The Ch'u'itnu Traditional Cultural Landscape:

A District Eligible for the National Register of Historic Places

Submitted by

The Native American Rights Fund

On behalf of

The Native Village of Tyonek

By Alan S. Boraas, Ronald T. Stanek, Douglas R. Reger, and Thomas F. King

April 3, 2015

Acknowledgments

Many people have helped with the preparation of this report, and we are indebted to all of them. In particular, we would like to thank Shina DuVall, Archaeologist in the Alaska State Historic Preservation Office, for her guidance and feedback; Doug Tosa, GIS Analyst with the Alaska Center for the Environment, for his mapping and technical assistance; and NARF staff Shay Elbaum and Jill Rush, for their editorial contributions.

Executive Summary

The intent of this document is to explain why the Ch'u'itnu (Chuitt River) drainage[1] of Cook Inlet, Alaska constitutes a Traditional Cultural Landscape (TCL) associated with the indigenous Tyonek Dena'ina, or Tubughna,[2] people. The Ch'u'itnu TCL as described in this paper should be recognized as eligible for the National Register of Historic Places (NRHP or "National Register"), for purposes of assessing and resolving adverse effects on it under Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations in 36 C.F.R. Part 800.

The Tubughna people have used and occupied the Ch'u'itnu drainage as an essential part of their traditional territory since time immemorial. The landscape along the river, including the river mouth, has been and continues to be a place where the Tubughna carry out subsistence resource harvests, settlement, celebrations of life, and travel to accomplish these purposes. Archaeological evidence of this sustained relationship between the Tubughna and the Ch'u'itnu TCL includes house structures, associated storage pits, and cremation sites which provide a glimpse of Dena'ina life before contact and during their initial transitions after contact with Russian traders. Additionally, historic written documents, photographs, ethnographies, and contemporary scientific research demonstrate a continuity of occupation and subsistence use of the area into the present day.

The Keeper of the NRHP, in consensus with the Alaska State Historic Preservation Officer (SHPO) in the State of Alaska Office of History and Archaeology, has found a portion of this drainage, called the Ch'u'itnu Archaeological District (CAD), to be eligible for the NRHP under Criteria A and D (36 C.F.R. § 60.4(a), (d)). The Keeper found that the CAD meets Criterion A, "association with events that have made a significant contribution to the broad patterns of our history," based on continued and uninterrupted subsistence practices centered on the keystone species of wild salmon from pre-contact times to the present, as well as on culturally vital social and spiritual aspects of traditional Tyonek Dena'ina subsistence

[1] Throughout this report we use the word "watershed" interchangeably with the word "drainage".

[2] The Dena'ina, formerly spelled "Tanaina," traditionally occupied some 41,000 square miles of south central Alaska. Their language is part of the Athabaskan linguistic group. Tubughna is the Dena'ina name for the people of the Tyonek area, and means "people of the beach." For purposes of this report we use the word "Tubughna" interchangeably with "Tyonek Dena'ina".

practices (NPS 2014). As discussed in the documentation supporting identification of the CAD, "subsistence" traditionally means much more in Alaska than the harvesting and nutritional aspects of food procurement and processing; it also includes a range of customary and traditional social and religious spiritual practices. These qualities are an integral part of subsistence as understood by the Tubughna people.

The district was also determined to be eligible under Criterion D for its potential to yield important data on the prehistoric and historic life ways of the Dena'ina people in the Cook Inlet area (Braund 2006a:58).

After further investigation, it has become apparent that cultural significance is not limited to the CAD, but is embodied within the entire Ch'u'itnu drainage. Upon reviewing the CAD documentation with specialists at the SHPO and the Advisory Council on Historic Preservation (ACHP), the Native Village of Tyonek recognized that the CAD was a rather artificial construct, based on contemporary property boundaries and the distribution of physical features recognized by archaeologists. As a result, much of what gives the area cultural significance to the Tubughna people was left outside of the CAD's boundaries. Further study, documented in this report, indicates that the landscape embraced by the Ch'u'itnu drainage is a more appropriate unit, and is eligible for the NRHP under Criteria A, C, and D as a TCL (see Andrus and Shrimpton 2002).

Intensive reliance on salmon through subsistence practices began in this region about AD 1000, when the Dena'ina developed *ełnen tu'h*, a complex underground cold storage pit that kept salmon frozen throughout the winter. The development of *ełnen tu'h* solved the problem of how to preserve large volumes of salmon for winter consumption, and led to a shift from nomadism to sedentism. This shift aided the development of social and spiritual cultural features that enhanced sustainability, including:

1. Complex avunculocal[3] village organization with *qeshqa* (chief)-led reciprocity in the formation of alliances
2. Interaction with animals as willful, sentient beings, expressed in a ritual ecology of burning land animal bones in the fire and distributing water animal bones in the water.
3. The First Salmon Ceremony, signifying world renewal.

[3] A societal arrangement in which boys, as members of their mother's clans, leave their birth homes at adolescence and go to live with their mother's brothers; girls typically remain in the mother's home until they marry.

4. A landscape populated with spirit forces.
5. Water described by the phrase *beggesh qul'i miłni*, "water without an impure essence."
6. The presence of ancestor spirits, which formed the basis for cremation and potlatch[4] practices.

With Russian occupation, this cultural system initially became disordered, but reached a measure of cultural stasis after a series of battles in 1797. Those battles taking place at Tyonek have been described by Alexan (1965) as "The last Indian wars of Tyonek."

During early historic times, the Tyonek Dena'ina relied heavily on wild salmon as a principal food source, supplemented by other wild foods. This pattern has been maintained by contemporary Tyonek Dena'ina. While fishing technology and techniques have changed over time (e.g., nylon nets have replaced spruce root or sinew nets), the harvest of salmon and other wild foods has been documented by the Alaska Department of Fish and Game (ADF&G) to be as significant to contemporary Tyonek Dena'ina as in the past.

The word "subsistence" is used throughout this report to refer not only to the customary and traditional practices of harvesting wild foods, but also to the associated and interdependent social and spiritual practices integral to indigenous culture. In contemporary Tyonek, there continue to be social, religious and non-religious spiritual practices that mirror the practices of ancestral Tubughna Dena'ina, including:

1. Hunting and fishing territories built around extended families.
2. Continued practice of the First Salmon Ceremony.
3. Informal rituals associated with a young man or woman's first moose kill.
4. Sharing salmon and other wild foods through family networks.
5. Sharing salmon as a symbol of community identity.
6. The belief that animals and plants are willful beings, often expressed within the context of Orthodox Christianity.
7. Taking and sharing of potlatch moose or memorial moose as part of a funeral ritual.
8. The ritual of the Great Blessing of the Water (although recently discontinued because of lack of a resident priest), in which water is baptized to remove sin in the form of human-caused pollution, making it ready for the return of salmon.
9. The view that water is sacred.
10. The interpretation and understanding of the landscape in terms of the Medicine People, or spirit forces.
11. The recognition that graves and cremation places are spiritually sacred places.

[4] Gift-giving feasts, central to the economic systems of Northwest Coast tribes.

12. The association of the landscape and waters of the Ch'u'itnu with freedom and cultural identity.

Tyonek today is an example of survivance - the process of traditional cultural survival - by virtue of uninterrupted subsistence and associated social and spiritual cultural traits from prehistory to the present (see Vizenor 2008). The cultural identity of the Tyonek Dena'ina is shaped by the Ch'u'itnu watershed, and by the wild salmon and other resources it sustains. The Ch'u'itnu is a living cultural landscape. As a measure of the cultural/historical importance of the river to subsistence practices, the people say that without the Ch'u'itnu and its salmon, there would be no Tyonek.

The Ch'u'itnu watershed and landscape, including the river's main stem, tributaries and headwaters, comprise an integrated whole that meets NRHP Criterion A (36 C.F.R. § 60.4(a)) for its association with the continuing cultural history and practices of the Tubughna people. As a distinguishable entity having cultural significance to the Tubughna people and containing many individual elements, the watershed comprises a district eligible for the NRHP under Criterion C (36 C.F.R. § 60.4(c)). As a source of historical, ethnographic, and archaeological data, this district is also eligible for the NRHP under Criterion D (36 C.F.R. § 60.4(d)). The watershed in its entirety has integrity of design, setting, materials, workmanship, feeling, and association, and constitutes a traditional cultural landscape eligible for inclusion in the NRHP.

Table of Contents

List of Figures

List of Tables

I. Prelude

Ndaha tiyush dit?

Where are you going?

Ch'u'itnu tgheshuł shit'i, nenht i?

I'm going to Chuitt River, how about you?

Aa' shi k'a Ch'u'itnu tgheshuł

Yes, I'll go to Chuitt River too.

Yada q'u ihu tghił'ul?

What will you go for?

Łiq'aka'a ihu tghel'ił shit'i

I'll go for king salmon

Tahbił negh k'ilan da?

Do you have a net?

Aa' tahbił shegh k'ilan.

Yes, I have a net.

Yagheli, ch'tudałni

Good, let's go.

. Max Chickalusion Sr. and Nellie Chickalusion (1979:3)
Tubughna Ełena: The Tyonek People's Country

A long time ago they called Tyonek *Ełnen Bunkda* "Mother of the Earth" because there are lots of things to eat all the time: clams, fish, beluga, seal, grease, and oil …They used to get lots of grub at Tyonek.

