

Indigenous Engagement with the Alexander Archipelago Wolf: An Applied Study of Culture and Traditional Ecological Knowledge

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*Uwashagi Gooch Gáas' (Panting Wolf House Post)**

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Executive Summary

The U.S. Fish and Wildlife Service in Alaska is conducting a Species Status Assessment in response to a petition to list the Alexander Archipelago wolf under the Endangered Species Act. This federal undertaking could not be adequately prepared without including the voices of the Indigenous people who have a deep connection with the species. The Indigenous knowledge presented in this report is the cultural and intellectual property of those who have shared it. The purpose of the report is to communicate the knowledge shared with us to the U.S. Fish and Wildlife Service to help inform the Species Status Assessment.

Due to limited time, we employed rapid appraisal research to expeditiously develop a preliminary understanding of Indigenous people's ecological knowledge of wolves. We applied the social scientific methods of ethnographic interviewing and inductive coding from grounded theory for text analysis. We conducted a literature review to supplement the interviews focused on the cultural significance of wolves in Tlingit society and social organization. The study was informed by tribal consultation (Appendix A).

Our Indigenous research partners consist of knowledge holders, living in Southeast Alaska. Their interviews represent six large geographic areas and communities, including Yakutat, Excursion Inlet, Kake, Klawock, Craig, and Hydaburg (Figure 2). Five Indigenous research partners provided information about cultural connections to Wolf, and nine provided traditional ecological knowledge about wolves. We interviewed a total of nine knowledge holders (Appendix D).

We primarily analyzed the data within geographic area and within interviews. The insights we learned are specific to the areas where the knowledge holders with whom we spoke have engaged with Wolf. There were differences and similarities in findings across areas. Some findings and insights apply for more than one area or social context in Southeast Alaska.

We report extensive traditional ecological knowledge about wolf health and abundance, distribution, territories, travel patterns, reproductive behaviors, and wolf habitat and prey needs and conditions. For the Yakutat and Excursion Inlet areas, two types of wolves were identified. The smaller of the two is known as the southeast wolf or the Alexander Archipelago wolf; the larger one was identified as the Yukon wolf. Our Indigenous research partners have not observed the two types intermixing.

The Alexander Archipelago wolves are organized into packs of about six to twelve animals on average, and sometimes packs are larger (i.e., ~20 to 30 plus). While there are discrete packs, they subdivide in various ways at various times. In the fall they join together into the largest units of the year. Related packs may merge to form larger packs. It is not entirely clear if these larger packs are one pack operating in one territory or two or more related packs joined together for hunting an area with abundant prey.

There was agreement that packs break up during the mating season as one or more breeding pairs begin denning and caring for pups. The other members of the pack continue to hunt as a smaller group and usually do not mate. There are usually five to eight pups in a litter. The dens are

multigenerational and located between 1,000 and 1,500 feet elevation in the Kake area. Packs reunite when the pups are big enough to travel and learn to hunt.

Wolf pack territories are bounded by watersheds or stream drainages in Yakutat, Excursion Inlet, and Kuiu and Kupreanof islands. Packs will normally travel on well-established and marked trails. For the Excursion Inlet area, wolf packs tend to move through the forest as a group, not necessarily following established trails, in similar fashion to a pod of orcas. Wolves tend to aggressively defend their territories, but some territories may overlap, and minor intrusions may be tolerated. We learned there are approximately 10-12 wolf packs in the Kuiu and Kupreanof islands area (Figure 17).

The wolf packs in coastal Southeast use habitats at all elevations from the beaches and islands to the mountain passes. Muskegs appear to be important habitat for wolves. Wolves tend to follow ungulates up and down the mountains in a seasonal pattern limited by snow depth. Large islands may be occupied by one or more packs, and packs tend to swim from island to island in pursuit of deer. Wolves travel on and near the road system, and road travel allows wolves to move quickly and effectively access prey.

The primary prey for the Alexander Archipelago wolves is ungulates supplemented with beaver and salmon, but wolves consume whatever they can catch or find, including birds, small mammals, and beached carcasses of marine mammals. There is evidence of more than one pack driving deer and moose into bottleneck or dead end areas to facilitate capture and kill. Three specific kill sites were identified by substantial accumulations of bones.

Results include detailed information on the cultural importance of wolves, Indigenous understandings of wolves, relationships between humans and wolves, and the position of Wolf in Tlingit social organization. The Indigenous peoples of Southeast Alaska possess an understanding of wolves that differs from the western scientific understanding of wolves. They have a profound and ancient relationship with wolves embedded in their language, culture, society, and homelands. Their understandings of Wolf and their engagements with wolves on the landscape are based in a rich blend of history in place, ecological observations, sociocultural knowledge, and cosmological beliefs (Figure 15). In this perspective, wolves are viewed as nonhuman beings that desire respect and are the relatives of people who belong to the Wolf moiety and clans.

We found evidence that some of the Indigenous wolf experts we talked with also have western scientific knowledge of and experience with wolves learned from agency biologists through direct conversations, sharing and reading reports of scientific research, or participation in the mark-recapture studies conducted in parts of Prince of Wales Island.

The primary motive for wolf trapping and hunting is to achieve balanced populations of deer and wolves. The local objective is to ensure adequate deer abundance and deer proximity to communities for subsistence harvests. There are two dimensions to consider: low abundance of deer from predation by wolves and deer becoming too wary, or skittish, and therefore difficult to harvest in the presence of active wolf packs. The preferred means of maintaining balance is by subsistence hunting and trapping in places where communities normally access and hunt deer and other ungulates for subsistence purposes.

To ensure healthy wolf packs, they have to be trapped and hunted on a three-year cycle in which a substantial portion of the pack is removed. The packs will regrow their numbers larger than original size when left alone for three to four years if they have adequate prey and no other sources of mortality. This approach creates a balance optimal to humans, deer, and wolves where wolf and deer harvests improve wolf and deer health while ensuring freezers full of venison and healthy Indigenous Peoples and cultures.

The agencies are seeking good estimates of wolf abundance. Indigenous experts in this study possess knowledge and skills that would help the agencies improve their population estimates. Local wolf trappers have years of experience with attracting wolves and making close contact. These skills are invaluable for the hair board mark-recapture technique. Expert wolf trappers know how to effectively mask foreign scents that may repel wolves, and they can estimate wolf abundance in an area by counting tracks and scat piles and studying features of wolf trails and markings. Indigenous wolf experts can effectively design and conduct studies with the agencies to estimate wolf abundance.

The analysis points to several important next steps, including more agency investment in Indigenous knowledge studies; wolf research that uses a coproduction of knowledge approach; enhanced collaborative management of wolves; and discussions of the potential for cooperative management of wolves in Southeast Alaska.

List of Key Words and Topics

Alaska Native Peoples; *At.óow*; Collaborative management; Co-production of knowledge; Culture; Endangered Species Act; Existencescape; Haida; Human-Wolf relationship; Indigenous worldview and ontology; *Ku.éex'*; Predator-prey dynamics; Prince of Wales Island; Southeast Alaska; Social science; Subsistence harvest; Tlingit; Social organization; Wolf-Dog hybridity

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1. Introduction

“Like when you see the wolves up in the woods, they come around, you yell, put your hand together [cups his mouth with his hands] ‘*Táanaa! Táanaa haat tán!*’ That means, ‘Bring the spears!’¹ And those wolves would take off, didn’t want anything to do with it. Yeah, that’s true fact, because there were a lot of wolves around the mainland. The mainland is where the wolves were at. And there used to be, before we moved into there, when we first come down, after that ice age melted down, that’s before the great rain. And there were mammoths up there, on the mainland. Old timers call them, *lugeit!*, ‘Snotty nose,’ because it looked like a snotty nose because they have that big nose.”

Mr. Thomas Jack, *Wooshkeetaan* (Interviewed by Chuck Smythe, 2017)

The U.S. Fish and Wildlife Service in Alaska is preparing a Species Status Assessment² in response to a petition to list the Alexander Archipelago Wolf under the Endangered Species Act. The petition and the assessment have a direct and important connection to the Indigenous subsistence way of life in Southeast Alaska. People and wolves depend on the same land base and many of the same food sources in this part of Alaska. According to Presidential Directive (Lander and Mallory, 2021), this federal undertaking cannot be considered complete or adequate without including the voices of the Indigenous people who have the deepest connections with the species. Accordingly, the U.S. Fish and Wildlife Service made a major decision to include traditional ecological knowledge in this Species Status Assessment.

It is highly appropriate to include traditional ecological knowledge because the agency is required to incorporate available information about wolves into its assessment, and part of that information is held by Indigenous residents of Southeast Alaska. This information includes, among others, wolf health and abundance, wolf distribution within its ecological setting, wolf behaviors and traits, and wolf habitat and prey needs and conditions, both current and future (U.S. Fish and Wildlife Service, 2016). The people who live everyday with wolves on the land and hunt, trap, and gather the same foods in the same places as wolves know a lot about the ecological and biophysical information needed for the Species Status Assessment.

The Indigenous ecological knowledge presented in this report is the cultural and intellectual property of those who have shared it with us. The purpose of this report is to compile, organize, and communicate the knowledge we have so graciously received. The primary audience is the U.S. Fish and Wildlife Service, and the objective is to inform the agency’s Species Status Assessment for the Alexander Archipelago wolf.

As Mr. Thomas Jack indicates in the epigraph, the Indigenous Peoples of Southeast Alaska have an ancient relationship with Wolf. Wolves mean much more to them than the subject of a petition to list the subspecies under the Endangered Species Act. Every analyst, project manager, scientist, and decision maker involved with this listing process has something to learn from those who have coexisted with Wolf³ in this place for millennia.

¹ Mr. Thomas Jack references a type of short spear easily carried on one’s back.

² We purposively avoided the use of most acronyms such as SSA and TEK throughout the report.

³ We capitalize Wolf when referring to the nonhuman being Wolf and the Wolf People to acknowledge the Tlingit perspective and understanding of wolves and to highlight this aspect of the Tlingit relationship with the species.

1.1 Background: Archaeology, History, and Culture

Although this report focuses on ecological and biophysical knowledge about the Alexander Archipelago wolf, it is necessary for the reader to understand at the outset the rich cultural and historic contexts and origins of this knowledge as it relates to Tlingit and Haida societies, ways of life, traditions, and cultural practices.

1.1.1 Indigenous Peoples and wolves in Southeast Alaska

Southeast Alaska consists of the mainland from Cape Yakataga in the north to Dixon Entrance in the south including the islands of the Alexander Archipelago (Smith, 2016). Wolves occur in much of this area but are absent in some places (Section 3.5). Archeological evidence of stone tools indicates humans arrived in the region approximately 11,000 years ago at a time of deglaciation and substantial coastal change (Moss et al., 2016). Human remains from Prince of Wales Island have been dated to 10,600 years ago (Dixon, 2000). The Tlingit and Haida were the Indigenous occupants in the region when European explorers arrived in the late 18th century. Tsimshian people live today on Annette Island near Dixon Entrance on the Metlakatla Indian Reserve created by federal action in 1915. Figure 1 shows Tlingit *Kwáans*, *Kaigani Haida*, and Tsimshian territories in Southeast Alaska.

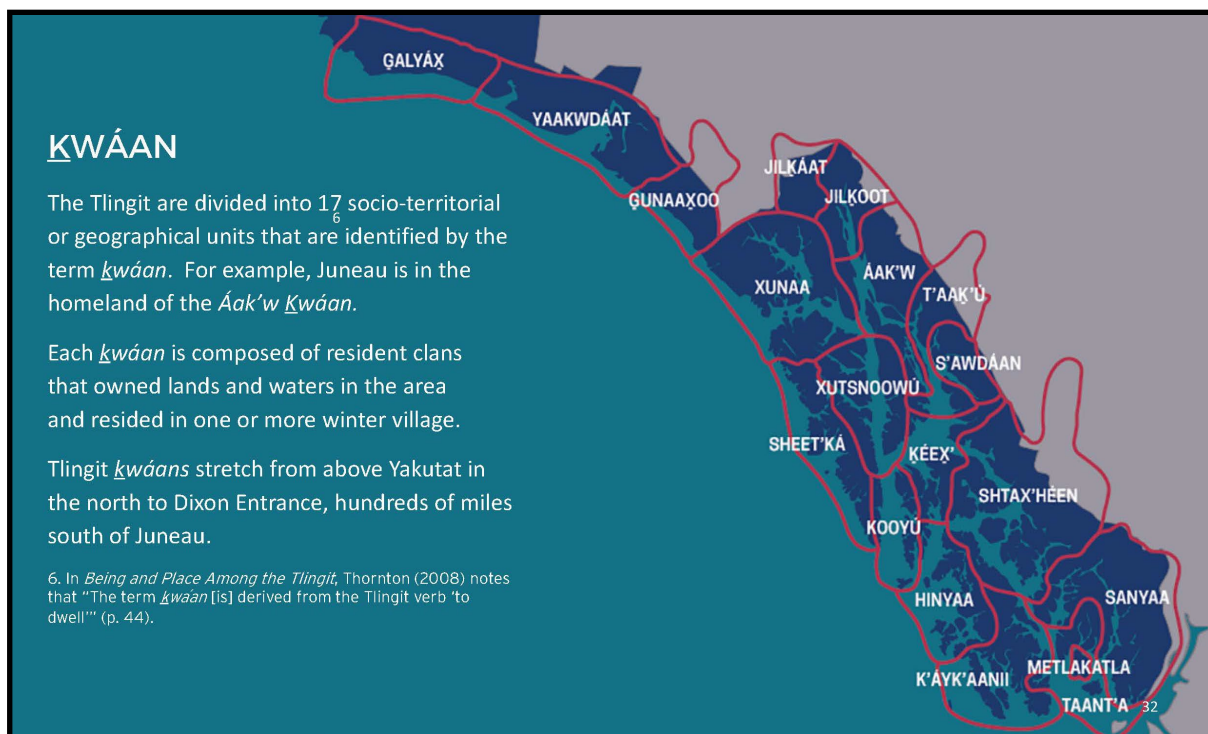


Figure 1. Tlingit *Kwáans*, *Kaigani Haida* (i.e., *K'áyk'aanii*), and Tsimshian territories (i.e., Metlakatla). Source: Sealaska Heritage Institute

Archeological and linguistic evidence suggest that Tlingit have been in the region for at least 6,000 years (Langdon, 2020a). The Haida emigrated to the southern part of the Prince of Wales Archipelago from Haida Gwaii in several waves approximately 100-150 years prior to European appearance (Blackman, 1990). The Tsimshian moved to Annette Island in 1887 from the vicinity of the mouth of the Skeena River in northern British Columbia, following authorization by the

United States Government of a request made by William Duncan, an English missionary, and Tsimshian leaders. Ironically, they sought a new home to escape the jurisdiction of British Columbia that refused to recognize their claim of aboriginal occupancy and sovereignty.

1.1.2 Archeological evidence of wolves and dogs

While the amount of archeological research in Southeast Alaska to date has been meager, there are several studies of relevance to this research. There is a substantial excavation covering about 3,000 years of human occupation at Coffman Cove on the east coast of Prince of Wales Island (Moss et al., 2016). Remains of dogs are first identified at 3,800 years before present, but no remains of wolves are reported from any strata excavated. Skeletal evidence is presented identifying two discrete dogs that are classified as “village dogs.” Moss et al. (2016:176) note:

“The gray wolf is the wild canid inhabiting the islands of the Alexander Archipelago. The bones found at 49-Pet-O67 [Coffman Cove] all are coyote-sized or smaller, indicating they are the remains of dog not wolf.”

Moss et al. (2016) do not appear to recognize the distinction between Alexander Archipelago and timber wolves, and that Alexander Archipelago wolves are smaller than timber wolves.

Archeological evidence of the appearance, presence, and characteristics of dog remains from four sites on Prince of Wales Island are analyzed in Crockford et al. (2011). The authors claim there is no evidence of wolf in any of the remains. They further assert, “While wolves do inhabit these islands, wolf (*Canis lupus*) skeletal elements are considerably larger than aboriginal dogs of any kind ...” (Crockford et al., 2011:56). They use as a comparative indicator, the lower jawbone of a wolf from the continental United States, as the basis for this assertion (Crockford et al., 2011).

It is important to note that while we have not consulted any anatomical studies comparing the Alexander Archipelago wolf with the timber or “Yukon wolf” for size, physiology, and morphology, it was pointed out by interviewees Thomas Mills in Excursion Inlet and Devlin Anderstrom in Yakutat that the solitary timber wolves they observed were significantly larger than the Alexander Archipelago wolves (Sections 3.5.1.3 and 3.5.2.1).

1.1.3 Historical accounts of wolves and dogs

In the late 1700s and early 1800s, a number of European countries sent voyages of exploration to the north Pacific Ocean. Great Britain, Spain, and France were the primary sponsors of those voyages. The Spanish explorers produced substantial descriptions of the people and their way of life along with aspects of land and sea more extensive than those of explorers from other countries.

Spanish explorers came to the west coast of Prince of Wales Island on three occasions: 1775, 1779, and 1792. On each occasion they entered Bucareli Bay. The 1779 expedition commanded by Arteaga and Bodega y Quadra came with two large 100 foot sailing vessels and a number of longboats for survey work. The party was in the area for about six weeks. Tlingit and Haida visited the main vessels anchored in Port Santa Cruz on Suemez Island where brisk trade between the Indigenous People and the Spaniards took place. A survey party explored the nearby

islands and waterways for 26 days taking soundings and making charts. During those travels, they had several encounters with Indigenous People. The Spanish journals include substantial descriptions of the landscape and various aspects of Indigenous culture and practices.

In the journal of Bodega y Quadra, one of the leaders of the 1779 expedition, he reported:

“... they continually brought well-woven mats of various colors, pelts from land wolves, sea lions, seals, sea otters, deer, bear and other small animals, well-tanned, others prepared with the hair on them” (Olson, 2002:109).

In 1791, Malaspina led a Spanish voyage of exploration that visited Yakutat Bay at the opposite end of Southeast Alaska. The area was occupied by Tlingit. As with the Spanish accounts of visits to Bucareli Bay, Malaspina and other members of the party produced descriptions and observations of people in Yakutat they encountered. Malaspina wrote:

“The clothing of the men is regularly a cape of nutria (sea otter) pelts, of wolves or of martens over the body, with a band (sash) on the lower part of the abdomen” (Malaspina quoted in de Laguna, 1972:434).

In 1792 Jacinto Caamano, captaining a single large vessel, returned to continue exploring portions of Bucareli Bay not completely surveyed in 1779. The vessel anchored in Port San Antonio on the southwest side of Baker Island. The survey took 11 days. One purpose was to continue to pursue waterways to the east to see if they could find a Northwest Passage. This was part of the charge given to Caamano. In fulfilling this aim, the long boat party went east and then south from the anchorage to Ulloa Channel that led them westward back to the Pacific Ocean. Eventually, they circumnavigated Suemez Island arriving back at Port San Antonio. Josef Maldonado, a botanist, was charged with documenting the fauna encountered in this survey and reported that “wolves” were observed as well as “Indian dogs” (Olson, 2002:503).

The Spanish journals documented there were wolves on the landscapes they explored, and the Tlingit were taking wolves, tanning their skins, trading them, and wearing the skins.

Some intriguing comments about dogs observed in Sitka were provided by a member of Captain Marchand’s crew who visited there in 1791. The surgeon Roblet noted:

“His feet are extremely large; the tail is bushy, the muzzle long and pointed, the ear erect, the eye sharp, the body thick and his height may be about eighteen inches. He barks little and appears timid with strangers. He welcomes and caresses his master, but caresses him alone” (Fleurieu, 1801:306).

Descriptions of hybrid wolf-dogs given by several interviewees strongly resemble this observation of both physical and behavioral traits (Sections 3.5 and 4.6). Mike Jackson of Kake made the following observations on hybrid wolf-dogs.

MJ: “...they [hybrids] were super protective of the owner. They would hardly bark or anything. They would just watch from out in the bushes, just like a real wolf ... but if there was somebody that was gonna do harm, they could sense it. And they’d come sit right next to ‘em and watch that person.”

De Laguna made a distinction between “small, quick, terrier like animals, quite different from the larger wolflike dogs used for ordinary hunting and carrying packs” (Emmons, 1990:139). This comment could be interpreted as referencing wolf-dog hybrids.

British explorer George Vancouver had numerous encounters with Tlingit and Haida when sailing in southeast Alaska between 1792-94. Just north of modern day Ketchikan, a party of Vancouver’s men had an intense, violent engagement with a party of Tlingit in several large canoes. During the confrontation:

“... a young man, appearing to be the chief of the party, seated himself in the bow of the yawl, and put on a mask resembling a wolf’s face, compounded with the human countenance...”

It is likely the mask was part of the armor that Tlingit leaders wore into hand to hand combat (Emmons, 1991:350).

In 1867, the United States purchased Russian claims to Alaska and assumed jurisdiction. In 1879, John Muir traveled to Southeast Alaska to explore the territory. Arriving in Wrangell, Muir joined with missionary S. Hall Young and arranged with Tlingit leaders to take a canoe trip into the northern part of southeast Alaska. One of the Tlingit was the young Christian leader Kadashan. The party was camped one evening along Chatham Strait when “the howling of a wolf on the opposite side of the strait was heard” (Muir, 1915:124). Kadashan asked the missionary S. Hall Young if wolves had souls. An exchange concerning wolves followed that Muir documented.

“The Indians believe that they have [souls], giving as foundation for their belief that they are wise creatures who know how to catch seals and salmon by swimming slyly upon them with their heads hidden in a mouthful of grass, hunt deer in company, and always bring forth their young at the same and most favorable time of the year.”

Clearly Tlingit were aware that wolf packs engaged in complex communication skills during deer hunts. Tlingit held wolves in high regard due to their combination of speed, strength, intelligence, and cooperation allowing them to consistently provide food for themselves.

Muir further inquired:

“... how it was that with enemies so wise and powerful the deer were not all killed. Kadashan replied that wolves knew better than to kill them all and thus cut off their most important food supply. He said they were numerous on all the large islands, more so than on the mainland, that Indian hunters were afraid of them and never ventured into the woods alone for these large gray and black wolves attacked man whether they were hungry or not. When attacked, the Indian hunter, he said, climbed a tree or stood with his back against a tree or rock as a wolf never attacks face to face. Wolves, and not bears, Indians regard as masters of the woods, for they sometimes attack and kill bears, but the wolverine they never attack ...” (Muir, 1915:124).

While we have identified little commentary on wolf abundance and distribution in the historic records thus far examined, one noteworthy comment from Emmons (1991:136) is as follows:

“Within the last 30 years [~1900-1937] it [wolf] has increased greatly in numbers and has crossed some broader channels to islands where many deer formerly lived, [and the latter, in consequence] have become extinct.”

Tlingit were no doubt aware of this phenomenon particularly those living in areas into which wolves expanded.

1.1.4 Cultural overview

Although they are not linguistically related and display distinct cultural identities, the three Indigenous groups share many cultural values, beliefs, and customary practices that allowed for significant, but not necessarily peaceful, interactions among the groups. Tlingit, Haida, and Tsimshian share matrilineal descent, corporate kin groups, key ontological assumptions about being and existential processes, and central ceremonial forms and ritual practices. The following cultural synopsis is based on Tlingit society as they are the predominant Indigenous group in Southeast Alaska before and following contact with Euro-American society. Haida and Tsimshian variations from this pattern are minor.

Culture is the general term covering all aspects of the way of life practiced by a human society in which members share understandings that enable the group to live collectively. For purposes of this discussion, Tlingit culture is divided into two subcategories: existencescape and social organization. The former is employed to frame the Tlingit relationship with Wolf from their perspectives and experiences on the land, while the latter is used to help the reader understand Tlingit relationships among individuals, social groups, and within their society as a whole.

1.1.4.1 Existencescape

An existencescape comprises the realm of possible understandings, behaviors, and creative responses given a set of cosmological and ontological principles. These are experienced and expressed in the embodied habitus among members of a cultural group that allows them to share orientations and understand experiences. Habitus constitutes the cognitive structures through which sensory experiences are processed into meaningful understandings; it is the physical embodiment of cultural capital, the deeply ingrained habits, skills, and dispositions that people have due to life experiences and position in a society (Bourdieu, 1977). In the rich temperate rain forest of their homeland, the Tlingit created an existencescape premised on shared similarities of being with other entities with whom they lived and now live (Langdon, 2019; 2020b). By being, is meant person—a form equivalent in essence to a human being, including an invisible spirit that is found in all existing entities. A key element of all persons, both human and nonhuman, is the spirit or existential essence that has the capacity to live, die, and return (i.e., be reborn) a process termed cosmological cycling (Fienup-Riordan, 1983).

Orientations of the Tlingit existencescape are based on core beliefs expressed in cosmological myths and mythic charters and covenants.⁴ Through the Raven cycle of myths, Tlingit acquire understandings of the nature of existence: domains, entities, processes, interactions, time, and space. They learn that the living forms around them are persons essentially like themselves in

⁴In this context, a myth is a traditional story, especially one concerning the early history of a people or explaining some natural or social phenomenon and typically involving supernatural beings or events.

that they are perceptive, sentient, attentive, volitional, and desirous of respect (Langdon, 2019). They learn that movements between domains of existence can occur (e.g., between living and dead or visible and invisible). They learn that movements between forms of existence can occur (e.g., transformation, hybridization). An implicit message in these accounts made explicit when taught is one must be observant, attentive, open to new knowledge, and respectful at all times. Finally, they learn that through appropriate respectful treatment and ritual action, fulfilling the moral obligations stipulated in the charters and covenants will meet their obligation to sustain existence. Anthropologist Julie Cruikshank has observed the Tlingit occupy “a moral universe inhabited by a community of beings in constant communication and exchange” (quoted in Thornton 2012). This fundamental orientation to existence is termed relational sustainability (Langdon 2019, 2020b).

1.1.4.2 Social organization

Social organization includes many components, but for the purposes of this discussion, it comprises the kinship structure that establishes identity and relationships among people, patterns of marriage, leadership principles, and ceremonial practices that sustain and reproduce the society. Everyday social life among humans in Tlingit society is organized around principles of membership and engagement at multiple levels. The first principle is matrilineal descent. Every person born in Tlingit society takes on a primary identity from their mother. That identity operates at multiple levels. The first level is the dual division known as moiety. There are two sides or “tribes,” Ravens on one side and Wolf/Eagles on the other. At the next level in each moiety there are approximately 35 clans that are named, corporate transgenerational entities whose members recognize and subscribe to a joint identity. The third level is the house group. Tlingit houses are named and recognized social units in Tlingit cultural processes. A person is then at birth a member of moiety, clan, and house.

A fundamental principle of social process and organization is a person must marry someone from the opposite side or moiety. In the past, a violation of this principle would constitute incest and could lead to banishment. The marriages create relationships between the two clans that can be characterized as obligatory reciprocity. That is especially apparent on key occasions, such as following a death, during house building, and totem raising. The side pursuing the event arranges with their opposites who carry out much of the related activity necessary to complete the task. For example, at death, the opposites come in and take care of the deceased body, prepare it for observation, and provide services such as food and solace to their relatives. Subsequently, those receiving the services stage a ceremony a year or more after to honor the deceased termed a *ku.éex'* (i.e., potlatch). Acting as host, they invite their opposite relatives who supported them as honored guests. At the formal ceremony among other activities, recognition, thanks, and gifts are given by the hosts to the opposites. This is a pivotal event in Tlingit social structure as it reinforces and recreates bonds while establishing new leaders and freeing the spirit of the deceased for reincarnation.

The Tlingit *Kwáan* is a socio-geographic organizing unit of intermarrying clans who occupy a discrete territory defined by clan territorial ownership within the area (Figure 1). It is not a political entity but is recognized as a unit in which peace generally prevails among the resident

clans. Clans, the sovereign political units in Tlingit society, may be in conflict with clans in other Tlingit *Kwáans*.

2. Study Design and Methodology

This type of study requires a substantial amount of time, community outreach, review, and discussions between the research partners and the agency analysts who seek to apply traditional ecological knowledge. The unfortunate reality is we did not have enough time to complete a comprehensive data collection and analysis. We developed a hybrid research approach that combined principles and methods from three well-established and compatible approaches in anthropology. These included rapid appraisal, ethnography, and grounded theory. Rapid appraisal is used to expeditiously develop an initial, preliminary, and qualitative understanding of a situation; in this case, Indigenous people's understandings and knowledge of wolves to inform the agency's Species Status Assessment (Beebe, 1995; Carruthers and Chambers, 1981).

To develop initial analytical categories and concepts for the sociocultural and ecological relationships between Indigenous knowledge holders and wolves, we applied ethnographic interviewing and inductive coding from grounded theory for text analysis (Bernard, 2006). Because traditional ecological knowledge is primarily specific to individuals and places, we conducted a within-transcript and within area analysis. Due to time constraints, we did not conduct extensive across-transcript analyses normally associated with studies of Indigenous knowledge such as regional comparison and contrast for commonalities and variations, missing data, and unique materials (Langdon, 2006).

We combined several methods and sources of information, including literature review, notes from tribal consultation (Appendix A), informal conversations with local wolf experts, a mapping exercise, and personal history narratives for long-time wolf trappers and hunters. We used open ended conversations and semi-directed interviews to construct the personal narratives (Huntington, 1998). The conversations focused on biophysical and ecological aspects of wolves, wolf behaviors, wolf characteristics, and interactions between people and wolves (Appendix B). Some Indigenous knowledge holders were asked about cultural connections and significance of wolves and how Wolf is used and displayed in names, clan crests, ceremonies, performance, sacred *at.óow*, everyday objects, *ku.éex'*, and other types of material culture (Appendix C).

Our Indigenous research partners are wolf experts and cultural experts, living in Southeast Alaska (Appendix D). These partners represent six large geographic areas and communities, including Yakutat, Excursion Inlet, Kake, Klawock, Craig, and Hydaburg (Figure 2). Five Indigenous research partners provided information about cultural connections to Wolf, and nine provided traditional ecological knowledge about wolves. We did not ask everyone the same questions and encouraged open-ended conversations. Some personal narratives about Wolf contained both types of information, and others contained one type or the other. Some partners provided extensive geographic information about wolf distribution, range, and locations of specific wolf packs. We attempted to map these locations when enough geographical and place name data were shared. Mr. Scott Jackson from Kake sketched a map showing wolf packs for Kuiu and Kupreanof islands (Figure 17).

Nine audio recordings were made and transcribed, resulting in approximately ten hours of dialog. The audio recorded interviews were proofed and corrected. The primary analyst carefully listened to the recordings while reading through the transcripts. Then, during a second read he used the comment function in Microsoft Word, Track Changes to apply coding labels to sections of text. The coding labels represent both questions we asked and some emergent and unexpected categories. The analyst wrote memos under the codes in the comment bubbles. The memos were the analyst’s summary impressions and interpretations of cultural understandings and traditional ecological knowledge of wolves and how these related to our purpose.

Interviewee Communities and Areas Covered

Note: Wolves are not found on Admiralty, Baranof and Chichagof islands.

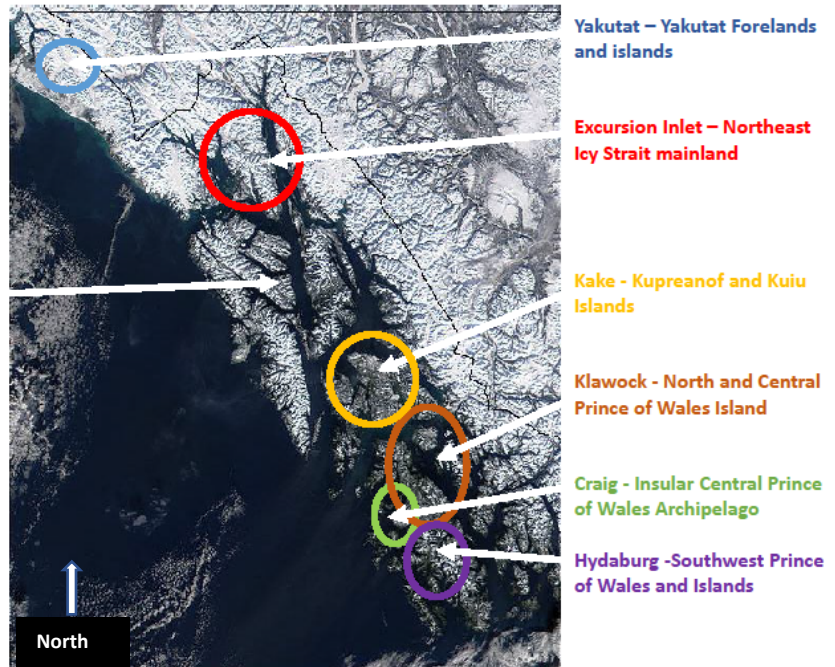


Figure 2. Map of study area, subregions, and communities covered by our Indigenous research partners. Source: Steve Langdon

Our Indigenous research partners voiced and shared a substantial body of knowledge about wolf behaviors and characteristics, trapper experience and insights, and sociocultural meanings of Wolf. Several interviewees reported over 50 years of active engagement with wolves. The results and discussions are largely descriptive syntheses with our interpretations and insights provided where appropriate. The presentation of results consists of analytical categories, narrative characterization and description, extensive direct quotations from the interviews and literature to support categories, and an interview theme used as a subtitle for each geographic area.

Each interviewee was given an informed consent form to read and sign beforehand, which was also signed by the interviewer (Appendix E). Each Indigenous research partner was compensated with an honorarium, and all agreed to the use of their names in the report. The interviewer, Steve Langdon, is designated SL, while the interviewees are designated by their initials (e.g., DA).

3. Results and Discussion

3.1 *Gooch*: Centrality in Tlingit Culture, Society, and Symbolism

3.1.1 Origins of Wolf crest and position in moiety structure

For the Tlingit, like western science, wolves existentially are the source of dogs.

“The origin of the dog is attributed to the wolf. Native tradition goes back to the taking of a wolf’s nest in the interior and the training of the young to hunt. From this beginning was developed the dog. The young wolf learned to talk, and so today the dog understands everything he is told to do” (Emmons, 1991:139).

As noted previously, Tlingit society is organized into two matrilineal moieties (i.e., social divisions) into which all Tlingit are born and assigned membership based on their mother’s status. Wolves stand with Raven as the symbolic crest representatives of the two moieties but there are no evident oral traditions that explain duality or the two chosen moiety crests (Emmons, 1991:23). While Raven, as one moiety crest, can be attributed to dominance in Tlingit cosmology and is so claimed by human Raven moiety members, there is no oral tradition that can be interpreted to raise Wolf to an equivalent level (Emmons, 1991:23). A Tlingit account from Yakutat stipulated:

“Raven ... tried to create a ‘brotherhood’ of all the creatures of the world, assigning major crest animals to one moiety or the other. But the Wolf was against him, and destroyed this harmonious scheme, so Raven doomed the latter to wander, howling for help” (Emmons, 1991:23).

While there are no oral traditions that speak to the pairing of Raven and Wolf as moiety crests, Tlingit are well aware of the symbiotic relationship between ravens and wolves in the environment. One perspective is that they are linked as ravens help wolves find prey animals and then after the animals are harvested by Wolf, ravens are able to get bits of food from those animals after the wolves have finished. Devlin Anderstrom provided his view on this relationship.

DA: “We see everything else as being people too. And especially the wolves because they're so similar to us. And they have this symbiotic relationship with ravens and crows, just like we do. And that's pretty interesting for us. And I think that's actually where that moiety comes from. That's my guess, my own personal guess. Well, you see them when you're out there, moose hunting. I'm a moose hunter myself. And you watch the animals, the way that they act when they're out there. And the ravens know that if they can help a wolf pack kill a moose, then they're going to get to eat the scraps, because the wolves can't pick every single bit of flesh off the bone and then the ravens will get the, you know, peck at the eyes and all the stuff that they like to eat. So, they'll lead them, they'll lead the [wolf] pack to a moose.”

3.1.2 Overview of *at.óow* and Wolf clans and houses

Gooch (Wolf) and wolves are at the center of Tlingit cultural construction and practice. Most critically they appear many times in the foundational *at.óow* accounts of virtually all of the clans

of the Wolf moiety, under which fall approximately 30 clans. Scholars of Tlingit life state that *at.óow* is the "single most important spiritual and cultural concept" among Tlingit and exemplifies the "two main features [that] characterize Tlingit culture and oral tradition—ownership and reciprocity" (Dauenhauer and Dauenhauer, 1990:13-14). Indeed, the objects and practices associated with *at.óow* are treated with great reverence by Tlingit in such a manner as to approach the sacred (White and White, 2000). Objects such as hats, tunics, blankets and other items typically had symbols or images associated with the events, locations, and spirits that were collectively owned by the matrilineal clan or house group and memorialized the central claims associated with a specific *at.óow* (Dauenhauer and Dauenhauer, 1990:15).

At.óow can be acquired only through some form of sacrifice, usually the loss of life of an ancestor who had acted to protect or advance the interests of the group, that establishes the ultimate foundational claim of the group (White and White, 2000). The associated objects, songs, and dances that are created to memorialize the event are handed down and placed on display or performed by subsequent generations only on ceremonial occasions of great significance. Dauenhauer (1995:21) described the significant connection of *at.óow* to a group and the power of *at.óow* to invoke the presence of their ancestors.

“The traditional art pieces called *at.óow* are brought out only on special occasions, usually in a ceremonial context, the most widely known of which is called "potlatch" in English. In Tlingit tradition, the ceremonial is called *ku.éex'*, and means 'invitation.' It begins with a ritual called *Ls'aatisháa Gaaxée* (the Widow's Cry), during which the guests bring out the *at.óow* of their clan to wipe away the tears of the hosts. Each piece of ceremonial wear, whether elaborately decorated or plain, is important. This ritual display of visual art is accompanied by oratory delivered by selected individuals who are genealogically related to the deceased and by the performance of appropriate songs. When we put the *at.óow* on our grandchildren, we wrap them in our care; when we wear the *at.óow*, we know that our ancestors are present. When we do this, we are doing what the art was designed and created to do. We are also imitating our ancestors. This is the greatest honor we can give to them and to our relatives among the hosting clan as well.”

Wolf *at.óow* are found in Tlingit clans across the regional sweep of Tlingit occupation and across time from the immediate post-glacial to the early 20th century (de Laguna, 1972; Thornton et al., 2019). Noted Tlingit ethnographer George Emmons (1991:22) wrote about clan houses named for Wolf.

“In the principal Wolf families, the chief's [highest ranking leader] house at *Kax'noowú* [Female Grouse Fort] of the Hoonah was named Wolf House; the chief's house in Sitka was likewise named Wolf House, with the front painted in a Wolf figure, while a minor chief's house was painted in the Eagle design. At Chilkat [Klukwan] the principal houses were named for the Wolf or Brown Bear.”

An example of a prominent wolf clan *at.óow* is the Panting Wolf of the *Kaagwaantaan* found primarily in the northern communities of Southeast Alaska (Section 3.1.3.1; Figure 10). Numerous wolf *at.óow* are found among Wolf clans from the *Taant'akwáan* on the southern boundary to the *Galyax Kaagwaantaan*, the most northwesterly of the Tlingit groups (Figure 1).

Wolf symbolic presence permeates Tlingit culture in all of its domains, including clan houses that have wolf names (Table 1; Figure 3).

Table 1. Tlingit houses associated with Wolf: *Kwáan*, village, clan, and house names.