Shem Pete
Kari and Fall 2003:49

II. Introduction

Overview

This report has been prepared by the Native American Rights Fund on behalf of the Native Village of Tyonek in Alaska to document how and why the Ch'u'itnu (Chuitt or Chuitna River) drainage of Cook Inlet constitutes a Traditional Cultural Landscape (TCL) of the indigenous Tyonek Dena'ina, or Tubughna,[5] eligible for inclusion in the National Register of Historic Places (NRHP). It has been prepared to help the federal and Alaska state governmental agencies understand the significance of the Ch'u'itnu drainage and consult with the Native Village of Tyonek and others about the effects of development and land-use projects on it under Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 C.F.R. Part 800).

On May 5, 2014, the Keeper of the NRHP determined that a portion of the Ch'u'itnu drainage, labeled the Ch'u'itnu Archaeological District (CAD), is eligible for the NRHP under NRHP Criteria A and D (36 C.F.R. § 60.4(a), (d)). In doing so, the Keeper wrote:

> *While the district* [CAD] *may be eligible as part of a larger landscape,* it is the Keeper's opinion that the CAD is individually eligible under Criterion A because it clearly conveys its significance as a place that represents the broad patterns of history regarding the uninterrupted use, from Precontact times to the present, of salmon subsistence not merely as a dietary supplement, but as an integral part of contemporary Tyonek culture. Specifically the documentation shows that the tangible, archaeological record reflects salmon subsistence as a key and central theme in the sharing/economic system that defines community membership, a spiritual system of sacred water, and gave rise to social and political complexity through the qeshqa system of governance and reciprocity. (NPS 2014, emphasis added)

Further consideration and consultation with the Keeper's staff, the SHPO[6] staff, and staff of the Advisory Council on Historic Preservation (ACHP), has convinced the Native Village of Tyonek that the "larger landscape" alluded to by the Keeper is the appropriate entity to regard as eligible for the NRHP. Based on relevant NRHP literature and consultation with experts, we

[5] The Dena'ina, formerly spelled "Tanaina," traditionally occupied some 41,000 square miles of south central Alaska. Their language is part of the Athabaskan linguistic group. Tubughna is the Dena'ina name for the people of the Tyonek area, and means "people of the beach."

[6] In Alaska, the SHPO is housed within the State of Alaska Office of History and Archaeology.

believe that the Ch'u'itnu drainage is eligible for the NRHP as a cultural landscape, comprising a district that can best be understood as a traditional cultural place or property (see Parker and King 1998). As such, and as discussed below, it is eligible for the NRHP under NRHP Criterion A. The same considerations support its eligibility under Criterion C (36 C.F.R. § 60.4(c)), as "a significant and distinguishable entity whose components may lack individual distinction."

In her determination of eligibility, the Keeper also agreed with an earlier conclusion by the SHPO that Criterion D – having the "potential to yield important information about history or prehistory"—applied to the CAD. As discussed below, we agree, and think that the watershed as a whole also meets this criterion. Only three areas within the Ch'u'itnu watershed have been archaeologically surveyed, and the results of those surveys suggest that further archaeological work is very likely to yield important "information [contributing] to our understanding of human history or prehistory" (Andrus and Shrimpton 2002).

However, the Native Village of Tyonek is a living community, whose links to its ancestors and traditional ways of life are vital aspects of its identity. While we acknowledge that they are of interest to scholars, and hence make the Ch'u'itnu drainage eligible for the NRHP under Criterion D, the landscape's paramount cultural and historic significance is best understood with reference to Criterion A.

For the Ch'u'itnu watershed, Criterion A—associated with the "broad pattern of our history"—is specifically "the uninterrupted use, from pre-contact times to the present, of salmon subsistence" (NPS 2014). As discussed below, "subsistence" in this context means not only the consumption of salmon, but the whole cultural system that was and is built around fishing, fish storage, processing, consumption and, critically, sharing. Although many indigenous groups in Alaska and elsewhere have engaged in salmon-based subsistence practices, its practice has survived among the Tyonek Dena'ina in an unusually intact form, remaining critical to the identity and survival of the Tubughna as a society. Because the Tubughna are still reliant on the fish of their ancestors, their cultural traditions are part of a living cultural landscape. The core of

that landscape is a clean, unpolluted river with intact hyporheic[7] and riparian habitats, in which salmon can spawn and their fry and smolt can survive.

To define and understand the Ch'u'itnu drainage as a TCL of the Tyonek Dena'ina, we ask the question: "What are the defining characteristics of the Ch'u'itnu drainage that contribute to this significance?" As detailed in this document, the answer lies in a number of dimensions of sustained place-based traditions, spanning from ancient to contemporary times. These traditions involve the harvest and consumption of wild foods, primarily salmon, and they are central to the community's traditional social dynamics, defined through family-based fish-camp activities and magnified through the sharing of resources that demarks community membership. Integral to these dynamics is a shared spirituality, manifested in religious and non-religious rituals that give homage to the salmon and the clean water that sustains them, while connecting the Tubughna people to the land and the traditional practices of their ancestors. These patterns have been in place and associated with the Ch'u'itnu watershed since at least AD 1000.

Background

The Ch'u'itnu and Tyonek

The Ch'u'itnu drainage—that is, the watershed of the Ch'u'itnu or Chuitt River—covers 150 square miles of southcentral Alaska (Department of Natural Resources 2013:32). Its mouth lies just northeast of today's village of Tyonek, some 50 miles southwest of Anchorage. It lies within the traditional hunting and gathering territory of the Tubughna, and the river is currently neither dammed nor obstructed for its entire length.

The Native Village of Tyonek has existed for hundreds, if not thousands, of years. It was first brought to European attention by Captain James Cook and his men aboard HMS *Resolution* and HMS *Discovery*, which anchored off the village in 1778. Although the village has moved several times (most recently in the 1930s after a major flood), it has always retained a close physical proximity to the Ch'u'itnu. The village currently has a population of about 180 residents, the vast majority of whom are Tubughna.

[7] The area under and alongside a stream, where shallow groundwater and surface water mix, is extremely important for fish spawning.

The Dena'ina Topical Dictionary (Kari 2007) spelling of "Ch'u'itnu" will be used in this document. The *-nu* (or *-na*) suffix means "river or stream" in Dena'ina, so to write "Ch'u'itnu River" is redundant. There are other spellings, including "Chuit'na," "Chuit'nu," and "Chuitt River." We sometimes use the term "Chuitt River," because it is the USGS designation and is common locally. In her 1930 field notes, de Laguna (1930:59) wrote that the name of the river is probably derived from the name of the old village, "Ts'úitna." *Ts'u* is from the root *tsa*, meaning "to see," and is probably an incorporated noun in this phrase. The stem *-it* is a transitional aspect, past tense stem; affixed to *ts'u*, it means "saw" or "began to see." The suffix *-na* means "river." The word *tsu'itna* means something like "he/she saw it river" or "he/she began to see it river" (analyzed by Boraas from Kari n.d.:418, 427, and 1073).

The Proposed Chuitna Coal Mine

PacRim Coal, LP has proposed a surface coal mine about 12 miles inland from Tyonek that would remove and market an estimated 300 million tons of sub-bituminous coal from the Ch'u'itnu watershed. The depth of the proposed mine would be up to 350 feet. The mine plan calls for the coal to be crushed, transported by overhead conveyor belt, and stockpiled at Ladd Landing, near the mouth of the river. From there it would be taken on a second conveyor approximately one mile out into Cook Inlet and loaded onto ships headed for Asian markets. In addition to the mine, conveyors, and holding area, the infrastructure would include camp facilities and employee housing, a private mine road and airstrip, and port facilities, including an island bulkhead. The mine has a proposed 25-year lifespan for its first phase and would be among the largest open-pit coal mines in the United States (PacRim Coal, LP n.d.).

Because construction of the mine would require alterations to waters of the United States, the project cannot be undertaken without a permit issued by the U.S. Army Corps of Engineers under the Clean Water Act (33 U.S.C. § 1251 et seq.). In considering whether to issue such a permit, the Corps of Engineers must consider the project's potential environmental impacts under the National Environmental Policy Act (42 U.S.C. § 4321 et seq.) and the regulations of the Council on Environmental Quality (40 C.F.R. Parts 1500-1508). It must specifically consider potential impacts on places included in or eligible for the NRHP, under Section 106 of the NHPA and the implementing regulations of the ACHP (36 C.F.R. Part 800). The proposed

mine project is also subject to review under the Alaska Surface Coal Mining Control and Reclamation Act (Alaska Stat. 27.21).

Archaeological Surveys and the Ch'u'itnu Archaeological District (CAD)

In preparing its permit applications to the Corps of Engineers and State regulators, PacRim undertook studies to characterize the mine's environmental impacts. Among the studies was a survey of archaeological sites, performed by Stephen R. Braund and Associates (Braund 2007). The survey examined only those areas where the proposed mine, if constructed, is projected to result in physical ground disturbance. The survey considered only archaeological sites where the physical remains of past human activity can be observed by archaeologists. A second survey, also focusing solely on archaeological sites, was subsequently done by Charles M. Mobley and Associates for Apache Alaska Corporation in connection with seismic testing. (Mobley and Mobley 2012). Both of these surveys ultimately formed the basis for the recognition of the CAD.

The Native Village of Tyonek is unsatisfied with the results of the surveys, and with the CAD as defined. One issue of concern is that the surveys addressed only the areas subject to projected physical disturbance by the mine, giving no consideration to the project's likely off-site effects.[8] Another concern is that the surveys' focus is strictly archaeological, with little consideration given to the potential adverse effects of the project on the cultural environment in general. A third concern is that PacRim's archaeological contractors only asserted that the CAD was eligible for the NRHP under Criterion D, "the potential to yield significant information about history or prehistory" (36 C.F.R. § 60.4(d)). Eligibility under other criteria, notably Criterion A, "association with events related to broad patterns of history" (36 C.F.R. § 60.4(a)), was not proposed.

In order to augment the PacRim and Apache Alaska surveys and correct their deficiencies, the Native Village of Tyonek and Native American Rights Fund (NARF) sponsored additional archaeological and interdisciplinary studies (Boraas et al. 2013a; Boraas, Stanek, and Reger 2013b). These studies, together with those sponsored by PacRim and Apache Alaska, informed the NRHP Keeper's finding that: (a) the CAD is eligible for the NRHP under both

[8] Potentially resulting from alterations to the river and watershed, as well as induced off-site development.

Criteria A and D; and (b) it may be part of a larger eligible landscape. The analysis contained in this report builds on those studies and findings.

Scope and Limitations of this Report

The Tubughna people have no doubt of the cultural significance of the Ch'u'itnu watershed. The Tubughna, however, have never needed to articulate that significance, or to describe the watershed, in the abstract language of Western social science and government. The dangers posed to the watershed, given its significance to Tubughna culture and subsistence, have motivated the Tribe to retain the outside expertise necessary to present the watershed and its significance in the TCL terminology of the NRHP.

We will show that the Ch'u'itnu watershed and the adjacent shoreline of Cook Inlet constitutes a TCL that is eligible for inclusion in the NRHP based on its association with patterns of events that characterize the traditional subsistence-based history and culture of the Tubughna people. To do this, we will organize and summarize a substantial body of ethnographic, ethnohistorical, and archaeological data, relating these data as clearly as possible to published NRHP guidance.

Adhering to NRHP guidance, we were forced to make some arbitrary decisions regarding what to call the TCL and how to define its boundaries. In NRHP terms, we think the watershed's landscape is most like a "district"—that is, a unified entity comprising a variety of resources, whose interrelationships convey a sense of the overall historic environment (Andrus and Shrimpton 2002). These relationships extend beyond the evident boundaries of the watershed as a hydrological phenomenon. Notably, they logically embrace a series of fish camps extending down the shore of Cook Inlet from the mouth of the Ch'u'itnu, where salmon were and are trapped in route to their spawning areas. We need to stress that in drawing the boundary where we have, we in no way intend to suggest that other areas are not significant enough to be eligible for the NRHP. The boundaries of the Ch'u'itnu district as we have drawn them are somewhat arbitrary, but are intended to include key places left out of the CAD that were and are used by Tubughna people for activities related to salmon-based subsistence, and whose use is dependent on the geographic, hydrological, and environmental integrity of the river and its tributary creeks.

Orientation: Survivance as a Context for Understanding Indigenous Cultural Landscapes

Before we further discuss the information relevant to recognizing the Ch'u'itnu drainage as a TCL of the Tubughna, we pause to introduce our readers to a concept of Native American Critical Theory known as "survivance." Survivance offers a broader context in which to understand and evaluate the historic significance of indigenous cultural landscapes. We will therefore be using this term to better explain the significance of the Ch'u'itnu TCL as a NRHP-eligible district.

Survivance combines the term "survival" with the suffix '-ance' the latter indicating that Native survival is a dynamic, ongoing process (as in "continuance"). Survivance is survival with dignity, worthiness, and control of history; it involves "the heritable right of succession…in the course of international declarations of human rights" Vizenor (2008:1). According to Vizenor et al. (2008), the concept of survivance manifests the unwillingness of Native Americans to be defined by historians, anthropologists, and others by a history of despair, desolation, and annihilation through colonial and post-colonial dominance. Dena'ina history certainly has its dark moments, and Dena'ina tribal institutions and individual Dena'ina continue to grapple with forced transitions not of their making, what Vizenor calls "cultural schizophrenia." A hopeful survivance in which the Dena'ina themselves initiate language revitalization and affirm cultural practices that define themselves as Dena'ina in the modern world is based on the continued ability to harvest wild salmon and other wild foods in the manner of their ancestors, to practice sharing, and to pay homage to traditional interaction with the forces of nature through rituals of place.

Survivance acknowledges spirituality in the landscape. Native spirituality has been poorly understood by Eurocentric scholarship; as a result, the master narrative of history constructed by Eurocentric Western scholars has often disempowered indigenous identity by robbing history of an indigenous perspective. Traditional Native American cultures approach the land through the lens of spirituality. Anthropologist Roy Rappaport has written that all cultures have one central concept that guides the understanding of everything else. He called these "ultimate sacred postulates," although the term "spiritual or fundamental foundation" might be better to avoid confusion with Christian or other religions' principles. Rappaport (1999:265) writes of ultimate sacred postulates: "They sanctify, which is to say certify, the entire system of

understanding in accordance with which people conduct their lives…It becomes something like an assertion, statement, description or report of the way the world in fact is." For the traditional Dena'ina, as with many Native American groups, that fundamental postulate is that everything has an animating spirit; people, animals, and the landscape are to be understood in terms of that spirit.

Survivance for the Tyonek Dena'ina comes in the form of stories by such individuals as Shem Pete, Nickafor Alexan, Max Chickalusion Sr., Nellie Chickalusion, and others. Survivance comes in the form of the spirit of the landscape; to traditional Dena'ina, the landscape is a moral landscape of good and evil events (Boraas 2009). Survivance comes in the form of wild food subsistence and its associated social and spiritual practices. The survivance of the Tyonek Dena'ina involves a broad understanding of subsistence; the specific technologies and techniques have been adapted over time, but the principles of living off the land by hunting, fishing, and gathering animals and plants have largely remained unchanged. This document will contextualize the survivance of the Tyonek Dena'ina for the purposes of the National Register program and NHPA Section 106 review.

Terms and Definitions

Through some of its National Register Bulletins, the National Park Service (NPS) has attempted to reconcile Western historical and archaeological approaches to historic preservation with the survivance-based approach of indigenous people within the structure of the NHPA and NRHP. The Advisory Council on Historic Preservation (ACHP) has provided comparable guidance with reference to Section 106 of the NHPA. This work is on-going; what follows reflects our understanding of terms and definitions applicable to this report, both as used by NPS and the ACHP and as derived from relevant professional literature.

Culture

The National Historic Preservation Act (Pub. L. No. 89-665, 54 U.S.C. § 100101 et seq.) authorized the Secretary of the Interior to "expand and maintain a National Register of Historic Places composed of districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, *and culture.*" 54 U.S.C. § 302101 (emphasis

added). Properties that are eligible for, or listed in, the Register must be taken into account during the planning process for federal undertakings that may affect them,[9] The statute does not define "culture" or any of the other areas of potential significance mentioned in § 302101.

A definition of culture is provided in the NPS's internal cultural management guidelines:

> Culture is a system of behaviors, values, ideologies, and social arrangements. These features, in addition to tools and expressive elements such as graphic arts, help humans interpret their universe as well as deal with features of their environments, natural and social. Culture is learned, transmitted in a social context, and modifiable. (Parker and King 1998: Appendix I)

A related definition of culture, set forth in a standard anthropology text is: "[A] society's shared and socially transmitted ideas, values, and perceptions, which are used to make sense of experience and generate behavior and [are] reflected in that behavior (Haviland et al. 2011:11).

Culture incorporates tangible products of behavior (e.g., tools or buildings), as well as intangible behaviors (e.g., cognition or ideology). The latter, though intangible, are no less real than artifacts, and involve the meaning a group ascribes to an activity, a place, or the built or social environment. That meaning is often manifested as place-based social practice or place-based ritual. It is thus made tangible because it is realized in behavior and may, therefore, be considered when evaluating a landscape for eligibility for the NRHP.

Tradition/Traditional

Berkes (2012:3) writes that the term "Traditional… refers to cultural continuity transmitted in the form of social attitudes, beliefs, principles, and conventions of behavior and practice derived from historical experience. It is cumulative and open to change." Parker and King (1998:1) define tradition as "those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice." Consequently, a traditional culture can be one that has adopted elements of Western culture, such as rifles or nylon fishing nets, but maintains a theme of beliefs, values, and practices that can be followed back in time, often to pre-contact times.

[9] The "Section 106 process" is authorized by Pub. L. No. 89-665 § 106, codified at 54 U.S.C. § 306108, and is outlined in regulation at 36 C.F.R. Part 800.

Traditional cultures are not frozen in time, but have adapted to changing conditions. Berkes (2012:271) writes:

> It is often assumed that indigenous peoples have only two options: to return to an ancient and "primitive" way of life, or to abandon traditional beliefs and practices and become assimilated into the dominant society. Increasingly, indigenous groups have been expressing preference for a third option: to retain culturally significant elements of a traditional way of life, combining the old and the new in ways that maintain and enhance their identity while allowing their society and economy to evolve.

Survival demands adaptation, and survivance is a form of adaptation. Individuals within a group who hunt with a rifle rather than a bow and arrow are not necessarily any less traditional than those who do not. On the other hand, if a people do not consider their indigenous heritage to be important, they are likely no longer traditional.

Traditional Cultural Landscape[10]

The NHPA states that properties "significant to American…culture" (54 U.S.C.A. § 302101) are eligible for inclusion in the Register. Parker and King (1998:2) add that "[o]ne kind of cultural significance a property may possess…is *traditional cultural significance*… significance derived from the role the property plays in a community's historically rooted beliefs, customs, and practices" (emphasis in original). A property with traditional cultural significance may have landscape characteristics—in other words, it may be a traditional cultural landscape. The ACHP has spoken directly, although not in depth, to the definition and treatment of TCLs. In a frequently-asked-questions publication, the ACHP writes that TCLs "are considered by [the Register] to be a type of significance rather than a property type," and that they:

> …could be comprised of natural features such as mountains, caves, plateaus, and outcroppings; water courses and bodies such as rivers, streams, lakes, bays, and inlets; views and view sheds from them, including the overlook or similar locations; vegetation that contributes to its significance; and, manmade features including archaeological sites; buildings and structures; circulation features such as trails; land use patterns; evidence of cultural traditions, such as petroglyphs and evidence of burial practices; and markers or monuments, such as cairns, sleeping circles, and geoglyphs. (ACHP 2012)

[10] Various terms are used for this kind of landscape in NPS guidance—for instance, "Native American landscape," "ethnographic landscape," and "rural historic landscape." All the terms mean approximately the same thing, or represent subsets of the general term "cultural landscape."