<i>Kwáan</i>	Village	Clan	House
<i>Sheet'ká</i>	Sitka (<i>Sheet'ká</i>)	<i>Kaagwaantaan</i>	<i>Kaawashagi Gooch Hit</i> (Panting Wolf House) <i>Gooch Hit</i> (Wolf House) <i>Déix X'awool Hit</i> (Two Door [Wolf] House) <i>Aanyádi Hit</i> Noble [Wolf] House <i>Wudzixeedi Gooch Hit</i> (Multiplying Wolf House)
<i>Laaxaayik</i>	Yakutat (<i>Yaakwdaat</i>)	<i>Kaagwaantaan</i>	<i>Gooch Xaay Hit</i> (Wolf Steam Bath House)
<i>Hinyaa</i>	Tuxekan (<i>Taxjik'.aan</i>)	<i>Shangukeidi</i>	<i>Gooch Hit</i> (Wolf House)
<i>Saanyaa</i>	Cape Fox Village (<i>Gaash</i>)	<i>Teikweidi</i>	<i>Gooch Hit</i> (Wolf House)
<i>Taant'akwáan</i>	Village Island (<i>Dàasaxakw.aan</i>)	<i>Da_{kl}'aweidi</i>	<i>Gooch Hit</i> (Wolf House) <i>Yeiskú Hit</i> (Forrester Island/Wolf)
<i>Taant'akwáan</i>	Tongass Village (<i>Kadukxuka</i>)	<i>Da_{kl}'aweidi</i>	<i>Gooch Hit</i> (Wolf House)
<i>Jilkáat</i> (Chilkat)	Klukwan (<i>Tlák.w.aan</i>)	<i>Kaagwaantaan</i>	<i>Gooch Hit</i> (Wolf House)

Sources: Hope (2009); Monteith (1998); Thomas Thornton, personal communication, March 18, 2022

Figure 3 portrays Chief Annahootz of the Wolf House of the *Kaagwaantaan* clan standing in front of the Multiplying Wolf house in Sitka (Griffin, 2000:2). The painted artwork at the top of the house front is called a house screen. This crest *at.óow* is on loan from the Wolf House and displayed at the Sitka National Historical Park Visitor Center.

“The *Wudzixeedi Gooch* ‘Multiplying Wolf’ house screen, now seen indoors, was originally installed outside above the entrance, in keeping with Tlingit tradition. Customarily house screens are displayed outside to identify the clan within. ... The

elements began to take their toll, and the screen was brought inside, protecting it from further damage. This painted crest tells of a time when the Wolf Clan outgrew its clan house and had to establish a new house” (NPS, 2022).



Figure 3. Multiplying Wolf house screen in Sitka with Chief Annahootz (*Anaxóots*) standing and wearing regalia. Photographer: E. W. Merrill; Source: Griffin (2000:2)

3.1.3 *Gooch* presence in Tlingit *at.óow* and clan oral traditions

At.óow are clan property. Tlingit clans derived their crests from past events or situations involving monumental interactions between clan ancestors and animal persons. These events have been recorded in oral traditions handed down through generations and comprise the historical heritage of a clan. Any clan or member of a clan of the Wolf moiety can use Wolf as a crest in some form or other on their personal regalia, but *at.óow* are under the control of clan leaders who make decisions about their use. Wolf crests may be of an individual or lineage nature derived from other oral traditions. Important clan traditions and objects exist that are neither *at.óow* nor commemorated in various regalia. There are significant oral traditions involving Wolf that are not manifest in crests or other forms of clan symbolism.

3.1.3.1 *Kaagwaantaan*

The Panting Wolf is a crest of the Sitka *Kaagwaantaan* generally recognized as the most powerful of the Wolf clans (Figure 10). The oral tradition that is the basis for this relationship recounts an occurrence of an ancestral encounter with a wolf while the group was migrating northward back home during the retreat of the ice sheets. The oral tradition of the Panting Wolf was recently presented in a lecture by David Kanosh (2018).

“While he was out hunting he saw this wolf out in the distance. He thought the wolf was going to attack him, but as the wolf got nearer, he could see that the tongue was hanging out. And then as the wolf got even closer, he could see that there was a bone stuck in between its teeth, and it punctured the lip, so the tongue was hanging out, probably trying to fight off an infection and a fever. The hunter said, ‘If you don’t harm me, I will remove that bone.’ The wolf came down gently and opened his mouth wide, and the hunter removed it. And then the hunter said, ‘Now tell me the secrets of hunting deer.’ ... but the wolf didn’t do anything. He ran away. Later on that night, the hunter was setting up camp. He built the fire. He was getting ready for bed, but then he saw that wolf again. And the wolf came running down, and then when he got by the fire, he stood up like a man. He started showing that hunter the secrets of how to use the deer call. ... And then he became quite good at hunting deer. He was able to provide not only for his family, but also for the entire village. That Wolf was no ordinary wolf. There was a young lady in that village who got sick, and that Wolf came up, that same Wolf, and he licked the wound of this young lady, licked it clean, and she became well. From this came a name: *K’ayéil’i*, ‘Saliva Mouth’, one you can still hear today, one being used by the *Teikweidi* people, and that young hunter, he built a house pole with a panting Wolf, one of the first emblems to be used by the Tlingit people in the migration north.”

There is also a *Kaagwaantaan* clan segment located in Klukwan of the *Jilkáat Kwáan*. In this community, Wolf *at.óow* is associated with the Wolf House and based on the Crying Wolf oral tradition. Jennie Thlunaut, revered *naaxein* weaver, gave this account of the tradition in association with her weaving of a *naaxein* for her daughter depicting the Crying Wolf (Figures 4 and 9).⁵ The clan’s origin story is *at.óow*.

“Their ancestor *Kaa.ushti* was at a place called *Kaak’wxanseiyí*. He saw a wolf crying while running ahead of him. *Kaa.ushti* believed the wolf was trying to tell him about a death back in his home village. All the time it was trying to tell him about his own death” (Thlunaut, 1988).

The *at.óow* associated with this oral tradition was memorialized by the Chilkat *Kaagwaantaan* of the Wolf House in another way. In 1904 a wolf house post was commissioned by *K’axook Éesh*, Jennie’s grandfather, also a *Kaagwaantaan*. The post was made to stand in front of the Wolf House. The wolf post is now located at the visitor’s center in Sitka.

⁵ The information provided by Jennie Thlunaut is from the film, *In Memory of Jennie Thlunaut* (1988), narrated by Nora Dauenhauer and transcribed by Chuck Smythe. Source: Sealaska Heritage Institute Archives



Figure 4. *Yaa Kandagax Gooch Naaxein* (Crying Wolf robe) woven by Jennie Thlunaut, Kaagwaantaan. Source: Sealaska Heritage Institute, SCC.1975.001.024

3.1.3.2 *Teikweidi*

The *Teikweidi* are a Wolf moiety clan with segments located in a number of *Kwáans* including *Taant'akwáan*, *Saanyaa*, and *Yaakwdáat*. Oral traditions indicate they are related to the *Kaagwaantaan*. Oral traditions converted to *at.óow* are found in *Taant'akwáan* and *Yaakwdáat Kwáan*. The *Teikweidi* oral tradition from the *Taant'akwáan* comes from an encounter with a wolf in the last 200-300 years. The oral tradition that is the basis for their wolf *at.óow* is called The Tired Wolf (Garfield and Forrest, 1961:18-19). Wolf and Brown Bear are crests of the *Teikweidi*.

A Tlingit party was traveling by canoe in the waters of southern Southeast Alaska. They noticed a wolf swimming who was so tired his tongue was hanging out of his mouth. They picked up the wolf and put it in the canoe.

“They took him back to the village, where he stayed with his rescuers. When the men went hunting, the wolf hunted with them and, as he was always successful, they had plenty of meat. He lived among them until his death many years later and came to be treated almost as a member of the clan. Not long after his death a dream came to one of the men of Forest Island House in the form of a song. The Wolf People were singing for their dead relative in this dream, and they appeared as human beings just like himself. ... Because this was a lament for their deceased relative, the people of Forest Island House sing it only as a dirge or mourning song” (Garfield and Forrest, 1961:18-19).

Two carved poles memorialized these events and the relationship. Both are unusual in that they are profile carvings rather than the standard frontal view. In both, the tongue is hanging out of the wolf's mouth (Figure 5).

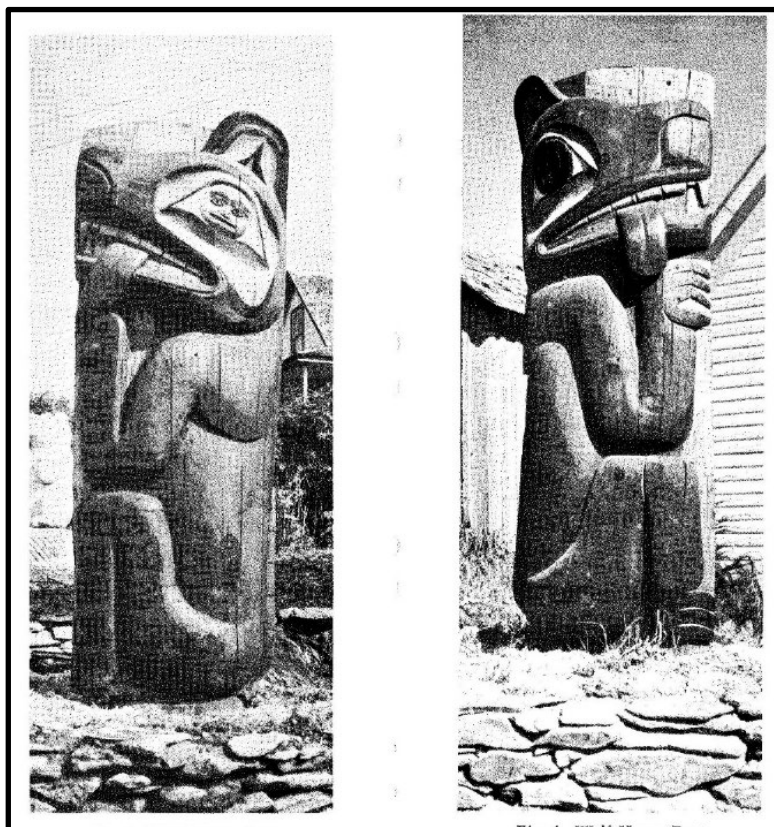


Figure 5. House posts of Wolf of the *Teikweidi* clan. Source: Garfield and Forrest (1961)

The *Teikweidi* also have clan presence in *Yaakwdáat Kwáan*. The incident that is the basis of their wolf *at.óow* is a little over 120 years old. The oral tradition might be termed the guarding wolves based on the wolf behavior described.

“A *Teikweidi* man drowned attempting to cross the Ahrnklin River when the water was high. His body was found at the mouth of the river on a sandbar by relatives several days later. The men had nothing to carry the body with and so had to go back for a stretcher. Before they left they spoke to the four winds and to the wolves, mostly, to guard the body. The wolves did hear and came to guard the body. When they came back with a stretcher to get the body, they saw a lot of wolves take off. And they could see the places where a wolf had been sleeping at the head and another one at his feet. They prayed to the wolves because they ‘had the Wolf’ [meaning it was their crest animal]” (de Laguna, 1972:872).

The two wolves that guarded the body are shown near the bottom of the Ahrnklin River blanket, a clan *at.óow* object. It was evident in the sand that one wolf had laid down at the head of the man and another below his feet. This oral tradition and associated *at.óow* recounts events that occurred around 1900 (Figure 6).

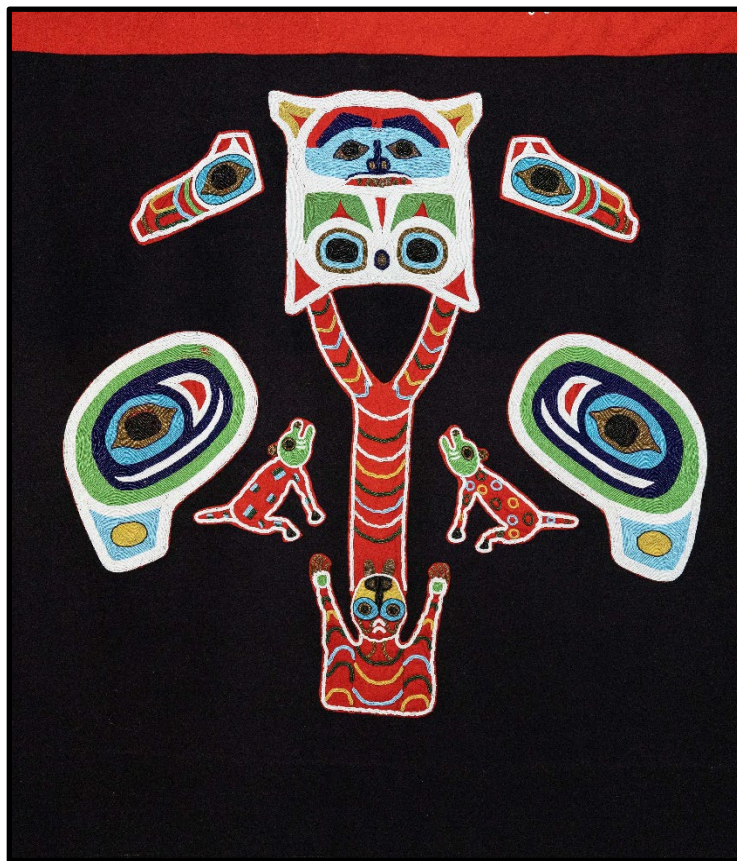


Figure 6. Yakutat *Teikweidi* blanket depicting Ahrnklin River event of drowned man's body protected by wolves. Courtesy of the Alaska State Museum.

3.1.3.3 *Yanyeidi*

The *Yanyeidi* are a Wolf clan of the *T'aakú Kwáan*. Wolf is a crest and *at.óow* of the *Yanyeidi* clan (Figure 13). They have an oral tradition that establishes their *at.óow* relationship with Wolf.

“The people of Taku used to make trips to the interior to trade with the *Gunanaa*. ... On one such trip there were three men and one woman. One night the woman went outside to urinate. She saw a ‘man’ like a *Gunanaa* [Athabascan Indian]. When the ‘man’ saw her he ran away howling like a wolf, for he was really a wolf-man. Then she was sorry. She told her husband what had happened. The wolf-man did not return. That night her husband dreamed of the wolf-man who said, ‘Your wife made a mistake. I wanted to help you to bring you whatever I caught. But I cannot because of what your wife did.’ The party went home to the coast. There the husband called the *Yanyeidi* together and related what had happened. The chief said, ‘We should use the wolf for a crest.’ The people agreed” (Olson, 1967:44).

3.1.3.4 *Wooshkeetaan*

The *Wooshkeetaan* are a Wolf clan whose oral tradition describes their migration from the interior to the coast down the Taku River. Along the way, an important interaction between an

ancestor and Wolf became the basis for a crest story. George Jim (1982) gave this account of the encounter and interaction between the two parties.

“This other one though, the head of the Taku, everybody who came down through the head of the Taku knows this story. At the head of the Taku a wolf approached a person. He kept going up to the place where he saw it up above towards the evening. A large house stood there, a *Shangukeidi* house. Then he searched for a moose, for something to kill. He was walking up toward there and this big dog was following him up. Eventually he figured it out. Oh, so it was a wolf. He had his ears laid back. He looked inside its mouth. They would lay down a leather hole punch; it is a bone with a sharp point. When he saw it he was speaking words of encouragement to it. It was foaming at the mouth. Then he pried the bone splinter out from between its teeth. After he pried it free from between its teeth [the wolf] moved its tongue around in its mouth. He wrapped the bone in leaves [and put it] inside his coat. After that it just sat by him. At this point it walked away from him. He was speaking words of encouragement to it for good luck. When he came home he went to bed; he didn’t eat. That night I dreamed, ‘I know you are my friend, which is why I came to you. I was suffering.’ The wolf was just emaciated; that’s what I dreamed. So he was the one who laid it down. So when they came out through the Taku the Wolf Spirit ran to my grandfather. They used to have two houses standing in the shelter of the point and the songs about them; alongside the other one where his ancestors went forth to speak. That’s how it is known by whoever came down along the Taku.”

A number of *Wooshkeetaan* clan members use the wolf as a crest on clan regalia. According to *Wooshkeetaan* clan member Thomas Jack, “Our wolf has a tongue hanging out of the right-side of the mouth” (Jack, 2022). He stated that any clan member was able to use the wolf as a crest on their regalia.

3.1.3.5 *Shangukeidi*

Wolf is a crest and *at.óow* of the *Hinyaa Shangukeidi*. Wolf behavior in the foundational oral tradition of the clan can be characterized as nurturing. Jon Rowan tells the oral tradition he learned as a child that is the basis for that relationship.

JR: “I’ve been agonizing over it. There was a people that went to this area and this boy’s parents got killed. And so it was the grandparents that were taking care of him, and he was crying, and he wouldn’t stop. And the clan leader, after a while, said, ‘That’s enough of that. Leave him on the flats. We’re gonna leave, we’re gonna—on this muddy beach.’ It was a muddy flat. Leave him there because they didn’t want to be burdened with that. And the grandparents were sad, but they couldn’t care for him, so they left him, and they went away. The whole village left him. And he sat on that muddy beach there and he cried, and he cried. Well, up in the hills, the wolves had heard him, and they came down and they took him. The grandparents, you know, after a while—I don’t know how long, you know, but they felt bad, so they went back to go look for him. And they looked in the mud on the flats and they could see his prints and all of this wolf prints all around him and where they went. And they were really sad then, so they went back. They—my aunt said probably a year of grieving

for him, and they went back to look again, and they camped out. And that night they heard all these wolves howling. Next morning they came down with him, and he was talking and telling them not to be afraid of them. He said, ‘They took me in, and they took care of me, and they fed me.’ And he said, ‘And I get to come back with you guys, and here is what they’re [giving us].’ And they came with tons of food: deer meat, every kind of food that they could think of. And they loaded up the canoes and they took him back, and he was brought up with great status after that, that particular household. And that’s all I remember from that because I was really [young]—I was probably about six or seven, and I had heard that so long ago.”

Mr. Rowan’s account is similar to the one the Klawock Tlingit leader John Darrow told to Olson in 1934 (Olson, 1967:106). In Darrow’s account, the boy shows his kinsmen the den where the wolves lived and informed them they could always come there to get food as long as they did not kill any wolves. In the account, the *Shangukeidi* clan continued to use the cave as a source of food at mortuary rituals (Olson, 1967:106).

As a crest of the *Hinyaa Shangukeidi*, Wolf appears on various types of regalia. Jon Rowan wears a headdress made of wolfskin on ceremonial occasions. Wolf is also a crest on the staff of the leader who leads the clan during ceremonies (Figure 7).



Figure 7. *Hinyaa Shangukeidi* clan leader Sam Williams carries staff with Wolf when leading clan members into ceremonies. Courtesy of Steve Langdon

3.1.3.6 *Kaax'oos.hittaaan*

The *Kaax'oos.hittaaan* are closely related to the *Hinyaa Shangukeidi*. The original oral tradition describing their journey and arrival at their primary territory, Sarkar Lake, includes the wolf as a significant actor in the events. Steve Langdon recounts the version of the origin story told to him by Clara Peratrovitch.

“The people were starving and decided to move to find a better place with more food. Their shaman and leaders told them pack their things and load the canoes. They started out but didn’t know which way to go. As they were paddling out from the shore, the shaman spotted a killer whale in the channel. It seemed to be waiting for them. The shaman directed the paddlers to move behind the killer whale. Then the killer whale headed up the channel and the people in the canoes followed behind at a distance. The killer whale stopped at one location and the canoes did as well. Then he started up the channel again and the canoes followed. The killer whale travelled a long distance with the people following. The killer whale stopped again as did the canoes but started up again and they followed. He kept traveling and the people began to wonder, where are they going to end up? After some time, the killer whale slowed again. The people thought maybe this was the place. But after a short time the whale moved on. Soon the people saw the killer whale come to a complete stop. And the canoes stopped as well. The shaman and leaders looked around. On the shore they saw a hairy man [*kooshdaakáa* (land otter man)] on the shore waving them to come in. The shaman hesitated but the killer whale was still, not moving. Then the people began rowing their canoes toward their shore where the hairy man was. When the hairy man saw the people coming ashore, he started up the bank and across the flats at low tide of Sarkar Cove. He moved rapidly ahead but looked back. The shaman and leaders decided to follow him. As they followed, the hairy man turned inland and began to walk up the bank of a river. The people were able to follow him because they saw his footprints in the mud. When they rounded the first bend in the river, they saw the hairy man far ahead. He was waiting to see if they were following. When he saw them, he headed further up until he came to a lake. Then they saw him go around the shore of the lake. They continued to follow. At the head of the lake, they saw the hairy man approach a stream. He looked back again to see if they were following. Then he continued up the stream and never looked back. The people followed his route to the stream where they discovered an abundance of sockeye. They were red and preparing to go up the stream to spawn. As the people came up to the river, the leaders noticed a wolf laying down on the opposite shore. As the people arrived, the wolf remained. The shaman knew that they had found their new home. They built new houses on the river and named themselves the *Kaax'oos.hittaaan* after the hairy man’s footprint which led them to their new home.”

While Killerwhale is an important crest and *at.óow* of the *Kaax'oos.hittaaan* clan, Wolf also is an important crest. The wolf appears as *at.óow* on the Sarkar pole originally located in the village of *Takjik'.àan*, and now a replica of it is found in the Klawock totem park (Figure 8). The pole represents the ownership of the Sarkar system at the northern end of Prince of Wales Island by the *Kaax'oos.hittaaan*. The figures on the pole are the crests related to the clan story of discovery

and occupation of the area along with the valued sockeye salmon of the system. This Tlingit *at.óow* tells the clan story about ownership of the stream and demonstrates respect for salmon (SASAP, 2019). Wolf is the third figure from the top of the pole and plays a central role in the clan's story of coming to Sarkar. Wolf is depicted in the descending wolf fashion with its tail being held by a human figure. Cultural informants told Garfield that it represents the head of the clan "holding back his clansmen, symbolized by the wolf, so that they will not be greedy with the fish which it is their good fortune to possess" (Garfield and Forest, 1961:119-121).



Figure 8. *Ƙaax'ooos.hittaaan kootéeyaa* (totem pole) is *at.óow* associated with clan origin tradition and demonstrates ownership of a sockeye salmon stream on Prince of Wales Island by the *Ƙaax'ooos.hittaaan* clan. Courtesy of Steve Langdon

3.1.3.7 *Chookaneidí*

The *Chookaneidí* are a Wolf clan found primarily among the *Xunaa Ƙáawu*. Their original homeland was Glacier Bay. They were forced to move from their ancestral village there due to a glacial advance that followed an insult to the glacier by a young girl. *Chookaneidí* returned following the retreat of the glaciers in the 19th century and re-established sites. They visited resource sites regularly until most subsistence uses in Glacier Bay were banned by the National Park Service in the late 1900s.

The Tlingit of Alaska and Canada use songs as important means for communicating and aligning relationships, knowledges, and emotions among humans, non-human persons, and ancestral lands. As potent expressions of individual and collective identity, heritage, and destiny, songs encapsulate and evoke special events and emotions. A particular ancestral or communal context, such as a potlatch or *ku.éex'*, may call for a spiritual, mournful, or happy song to help effect a transition, for example, from mourning to celebration or death to rebirth. Ceremonial songs are typically owned as property and performed by particular Tlingit matrilineal groups (i.e., clans or their house groups).

Although property of the clan, songs are in the first instance composed by individuals, typically in response to other unique events, such as extraordinary encounters with wildlife, disasters, or other remarkable circumstances. Mary Sheakley (*Lxook*) is one such figure. Mrs. Sheakley accompanied by relatives journeyed from Hoonah to a traditional berry picking site in Dundas Bay on the north shore of Icy Straits. She composed the song in response to a group of wolves that came to the beach and howled as she and her fellow paddler left their subsistence camp in what is now Glacier Bay National Park and Preserve around the turn of the twentieth century. In 1996, the song was spontaneously remembered by a contemporary elder and younger *Chookaneidi* clan sister to Mary Sheakley, Amy Marvin, who, in turn, taught it to her younger clan daughter during a berry picking trip to Glacier Bay. Later, during that same trip, Amy Marvin deployed the song to cap an impromptu ritual of commemoration for Tlingit relatives that had died in a tragic boating accident in the Park in the late twentieth century.

The song was revived and become a clan song, which is now considered sacred clan property (i.e., *at.óow*) and performed during *ku.éex'* (Thornton et al., 2019:392). Mary Sheakley's song is plaintive in tone because it conveys feelings of longing or love for members of the opposite moiety (Thornton et al., 2019:393). The account of the inspiration for the song interprets the wolves' howling at the departure of the party as "crying." Crying might be for any number of reasons, but no further commentary is provided on why the wolves are crying.

3.2 Wolf in Material Culture

3.2.1 Tlingit

The centrality of Wolf to Tlingit cultural practice is demonstrated in the artistic domain of material culture. There are innumerable objects of regalia worn only at significant ceremonial events that display Wolf. We provide examples involving dance, regalia, house posts, and totem poles. Dance performance is part of material culture in Southeast Alaska. Mr. Michael Arne Jackson from Kake describes an entrance dance in which the participants ritualized wolf howling and physical motions in the performance. Mike shares an account from his youth about the first time he heard the performers howl at a *ku.éex'*. In the story, the Wolf clans are the *Wooshkeetaan* and *Shangukeidi*. He describes the dance motions and postures of Wolf used to communicate messages.

MJ: "I remember being small enough to remember the sound of the wolves that sent chills up my spine when I was standing by my mom and dad, and I heard them outside. They weren't yelling or the wolf call wasn't really loud, but it was loud enough to hear them outside the building, the old Alaska Native Brotherhood Hall.

And then you heard the box drum, and they started getting louder, and it was their coming-in song or announcement they were out there. And then pretty soon the doors swung open. There were helpers, the Raven helpers opened the door for them, and they were all dressed to the tees because they made their regalia for them. And then these wolves started coming in with the headdresses. There were three of them ... SL: When they entered—I assume it’s howling ... Did they make any body motions to try to imitate the Wolf? MJ: They came in real low and backwards. ... [This] signaled they were in peace. They weren’t prone. And that’s how the young wolves act around the big alpha. And Dad said, ‘You see, they’re real low. They’re coming in peace.’ ... but the language isn’t said, but the motions say it all. ... *Teikweidi* are the same way. They came in backwards meaning that you could attack them if you wanted to, and then they turned around real slow.”

The motions, gestures, and postures used in the dance performance mimic communication among wolves while at the same time symbolize and communicate information to the audience about human relations between Tlingit social groups.

In Figure 9, a woman wears regalia and dances at a ceremonial event to represent the Wolf House of the *Kaagwaantaan* in Klukwan. It is called *Yaa Kandagax Gooch Naaxein* (Wolf Going Along Crying or Mourning, also known as the Crying Wolf Chilkat robe).



Figure 9. Ms. Agnes Bellinger wears and dances the Crying Wolf *Naaxein* (Chilkat robe). Courtesy of Sheldon Museum.

Kaagwaantaan clan members stand in front of the Panting Wolf House, which is the first and leading house of the Sitka *Kaagwaantaan*. The object on the house front is a depiction of the Panting Wolf, which is a *Kaagwaantaan* crest and *at.óow* based on the oral tradition of an encounter between a wolf and *Kaagwaantaan* ancestors (Figure 10).



Figure 10. *Kaagwaantaan* clan members gathered in regalia for a major ceremony in 1904 (Alaska State Library William Norton Photo Collection ASL-P226-369).

The extended tongue of the *Uwashagi Gooch Gáas'* (Panting Wolf post) represents the passing of knowledge to future generations (Figure 11). The house owners are wearing associated regalia. This is the same house post as the one depicted in Figure 10 and on the front cover.



Figure 11. *Kagwaantaan* Panting Wolf House post from Sitka, Alaska (Courtesy of National Park Service, Sitka National Historical Park).

Pole carving is an important sociocultural practice and means of communication in Southeast Alaska. Depictions of Wolf and other crests are common features in carved poles in the region. In Figure 12, Wolf is the lower figure in what is likely a mortuary pole housing the cremated remains of a person of the *Shangukeidi* or *Kaax'oos.hittaaan* clan for both of whom Wolf is a crest.



Figure 12. Wolf is depicted in this *kootéeyaa* in *Takjik'.àan* (Tuxekan), Prince of Wales Island in 1903 (Courtesy of National Park Service, Sitka National Historical Park; SITK 3825).

A member of the *Yanyeidi* clan wears a headdress depicting Wolf while making an offering during a ceremonial event. The regalia is made from carved and painted wood with wolf fur attached (Figure 13).



Figure 13. Mr. Ben Coronell, *Yanyeidi* clan, makes an offering of food for the Thanking and Feeding the Spirits of the Trees portion of the Sealaska Heritage Arts Campus Grand Opening Ceremony, June 8, 2022 (Courtesy of Sealaska Heritage Institute).

3.2.2 Haida

The Haida are recent emigres to Southeast Alaska traveling from their homeland in Haida Gwaii, formerly Queen Charlotte Islands, across Dixon Entrance and now primarily residing in previously occupied Tlingit settlements in the Prince of Wales Archipelago. There are no wolves in Haida Gwaii and perhaps consequently they have no presence in Haida social organization, which is similarly constructed to Tlingit. The Haida were aware of wolves from their interactions with their Tlingit and Tsimshian neighbors. The Haida name for Wolf living on the land is *ruuji*.

While Wolf per se does not appear in Haida oral traditions, their mythology includes a hybrid known as '*Waasguu*, which combines characteristics of Wolf and Killerwhale (Figure 14). This bronze cast of the post, carved by Haida artist T. J. Young of Hydaburg, depicts '*Waasguu* (Seawolf), a supernatural figure in the Haida culture known for possessing the size and strength to hunt whales. Mr. Young said,

“I’ve illustrated *’Waasguu* mid-hunt with two Killerwhales clenched in his teeth. The third Killerwhale has temporarily eluded *’Waasguu* and rests on top with his pectoral fins tucked inside *’Waasguu*’s ears” (Sealaska Heritage Institute, 2019:1).

’Waasguu’s arms and legs are adorned with classical relief carved Haida form line.



Figure 14. *’Waasguu* hunting two Killerwhales: A bronze cast of a Haida post depicting *’Waasguu* carved by T. J. Young (Courtesy of Sealaska Heritage Institute, 2019).

In the 19th century following contact with Europeans, Haida monumental architecture in the form of various types of carved poles boomed. Crests derived from cultural practice made up the images carved into the poles. MacDonald (1995) reports *’Waasguu* is one of the most frequent images in carved poles among the Haida in their homelands. Wright (2001) reports only one image of *’Waasguu* on a pole in the Kaigani Haida settlements. It was located in Koinglas, the only Kaigani Haida village not built on the same site as a previous Tlingit village. The oral tradition explaining the origins of *’Waasguu* and its ability to bring wealth and prosperity is found in all three groups of Alaska Native Peoples living in Southeast Alaska.

3.3 Tlingit Relations with *Gooch Kwáani*: The Wolf People

The way that many Alaska Native People in Southeast Alaska understand and relate to wolves is by living closely with them in their homelands, practicing their culture through ceremony and ritual, affirming their Indigenous identity, and continuing their way of life on the land and sea. Stories and experiences of Tlingit-Wolf relations are passed down through the generations. This relational sustainability is part of Tlingit existencescape, which merges time, ontology, spirituality, sociocultural meanings, ecology, and place (Cooper, 2019; Langdon, 2019, 2020b; Figure 15).

3.3.1 Wolf as nonhuman relative: Tlingit understanding and respect

As Mr. Thomas Jack indicates in the epigraph of this report, the Tlingit of Southeast Alaska have an ancient relationship with wolves or as they say, with Wolf the nonhuman person and with the Wolf People. Wolf means much more to the Indigenous people in Southeast than a subspecies of interest for biological conservation. They have an actively vibrant relationship with Wolf. Mr. Devlin Anderstrom from Yakutat articulately explains that Tlingit and Wolf are similar beings with profound connections.

DA: “... we also have a lot of respect for them, because we think about them as like another type of people. I was just having this conversation with somebody the other day about what the difference is between a real Tlingit worldview and then the modern worldview, and one of the things is that in school, we go there, and we learned that humans are animals, we're part of the animal kingdom and for us, when we talk about things in Tlingit, like every type of species, we call it the people, so the wolf species, that's *Gooch Kwáani*, the Wolf People. So, to us, it's the other way around. We see everything else as being people too. And especially the wolves because they're so similar to us. ... they [the Wolf People] have this symbiotic relationship with ravens ... like we do. ... I think that's actually where that moiety comes from.”

Mr. Anderstrom shares an ancient and deep cultural connection to Wolf. In a more modern sense, Mr. Mike Douville shares an Indigenous view of wolves based in a deep respect for the hunting prowess of Wolf that contrasts with the majority western European ethos of wolves, which is based in hatred, fear, and perceptions of cruelty.

SL: “... in terms of the [wolf] kills that are not consumed, leading to this rabid hatred of wolves ... in the western ethos ... so they [wolves] will be labeled as cruel or unrestrained. Do you have any thoughts about that? MD: I don't have any hatred for them. They're really probably the best at what they do. I mean they're really good at it. But I think the hate comes from competing for food, tempts the Wolf, and they're so much better at hunting than any human. They are absolutely the peak deer predator. So they can get deer where you can't, and it frustrates a lot of people, and they've developed this hatred, if you will, I guess, for them. But they're just good at what they do. They have a good nose; they have good ears; they can move fast; they're—I mean, if they get after a deer, it doesn't stand a chance. I mean, they will get them. And you can hunt in a place where you can hardly even get a deer, and a

wolf will be fat, seriously, fat as deer! I can show you pictures of a St. John wolf from a year before that is just fat as deer, and no one's hunting on there because they can't get any [deer]. But there's enough deer to keep the Wolf fat."

Mike's statements, similar to Devlin's, demonstrate the Indigenous view that Wolf is a nonhuman being or person with perhaps the same temptations as humans. Wolf is capable of being tempted to misuse his ability as a great hunter. Wolf is not being cruel but has succumbed to the temptation to take more deer than he needs because he can; he has this ability because he is the best hunter. In the Indigenous perspective, Wolf may occasionally have similar weaknesses as humans. That is a profound understanding based in an Indigenous existencescape, sociocultural meanings, and extensive observations and experiences on the land with wolves in their ecological setting (Figure 15).

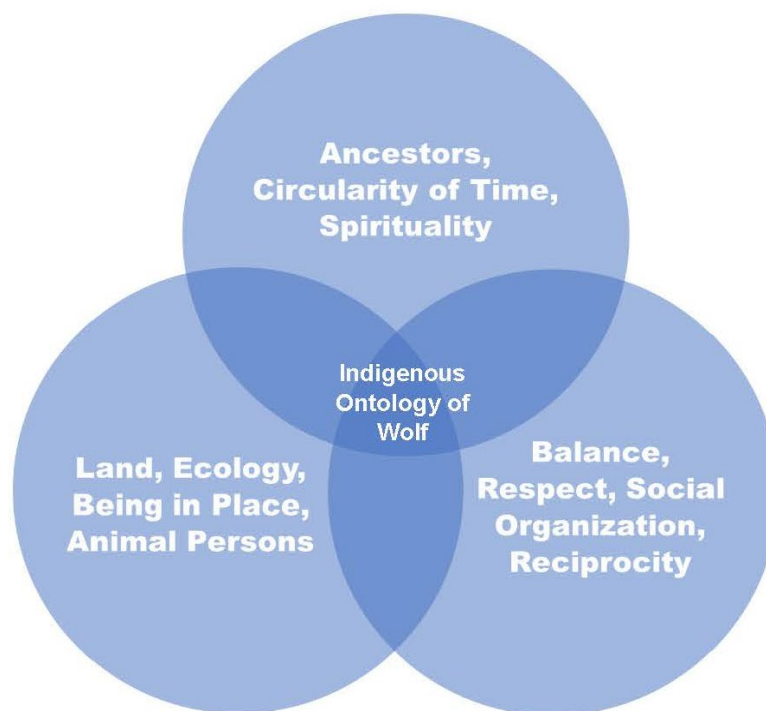


Figure 15. Aspects of culture, nature, and spirit overlap to reveal an Indigenous existencescape and conceptual understanding of Wolf (Cooper, 2019; Langdon, 2019, 2020b).

Mr. Michael Jackson from Kake further demonstrates Tlingit existencescape in a description of how hunters engage with the animals they harvest during a hunt. The Tlingit do not simply kill animals. There is a deep and respectful relationship and interaction that is ritualized in specific actions directed towards animals by the hunter.

MJ: "And they didn't just go out to kill it. If they saw a wolf, they just didn't kill it. They had to ... get ready, and they had a ritual to do, and then when they killed it there was a ritual to put it to rest. ... And it wasn't just going out to get the wolves to

say, 'Ha, I'm a sports hunter.' ... And put it up on the wall. No. It was—when they killed—even today, when Shawaan goes hunting—I told him right from the beginning, and he was wondering why I put water in the mouth or go down and drink water out of the stream and come back and share it with the Deer or the Wolf. The Mink, the Otter. Same as the Seal. You can put saltwater in your mouth and not swallow it and go over and share it with [the animal being for its] the last drink. That's part of the ritual, laying to rest. ... and closing the eyes.”

The Tlingit relationship with Wolf and other animals runs deep with elements of ritual, respect, thankfulness, and spirituality. Mike explains what hunters do before and after killing an animal as a ritualized sharing of a drink of water with the animal and closing its eyes.

Devlin Anderstrom continues by explaining why he is never worried or fearful about being approached or threatened by wolves when he has made a moose kill. He practices what his Grandmother taught him when he is out on the land.

SL: “Now, have you ever heard a story or had the experiences of wolves closing on you after you've made a moose kill? DA: I've never had them really come up to me like that. I've heard some interesting stories about that. But I've never had that or really even had that as a worry or a fear. And I talk to them when we're out there. We call it *x'alakáns*'. And my Gram taught me that the animals will hear you and understand you if you talk to them and explain what you're doing there. Like we saw *Wooshjixoo Éesh* [George Ramos] doing in that video that was *x'alakáns*' too, when he was talking to the seal. So, I'll talk to the wolves and the bears and explain to them what I'm doing out there. And I'll ask them to not let any harm come to me. And, even to protect me because that pack out there, those are the same wolves that protected my *Gaawhittaán* [Drum House clan] ancestor when he got hurt. So, they're kind of like relatives, that's the way that we see them.”

Devlin talks to the animals and asks them for help and protection. He is reminded of the story of his injured ancestor being protected by Wolf. He is literally related to Wolf, so he is not afraid. Judith Ramos also speaks of talking to Wolf as if speaking to one's relatives.

SL: “Can you tell me as a child, what you were taught or learned about wolves? JR: So most of the stories I learned about was through my mother. And she would accompany her father Olaf, and whenever they would encounter a wolf, they would talk to the Wolf because he, his people, the *Teikweidi* have a relationship with the Wolf. So, I grew up hearing stories about the Wolf, they would come down mostly in the winter down from the mountains down to the Yakutat area. ... come down nearer to the community, ... they would only kind of encounter them occasionally on the beach ... SL: Do you remember what your grandfather might have said to the wolves? JR: He would just talk to them like they were his brothers. Greet them, and mom would talk to them. And she loved the wolves, she would also tell stories about talking to the wolves, when they would sort of accompany her and her father as they were doing things [out on the land]. ... She would talk about how the Wolf would just be there. And she always loved talking about her Wolf, it was her Wolf, of course. ... So she had a real love for the wolves. ... I think there was a sense that the Wolf had a

kind of relationship with them through Olaf's family, that they were his, like his brothers.”

3.3.2 Time and ancestors: *Haa Shuká*, *Haa Shagóon*, and *Haa Kusteeyí*

Tlingit clans have relationships with their ancestors. The discussion of Indigenous knowledge of wolves would not be complete without acknowledging time and clan ancestors (Figure 15). The concept *Haa Shuká* refers to “our ancestors,” especially those who made significant, contributions to the clan heritage. The ancestors have a continuing presence that is most manifest when their names are called out at the beginning of the *ku.éex*’. When donning regalia worn only on the occasion of a *ku.éex*’, living clan members experience the presence of their ancestors. Regalia play a critical role as donning and presenting them at a *ku.éex*’ invokes the presence of the deceased elders.

A more encompassing concept is *Haa Shagóon*. Dauenhauer and Dauenhauer (1990:19) characterize this deep concept as “those born ahead of us who are now behind us and those unborn who await ahead of us.” Thus the term references the past and the future and the total clan membership in those temporal domains. It is a primary Tlingit concept that sits at the core of the existencescape and defines how Tlingit think of the social interactions among the generations that are essential for the continuity of the human spirits of the clan.