A TCL need not have a definitive boundary (See, e.g., NPS 2010). However, in this case, the Ch'u'itnu drainage is a convenient land unit within which the salmon subsistence-based cultural traditions of the Tubughna are expressed.

Traditional Cultural Property or Place[11]

A traditional cultural property—a place that possesses traditional cultural significance—is defined in Parker and King (1998:1) as a place associated with "cultural beliefs and practices that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of that community."

Of further note, Parker and King (1998:2) state: "Traditional cultural values are often central to the way a community or group defines itself, and maintaining such values is often vital to maintain the group's sense of identity and self-respect. Properties to which traditional cultural value is ascribed often take on this kind of vital significance, so that any damage to or infringement upon them is perceived to be deeply offensive to, and even destructive of, the group that values them."

The definitions of "traditional cultural property" and "traditional cultural landscape" are quite similar. We use the latter term here, because removing the term "property" better depicts the way indigenous people such as the Tyonek Dena'ina understand their culturally significant places.

Subsistence

As noted by Thomas R. Berger (1985:5),

> "The word 'subsistence' reminds most Americans of dirt-poor farmers, scratching a hard living from marginal land. In Alaska, however, subsistence means hunting, fishing, and gathering. More than that, it means a way of life—far from being marginal—subsistence fulfills spiritual as well as economic needs."

Subsistence includes the traditional cultural knowledge and practices that have been passed down from generation to generation. The continuity of these practices represents a

[11] National Register Bulletin 38 (Parker and King 1998) uses the term "property," but we understand that in the revision of the bulletin now in preparation, in response to comments from Native American groups and others, the word "place" is used instead.

preferred way of life that includes important social practices and a shared underlying belief about spirit-based interaction with animals, the environment, and landscape. In this report, we use the word "subsistence" to mean the acts and knowledge of hunting, fishing and gathering *and* the associated social and spiritual practices that are derived from living off of the wild, non-domesticated, landscape.

In the case of the Tyonek Dena'ina, tradition can be traced through reliance on salmon as a keystone species. The thousand or more years of reliance on salmon-dominated wild foods have shaped social organization, spirituality, and cultural values in a dynamic adaptation that continues to be practiced by the Tubughna today. Their subsistence activities and practices inextricably connect the acts of hunting, fishing, and gathering to their social and spiritual practices. Together, they give cultural meaning to life.

In the 2013 NARF Tyonek Interviews, Max Chickalusion Jr. was asked what things he needed to survive. Mr. Chickalusion (2013:74) responded, "A subsistence way of life, you know…moose hunt, fishing…." In the film *Tubughna: The Beach People* (Brink and Brink 1988), Tyonek Dena'ina leader Fred Bismark stated, "If they take subsistence away from us they're taking our life away from us." Subsistence is cultural survival.

Dena'ina subsistence is best described by the Dena'ina language. The phrases *ye'uh qach' dalts'iy* ("what we live on from outdoors") and *ey'uh qa ts'dalts'iy* ("living upon the outdoors") both connect subsistence with interaction with the natural environment (Kari 2007). In addition, the title chosen for the Anchorage Museum's major exhibit in 2013 and accompanying book—*Dena'inaq' Huch'ulyeshi*: The Dena'ina Way of Living (Jones et al. 2013)—describes subsistence as encompassing both the harvest of wild foods and the associated social and spiritual components of culture.

Legal Protection for Subsistence Uses

The importance of subsistence to indigenous cultures in Alaska has been the subject of both federal and state legislation designed to protect and prioritize subsistence uses of fish and wildlife.

Alaska Native reliance on wild natural resources was recognized in Section 4 of the Alaska Statehood Act, which required the newly admitted State to "forever disclaim all right and title … to any lands or other property (including fishing rights)" of Alaska Natives. The Statehood Act further provided that those lands and other property "shall be and remain under the absolute jurisdiction and control of the United States until disposed of under its authority, except to such extent as the Congress has prescribed or may hereafter prescribe." Pub. L. No. 85-508, 72 Stat. 339 (1958), amended by 73 Stat. 141 (1959).

With the enactment of the Alaska Native Claims Settlement Act (ANCSA) in 1971 (Pub. L. No. 92-203, 85 Stat. 688, 43 U.S.C. §§ 1601-1628), Congress confronted the land and land-related claims of Alaska Natives and extinguished hunting and fishing rights based on aboriginal title. 43 U.S.C. § 1603(b). At the same time, Congress stated: "The Conference Committee expects both the Secretary and the State to take any action necessary to protect the subsistence needs of the Natives." H. Rep. No. 92-746, at. 37 (1971) (Conf. Rep.), reprinted in 1971 U.S.C.C.A.N. 2247, 2250.

Congress returned to the subject in 1980 with the passage of the Alaska National Interest Lands Conservation Act (ANILCA). Pub. L. No. 96-487, 94 Stat. 2371. In Title VIII of ANILCA, Congress impressed all "public lands" in Alaska with a preference for subsistence uses of fish and wildlife over all other uses. 16 U.S.C. §§ 3111-3126. While protection of the subsistence way of life of Alaska Natives was the driving concern of Title VIII, Congress afforded a subsistence use preference to all "rural residents." Pub. L. No. 96-487, 94 Stat. 2371, 2423. Congress did so to accommodate Alaska's concern that the Alaska Constitution prevented the State from providing a subsistence priority to Alaska Natives. After initially adopting a state management system consistent with ANILCA, the Alaska Supreme Court held that the Alaska Constitution prohibited the Legislature from enacting a subsistence use priority that is limited to rural residents. McDowell v. State, 785 P.2d 1 (Alaska 1989). As a result, the Federal government manages subsistence uses for rural residents on Federal public lands and waters in

Alaska, about 230 million acres or 60 percent of the land within the state, and the State of Alaska manages subsistence uses for all Alaskans on state lands and waters.[12]

Spirituality and Ritual

In this document, we will use the term "spirituality" to refer to a range of beliefs and practices related to the central postulate of Dena'ina culture as defined above: that everything has an animating spirit, including people, animals, and the landscape. Spirituality is often expressed in terms of Orthodox[13] or other Christian beliefs, and in informal rituals such as sharing salmon in the First Salmon Ceremony.

Intangible cultural factors related to spirituality have not traditionally fit well under the structure of the NRHP. However, a significant component of spirituality involves ritual and behaviors that are observable and performed at physical places. Wallace (1966:107) defines religion as "a set of *rituals*, rationalized by myth, which mobilizes supernatural powers for the purpose of achieving or preventing transformations of state in man and nature" (emphasis added). Rappaport also recognizes ritual as a critical component of religion and spirituality. Rappaport (1999:23) writes that ritual is the "form of action" in which the sacred, the numinous, the occult and the divine are expressed. The basis of spirituality lies within cognitive domains that are intangible from the standpoint of other cultural perspectives.

Sometimes ritual centers are identifiable in the archaeological or ethnographic record. Other times, as with many Dena'ina rituals, the rituals occur organically, often in nature, and not always at the same place. Human cremations, animal cremations, the First Salmon Ceremony, the First Moose Kill, and The Great Blessing of the Water, among others described in this document, are rituals that occur or occurred on the cultural landscape. The locations of these rituals may be considered to be privileged cultural knowledge.

---

[12] The State of Alaska enacted subsistence legislation in the 1978 *State of Alaska Subsistence Act* (AS 16.05), which provided for a Division of Subsistence within the Alaska Department of Fish & Game (ADF&G) and defined subsistence as "customary and traditional use." The act specified a subsistence priority in wild resource allocation over commercial or sport caught resources. The act did not limit subsistence to rural (predominantly Alaska Native) residents, but to any Alaskan. The act directed the Division of Subsistence to "quantify the amount, nutritional value, and extent of dependence on food acquired through subsistence hunting and fishing" (AS 16.05.094) and has resulted in over three decades of the most detailed subsistence data collected anywhere in the world, some of which is used in this report.

[13] Eastern or Russian Orthodox Christianity was established in Alaska in the late 18th century, and remains an important spiritual tradition today.

Rituals are composed of human behaviors that make up tangible representations of intangible beliefs or ideas. It is important to recognize the role of ritual in the cultural landscape, because it moves the intangible (belief and ideology) to the tangible (observed behavior), and is a critical component in helping "humans interpret their universe as well as deal with features of their environments, natural and social" (Parker and King 1998:26). Ritual places, formal and informal, are a significant part of the TCL of the Tyonek Dena'ina.

Interpretation Summary

In this document, we demonstrate that the Ch'u'itnu drainage constitutes a district that is eligible for the NRHP as a traditional cultural landscape. This interpretation is consistent with the Keeper's finding that the more narrowly defined CAD may be part of a larger cultural landscape and is significant "as a place that represents the broad patterns of history regarding the uninterrupted use, from pre-contact times to the present, of salmon subsistence." In simplest terms, the logic of this interpretation is as follows:

1. The river and its tributaries support wild salmon runs.

2. The salmon are, and have always been, integral to the Tubughnu people nutritionally, socially, and spiritually. The traditional culture of the Tyonek Dena'ina is organized around salmon and other wild species of the Ch'u'itnu.

3. As a result, the river watershed, along with its salmon and other wild species, is central to the past and contemporary cultural practices, identity, and survivance of the Tyonek Dena'ina.

4. This makes the watershed, with its component and related specific cultural locations, water, plants, and animals, particularly including salmon, eligible for the NRHP under Criteria A, C, and D.

III. Tubughna Territory

Overview

In NRHP terms, the Ch'u'itnu drainage is a property or place because it is a tangible piece of land. Specifically, it is a traditional cultural property or place, because of its association with the cultural practices and beliefs of the living Tyonek community that are (a) rooted in that community's history and (b) important in maintaining the continuing cultural identity of the community (See Parker and King 1998). The discussion below will describe specifically how that landscape and the people have interacted to produce this association through history, and continue to do so today.

Territory of Tubughna

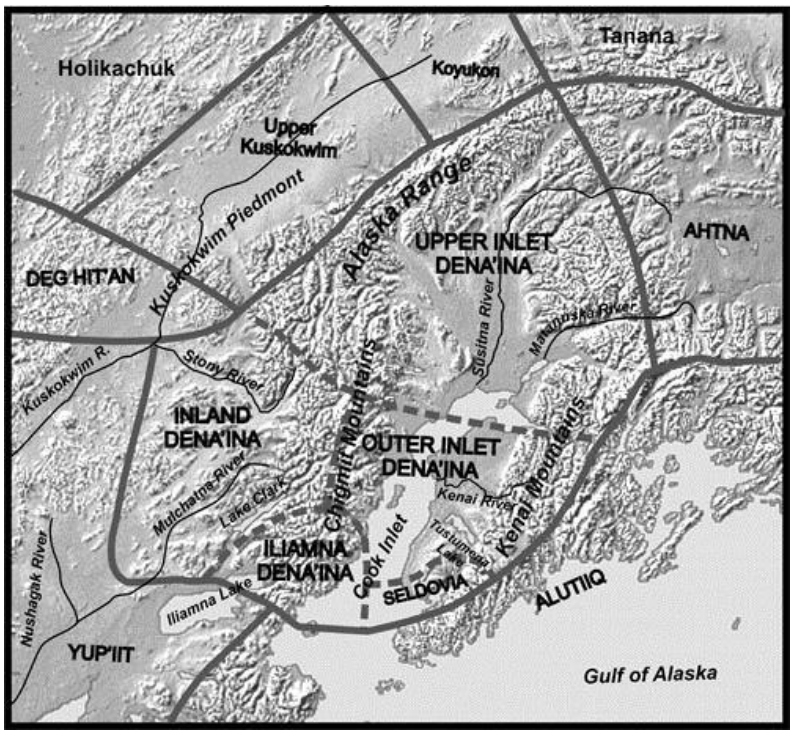

Figure 1. Dena'ina Territory. Map by Alan Boraas.

Figure 1 identifies Dena'ina territory (*Dena'ina Ełnena*)[14] in south-central Alaska. It is one of the largest indigenous territories in North America, extending from Kachemak Bay and Augustine Island on the south to beyond Denali or Mount McKinley (*Dghili Ka'a, "*Big

[14] All Dena'ina language words in this document are from Kari (2007).

Mountain" in Dena'ina) on the north, and from the Matanuska River drainage on the east to the Mulchatna River on the west. The territory includes the Kenai, Chugach, Chigmit, and Tordrillo mountain ranges, and three major drainages: the Susitna, Kenai, Kasilof, and Ch'u'itnu drainages into Cook Inlet, the Newhalen drainage into Lake Iliamna, and the Kuskokwim drainage via Stony River. Five dialects of the Dena'ina language were spoken within this area.

"Tubughna", which means "people of the beach," also refers to the territory of the people of Tyonek, including the village just south of the Ch'u'itnu. When Elder Max Chickalusion Jr. (2013:6) was asked his name for his peoples' customary and traditional use area, he said, "We call it Tubughna, it's traditional ground." It is one of seven focal areas of Dena'ina subsistence after AD 1000, which include the Kenai/Kasilof River, Kachemak Bay/Anchor River, eastern Iliamna Lake, Lake Clark, the upper Mulchatna River, the Susitna River, and the Tubughna area.

Figure 2 illustrates Tubughna territory and is derived from Map 11 in Shem Pete's Alaska (Kari and Fall 2003:48). It is based on 118 known place names, which reflect traditional use areas. It identifies the general Tubughna area with the Ch'u'itnu watershed. Place names reflect traditional use of geographic space, so a map of cultural territory based on place names is a logical unit of space.

Tubughna territory includes the Ch'u'itnu, McArthur River, and Beluga River drainages as well as many smaller creeks that flow directly into Cook Inlet. There are three major ecological zones: 1) heavily wooded lowlands in which the dominant tree vegetation consists of spruce, birch, willow and alder; 2) uplands of transitional brush tundra; and 3) a rugged alpine area of tundra and rock dominated by Mount Spurr and the northernmost volcanic mountains of the Aleutian Range.

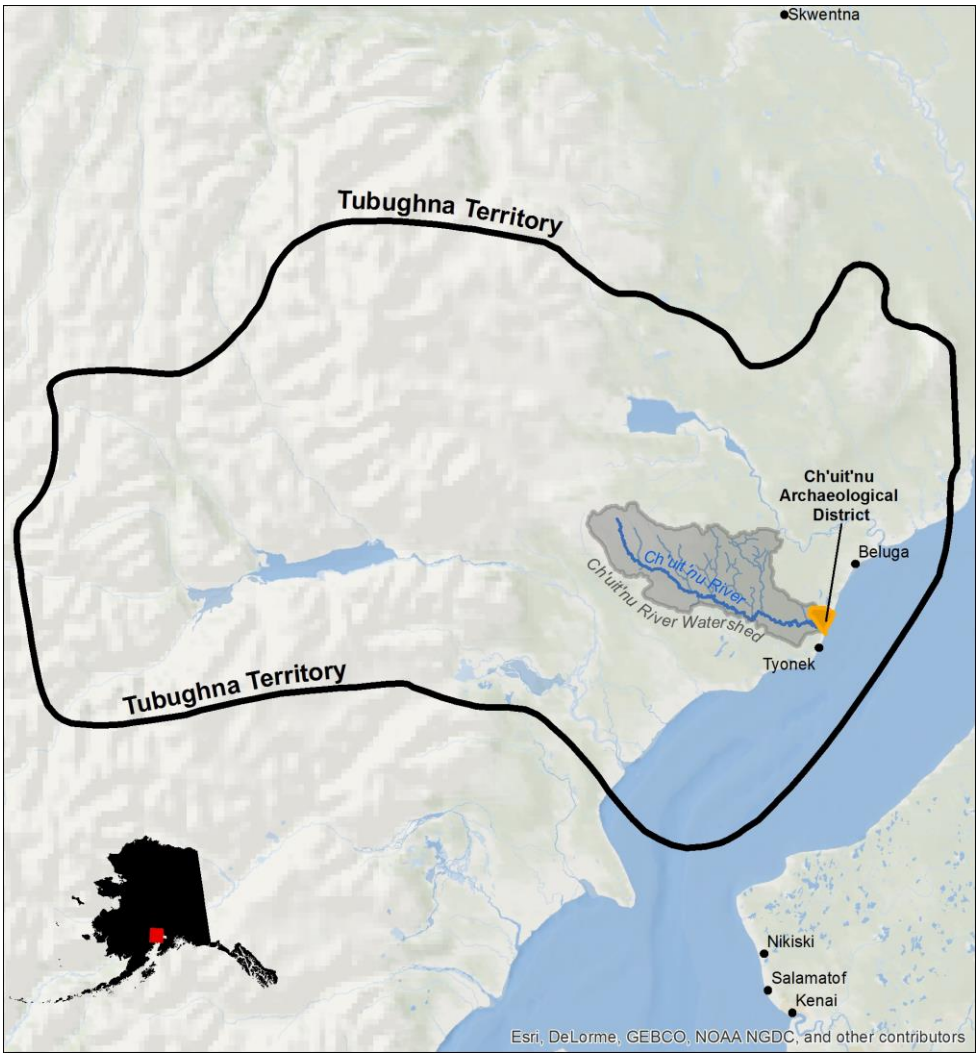

Figure 2. Tubughna territory, based on Kari and Fall 2003:48

Initially, the Tubughna occupied a set of villages along the beach from Granite Point to the Beluga River. In the nineteenth century, these coalesced into a settlement at Robert's Creek near Granite Point in an area that is sometimes called First Tyonek. The people moved to Tyonek Creek, called Second Tyonek, in the late nineteenth century. When this location flooded around 1930, the village moved to its present location on Indian Creek near the Ch'u'itnu. Tubughna territory and the modern village of Tyonek remain primary centers of Dena'ina occupation today (Figures 3 and 4).

Tyonek has a population of about 180 people. Its principal institutions are the Native Village of Tyonek, Tyonek Native Corporation, Tebughna School (Grades 1-12), and St. Nicholas Orthodox Church (Figure 5). Facilities include a Tribal center, corporation center,

water treatment facility, health clinic, airport, gravel road system and associated maintenance facilities, and a public greenhouse and garden. Tyonek is connected by road to the settlement of Beluga near the Beluga Gas Fields and other oil developments on the west side of Cook Inlet. It is not connected to the main Alaskan road system or to Alaska's largest city, Anchorage, 45 air miles east across Cook Inlet.

Figure 3. Tyonek, Alaska, 2013. Photograph by Alan Boraas.

Figure 4. Tyonek, Alaska, winter 2013. Photograph by Alan Boraas.