Haa Shagóon is the embodied Tlingit construct that culturally defines cosmological cycling through its direct connection of one’s ancestral relatives with one’s descendants. The concept is always invoked at critical moments in Tlingit ceremonial and ritual events such as the mortuary *ku.éex*’. While primarily intended to recognize and honor recently deceased persons, this ceremony is a pivotal social ritual for the clan and larger society because it is formally structured to honor and recognize all the ancestors, those who have gone before, and to celebrate and embrace the positioning of young people in their social stations, envisioning their active roles to ensure continuity of the clan and its members into the future.

The third concept is *Haa Kusteeyí* that refers to the totality of Tlingit culture and historical existence. It is used when discussing “our way of life” as what is valued and practiced from time immemorial. We learned about Tlingit concepts of time, ancestors, and *at.óow*. The Tlingit view of time is demonstrated by their beliefs in wearing and displaying sacred objects at *ku.éex*’. Mr. Jon Rowan from Klawock explains when the *at.óow* come out for the people to see during a ceremony, the clan’s ancestors are present with them.

SL: “When you are in an occasion where those garments are worn, what sort of impact does wearing them have on you? JR: Well, like when our *at.óow* comes out we believe that’s our ancestors that goes—that’s all our ancestors being represented. They’re with us. That’s our uncles, they’re standing with us when they’re brought out. SL: When those objects of *at.óow* are brought out, all of the ancestors are present? JR: They’re with us. SL: Does that produce any special sensations or feelings for you when you start dancing? JR: Well, it’s like say you went to Ireland and you guys had a special doing [or ceremonies] that said your ancestors are here now. How would you feel? I would feel pretty darn good that they’re here with me. SL: Yeah, for sure. JR: And that’s represented in this item here, this sacred item.

That's that kind of power. SL: ... when you start dancing and singing, what are the feelings that go along with that? JR: It's like we're with them [our ancestors] ... because they did the same things. And where we practice it was almost darn near within a quarter mile of where they [practiced it]—you know, especially like the *Gaanax.ádi* were doing it. You know, living it.”

All the generations are together when the *at.óow* come out, invoking *Haa Shuká* and *Haa Shagóon*. When clan members enact *ku.éex'* and the same or very similar rituals their ancestors had enacted, the entire clan is united across time. This is a powerful experience tied to sacred objects, place, and an ancient way of life. The power of the sacred objects displaying Wolf lies in their capacity to invoke the ancestors and bring the past and future into the present. The continuity of the clan is maintained through the power of *at.óow* when *ku.éex'* are held in the same place or nearby where their ancestors had held *ku.éex'*.

3.3.3 The *ku.éex'* and presentation of *at.óow*

The *ku.éex'* accomplishes multiple objectives including, honoring deceased clan members, thanking the clan members of the opposite moiety who took care of the body of the deceased at the time of death, freeing the spirit of the deceased so it can return, giving new names, and creating the conditions for the spirits of deceased clan ancestors to be present. At the beginning of the *ku.éex'* is the period of grieving at which time clan leaders of the opposite moiety approach the host clan members who are positioned facing members of the opposite moiety wearing their appropriate regalia. During this stage of grieving, members of the opposite clans walk up and approach the hosts carrying their *at.óow*, typically crest blankets. They may provide a short account of the *at.óow* tradition and then metaphorically speak of how the wolf crest will protect, aid, comfort, and otherwise support the opposites in their difficult time. *Kaagwaantaan* women hold tunics with their wolf crest as they speak to their Raven opposites seated in front of them (Figure 16).



Figure 16. *Kaagwaantaan* clan members present Wolf crest regalia to Raven hosts at *ku.éex'* while providing condolences and support. Courtesy of Steve Langdon

3.3.4 Tlingit place names and personal names using Wolf

Tlingit people have a complex relationship with places. The place names given to locations derive from many themes and often experiences on the land (Thornton, 2008). Wolf, as both physical being and totemic crest, is a component of a variety of place names that are found across the span of Tlingit geography from the *Taant'akwáan/Saanyaa Kwáan* in the south to the *Yaakwdáat Kwáan* in the north (Table 2). There are no Tlingit place names using Wolf on the islands where wolves are not found, namely Admiralty, Baranof, and Chicagof.

Table 2. Tlingit place names with Wolf.

Place name	Translation	<i>Kwáan</i>	Location	Notes
<i>Gooch Tatóogu</i>	Wolf Cave	<i>Yaakwdáat</i>	Ahrnklen River	
<i>Guchhéeni</i>	Wolf Creek	<i>Xunaa</i>	Wolf Creek in Spokane Cove	Glacier Bay
<i>Gooch Gúgu</i>	Wolf's Ear	<i>Sheet'ká</i>	Reef near Biorka Island	
<i>Gòoch Te</i>	Wolf Rock	<i>Hinyaa</i>	Wolf Rock	
<i>Gòoch Héeni</i>	Wolf Stream	<i>Taant'akwáan/Saanyaa</i>	Creek from Yellow Hill	
<i>Gòoch Làakanòow</i>	Inside Wolf's Mouth Fort	<i>Taant'akwáan/Saanyaa</i>	Inside Kasaan Bay	
<i>Gòoch Héenak'u</i>	Wolf Little Stream	<i>Taant'akwáan/Saanyaa</i>	West shore of Princess Bay	"Wolf Streamlet" would be a better translation.
<i>Gòoch Héeni</i>	Wolf Stream	<i>Taant'akwáan/Saanyaa</i>	Creek at head of Tamgas Harbor	
<i>Gòoch Héenak'u</i>	Wolf Little Stream	<i>Taant'akwáan/Saanyaa</i>	Near Annette Point	"Wolf Streamlet" would be a better translation.
<i>Gòoch Héenak'u</i>	Wolf Little Stream	<i>Taant'akwáan/Saanyaa</i>	South of Davison Mountain	"Wolf Streamlet" would be a better translation.
<i>Gòoch Héeni</i>	Wolf Stream	<i>Taant'akwáan/Saanyaa</i>	Shore near Snip Island	
<i>Gooch X'akanòow</i>	Wolf Mouth Fort	<i>Taant'akwáan/Saanyaa</i>	Cape Northumberland	More literally "On-Wolf's-Mouth Fort."

Source: Thornton (2010)

Tlingit personal names can be based on a number of elements in the culture. The crest animal itself can be the basis for names. "Wolf on the Mainland" and "Wolf's Nose" have *Gooch* in the name itself. Names may derive from aspects of oral traditions about wolves. For example,

K'ayéil'i, (Saliva Mouth) is derived from the *Kaagwaantaan* oral tradition of the Panting Wolf. *Asx'áak*, (Between Two Trees) is based on the *Kaagwaantaan* oral tradition of acquiring the wolf post from the Athabascan woman because the house posts were between two trees. *Yaanjiyeetgaax* (Crying from Hunger) is the name given by the wolves to the Athabascan man who followed the wolves into the interior looking for food but eventually collapsed due to starvation. It is likely personal names implicating Wolf or oral traditions involving wolves are more numerous in Wolf moiety clans, but Raven clan persons are not precluded from having wolf names.

3.4 Tribal Consultation

The U.S. Fish and Wildlife Service arranged for a Government-to-Government tribal consultation on March 2, 2022. The proceedings of the tribal consultation are an important source of information for this study. Seven tribal leaders, other tribal representatives, and staff were in attendance. The Craig Tribal Association was the primary participant with the Organized Villages of Kake and Kasaan also in attendance but with less representation. Mr. Mike Douville represented the Craig Tribal Association. Mr. Joel Jackson, President of the Organized Village of Kake also spoke on the record. The reader is directed to Appendix A for the full record.

The tribal leaders thanked the federal agency for asking them to contribute to the discussion of the petition to list the Alexander Archipelago wolf and the development of the Species Status Assessment. One of the issues raised by the tribes was there was not enough time allowed for the work to be properly accomplished, which caused frustration. They asked for several more consultations during this important process.

Most of the discussion focused on the need to provide adequate subsistence harvest of deer and other ungulates for the many communities in the region. Mr. Jackson said, “It’s important to echo our reliance on deer and moose populations.” Experienced hunters and trappers explained that when wolf numbers are too high on the islands, deer numbers decrease dramatically and there is inadequate subsistence harvest to fill freezers. Harvest of old growth forest was also implicated in the decrease in deer abundance. Two tribal participants recounted a story about having to go outside to Juneau to buy meat during the COVID-19 pandemic because the local stores were empty, and there were no deer to harvest. This occurred outside the regular hunting season.

Another theme of the consultation was the need for state and federal managers to obtain better wolf population estimates so that proper and correct quotas can be set for wolf hunting and trapping. The local trappers need to remove enough wolves to ensure adequate subsistence harvest of deer. It was unanimous that the wolves in Southeast Alaska are healthy and abundant and as such are not endangered. It was stated that the local people who rely on deer will suffer if the subspecies is listed. Residents practice a subsistence way of life and harvest deer meat for important cultural reasons. There was frustration with the fact that outsiders, who had never been there, were trying to make decisions for them about their homelands. Mr. Douville explained,

MD: “Outsiders do not know what is going on in our place, they are trying to make local decisions, and that is not right. Wolves adversely affect deer harvest success. Deer are in decline within past years, Alaska Department of Fish and Game reports

also indicate that. The geography we have will support a lot of deer, but we need to keep predators in check, so it's devastating to deer, it's from high predation. You also need to stop harvest of old growth [forest] to have a place for deer to overwinter.”

3.5 Traditional Ecological Knowledge by Geographic Area

The Alexander Archipelago wolf occupies most of Southeast Alaska from Yakutat Bay to Dixon Entrance. Wolves are not present on Admiralty, Baranof, and Chichagof islands or in Haida Gwaii. We discuss traditional ecological knowledge for the Yakutat area, Excursion Inlet area, the Kuiu and Kupreanof islands, and three areas of Prince of Wales Island (Figure 2).

Results are primarily organized by geographic subareas, north to south, for two reasons. First, Southeast Alaska is vast with a total land area of 35,138 square miles (91,010 km²) (U.S. Census Bureau, 2020). Southeast is a physically diverse area with more than 18,000 miles of coastline (29,000 km) and thousands of islands; the Alexander Archipelago has about 5,000 islands, over 1,000 of which are named on maps (Smith, 2016). Second, traditional ecological knowledge is closely tied to places, or locales in the landscape where Indigenous knowledge holders have lived their lives and gained extensive experience through being on the land. Our Indigenous partners spoke about Wolf and wolves in the context of their places and life experiences.

Traditional ecological knowledge is a smaller subset of a much larger body of Indigenous ways of knowing (i.e., Indigenous science; Cajete, 2020). The people in Southeast Alaska we partnered with for this study apply their own models of coexistence with wolves in their homelands.

3.5.1 Yakutat area: “And I talk to them when we're out there.”

Two Tlingit interviewees familiar with the Yakutat region provided information on their experiences with wolves. Ms. Judith Ramos was born in 1959 and was raised in Yakutat where she spent most of her life. She, like her mother, Elaine Abraham, is of the Raven, *Kwaashk'ikwáan* clan, Owl House. She is the granddaughter of Olaf Abraham of the *Teikweidi* clan. Mr. Devlin Anderstrom was born in 1999 and has lived in Yakutat off and on during his life, but continuously since 2013. He has extensive hunting experience for moose with his father and by himself over that period. He is a member of the Raven, *Kwaashk'ikwáan* clan, Moon House. He carries the name and spirit of his great-great grandfather as foretold in a dream to a clan member prior to his birth. Both Judith and Devlin describe the practice of talking to Wolf.

3.5.1.1 Environmental context, presence of wolves, and historical abundance

The Yakutat forelands are located at the northern end of Southeast Alaska. The region is bordered on the west and north by extensive ice fields and mountains and to the east by heavily glaciated mountains. To the south, the region is connected by a narrow coastal strip of rain forest to the Icy Strait region of northern Southeast Alaska. Yakutat Bay was covered with a large ice sheet extending into the Pacific Ocean at the end of the last Ice Age and became available for occupation by wildlife, fish, and humans beginning around 9,000 years ago.

Connections between the Yakutat region into the interior and southeast regions have varied through time. Pathways into the Yakutat region appear to be primarily down the Alsek River to its mouth at Dry Bay and along the coastal strip from the Icy Strait region. A less likely route is along the shore to the west where ice sheets closely abut the coast. The Alsek River is considered to be the corridor through which moose enter the region from the proximate interior region. Deer, on the other hand, are thought to have entered the region by traveling up the coastal strip. Both local interviewees, however, stated their belief that deer were “released” or “introduced” into the area.

While wolves were present in the 1950s, they were not present across the Yakutat region.

JR: “Only up, way up in the Ahrnklin mountains way up there when my grandfather trapped up there in winter. That's mainly when he would encounter the wolves way up there.”

The presence of wolves is likely related to the presence and abundance of moose and deer, the two primary prey for wolves in the Yakutat region. The status of these two species likely has had a major impact on wolf presence and abundance in the Yakutat region.

JR: “Moose did come in [until] the 40s, maybe 1940s. They suspect it came down from when they were building the highway, the Alaska Highway or something did come down the rivers or something. SL: So neither deer nor moose were there in the 19th century? JR: Not till the recent centuries, yeah. SL: Really? JR: Deer or moose, neither them nor deer; my grandfather has a story when he encountered the first moose.”

3.5.1.2 Teachings about Wolf, interactions with humans, and seasonal movements

Growing up in Tlingit families in Yakutat, Ms. Ramos and Mr. Anderstrom were taught about wolves from their families and observed wolves while out on the land. Ms. Ramos traveled with her mother and grandfather on many trips as a child and young person when they encountered wolves. Judith was taught wolves were her grandfather’s relatives. She also learned that wolves would move down from the mountains in winter, and people would see them on the beaches. Devlin was taught to respect wolves and speak to them as people.

JR: “And so, a lot of the Wolf *Gooch* ... information comes from Olaf Abraham's lineage. So, he even had a *Gooch Yaakw* a wolf boat. My mom used to tell stories about the *Gooch Yaakw* ... she would accompany her father Olaf, and whenever they would encounter a wolf, they would talk to the Wolf because he, his people, the *Teikweidi* have a relationship with the Wolf. So, I grew up hearing stories about the Wolf, they would come down mostly in the winter down from the mountains down to the Yakutat area. And people would know when the wolves would occasionally be on the beach.”

DA: “I was taught that I have to have a lot of respect for them in different ways, because for one, they can be dangerous. But they also don't really mess with us. I've never had it happen to me. I've never even heard of many people getting messed with

by wolves in Yakutat. ... my Gram taught me that the animals will hear you and understand you if you talk to them and explain what you're doing there.”

3.5.1.3 Two types of wolves

Two kinds of wolves are recognized in the Yakutat region. Southeast wolves and Yukon wolves are perceived as distinct species and populations. Yukon wolves are thought to enter the region via the Alsek River valley and Southeast wolves along the coastal strip. Tlingit sources in the first half of the 20th century recognized two types of wolves in the region, larger and smaller wolves. Sources reported to Frederica de Laguna in the first half of the 20th century the smaller wolves were found in the southern part of the Yakutat region (de Laguna, 1972). The recognition of two types of wolves in the Yakutat region continues to this day.

DA: “I might not have even noticed myself if my dad didn't point it out to me that there seem to be the Southeast wolves. That's what he called them, ... that are the small ones. And then there's the Yukon wolves that's what he called the Southeast and Yukon wolves. ... SL: He made that distinction, too. DA: Yeah, those [Yukon wolves] are the big. ... there's the really big ones and then there's the smaller ones, which are like the ones that I think of as being like from Southeast maybe. Both of those two loners that I was telling you about were bigger than most of the well, actually, there was this one really big one that I could just tell by his tracks. Out at that spot where I like to go hunting, there was a pretty massive one out there. There's the really big ones and then there's the smaller ones, which are like the ones that I think of as being like from Southeast.”

Mr. Anderstrom has never seen any mixing of the two kinds of wolves. He has seen packs of southeast (i.e., Alexander Archipelago) wolves but only solitary Yukon wolves.

3.5.1.4 Wolf health

Mr. Anderstrom has noticed differences in health among wolves. He suggests how those health differences may arise. This comment raises the interesting issue of how wolves adapt if the resources of their customary territory falter.

DA: “I've seen real skinny ones before. I've seen the ones it looks like they're kind of emaciated, and they have more of like a ratty hide. It's not so nice and full. And then I've seen really strong, big healthy ones. SL: What do you think is the cause for the unhealthy ones ... Not enough food, maybe? DA: Yeah, I don't know it might be. I'm wondering if it has something to do with the way that their territories are, are lined up. If this one, like something happened, where if there was too much rain or something like that, and they couldn't get to the fish and there weren't as many deer over there or the deer moved into some other pack's territory or something? My guess something like that, or it was just sick.”

3.5.1.5 Wolf distribution and abundance, pack size, and location of territories

While Mr. Anderstrom primarily hunts for moose and has had his closest encounters with wolves in the Ahrnklin and Dangerous River valleys, he is familiar with their presence in other parts of the Yakutat region.

DA: “I hunt on the east side of *Kulijigi Héen*, Dangerous River. And that's wolf country over there. There's a lot of wolves there. There's a really huge pack that lives right there. SL: Could you estimate when you say huge numbers of a pack? DA: My guess, maybe 25 of them or more? ... Maybe 30. I had heard that there were a lot of wolves out there. You see the sign all over the place. And you know that there's wolves there. I think they have really well-established territories. And I'd be surprised to find if there was much overlap, but I know that they do like to move around, for sure. But it seems like the different packs have different food sources that they're used to hunting. Because the wolves in the islands, I'm pretty sure they primarily eat deer. There are fewer salmon streams and things on the islands. So, I don't think they're fishing as much. And then these wolves out by Dangerous River, that area back there floods all the time. And you can walk back there, you can walk around and pick up red fish with your hands. Yakutat area is huge. And there's a lot of places there that I haven't been to, but of the places that I'm familiar with, Dangerous River has that huge one, a huge pack there. And I think they've got that little area claimed between Dangerous River and Italio River. And they run that whole area; I think it's the same pack that goes up to Harlequin Lake too, and I think they hunt around there. Yeah, I've seen them. I've seen their sign in the forested area back there, too. And there's the Ahrnklin River pack, and I think they're a pretty big one too. But I don't spend as much time over there. There are some out by Situk. And I don't know where their den is or anything like that. I just know that there seems to be another group there. There's more by Lost River. And then I think there might be a pack that likes to hang out by Tawah Creek and run that creek. ... and then there's the ones that are in the islands. And I don't know if those are ... SL: Discrete or not right, where they're their own group? DA: Yeah, I think they might be, and I think they might go from island to island and hunt deer. ... I know that for sure there are some in Russell Fjord, and then there's another pack in Chicago Harbor, Knight Island.”

Mr. Anderstrom lists six apparent packs in the Yakutat area, two of whom he considers quite large: Dangerous River, Ahrnklin River, Situk River, Lost River, Tawah Creek, Ophir River, and the islands. In addition, he states there were wolves in Russel Fjord located at the northern end of the Yakutat area. He suggests pack territories in the Yakutat area are organized by stream drainages with the exception of the packs on the islands.

3.5.1.6 Hunting behavior, diet, and movement patterns

In the Yakutat region, wolves primarily hunt and consume moose and to a lesser extent, deer and salmon seasonally.

DA: “... this last year when I was moose hunting. And I had already gotten a moose, but I was taking my friend out to try to get him one. And first I could hear this cow

and calf. And I figured if there's a cow and a calf over there, maybe there's a bull nearby. So, we started walking across this meadow and then there's these big stands of cottonwoods and willows. And they're kind of blocking off the next meadow, which is where I was hearing them from. So, as we're going around them, it starts to blow and rain. And it's getting harder to hear. And I'm still hearing a sound, but the sound changed. And it's something else now. And it took me a minute to identify it and finally got close enough and realized that I was hearing wolves yipping. Yeah. So, there was a cow and a calf. And I could see their tracks, I could see where they ran away. And I know this area pretty well. So, I'm pretty sure I know what the wolves did. Because I could hear where they ended up. And they weren't very far from me, but I just couldn't see them. And I didn't want to step back there because it's a really closed off little area. And it would have put me right on top of them to be able to see them. But there's a finger meadow that ends, like it's surrounded by really dense thickets; it would even be hard for a moose to run through. And actually, in a similar spot, I've seen a moose break its own leg, trying to run through a thicket. And this pack chased them back there. And I guess they must have got that calf or something because I was crouched down in a short little stand of willows and just listening to them. And then they all started to howl at the same time. And that's when I realized how many of them there were. Because even being that distance away from them, when they all went off at the same time, it was so loud that I could feel it. I could feel the vibrations in the air. And that's when I realized that day was for the wolves. So, I told my buddy, they're hunting here today. We got to get out of here, man.”

Devlin shares an account about observing a wolf hunting strategy of driving moose to a place where they may be able to make an easy kill near Harlequin Lake.

DA: “And this was pretty interesting because they were hunting moose at the same time as my dad and I were, and we went up by the lake, by Harlequin Lake, and then we came back down. And apparently in the time that we had gone to the lake and then come back, a moose had ended up on the trail, and the pack got behind it and started chasing it. And they did something that I thought was pretty interesting. You could see the tracks right in the parking lot where the trail comes out. They pushed that moose onto the bridge. And I think they must have started attacking it on the bridge and then killed it on the other side of the river.”

Wolves have successfully hunted deer in islands of Yakutat Bay.

DA: “They [wolves] move around, and you'll see them on Khantaak there used to be a lot, used to be a lot of them. And well, I guess there is again now. ... so they move around. And there weren't hardly any. There was no wolf sign really on Khantaak for a long time. So, I think maybe there just weren't any wolves there. But the deer population got pretty big on Khantaak. And I just heard from my dad recently that when he went deer hunting there this last winter where we usually go to there, there's tons of deer. There's so much deer sign in this this little crossing. And it was just

filled with piles and piles of wolf shit, he said. They were deer killing, yeah. Killing those deer. Yeah, he [father] was pretty sad about that because that was our spot.”

Mr. Anderstrom has observed that wolves catch red salmon in upper reaches of the Ophir River.

DA: “One of the things that I learned is that they like to fish, and I learned some of the spots where the wolves like to go get fish because they're really close to where we spear fish. I used to go out and spear fish ... the really red time of year that we go get them, ... we'll get them even sometimes in November, cohos.”

He went on to note that wolves are particular, use the same spot, and appear to recognize stream conditions.

DA: “... this is one of their fishing spots. Because I think it's just set up the right way for them to, to go down. And it's just there's a spot where there's kind of a bank that they stand on. And they look down into the water and wait till they see a fish come underneath them. Right where, they must know where the eddies are and stuff.”

3.5.1.7 Communication and vocalization

Wolves utilized different kinds of vocalizations to communicate and share information. Mr. Anderstrom observed and describes a pattern of wolf communication. The howling he believes was an announcement or celebration of having killed the moose.

DA: “I think that's how they talk to each other. When they're hunting and when they were, I think they pushed those moose right where they wanted them to go. SL: Telling each other how to coordinate their movements? DA: Yeah. Because that's what I started to hear was like, ‘yip,’ like this, the sound over here and this unit over here, and hearing it over there. And then I heard them, like, kind of like concentrated in one area. And I think that was them pushing it into that little finger meadow back there. And then that's where that's where it got quiet all of a sudden. And then, and then one started to howl and then they all howled together.”

3.5.1.8 Motivations for and impacts of hunting wolves

Tlingit subsistence harvesters in Yakutat harvest wolves for various reason. The impacts of those harvests on the wolf population are small according to Mr. Anderstrom.

SL: “Is there a conscious effort within the Yakutat hunting and trapping community to control wolves, to keep wolf populations at some level. DA: A little bit, I think. There are people that would like to see less wolves sometimes because there are a lot. We have quite a few of them. But I only know of a few guys that really trap them. And they don't do enough to really put a dent in the numbers. I haven't seen or noticed them fluctuate myself very much, but I'm pretty young, you know, I've only been out there [a few years]. SL: Well their motivations for trapping them would be economic or for regalia or what would be their motivations for trapping them? DA: Mostly ... economic so they can sell the hides, yeah. And sometimes to make regalia out of them.”

3.5.1.9 Ecological balance

At present, the relationship among humans, wolves, and ungulates in the Yakutat area is one of balance according to Mr. Anderstrom. Humans are satisfied with their opportunities to obtain moose and deer. Moose and deer populations are healthy. Mr. Anderstrom is puzzled by the one deer limit because the deer population is so healthy at present. Wolves are numerous and found throughout the region.

SL: "... in your experience, the dynamics between wolves, moose, deer, and humans. People have not complained about their subsistence areas or subsistence catches of those animals, moose or deer in a way that has led them to try to cull wolves? DA: No, nobody really doing that. People have talked about it a little bit, wanting to get out and start trapping. And I myself wanted to. I want to go and start trapping for regalia mostly. Yeah. SL: So it's generally ... not any great anxieties about them. DA: No. More bears than wolves. ... SL: So do people have any concerns about the size of the moose population for subsistence purposes or hunting? DA: No, our moose population is pretty strong, I think."

People are not actively targeting wolves for removal to increase ungulates in the Yakutat area. It should be noted that unlike the Prince of Wales Archipelago discussed below, very little clear cut logging has been done in the Yakutat area to date. The unaltered condition of the forest habitat may be a benefit to wolves and ungulates in the area, supporting high numbers of each.

3.5.1.10 Wolf-Dog hybrids

Judith Ramos reported her uncle actively sought wolf-dog hybrids and describes how he pursued that end. The offspring were larger than other Yakutat dogs and were used as pack dogs.

JR: "So yeah, he was trying to breed a hybrid wolf mix. So he would take a female dog in heat and kind of stake it out, you know, where he knew the wolves would be. And so either the wolf would impregnate that female dog, and they'd have a hybrid, or they would kill that dog. So anyway, that's the way he would breed hybrid dogs. SL: And what was his purpose in doing that? JR: [H]e always had, this was Harry, Great Uncle Harry Bremner. There was always a dog that he used, and there was a big dog he would always use that was trained. Mom would always laugh that was trained to be a packing dog, you know, and that was always in the competition to see how big, how much it could pull things. And it was smart enough to go out and wash its own dish. Yeah. So I don't know if this is from when he lived up in the Cordova area, when this big dog he had that was trained. So he had a great interest in training dogs and things like that. I don't know why."

3.5.2 Excursion Inlet area: "There are advantages of having wolves around."

Mr. Thomas Mills is an elder and long-time resident of Excursion Inlet, located on the north shore of Icy Strait. Excursion Inlet is on the mainland. He was interviewed April 21, 2022. Mr. Mills is 76 years old. He lived a traditional Native subsistence lifestyle and attended boarding

school in Hoonah, starting at age nine. Mr. Mills is a veteran of the U.S. military, serving six years in the Vietnam War. He trapped wolves with his father when he was young. He has been inside wolf and bear dens, and he once raised a wolf pup as a family pet and pack animal, which he and his siblings rode to boarding school. Mr. Mills has a deep connection to the land and Wolf. He was taught by his elders, and his knowledge and experience are rooted in and represent the Excursion Inlet area.

TM: “I am Raven. My brothers and sisters are on the *Kaashaayi Hit* and *Tax’hit* in Hoonah. It’s a Head House being the biggest Raven house in Hoonah and Snail House being the second ... My father’s clan is the *Wooshkeetaan* from *Noow Hit* [Fort House] in Angoon. I don’t remember his Tlingit name, but his English name was Gilbert Albert Mills, Sr. ... I spent my whole life over there [Excursion Inlet] except for six years in the military, when I had to go over to Vietnam for a little bit. ... My first nine years in Excursion Inlet and growing up over there, we just lived the Native lifestyle of hunting, trapping, and fishing. We always gathered our foods, early, from the very first time. We never, ever played with toys or anything like that. It was nonexistent. ... when we were just old enough to start participating in the hunting and gathering, we did it. And it started off going out with our great uncles, and in the wintertime we used that for when we were running out of food ... we used to go find bear dens and being I was small enough and smart enough and strong enough, my great uncles and my grandmother’s brothers used to give me a rope, and I’d crawl into a black bear den and tie a rope around it, and they would pull it out. ... and then after that we’d take the meat downtown; we’d share the meat with the whole village. ... SL: Who were your older relatives that were involved with you? ... TM: It’s Alexander Wilson. His nickname was Shorty. And his brother was Frank Wilson. My grandmother’s (Mary Wilson) brothers ... At one time the Wilson family used to own Excursion Inlet. SL: ... So they were *T’akdeintaan* as well? TM: Yes.”

3.5.2.1 Two types of wolves

Mr. Mills states there are Alexander Archipelago wolves and larger timber wolves in the Excursion Inlet area. He can tell the two apart by judging body size and coat color. The big timber wolf is gray or brown, and the Alexander Archipelago wolf is black, or brown with black guard hairs, and he has seen white ones, too. He has only observed single timber wolves but packs of Alexander Archipelago wolves. He indicated that the two types never intermix.

SL: “Now you mentioned earlier to me about the different types of wolves that you’ve seen. Can you explain that? TM: Yes, we have different—two different kinds of wolves that were in Excursion Inlet. We have the Alexander Archipelago wolf, which is a smaller species of the—what we refer to as a timber wolf or tundra wolf or whatever they call it, but the timber wolf is a great, big thing. It weighs around 200, 250 pounds. And an Archipelago wolf is much smaller than that. I don’t think they get over 60 pounds. SL: Now you’ve seen them both in the vicinity of Excursion Inlet in your life? TM: Yes, but they were always present, but they never, ever mix. SL: ... they’re always present, but they never intermix? TM: Yes.”

3.5.2.2 Territories and travel patterns

Mr. Mills describes two different packs in the Excursion Inlet area with separate territories. He describes the location and geography of each territory. He describes wolf movements, travel patterns, and the time a wolf pack takes to travel a circuit around its territory. One pack takes 42 days to make its circle, and the other one takes about 73 days to make its circle. These packs have maintained this same travel pattern during Thomas' lifetime (~80 years.) He says they can hear the two packs communicating with each other but indicates little to no intermixing.

SL: "Which are the predominant ones that you've experienced? TM: Most of the wolves that we have experience with is the Alexander Archipelago wolf. I think that they are most common there. Over in Excursion Inlet we have two packs of them. One of them comes down, and it goes up towards Haines area, comes down around the Chilkat Peninsula side. They think it's every 42 days. And then there's another pack that goes across the bay and National Park Service, and those ones go up a different trail but head up towards Haines area and make their way down into Glacier Bay hunting. And those ones take 72 days, 73 days, to make their circle. SL: ... they have separate circuits so that they don't interact. TM: Yes. SL: And over your life, have those groups maintained in that kind of pattern? TM: Yes. And we can hear them communicating with each other, but we never, ever saw them mix. If they mix, they probably did it up at the head of the bay in Excursion Inlet, where it just goes for miles up there in the valley. SL: But you think they head on the outside of the peninsula, on up the peninsula, and then they head back down. TM: Yes. SL: And how do those cycles operate the same throughout the year, or do they change between the warmer season and the colder season? TM: They pretty much operate separate all year long."

3.5.2.3 Pack size and hierarchy

Thomas says the one pack is smaller at 12 to 13 wolves, and the other pack on the National Park Service side is greater than 40 individuals. Thomas says the alpha female is the leader of the pack and all wolf packs are led by females.

SL: "... And so in those other two packs, do you have any way of estimating the approximate number of animals that might be in them? TM: The first one had, I think, twelve, thirteen wolves. ... And then on the one across the way in National Park over there are about 40, 47 wolves. ... SL: So in your view, the head of the pack could be male or female? TM; It's female—this one was female. Or it seems like it. The leader[s] of all the packs are female."

3.5.2.4 Seasonal habitat use

In the Excursion Inlet area, Mr. Mills says Wolf follows its prey, using different elevations as snow depth changes. A pack will follow the ungulates up and down the mountain as conditions change.

SL: "I think this area up in the mountains has heavy snowfall. TM: Yes. SL: How do wolves deal? Do they stay out of heavy snowfall? TM: They stay in the forest. They

don't run into the snowfall areas; they stay in the forest. Yes, and they don't—they're not so high up. They're not so high up, either. They follow the game and if there's too much snow the game—drive the mountain goats and deer and stuff will come down lower. SL: So in terms of their zone might be halfway up the mountains? TM: Yes. Three-quarters way up the mountains, halfway, or on top of the mountain, and then when the snow starts getting too deep and the deer and stuff can't move around, they take them into the forest for shelter and food, too. And the wolves just keep following them."

3.5.2.5 Hunting behaviors and diet

People were taught to be very careful with wolves because they were vicious predators and highly intelligent. Mr. Mills says one needs to be cautious when Wolf is feeding; do not disturb Wolf. Wolves are not fearful of guns. Wolf will come into the community and take food if it is left out. Dogs in the community are afraid of wolves. People were taught to be careful when harvesting game because wolves could be attracted to the animal blood. People learn from wolves; they always watched wolves to see how they behave and hunt.

TM: "But we've always watched wolves. They were always very intelligent. We would watch how they would surround an animal and take it down for food. And we'd watch 'em when they were out hunting over there. They would have a couple of wolves, adult wolves, standing by to watch the immature wolves while the rest of 'em were out hunting. ... and we also saw it—my children also saw it over there by our cabin by Gustavus when we were watching the children videotape wolves takin' down a cow moose, and they were able to see the whole thing that we explained to them. We'd had two adult wolves takin' care of the babies while the other adults went after an adult moose to bring it down. And when we saw those wolves take down that moose, I think there was two different packs that joined together to help. Because there was one pack in the brush across the river from my cabin were howling all night long, and then there was another pack further on towards Gustavus that was howling."

Mr. Mills says the wolves in this area do not use trails; they spread out and follow their noses while they hunt. They do not follow each other on a trail. He compares them to orcas.

SL: "Now do the wolves have their own trails. Do they use the river corridor? TM: They just follow their noses. They're just like orcas. They just spread out. They just don't follow each other on one trail. ... They just bust through that whole area just like you will see on those killer whales. They will just close off a whole bay and just swim up there and harvest everything in its path. SL: That's the way they move. TM: That's how the wolves go through the forest. And when they pick up on wounded game or everything, that's when they all bunch together and team up."

Mr. Mills describes how wolves got to Pleasant Island and reduced the deer numbers by driving them to the beach; he said there is one particular beach littered with deer bones. He said he is not sure how the wolves got to the island, but he thinks they came over on the ice. He explained that these islands were where his people would go to hunt deer because they tasted really good. Now,

the deer are scarce, and people cannot harvest on Pleasant Island. People are not actively harvesting wolves from Pleasant Island; once some deer hunters got a wolf there with a bow and arrow. Thomas says that wolves are not on Lemesurier or Inian islands. There are bears on these islands, black, brown, or both.

SL: "... you mentioned an occasion in which there's hunting for deer done on Pleasant Island. TM: Yes. ... Pleasant Island is that big island by Gustavus, and it is always, always loaded with deer. The best-tasting deer came from Pleasant Island, Lemesurier Island, and the Inian Islands. Those were three places where we went hunting for our deer. But somehow wolves got onto the islands, and I think it got on from the ice floe. When the wolves went out on the ice, it broke off on the shoreline and floated out and it hit the beach over there on Pleasant Island. And I think there's a pregnant female wolf out there with 'em, because those wolves multiplied out there and now there's no deer out there. There's just one beach where they drove all the deer down to the beach and killed 'em down there and ate 'em. You just see how that one beach is just littered with deer bones. SL: Was that a single event, the killing of those deer? TM: It's going on today. It's been going on the last 25 years now. SL: So the deer have been able to maintain reproductive population. They haven't disappeared from Pleasant Island. TM: Well, they're becoming very scarce. There's some other people in Gustavus that I know have told me he hasn't gotten a deer on Pleasant Island in the last five years. SL: So I want to make sure that you we're not talking about a single event in which the pack drives deer, a bunch of deer, onto the beach. That is—did that occur or not? TM: Well, they would run the deer, and the deer would run to the beach, trying to get away, but the Wolf would trap 'em on the beach. SL: How many deer, usually? Is that a one deer or two deer? TM: Well, you could see one or two deer where they drag 'em down, but where they trap 'em on the beach over there you could see all their deer bones ... SL: That's a recurring pattern, then? TM: Yes. They keep driving' the deer down on that one beach more than any other beach. SL: So you think that if we were to go to that beach today, we would see the deer bones? TM: Yes."

Thomas Mills says wolves will eat birds, porcupines, bears, in addition to salmon, goats, deer, and moose; they eat whatever they can find. They will go after bears, especially if the bear is sick or injured. Thomas gives an account about a wolf pack chasing a small black bear in a coordinated effort.

SL: "... do you have any other indications of what wolves eat? You said mountain goat, moose, deer obviously, and you've seen 'em eat salmon. TM: Yes. Well, they're pretty much—hunt whatever they can find. They know how to kill porcupine and eat 'em without getting quills in 'em. Most of the porcupine carcasses that I've seen, the head would be gone and there would be no insides. You'd just see a hole where the neck was at. And the rest of the body with the quills on it would still be laying' there. SL: Wolves don't try to take bear, do they? ... TM: If the bear is wounded or sick, they'll go after it. They'll go after just about anything. Out at the cabin there was people in Gustavus were using great big snares to catch a moose, but there was one incident where this one bear had a snare around its neck so tight that it didn't have

any hair on it except for the head, the front paws and the back paws. It looked like it had fur slippers on. The rest of it didn't have any hair. But it was sick, and it walked out on a sandbar in front of the cabin and sat on the grass a little bit, and then it staggered back into the bushes. And a smaller bear came out, a healthy one, and then a pack of wolves came out and they smelled that sick bear. So they thought that little healthy bear was the sick one, and they tried and tried and tried to take it down but it—for almost four miles of fighting, that they never, ever brought that little black bear down. They would just go to try to attack it over there, and when it didn't work, the wolves would break off and go back by their leader, which is the mother, and they would—just like they had—were having' a little conversation, and they would try something new again.”

According to Mr. Mills, wolves in the Excursion Inlet area will eat sockeye and pink salmon. Wolf will sometimes feed on the beach and shore for invertebrates, shellfish, octopus but do not dig deep for clams. Wolves hunt and eat ermine but do not eat sea otter carcasses. He says wolves are frequently seen when going to the mountains to hunt mountain goats; when the moose started coming into the Excursion Inlet, they started to see both species of wolf, and the wolves would follow the moose.

SL: “... how frequently did you see wolves? TM: We would—when we went out moose hunting—mountain goat hunting, we would see the wolves just about every time we went up in the mountains to go get a goat. ... And later on, when moose start showing up in Excursion Inlet, we start seeing both species, the Alexander Archipelago wolf and the great big gray timber wolf, and they would follow the moose around.”

Earlier, Thomas Mills said wolves would come into the village to eat ducks that were hung up aging, but they never bothered their fish smoke houses. However, he has observed wolves feeding on fish in the Neva River.

SL: “Now you mentioned that the wolves came to the village for the geese [ducks], but you folks are smoking fish there. Have you ever had wolves around your fish—salmon that's processing? TM: No, we never, ever had wolves bothering the smokehouse or trying to get the fish we have already caught. But up there in that Neva Creek over there, at one time I came across I think three sockeye all in one big pile. And I thought ... it was the work of a bear pulling them out of the river. And then I looked at 'em a little bit closer and you could see the tooth marks, canine teeth marks from a wolf, where they just bit 'em in the back and sheered the backbone and put it up on the beach and they let the—let it ferment a little bit to break down, and then they went down there and ate everyone them up. You couldn't even see any scales over there anymore where all the wolves—where all that salmon were. SL: You've only seen that happen once, though, huh? TM: No, it's the only time I've ever noticed that. ... I would see places where there was a lot of fish over there, but I never really examined it. I always just assumed that it was the work of a bear. But then after we started realizing it, we started looking a little bit harder and we could see wolf tracks up and down the river just like bear. SL: That's on the river proper. TM: Yes.

SL: That's not on the tributary creek up above—coming out of the lake, then, where they went ... TM: Yes, it's the one that comes out of the lake.”

3.5.2.6 Mating, denning, and dispersal

Wolf mating season begins in February in the Excursion Inlet area. Wolf is vulnerable to trapping during the mating season. Thomas and his Dad trapped in February when they started to breed because the wolves become distracted and careless during the mating season.

TM: “We would just get ready for February, because February is when the wolves and the coyotes start mating [in this area] ... and that's when they become careless. SL: How would you know that they're mating at that time? TM: We would hear them howling. They have a whole different activity, and you would see tracks all over, lone tracks. ... You'll see a lone female or a lone male track over there, where one of 'em, usually a male, would break off from the pack over there and try to start its own—find a female and start its own pack.”

Thomas described a time they found an active wolf den under stumps and extracted a pup. He explained how to identify the alpha wolf in the litter by allowing it to bite the hand.

SL: “Did you ever encounter a den, a wolf den? ... TM: Yes. ... We used to watch this one wolf go over there, keep going into these bunch of stumps the military stacked up over there, and we'd hide away and just keep watching 'em from different angles, and pretty soon we found out where it's den was. And then we found out that there's a mother there that had pups already, so we just took some of Grandmother's dish cloths and small towels and wrapped it around our arms and stuff and we stuck it into the wolf den, and the first one that bit our arms and stuff, we pulled it out and kept it, thinking that was the alpha. That was the alpha and the pups over there. SL: ... Your sense is that the one that would bite would be the alpha ... TM: Yes. That's to protect—protecting the rest of the pups.”

Thomas observed a litter of seven pups inside this den. He says there is only one breeding pair in a pack—the alpha male and the alpha female. The alpha male will not allow the younger males to breed. He indicated that dispersal of pack members, and possibly new pack formation, will occur when the leader or alpha wolf dies. When left without a leader, the other members of the pack are vulnerable to attack by an intact pack, so they have to disperse and form a new pack(s) to avoid the threat of attack by a stronger pack in the area.

SL: “So the time that you went in and got the wolf pup [from its den] ... do you have any idea of how many pups were present? TM: I think there were seven; seven pups in there. SL: In the litter. TM: Mm-hm. SL: Well, given the size of some of those packs, you must have multiple breeding pairs in them? TM: No, there was—in a wolf pack there's just the alpha male will breed with the female, the alpha female. The rest of 'em won't breed. And if they try, the alpha male will fight 'em and tear 'em down. SL: ... they obviously have to have a pattern because the leader is gonna die at some point, so there's probably some kind of way in which a new leader has to come into existence. TM: I think they break apart when the alpha leader dies, and then the herd

[pack], the [pack] doesn't have a leader anymore because it's all the female's children. So they all have to scatter off and go start their own herds [packs] again or else the other wolves around will hunt them down and kill 'em. Wolves don't—wolves are predators, and they won't like—they don't like other predators around 'em, so they'll go after the other predators and try to kill 'em to eliminate the competition for food.”

Mr. Mills has observed a group of wolves by Neva Lake and river that may be a recently formed wolf pack.

TM: “... Yes, it's the one [river] that comes out of the [Neva] lake. ... Then, I think there's one new wolf pack that just hangs out up there by that lake. SL: This is recent, then. TM: Yes, this was in the last five years. Because every year, every winter, we have our own little march out there where we drill holes into the ice in the lake and see who can catch the biggest Dolly Varden. And sometimes when we're real quiet over there we can hear them wolves making little noises in the bushes around us over there, and the wolves won't even hear us walking on the ice. Most of the time the wolves will stay off of the lake or frozen water because they know it's dangerous and when all that methane gas and stuff that's coming up underneath the ice over there, the ice starts vibrating over there and the wolves can pick it up in their feet ... SL: So it sounds like you think there's another pack coming into existence? TM: Yes, I think there's a new pack that's started off over there, because the female is pure white.”

3.5.2.7 Communication and vocalization

Thomas Mills says wolves howl to communicate with one another, and their howls do not have an echo. Mr. Mills shares an account about encountering wolves in the forest as a child. Wolves will respond to humans howling at them. Wolves will kill intruders they find in their territory, and they do not tolerate coyotes. Thomas has never heard a wolf bark.

SL: “... what you said about that pattern of wolf howling. What's going on with the howling? TM: Well, the howling is their—first of all, the wolves' howling doesn't have an echo. Coyote doesn't have an echo. And the wolf howl is used to send messages to the other wolves that broke up from the pack to hunt, to either let 'em know that there's danger or they got—or they took something down for food or killed a—it's kind of like a beacon to let the other wolves know where they're at. If somebody who is smart enough that was hunting wolves and knew all this information, they could just pick up on a wolf howl and just head right straight toward it and chances are they'll see the wolf. And when the wolves start howling, one will start—one will start it, and all the other ones will join in like a big serenade. That's when they're feeding. SL: And so if they see you, have you ever heard wolves howl or make other noises when they observe you? TM: No, ... they just become quiet and all you see is little flashes of shadow. ... SL: Have you ever tried to communicate with wolves using howling? TM: Well, we would howl over there, and I don't know, they were probably laughing at us. But they would answer us. SL: They would? TM: Yes. We'd howl like a wolf, and then they would answer.”

3.5.2.8 Intelligence, sense of smell, and response to trapping

In the Excursion Inlet area, wolves travel in a consistent pattern but will change their ways if someone sets a trap line. Mr. Mills says wolves will avoid an area that has been set. Once a wolf is caught, others in the pack will avoid the area; wolves become wise to trapping and become trap shy or avoidant. Catch success decreases with duration of trapping effort in the same location. Wolves are hard to trap, and success is low in this area. Thomas states that his father's take of wolves did not affect wolf numbers because wolves leave an area that is being trapped and do not return for a long time. Trappers and hunters would have to actively travel and search for wolves after the pack left the area, which is not efficient. Even the really good trappers have low success. He says you have to have a lot of knowledge about wolves to catch high numbers, and it is critical to remove all human scent from one's trapping equipment to be successful.

TM: "And this other guy trapped two Archipelago wolves that—last year, and I called him, and I said, 'You're not gonna get anymore wolves,' and he didn't believe me. He's been tryin' now for the last couple years to trap an Archipelago wolf, and he won't do it. ... So I just told Dan he's not going to—he's going to be very, very lucky if he ever traps another Alexander Archipelago wolf, because they're wise to him already. SL: ... those traps that you use—your father used, what kinds of traps were they? TM: They were double spring with big teeth on 'em. ... we used snares, too. And it was—both with snares and traps you have to be really careful that you don't leave any human scent on it. SL: Is there any difference in their effectiveness? TM: Well, you leave human scent on any of 'em, they won't catch—you won't catch anything. So normally we would get our traps and boil 'em in either spruce boughs or something that would kill the smell of it. SL: How would you transport them? TM: Oh, just put 'em in a burlap bag ... we'd have to boil the burlap bag in the water, too, when they're over there, sort of to get rid of all the human scent, yeah, and just carry the bag."

Thomas explained how to best anchor or weight a trap so that the wolf would not chew its foot off. Wolf can see your traps, so you need to use several decoys and one hidden out of sight to trick Wolf. Thomas and his Father did not target a specific number of wolves. He says what you got by chance is what you got. He says they primarily caught immature wolves. Wolf is too hard to trap, so you do not get enough to make a difference.

SL: "Have you trapped or hunted wolves specifically? TM: Yes, we trapped—I went out with my dad when I was a child. But most of the time we would be trapping 'em, marking up there in the mountains. But when we did go for traps we always used three or four different traps over there because of the wolves' intelligence, if they would—we'd set one trap and hide it away really good so the wolf can't see it, and then another trap we'd set it there just so the wolf can spot it and avoid it, and another trap, we'd just leave it out in the open so the wolf would know it's there. So while it's looking at both of the other traps, it steps into the one it's not seeing. And then they always have to attach the trap to a weight that the wolf can drag, but not too far, because if the wolf can't drag the weight or move the trap, it'll chew its foot off. SL: Now this trapping, what part of the area did you do

that in? TM: We trapped in Excursion Inlet up in the mountains. SL: What approximate elevation, would you say? TM: Um, about halfway to three-quarter. We stayed in the timberline. SL: ... any difference in terms of whether they're large or smaller wolves that you would be catching in the traps? TM: Normally you would catch the immature wolves because the older wolves are wiser and smarter. And once a wolf is trapped, all the other wolves are wise to that area, and you'll never catch another wolf in a trap."

3.5.2.9 Wolf health and status

Mr. Thomas Mills observes that the wolves in his area are healthy. He uses the condition of the wolves' hides as an indicator of wolf health. He says wolves are not endangered. The narrative indicates people have been harvesting wolves in Southeast Alaska for a very long time, and the wolves are still there.

TM: "... when the Wolf starts eating a, say a moose or a deer, they eat the hair, hide, everything. It's a—that's why you see all the hair inside their droppings. Yeah, if you just observe what comes out of a wolf over there, you can just about tell how healthy the pack is, too. Okay, yeah, when you're going' after wolves and stuff, you probably going' after the hide, and you want the hide to be in prime condition over there. Well, if a wolf isn't eating very good, the hide isn't a very good condition. So the indicators are what comes out of the wolf and its stool. If it has good, healthy stool and it's a nice—it's nice and solid over there, chances are that wolf is a real healthy wolf and the hide is really good because those hides are beautiful. They're real thick. You can't imagine how—you can't imagine the beauty of one of those wolves, and you can't explain it until you have it in your hands, and then you just really can't believe it. You just can't believe you can just feel the—how insulated that wolf hair is over there, because your hands automatically warm up, just from your own body heat being insulated from the hair on the wolf hide. SL: are wolves endangered in your view? TM: No, I don't think wolves are endangered. I think the wolves are pretty healthy. Because all the wolf hides that I—when somebody traps a wolf or shoots a wolf and they mention it to me, I just go over there and look at it, just glance at it and see what condition the hide is in, and that's where I can tell whether those guys have a good hide [health] or whether the wolves are having trouble feeding."

3.5.2.10 Conservation, regulation, and hunting

Based in his knowledge and experience, Mr. Mills shared a conservation message for agency regulators and decision makers. He implies that hunting may be more successful than trapping in the Excursion inlet area. He says it is easier to hunt wolves today with modern long range rifles, and hunters can locate the pack by walking toward the direction of the howling because wolf howls make no echoes. Thomas says that there are not as many people going after wolves today as compared to the 1930s through the 1950s because there is far less economic incentive.

TM: "And then hunting them, too, it'll be—it's easy if you're going after a wolf to hunt, because like I said earlier, the wolf howl doesn't give an echo. So when ... you're after a wolf, and you hear a pack of wolves howl, you just go right over to that

direction over there and you're going to find 'em. And with the modern rifles now, like, um, say, for an example, on Prince of Wales Island, where they've clear cut [the forest]. So you're destroying the Wolf's habitat, although you're building up a browsing area for the deer. So the wolves are confused because there's no more trees around anymore that used to give them shelter. And when they start hunting over there and start howling, with their success on hunting 'em, and then the other people over there have these modern rifles over here and they can kill wolves at a thousand yards with no problem. And that's how come most of the wolves don't go further south and around cities and stuff, start losing their big ... packs of wolves, because they're people with modern, long-range shooting rifles over there. The wolves just don't have a chance. The way [to] protect the wolves over there would be to have an open and closed season and a limit on them. They should, before they try to put anything on endangered species, they should try everything else first before they just shut the door on everybody. Because there's very few people that hunt wolves now for a profit like they used to back in the '50s, '40s and '30s. They don't hunt them as much as they used to. ... The Wolf is just a magnificent animal if you just really look at it and see what it does and how it helps nature. It doesn't just go out there and slaughter the other animals. The Wolf is just like coyotes and stuff: they'll prey on the weak and the sick. And that's thinning 'em out. So there's a lot of advantages of having wolves around, and like I said before, not very many people go after 'em, and the people that do go after 'em, they're not very successful. The Wolf is just far too intelligent, once they understand what's happening, because they know where to go to stay away from the area."

In Excursion Inlet today, people equate the presence of wolves with lower deer harvest success, but they have accepted it and do not desire to go after the wolves to lower competition for deer. Thomas says that it is important to conserve wolves, but the agencies should try everything possible before making it an endangered species, which he thinks would shut everybody down. He recommends limits on seasons and amount of harvest for wolves before listing. He thinks clear cutting has been bad for wolves as well.

3.5.2.11 Wolf-Dog hybrids

Thomas Mills reports on what he learned about wolf-dog hybrids.

TM: "I've heard about them, too, but they said they're pretty much useless for a work dog because they have a tendency to go back into the wild. And when they have a dispute with the other dogs, like say that they're using 'em on a sled dog [team], well, the wolf-dog will kill the other dogs really quick. And even before the guy can stop it, the owner can stop one, the wolf-dog will kill 'em."

3.5.3 Kuiu/Kupreanof Islands: "We are trying to enhance our subsistence way of life."

Mr. Michael *K'a.óosh* Jackson and Mr. Scott Jackson from Kake, Alaska were interviewed April 26, 2022. They are distant relatives who grew up in Kake. The information they shared about Wolf pertains

to the Kupreanof and Kuiu Islands. Scott and Michael both shared traditional ecological knowledge of Wolf, and Michael shared cultural knowledge of Wolf. Michael is an elder and culture bearer who has lived in Kake for 71 years, and Scott is an expert wolf trapper.

One of the main themes of this section and these interviews is the desire to maintain a balanced subsistence way of life. Trappers such as Scott Jackson continue to work very hard in a coordinated effort with a small group of trappers to control wolf numbers to ensure their subsistence way of life in perpetuity. Feeding the elders and the community wild foods such as deer and moose meat is the overriding motivation for trapping and hunting wolves.

3.5.3.1 Motives for wolf harvest and control

The reasons people trapped and hunted wolves in the 1950s are similar to their motives today, including the economics of trade and the mixed subsistence-cash economy; wolf management and control to ensure enough deer to feed the people; and protection of life and property, especially to keep wolves from entering communities to eat dogs or threaten people.

SL: “Now, your father and the rest of the people’s motivations for taking wolves back in the 1950s say, were primarily for economic ... MJ: Yeah, yeah. SL: ... economic motivations. It was not related to excessive predation by wolves or impact on deer or anything like that. MJ: It was all of the above because if the wolves got too plentiful, they came right in the village and took their dogs. SL: Even at that time. MJ: Yes, even at that time. Like it says, you don’t ever kick anybody’s dog.”

Michael explains when he was young his dad and most of the town trapped furbearers in the winter for a source of cash. It was an important community and family activity. He explains that his dad would be out on the islands for long periods, and they used to take the entire family trapping before the kids were made to attend school. The missionaries convinced the town fathers to fine parents when they did not send kids to school, which changed this winter subsistence activity.

SL: “What did you learn or were you taught about wolves as a child? MJ: ... growing up around my father and my uncles ... and my grandfather, then, the whole town were trappers. That’s how they earned money during the winter. It was so serious that my dad would disappear for two or three months on end. So would the whole town, the guys. SL: They’d be out in the islands? MJ: Yeah. Before that, they would take the families out. Back in 1912, the city wanted to be an organized village in the western way, and the only way that—see, missionaries, they wanted the kids to go to school. So they convinced the city fathers to fine the parents fifty cents to five dollars, and back in the day that was big money. And if they took their kids out in the winter, they’d stay in just these canvas tents with a stove in there. And they did everything outside, all the activity. But even then my dad remembered how they were trained to trap. They trapped everything from the ermine to the mink to the otter to the marten to the wolves, and so they were pretty busy. We would be helping ‘em disinfect the traps, so they had no smell.”

Wolf pelts were coveted because of the thick fur and warmth and waterproofing. These were decorative and may have been used in certain regalia and donated to elders in times of need. Getting a wolf was a status symbol for the hunter or trapper, not just a valuable fur.

SL: “Did you think Wolf were ever used in regalia? MJ: Yeah. If somebody they knew of needed something, they’d donate freely. They’d just give it to the elders if they needed something. And a lot of times, back in the day, dad said that they [wolf pelts] were coveted because the thick fur that would be waterproof and snow proof. They would look [like] a big, well, for the current word, Sasquatch, walking through the forest with this ... besides seal pelt and sea otter, the wolf pelt was really decorative. ... the wolf pelts, they just didn’t get them for the pelt. They were admired when they got them.”

The people in the Kake area know by experience that controlling wolf numbers allows for enough deer to sustain the human population. From a subsistence perspective, there are two dimensions to the wolf-deer dynamic: Michael Jackson indicates that when wolves are present in the community’s deer hunting areas, the deer become spooked and skittish or “scared,” making them difficult to hunt, and after the wolves successfully kill and eat a large number of deer in an area, deer become too scarce for adequate subsistence harvest. Mr. Douville of Craig also described the same dimensions of the problem in his interview. It is not only lower abundance of deer from predation, but just as important, the deer become too difficult for people to harvest in the presence of an active wolf pack.

MJ: “Yeah, because then, too, they [the people] noticed the impact of the wolf because the wolves would eat the deer. And the deer would get scared. ... And they knew it because there were some places and villages that didn’t trap the wolves. They didn’t have trappers, and people that went out of their way to go get the wolves. And here they were—they’d been almost starving. And I remember my father telling me those different places he’d go where that was happening. But when he’d tell stories and, you know, the meaning of the story was that you had to control them. SL: It was about the classic Tlingit concept of balance. MJ: Right.”

Scott Jackson articulates that trappers’ motivations are to ensure the people’s subsistence way of life in perpetuity. Good subsistence equates with wealth and good health for the community and the Tlingit people.

SJ: “ ... that's the bottom line is where we're subsistence trappers not trying to overdo our boundaries and just trying to respect ... Yeah, we're just trying to respectfully get something back that you know, pays dividends into our family of, this is how a lot of us are rich. You know, if we can keep our subsistence rich, our community remains rich. And it keeps us from having to hit the liquor store. I mean, the Hardware, the SOS, the Value Marts so often. ... I keep reiterating, like, why we do this, it's we're trying to enhance our subsistence way of life. And if we're gonna allow outsiders to come in and throw a wedge in there, you know, they got to at least come in and say, well, this place really needs, a place like Kake, a place like, you know, we need stuff like that [wild foods]. We don't always have; we don't always have [store bought foods and other commodities].”

Scott reiterates that people from outside his area need to understand that they need deer and moose to survive in a place like Kake, Alaska.

Another motivation is protection of life and property. A direct threat to the community exists when wolves become hungry in the absence of their normal prey. Michael shares an account when wolves came into town and killed a German shepherd dog for food. The loggers in the area had killed off the deer, and the wolves were hungry. The wolves came into town and killed the dog and dragged it off to eat, leaving only the head on the chain.

MJ: “They [wolves] come so—they’ve come in here when the loggers chased them out of the woods, and the loggers killed a lot of the deer, so the wolves came into town. Me and Edna stayed just right down the beach there with two elderly people, and they said, ‘You hear that last night?’ And—because we’d always take ‘em either a pie, or we’d go share something like seal, because they were very elderly. And they said, ‘You hear the wolves?’ And I said, ‘Yeah, they were right above the house here on the road, running.’ And they said, ‘You guys don’t go out. Don’t let your little dog out.’ We had a little foo-foo dog. Here, Gilly Williams—did you ever meet him? He was like with Calvin’s age, senior, Clarence age ... But he had a big German shepherd *because* of those wolves. And one night when that was going on, all he heard was a whimper from his dog outside. He had him chained up on an alder tree. He jumped up, grabbed his gun—because he knew what happened. And all he could see were these blinking eyes and disappearing. They ripped that dog right off his chain. All that was left of his dog was the head. They just—all of them got together and just ripped it off because they were hungry.”

3.5.3.2 Number and location of pack territories, movement patterns, and abundance

In the Kake area, Scott Jackson says wolf pack territories are organized by watersheds, and pack trails are associated with stream beds. He explains there are many wolf packs that most people never see running the creek beds, valleys, and beaver beds.

SL: “... do you have any idea of what organizes a pack's territory? ... SJ: And I've seen it several times where I've been in the Hamilton area, and where I came into an area, and they got really territorial. You can see when they're on the road, when two packs come together, they get really territorial, because they'll start pooping and peeing really bad. Right on the border. And you'll think it's just the one pack, but you know what, there's another pack down by the creek bed that's barking and peeing and pooping in that area, too. And that's the thing that a lot of people don't realize is, if there's one pack here doing that, then that means there's another pack over here, keeping the range. ... [looking at a map] This is the North pack. And I would call this the Portage. And then there is a Mid pack like in here. I mean, it's just because people aren't seeing them, don't mean they're [not] there. There's so many hidden roads back here that they're running on. Then they run valleys. They'll run creek beds; they'll run beaver beds. You know, everywhere you see a creek on this [map], that's where they're running. That's their travel path.”

Scott draws on a map where each pack has its territory as he names and counts the number of packs. He estimated about 10-12 wolf packs on Kuiu and Kupreanof islands. The packs have local names given by the trappers (Figure 17).

SL: "... how many packs would you think exist ... organize it spatially for me whether you can do it the whole island or half the island or whatever? SJ: I would say, like how many packs do we have throughout Kupreanof Island? ... I would say we have a north end pack. Yeah, north. That's in Portage Bay and tip of Schooner. I think we have a mid-pack by the Alpines to White Rock, which is Petersburg Borough. And then we even have another pack that developed out here. And I only say that because right now, if you see them consistently, that means they're by a den. ... So, this is just our area. Yeah, so then you can include Kuiu [Island], and there's one, two, three, just on this side. Probably four [packs] that are on that side. So, I would say a dozen packs, just to be realistic."

Scott shows the locations of the various wolf packs and some dens in the area. He explains how wolves start to become more common when people start hunting moose; they come around to feed on the leftovers from subsistence harvests.

SL: "You think you could quickly sketch that in? SJ: Yeah. Let's see, what do we have, where's Kake on this thing? Kake access [road]. So, this is Portage right here. This is because there's a spot here. And this isn't even covering our whole island. I heard the peninsula down here. Down here, this is just covered with wolves. Lindenberg? ... So Lindenberg, like, I heard this is where a majority of Petersburg people, the majority, of the hunters, I'll say complain about wolves is on this peninsula. But see what, what they do if you're ever around, so there won't be no wolves around, they'll stay hidden. But once all the moose, so everyone start shooting moose in here and this is a peninsula. I call it the Salt Lake Peninsula. Salt Lake and once people start slaughtering moose, the wolves start congregating out here. And you'll hear him [Wolf] all the time. Because they're going after the carcasses and ... you'll see them start moving. Like, that's how you get a good grasp. And what I do is, in the wintertime, I can go out and I can see what is going on out here. But down here by Devil's Elbow, right here, they cross heavily. So they cross here heavily. ... this is Devil's Elbow, I believe, right? Because I spent so much time out. So it's like a cross path and then down here is Three Mile, and that is loaded. And then we have No Name. And then we have Affleck lower down that way."

SL: "So those names, you're referencing packs and those locations? SJ: Yeah. ... So, this is the mid Saginaw. So this is the Kadak pack up here. Yep, and then if we go farther up here, you're talking about Saginaw, so. SL: Are you over on Kuiu? SJ: Yeah. So, we'll call this Saginaw pack. And then if you go farther this way, there's a Saginaw/Security pack. So just to reference this, 1, 2, 3, 4, 5, 6 just on that side of Kuiu. And then down here we have Totem Bay. This is the Totem pack, which is the south end of our island. And then there's another pack. But this is where it gets tricky, right. So up here, you see what road it is. Here's the 45-38 [roads], the 45. I wish they had the lake on here. There's a trail that runs this way, to here. And a lot of times the

wolves run up this side. Wolves are up here, wolves around this way. But I've known there to be a steady pack there. There's also a pack right here. I want to say their den is right here. So, every time we can think of a den Yeah, so there's a, they've been seeing, and Josh, one of his workers said they saw a female track with blood in it. So, you know the den is close. So I want to say in this timing area, but I think it's around here. The den there, I've seen a den down here, I've seen a den over here. This is Irish area. So, this area is really flooded with about 10, a pack of 10 runs a circle right here. So from here to there. ... But if I can continue on this [map], I have a pack here. Right? So a den, I heard there's a den right here. So right in the middle between Seal Point and Kake, there's a den right here.”

There is a high abundance of wolves on the Lindenberg Peninsula.

SJ: “... I heard the [Lindenberg] peninsula down here is just covered with wolves. Have you ever heard of Lindenberg Peninsula? SL: Yeah, sure. SJ: So Lindenberg, like, I heard this is where a majority of the Petersburg people, the [deer] hunters, I'll say complain [about wolves].”



Figure 17. Wolf packs on Kuiu and Kupreanof Islands (Mapped by Mr. Scott Jackson; Source: Steve Langdon).

3.5.3.3 Hunting, feeding, travelling, and territoriality

Michael describes why sometimes you may find a deer kill left before it is completely consumed by Wolf. During travel between watersheds, if a wolf intrudes on the territory of a different pack and kills a deer, they will not have time to finish eating it. They have to leave it partially uneaten to avoid a conflict with the pack in whose territory they entered to make the kill.

SL: “ ... periodically, there are accounts of wolves killing large numbers of deer and not consuming them. Have you heard stories or see any events like that? MJ: I’ve never seen any, but I’ve seen where they left ... and the way dad explained it to me, and grandpa, was that they were going. They [wolves] were traveling. And they travel from watershed to watershed. And that’s very territorial. But if there was a visiting wolf and they got a deer, most likely a deer, they would eat as much as they can as fast as they can and get out of that territory and leave it. And that was an intruder. The other ones, if they had got it, a pack of them, they’d howl and the other packs would come in, and if they’re in their same watershed, they’d come and eat it.”

Scott Jackson describes in more detail wolf diet and prey types. Scott says the wolves primarily eat deer, moose, and beaver, and their diet is seasonal. After the moose and deer rut, in winter, the wolves will prey on the male ungulates because they are weak and vulnerable from the mating season (i.e., rutting). Wolves will prey on deer fawns and moose calves during spring.

SL: “Now what have you seen wolves eat besides the ungulates? SJ: What have I seen them eat on the island? SL: ... there are two things: What have you seen? And what are you aware of them eating through looking at their feces or their stomachs? SJ: Oh, feces? I think I see a lot of beaver in there. Lots this year, this spring, I noticed a lot of deer hair, moose hair. I guess it goes on winters too. ... It really depends on the time of year, you know, because after the ruts, and after the big, when after the bulls, moose and everything, you know, rut and everything. And same with deer. They're weaker. And that's, I think that's a time of year that you'll see them more vulnerable. SL: What about at fawning time? SJ: In fawning time? I think usually you see quite a bit of deer fur, tending to, [wolves] really focusing on them [fawns].”

3.5.3.4 Watersheds, roads, conflicts, and assimilation

Wolf packs in the Kake area are organized into territories that correspond to watersheds. Michael did not know the specific time it takes a pack to travel its territory, but he says it is faster now because the watersheds are connected by roads. He indicates that the roads have led to more conflicts between wolf packs because the roads allow the wolves to easily enter more watersheds and another pack’s territory.

SL: “So the underlying principle—the wolves are organized by drainages and watersheds into their territories? MJ: Yeah, yeah. SL: And what kind of timeframe do they use to make their circuit? MJ: Today it has sped up, and Scott might talk about it. It is because roads connect those territories, those watersheds now. ... [wolves] got into more watersheds, into one another [pack’s territory], so there were conflicts. SL: So there are conflicts over territories? MJ: Oh, yeah. And the only ones that were

brave enough were young, strong ones to be integrated into another one, they took 'em in because they knew he was going to be tough... where he gave up a big fight with the alpha. SL: So there will be assimilation? MJ: Yeah, and that's how they kept their blood lines different. But they were always looking for another female on the other side. SL: Oh, yeah. Recruiting, or... MJ: Right.”

Conflicts with intruding individuals may lead to outside wolves being assimilated into a pack. If an intruder could survive a fight with the alpha male, it would be integrated. Also, a pack is always looking for females from a different pack. Michael says a wolf pack will do this to “keep their blood lines different.”

3.5.3.5 Reading wolf sign, pack boundaries, abundance, and harvest amount

Scott shares an account about finding himself between two packs; he was on the boundary of two wolf territories. At a place called Hamilton, he found a wolf he had snared to be torn apart by a rival pack in defense of territory.

SJ: “Well, I will say this one time. So when I was trapping, this is where I knew I was between two packs. So I checked my traps every three days, and I was trapping the road system. And right here by Hamilton, there's a den here. But see, there's a creek right here called Hamilton. So I trapped two wolves in the snare. I came back on the third day, it was icy, came on my four-wheeler, and I came up to the snare and they're ripped apart by another pack of wolves. You can see the one pack on this side ran this way, and the other pack stayed on the road, marking their territories, and they turn around there and went back towards Petersburg. So that right there just tells me you're dealing with probably 30 wolves together. Yeah, and just me. Yeah, I'm gonna have a good season. I think I'm doing good for 20 years if I can catch 20 a year, and I've done pretty close to that. But that's nothing because you're talking about pack after pack after pack.”

He explains how he reads wolf sign that marks the boundary to estimate number of wolves. Scott determines that the two packs together probably comprise about 30 wolves, so roughly, 15 in each pack. He also estimates that he may take 20 wolves per year which is not a lot considering all the packs in the area and the size of the packs.

3.5.3.6 Denning, den location, litter size, and movement patterns

Michael describes how to locate a wolf den and at what elevation he has seen dens. He says the reason Wolf has its den at 1,500 feet elevation is because here the area would not become snowbound; the wolves at the den could still travel in and out of the area to hunt in the valleys and still go back to the den to protect and care for the pups. The parents need to be able to come and go quickly and easily to and from the den site.

SL: “... Well, what about wolf dens? ... MJ: Yes. You really start seeing where a den was because of the activity at—when you're walking through the forest there's certain vegetation scattered around, and at different levels [elevation]. So most common wolf dens I have run into were maybe around the 1,500-foot level. So that it wasn't snowbound enough, they couldn't get around; they could get down into the

valleys, but they go back [to the den] ... because the most important part was the protection of the cubs. And then when you got closer to them [dens], you'd start smelling decaying matter. But they didn't have the decaying matter by the entrances and the play area of the den. It was off to the sides ... That was there to warn the other wolves to stay away. You know, they came up and did their business at the way fringe, but they also got rid of what they didn't want at the fringe. So when you start coming upon a den, it was pretty clean. It was pretty well worn because if it was an established pack, you know, that's where they'd had all their social interaction, but all the little ones would run around, too, into—and you can see very clear—into their dens, where they went in. It was always down and up. Because the weather would come, it'd go down, but it'd never go up, because up here would be the heat.”

One can smell a den when you are close to it due to decaying matter at the perimeter of the den site used to warn other wolves to stay away. Near the den entrance it is clean and well-worn from social interactions and pups playing. The den entrance is clearly evident, and the entrance to the den is constructed with a cold sink.

Wolf dens are multigenerational, but they just don't use one den, they use multiple den sites. Michael explains wolves will move up and down the island depending on temperature; they move from the south end of Kupreanof Island, if it is too cold, all the way to the end of Kuiu Island. They will make their dens on the south side facing the sun for warmth. Michael's dad saw seven pups in a litter one time. Michael thinks seven is a lot.

SL: “... those dens, do you think they're transgenerational? I mean multiple generations that keep using the same locations. MJ: Yeah. They just didn't use one den, though. ... just like us when we went after halibut, we went to a different place. When we went after sockeye, we went to that—the lake area. SL: So they have multiple sites like that? MJ: Yeah. They'll go up and down the island. Like up here it gets too cold, and they'll go to the south end of Kupreanof or all the way to the end of Kuiu and sit on the south side, their dens, facing the sun. And the other animals would, too—the deer. SL: Have you ever been on Kuiu to see them out there? MJ: Yeah ... SL: How many pups in a litter? Do you have a sense? MJ: Once we saw because my dad came across one and he said there were seven [pups]. That's a lot. SL: ... would be their ability to replenish is pretty high. MJ: Yeah.”

Michael describes how wolves use trails and travel the same trails over the decades, moving along in places where deer are located and spend time. He repeats how wolves use different elevations during the season. Wolves come down off the mountains in fall, and they go back up to about 1,000 feet elevation to their den sites in winter. Earlier, Michael said the dens were at about 1,500 feet, so perhaps the dens are 1000-1500 feet elevation.

MJ: “... the river comes down like here, and the river also used to connect to there, to Big John's Bay. So there was a trail that they [wolves] used, too, but most of the time we'd go on his little rowboat that had an 8-horse. SL: You can see wolf trails? MJ: Yeah. SL: And how do these trails manifest themselves in these areas? MJ: They were just used over decades. You could see where they traveled. They move along, where the deer might hang out and at different elevations during the season. But

mostly at fall time, they were coming down off the mountains, eating ... So they're around about the thousand feet, and that's why the dens were about a thousand feet. So in the wintertime everybody came down. But the wolves would go back to their dens up there."

3.5.3.7 Age, pack size, and vulnerability to Bear

Scott and Michael share information about wolf age and pack size. Wolf is in its prime at ages eight to ten, and pack size can be from six to twelve animals.

SL: "When we say old-timer, what are we talking about in terms of the longevity for a wolf? Same as dogs? MJ: Yeah. Their prime is around about eight or nine years old ... ten years old. Then you start going downhill. SL: What do you think the, well, a general pack size is? SJ: General pack sizes here? What I've noticed is anywhere from six to 12. ... SL: I mean would bears look to predate on them at the den—on the cubs, do you think? MJ: Yeah. They'd always—but they knew better not to. Because they knew the business of—if you—if they went into the territory, they're [a wolf pack] so organized they can take down any kind of bear."

Michael indicates that bears may like to eat wolf pups, but they avoid doing so if they know there is an organized pack in that territory.

3.5.3.8 Vocalization and Human-Wolf communication

Michael said he heard a wolf moan right before his father killed it (he had caught it in a trap) because it was scared and knew it was at the end of its time. His father was talking to the Wolf in Tlingit. At the end of this section, Michael says it may have made a whine not a moan. Michael indicates that Wolf is aware of its own death when eminent. He also shares an account of a group of people calling to wolves at a particular location and wolves responding. He says people are cautious when doing this because they are fearful to be approached by a wolf pack when far away from town.

SL: "What about wolves' communications? The sounds that they make and the purpose of their sounds. MJ: I was close enough to hear one when it was scared. And it was almost like a moaning, real deep. Because he knew he was at the end of his time when my dad caught him. And my dad was talking to him in Tlingit and [speaks Tlingit]. SL: And when they howl, are you able to howl back and get a response? MJ: Yeah, but it's not real, but on the other hand, they can't take a chance of another group coming into its territory. ... We were just talking about this the other night with Don and Cal ... There's a place we—they're clearing now, I have them clearing so people can gather all kinds of things. And we call it Skyline Mountain. I just printed it off [a map]. And right here, this real small branch right here, it goes up, and it goes up a mountain, and then one goes off to one side, the other one comes back this way. And that place, you can go up to the top and there's this big valley right here. Goes over toward Petersburg, Duncan Canal. You can howl and you can hear it echo, then pretty soon you'll start hearing [wolves howling back at you]. Cal and they were out there kind of toward the evening, and they did that, and they were right close, just

right around below there. They said, 'Well, let's go.' And when you're out there by yourself, you want to go because you don't want to get a flat close to them. ... SL: ... Do they bark? MJ: Yeah, when they're running, mostly. Most of their growling was either in contact with you [makes deep growling sound] ... or growling at the smaller ones."

Michael has heard wolves howl, moan, bark, and whine. They will howl back to you if you howl at them, but they know it is not real. However, they have a strong urge to protect and defend their territory so they may come to your location because they can't take a chance of letting another group of wolves into their territory. Michael says they growl when they have contact or interactions with people or when they are correcting their young, and they may bark when they are running.

3.5.3.9 Coordinated trapping to maintain balance and wolf health

Mr. Scott Jackson explains how to maintain a balance among subsistence, wolf numbers, and deer numbers, which if achieved can allow for the health of all. Subsistence harvest is dangerous the farther from home you must travel to find deer. He reminds the reader there is a subsistence priority in Alaska, so there is a need to trap wolves in places where people subsistence hunt for deer near their communities.

SJ: "I became involved [in wolf trapping], as you know, it was a long time ago, we lost my uncle and my cousin and a family friend on the north side of the island. And by then we had already started trapping and what we started realizing is every area that we did trap, the abundance of deer and moose that you'd see in that certain area, but the whole bottom line is, at one point after we lost our family members and family friends, we come to the realization that we shouldn't have to travel a waterway to go across that strait to harvest our deer. SL: So that's why they drowned in the water going across to do subsistence. SJ: Yes, on the very last day of the season. And that's to me, traditionally, our subsistence gatherers, we shouldn't have had to do that, day one. And this is one of the reasons why I set out to catch as many [wolves] as I can in certain areas, because I only trapped the areas that I hunt."

When there are too many wolves, they are not healthy. Scott trapped an area for 10 years before he could save a hide that had market value. He advises the best or correct way to manage wolves is through subsistence trapping and hunting. The subsistence deer hunters who harvest wolves are not out there to decimate or kill all the wolves. They are trying to preserve their subsistence way of life by ensuring adequate deer abundance and health by removing the proper number of wolves to maintain balanced wolf-deer populations.

SJ: "... it's just been like the whole ideal on this is for the first 10 years we couldn't even save a [wolf] hide, and to me, it seemed like they had eaten themselves out of [house and home]... SL: The hides were so, of such poor quality. SJ: Yeah, they were really poor quality. Yeah, for 10 years, I couldn't even save a hide. It was like, we'd catch wolf after wolf after wolf, and they'd be like mangy and the bugs on them, and their fur would be coming off and their tails wouldn't have any fur on them, type deal. But I think ... there's such a separation of what the right way is to go about managing,

and I think the right way to manage them is just allow subsistence trappers to keep it subsistence trapping, because they're not out there to decimate. We're out there to help increase the subsistence way of life. We're just not all killers who are just up [to no good]. You know, and that has been the perception of the whole thing.”

Trappers in the Kupreanof and Kuiu area cooperate in an organized fashion and on a set timeline for wolf harvest.

SL: “Now, after you had trapped, how quickly did you begin to see deer replenishing?
SJ: For me, it took about three to five years because you'll start seeing fawns, you know there's that, because it's not gonna happen right away. I mean, you're looking at three to five years, maybe ... but I ... have friends that I asked to come and show me how to, you know, Winrods and Peters. I asked them, ‘Can you come help me because this place is overrun.’ Yeah. So, they go down on the south end, and we work together. I work the north side, and then we'll meet together, and we'll check stuff. Yeah, work down because you can't do it by yourself. It's too much area. SL: What about Kuiu? SJ: Yeah. Oh, that's the worst place. And what we're realizing is a majority of the Kuiu [wolves] are the ones that are flooding onto our island and wiping our game clean. Because I've been all over the island, but it wasn't, see once we started talking about how long it takes, see, so Winrod came up this must have been 10 years ago, and he said it's gonna take like five years. So about five I'd say, and you can look at the reports for the moose and the deer and I just got a call earlier that said, we were the highest moose-take-area again, in Southeast Alaska. It's been like that for if you look at the moose reports, it's been going like this in a steady uphill ever since those guys started coming up and helping me. But they don't come up every year or every third year, they'll come up. SL: Third year, it's your own sense of rotation? SJ: That's our own rotation. Because I asked them. I respect everything and out of respect you need a balance. You know, so what our balance is every third year that we have those guys come up, and that's because I keep in close contact with the biologists in Petersburg.”

After three years of trapping an area, the wolves there start to get healthier due to more food per animal. Scott explains if there are too many wolves at one time, the younger ones are not allowed to eat because the older dominant wolves consume all the food. There needs to be balance, so there is enough food to go around. When the wolves become healthier, they start to form new packs in different areas because as they become trap shy and warier of people, they relocate.