Figure 5. St. Nicholas Orthodox Church, Tyonek, 2014. Photograph by Alan Boraas.

The Ch'u'itnu Drainage

The Ch'u'itnu drainage is the focal point of this document. It is mapped in Figure 6. Also included on this map are the Old Tyonek Creek (Robert's Creek), Tyonek Creek and Three Mile Creek drainages; these flow directly into Cook Inlet and are not hydrologically part of the Ch'u'itnu drainage. These creeks are included in the Ch'u'itnu TCL because of events surrounding them that play a major role in the history of the Tubughna, and because they are important today as subsistence areas.

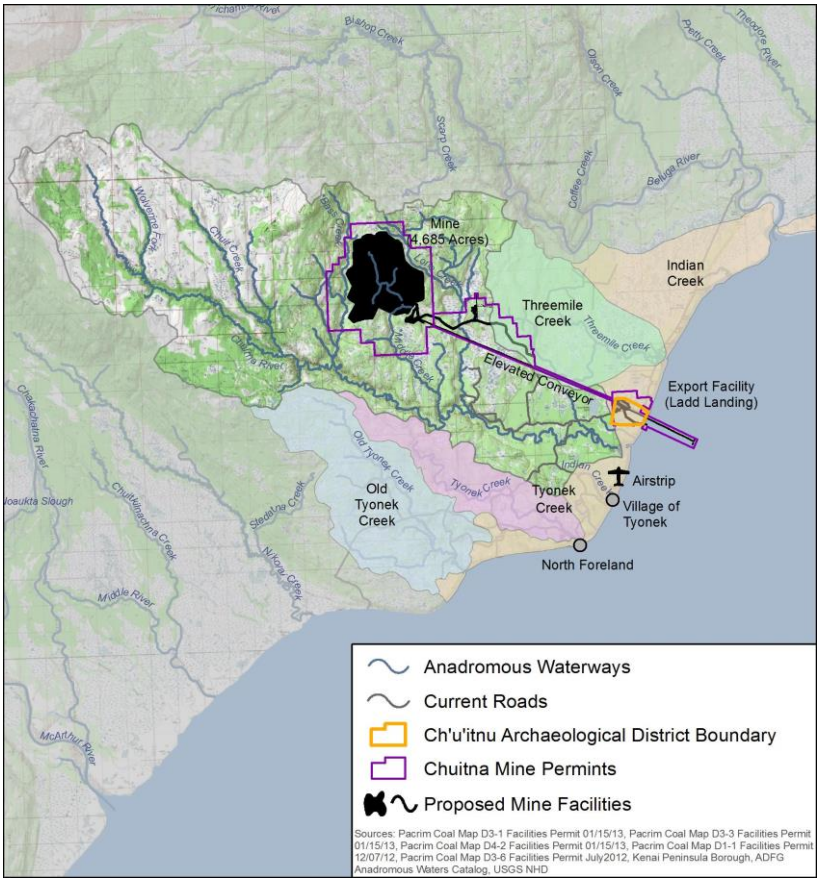

Figure 6. Ch'u'itnu drainage and nearby small stream drainages: Old Tyonek Creek, Tyonek Creek, Threemile Creek and Indian Creek. Map by Doug Tosa.

The reason for selecting the drainage as the principal defining boundary of the traditional landscape is to allow for the fishcamps down-inlet and for its central association with the Tyonek people and with the keystone species of their culture: salmon. The Ch'u'itnu and its tributaries are listed in the Alaska State Anadromous Stream Catalog as salmon-spawning streams. The Ch'u'itnu (Figure 7) is one of the major salmon-spawning rivers in Cook Inlet and the primary

Chinook salmon (king salmon) river on the west side of the Inlet. All five species of salmon—Chinook (king), sockeye (red), coho (silver), pink (humpy), and chum (dog)—spawn in the river system, and the river and its landscape supports all of the species significant to Dena'ina subsistence, with the exception of marine mammals.

Figure 7. Ch'u'itnu, 2013. Photograph by Alan Boraas.

Pleistocene Geology of the Ch'u'itnu

The deep bedrock geology of the Ch'u'itnu area is part of a forearc basin defined by terranes (mini-continents) drifting into the Alaskan continental crust, creating convoluted strata, volcanic activity, and sedimentation. This began during the Tertiary and early Cenozoic times (Finzel et al. 2009), and continues today as an active plate boundary. Sedimentary events associated with this time period produced the extensive coal deposits of the Ch'u'itnu area (Schmoll and Yehle 1992:16-17). Two geologic faults bisect the Chu'it'nu plate boundary: the Bruin Bay Fault, about 6 miles from Cook Inlet, and the Lake Clark fault, about 15 miles from the Inlet (Finzel et al. 2009:3). Both merge with the Castle Mountain Fault system in the Beluga River area. The faults have produced vertical uplift of as much as 300 meters in the Ch'u'itnu area, but none are considered active at the present time (Finzel et al. 2009:2).

The surficial geology is dominated by glacial events of the Pleistocene ice age, resulting in a mantle of thick gravel deposits. The Ch'u'itnu drainage includes two geographic areas within the Cook Inlet-Susitna Lowland physiographic province in which it is located: the Bootlegger Cove platform and the Beluga plateau (Schmoll and Yehle 1992:13). The Bootlegger Cove platform near the Cook Inlet coast is nearly flat, and the river and its tributaries have cut valleys into it. Glaciolacustrine (glacial lake) deposits dominate the platform, with stands of spruce-birch-alder boreal forest and extensive bogs. About five miles upriver from the Cook Inlet coast, the platform transitions to the Beluga plateau, a moderately rolling hummocky area of moraine and glaciofluvial (glacial river) deposits of unsorted gravel. The plateau's vegetation is boreal spruce-birch-alder forest grading to brush tundra and ultimately tundra at higher elevations in the foothills of the Tordrillo Mountains. Within the Beluga plateau is Lone Ridge, a distinctive feature bounded on the east by a valley formed by glacial melt water that once flowed to the Ch'u'itnu, cutting a deep channel, but now is diverted east to the coast via Threemile Creek. On the west of the ridge is Lone Creek, which likewise once drained melting Pleistocene glaciers, and still flows to the Ch'u'itnu (Schmoll and Yehle 1992:16). Lone Ridge parallels the Lake Clark fault (Finzel et al. 2009:3).

The gravel moraines of the area have two different glacial sources, an earlier source flowing from the north and a later source flowing from the west. The northern flow consisted of a massive glacier filling the Susitna Valley and most of upper Cook Inlet. After the Susitna glacial retreat, valley glaciers from the west flowing out of the Tordrillo Mountains by Mount Spurr formed gravel moraines in the Beluga plateau (Schmoll and Yehle 1992:19). The Beluga plateau moraines from the Tordrillo Mountains are dated at about 14,000 radiocarbon years BP, in the late Pleistocene (Schmoll and Yehle 1992:21).

Salmon Biology of the Ch'u'itnu

The glacial gravel stream beds of Alaska are optimal salmon rearing habitat. In particular, their hyporheic[15] habitat is optimal for salmon egg incubation and fry survival. The glacial events described in the previous paragraph provided ideal hyporheic gravels for the Ch'u'itnu. Female salmon dig nests, called redds, as deep as 0.5 meters into the gravelly hyporheic habitat

[15] The area under and alongside a stream, where surface water and groundwater mix.

(Malcolm et al. 2008). They lay thousands of eggs in the redds, where males inseminate them. The fertilized eggs grow to fry within the gravels, where they are both protected from predators and supplied with oxygenated water. In addition, rivers such as the Ch'uit'na have a riparian habitat conducive to juvenile salmon survival: the root mat hangs over the stream, providing protection from predators.

Anadromous salmon move to the ocean and grow to maturity in the nutrient rich upwelling waters of the North Pacific. They return with marine derived nutrients (MDN) (Schindler et al. 2003). The principal MDN are isotopes of carbon, ^{13}C, and nitrogen, ^{15}N, which are critical nutrients for both plants and animals. When salmon spawn and die, the MDN are distributed in the boreal ecosystem by absorption and consumption by scavengers, enhancing biotic productivity beyond that which would occur without anadromous salmon. The MDN also provide nutrients to salmon fry—the system is one of positive feedback.

Measurements of ^{15}N in lake core sediments indicate salmon have occurred in south-central Alaskan waters for at least 2,200 years (Finney et al. 2002). Finney et al.'s 2002 data further indicate a decline in salmon from approximately 100 BC to AD 800, and an increase in salmon from AD 1200 to 1900. The former correlates with a colder Pre-Medieval Warm Period ice advance and the latter with the Medieval Warm Period. Archaeological data indicate that indigenous people have been harvesting salmon in Cook Inlet for at least three thousand years, and that the Dena'ina have been intensively harvesting salmon since at least AD 1000 (Reger 1998).

The Ch'u'itnu is the Lifeblood of the Tubughna

The occupation and cultural sites and use areas in the Ch'u'itnu watershed are some of the few remaining areas in Cook Inlet where the story of salmon and salmon-related subsistence is still clearly represented in the natural and cultural environment, reflecting events in the associated cultural landscape from AD 1000 to the present. The area is primarily wild. There are some gravel roads and two gravel airstrips, but with these exceptions, the area is much as the Dena'ina of AD 1000 would have known it. The wild animal and plant subsistence base is still extant.