SL: “How long did it take for you to begin to see the improvement in their health and the quality of the wolf [pelts]. SJ: Once they [other trappers] started coming up, it took probably, I would say, three years, and right away, you started seeing healthier? Because it's, it's gonna be healthy because you want to take out ... the old ones, because they always end up taking all the food from the younger ones. You see, so there's got to be that balance on where they come in, and they got to be shared. SL: Okay, so you think the older ones are going to be trapped and there's going to be better food for the younger ones? Do you think that's the dynamic process? SJ: I think it's a good dynamic. I mean, what you have now and what I've noticed, just on my

own, is, you have packs splitting up to make, like, when they're healthiest, and it's the same thing they used to notice on the POWs when they're trapping really good, is you'll see the, the older, like, usually a male and female will split off. And they'll start their own little packs. Yeah, and that's what they'll do. But see, what we have now is, and what I've learned is that I keep looking at the old spots where I caught wolves. So alright, so the wolves aren't gonna go there. They're too smart. So just the last couple of years, it's been like, oh, nothing's here. Nothing's here. And I kept telling my friends that and two weeks ago, my friend was filming a *Life Below Zero* deal, and he said 11 wolves ran onto the flats. So, there is no shortage. They're just getting smarter.”

The concept of balance is the appropriate Indigenous model for wolf-deer management and ensuring a continued subsistence way of life. The whole point of the coordinated trapping effort is to have and maintain a Native diet in perpetuity.

SJ: “Yeah, like I said, there's gonna be balance. But I think if we can keep from outside interference, we can keep it positive for this island. ... I grew up out here. When I had to go to college, I was living in the grocery store. And you know, you have pork chops and steaks and chicken. You know me, I'm used to my Native diet. SL: And it's much better for people I believe you're absolutely right in that contention. SJ: Yeah. And so then after this process, the [wolf] hides improve. SL: And so the hides become marketable? SJ: They're very marketable once they improve.”

There is an economic incentive to having healthy wolves. The wolf hides become marketable when wolf numbers are kept under control and maintained at a level that allows for balance. When there is balance, Wolf and Deer are healthy, and there are successful deer hunters and adequate amounts of venison in the communities.

SJ: “... we have a guy that works on the north end and what we communicate, I go work to the north, like right next to him, and he'll go back to Petersburg, and I'll come back this way. SL: So Petersburg works on that side. SJ: Yeah, from Schooner Island, towards Portage Bay and back from Portage ... to Petersburg. SL: What do you think of their efforts? SJ: They've done a good job. SL: So that's their hunting territory. SJ: Yeah, he hunts. He traps the areas he hunts. And it's kind of like me [trapping wolves where I hunt deer]. ... And I like it's really been a cooler deal to see so many successful hunters the last couple of years. Yeah, cause that's moose and deer. We grew up on deer. And it's cool to be able to see the elders at least be able to keep on doing what they're doing. So in a sense, it keeps a lot of them kicking, including my father.”

Scott estimates he can catch five to seven wolves in a certain area in three years, and that amount of harvest does not result in more deer and moose. Trapping becomes more difficult as time passes. Wolves move out of an area when they are consistently trapped to avoid losing more pack members, and deer and moose move in when the wolves leave because they do not have to stress over predators.

SL: “When you trap an area, how many do you usually get out on the three-year cycle? SJ: If I’m trapping this area, I’m lucky to pull five to seven out in three years. SL: And what is your feeling about that number? SJ: I feel like it hasn’t done anything. Because it’s still .. I went back there this year and that’s still a pack of 10 [wolves] because I can see it in the tracks. And then I have people that call and tell me, ‘Hey, I saw about 10 wolves in that bay right there.’ SL: And so then what that means is that’s not going to give you the benefit with regard to moose or deer. SJ: No, now I think the consistency on trapping an area, you’ll start to see them push out of their area and that will make the deer comfortable and the moose comfortable to come into an area. SL: Okay, so if you’re trapping it consistently, they [wolves] get uncomfortable and spatially relocate? SJ: Yeah, they’ll spatially relocate and stay out of the area where their friends got picked off.”

The key to effective wolf trapping is maintaining a consistent effort. However, the wolf population outnumbers the active local trappers. Despite their coordinated efforts, it is difficult to control wolf numbers to the extent there is a noticeable increase in ungulate abundance.

SJ: “I did a lot of work when you saw the moose come back. So let’s just say about eight years ago, I trapped back here. And you saw the moose, just, and deer. You can just, and not only, like I said, I went in there. I knew the pack was strong and heavy, because my friend said he saw about 15 wolves. And I said, ‘Well, I’m gonna concentrate there this year.’ Because a lot of the things I do, somebody calls me and says, ‘Hey, you need to concentrate here. I saw 12 to 15 wolves.’ And go take about five or six out and harvest those because they’re really, because the pilots will see if they’re raising Cain on an area, they can see when the pilots are flying they’ll see blood or, you know, just a massacre stuff. And they’ll be like, ‘You really need to go take care of that pack.’ ... a lot of times I’ve tried to sit back and say, ‘Oh, we don’t have a problem.’ But we do have a problem because the wolves, like even if I trapped, I’m just gonna throw a number out there. Okay, let’s say I trap 60 wolves in the last 7 years. Okay, that’s only, you know, that’s nothing. ... even if I came in and I say I trapped 57 in the season. Okay, but the following season, the following three seasons, we got like, maybe five to 10 every trapping season. I mean, once you get on them, I mean, you can’t stop. I mean you can stay consistent. I’m not gonna be able to do many. Like, I don’t have 100 trappers here. There’s just me on the side covering from here. So my friends cover [this area]. ... I’ll cover down to this area. This is our line here. And, and they try to cover in here and all through here.”

Trapping success tends to decrease in the second and third seasons as wolves become trap shy, fewer in number, or leave the area.

3.5.3.10 Duration and timing of wolf trapping

A one-month wolf trapping season is not long enough for trappers to adjust to conditions like bad weather; they feel pressured to go out in dangerous weather conditions. Trappers need more time to implement contingency plans, adapt to changing weather conditions, and sit out days that are not safe to travel. Also, law enforcement could force them to pull all their gear on the last day of the season, and that day could be bad weather with unsafe travel conditions.

SJ: "... if they have a deal or let's just say we're Prince of Wales and they just came in here and said, 'All right, you're only get to trap for a month.' Well, guess what, I don't have that month to sit here and trap those ones right here. And, and realistically when they give you a month, it's dangerous for the subsistence trapper. SL: You got to confront weather. SJ: Yeah, and friends going out in 20-25-foot seas. I mean, I can understand them, an outside group, but they got to see the perspective of, 'Okay, I'm gonna give you a month to trap.' Okay, but one it's blowing and it's 20-25-foot seas. This guy sitting out here is the State Trooper right now. They're going to expect you to pull your stuff [traps/snares] no matter what. So how many lives are going to be lost just trying to help out one community?"

If the wolf trapping season is going to be for one-month, Scott says the best time for it is December 15 to January 15. He prefers not to set traps or snares in November during the deer rut because the rutting deer move a lot and may be unintentionally caught.

SJ: "... if you trap late in the season you're looking at unprime [fur], ... and in November I try not to trap, you know, I'm really, I watch what they do on Prince of Wales, that kind of mixes with the rutting season. And that's probably not good. You know, it really affects me, I don't want people to set traps and snares and have them catch all the rutting deer because they're running through that area. That's why we've always, that's why I always questioned my friends who were trapping in November. I said why are you guys trapping in November? They said, that's the timeline they give them. You know, I said, end of December. If they went from December 15 to January 15, that'd be a good season."

3.5.3.11 Wolf-Dog hybrids

Mike Jackson comments that wolf-dog hybrids were sought by the Tlingit through specific procedures. Further, they had special qualities that were valued. They sought to continue the line, but gradually desired qualities disappeared. In some cases the hybrids returned to the wolf packs but were killed.

MJ: "They took a dog in heat out in—trapping with them ... when they knew the pack was around. And they put it out there at night. This was a long time ago. But they built a fire big enough, and they used torches, where they would tie rope real tight that was soaked in water but also with the oil, and then they covered the torch with pitch. And they lit it afire, and they put it out there kind of close to the dog in heat, and they'd tie it up there. They'd load up their bows all set, and they'd just see these eyes turn up, you know, the glowing fire ... in the [eyes], and if the fire was small enough, they weren't afraid of it. So as the dog in heat—they'd whistle because, you know, they trained it, and it'd look toward 'em [the hunters], and they knew that was the dog they tied there. The other ones that were—they'd turn away, you wouldn't see 'em before, but just as they turned they knew which—where the body was facing ... and they'd shoot 'em. SL: That's really interesting about using the female dog to draw them in. MJ: Because they'd just go nuts. SL: ... do you think—well, did they produce hybrids from that? MJ: Yeah."

Hybrids had a number of characteristics that made them useful to Tlingit people as Mike Jackson points out.

MJ: “The hybrids were easier trained. And they were super protective of the owner. They would hardly bark or anything. They would just watch from out in the bushes, just like a real wolf ... but if there was somebody that was gonna do harm, they could sense it. And they’d come sit right next to ‘em and watch that person. And the people would look for them, because, you know, their dog looked like this. A lot of little dogs—they were little—but the ones that they trained in that order were getting bigger. But my dad said one of the *ixt*’, the spiritually trained, think it came—they looked a lot different from wolves after like the third generation. SL: So you could keep breeding them? MJ: Yeah. And they became more vocal. SL: So they didn’t bark at the outset? MJ: Yeah, but there were also—they knew where the big wolves were. They could smell the trail. And they’d start—they’d light up and that’s where they would set traps and stuff. Yeah, so they ... had enough of what they knew [as wolves] ... in their head to show their owners where the trails were. But sometimes they’d go back to the wild and most of the time they were killed just like that.”

Mike Jackson’s account of how Tlingit proactively sought hybrids is similar to Judy Ramos’ account from Yakutat though valued hybrid traits differed between the two areas. He also states that when hybrids went away from human settlements they were often killed by wolves.

3.5.4 Prince of Wales Archipelago

The Prince of Wales Archipelago is located on the southwestern corner of southeast Alaska. It consists of Prince of Wales Island proper, the second largest island in the United States, and a group of islands to the west extending from Kosciusko Island in the north to Dall Island in the south. Interviews with Indigenous experts on the island are organized geographically as follows: Klawock (Northern and Central Area), Craig (Central Islands), and Hydaburg (Southern Prince of Wales).

3.5.4.1 Northern and Central area (Klawock): “Wolf has to eat, and we have to eat.”

Mr. Jon Rowan and Mr. Thomas Allen George were interviewed in Klawock, Alaska on April 19, 2022 and April 22, 2022, respectively. Mr. Rowan is the Cultural Education Teacher at the Klawock School District. Jon is 58 years old and has lived in Klawock for most of his life except for a short period of military service. Mr. Rowan is a culture bearer and an experienced wood carver. He also has experience hunting and trapping wolves. His Tlingit clan is *Shangukeidí*. Jon started trapping later in life after he got out of the military. He decided to learn how to trap, and he taught himself and was mentored by Mr. Thomas George and others. When he watched Thomas working on his wolf traps, he thought it was cool.

3.5.4.2 Early trapping activity and experience

Mr. George is an elder who has lived in Klawock for 67 years. His Tlingit name in English means “Before the Raven Rises.” He is a Raven and is an expert wolf hunter and trapper. He

practices both wolf trapping and hunting, which use different methods and require different skills. His Father's name is Robert William George, Sr. from the Tlingit Wolf Moiety. Thomas started trapping around age nine.

SL: "When did you first start your experience of trapping or hunting wolves? TG: I caught my very first one when I was nine years old. I got a bunch of otter traps and used a C-clamp to set 'em because I was too squirrely, too light. Had to use a clamp and stick a nail under the jaw and set 'em open and—but I put like ten traps around a deer head, there, and—buried a rotten deer head. SL: Where? TG: On Wadleigh Island across here at Flounder Bay. Yeah, just across the bay. I couldn't go far ... all I had was a six-horse Johnson. And it was a learning experience. I kept checkin' it, checkin' it, and they would always steal my bait. But I finally got that deer head and put a rockpile on it because they knew there was gonna be bait there all the time, so they kept coming back. I buried the traps in gravel, and some of them didn't close all the way but when I finally got that one big female ... She was tangled up all over the top of that rockpile there."

3.5.4.3 Wolf abundance, amount of harvest, and motives for harvest

Jon Rowan says that wolves are abundant in his area. Even when they trap a lot, or "hit it hard," the wolves come back the next season. They are seeing more wolves now than they ever have before.

SL: "Now you've been at this a while, and not so much recently, but during the time in which you were trapping, did the number of wolves out there change, do you think? JR: [silence while he thinks] Let me put it this way. We went to this one area, and we would hit it hard, up on the road system. We'd go to this island. There were a lot of wolves there. A lot of deer there, too, but they would—they would be really skittish. So the cousin, he would trap the bays. That was his territory. But we'd go up inside. And they'd get a lot, and we'd get a lot. But the next season, [they'd] be back just like cockroaches, man. I mean, just like we haven't—just like they reproduce to bring it back even more, and we would hit it hard again. SL: So it's hard to make a dent in them. JR: Seems—it seemed like it. And then now, we're seeing more Wolf everywhere than we ever have before."

Jon shares a different view where in past years it seems wolf and deer numbers have been decreasing.

SL: "... so you don't have an experience of saying that we've knocked the wolves down and then we can see the deer come back? JR: You know, I personally never noticed. I wasn't aware of that; I didn't think about it. But just in the past years it seems like there's been a lot of wolves and a lot of deer disappearing, and it can't just [be blamed] laid that on the Wolf, either, because you've got black bear that'll go through a unit with a bunch of fawns and eat every one of them. SL: There's supposed to be more black bears now because they're not being hunted as much anymore. JR: Yeah. SL: There's secondary growth, there's the predators, they're around wanting his food. JR: Yeah."

He indicates wolves and black bears compete for deer. Lower deer numbers are not just caused by wolves; black bears eat a lot of deer fawns in some areas. The dialog indicates black bear numbers are up due to less black bear hunting, and secondary growth plays a role in deer and wolf abundance.

Jon said that in their preferred trapping area, he and his partner would take 8-10 wolves out of the pack based on the wolf sign they would see in that area, implying that they judge or estimate the number of wolves in an area by studying the wolf sign they find there.

SL: “Would you have any set number of wolves that you wish to take, either a ceiling or a target, when you were working? JR: This one area we really liked to hunt. We would take at least—just us, me and my partner alone, we would probably take eight to ten out of the pack. SL: ... why was that number chosen? JR: I don’t know. We just look at the sign—see we weren’t there to wipe them out. Because you need that. Otherwise, if you take and wipe all of them out, these guys [deer] suffer because you got sick and weak animals. SL: You meant the deer. JR: Yeah ... [They] need to be culled out. SL: ... so much deer they’re gonna damage the browse ... JR: And get a disease which you see a lot happening, it seems like.”

Jon said they had no intention of wiping the wolves out in that area, because that would upset the predator-prey balance. Jon indicates the wolves maintain balance in the deer population.

Thomas traps and hunts wolves in areas where people deer hunt to allow them to fill freezers with venison. He has trapped in many places and in the service of many communities.

TG: “... I used to trap Noyes, Baker, and Lulu for the longest time, and that was always good for 30 plus wolves every year, and then I hit Heceta and the peninsula between Naukati and Shinaku. I’d target all those bays and stuff there, and the entire Thorne/Staney Valley. I’d target that because there is a lot of [deer] hunting activity from locals in that area. ... I trapped all the way to Lab Bay. Because a lot of our Native people were driving the roads up there for deer hunting to get away from the Ketchikan hunters that were clustered in the middle, and we’d go all the way—they’d go all the way up there deer hunting, camping overnight and such, and so we went up there. My god, it was anywhere from five to ten wolves every visit. SL: So how often have you trapped that far up, or up that north? TG: I did it for about ten years. But it was never ten years in a row. It was like every other year or every third year. SL: Did you move it around to different areas up there? TG: All the way from Collar Bay all the way around to Red Bay, Lab Bay, all the way out by—I developed the—a dry land set, and I got pretty effective at it to where I actually set five traps on the Kasaan Peninsula and checked ‘em six hours later and had five wolves. ... I’ve trapped Coffman. The mayor, she asked if—what’s the chances of me coming over and working on that pack, because they’re—she says everybody’s freezer’s been empty for several years. I went and drove through there and checked it out, and my god, she was not kidding. So I went back into town after doing an assessment of what the hell is going on around there. I told her, ‘Well, I’m ready to do it ...’”

His expertise is in demand. The mayor of Coffman asked Thomas if he would come trap wolves in their deer hunting area. Where there are a lot of wolves and no wolf trapping, there are no deer for subsistence harvest. Thomas insists that consistent wolf removal will allow for enough deer for subsistence harvest.

TG: “ ... I quickly found out that, *wow*, it fills the freezers by takin’ down this pack and this pack and this pack, and you go back there couple years later, the place is just loaded with deer. ... I had it figured out. I needed deer here, I got all the Haidas deer, I got all the Thorne Bay deer, I got all of Kasaan deer, Naukati—I had deer overrunning Naukati and Coffman Cove, Craig and Klawock. I didn’t have to go but across the bridge to go get my deer, because I took care of that pack back there. I hammered on ‘em for 20 years. And then all of a sudden, my god, I’ve got deer on my back doorstep. I take a five-minute walk up the hill right there, and I had all the deer I wanted. ... Wolf has to eat, and we have to eat. ... I was targeting the Thorne River, built a deer herd up in there when you’re comin’ back from a ballgame in Thorne Bay at night in the dark, you’d count over a hundred deer in your headlights.”

3.5.4.4 How to find Wolf by reading sign

Active trails are the primary indicator of Wolf. Jon says the active trails are worn down, wider than inactive trails, and have marking posts where wolves habitually urinate.

SL: “... what indicators would you use to locate wolves? JR: First thing is if I was heading out into an island or wherever, If I’m gonna look for Wolf, I’m gonna look for sign. I’m gonna look for tracks, I’m gonna look for scat, I’ll look for trails, active trails. SL: “... you distinguish between active and—what difference would that be in terms of the use? JR: Worn down, wide, piss posts. You know, where they’re always marking their territory, wherever they’re going.”

After Thomas agreed to the mayor’s request to trap the Coffman Cove area, he went there to assess where to set traps. Trappers locate wolves and estimate wolf abundance by the sign they observe. Thomas stops when he sees wolf sign to investigate the area; if he finds a pack’s trail with fresh sign, he makes sets.

[Driving Coffman Creek Road] TG: “... after you get out to the first straightaway there was a little curve in the road and there were several piles of wolf crap right there on the road. So I got out to investigate and I got to lookin’ and I could see a wolf trail in the rocks, goin’ down and goin’ through a little tunnel of saplings. When I poked my head through that tunnel, there was a wolf trail carved in the muskeg that deep. You can’t see the muskeg from there, but it was carved that deep into that muskeg. So I followed it on, and I found a sapling and tied a snare off and hiked out onto that muskeg. Oh, my god, the wolf trail across that muskeg was unreal. I just snared all the way down to Grassy Lake and came back up. The very first snare I set I had a wolf in it already. Ha! Two hours! Two hours I was gone, and I came back, I had a wolf, and it was still alive. It was a female.”

This story provides more evidence that when wolves are not trapped, they are not trap shy and can be caught more easily and more rapidly than wolves that have experienced being trapped and are warier.

3.5.4.5 Travel circuit, movements, territories, and habitat use

Jon Rowan from Klawock explains the amount of time it takes a wolf pack to travel around its territory is one month.

JR: “I was going up above the dam, across the river. Because you listen for them, you know, and then you start learning where they’re going and like those guys, the older guys, are saying, if—when you’re up there and you get one, remember the day, remember the week. Because in a month they’re gonna be right back through again.”

Thomas George says it takes a wolf pack seven to eleven days to make a circuit, or roughly every week to ten days they complete travel of their territories.

SL: “... so that pack that had developed in the back of Sunnahe, what would be their territory up there? TG: That pack used to run from Sunnahe all the way to Klawock, all the way down to the bottom of the Harris to 12-Mile Arm to Trocadero Bay, and then back. SL: That’s their circuit? TG: Yeah, yeah. SL: Now is there a time frame in which they move around? ... TG: It is seven to eleven days they move through there.”

Thomas says wolves follow the deer up the mountain during summer as the deer migrate to higher elevations. The wolves are not down in the valleys and on the islands in summer unless they run out of deer and are hunting beavers at lower elevations.

SL: “... I want you to talk a little bit about these trails and how wolves move across the landscape. They mostly use their trails, or do they move through the forest to hunt? TG: They’ve got summer trails, and they’ve got winter trails. In the summertime they’re usually up high because the deer migrate up with the snowline, so the wolves are up and about way up high. So when these guys are doing their wolf studies to assess how many wolves are on the island, they’re all looking through the bottom of the valleys and ... you know, like the only time you’re going to find them down low like that is around beaver ponds and stuff when they’re dammed up. SL: So they will eat beaver? TG: Oh, yeah. It [Wolf] totally devastated the beaver population on this island because they ran out of deer.”

Mr. George shares an account about when he sat down with a biologist. They did a mylar mapping exercise together, and Thomas’ map matched the biologist’s map; there was clear corroboration between traditional ecological knowledge and the telemetry data. Thomas says that wolves go over the saddle to the other side of the mountain, and wolves use the muskegs at elevation in the mountains for sunning and resting. He says that sometimes pack territories overlap.

SL: “... so there are gonna be wolf trails up high in the summer in the warmer periods because that’s where the deer are, but they’re gonna use these trails, whether they’re low elevation or mid elevation or high up? They establish their customary routes;

they just don't move through the landscape ... or both? TG: They occupy territories and in some cases they overlap territory boundaries. I've found two different packs occupying at the same ridge line ... And actually I had a chance to sit down and talk with the biologist, and he had this map like this here of Prince of Wales, and he put a mylar over the top of it and handed me a marker. And he marked off islands and so forth, a boundary around there, and he says, 'In your idea, could you show me what you know about boundary lines of the different packs on the island?' I says, 'Sure.' I went and I drew it in, and I was explaining to him how the wolves moved around there, and I said, 'Now this pack occupies this territory here, and this one and this one here, but they occasionally cross over each other's boundary line here. Why that is I don't know. I don't know if they're related to one another, but they seem to allow it. And he says, 'Okay,' and I kept on drawing it. SL: Do you remember how many different packs that you drew at that time? Approximate? TG: No, but I probably know 'em all yet, but he brought another piece of mylar out on his—all his research on following the radio transmitters and everything to establish, and he put that over the top of mine, and he says, 'How did you figure all this out?' I says, 'Well, I've been chasing 'em my entire life.' You know, I says, 'You've been only out here for a few years.' And he says, 'That's interesting about this pack sharing this territory on this ridge line,' he says, because he monitored that happening. And that saddle trail that I was telling him about, way up in the top end of Shinaku. And he says yeah, he's got transmitter recordings that he followed all the way up through there where they [wolves] did go over that saddle more than once, through those mountains. SL: ... do any 'em go over the main mountain line? TG: I've shot 'em up in the mountains over and over, and sometimes you come out there and my god, there are fifteen wolves laying on the muskeg right out in the middle, just lying there in the sun. SL: Way up high. TG: Yeah, way on top the mountains ... it's crazy!"

Mr. George describes wolf movements among islands. He says a pack will leave an island sometimes for up to six weeks to hunt on other islands before returning to hunt the island they left. A pack will island hop by swimming to find deer and other prey.

SL: "... how did you know that there were wolves on Wadleigh? TG: You could hear 'em. Yeah, you could hear 'em. You can hear 'em on Peratrovich and Wadleigh, you know. There was wolves all over there, howling all the time. Yeah, it's only a couple minutes to 'em across the channel for them. They are swimming all the time. SL: What distance can they swim? TG: They swim out to St. John all the time. SL: The closest to get to St. John is actually probably from Amagura, right? TG: Yeah, Amagura or Fern Point. Yeah, and they also will swim off of Wadleigh onto Fish Egg and across Fox Islands out to St. John that way. ... They swim Bocas de Finas all the time out to Anguilla islands there."

Thomas listed a number of islands used by wolves, including Wadleigh, Peratrovich, St. John, Amagura, Fern Point, Fish Egg, Fox Islands, Anguilla Island, and Heceta Island. He shares a story about his experience trapping on Heceta Island in which the pack had left the island for six weeks. A large pack came back, and Thomas caught over twenty wolves on Heceta.

TG: “I set up the bay, and I went out by the old cannery site, and I found a hell of a wolf trail, so I set all the snares and it was fresh wolf tracks, everywhere I was lookin’ there was wolf tracks, and all fresh. And dang, there was—the beach trail was carved into the beach like I’ve never seen before. And I trapped that place for years and left it alone because they were doing that study. But they [the pack] were gone for six weeks. Not one wolf. I had so much time on my hands setting that place up, I had so much gear in there, traps, snares, you name it, I had everything—where did they go, you know? Then all of a sudden they came back. My first encounter with them was by the cannery. Boom, I picked up five. They killed a doe right smack in the middle of all my snares. They chased it in there and killed it, and they tore it up, tearing, runnin’ in different directions. I got five of them. ... SL: You mean the cannery site at the head of Warm Chuck, is that what you’re talking about? TG: The cannery. It’s on the left side of Warm Chuck as you’re going in. Just above Bay Point, by those—inside those little islands. But up the head of the bay there on the left side I had so much gear in there, yeah, after they passed through there they went up in there, and I pulled in there with a boat and we sat there looking with the binoculars, and just looking I could count seven on the beach that were fighting in traps. Yeah, so we went ashore and started walking into trails and checking my hardware, and it turns out we wound up with 17 on one visit. And I had so much gear in there I told my brother, I says, ‘I don’t want to kill them off because that wouldn’t be good for the deer.’ I said, ‘You gotta leave at least one breeding pair to go, and they will take care of the sick deer so that the disease doesn’t spread through the rest of the deer herd.’ So I says, ‘We’ve gotta pull the—start pulling the gear.’ It took me three days to get all my gear out of there, and by the time I got all my gear pulled, I had 23 wolves out of there. SL: Those were all Heceta Island wolf? TG: Yeah. SL: When you said they went away, you said six weeks there was no evidence. TG: Yes, no sign, no tracks, no fresh tracks, nothing. They swam onto the Anguilla Islands. SL: So that’s part of their circuit, then? TG: Yeah.”

Jon indicates wolves use the beaches all the way to the mountains, and they follow the deer up high, and they will come back down to the coast when the deer move down. Jon has also seen wolf sign at lower elevations in the summertime, indicating that they do not stay at elevation all the time in summer.

JR: “Because they’re going where the deer are. They’re going up high. SL: At what elevation do the wolves operate? JR: And that’s not to say they’re gonna stay up there because I’ve seen sign way down low in the summertime, too. But for the most part ... when the activity is—because the snows up there is deep there’s nothing up there to eat. All—everything is pushed down. So that’s where they’re going, where the refrigerator is.”

3.5.4.6 Pack size

Jon Rowan from Klawock says, on average, pack sizes are six to ten wolves. Thomas George described the largest wolf pack he has seen to be 30-45 wolves; he indicated that he and his deer

hunting partners could not get a count; there were so many wolves. His story is set in the Port Bazan area of Dall Island.

SL: “What size do you think the packs are normally? Numbers of animals. JR: I think probably they’re averaging between six and ten.” TG: “The most I’ve ever seen was just a few years ago in one pack. It was right above Port Bazan. I was deer hunting down there with ATVs, a friend of mine and my son, ... SL: Dall Island. TG: Dall Island, yeah. ... and we had a weather change. It quit raining and then started clearing up and then the temperature dropped 20, 25 degrees, just boom, really quick. And I’m wet underneath my raingear, and it’s starting to get cold. I still got 20 miles of road back to the boat. I told those guys, I says, ‘I’m gonna have to get dried out and warmed up here. We gotta build a fire before we continue.’ So I was sitting on the four-wheeler because the heat from the engine was keeping me warm, and they started gathering sticks and stuff to build a fire, and the sun starts shining way out past where they took the bridge out above Port Bazan there, and I was looking and I says, ‘Hey, look, there’s something running on the road coming this way.’ And I had a two-point buck on my four-wheeler and the wind was blowing right at them and they could smell all that blood. And I don’t know, ten to fifteen wolves ran around, and they were in behind a bunch of trees where the road curved around behind it before it came to where they took the bridge out, and they were all looking down where they took the bridge. ... [We] looked over [to see] two more rows of ten to fifteen wolves coming around that corner. Ten to fifteen went by already, and ten to fifteen more coming around the—it was so many of them we couldn’t count ‘em. ... I’ve never, ever seen a pack of that magnitude.”

Mr. George was very successful trapping the Coffman Road area. TG: “And in two and a half weeks, trapping that Coffman Road, I took 27 wolves out of there. And I said that pack can’t be very much bigger than that.” Mr. George shared his knowledge of the average pack size. “SL: What is your general sense of the size of these packs that move around? TG: On the average, it’s 7 to 11, the average size packs.”

3.5.4.7 Fluctuations in wolf-deer abundance related to logging and roads

Thomas explains why they saw such a large group of wolves in the Dall Island area. He indicates that packs generally do not join together to form larger packs, at least not in this context or situation. Pack size tends to increase when there is lots of prey. Thomas explained that all the logging activity in that area kept the wolf pack off the roads, so they could not access and kill deer. In the absence of wolves, deer abundance went up. As a result subsistence deer harvest was exceptionally good.

SL: “Could that be packs joining for some reason? Do they ever join together? TG: No, this is what happened. Because of all the logging activities that were going on down there, it kept those wolves off of that road system, and the deer population flourished around it. I mean, you could go down there and tag out in three hours of hunting with a four-wheeler. You’d fill every tag you have on the boat. We went up for two hours, the three of us just went to take a look to see what it was like when we first tied up, and in two hours we got seven bucks. It wasn’t even hunting. It was like

shopping. And that was our very first time we ever went up there, and they were still logging there, Sealaska was, and when they pulled out, the wolves utilized the roads and because of the ungulate populations was so huge like that, they had it so easy to get 'em and everything, their [wolf] population just exploded on there. When we were drivin' down there, we were actually choice-selecting what we were taking, and we'd have almost all four-pointers [bucks]. SL: But you didn't take any of those wolves that you saw? TG: No, we didn't see them back then. [He described hearing reports of other hunting parties in that area only harvesting bucks.] ... But that last trip when we were down there, we saw all those wolves, before we saw the wolves, I asked, ... 'where's all the does?' We've been hunting this for five days hard, and all we saw is five does. No fawns. I said, 'Every time we were down here before we'd see 80-100 does, and we couldn't even begin to count how many fawns.' So what happened? Mike says, 'Well, maybe those Tsimshians shot 'em all. Or those Wrangell boys might have got 'em.' I says, 'No, from what I hear they were takin' nothing but bucks.' Then when we saw that big pack of wolves, we put two and three together and decided that was the culprit, you know. They [the large group of wolves] were just totally devastating that herd of deer."

When the logging operation ceased, the wolves began to use the roads again to access and successfully hunt the large deer population. Thomas says that all the deer hunters in the area were getting bucks at the time logging ceased, and nobody was seeing many does or fawns. They wondered if other people had harvested all the does before they arrived, but everyone else was only harvesting bucks. In the end they determined that the large pack of wolves had eaten the female deer and fawns after the logging operations stopped.

There was no evidence in the conversation whether this large wolf pack was a result of quick and successful reproduction in the presence of high deer numbers or if it formed from two or more smaller packs joining together to hunt. In a subsequent follow up conversation with Mr. George, we learned apparently on occasion related packs can join into groups as big as 35 wolves. Thomas called these "super packs" and indicated they can engage in massive deer kills.

3.5.4.8 Denning behaviors

Wolf dens can be found under trees and thick brush. Thomas says you find the surrounding area tore up and littered with bones and feces at a den site. Dens are located near a reliable food source and are used year after year; dens are multigenerational.

TG: "They just had it [den] under a couple bull pines and a cedar tree. There were actually no den [excavated], they just had...yeah, they just had the pups under the protection of the bushes. And there—it was no doubt about it. There was small scat and bones all over the place there. Beaver bones. Because all the way around that muskeg is beaver ponds, pond after pond after pond after pond... The site location depends on the available food source that's there. And this particular situation, it was all those beaver ponds and beaver lodges all the way around. So it was obvious they were—they picked that location just because of the food source available."

Thomas shares an account about locating a den site at Gucki Lake.

TG: “Gucki Lake has a den site. ... Yeah, on the south side of the lake there’s a little, tiny little peninsula like that sticks out part onto the lake, just a little—maybe the size of this building. And up in the middle there’s a den, and I crawled into that one—had my nephew crawl in there, Duane, Jr. And we had to grab him by the ankles and pull him back out, but he was able to get in there okay and he was just a young guy, then, and through a breather hole up there, ‘Here, grab it.’ He handed us a little pup. Eyes weren’t open yet or anything, you know. What a cute little—plays around with it a little while ...”

He also shares an observation of a pack denning up near town on the back side of Mary Jackson, which is a housing development.

TG: “I was up walking my dog at 4:00 in the morning. She wanted to go out, so I got up and was walking around the streets in my PJs and ... there was a whole pack of wolves lit up [howling] on Klawock Flats and a whole pack of wolves lit up on the back side of Mary Jackson, there, howling at each other. I says, ... they denned up right here again.”

3.5.4.9 Pack dynamics, litter size, pup size, and pup growth rate

Wolf pups are taught how to hunt during their first year with the pack. Within six months of age, pups are almost as big as adult wolves. They grow fast, especially when they have a lot to eat; growth rate of pups is related to the amount of food available.

SL: “... what happens to the pups ... there’s some adults, then, left there to feed the pups, or at what age do you think they start eating? TG: They’re taught how to hunt on their first year with the pack. And they’re actually almost as big as the adult wolves on their—within six months of age. They grow fast. And they grow faster if there’s a lot for them to eat.”

Jon says he has seen a group of pups numbering eight running down a road. Thomas also thought eight was about the right number for a wolf litter size.

SL: “How many pups will a mature mating pair produce in the litter? JR: Hm, I couldn’t tell you for sure, but I’ve seen a pack of pups running down the road and there was like about eight of them. SL: Yeah, I’ve heard that’s in the neighborhood. Tom said that, too.”

3.5.4.10 Pack formation and reproductive behavior

Thomas describes the conditions in which wolves will purposively have a population boom. This may indicate the formation of new packs or growth of a single related pack.

SL: “... you talk about seeing singles, small groups, and large groups. ... in your encounters with wolves, how does it break up in terms of I saw a single wolf, a small group, or a large group? TG: When trapping through the month of January and you start seein’ groups of three wolves instead of big pack sizes, and there’s a lot of ungulates around, you’ve gotta take caution because there’s gonna be a boom in the wolf population the following year. I’ve seen it happen over and over and over again.

They split up with a female and drive her into goin' into heat and developing packs all around when there's a lot for them to eat. That's where the population boom comes."

3.5.4.11 Wolf diet, body weight, and coat color

Jon explains wolves eat deer and salmon and whatever they can get. He has heard that the wolves will feed on salmon in the rivers and streams in the fall, and they mostly eat the heads where it is fatty and nutritious. Jon imagines that wolves eat bears; he tells a story about encountering a black bear at the edge of a muskeg that was crawling low to the ground. During this observation, Jon made a wolf call, and the bear quickly turned and ran into the forest as if fearful of the wolves. Jon imagines that wolves will eat marine foods and whatever they find on the beach such as marine mammal carcasses.

SL: "What do they eat? Besides deer. JR: Deer, salmon, they eat whatever they can get ... SL: Have you seen them at a stream in Southeast? JR: I've never seen them myself, but I've heard of them eating [fish] ... especially in the fall when the salmon are in the rivers. And I heard there was a—mostly the head, where it was really fatty, good, nutritious stuff. SL: Do you think they eat bear? JR: I imagine they do. I mean, when I was out hunting in the fall, and I was blowing the call, and this happened to Sambo one time, too. And I saw these two little—looked like two little birds at the edge of the muskeg. And I was like *what the heck?* So I was ready and I kind of tiptoed up and looked. Here it was a black bear, low, crawling. ... So I started howling, and that sucker jumped up, took off, and boy I just kept it going and I could hear him going through the woods. ... SL: Do you think they eat marine foods? JR: Clams and stuff like that? I imagine so. ... Anything [they can get]."

Thomas George shared details about what wolves eat. Wolves prey on several types of birds, marine mammals washed up on the beach, beavers, and beavers out of people's traps. Thomas talked about wolves eating the carcasses of sea lions, sea otters, and pilot whales and shared an account of catching a large alpha female that had been feeding on a beached carcass. The alpha female he caught weighed 97 pounds, and she had been feeding on blubber from a dead pilot whale washed up on the beach.

SL: "What's your comment about the kind of food that you have seen them eating? TG: Well, I've found geese, swans, seagulls, ravens, eagles, you know, all torn up. You know it's wolves that've done it. And sea lions, I've seen them down on the beach munching on a sea lion. They didn't kill it, the sea lion washed up on the beach. But they could smell it, and I've even encountered them munching on a pilot whale on a beach. And I was trapping beaver and right up here where that big Salt Lake subdivision is down there, there's that one pond they call Mallard Pond. We set that up for beaver, and the wolves kept stealing our beavers. So I set up a snare and a trap, and I got two. And the next day I had two more. And the next day I had three more. I thought what the hell is going on. So I set it all up, and I wound up catching a total of seven, but the one that really caught my attention was this big female. I mean she was huge! So I said, 'well, I'm gonna have to weigh this'. I've never seen a female wolf this big. Ninety-seven pounds. And when I went to skin her ... she was

all bloated. I took the skin off and she had canines on her like that. Long, sharp. I mean, and she was the alpha. And I went and opened her up because I wanted her glands in the worst way [for making lures]. ... and her stomach was so full I had to see what was in it. And all it was shreds of fat. So low tide that evening I jumped in my skiff, and I ran the beach back up toward Small Salt Lake and just across from where the Winrods have their boat parked there, there was a pilot whale dead on the beach there they had been eating on.”

The largest alpha male Thomas remembers harvesting weighed 143 pounds on Sukkwan Island. When he first trapped there, the alpha male was only 87 pounds, which is the size of a big female. Wolf body weights are positively related to the amount of food and inversely related to pack size, or wolf abundance in a territory, which determines the amount of food available per individual.

SL: “What about the difference in size? What kind of variations are there in terms of the size that you see? What was your biggest? ... TG: That was 143 pounds, and that—on Sukkwan Island, the alpha male, when we first trapped it, was 87 pounds, and that’s the size of a big female. But only because there was little or nothing for them to eat on that island. SL: So that’s what [food] affects the variation in size. Now what about their color, or color phase? What kind of differences? TG: No, I don’t know what triggers the color, but I came across a couple different packs that produced darker ones, and I actually targeted them pretty extensively that one winter. And I wound up with 19 black ones. SL: From one pack? TG: No, multiple packs. I just come across them. I’d call ‘em in, and I’d shoot one or two of them, and ‘*Oh, shoot, there goes a couple black ones!*’ and I shot too soon, and so I’d set it all up [with traps] and target them, and I wound up getting all of ‘em, and they finally started getting a few dark ones showing up. I got a couple last year, or a couple years ago. But I think Sam Peters might have got one, too.”

Thomas says getting black wolves is desirable. He has harvested a substantial amount of black wolves from multiple packs.

3.5.4.12 Hunting and feeding behaviors

Thomas shared an account in which he observed a place where wolves had killed several deer and had been using the same place to feed for a number of years. He described how certain wolves play certain roles in an organized manner when hunting deer. In this case the wolves were driving deer to a kill site.

SL: “... have you ever seen evidence of the wolves driving deer and then killing a whole bunch of them at once? TG: On the north side of Sunnahe there was a little cul-de-sac below the knob on that ridge. There’s a muskeg on top of the ridge, and the road goes all the way up around to the top of the ridge and the muskeg is right below the cul-de-sac on that road, and there’s a cedar lead strip that’s all through there that the deer hold up in. But there’s that little road on the bottom of that knob down below a little stretch of clear cut. One or two wolves—you could see it in the snow actually what happened, they’d send a couple wolves up that road and drive those cedar strips,

and I would see the hunters, man, I mean, when I first pulled in there I think there was seven deer dead on that cul-de-sac. ... the way I found it was seeing all that raven activity. ... something's going on up there. So I drove up there and my god, in that fresh snow, there was blood everywhere. And I ... opened my box and started setting hardware all over the place in there, and I got to lookin' around. When the snow melted, they'd been utilizing that spot for maybe two or three years, or when they first started logging. SL: Oh, so you saw bones there? TG: Yeah, when they quit logging it, you know, because a lot of those bones had been there for a couple of years. SL: So that's a site where they have historically been able to successfully harvest lots of deer. TG: Yeah, they just didn't have anywhere else to go. They'd just stay there and eat ..."

Thomas indicates a wolf pack will use an area for a number of years for getting multiple deer at once. Thomas has seen deer bones in this place that were from multiple kills over 2-3 years. He referred to this place as a "buffet."

A large pack will split into smaller sized "hunting packs" as a function of food scarcity Thomas says the two smaller groups are from the same large family or pack and will join back together when food becomes more plentiful, and a large kill is made.

TG: "But what got me is I think there was seven to eleven wolves that was goin' around in that area [Heceta Island], but ahead of them and adjacent to them there was probably seven to eleven more other wolves goin' around that same area. They were all the same family. But they were all split up into hunting packs occupying it, because the way it looked, when they got held up somewhere from a good feast, good kill, all of a sudden, you'd have a space between when they'd show up again. Sometimes it would be only three days later, sometimes it would be fifteen days later. And when they'd come back, it seemed like the pack size would have doubled because there would be a lot more tracks. They'd bump up into each other before splitting up equally again, you know. So that's why I asked Mike Douville for help, and he set up Trocadero, and he started pulling twenty a year out of there."

Thomas asked Mike Douville to help him trap this large pack.

Thomas shares an account about a severe winter of 1968 where he and a group of fishers saw a pack of about 29 wolves that were staying near Klawock Lake "a wolf pack on ice all winter." Thomas returned to the area a month or so later, and he found a large number of dead deer that had been killed by wolves and left uneaten. Thomas says the wolves killed them just for the kill. We heard about reasons for this type of wolf behavior in other interviews (e.g., Mike Douville from Craig). He also describes how wolves catch and kill deer.

TG: "No, they actually kill just for the kill. Yeah, because I've seen it. The winter of 1968 was an extreme one. There was the ice in Klawock Lake got so thick that it is expanding out and pushing the banks, uprooting the trees inward. And there was a wolf pack on ice there all winter, and there were—we counted 29 in that pack as we walked the ice up to the mouth of 3 Mile. Henry McNeil, William Charles, Raymond McNeil, and I went up to get some cherry cohos. They wanted cherry cohos for

boiled fish. So we went up and the mouth of that creek to a spot where the water kept it from freezing. ... So we hiked up there and it was a long walk, but boy, there were good cohos. And across the lake there by Hatchery Creek there was a pack of wolves there. ... there was like 29 in the pack, and I started yelping and howling at ‘em. They come running halfway across to us and then got nervous around by [us], and my uncle Henry got mad at me. ‘Don’t do that, I’ve only got seven bullets!’ ... and he had the only rifle among us, and so I quit. But I went back up there in February because it never got warm and all those trees were uprooted away from the lake and the ice was so thick, and all over that lake there was dead deer. And a lot of them were just hamstrung and left. They were just doin’ it to take em’ down. SL: ... typically how do they kill deer? TG: Well, they will hamstring ‘em to slow ‘em down. And bite a chunk of meat right out of the back of the leg and flip ‘em over and then *thoomp*. And it—but a lot of ‘em their throat wasn’t even crushed, they were just hamstrung and left, and one was still sitting upright, and I said, ‘... there’s a live one!’ and went over there and the was dead. SL: Sitting up on his haunches. TG ; Yeah. ... Yeah, they were just killing for the kill.”

3.5.4.13 Vocalization and communication

Mr. George says wolves talk to one another when they have a kill and when driving prey; they make a short howl, which means they are moving fast. When they are on a kill, they make a lot of noise while they fight over who gets to eat first. Wolf whistles when he breathes. And barks on rare occasions. A wolf bark is an omen of death.

SL: “... if you hear them howling before you’ve tried to bring them by howling, why are they howling? TG: Just a means of communication amongst themselves. Sometimes they’re saying, ‘Hey, dinner’s on.’ They’ve got a kill. Sometimes they use it to drive their prey. They have a different howl then. [mimics the howl]. SL: Would you still call it a howl? TG: It’s kind of a howl, a short howl the way they do it. When you hear that, they’re moving fast. I usually just try to keep up with them until they make the kill. You know because they’re on the chase. Once they’re on the kill, it’s [mimics the sound they make]. SL: Would you call that barking? TG: No, they’re fighting amongst each other on who’s gonna get the first bite. ... Yeah, and when that’s all goin’ on, there’s usually ravens [makes raven noises] and with all that ruckus you could walk right up on ‘em ... They make like a whistling noise. [mimics the whistling noise] It’s just the way they breathe. It sounds like a whistle. ... SL: Do they bark like a dog? TG: *Very* rarely, and amongst our Native people, that’s—my grandma [would] say, ‘When you hear a wolf bark, you go the other way and hope that it’s not intended for you.’ Because when you hear wolves bark like a dog, that means you’ve got death coming in your family. SL ... so that’s cultural knowledge. TG: Yeah. Well, it turned out to be true. My brother Bobby and I were hunting wolves in Salt Lake, and the wolves came down. They wouldn’t show themselves. They started barking at us [mimics the barking sound]. ... We’d howl at ‘em, and they’d just bark. They’d never howl back at us, and they would not come out. They would not howl. They [were] just barking at us. And the whole pack, barking all different areas. And that winter, a month later, my dad died right on my mom’s birthday.”

3.5.4.14 Wolf-Dog hybrids

Wolves and dogs are able to interbreed and produce hybrid offspring (Lescureux, 2018). Those offspring are fertile and can continue to breed with dogs in human settlements. The flow of genetic material is usually from a male wolf to a female dog. An oral tradition from Klawock, told to Steve Langdon when he was young, states that village leader John Darrow in the 1910s and 1920s patrolled the outskirts of the village with three wolf-dog hybrids, presumably to keep wolves away from the community. Thomas George once acquired a female wolf-dog puppy, which he used as a source of urine to mask his scent and make lures to attract wolves for hunting and trapping. Thomas tells a story about how he raised the animal and how he manufactured a “passion lure” from its urine when she was in heat.

SL: “Now one of the things that I heard when I was younger here was that John Darrow, the man had three hybrid wolf dogs that he used to go out and patrol the community for wolves’ presence. Have you ever experienced hybrid wolf dogs? TG: I had one. I named her Shadow Girl, and she came from Fairbanks when she was a puppy, and Sylvia Montero’s sister or brother-in-law gave her the pup. And Sylvia was living in Hydaburg, and I was working down there at the time, and I kept eyeballing it, and it was just a small, little thing ... I’ve been around wolves my entire life, and I could see the resemblance of a wolf immediately. Soon as I saw that dog running on the side of the road [expletives] ... there’s a wolf, you know. So I did some inquiries around as to whose dog it was, and I knew Sylvia, and I told her, god, you know, I’d love to have a pup and if she ever breeds it. Well, make a long story short, a month later she calls me up, says, ‘You want my wolf dog?’ I said, ‘What’s goin’ on, Sylvia?’ She says, ‘Tommy, [she explained she was seriously ill] ... I just need her to go to a good home, and I know you’ll take care of her.’ I said, ‘Sylvia, I’d love to keep your dog.’ So I raised her, and I actually used her urine on a lot of my sets, and when she’d go into heat, I’d collect it and stabilize it with sodium benzoate, so I could have it in a spray bottle and spray my boots and walk through my sets. And I’d set up Polk Inlet, and I had those wolves so in love in there, they would not leave the bay. I took seventeen male wolves out of that bay, all males, big males.”

Thomas George has had extensive contact with hybrids, raising a hybrid female who had numerous litters of offspring. His commentary reveals a number of significant aspects of the behavior of the female hybrid. He recounts that another Klawock resident also had a hybrid wolf-dog and discusses events that occurred when the two animals came together.

TG: “That Shadow Girl ... even though she was a hybrid, ... she had that strong [will]; she’d never bark. Once in a while you’d hear her howl just the most beautiful sound you ever heard, and this one day, our neighbor down the street there—he got this hybrid dog, and it was a big monster. And he had it for about a year, and my Shadow Girl was on a twist-link chain. Boom, boom, and she was snapping at the chain. What the heck is goin’ on? I ran out to see what all the ruckus was about, and here that big dog got over in front of her and into her... [territory]. And she’s punching at the chain, and pretty soon, *pow*, she broke it. That big hybrid wolf dog took off running and as small as she was, she caught him up in just a flash and she nipped him on the

back of the leg, flipped him over, and just went [makes a sound]. And she started running back, you know, coming back to me—I was calling her. And that other dog got up and took off running, running like hell, and the owner was looking out there. It was Shanky Peratrovich. He goes, ‘Hey, you better keep that [expletive] animal chained up!’ I says, ‘She was chained up, and she broke her chain because your dog wasn’t chained up, coming over [to] her.’ And the dog dropped dead right at his feet, *whump*. When I saw what she could do, ho, man, my blood turned cold, and I could not tolerate the thought of her doing that to some little child, you know. So I took her out and put her down ... because I didn’t want the responsibility of some little kid getting their throat torn out.”

Shadow Girl was friendly with the family but untrainable. They bred her with a dog, and she had eight pups of which she was highly protective. Mr. George shared an account of how Shadow Girl interacted with his wife and himself while she was caring for the pups. They determined that the hybrid female had eaten the female pups, and Thomas thought she did this to eliminate competition in the pack.

TG: “Yeah, and she was just a hybrid, and I couldn’t train her, couldn’t do anything with her. And she loved the hell out of us. She had eight pups. Yeah. And on the second morning, my wife was the only one that could go in and play with—and handle the pups and look at ‘em, and she’d just lick my wife’s hands, you know. If I tried to do it, *wham!* I mean I had holes on my hands. I had holes—see? Yeah, she [makes growling noise] ferociously ripped me up, wouldn’t let me touch ‘em. But my wife can hold ‘em and play with ‘em, and she determined there were four males and four females. On the second morning, she went down there, and I says, ‘Hey, come here. Check this out.’ I says, ‘I could only see four.’ She says, ‘No, there’s eight.’ I says, ‘No, there’s not, there’s only four.’ She went down there and looked. Only four. Four males. During the night, she ate the other four females. She didn’t want the competition in the pack. Yeah, you talk about a cruel, cruel world. I mean. We bred her with a big husky and my god, those pups got *huge*. Skip Warren had one of ‘em, and he was like 190 pounds. Yeah, I mean, got forearms on ‘em like this big around and just—although you couldn’t train ‘em or anything, you just strictly to a chain, you know, and just as friendly as you could possibly imagine.”

Thomas George’s account describes a longer time of living with hybrids and therefore a variety of experiences. His female hybrid provided protection and was the source of a successful wolf lure, but she was essentially untrainable and dangerous to other dogs and potentially people. The disappearance of the female pups from one of her litters and Thomas’ interpretation that she consumed them is a unique observation made in this study.

3.5.4.15 Predator-prey dynamics, trapping cycle, model of wolf health

Thomas George explains when there are too many wolves, they run out of food and become unhealthy. There needs to be a balance through wolf management. Thomas shows Steve two photos, one of a healthy wolf, after substantial trapping on the island, and one of a skinny underweight wolf in the absence of trapping (Figure 18).



Figure 18. Photos to illustrate wolf health. The top is Wolf with good body condition, and the bottom photo is Wolf with poor body condition. Courtesy of Mr. Thomas George

TG: “It’s a good example of conservation does not work. You see how big that dog [wolf in the photo] was? Hundred and 43 pounds. That is one year after we had that 168-wolf harvest on the island here. He did not have the competition to go after food. SL: For game ... So the size—the ones that are there increase in size? TG: Yeah. Here’s what conservation does. Look how skinny that is. SL: I’m not seeing it right. You’ll have to explain that to me. Oh, there’s no fat in that gut, is that what you’re saying? TG: Um, that’s a shoulder blade. There’s no meat on it. And those ribs, there’s nothing’ on it. This is a full-grown adult female wolf, wet. She weighed 50—or 30 pounds. SL: What, oh, now what accounts for her condition? Why is she like that? Because she can’t eat? TG: There was no food out there for her. She’s still retaining that hunting area as her domain. But there’s nothing for her to eat out there.”

Thomas traps a wolf pack on a three year rotation, and he leaves at least one breeding pair to rebuild the pack to ensure the deer stay healthy. He says if you stop trapping for more than three years, the pack may substantially increase to larger than its original size. He says that a 3-year trapping cycle ensures a healthy mature wolf pack.

SL: "... How do you choose a site in the sense of why did you decide that you were going to be working Heceta, or when you decide to work any area, what is your thinking about picking it? TG: I used to do a three-year rotation because the—after the third year, if you leave it alone for more than three years you're gonna wind up with a wolf pack that's more than 200 percent of the original pack size when you first went in there. SL: Within three years. TG: Yeah. So I targeted the packs on a three-year rotation. Anywhere I trapped I'd really work on taking that pack down, but I always made sure that I tried to leave at least part of a breeding pair, if not a breeding pair, behind. And going with a three-year rotation, you wind up with more mature wolves than you would catching a whole bunch of pups."

Based on his experience, Mr. George reiterates if not trapped or hunted for three years, with a good food source, a pack can potentially increase by 200 percent. His estimate was corroborated by western science after discussing it with a wolf biologist.

SL: "... in your three-year cycle, ... you knocked them down to some relatively low level and within three years their reproduction rate allows them to get back to that same level or more. TG: In three years, in my experience, if left alone, they can come back 200 percent better than the original pack size. And I brought that to the area biologists attention, and ... He says, 'Are you sure?' I says, 'Yeah, absolutely positive.' And he pulled out some paperwork for me to read. It's exactly the same findings that he came across. SL: they have enormous reproductive capabilities? TG: Yeah. Well, if the food source is available, and you've got a low mortality on them."

Thomas gives a caveat on pack-size growth: there has to be a good food source for them and low mortality in the pack. Mr. George's estimate of a potential 200 percent increase in pack size in three years is corroborated in the case of the Honker Divide pack. Four years after trapping ceased, the wolf pack at Honker Divide grew from 11 animals to 36, which is a 227 percent increase. Trapper access to the pack ceased when the road was gated for the purposes of continuing research on the pack.

Thomas says trapping a large pack that has not been trapped for more than three years results in catching a lot of young wolves and pups for which there is no fur market. Other interviewees have explained that when you first start trapping a pack, you first catch the younger wolves that have little experience with traps, and they are not trap shy or wary.

TG: "I worked that Hydaburg area for a couple of years and built up a hell of a deer herd on Sukkwan Island to where I couldn't hang a snare anymore. And the wolves that I initially took off of there the first time settin' it up, only one was worth any value. Because they didn't have the nourishment to put hair on 'em. There was no fur, and the fur on the rest were all dull and kinky and, you know, from being undernourished. And they were all skinny little runts, every one of 'em. And I let

them alone for three years and went back and set it all up. I caught nine again, and only two of them were not marketable. The rest of them were big and plush, just silky hides on ‘em, you know. It’s amazing what a turnaround. And they had so many deer on that island, they had plenty to eat, and they flourished. But I could see, because of leaving ‘em alone for three years, if I left ‘em alone for four years, boom, they’d kill that deer herd off overnight, and so... Oh, it makes a healthy wolf—overnight. ... SL: So they have enormous reproductive capabilities, then. TG: Yeah. Well, if the food source is available, and you’ve got a low mortality on them.”

Mr. George explains how wolf health and fur marketability are a factor of removing enough individual wolves during a three-year cycle of subsistence trapping.

Thomas uses deer abundance and difficulty in deer harvest as indicators to determine where he is going to concentrate on wolf harvest. He understands the relationship between predator and prey abundance, and he uses this knowledge to guide his wolf trapping and hunting behaviors.

SL: “... do you have any sense of its impact [on] next year in terms of the population numbers, or on deer harvests? TG: I’d always determine where I’m going to be concentrating on harvesting [wolves] while I’m deer hunting. How much effort do I have to put into deer hunting in this area versus this area, and why doesn’t this area [produce deer]? ... it’s been a better environment for deer than this one, and there’s more deer over here, so you put two and two together and there’s got to be a problem or something developing over here. So that’s when I’d concentrate on [trapping]. SL: That’s how your indicators are that you use. TG: Yeah.”

One experienced wolf trapper and hunter with high success can affect subsistence harvest over a large geographical area, benefitting many communities.

TG: “Well, the truth of the matter is, when I was hard at it, I had every freezer on the island here full of venison, including Ketchikan, Saxman, Metlakatla, Wrangell, and Petersburg. ... Yeah. Everybody was happy, everybody was a great hunter.”

3.5.5 Central Islands (Craig): “But we do have a good population of Wolf.”

Mr. Mike Douville is an elder and long-time resident of Craig, Alaska. He was interviewed April 23, 2022. Mr. Douville is 73 years old, and his Tlingit name is *Gitwaayne*. Mr. Douville is a Crow (Raven) Beaver (*Deisheetaan*). He is an expert on wolves and has been hunting and trapping on the land in the Craig area since he was 15 years old. He started hunting with an old friend and mentor named, Bud Thomas. Mike was also taught how to trap by Claude Hanson and Lester Nelson. Mike describes his first year of trapping and how he got started. There was a bounty on wolves at the time, so there was economic incentive to learn to trap. Up-and-coming trappers got support (e.g., credit, seed money) from others in the community who wished to invest in the trapping venture.

SL: “... And do you recall your first sighting or interaction with the wolves? MD: No, I cannot remember. I remember we used to hear Wolf ... Oh, I was like fourteen or

fifteen years old. I used to go hunting with an old friend of mine, Bud Thomas. Yeah, we had contact with Claude Hanson, he made his living trapping and wolf hunting, seal hunting and at that time, actually, hunting eagles. There was a bounty on eagles as well as seals and wolf. And Bud was also a wolf trapper, him and Lester Nelson, they used to trap together in the winter, and he would always tell me stories about it. And Claude also [would] tell me stories and actually how to trap, how to make sets, so that perked an interest, but not only that, there was a \$50 bounty, which made it kind of attractive, too. So when I was like 15 years old I build a skiff. I didn't have a boat of my own to get around, so I built one and then started with the instruction I got from Bud and Claude, I started to trap Wolf. But my first year I just had some otter traps and they're not really what you need to catch Wolf with. You will catch some, but you'll also miss them, and they can get away from you with a smaller trap. So when I was 16 I bought a dozen real wolf traps from Tex Yates for \$150, and he actually fronted me, trusted me to give me credit, and I bought a dozen traps and then started more serious trapping. But I could only put two traps with the one set, and I could only have six sets, so you would catch two wolves and then they'd steal your bait, and they'd all go away. So it wasn't near enough."

3.5.5.1 Historic abundance and habitat changes through time

Mr. Douville says in the early days of his trapping career he took far too few wolves to affect the population. The areas where Mike trapped when he was young were pristine before logging became more expansive. Mike says wolves were widespread and deer abundance was good decades ago when the feds were using poison to remove wolves and collecting bounties. The bounty on wolves helped residents purchase fuel. He says even with the incentive of the bounty and increased local trapping effort the wolf population did not decrease. This may imply that after the federal government stopped using poison, the wolf population increased, or they moved back to territory they had abandoned as a result of poisoning efforts.

SL: "... in what locations did you begin with your trapping? MD: Well, in reality, looking back, I didn't harm the wolves back then because I only had just a few traps, and I had them up at Big Harbor [Trocadero Inlet south of Craig]. I had a couple sets. I had a couple sets on San Fernando [Island] and sometimes I'd put some in Port Estrella, but that was about the extent of it. They [wolves] were really widespread, and I was catching Wolf, but in reality it wasn't harming the population at all, didn't make a dent in them. SL: Well, in the time frame you're talking about and in the areas that you're talking about there had been no logging ... oh, there's Jim Sprague logging at the mouth of some, what do they call it, A-frame? MD: Well, he did Cat logging. There was a little bit of Cat logging in Big Harbor, which is which is Trocadero Bay. Local name is Big Harbor. There was a little bit up at the head of Port Estrella and Port Dolores, but those were just Cat logging. It was pretty much pristine. SL: Exactly, not like what followed afterwards. So in those years you were also providing food by hunting deer. MD: Correct. SL: And what was your sense of the deer? What did people talk about in terms of deer abundances through time, as you recall? MD: The deer abundance was actually pretty good. ... in the '50s, they [attempted to] eradicate Wolf by the federal fish and game, and they used a poison called strychnine.

... up until about the mid-'60s or maybe even close to 1970 there was quite a bit of deer. And then when I was about 16, which would be, '66 or '65 I started trapping. The Wolf started making its presence again, and there was still a bounty on them, so Wolf was quite valuable because a barrel of gas cost \$35, so you could—if you got a wolf you could buy a 50-gallon barrel of gas. So it was really quite valuable, really, for me. But by the early '70s we had a really strong wolf population. It just rebounded, just—it was just amazing to see how much Wolf—the population grew. SL: ... let's talk about the late '50s and '60s, then. Claude Hanson is out there, Lester's out there, and then you come along. There's a pretty big incentive, so do you think there was enough effort across you guys to knock the wolf population down? MD: No. SL: There was not. ... so what accounts for their rebound ... What might account for why the increase of wolves at that time? MD: Well, when the federal fish and game quit trapping [poisoning] them, there was some effort, but the effort that I saw was they'd go out—Bud and Lester would go out in a big boat every week or ten days to check their sets. ... it was just kind of a thing to do. They were younger and didn't mind doing it. But they didn't catch enough of them.”

3.5.5.2 Current population status, habitat condition, and trapper response

When Mr. Douville talks about wolf abundance and population health, it is always in the context of deer abundance and population health and also deer availability for subsistence harvest. For Mike, discussions of predator-prey dynamics include humans harvesting both deer and wolves to achieve and maintain balance. In this case, he integrates the current condition of forest habitat into his explanation. He says the population of wolves is good and healthy. If trappers can remove just enough wolves, the deer should be okay. As it is now, the deer numbers and subsistence deer harvest are going down.

MD: “But we do have a good population of Wolf. I mean, our population is high enough to where our deer population is—the deer harvest numbers are still going down, and they will continue to go down because we're not able to keep the wolf population at 100, 150. I would think we could probably maintain, but we're not going to build a deer population like we had in the 2000s because all through the '90s and 2000s, up to 2010, we were able to trap like hell. ... So we have two things: you have stem exclusion and a high wolf population, and we're still trending down.”

The secondary forest conditions are negatively affecting the deer population. The deer population has at least three interrelated things against it. Mike says deer are at high risk due to secondary growth, deep snows in winter, and wolf predation. Stem exclusion in secondary growth forest limits the ability of deer to utilize that habitat. There is no cover for the deer in winter in secondary growth; the snow gets too deep. They try to keep the wolf population down to a manageable level.

SL: “... You had made a comment about the impact of the secondary forest having on the ability of the deer population. What are your feelings about that? MD: I think it's high risk—we're at a high-risk time because we have so much secondary growth that doesn't support deer. Geographically we have enough ground to have deer, a good population, but then you have predation. So we're at high risk because of snow. It

could decimate the deer population, which it probably did this winter some. But in the short term, if you keep the wolves at a manageable level, then you'd have deer. But for quite a few years we were able to trap all winter, and we kept the population down, significantly down."

Mike says the most he has taken while wolf trapping is 31 animals and he averaged about 25 per year for a number of years. He said this did not seem to adversely affect the wolf population by any means.

SL: "... what is the most that you have taken in a year, in numbers? MD: I believe 31. I was averaging close to 25 a year for several years. SL: ... what is your sense about that number in terms of the relation to the wolf population? MD: Well, at the time I was doing it every year. I mean it was okay. There seemed to be plenty of wolves."

Mike now focuses his trapping efforts on the nearby islands to keep a small area that's got a good enough deer population so the community can get meat. When trapping stops or is not seriously and consistently pursued, the wolf population increases quickly.

MD: "So the only thing I can do is trap on the islands here and keep a small area that's got a decent deer population so we can get meat. SL: ... in your experience, there've always been wolves on those islands, even when you're trapping? ... MD: There are some. Yeah, there's still Wolf. Not as many as there were before because I've been working on 'em for several years. But soon as you let your thumb off of it, they'll regroup, and you'll have a pretty good population. It doesn't take too long."

Decreasing deer abundance is an indicator that wolves are doing well, and their population is at a viable level. There are plenty of wolves, and they need to be managed to improve deer abundance.

MD: "We've got plenty of wolves. I mean, they're not a problem. The deer population would totally indicate that. The deer population is going down, which means you've got so many wolves that you can't even level either one of them off. And try to keep it at a sort of a level. They'll never be a level, but you can hope for sort of one. ... you don't have to kill them off. It's never been my desire to do that. Well, maybe on a couple small islands. But for the rest of it—to me, I'm getting older, it's not worth the effort, you know, so long as I have a smaller place to hunt that can produce quite a few deer, but the local population gets onto it, too, and it's really kinda hard because they're as bad as the wolf, too"

Mike has no desire to kill all the wolves, he seeks balance. He is getting too old to put in the required effort, so he tries to have just enough deer to get meat, but the local demand for deer is going to exceed his ability to produce enough through the local management system, using subsistence wolf trapping. He indicates during times of low deer numbers competition among local subsistence hunters and perhaps non-subsistence deer hunters can be a problem.

3.5.5.3 Predator-prey dynamics, threats and vulnerabilities, and trapper response

Mike took a break from trapping wolves in the mid-1990s because the quota was so low, and he switched to steelhead fishing until the harvest was restricted. He was having trouble getting deer at the time he stopped steelhead fishing. Mike had to start trapping wolves again to allow for the deer to return. He says there was a pack of wolves on each side of Trocadero Inlet, howling during deer season in the early 2000s. This made the deer skittish and wild, and deer hunting was difficult. He started seriously trapping again and harvested 30-31 wolves that season. Mike has observed that trapping wolves can increase deer numbers unless the deer population goes too low. Then, it takes about a decade for the deer to return; this is for St. John Island.

SL: “So as a result of your efforts out in the islands, of taking those wolves, can you see, when the wolves come back up, how that affects the deer population as compared to when you’ve taken the wolves down? MD: For a while I didn’t trap wolves as heavy as like in the mid-’90s, ’94, ’95. I used to like to go steelhead fishing. And I was pretty busy [with fishing and working] ... I was having trouble getting deer. I’d go to Big Harbor and there was a pack of wolves on each side of the bay howling, and you’re trying to get deer. So I said we’re gonna have to do something about this. So I got all my gear together and really started. We were struggling. But when the wolves are howling, the deer are so wild, and they’re really hard to get. So I started trapping seriously again. I think I had 30, 31 wolves that season. And I was trapping up at Trocadero, Suemez, and on the outside islands. And it took twelve years to get the wolves on the outside islands down to where we had deer again, twelve years of hard effort. So it takes quite a while to do that. But we had a real blossom of deer for a while, and then ... I didn’t quit trapping, but kinda slacked off, and we had deer for a while. And then the wolves repopulated again and so now we’re repeating the cycle. So the population is not real strong out there now, and last couple of years we’ve had good success hunting there, as opposed to what’s going on Prince of Wales. But part of that was because the [wolf] quota was so low I focused my effort on where we’d get our meat. ... So it has made a difference with the exception of St. John where the deer population got knocked down so bad it’s gonna take ten years for it to come back if you keep the wolf off or at least to a lower level.”

He indicates deer can be healthy, and winter culls deer when they become overpopulated. Deer also will avoid wolves by moving to places where it is harder for wolves to catch them like brush piles or steep country. Deer are pretty good at dealing with predators, but wolf will eventually win out.

SL: “ ... Does the presence of deer predation affect the quality of the deer? I mean, are the deer healthier ...? MD: ... the deer can be pretty healthy. They just go to live in places where it’s harder for a wolf to get them or sneak up on them. So they’re pretty good at dealing with predators, too, but in the end they will lose. But they hide in brush piles where you can’t sneak on them or things like that, steep country ... SL: What would happen to a deer population if there was no predation, no—either humans or wolves, say, on one of the islands? MD: The deer population would go up, sure. SL: You never had the experience, but when it reached its peak, what would

happen to it? MD: I guess in the past you'd have tough winters and stuff, ... when the deer population overpopulates, they're not as fat and as healthy to withstand the winter, and that will thin them out because they're not as good a shape. You don't get as fat because the browse is all gone."

Mike indicates in the absences of subsistence hunting and predation by wolves, deer can become overpopulated and succumb to hard winters and deep snow. This will bring things back into balance. Deer do not necessarily need a predator to stay healthy.

3.5.5.4 Territory size, movements, and travel patterns

Mr. Douville says heavy snows and hard freezes shut wolf trapping down. These conditions render trappers' equipment useless, and the wolves do not travel in deep snow, especially in mountain passes. He says wolves will isolate in an area during heavy snows and move when conditions improve.

Wolves cover a 30-mile area in one to two weeks in the Craig area. Wolves generally use trails but will scatter away from trails from time to time. Mr. Douville says wolves travel across muskegs using trails; bears use these too, but deer do not like to go across a muskeg in the open. Wolves and bears use the same trails, but the bears do not make trails. Wolves make the trails, and Wolf is the primary user of the trails. Wolves have pee posts in the muskegs that they use to mark territory just like a dog will pee in the same place.

SL "... in terms of winter or other kinds of climate conditions, do those affect your success? MD: It does. Heavy snow and a hard freeze will just about shut things down. ... the wolf doesn't travel, either. They won't go over the mountain passes and stuff. The valleys and stuff get too snowed in, and they don't like to go through deep snow here. So that keeps them isolated in an area until conditions get better, and then they'll come across again and start their normal travel. They seem to travel in about a 30-mile area. SL: Circuit, kind of? MD: Yeah. SL: Is there a time period that they cover that area? MD: One to two weeks, generally. SL: And how do they travel? Do they have trails that they stay on? MD: Absolutely. SL: In a single line, or do they spread out? MD: No, they have a trail. They'll scatter off of it, but as a general rule they go down a trail. SL: ... do they go around muskegs, across muskegs? MD: No, they'll go across a muskeg. They like to go across muskegs. Deer don't, particularly, like ... whenever I was flying in an airplane you can see these lines going across the muskegs, you know, and I always, before I knew better, I thought those were deer trails. They're not. They're wolf and bear. SL: Bear ... do they use the same trails? MD: They do. A bear doesn't make the trail, but he uses it. The wolf is the primary user. But they get out in these muskegs, and they have their pee posts and places where they scratch and stuff like that. It's important. They do it. Just like a dog."

Mike has experience observing wolf sign since he was a teenager, which allows him to know where Wolf goes. He describes Wolf as a creature of habit, and their habits are as reliable as clockwork. Wolves have travelled around the islands in a similar way several times in the past three years. Mike says the wolves will island hop and stay until the deer are gone before moving to another island.

SL: “So let’s talk a little bit about Lulu Island in terms of your deciding to make sets there. ... how would you select your site?... MD: There are three or four places that they [wolves] like to frequent, really, like clockwork. SL: How do you know that? ... I’ve trapped there since I was a kid ... since I was a teenager. And I know where they go. The Wolf is a real creature of habit. And they all go the same way. SL: Do you think that those island wolves, then, they’re different on different islands, but they can swim, do they constitute one kind of population? MD: They can move around. They—the last few years they’ve been coming from like Heceta Island and coming across the Hole in the Wall islands, and then they go to Noyes, and then they cross from Noyes over to Lulu and San Fernando or any of the other islands. They’ve done that several times in the past three years or so. SL: ... to get to Noyes is actually closer if you go down to Kelly Cove. That’s a much closer. MD: So when they’re crossing, they don’t just make a beeline. They live on Anguilla’s for a while. I was there three years ago. I went into a hole there. It’s a good place to get deer. The beach is kinda like mud and stuff, and there were no deer tracks. The wolves had come across there, and they’ve lived on there long enough, they’ve got all the deer, and then they moved across to Hole in the Wall and hunt there, and they worked their way across. So the only tracks in there were honker tracks. There were no deer tracks, and there were no wolf tracks, either. And it used to be, in the ‘70s and early ‘80s there was pretty good deer hunting out there. We used to make special trips there to get deer. SL: To Anguilla? MD: Yeah, it was good. SL: And so those wolves came from Heceta. MD: Yeah.”

Mr. Douville says when food is scarce or difficult to get, Wolf will move. There may be a few deer left in the place the wolves left, but it will take years for them to build up their population. Regarding wolves moving from island to island, Mike says some wolves do not like to swim, so they will be left on the island to continue to hunt. Sometimes the entire pack will move.

SL: “Now is it possible that in the cycle that you’re discussing that St. John’s could end up with virtually no deer and virtually no wolves at a low point in the cycle? MD: They [wolves] will move. When the food gets too hard to get, they will move, and there are generally a few deer left. But it takes years to—for them to build back up again. SL: So the cycle is that the wolves will continue until they can’t get any, and then they will move on. MD: Yeah. SL: So we know that they’re out on other islands, and they can get to other places. MD: But the problem is, a wolf is sorta like—they’re just like a dog. Some of them don’t like to swim. So most of them will leave, but sometimes they’ll leave one or two behind, so that keeps the [deer] population down even longer. And that’s what I see. So I guess sometimes they can all move.”

3.5.5.5 Hunting behaviors, prey, and diet

Mike says when deer have no experience with wolves, they are easy for Wolf to kill, and Wolf may take more than he can consume. He does not know for sure but thinks it may be the younger inexperienced wolves that do this. He offers these observations on an occasion where wolves killed and did not consume multiple deer on St. John Island near Craig.

MD: “I went over there and here’s a dead deer, and geez, there’s the wolf tracks, and so those deer had not had a predator for many years and the wolf is like a dog in a chicken coop. If the deer—if it can catch the deer, they kill way more than what they eat. So they’ll decimate a population like that. And that’s what happened there. We saw several kills that weren’t even eaten. They were dead deer that the wolves could catch easy, and mostly smaller ones, but they killed them and didn’t really even eat them. I mean, that’s what happens when there’s a good deer population and, they don’t have a fear of a predator like they should. SL: ... do you think they’re using those events to train the younger wolves to learn how to make a kill? MD: I don’t know. It’s hard to tell. I would think that might be the younger, inexperienced ones that would go and kill and not eat them. Because it’s just there, and they’re younger and more susceptible to do that sort of thing.”

Mike explains that wolves catch smaller younger deer and fawns in winter because these deer cannot get away as easily and are inexperienced with predators. He says wolves primarily use stalking to catch deer, not driving. People used to drive deer as a successful hunting method, but wolves do not.

MD: “And trust me, the Wolf can take any deer that he wants, but they mostly eat small ones. When I’ve cut these wolves open and looked at their stomachs, a lot of the—most of the time the hooves in there are little guys. They eat—especially if there’s a pack, they will start eating down a leg, like a pretzel if you will, a straight pretzel. They eat the hooves and everything. I’ve seen them with whole ears in their stomach, a whole deer ear, swallowed whole, you know. SL: ... so now the deer fawn when, in May or June ... MD: Yeah, May and June. SL: ... is that a time when the wolves would be particularly after those fawns at that age? MD: They do catch a lot of ‘em then, but they catch ‘em over the winter, also, because they’re easier to catch. ... they’re just not as smart. They’re just not as worried, can’t get away so easy, so the younger deer predation is much higher on small ones than it is big ones.” SL: ... there’s two accounts I’ve heard of wolves driving deer to particular sites for kills. Do you have any experience like that? MD: No, I don’t think so. They can catch deer. I don’t know if it’s easy, but they don’t have any trouble getting deer. They can smell ‘em, they can sneak up on ‘em, and get ‘em. SL: ... but in your sense there’s no reason for a wolf to do that, to be driving deer ... MD: No, they can get ‘em without doing that. But people used to do that.”

Mr. Douville says wolves are opportunists in the Craig area and eat a wide variety of foods, including deer, beaver, swans, mink, marten, salmon in streams in the fall, spawning needle fish in the intertidal and beaches, and wolves will scavenge carcasses on the beach. Wolves’ preference is deer, and beaver is a delicacy to Wolf. Mike also explains the difference between bears and wolves in the fall feeding at salmon streams; the bears stay until the food is gone, while Wolf eats for a day or two and moves on. “They’re [wolves are] always moving.”

SL: “... what do wolves eat, besides of course deer and how do you determine that by looking at their stool or something inside their stomachs? MD: They eat mostly deer. I’ve cut open lots of wolves and most of the time they’re eating deer. They will eat

beaver also, is a real delicacy for them. If they can get beaver, they will certainly go after them. I've seen them eat these big swans. But I think it just—it's not something they target. They just will go after them if the—like they're opportunist, you know? They'll eat mink and marten out of your traps. They'll scavenge off the beach, also—Anything that dies and drifts ashore ... they actually will even eat these needlefish when they come ashore to spawn, you know? They bury in the sand; when the tide's down, they eat those. They eat fish in the creek in the fall. They're not like a bear; they don't live there and keep doing that and live there until there's no more. They keep cruising. They never stay in one place for a day or two or whatever, and they keep moving. They're always moving. So they'll eat fish for a day or two and then they're off to go somewhere else. SL: Well, that's a—that's a pretty wide range of diet. Do you think they'll try to eat shellfish or anything, like bears? MD: No, I've never seen them do that. I've never seen any evidence. I suppose they—if push came to shove they would.”

Mike says wolves like to eat bear if they can. Mike told a brief story about accidentally snaring a bear that was eaten by wolves. It was totally gone except for the bones. Mike is not sure if wolves actually hunt bears, but he thinks they probably would if they had a chance to take a cub.

SL: “... what about their interactions with bear? Have you ever seen any evidence?

MD: They will eat a bear if they can. They do like to eat bear. I've accidentally snared bear, and you come back and there's nothing left except the bone that was the snare's around, and the bear is totally eaten up, totally gone. They eat it. They like to eat bear. I don't know if they actually hunt them; they probably would if they have a chance to get a cub or whatever, but they will certainly eat them. Nothing left.”

3.5.5.6 Pack size and dynamics, hierarchy, mating, denning, and feeding pups

Mike says there is generally one pack per island. The largest group Mike has seen is 12 wolves on Noyes Island. He said there were more wolves there at the time, but only 12 in the group he observed. He says the breeding season is February when one starts to see single males cruising around looking for females. During the breeding season, the pack will break up into one to two mating pairs to den up and have pups, and the other nonbreeders in that pack will run and hunt together but will not be mating or denning. The entire pack does not live together in the same place raising pups during the breeding season. Mike says in the fall, the pack members will come back together to form a larger group.

SL: “ ... in your mind, how are they organized in terms of their packs and the territory for those packs? How do you see that organization out there? MD: Generally, there's just one pack on an island. There may be some that are not with the pack at any particular time, but as a general rule they're all together. SL: Now, when you've seen wolves, do you see them as single individuals, small group, or a pack-size grouping? MD: You'll see singles in February when they're—when they have their breeding season. You see more singles then, big dogs, looking for females. ... a lot of people would like to believe that they mate for life, but you see these singles looking for females during the breeding season. They're on their own, and they're cruising. SL: Do you ever see small groups, by which I mean five or less together? MD: You do. It

depends on how big the pack is on an island. You see them as many as a dozen, you know. SL: What's the largest grouping that you might have seen? MD: I've seen like twelve on Noyes Island at one time. But that wasn't all of them. That was that pack. There was more than that on there. SL: On that island. But so when they divided in those units, is that for purposes of hunting or for looking for food, or how is that? MD: I think that what it looks like to me is a couple pairs of that pack will pair off and have dens and stuff, and then the others are running kind of on their own. So they're not breeding or anything [the ones running on their own]. So they don't all live in the same place, you know raising a bunch of puppies. It doesn't look like that to me. But a couple pairs of them will have den sites and the rest of them are just kind of cruising and hunting, you know. And they seem to regroup come fall. SL: Oh, okay. By that you mean there is a larger group that comes together then. MD: Yes. SL: Oh, and that's cyclical, or seasonal. It happens during certain seasons, they come—they will get into bigger groups. MD: Yeah. SL: And then they will occupy a single den area, I mean, they'll all be in the same den area? MD: Not the whole pack. I don't think they do that. But I think that pair will raise a batch and then they'll rejoin the group.”