The river is the lifeblood of the people. Without the river, the salmon, and the other species it nurtures, there would be no appreciable subsistence for the Tyonek people. Because of a thousand or more years of salmon subsistence, the Tyonek people feel a sense of cultural entitlement to the river and its resources. Violet Kroto (2013:5) said: "The Chuitt [Ch'u'itnu], you know, it's our river." Al Goozmer (2013:34), President of the Native Village of Tyonek, expressed that same sense of cultural entitlement:

> That Chuitt River is ours. It's always been ours. As I said, the fish that we catch out here on Tikahtnu --by the way that's not Cook Inlet, that's Tikahtnu. Yeah, 'big water river,' you know [traditional Dena'ina place name]. It didn't belong to Captain Cook. It wasn't his. He didn't discover it or nothing. We were here.

The Ch'u'itnu Archaeological District

At the mouth of the Ch'u'itnu is the Ch'u'itnu Archaeological District (CAD). As first proposed, the CAD boundary was restricted to the areas archaeologically inventoried as part of the coal mine project area proposed by PacRim Coal. However, following additional documentation provided by consulting parties (see Boraas et al. 2013, Mobley and Mobley 2012), the Alaska SHPO and the Keeper of the NRHP concurred that the boundary should be expanded to include the entire range of prehistoric and historic sites in the area of the river mouth (Figures 8 and 9). The Alaska SHPO and the Keeper of the NRHP also formally concurred that the CAD is eligible for the NRHP under Criteria A and D as noted above.

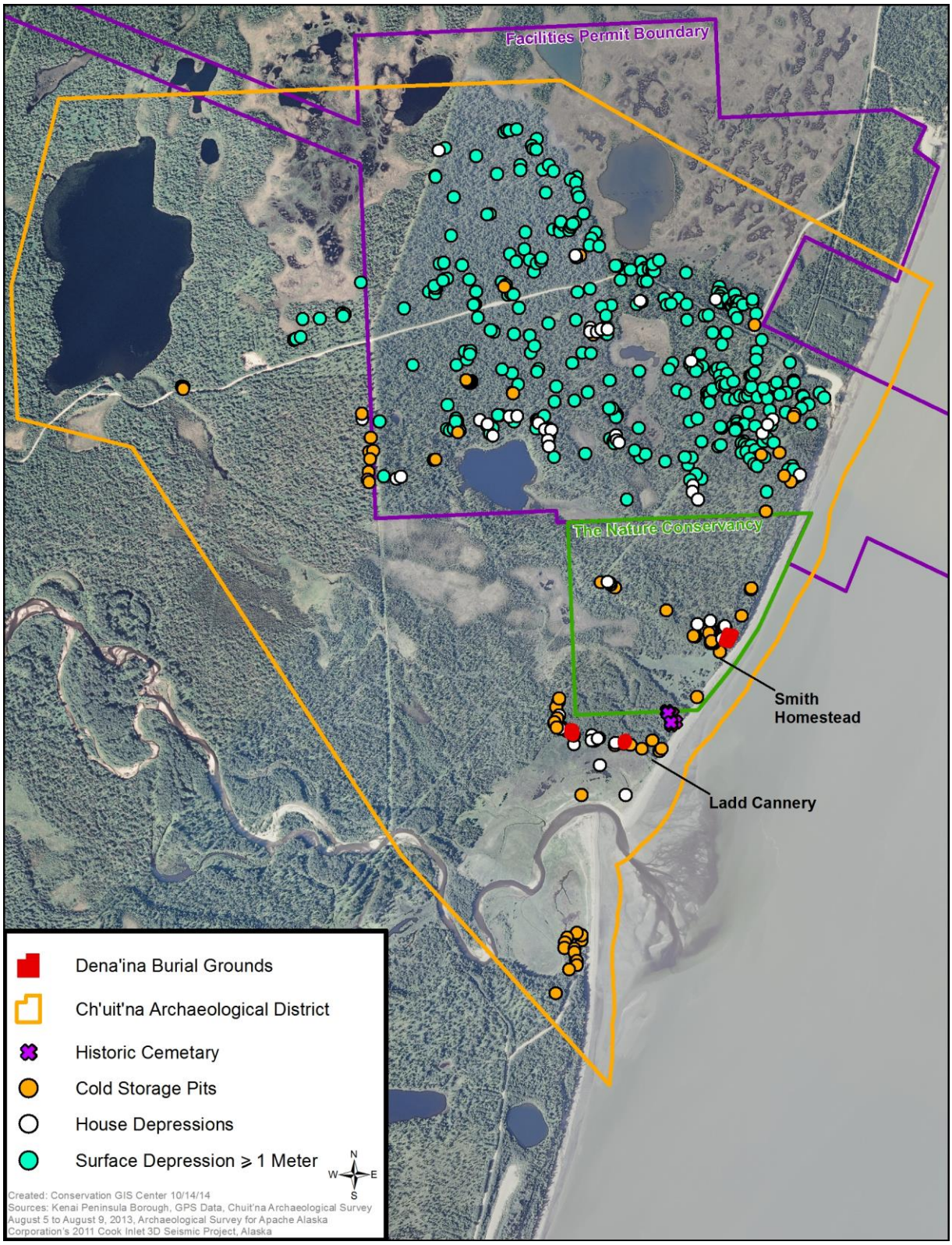

Figure 8. The Ch'u'itnu Archaeological District. Map by Doug Tosa.

Figure 9. Mouth of the Ch'u'itnu, 2014. Tikahtnu (Cook Inlet) is on the right. Photograph by Alan Boraas.

Beyond the Archaeological District

The CAD is one of three areas in the Ch'u'itnu drainage that have been subjected to archaeological survey. The other two are the footprint of the proposed coal mine and its immediate environs in the northeastern part of the watershed, and the route of the proposed elevated conveyor system that would carry coal from the mine to the Cook Inlet shore at Ladd Landing. The rest of the watershed's landscape remains to be examined for archaeological resources, but like the mine site and conveyor route, is well known and regularly used by Tyonek Dena'ina families.

Many of the traditional Tubughna activities that take place in the watershed, such as the use of culturally defined hunting and fishing territories, do not involve structures or other physical indications of use observable by archaeologists. They are, however, well known and shared through oral tradition and traditional and contemporary ecological knowledge. Many

significant places remain to be identified, such as where first salmon and first moose rituals are undertaken. Processing at these sites often involves ritualistic practices in the manner of processing and handling of specific parts and organs of the animal. Identifying such locations requires consultation with the people of Tyonek, not archaeological investigation. It should also be noted that many places and events and places involve privileged cultural knowledge, which Dena'ina people may or may not share with others.

The Ch'u'itnu Traditional Cultural Landscape Historic District

The Native Village of Tyonek asserts that the district shown in Figure 10 is eligible for the NRHP under NRHP Criteria A, C, and D (36 C.F.R. § 60.4(a), (c), (d)). The district comprises the Ch'u'itnu watershed plus a stretch of the Cook Inlet shoreline south of the river's mouth, in which fish camps are traditionally operated.

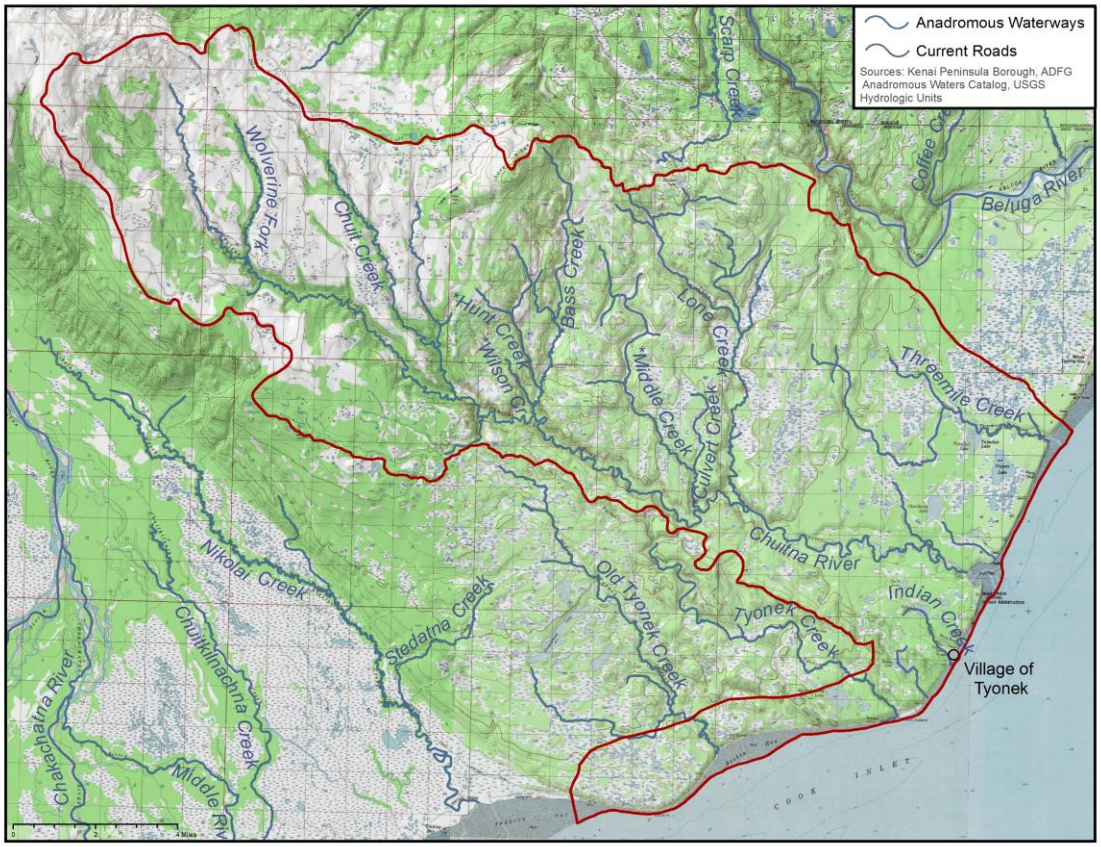

Figure 10. The Ch'u'itnu Traditional Cultural Landscape. Map by Doug Tosa.