Mike has observed bone yards near den sites. He says prey is brought back to the den site for the pups until they are big enough to go hunt with the parents. This is evident by the presence of bone yards.

SL: “Oh, okay. So have you seen den sites? MD: I've seen a couple on camera, and I've been close to den sites, but I have never looked for it exactly. There was no one interested in doing so. But there was just like a bone yard. Deer bones everywhere in a little muskeg. SL: So that implies that they can pack the food or the animals back to the den site. MD: They absolutely do. SL: That's what—they pack it back and that's how they feed the pups, then. MD: Until the younger ones are big enough to follow them. But that's why the boneyards.”

Mike has observed that female wolves are fatter and most likely are allowed to eat more, so they probably have a special status in the pack.

MD: “The females seem to be the fattest. They have the—a status that is a little higher than the rest of them. ... when you catch females they're generally fatter than the males. ... So they have—at least some of them have a status that allows them to eat more.”

3.5.5.7 Reproduction, litter size, and aggressive competition among males

Mike Douville says the number of pups in a litter is a function of the female's experience and age. A young female may only have and raise three pups. Generally, you see five to seven pups in a litter. Mike says it was a first-year mom that only raised three pups. He reiterates that mating pairs pair off—“they branch off.” There could be more than one mating pair in a pack, and they will have pups in different places. Mike indicates that the larger group will come back together after the pups are old enough.

SL "... do you have any idea of how many pups there are in a litter? MD: Usually, depending on how experienced the female is, like last year on St. John there was three [pups]. But that was—I know that female was inexperienced, a young female, so she raised three. But generally you see five to seven [pups]. SL: But only maybe three will survive out of there, huh? MD: Well, that was an inexperienced mom, and I know that she was just a first-year mom. So I've been watching these wolves on St. John's cameras and stuff. SL: So now, when they mate, she's gonna have a separate—the alpha male doesn't try to control all of the females in terms of impregnating ... MD: They seem to pair off. SL: Okay, they pair off. So that's a new mating pair? MD: Yeah. SL: That's a unit that Person uses, right, when they [biologists] talk about wolves, they talk about mating pairs and total population. So how does that sound to you as an assessment? MD: They pair off. ... SL: Will they start their own pack, then, or will—can you have two mating pairs in a pack? MD: I think you absolutely could, but they branch off. They don't all have puppies in the same place. They pair off. SL: But then for other purposes they could all come together. MD: They do."

Mike says that he see males in a group that are not alphas. He can tell alpha males from younger non-alphas by the size of their testicles/external sex characteristics. The alphas' reproductive organs are noticeably larger. When male wolves fight, they try to castrate one another; this has led to the males not having long hanging scrotums. This is due to internal competition among males.

MD: "You'll see males in a group that aren't alphas. You can tell the alpha male because they, for lack of a better term, they got great big balls on 'em, with the ones almost as big as him have little peanut nuts on 'em. Yeah, you can tell alphas. They got a big pair of nuts on 'em. But you can get a wolf that's almost as big as that guy and they're just peanuts, you know? And they don't have a nut sack like dogs. It's kind of in. They don't hang down like that because what they do, when they fight with each other, is they try to castrate the other one. I think that's something that's developed over eons of time is that they don't have a nut sack quite like a dog. But you see evidence of where they tried to take the other ones' balls off or ... the sexual organs even was missing. SL: Then you think that's part of their internal competition, then. MD: It is."

3.5.5.8 Communication and vocalization

Wolves can distinguish a male howling from a female howling. Mike describes an observation of a lone female wolf calling to other wolves at a different place to group up with her at her location. There is variability in wolf vocalizations. Mike shares a story where a wolf heard his boat motor and responded in a real deep voice to let Mike know he knew that Mike was there. Pups make different sounds for different occasions.

SL "... so tell me about your use of how wolves are communicating ... MD: They can tell from a howl, if one's howling, if it's a male or female. I don't know how they do it, but they can. They know. Because there was a female on Lulu that I could almost get all the wolves off there and then she would regroup them from the other islands,

because they could hear her across on Baker, and they could hear [on] Noyes, San Fernando, and they'd regroup. She could call them together. SL: ... Do you ever hear them howling as a unit? MD: Oh yeah. Yeah ... SL: Is there any patterning to that in terms of season or time of day? MD: No, I don't know what sets them off. On Lulu, for a few years, there was one old big one on there, and he could hear my speed boat, and you could hear them back in the woods, wooooo. He was letting me know that he knew I was there. He knew. I heard them several times. He could hear my speed boat and when I shut it off and was doing what I was doing, you could hear them back there. He was a big old dog, wooooo, real deep voice, you know. He knew what was going on. SL: What other kinds of noises have you heard them make? MD: When the puppies—they make quite a—they've got their regular howls and then you have the intermediate gang kind of thing. [Mike makes a different sound, rowrowrowrow.]”

3.5.5.9 Sense of smell, response to trapping, and hair boards

Mike Douville describes trapper practices used to cover human scent and trap scent using both modern and traditional materials. There is a basic principle of removing as much scent as possible from equipment to increase trapping success. Mr. Douville's narrative is a foreshadowing of what he says later about why the hair boards were not working. He explains that the field researchers conducting the study did not put enough effort into removing the scents from their hair boards. Therefore, they calculated an estimate of wolf abundance that was biased low.

Mr. Douville states Wolf can smell metal traps, and the hair board traps used metal barbed wire.

SL: “... And what is the labor investment in preparing a wolf set as compared to mink or marten set? MD: You boil it in the same way; I use bark and stuff like that and boil them. And then I wax them to preserve them and keep the scent down. I add pitch and various things in there to keep the metal smell away because a wolf gets onto that and they... SL: On the metal smell, they can distinguish that? MD: Oh yeah, absolutely. MD: So if you don't put the effort to try to keep them scentless, your sets really just don't work very well. But still I don't think the hair board system is working very well because these guys [wolves] are too smart for that. For me to catch them, I can't leave any smell, I do everything I can to not even know that I have been there, you know what I mean? Biologists do not want to listen to Indigenous knowledge. You don't even want 'em to even suspect that you were there. But here you have a biology group that they can even smell your boots, where you walk with XtraTufs. They can smell you for days if it doesn't rain. And if it's frozen out, it just like preserves it in a freezer. It doesn't go away. But I think they have a lot to learn about even what they're trying to do. See, their—one of the things that I said you need to boil your stuff and take the scent away, but when you boil plywood, it's got all this glues and stuff and then it makes even a worse smell. And they can smell metal. If you take a piece of metal, he [Wolf] can smell it. Even with our nose, and a wolf nose is so much better. So they'll get a few samples like that, but it's not going to work very well. It's just plain and simple, a wolf will rear back—because they're putting it in the same place. I've had wolves bust my trap and it'll never work again because he'll

go there and he knows what it was, and he'll go there and check to see if it's there again. ... for as long as that wolf lives, he never forgets that spot and he'll come and look to see if you did it again. ... So it's never gonna work because he [Wolf] knew what it was. And that's the same situation, but how do you teach somebody that? ... a biologist doesn't like to listen to Indigenous knowledge. And I've been doing this for 65 years or so. I've had a lot of experience with these guys. But when I see what they're doing, I know that they're not gonna be really successful because they leave their smell all over. They probably throw these things in the back of their truck and who knows what's in there and people smell; it's not gonna work that well. So you have to take that into consideration when you're doing your formulas because you're not getting a really good sample. Because he's [Wolf] really smart. And they don't forget. They remember everything down their trail. They might have a hundred-mile trail that they've circumference, and they know when something's screwed up on it. If you put a stick across there that wasn't there before, they know it."

Mike indicates the hair boards have too much scent, and Wolf figures out what they are and will not go near them, so the researchers get a low count. The method is conducted the same way each year, so the wolves remember what they have seen and smelled in the past. His assessment is based on extensive years of trapper experience covering up scent to increase trapping success. He says wolves never forget and will go back to a place and check to see if the trap or foreign object is still in its territory.

3.5.5.10 Wolf abundance, Indigenous science, and western science

Mike discusses the hair board study in depth. The biologists and traditional knowledge holders did not agree on the wolf population estimates. The biologists estimated a population of 89, while the trappers estimated 220. The quota was lowered to 10% of 89, so the trappers stopped trapping because it was not worth it. Then, the biologists figured a new estimate at 171 wolves, and the trappers caught 164 wolves. Mike says that you have to be very successful to get half the wolves in an area, so he is saying that there are at least twice as many as the trappers got, so that estimate would be 328 wolves; last year, the biologists came back with another estimate of 323 that is much closer to what the local experts figured.

MD: "So they put these hair boards out, and they were getting some samples of Wolf—they did this mostly in the central part of Prince of Wales. There's an area there that they like to do research on because they have a closed, gated road, they can drive in there, and after they did this study they collected some hair and decided that there was 89 wolves on Prince of Wales, so—in Unit 2. We thought there was—we got conversation with each other, the trappers, and we thought there was 220 based on what we see, how many tracks, all kinds of different stuff we observe. We know what's going on. So, then the quota got cut to I think ten percent of that population, so that made it like ten or eleven or whatever it was for a quota. But I'm saying that you're not getting a true test, depending on what formula you're using to extrapolate that across the whole of Unit 2. And we disputed that number. I've always disputed that number. So by keeping the quota way down, only taking ten or eleven wolves a year, there was no wolf trapping being done on Prince of Wales. I was trapping on the

outside islands. So the wolf population was growing really fast. But the DNA hair samples was not showing that, and one of the things that you have to remember about Wolf is they're [he is] scared of people. So you have these—this biologist, and I consider them amateurs, setting these things out, people smell all over 'em, close to the road, using barbed wire and plywood that has totally foreign smell, and they use the same scent every year. And in my opinion it would work less and less every year. They're just too smart. So you might be able to get a sample out of that, but the real thing that happened is they decided, well, we're gonna open it for two months, and they said the population—the mid-level population we estimate is 171. So we caught 164 in 2019. So always in the past I felt that if you could catch half, which would be a high number, you were doing pretty good, so that meant to me that the population was close to 400. But they're still using the hair boards, and it's still not working very well. You're not getting a good handle on how many wolves there are unless you have the proper math to do it. So when we caught the 164, a certain amount of those were DNA catalog wolves. But that gave you a whole, great-big population that they did have DNA on, so then you have two numbers to work on. So then they calculated last year that there were 323. Somehow the number—they figured out how many that they were missing that they weren't getting DNA on, as opposed to the ones that they did. So you have two different numbers to work with, then, and it gives you a more accurate estimate of the wolf population.”

3.5.5.11 Indigenous knowledge, cooperation, and balance

Mike indicates a combination of local hire and application of Indigenous knowledge is needed to resolve this problem. Traditional ecological knowledge of wolf behavior is needed to make the hair board population estimate studies successful. Hiring nonlocal biologists who have not lived in the place and do not know how wolves behave is a mistake. They need the agency employees to listen to them and learn the local perspectives. It seems to Mike the agency is trying to take the easy way out when in reality it is very difficult to get close to Wolf.

MD: “ I think one of the biggest flaws is having biologists that have not lived here, and really understand the dynamics of how Wolf operates here. And they don't like to listen to you. You know, they don't—because I don't have a doctorate, they're not gonna listen to me. But I have decades of experience. In order to get a good hair sample like what they're trying to do, you're trying to contact a wolf. And in order to do that you have to be really careful how you do it. You don't want them to even know you've been there. So how you integrate that into what they're trying to do and teach them is very difficult. I don't think they listen to you. And they're doing it the easiest way they possibly can, which is drive on the road and walk off 20 feet and put a hair board there, that type of thing. Real easy. When you're trying to catch Wolf or have contact with 'em, it's not always that easy; it's best to go places where you have to go back a way [off the roads]; you have to work at it, here's [locate] their best trail on the island, right here. You're not even close to it. It takes an effort, and from what I see, it's not there. They're doing it the easy way and saturating the road system with hair boards, but they're not getting the whole picture.”

Mike wants to work with the agency biologists and regulators to ensure they get an accurate wolf population estimate so a proper trapping quota can be set. When the quota is set at the correct level, the trappers have an incentive to do the work. This in turn allows for the proper amount of deer for both subsistence and wolf prey. The goal is to achieve and maintain balance.

3.5.6 Southern Prince of Wales (Hydaburg): “They're denning out there, so that pack took over that island.”

The community of Hydaburg was founded in 1912 consolidating most of the Haida population from four villages on the west side of the Prince of Wales Archipelago. Kasaan, located on the eastern side of Prince of Wales Island, continues today as a separate community. Tony Sanderson was the primary interviewee in Hydaburg with a brief contribution by Sid Edenshaw. They are both of the same lineage, Eagle moiety and the Haida *Sgajuuga.ahl* clan, ancestrally originating in Masset, British Columbia. They both reside in Hydaburg and spent their entire lives there. Mr. Sanderson is 60 years old, and he grew up trapping. He has been working with the agencies and the Hydaburg Cooperative Association conducting population estimates using hair boards as a mark-recapture method.

3.5.6.1 Historic presence and engagement with Wolf

Wolves were known to be present in the forest surrounding Hydaburg when they were growing up but neither Mr. Sanderson nor Mr. Edenshaw recall any stories or teachings about wolves.

TS: “Not in the village. They'd be behind the village, behind town here. ... this next street up. That used to be all muskeg that would run down towards Saltery. Because we used to play around there when we were kids. That's how close the wolves come. So you're talking like 300 yards behind the village, about 300 yards from here. My brother, when he was hunting down in Saltery one time there was about eight or ten of them that surrounded him down there.”

In the 1950s and later, wolf trapping was a significant activity for many in the community, and wolves were one of a number of species trapped. The take of wolves was limited and not thought to have had any major impact on their numbers.

3.5.6.2 Presence of wolves in the islands in 1960s

Tony began engaging with wolves while trapping with his uncle in the 1960s. They trapped for a number of animals including wolves. He notes that roads have increased the mobility of wolves.

TS: “... because they do travel the islands. You know, so, like I said, we did catch some wolves and like in the late 60s when I was seven, eight years old, I mean, there were a lot of people that would trap in wintertime. And they would trap wolves, but they would, they never caught them all. You know, like growing up, before the road system got put in. I think I've seen wolves three times on the beach. You'd hear them at nighttime. You know, and a lot of times, you'd hear them when you're hunting, but you wouldn't, actually see them that much. You'd see their scat and stuff, but you wouldn't see the actual wolves that much. At least I never did until the road system

went in, and it's like you start seeing them more and more as time went on, and the road system I think has just made it easier for them to travel and hunt.”

3.5.6.3 Other trappers in the 1960-70s

The area around Hydaburg was divided up into recognized trapping areas for different groups in earlier days.

TS: “It was just the area that we were trapping and like I said, we weren't the only ones trapping. So they had their area where they trapped and there was other people that trap. Like I know that Cliff Durgan, he would trap the wolf outside of Dall Island.”

3.5.6.4 Impact of the road coming to Hydaburg and predator-prey dynamics

Deer were abundant at the time the road to Hydaburg connected the community to the island road system.

SE: “As I grew older, the road between Hydaburg and the Hollis Cutoff was connected in 1983. Right around there. So we started driving the road and seen a lot of deer in those days when I was younger. And as we got older, the deer became more and more scarce. And we know the wolves were multiplying because we would see them on the road here and there. And pretty soon as the years went on, we never seen any deer at all between Hydaburg and the cutoff. But when the wolves started getting hunted in the 1990s, I think, by some hunters, we started seeing a lot of deer again, probably about ... The wolves started being hunted, and then we started seeing about probably upwards of 80 to 90 to 100 deer. We'd count them between Hydaburg and the cutoff. And in the later 1990s, they put a limit on hunting the wolves. And the numbers that we saw dropped back down to probably anywhere from five to 10 that we would see compared to the 100 we seen the 10 years before that. And now it's still low that we would only see probably close to 10, nowadays, that was anywhere from one to 10.”

The number of deer observed on the road between Hydaburg, and the Hollis Cutoff is an index of deer abundance for Hydaburg residents. On his drive to Hydaburg from Klawock in March 2022, the interviewer (SL) saw one deer along the road.

3.5.6.5 Wolf health

Tony explains the difference in appearance between healthy and unhealthy wolves.

TS: “I've only seen one wolf that looked really scraggly. You know and I don't know if it was an older wolf that might have been a little bit sick or something because it was by himself. He looked real scruffy compared to like, say the 10 that we saw down in Soda Bay last fall. I mean, every one of those groups were healthy looking, and it was really weird because they were almost all identical in color.”

3.5.6.6 Travel circuit, movement patterns, and trails

Wolves in the Hydaburg area travel from island to island presumably swimming. They also use trails and the roads. A pack in this area takes two weeks to make a circuit of its territory.

SL: “How do you think they are organized? Maybe one pack on Sukkwon, but what about the other islands? TS: Oh they travel through the islands. SL: They travel through the islands? They don't just stay on one; they are moving? TS: Yeah. They're not like Sukkwon, they're not local to Sukkwon. They'll travel through there. You know and usually a wolf will take a couple of weeks to make a circuit. One's from Natzuhini, I think, because we've had pictures of them out in Canoe Pass, you know, because we had hair-boards on Canoe Pass. That wasn't on the road system. And we had pictures of them coming through, and they go over to Goat Island. You know, and like I say, there's trails on this and Goat Island by Lone Tree where they come across there. At some point they used I think they would travel across there because they can go through by Tlevak Narrows. ... SL: ... you mentioned the trails. How do you choose a site to set a trap? TS: You just look for their trails, they're pretty well worn where they run. Wolves are like dogs, so they'll tend to take the same trail, you know. SL: ... that's their standard, they never spread out, even in the forest and move sort of individually, they're following a line along these trails ... That's what they do? TS: Well, one thing I noticed when I was, a few years ago, because I started doing that wolf survey for the Tribe. And one thing I noticed was up towards Kasaan. We were going up towards Tolstoi, and we saw a wolf kill on the road. But one thing I noticed is they would run down the middle of the road, straight down the middle, but then every once in a while, the wolves would break off and then come back. SL: Some people talk about them as they're being the scouts or they're doing scouting. TS: Either that or they're chasing whatever they see.”

Tony says working on the hair board project has confirmed a wolf pack travel circuit of two weeks.

SL: “But on this mainland over here, south here, going down towards Eek and Heceta you don't know what the wolf situation or do people hunt that way? ... TS: Oh, yeah. And down in Nutkwa there, after Sealaska logged down there. ... you see the deer and wolf scat on the roads back in there. So they [wolves and/or people] do go down in there and hunt. Back in Chomly when we were doing the surveys because we could only drive to Chomly. So we'd have hair-boards back in there. And we got pictures of the wolves back in there. And that's why I say it probably takes a couple of weeks because they'll travel through. Like you'll get some hair samples and then it'll be nothing, nothing, nothing. And then pretty soon, they must come back this way, because then you get their hair samples again.”

3.5.6.7 Wolves and trails on Dall Island

Dall Island is west of Hydaburg and lies on the coast of the Pacific Ocean. Tony trapped Dall Island for wolves as a young person. He recalls Cliff Durgan trapping the outer exposed inlets and bays of Dall Island for wolves in the earlier days.

TS: “All over in the islands here, up in Natzuhini Islands, used to go all the way up towards the Tlevak Narrows and down Dall Island shore. Because it wasn't just the wolves we were trapping. ... my dad used to tell me about when they would trap wolves all the time. ... because when I first started trapping by myself, he told me, okay, out by Lone Tree, there's a trail, a real good wolf trail. So they knew where the wolf trails were across here by the graveyard. The next cove over there's trails back in there, and him and my Uncle Matt used to trap wolves all the time, him and my Uncle Oozie.”

Tony Sanderson discusses seeing wolves and a den on Dall Island. The pack in this encounter also numbered about seven animals, corroborating Sid's observation.

TS: “Five years ago, and I've seen that pack was, you know, six or seven. I didn't see the whole, I didn't see the [entire] pack, but I saw the tracks and I saw the den. And so that means they're denning out there, so that probably means that pack probably pretty much took over that island.”

3.5.6.8 Wolf den on Dall Island and estimating abundance from tracks

During another field research project on Dall Island, Mr. Sanderson encountered a wolf den near Manhattan Lake. He comments on the location of the den in association with a salmon stream and lake. The lake supported beaver as well.

TS: “And where we were doing the wolf survey back in there behind the lake and behind Manhattan Lake and when we were coming back out of the creek up there, we were on the opposite side of the stream. But when we were coming down, I was looking across, and I could see where the hole [den entrance] wasn't very big, like, maybe three feet around or something. You know, land otters have sort of the same size holes when they dig out a lot of areas. They [otters] will make the hole a little bit bigger. But this one here, the trail came out and they went up the hill. It didn't go down the hill. Land otters will go to the creek. This one came up and around. And there was actually three of us out there doing that survey: me and Jeff Peele and Melanie Kadake. Well, Jeff had left us, and he'd walked down. And so he was probably half a mile ahead of us, I guess. And so we looked at that, checked out that den a little bit. And then we kept walking, well in the meantime, the wolves ended up between me and Jeff and Minnie (Melanie). Jeff was down and he had the gun and here he went all the way to the edge of the lake, and he sat out on a big rock out there and he wouldn't move because he didn't know where they were at. But we could hear them following in between us. By looking at the tracks, there was probably five or six wolves in there in that area and there's some smaller ones because there was smaller tracks in there.”

3.5.6.9 Location of dens

Tony describes the location of a wolf den.

TS: “Probably a couple 100 feet up, you know, and it's probably yeah, cause that's sort of a steep stream going in there. And gradually, it goes back and then we were all the way out the back end of the lake and then there's another stream back there. So we were all the way in the back end that. I don't think they go up. I don't think they'd den too high up because of the snow and stuff. I think they tend to stay down. But there was a lot of tracks in that valley back there, so they liked that area.”

3.5.6.10 Pack size, body size, coat color, diet, and hunting behavior

Sid describes seeing a pack of about seven or eight wolves running and playing in a muskeg. He shared an account about his cousin seeing wolves kill a deer and kept running without stopping to feed.

SE: “Also in 1981, I was logging. And we were logging up on the hillside behind Hydaburg here by the dam. And it was early in the morning, and I saw a pack of wolves run through that first muskeg by the dam, a wolf pack, there must have been about seven or eight of them just running straight through. And I watched them, they played around in the muskeg, and they took off. But I've heard about hunters. I think it was my cousin Robert Carle might have been Robert that was up on Heda Mountain, seen a pack and it was below him running and they were chasing a deer, and they killed the deer and just kept going, just left the deer. Yeah, surprised that they didn't stay and eat it. They just killed it and then kept going.”

Mr. Sanderson has seen a group of ten wolves while hunting on Soda Bay.

SL: “... have you seen them as singles in small groups or large groups are all of the above? TS: All of them ... Usually, I don't know, it's hard to say, because sometimes you'll see just one and then sometimes, you'll see a couple like and then last fall when we were down on Soda Bay hunting, we went down there, and we saw ten in a bunch. SL: ... the largest grouping you've ever seen is ten? TS: Ten, yes. SL: Have you observed a variation in the wolf size or the color phase? TS: No, I don't think so. I at least I haven't noticed anything in the size. You know, you've got the males that are big and then females are smaller and then there are pups.”

He describes variation in coat color he has seen for wolves.

SL: “What variation in color have you seen? TS: That was a gray and black color. I think the gray and black is the most popular. Every once in a while you'll see one that has blacker color and will still have some of that gray in there. I've never seen any real light-colored ones.”

Tony is aware of wolves eating fish, beaver, and deer.

SL: “What do wolves eat? TS: ... sure they eat fish and deer. SL: ... Have you ever seen them on a stream? TS: I've seen the scat around the streams. I've never seen the

wolves along the stream but they're no different than a dog. A dog will go eat salmon. ... they eat beaver. ... Yeah, they like beaver. So usually around beaver dams and stuff, you'll see their tracks.”

3.5.6.11 Hair-board locations, issues, and impacts

Tony Sanderson has been involved in wolf hair board research with the agencies and his Tribe, the Hydaburg Cooperative Association, for several years. He has a great deal of experience with these studies and makes several observations based on that experience.

TS: “Yes on Sukkwan. They do it [put out hair boards] let's see where they have done that, they have one out in [Audrey] Bay, one down by Klakas, have one over in Dunbar. And then you come down on this side and you have one down by Blanket Island. But they're not doing Dall Island, which I think they should be if they want to see if they're the same wolves or not. Because the hair samples will tell them, so you got to [try] to see if it's the same pack of wolves or not there. You know, there could possibly be more wolves out there than they think because they don't test that, you know. And when we're talking about when we're talking about Chomly down, I mean, that's what 20, 20-30 miles down. Yeah, big area down there. It's not being tested to see if there's more packs down that way.”

Tony explains the hair board researchers are placing the traps along the roads, which only represents part of the wolf habitat. He implies this practice may lead to samples that are biased low. We heard this observation from Mr. Douville about these studies in the Craig area.

There may be a perception of multiple or different purposes of the hair board technique. That is, Tony indicates the goal is to identify different packs in different places, while the usual purpose of the technique is to calculate mark recapture ratios to estimate abundance.

TS: “They're doing all the surveys just right on the route, actually. Some of them were maybe 20 yards off the road. Some of them are right on the side of the road, where they put them. SL: What is your sense about that strategy? TS: I think that there's a lot of area down here that [should] be checked for it. I think another thing and I talked to him, I talked to the Forest Service about that, because they asked me that same question. And I said I think that the hair-boarding is drawing the wolves towards the road. So that's pushing the deer away from the road system.”

Interestingly, Mr. Sanderson further observes the hair board traps may be attracting wolves to the road system, which moves the deer away from it due to predator avoidance. The implication is deer hunting becomes more difficult for the community because they must travel further from home to access deer.

3.5.6.12 Competition for deer

Mr. Sanderson describes sources of competition for local deer hunters from outside hunters, wolves, and bears.

SL: “... Do you think that wolves are ... a problem because of their impact on deer?
TS: The impact right now is that sure they eat deer and stuff. But that's not the only

factor, you know, to the declining deer population. You got, I mean, the amount of hunters from [outside]. When I was a kid and hunting here, we used to get deer whenever we wanted it. I mean, we'd never go out and come back home without a deer when we wanted to go get deer. But now you have so many people hunting, the wolves are competing with all the people. They're competing with all the bears ... they cut them off from, bear hunters used to be able to come here and hunt without having a registered guide. Now I think they're required to have a guide. You know, so our bear population has skyrocketed. And I think bears probably killed more [deer] than wolves do. SL: Interesting, then you have the impact of the clear cuts ... the secondary growth on ... how that limits the deer's abundance. ... you guys have to endure the ferry system bringing all the additional hunters ... TS: Yeah, a lot of them do because Sealaska's roads are open to the public. They [nonlocal hunters] do come down, and boats, I mean, they're all over the place. I went hunting up by Tlevak Narrows last year, two years ago. If I go back to the spot where I go hunt, we used to hunt all the time I hunted since I was a kid in that area. I go around this lake, and I get back on the backside of this lake. And then I'm sitting there taking a break and here comes these two guys walking up. So I got up and I hollered at them and waved at them, and they came over by me. I didn't want them to start shooting at me. The guy said, 'Yeah, there's four more guys back there. Over there, back over on the other side.' And I was like, okay, well, that's good to know. So, I'm gonna get out of here. Yeah, so I started walking along the lake. And I could hear these guys, and they're quite a way away from me, but I could hear them talking. ... Yeah, so I made a beeline for my boat and got the hell out of there. But just about anywhere you go now, you gotta be careful. I never know if there's gonna be people around me now. That island gets a lot of pressure.”

Wolves are considered abundant at present, and the indicator is that deer numbers are low. However, Mr. Sanderson believes that wolves are only partly responsible for a decline in deer abundance.

3.5.6.13 Impacts of wolf trapping on deer and current trapping by Hydaburg

Sukkwan Island lies immediately to the west of Hydaburg. Hydaburg residents can easily cruise the coastline so availability of deer on Sukkwan Island is a priority to Hydaburg subsistence hunters. A family of non-Native hunters and trappers, the Winrods, who lived near Hydaburg used to harvest a substantial number of wolves, but they have moved out of the area.

SL: “... do you have any sense of what affects your success in trapping or hunting them? TS: ... not really, because I haven't trapped in quite a while, especially wolves. I mean, there's enough people that do the trapping now. Compared to when I was younger when I trapped all the time. SL: (clarifying) Do you have active trappers now in the community? TS: Not here now. Yeah, the Winrods were the last ones that actively trapped here. I know he [former resident trapper], he pretty much took care of Sukkwan for us and kept the wolf population down. So the deer population was up, and then after he moved, the wolves move back in again and start multiplying and

now the deer population is down again. Elijah caught a lot of wolves off Sukkwan. And after he did that for a few years after that the deer rebounded really heavy.”

There are no active wolf trappers in Hydaburg now. Tony feels it would be helpful to have a coordinated effort by Hydaburg trappers to reduce the number of wolves. However, he says it is a cost prohibitive endeavor. It is not clear if this is due to startup costs being too high, the fur market too low, or the quota on take being too low. It is most likely a combination of factors.

SL: “Do you think that the community needs to have an effort to limit the wolves?”

TS: No, it would be nice, but the cost of actually going and catching the wolves, tanning the wolves, you know, there's a lot of costs in it. It's not a cheap thing to do.”

There used to be systematic trapping of wolves on Sukkwan Island, a key subsistence area, that kept wolf numbers down. Deer flourished at that time. Now with no trapping, the wolf numbers have increased, and deer numbers declined.

4. Key Findings and Insights

We primarily analyzed the data within geographic area and within interviews. This is an appropriate approach given the vast size of Southeast Alaska and the place-based nature of Indigenous knowledge. The insights we learned are, for the most part, specific to the areas where the knowledge holders with whom we spoke have engaged with Wolf. These are discussed in Section 3.5 for each geographic area. There are, however, some common findings and insights that appear to apply across the diverse geographies and social contexts of Southeast Alaska.

4.1 Relationships, Existencescape, and Science

In Southeast, the Tlingit have a profound and ancient relationship with Wolf and the Wolf People embedded in their language, culture, and society. Their understandings of Wolf and their engagements with wolves on the landscape are based in a rich blend of ecological observations and sociocultural and cosmological knowledge and beliefs (Figure 15). The Indigenous peoples of Southeast Alaska have an existencescape, or ontological understanding, of wolves that differs substantially from the Euro-American, western scientific understanding of wolves. They have their Indigenous science regarding wolves, which is “that body of traditional environmental and cultural knowledge unique to a group of people which has served to sustain that people through generations of living within a distinct bioregion” (Cajete, 2020:2).

Having said that, we found evidence that some of the Indigenous wolf experts we talked with also have western scientific knowledge of and experience with wolves they have learned from agency biologists through direct conversations, reading reports of scientific research, or participating in the hair board studies conducted in the central and southern parts of Prince of Wales Island. For example, Mr. Douville and Mr. George understand the mark-recapture technique and ratios applied in the hair board studies, and Mr. Sanderson has worked with the agencies and his tribe as a field technician on the studies. These Indigenous research partners discussed limitations and areas of improvement regarding the hair board studies.

4.2 Balance: Subsistence Priority and Motivation to Manage Wolf

A common motive for wolf trapping and hunting emerged. Across several knowledge holders and in the record of tribal consultation, we learned the primary motive for reducing wolf numbers is to ensure adequate deer abundance and proximity to communities for subsistence harvest. There are two dimensions to the problem: lower abundance of deer from predation and deer become wary, or skittish, and therefore difficult for people to harvest in the presence of an active wolf pack. The preferred means of keeping wolves in check is by subsistence hunting and trapping near communities and in places where communities normally access and hunt deer for subsistence purposes. These motives and desires are based in the Tlingit perspective of balance. In a simple statement, Mr. George explained, “Wolf has to eat, and we have to eat.”

As evidenced in the record of tribal consultation (Appendix A) and the interview transcripts, nobody thinks the wolves in Southeast Alaska are threatened or endangered. Our Indigenous research partners have told us there are abundant wolves in their areas and in some places, there are not enough deer as a result. We also learned that to have healthy wolf packs, they have to be trapped and hunted on a three-year cycle in which a substantial portion of the pack is removed, but never the entire pack. The packs will regrow their numbers larger than original size when left alone for three to four years if they have adequate prey and no other sources of mortality. The path to balance is consistent and coordinated subsistence trapping and hunting of wolves in places where people harvest deer. In their view, this approach creates a balanced ecosystem optimal to humans, deer, and wolves in which human harvesting works to enhance the health of the wolves and deer, while at the same time, ensuring healthy Indigenous Peoples and cultures.

At least two of our Indigenous research partners reminded us of the subsistence priority on federal lands under the Alaska National Interest Lands Conservation Act (ANILCA). To maintain the subsistence way of life in Southeast, there has to be an optimal number of wolves and deer relative to a community’s subsistence need. A balance must be reached among the three factors. One cannot be studied and understood outside the context of the other two. When the quota on take of wolves is properly set, there is incentive for subsistence trappers and hunters to pursue wolves for economic gain, community status and recognition, and most importantly, to ensure plenty of deer nearby communities that are not spooked by the presence of wolves. If the limit on wolves is too small, their trapping efforts have no positive effect on deer abundance and subsistence harvest.

4.3 Local Experts and Abundance Estimates

To set the correct bag limit on wolves for subsistence harvest, the agencies must have good estimates of wolf abundance. Some of the Indigenous experts in this study possess knowledge and skills that would help the agencies improve their population estimates. For example, the hair board technique relies on attracting wolves in close proximity to the hair traps. Local wolf trappers have years of experience with attracting wolves and making close contact. These skills are invaluable for this mark-recapture technique. Moreover, the expert trappers with whom we spoke know how to effectively mask human and other foreign scents that may repel wolves. Long-time wolf hunters and trappers have the ability to estimate wolf abundance in an area by counting tracks and scat piles and studying features of wolf trails and how wolves mark their territories. These skills could be adapted for use in other types of abundance estimation studies.

Local wolf experts have formally and informally contributed to the studies, and the agency's estimates of wolf abundance have improved as a result. This needs to be recognized.

4.4 Common Ecological Knowledge

Traditional ecological knowledge of wolves appears to converge in general agreement for several topics. For the Yakutat and Excursion Inlet areas, two types of wolves were identified. The smaller of the two is known as the "southeast wolf" or the Alexander Archipelago wolf; the larger one was identified as the "timber wolf" or the "Yukon wolf." Our Indigenous research partners have not observed the two types intermixing.

The Alexander Archipelago wolves are organized into packs of about six to twelve animals on average, and sometimes packs are larger (i.e., ~20 to 30 plus). While there are discrete packs, they subdivide in various ways at various times. In the fall they join together into the largest units of the year. Related packs may merge to form larger packs. It is not entirely clear if these "super packs" are one pack operating in one territory or two or more related packs joined together for some reason such as hunting an area with abundant deer.

There was agreement that packs break up during the mating season as one or more breeding pairs begin denning to birth and care for pups. The other members of the pack continue to hunt as a smaller group and usually do not mate. Often lone males will be seen moving around looking for females during this time. There are usually five to eight pups in a litter. The dens are multigenerational and located between 1,000 and 1,500 feet elevation in the Kake area. When the pups are big enough to travel with the pack, the pack reunites.

Wolf pack territories are bounded by watersheds or stream drainages in Yakutat, Excursion Inlet, and the Kuiu and Kupreanof islands. Packs will normally travel on well-established and marked trails. For the Excursion Inlet area, Mr. Mills described wolves moving through the forest using their noses to hunt, not necessarily following established trails; he spoke of a wolf pack hunting in similar fashion to a pod of orcas. Wolves tend to aggressively defend their territories, but some territories may overlap to some extent, and minor intrusions may be tolerated. We learned there are approximately 10-12 wolf packs in the Kuiu and Kupreanof islands area (Figure 17).

The wolf packs in coastal Southeast use habitats at all elevations from the beaches and islands to the mountain passes. Muskegs appear to be important habitat for wolves. They tend to follow ungulates up and down the mountains in a seasonal pattern limited by snow depth. Large islands may be occupied by one or more wolf pack(s), and packs tend to move around from island to island in pursuit of deer. Wolves also travel on and near the road system, and some interviewees have observed road travel allows wolves to move quickly and effectively access prey.

The primary prey for the Alexander Archipelago wolves is ungulates supplemented with beaver and salmon. However, the Indigenous knowledge holders in this study have seen them consume whatever they can catch or find, including birds, small mammals, and beached carcasses of marine mammals. There is evidence of more than one pack driving deer and moose into bottleneck or dead end areas to facilitate capture and kill. Specific kill sites were identified by large amounts of bones accumulating over time in the same place. These "bone yards" may also be found at den sites as the parent wolves bring food for the pups over multiple years.

4.5 Human-Wolf Interactions

Wolves are often observed or heard howling near communities, but normally do not enter town except on rare occasion to take a dog for food when they are extremely hungry. Wolves are attracted to female dogs in heat and have approached people on the land when accompanied by a dog in heat. We did not learn of any cases of wolves injuring people, but accounts were shared about close interactions between humans and wolves. Some of these are contemporary and others based in oral history. Subsistence wolf hunters who “howl up Wolf” are often closely approached by wolves in defense of their territory. A hunter would call the wolves to his location by howling. When a wolf or wolves arrive to confront the intruder, the hunter may have an opportunity to harvest.

4.6 Wolf-Dog Hybrids

Humans have an ancient and complex relationship with dogs, wolves, and wolf-dog hybrids (Lescureux, 2018). Dogs and wolves have been co-occupants of the Alexander Archipelago for thousands of years, and most likely both have interacted with humans over that time period. Interviewees’ accounts and statements indicate a variety of different patterns of hybrid behavior and their relative utility in aiding the Tlingit. Tlingit people endeavored to obtain hybrids by placing female dogs in heat in proximity to wolf packs in the hope they would be impregnated. Hybrids have been used as pack animals, for protection from wolves, and for general protection and assistance in hunting. For example, Mr. Thomas George valued the urine from female hybrids for making scent lures used for trapping and hunting wolves. Interviewees felt that some hybrids did return to the wild but would likely not be accepted back into a wolf pack but rather killed.

5. Recommendations

The insights and knowledge learned from doing this study with our Indigenous partners has led to five recommendations.

1. The agencies should support expanding the current study.
2. The agencies should design, support, and fund future research on Indigenous knowledge for the Alexander Archipelago wolf and other wildlife species.
3. We recommend all wolf research in Southeast Alaska moving forward use a coproduction of knowledge approach.
4. The agencies should actively increase the meaningful participation of Indigenous wolf experts in existing collaborative management and regulatory processes.
5. We encourage the agencies and local leaders, including Tribes and wolf experts, to consider holding preliminary discussions to explore interest in and potential for a co-management arrangement for the Alexander Archipelago wolf.

5.1 Extend and Expand the Current Study

This type of study requires a substantial amount of time, outreach, review, and discussions between the Indigenous knowledge holders, the consultants, and the agency analysts who want to apply traditional ecological knowledge. The Indigenous research participants are part of the study team and coauthors of the report, so there needs to be ample time allocated for substantial interaction, feedback, and trust building. We had approximately four to five months to complete a study that normally would take two years or more.

Although this report is rich in information, the unfortunate reality is we did not have enough time to complete comprehensive data collection and analyses. This interim report should be expanded to include additional information from the interviews and better integrate the cultural significance sections with the traditional ecological knowledge sections. We recommend the agencies commit to continued financial support to expand this Indigenous knowledge project.

Future work for this study includes consideration and analyses of commonalities and variations in findings across geographic areas. There are data gaps, limitations, and uncertainties to consider, analyze, and report. This would involve follow up travel and conversations with our Indigenous research partners to fill gaps and clarify outstanding questions. It is advisable to obtain two to four additional interviews to represent Indigenous knowledge of wolves for the mainland areas of Haines and Klukwan and Ketchikan and Saxman.

Specific topics to further flesh out are pack movements; two types of wolves in the north; trappers' specific skills, techniques, and practices and how these could be harnessed to improve wolf research; the ecological and social importance of having wolves on the landscape; understanding the effects of logging and secondary growth on deer and wolf population dynamics; and further mapping of wolf pack territories by expert trappers and hunters.

The interviewees provided many place names and identified locations where wolves are known to exist and use specific habitats; we recommend more analysis and follow up to develop a mapping component for this study to capture the geospatial aspects of wolves and Indigenous knowledge in Southeast Alaska. This would add a valuable component to this study. It may also be planned as a second project focusing on the geospatial components of traditional ecological knowledge.

5.2 Invest More Time and Funds on Indigenous Knowledge

We recommend the agencies begin to have serious discussions with their Indigenous partners and tribal leaders in Southeast Alaska to explore what they consider to be needs and priorities for fisheries and wildlife research and management in their homelands. Once you discover who the local experts are for the research questions of interest, you should invite them to co-develop agency-sponsored studies that apply Indigenous science and traditional ecological knowledge alongside contemporary wildlife science, research, and decision making. The ultimate objective is to apply a complementary Indigenous knowledge system to agency decision making processes, not perfectly integrate Indigenous science and western science (Kendall et al., 2017).

As the agencies pursue expanding wildlife research that applies traditional ecological knowledge, they should work under the provisions of ANILCA, Title VIII to ensure the research is focused

on a subsistence way of life and the subsistence priority. The agencies should encourage and support more Indigenous knowledge studies through the existing Fisheries Resource Monitoring Program administered by the Office of Subsistence Management. This is a small but effective federal research program authorized under the ANILCA focused on subsistence fisheries. We recommend the U.S. Fish and Wildlife Service in Alaska expand this research program beyond fisheries into wildlife research and monitoring to include subsistence hunting and trapping of wolves and other species.

5.3 Coproduction of Knowledge for Wolf Research Moving Forward

Based on the record of tribal consultation (Appendix A) and past and present frustrations among local experts, tribal leaders, and agency scientists, we recommend substantially more local outreach and local hire for agency-sponsored wolf research. Our Indigenous research partner in Hydaburg has been directly involved in the DNA-based mark-recapture research (i.e., hair board studies) conducted by the Alaska Department of Fish and Game with support from the Hydaburg Cooperative Association and the U.S. Forest Service (Shumacher and Moore, 2021). We applaud this case of local hire because it provides some opportunity to apply Indigenous knowledge. We recommend a substantial increase in such partnerships to foster trust and build stronger relationships among the agencies and the Indigenous residents of Southeast.

Above and beyond local hire, we recommend these partners deepen their relationships by making a substantial shift toward a coproduction of knowledge approach for all wolf research moving forward in Southeast Alaska, especially for studies designed to estimate wolf abundance. Coproduction of knowledge is a popular topic among Indigenous peoples as they discuss how to engage with federal agencies and best account for Indigenous knowledge and values (Brooks, 2020:5; Inuit Circumpolar Council, 2020; Wheeler et al., 2020; Wong et al., 2020).

“Coproduction of knowledge between Indigenous peoples’ understandings and scientific understandings is the creation of new information by working together to understand the world. It involves mutual understanding, interaction, and respect, as well as the recognition that each party brings something important to the discussion” (Isaac, 2015:45). Coproduction acknowledges and accounts for Indigenous expertise, values, and ways of knowing through interactions that are respectful and mutually beneficial.

In coproduction, the outcomes of engagements between the agencies and the Indigenous experts include shared information, common understanding, and new knowledge. Coproduction takes the principles of formal tribal consultation a step further by adding equality of information, equality of knowledge, and equality of intellectual authority (Isaac, 2015). It is a way to better understand the interface of Indigenous knowledge and scientific knowledge used by biologists and managers. Coproduction allows Indigenous experts and agencies to create new knowledge and capitalize on the complementary nature of Indigenous peoples’ understandings and scientific understandings of wolves and their ecology.

In the context of wolf research and management, coproduction of knowledge occurs when agency scientists, managers, and Indigenous wolf experts develop a mutual understanding of a research problem before the research proposal is written. Both contribute to a shared meaning of the research question, and their individual contributions support and often fuse into a new and

distinct understanding of how to best conduct wolf research, analyze data, and interpret results to inform decision-making, wolf management, and harvest regulations (e.g., BOEM, 2019). Successful coproduction is verified by discussing and arriving at consensus on the credibility, usefulness, and mutual benefits of the results, implications, and final products.

In a coproduction model of wolf research, Indigenous peoples' understandings and scientific understandings of wolves, predator-prey dynamics, and other ecological concepts inform each other, and both partners benefit equally from the results (Isaac, 2015). Out of respect, the agencies should bring Indigenous experts into projects as early as possible so they may make real contributions (Johnston, 2020). The idea is for both sets of values and knowledge systems to contribute to the research goals. By engaging at the earliest stages of research, Indigenous wolf experts and wolf biologists can ensure equality in determining choice of research design and methodology.

Long-time wolf trappers and hunters have years of experience estimating wolf numbers by carefully studying the wolf sign they observe in an area. A coproduction approach would harness these skills for use in future studies and benefit wolves and all stakeholders in wolf research and management. Local wolf experts should be directly involved alongside agency biologists on an equal playing field to design, implement, and interpret studies on wolf abundance and other population parameters.

We recommend the agencies, with their Indigenous partners, work to develop viable and effective frameworks and methods for implementing coproduction of knowledge in wolf research using special arrangements, cooperative agreements, or memoranda of understanding. Open and transparent communication, frequent interactions, and trusting relationships are prerequisites (Brooks, 2020; Jacobs and Brooks, 2011).

5.4 Enhance Participation by Indigenous Experts in Regulatory Processes

There is a need to strengthen trust and relationships among agency scientists, agency regulators, Indigenous leaders, and local wolf experts in Southeast Alaska. More frequent and meaningful Indigenous engagement with, involvement in, and influence on the federal and state regulatory processes for subsistence wolf harvest would be beneficial for building trust, improving working relationships, and applying traditional ecological knowledge. However, the systems in place in Alaska used to manage subsistence harvest are not easy to navigate.

There are currently two separate regulatory bodies and processes in use for setting wolf harvest limits and restrictions, determining timing of trapping and hunting seasons, and deciding means and methods of harvest for wolves. These are the State of Alaska Board of Game and the Federal Subsistence Board. Each have different jurisdictions, and each promulgates separate state and federal regulations, respectively.

The state process is authorized under the Alaska Constitution and state law [Alaska Statute 16.05.221 (a) and (b)]. The purpose of the State Board of Game is for conservation and development (e.g., access to and allocation) of fisheries and wildlife resources in the interest of Alaska residents. The Alaska Department of Fish and Game and its Commissioner work in support of the Board of Game.

The Federal Subsistence Board is authorized and directed by ANILCA (Title VIII). The Secretaries of the Interior and Agriculture are responsible for implementing the federal law. The Federal Subsistence Board consists of the regional directors of five federal agencies, two members of the public, and a Chairperson. The chair and the public members are appointed by the Secretaries. One primary purpose of the Federal Subsistence Board is to ensure a subsistence priority on federal lands such as the Tongass National Forest. The Office of Subsistence Management, which is part of the U.S. Fish and Wildlife Service, and staff analysts from other federal agencies support the work of the Federal Subsistence Board to set subsistence harvest regulations on federal lands in Alaska.

Both regulatory processes use a complex and lengthy public process in which regulatory proposals are submitted by public individuals and entities and evaluated by the boards and their supporting staff, with input from the public. Both processes use advisory councils or committees to support the boards as they deliberate decisions on proposed regulations. The advisory bodies are made up of various stakeholders chosen to represent geographic areas and public interests. In Southeast Alaska, the advisory council for the Federal Subsistence Board is the Southeast Alaska Regional Advisory Council (Department of the Interior, 2022). This advisory body assists and advises the Federal Subsistence Board in decision making for the region.

The process is highly structured and organized, but confusing, and it is often difficult for most rural residents of Alaska to understand and get involved. In addition, the bureaucratic procedures and operations involved in the regulatory processes are not amenable to the cultural practices and ways of knowing used by Indigenous peoples (Brooks and Bartley, 2016; Jacobs and Brooks, 2011). We recommend the agencies work closely with the regulatory bodies and their Indigenous partners to improve the processes to be more user friendly and adapt procedures to better accommodate participation by Indigenous experts.

Indigenous people in Alaska have opportunities to participate in the regulatory processes as members of the public by attending and speaking at government meetings and by serving on the advisory councils. Mr. Michael A. Douville currently serves on the advisory council for Southeast. More Indigenous wolf experts should be sought out and encouraged by the agencies to get directly involved in the process and consider membership on the Southeast Alaska Regional Advisory Council.

5.5 Explore Potential Co-management for the Alexander Archipelago Wolf

The existing management and regulatory regimes under the State Board of Game and the Federal Subsistence Board have produced successful outcomes and are public processes that are highly collaborative. Indigenous experts are involved in these processes and should continue participating to the extent practicable.

In Alaska, the existing systems of governance for fish and wildlife and other natural resources only allow for an advisory role for Indigenous experts and members of the public. The Boards may defer to their advisory councils and committees in a large number of cases, but they are not obligated by formal arrangement or law to defer to their advisors. All decision making authority lies in the hands of the state and federal governments.

There is a notable amount of locally coordinated wolf management occurring in certain places where people hunt deer in the study area via subsistence trapping and hunting. Some of our Indigenous research partners are in regular communication with agency biologists and have a good understanding of wolf abundance and population dynamics from both the Indigenous and biological perspectives. There is also a notable amount of frustration among Indigenous wolf experts with current agency research, regulation, and management, especially for parts of Prince of Wales Island.

“Co-management (also called cooperative management) has been highly effective in some cases where neither local management nor exclusive government control provides for sustainable and equitable common property management” (Spaeder, 2005:165). Based on our observations, the current situation and context surrounding the Alexander Archipelago wolf appears amenable to and ripe for consideration of a co-management arrangement or pilot/demonstration project on co-management. We did not speak in depth with tribal leaders or agency officials about this topic, so our suggestion is preliminary and solely intended to bring the potential of co-management into awareness and discussion. We suggest and encourage the agencies; local leaders, including Tribes; and local wolf experts to consider holding preliminary discussions to explore interest in and potential for a co-management arrangement for the Alexander Archipelago wolf.

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Appendix A. Record of Tribal Consultation

Alexander Archipelago Wolf Species Status Assessment Tribal Information Briefing and Government-to-Government Consultation

Wednesday, March 2, 2022

9:00 to 10:48 AM

Participants List

Tribal representation:

Clinton Cook, Craig Tribal President
Dennis Nickerson, Organized Village of Kasaan
Joel Jackson, President, Organized Village of Kake
Michael Douville, Craig, AK
Millie Schoonover, Craig Tribal Association
Rudy Bean, Tribal Administrator, Craig Tribal Association
Shannon Isaacs, Craig Tribal Association

Research consultants:

Stephen J. Langdon, Ph.D., Sea Alaska Heritage Institute
Jeffrey J. Brooks, Ph.D., Bureau of Ocean Energy Management, Anchorage
Chuck Smythe, Ph.D., Sea Alaska Heritage Institute

U.S. Fish and Wildlife Service:

Bohling, Justin H.
Cogswell, Stewart
Eakin, Carly J.
Farmer, Sabrina J.
Kenney, Leah A.
Leonetti, Crystal
Mahara, Carol J.
Markegard, Sarah I.
Russell, Robin E.
Spegon, Jennifer
Knoll, Erin

Transcript of discussion

Crystal Leonetti: [Welcomes the group and kicks-off the call.]

Clinton Cook, Tribal President with Craig Tribal Association in Craig, AK: Looking at map slide, it looks like there's a line east of Vancouver. I don't think this wolf is special to the area since this map shows the wolf is on the mainland. It's interesting that you have Prince of Wales Island, but you are including the mainland in your range. Mr. Cook said that the map in the slide show was incorrectly including the mainland; he was questioning if the subspecies exists on the mainland.

Sarah Markegard: Yes, we'd like more information outside of Prince of Wales Island on the mainland. We do think that coastal wolf/AA wolf is on the mainland based on some information on genetics, diet preferences, and other biological information.

Joel Jackson, President of organized village of Kake, AK: I've been following this wolf/Endangered Species Act conversation. I'm 65, and we've hunted in our area, Tongass NF, and we've seen the wolves go up and go down because the food wasn't there anymore, meaning deer, moose, etc. When prey come back the wolf rebound. Over past couple decades, deer populations have dropped, ever since logging started in our area, and after the past couple years, we've seen a decrease in deer and moose population. We only have one trapper in our area, and he's set an area around us to keep the wolves out of our hunting area, and we've seen the difference: more deer. This trapper is taking some wolves out of the population to protect the deer hunting; this trapper has told Mr. Jackson that he only takes a number of wolves that the wolf population can support. This is my experience of living in the Tongass. Thank you for including tribal leaders, because nobody usually comes to us about what we know about our areas. We do see healthy wolf populations on the ground. We hear them. The only thing we see adversely affected is when we try to use science to explain what's going on, but I believe in science. I've seen the cycle of these wolves over 65 years, and I believe they have the right to live, but we know for a fact that they are healthy around us. Mr. Jackson does not agree with the map either; it is too big of an area; I don't think everything should be included in your map. I have friends on POW sending photos of wolves in their community, and my experience is when food is scarce wolves come into our communities; they take our dogs; they just drag them off; wolves will come into the community because they are hungry.

Thank you for including us tribal leaders. We do have local knowledge, and it's time the agency starts listening to us. Sorry if I'm rattling on, but this has been on my mind for a long time, and I'm trying to be respectful. I just want to share my experience.

Crystal: Our scientists are excited to learn from you and this is a first for us to try to learn as much traditional ecological knowledge as possible. I want to note Dr. Steve Langdon and Dr. Jeffrey Brooks, and Chuck Smythe from Sealaska Heritage Institute, so we have many ears listening in. [Asks them to ask questions if they need clarification.]

Steve Langdon: I want to acknowledge and thank you for noting our participation for bringing Indigenous Knowledge into this process. I want to support that this is the first time in U.S. Fish and Wildlife Service to include Indigenous Knowledge and hopefully this will be the practice moving forward. Wanted to underline that dimension of that.

Michael Douville, Authorized to represent Craig tribal association and represents the Kake tribe on issues of wolf and sea otter: I've lived on POW for 73 yrs. I've done a lot of harvesting since I was a teenager and am active today, but POW wolves are the most studied wolves in USA. Since early 1990s we've been dealing with ESA. Most of this is conservation groups aimed at stopping timber harvest. We also oppose timber harvest because it stops our ability to get deer; secondary growth acts as an exclusion zone; we cannot hunt deer in it. There's 100,000s of acres of secondary growth, but using Wolf to stop timber harvest isn't the way to do it. With the last pop growth of 6-7 years ago, Alaska Department of Fish and Game did a hair board study and decided there were 89 wolves in Unit2, and we disagreed. Mr. Douville said they thought that 89 was a low estimate. We thought it was more like ~220 wolves. But we were stuck with this number, and trapping/hunting quotas were adjusted accordingly [low], meanwhile, the wolf population was exploding. The low quota in the last years means we focus our harvest on other islands. This led to a population increase. When Alaska Department of Fish and Game opened the season for 2 months, we had a harvest of 64 wolves in three weeks (close to their pop estimate), which made it look bad. In a season if you could get 50% it was a big deal. The numbers made it made it look like 6 wolves were left, but I think it was double what was hunted. The wolves learn about trapping, and they haven't been trapped on POW for several years because of the low quota. Mr. Douville said the hair boards do not provide a representative sample for a good estimate of abundance, and he recommended the agencies use cameras. Wolves are too smart; they avoid hair boards. They are really shy and you're only

going to get a small percentage of wolves on the hair boards. You need to know how many you're not getting. The 2019 high harvest gave us two numbers: those with and without DNA samples. Those percentages can give the department [Alaska Department of Fish and Game] an idea about how much they're missing. I encourage camera use to count wolves and understand how they interact. Last year came out with a more realistic number, 323 wolves. Now they think that 3 weeks is adequate. It might have been, but the last 10 days of season was too cold for our equipment to be operable. We still caught 64; gives an idea of the high number. You don't see the Department off the road system, and I don't think they have a good handle on what's going on off the road system. In other words, there is no endangered species here. I've seen the population go up and down. In the 1950s, fish and game decided to eradicate wolf in Unit 2, but by the 70s were starting to see wolf again, until a population high in the mid-1990s. When wolf population is high, deer population is down. If listed, the people who suffer are those who rely on deer for meat. We culturally harvest our own meat, which is becoming difficult, not because of old growth harvest, but maybe due to lots of snow, and we've had a high population of wolves recently, but no one wants to believe that's causing low deer numbers. If Wolf is listed, we will suffer because we cannot get deer. If there was no wolf, we'd have an abundance of deer. The wolf population is having biggest effect on deer. Old growth harvest has some but a lesser effect. We don't want to see wolf go away. I've done this for years. I don't care about hunting on POW, but I also hunt on the islands to the west. To list Wolf would be devastating to the people who live here and harvest their meat.

Sarah: [Thanking him for information and let him know that DIP letter response was received, while noting timeline/goals and process. We are considering all available information. Noting potential RTM outcomes: NW, T, E, CH.] The final rule making is scheduled to be completed by September 2022. There could be three outcomes: listed in its entire range, listed in only a portion of its range, or no listing.

Leah: We'll have a draft in July of Species Status Assessment that we'll send to tribes for review.

Clinton Cook: Wanted to remind U.S. Fish and Wildlife Service that it's March and the assessment is roughly ½ way over at end of the month, and there has been little consultation with tribes at this point. Any government-to-government should be with elected officials of the tribe, not with staff and non-elected tribal members, [and with higher ups at U.S. Fish and Wildlife Service, not just staff biologists]. This is frustrating to tribal leaders. I want to thank Mike Douville – he has a wealth of wolf knowledge. Government-to-government consultations are very important and should be at the forefront before the July status assessment is put out.

Crystal: Thank you for the reminder. I facilitate but also relay information back to the Regional Director at U.S. Fish and Wildlife Service.

Joel Jackson, President of the Organized Village of Kake: It's important to echo our reliance on deer and moose populations. The pandemic brought that to light. Stores couldn't get any meat. I got worried so I went to Alaska Department of Fish and Game about out of season deer and moose hunt and was denied; went to district ranger and they said they were not authorized to make that decision; went to Juneau to the regional ranger and got somewhere. At some point, Mr. Jackson was directed to the Federal Subsistence Board where a special action could be evaluated to provide an out-of-season hunt. I went to Forest Service, after 4 day discussion, my request went to DOI and then back down to district ranger office [?]. Three months had passed since I started to pursue this. They said they put a call out to Kake to see if we had a meat shortage, but I checked around with people locally and nobody heard from them. Went to the federal subsistence board who authorized a district ranger; he asked me how much deer and moose I'd need. I said 2 moose and 5 deer. We only used 1 of 2 approved hunts because the deer season opened before we could do the second hunt. That stood out in my mind; I wasn't asking permission, I was

checking boxes to try to keep it legal, but if I'm denied I'm going to do what I need to do to feed my people. If we can't go to the store, what are we going to do?

Also, regarding roads, years ago, Alaska Department of Fish and Game or U.S. Fish and Wildlife Service were talking about logging roads being stretched across islands and how it makes traveling for wolves easier. That was concerning to us. We still see that; wolves quickly traversing the islands using the roads to travel. They don't stay on the road, but they use it when they need to move fast. Forest Service has been tearing up the roads, making it impossible for us to pass but not for wolves. It's important for U.S. Fish and Wildlife Service to talk with us. Up to this point, we hadn't heard anything from anybody. I heard about this meeting from social media.

Crystal: President Jackson, thank you for the touching and illuminating story how pandemic highlighted need for local foods and what you had to do to accomplish that legally.

Michael Douville: To have deer, we must harvest wolf as well; we have a healthy wolf population. We have wolf on other islands. St. Johns was only island without wolf; that's where we went to harvest deer, but then wolf got on and then the deer were wiped out. In the 70s, one island provided Craig (Kake?) with deer. Humans are part of this ecosystem. A lot of this stuff is coming from outside and people are trying to make decisions from us from outside. Mr. Douville explained that outsiders do not know what is going on in our place, they are trying to make local decisions, and that is not right. Wolves adversely affect deer harvest success. Deer are in decline within past years, Alaska Department of Fish and Game reports also indicate that. The geography we have will support a lot of deer, but we need to keep predators in check, so it's devastating to deer, it's from high predation. You also need to stop harvest of old growth to have a place for deer to overwinter. But Wolf knows that too, so they hunt in those places in the winter. In the 2nd growth areas there's no way for deer to eat during the winter. I recommend harvest of 2nd growth to open up forage, but no one is interested in harvesting 2nd growth. To catch wolves, you have to study them well. I've tried to help the department [Alaska Department of Fish and Game], but it's like they don't trust outside help. I'm not interested in wiping out the wolf population, but to list them would be unnecessary at this point in time.

Chuck Smythe, working with Sealaska Heritage Institute: Want to explain our role: facilitate research by Dr. Langdon and the report to be written by Jeff Brooks. I want to explain that SAI is supportive of both consultations and collection of TEK. We've done a lot of work on herring and the Sitka harvest. We're writing more proposals to continue that work. We're testifying at board of fish in support of subsistence fishermen in Sitka. We view this research as significant as a first by U.S. Fish and Wildlife Service to integrate TEK into their Species Status Assessment process and documenting what is not well known about wolves in the communities in this area. Want to address meaningful consultation. It needs to be early and meaningful. This is the first consultation, but really there should've been earlier consultation; consultation was needed to plan and design this TEK/IK study we are talking about. We've been in communication with Yakutat. It might be useful for Dr. Langdon to describe the scope of this project and how it will be carried out. We're currently finalizing the grant agreement. I hope this is a successful effort.

Steve Langdon: I told U.S. Fish and Wildlife Service that normally projects of this kind are multi-year processes, so this is a very limited timeframe. We had to weigh whether to do something or not at all. The research design is guided by needs of the assessment process and the wolf itself. We are planning 10 interviews across SE AK with Tlingit people, with some interviews on POW and some on mainland with Kake people and Haida people. In addition to interviews, will be assessed and included in a report. We'll also touch on cultural significance; ethnographic and the position of the Wolf in Tlingit culture and how the Wolf is incorporated into the cultural processes. Respect and balance are core values also will be

recognized in the report. I wish this was not such a short-term process. We would want people's review of the report before any inclusion of report and materials in the Species Status Assessment.

Jeff Brooks: I really wanted to listen to tribal leaders today. I'm a social scientist for BOEM and doing a detail with U.S. Fish and Wildlife Service. I used to work in the Subsistence Program with U.S. Fish and Wildlife Service. I will help Dr. Steve Langdon analyze results and analyze and apply TEK about wolf, deer, people relations, and whatever else we learn. It's important to look at TEK in the ESA listing process, so I want to be involved in this important study, but I need to really learn from all of you at this point.

Crystal: [Thanks all and recognizes this is a learning moment for U.S. Fish and Wildlife Service and we're limited by when someone is going to petition a species. She is grateful to tribal leaders and those who will continue to participate.]

Rudy Bean, Tribal administrator for Craig Tribal Association on POW: Kake is also my hometown. I wanted to talk about what Joel was talking about and the lack of meat in the store during the pandemic. [Thanks Joel for his comments and leadership.] During that time, I had to fly to Juneau to buy meat for the family. Regarding agency trying to protect wolf; we ask ourselves if wolf or humans are more important to the agency. We can't wrap our head around why the wolf would be protected.

[Chat from Chuck Smythe: It may be helpful to explain that the origin of this project was a petition filed by some entity. ... and as Crystal said the agency is required to address in a short time frame.]

Erin Knoll: This is a learning process for the U.S. Fish and Wildlife Service, and we want to do better in the future, for wolf, ES, and communication. We were petitioned in 2020 by CBD to list the wolf. Once that happens it kicks off a timeline that we're beholden to in our regulations. We have learned that the minute we got the petition, we should've started this and tried to share that experience with other regions.

Crystal: Can you speak to the agency's role in the petition?

Erin: U.S. Fish and Wildlife Service is charged with the ESA and maintaining the list of listed species. Our job, once petitioned, is to gather all information on the species to make an unbiased decision based on the best available scientific information. This is not supposed to be based on politics, economics; it should be what is best for the species. The listing decision is a longer process, and a decision will be reached December 2023. This is the first step in the decision-making process, with Species Status Assessment being the information collecting phase.

Clinton Cook: Comment regarding Erin's comment. Seems like you are getting pushed around by environmental groups and leaving us a very short window to testify. We understand the wolf more than any environmentalist will. We're starting our gathering season very soon: the herring are coming and with the herring comes life and squeezing this assessment into 6 months is too short of a timeframe. (Mr. Cook indicated that they would have to attend to their subsistence calendar (e.g., herring harvest) which takes time away from working with the agency on this effort.) You must have input from tribes since tribal members are affected most by this listing. This timeframe is very short for gathering the tribal input that is needed.

Dennis Nickerson: Wanted tribal leaders to speak before me. When we became aware of the petitioned listing, our department started researching this. At this time Alaska Department of Fish and Game came to advisory meetings and they only wanted to talk about the wolf. Some things were left out of our discussion with them, one thing being Section 10 of the ESA. Hearing that wasn't divulged by State of AK made the tribal committee feel like we were being cornered. We need to be notified. CBD is huge and has funding to do this. If we knew ahead of time, we'd have a better chance to address this. I think all

agencies should yearly be contacting us to find out who are tribal leader, president, and any other people representing the tribe. I keep hearing about TEK/IK. What we're dealing with is Indigenous Science and Local Science. People go to college to do the same sort of studies we do in the field here. I think we need to coin what we do as Indigenous Science.

Crystal: U.S. Fish and Wildlife Service, any response to Section 10?

Erin: I can speak to Section 10 of ESA speaks to AK Natives and the relationship to T/E wildlife. Essentially, subsistence harvest by AK Natives and non-natives of AK Native village and doing so for subsistence in a non-wasteful manner, is exempt from the ESA. What this looks like moving forward – we'd need to talk to our Solicitor and with you to understand how wolf fits into the subsistence picture, should the species be listed. It's hard to speculate if the species were listed.

Millie Schoonover, with Craig Tribe: On just to learn.

Shannon Isaacs, Craig Tribal Association: Just here as staff to listen.

[Chat from Joel Jackson: could I have a full report on this meeting sent to ed@kake-nsn.gov]

Joel Jackson, President of Organized Village of Kake: What struck me at beginning of meeting, there are a lot of unknowns about the wolf population: how they move, numbers. If you've been out in the forest, how do you calculate what is there. Just look at the picture (on the slide), you can only see a limited amount of the landscape. It would take years to find out where all the deer and moose are, they are constantly evolving and adjusting to their environment. It can be weeks or months before they come back through a certain area. A lot of unknowns about these wolves. I'm out on the road and my boat and I don't go through the woods often, but I listen to our younger hunters and trappers and guide them to go check these areas. These are a lot of unknowns to respond to within 6 months by us or any agency or organization. This is ridiculous.

Sarah: I agree. We are lacking a lot of information. I'm not on the ground, so we are reliant on people like you and others who are on the ground and other scientists. My hope is that we can have these conversations in future years regardless of whether we are petitioned to list them. Really appreciate you pointing that out.

Jeff Brooks: The U.S. Fish and Wildlife Service seems interested in incorporating TEK in this process. Other than guidelines in ESA regulations, when did U.S. Fish and Wildlife Service decide to go the route of gaining the knowledge of Tribal people on the ground. I recognize we can't add time to the situation, but how can we make this work best in the time we have. Maybe you can give some context about how important the people's knowledge is to this project to help us to do the best we can for this project. I sense a great deal of frustration on part of the tribal leaders on the call today regarding the short timeframe.

Crystal: I will try to address from high level. There have been a couple species in AK where TEK or IK has been incorporated as part of the process but not as part of the Species Status Assessment process. [References polar bear and walrus in part of listing decision making process.] When the agency has been doing something in a structured way for a long time, it's hard to insert a new piece into that structure. Right now, we have a lot of people in the agency who are supportive and excited to learn TEK. We recognize that knowledge is limited but there are a lot of people are working to advance this. We are hoping that we can gain critical information about the process to advance the process.

Jenny Spegon, branch chief of Ecological Services: As branch chief I review documents, and I appreciate TEK. We can't get this anywhere else, and this needs to be considered when we're listing species.

Stewart Cogswell, U.S. Fish and Wildlife Service Field Supervisor of the Southern AK Field Office: I hear what tribal leaders are saying and unfortunately this is not unique. This feels frustrating to me, and how can we translate local concerns to national policy. This is tough but the good thing is that we're talking about it. TEK is picking up steam and our current administration is supportive, which is exciting. The timing isn't good for the wolf, and I apologize. We can work on getting staff and making future efforts better. I appreciate your comments and growing up as a hunter and gatherer myself it's tough to hear. Please continue to share your voice and keep the conversation going beyond this call so we can have the best outcome.

Michael Douville: Really appreciate the opportunity we have today. It's encouraging and down the road we can have more conversations. I'd be happy to answer questions later. I appreciate the opportunity and the effort you put forth.

[Chat from Clinton Cook (to request meeting notes): Clintoncooks@raigtribe.org]

Clinton Cook: I echo Mike's thoughts and hopefully this is the first of quite a few Gov-2-Gov meetings. You can see the outpour from Craig tribe: we have staff and leaders here today. It's important to us to protect this resource. I'll continue to put the stress on Gov-2-Gov throughout the process. The use of TK is a factor. Glad that Sea AK is involved, and we consider Dr. Langdon as member of our community. Mr. Cook indicated they would be glad to see U.S. Fish and Wildlife Service in Craig for further consultation.

Jeff Brooks: I feel there is a substantial amount of knowledge on the ground that will help us do right by the species. Local managers are doing a great job managing the species on the ground. There is a lot we can learn from the people.

Steve Langdon: As a matter of commitment, the U.S. Fish and Wildlife Service should look into how budget and process makes a lot of sense, and this should be part of your consultation process moving forward.

Joel Jackson: Thanks to everyone on this call. This is an important first step in this process. I can't remember the last time we were asked to the table on anything concerning our resources in our area other than people just listening and going away and doing what they were going to do anyway. I hope this is different. U.S. Fish and Wildlife Service people here today, take our comments to higher ups who can make decisions and I hope they consider it.

[Chat From Chuck Smythe to Everyone 02:46 PM]

I was thinking along these lines as well ... about the need to plan for continuing study including funding for it.]

-----End of call at 10:48 AM-----

Appendix B. Conversation Guide for Traditional Ecological Knowledge

Alexander Archipelago Wolf Traditional Ecological Knowledge Project:

Wolf Characteristics and Behavior Protocol

INTRODUCTION – The USFWS is conducting an Endangered Species Status Assessment (SSA) for the Alexander Archipelago wolf. They intend to include Tlingit and Haida traditional knowledge and cultural information in their assessment. To meet those needs, a limited research project is being conducted to acquire, analyze and prepare a report on wolf topics that will be submitted by the USFWS to use in their SSA. The information provided through this interview will assist in the preparation of the report on these topics that will be submitted to the USFWS.

BACKGROUND INFORMATION

Full name	Maiden name
Date of birth	Location of birth
Tlingit clan	Tlingit name(s) (translation)
House name	
Mother's clan	Mother's name
Father's clan	Father's name

Years resident in communities

BACKGROUND INFORMATION

What did you learn or were taught about wolves as a child?

From whom did you learn that information?

Do you recall your first sighting of or interaction with wolves?

Have your elders told you stories about wolves?

PERSONAL EXPERIENCE

When did you first trap or hunt wolves?

When did you start trapping wolves? Why did you decide to do so?

Where did you begin trapping wolves?

How are traps set up? How do you choose a site? Describe how you distribute wolf traps/ snares.

Narrative – Where, how, outcomes, observation

Through time – Locations, time periods, experiences

Please describe your experience in seeing the large number of deer killed by wolves – one or more occasions?

WOLF CHARACTERISTICS

What kind of wolves have you seen – single, small group, large group?

Have you observed variation in wolf size, color phase? Any patterning?

Can you distinguish male from female wolves?

Have you seen wolf dens? Locations. How they re-use them?

Population – how do population numbers change? What indicators do you have?

WOLF BEHAVIORS

What indicators do you use to locate wolves? How do wolves respond to seeing you? What do wolves eat? Do you check their stomachs when you harvest them?

What size are wolf groups/packs?

Do they have territories?

How do they move seasonally?

How many pups appear in a litter?

WOLF COMMUNICATIONS

In what ways do wolves communicate?

When do wolves make noises?

Do wolves make noises when they encounter you?

Wolves howling – individual, group, response - discuss

Do wolves bark? Do wolves growl? Do wolves whine? Are there other noises?

Do you communicate with wolves? How do they respond?

WOLF HARVESTING

Have you ever hunted wolves?

Have you ever snared wolves? How does it differ from trapping?

If yes, how do you decide when and where to trap/hunt wolves?

Do you have a goal or general idea about the number of wolves you take? What goes into that decision?

What factors affect your success in trapping/hunting wolves?

Do you see impact of your wolf harvesting on deer populations?

WOLVES AND DOGS

Have you heard of hybrid wolf-dog animals?

Have you seen them?

What are they like – characteristics, behaviors etc.

Do you know any stories about hybrids? Hunting, searching, etc.

OTHER INFORMATION

Have you observed wolves in your community?

Have you heard stories or experienced wolves threatening people?

Have you seen wolves on beaches or in the water when you have been traveling for other activities?

Appendix C. Conversation Guide for Cultural Knowledge

Alexander Archipelago Wolf Traditional Ecological Knowledge Project:

Cultural Information Protocol

INTRODUCTION – The USFWS is conducting an Endangered Species Status Assessment (SSA) for the Alexander Archipelago wolf. They intend to include Tlingit and Haida traditional knowledge and cultural information in their assessment. To meet those needs, a limited research project is being conducted to acquire, analyze and prepare a report on wolf topics that will be submitted by the USFWS to use in their SSA. The information provided through this interview will assist in the preparation of the report on these topics that will be submitted to the USFWS.

BACKGROUND INFORMATION

Full name	Maiden name
Date of birth	Location of birth
Tlingit clan	Tlingit name(s) (translation)
House name	
Mother's clan	Mother's name
Father's clan	Father's name
Years resident in communities	

CULTURAL INFORMATION

Are you aware of a story about how the *Kaagwaantaan* or Klukwan Wolf House acquired the wolf as a crest?

Are you aware of a story about how the *Kaagwaantaan* Wolf House acquired that name?

Are there wolf crests or images that Wolf moiety/clan members use?

Are there wolf regalia – headdresses, tunics, blankets, dance boards etc. – that are the property of the house?

How are those regalia used (*ku'eex* etc.) by Wolf House clan members on ritual occasions?

Are there *at.óow* associated with wolf of the Wolf House?

How were/was the *at.óow* acquired or created?

Have you worn *at.óow* regalia? If so what is that experience like?

Do you know of any personal names used by Wolf clans that include reference to the wolf, wolf characteristics, or wolf behavior?

Do you know of any songs concerning the wolf sung by Wolf House members on ritual occasions?

Do you know of any dances concerning the wolf that are performed by Wolf House members on ritual occasions? Is there a name for the dance?

Are there any other aspects about the wolf that Wolf House members practice or perform (like howling)?

PERSONAL EXPERIENCES

Have you ever seen or encountered wolves?

Have you heard stories from other people about seeing or encountering wolves in the community?

Are you aware of any tribal member in Klukwan who trapped or hunted wolves? If so, when was that activity taking place? Why was it undertaken if you know.

Appendix D. Indigenous Research Partners

Name	Community	Age	Moiety	Clan	House	Trapper	Hunter
Judith <i>Dayootsú</i> Ramos	Yakutat	63	Raven	<i>K̄waashk'ikwáan</i>	Owl	No	No
Devlin <i>Shaagaw</i> <i>Éesh</i> Anderstrom	Yakutat	25	Raven	<i>K̄waashk'ikwáan</i>	Moon	No	No
Thomas Mills	Excursion Inlet/Hoonah	77	Raven	<i>T'ak̄deintaan</i>	Head	Yes	Yes
Michael <i>K'aóosh</i> Jackson	Kake	71	Raven	<i>K̄aach.ádi</i>		No	No
Scott Jackson	Kake			<i>Was'eeneidí</i>		Yes	Yes
Jon Rowan	Klawock	58	Wolf	<i>Shangukeidí</i>	Wolf <i>Gooch</i>	Yes	Yes
Thomas George	Klawock	67	Raven			Yes	Yes
Mike <i>Gitwaayne</i> Douville	Craig	73	Raven (Crow)	Beaver <i>Deisheetaan</i>		Yes	No
Tony Sanderson	Hydaburg	60	Eagle	<i>Sgajuuga.ahl</i>		Yes	No

Appendix E. Informed Consent



Wolf Traditional Knowledge Research Interview Consent Form

TEK Gathering for Alexander Archipelago Wolf Species Status Assessment

Chuck Smythe, Ph.D. (Sealaska Heritage Institute), Steve J. Langdon, Ph.D. (University of Alaska-Anchorage), Jeffrey Brooks, Ph.D. (Bureau of Ocean Energy Management)

Researcher

Steve J. Langdon, Ph.D.
(907)-227-3126
sjlangdon@alaska.edu

Project Description

You are being asked to participate in a research project about Alexander Archipelago wolves that is being funded by the U.S. Fish and Wildlife Service through a cooperative agreement with Sealaska Heritage Institute. This research will be aimed at identifying traditional ecological knowledge (TEK) and other cultural knowledge related to the Alexander Archipelago wolf. Information from this interview will be used in a species status assessment (SSA) for the wolf as a potential endangered species following the provisions of the Endangered Species Act.

If you would be willing to participate, I would like to interview you on your knowledge and experiences concerning the Alexander Archipelago wolf and its position in Tlingit and Haida culture and society. Your perspective is of great importance and would greatly help to assess the status of this species. I will be recording this discussion and taking handwritten notes during the interview. This should take about an hour to complete. Information from this interview will be stored at SHI. We will share the results of this study with the communities involved through written materials.

Voluntary Nature of Participation

Your participation in this research is voluntary. At any time prior to the publication of this research you may contact me and withdrawal your consent.

Confidentiality

The protection of your identity is my primary concern. Under no circumstances will your identity or participation in this study be compromised. The study report to US Fish and Wildlife Service will use fake names for all participants to protect your identity. If you would prefer to be identified by name as one of the interviewees, please provide your consent here:

Yes, I give my permission to be identified by name as a participant in this research (Optional).

Signature _____ Date _____

Potential Benefits and Risks:

By participating in this interview neither you nor any groups you are affiliated with are at risk. You will receive \$250 for each hour of interview you provide. Longer term benefits for participating in this collaborative research may be possible as a result of the analysis, results, and implications of this research.

Contact People

If you have any questions about this study, please contact Chuck Smythe, Ph.D., at (907)-586-9282 or chuck.smythe@sealaska.com. If you have any questions or concerns about your rights as a research participant please do not hesitate to contact Adam Kersch, Culture & History Manager at Sealaska Heritage Institute, (907)-586-9180 or adam.kersch@sealaska.com.

Consent

Please provide your informed consent to participate by signing below.

Participant's signature _____ Date _____

I have informed the participant about the information described in this form by providing a written summary of the research goals and objectives, how the results will be used, and answering any questions by the participant.

Researcher's signature _____ Date _____

NON-DISCRIMINATION STATEMENT

The U.S. Fish and Wildlife Service conducts all programs and activities free from discrimination on the basis of sex, color, race, religion, national origin, age, marital status, pregnancy, parenthood, or disability. For information on alternative formats available for this publication please contact the Ecological Services Office to make necessary arrangements. Any person who believes she or he has been discriminated against should write to U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, Alaska 99503 or O. E. O., U.S. Department of Interior, Washington, D.C. 20240.