The boundaries of this district are permeable by humans and animals. However, it is generally within them that Tubughna people carry out—and have carried out for a millennium—the economic, social, cultural and spiritual activities that collectively comprise Dena'ina salmon-based subsistence. This concentration of activities within the district reflects the watershed's distinctive geological and environmental qualities, and the resulting behavior of salmon and other culturally important species.

IV. Criterion A: Association with Traditional Dena'ina Subsistence and Culture

Overview

Under NRHP Criterion A (36 C.F.R. § 60.4(a)), a place with integrity is eligible for the NRHP if it is "associated with events that have made a significant contribution to the broad patterns of our history." NRHP Bulletin 38 (Parker & King 1998) explains that "(t)he word 'our' in this criterion may be taken to refer to the group to which the property may have traditional cultural significance, and the word 'history' may be taken to include traditional oral history as well as recorded history." The same bulletin specifies that a place may be eligible for the NRHP "because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community."

In the case of the Ch'u'itnu TCL, the events that have made significant contributions to the broad patterns of our (Tubughna) history are the sustained subsistence and related indigenous social and spiritual practices that have operated without interruption from pre-contact times to the present, based on the same keystone species—salmon. The key components are the river, including the entire watershed where anadromous salmon spawn, and the traditional and cultural practices of the Tubughna people associated with the watershed and salmon, shaped by the last 1,000 years of continued practice of salmon subsistence. The Ch'u'itnu is a living cultural landscape that is testimony to the Dena'ina's ability to maintain identity in the modern world while engaging in the heritage of their ancestors.

The remainder of this section is arranged topically. It will first discuss the history of the Tubughna people with particular reference to salmon subsistence. It will move on to address contemporary Tubughna subsistence practices, and will close with a discussion of Tubughna spiritual practices, past and present, and their foundation in the landscape and the resources it provides.

A Brief History of Tubughna Subsistence

Dena'ina Pre-Contact Chronology

Pre-contact events in the Ch'u'itnu drainage are part of a pattern of prehistoric events along Cook Inlet, as described in Reger (1998), Boraas (2007:31-40), and other sources. Figure 11 is a chronology of Cook Inlet prehistory; the Ch'u'itnu falls within the Outer Inlet chronology.

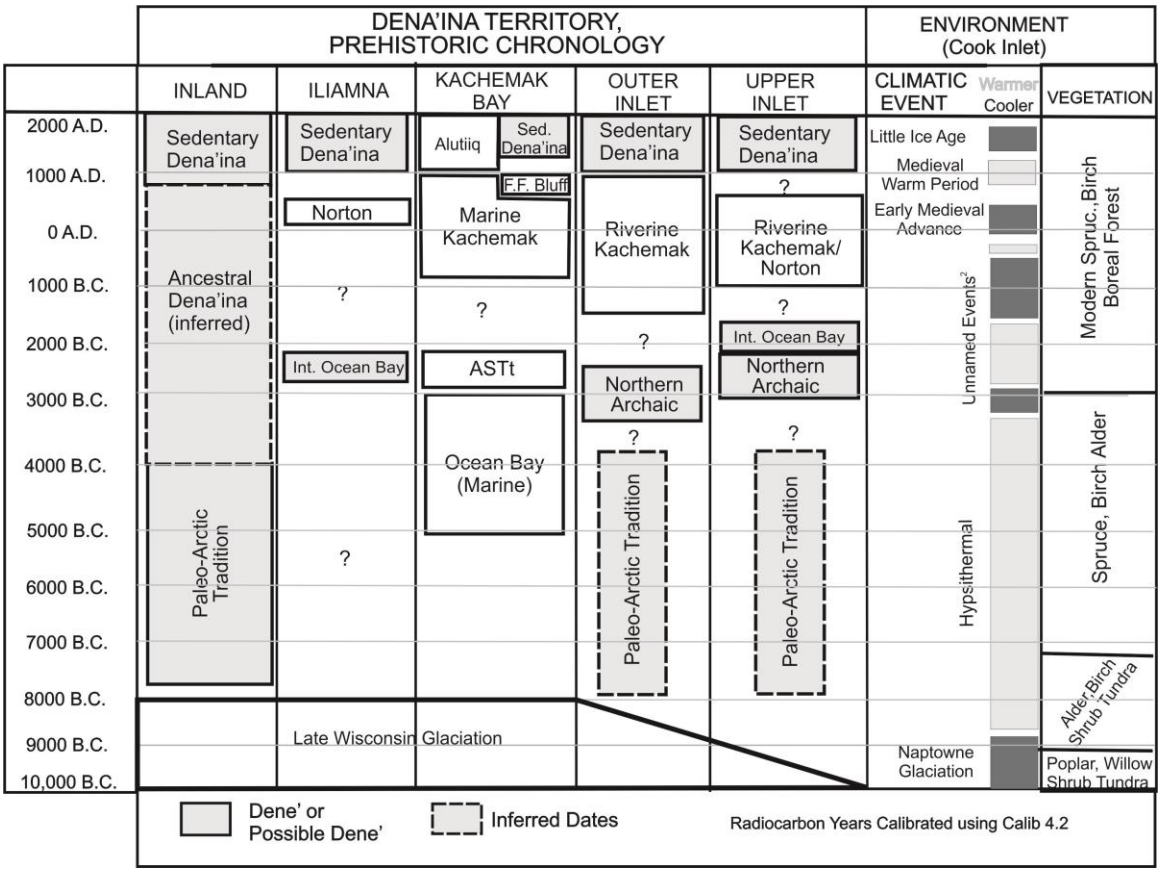

Figure 11. Cultural chronology of Cook Inlet, Alaska. Chart by Alan Boraas.

The sedentary Dena'ina described in this section appear in the archaeological record around AD 1000, coinciding with the Medieval Warm Period. Before that time, the ancestral Dena'ina were likely a nomadic, primarily caribou hunting culture in the Inland area. As a result of the development of underground cold storage pits, the Dena'ina became sedentary and expanded into salmon subsistence areas. The sedentary Dena'ina of the Ch'u'itnu drainage are

described here based on archaeological and linguistic data, and on ethnohistoric inference recreating the ethnographic present, the time just before European contact.

Until recently, information about the pre-contact period of the Ch'u'itnu area was largely inferred from linguistics (Kari 1988) and from ethnographic descriptions such as that of Cornelius Osgood (1976 [1937]). Two significant archaeological surveys, one conducted by Stephen R. Braund and Associates (Braund 2007) in connection with the proposed PacRim coal mine and the other by Charles M. Mobley and Associates (Mobley and Mobley 2012) for Apache Alaska Corporation in connection with seismic oil and gas exploratory testing, added considerably to the body of archaeological research in the area. Additional work has been done by the Native Village of Tyonek through NARF (Boraas et al 2013a; Boraas, Stanek, and Reger 2013b; Institute for Canine Forensics 2014). More work remains to be done, particularly along the tributary streams of the upper sections of the Ch'u'itnu. Table 1, on the following page, plots the known pre-contact and post-contact archaeological sites in the CAD. The extent to which similar concentrations of archaeologically observable phenomena are distributed throughout the watershed remains to be determined. For the pre-contact period, the number of Dena'ina house remains (*nichił*), underground cold storage pits or cache pits (*ełnen tu'h*), and cremation areas is very significant.

Table 1. Major archaeological sites in the Ch'u'itnu Archaeological District. Data from Mobley (2012); Boraas et al. (2013a).

Site	Name	Characteristics
TYO-002	**Ladd Cannery**	Late 19th, early 20th century cannery
TYO-132	**Ch'u'itnu Archaeological District**	Pre-Contact and Early Contact Dena'ina Village
TYO-252	**Chubutna**	Late 19th, early 20th century Dena'ina site associated with the Ladd Cannery, cremation burial area may or may not be temporally associated
TYO-253		Dena'ina cold storage pits
TYO-259	**Smith Homestead**	Early 20th century homestead
TYO-260		Cold storage pits, part of a village complex including TYO-261, 262, 265, 266
TYO-261		A single cold storage pit, part of a village complex including TYO-260, 262, 265, 266
TYO-262		A single cold storage pit, part of a village complex including TYO-260, 261, 265, 266
TYO-265		Cluster of cold storage pits, part of a village complex including TYO-260, 261, 266, 266
TYO-266		Five Dena'ina house depressions and associated cold storage pits. Cremation burial area
TYO-275	**Native Cemetery**	19th or early 20th century cemetery possibly associated with the influenza epidemic

The prehistoric and early contact village complexes in the CAD date from AD 1450 to AD 1896, based on fourteen calibrated radiocarbon dates from the Braund 2006 field season report and Boraas et al. 2013a excavations,[16] summarized in Table 2. The most likely age range is from the late fifteenth century to the early nineteenth century. Captain James Cook's 1778 voyage into Cook Inlet is often used as a marker separating pre-contact Cook Inlet from post-

[16] The radiocarbon dates were calibrated using Calib 7.0 at the 2 sigma (two standard deviations) level using the largest relative area under the probability distribution. This calibration gives the broadest possible age range for the data and may exceed the actual date, as in the case of the AD 1896 date which is likely an outlier.

contact Cook Inlet. Thus, the range spans the time period from the Late Prehistoric or pre-contact period to early contact times.

Table 2. Select calibrated radiocarbon dates of the Ch'u'itnu Archaeological District. Data from Braund (2007) and Boraas et al. (2013a).

Association	**Radiocarbon Age**	**Calibrated Date** 2 sigma, largest relative area under probability distribution
HP003	150±40	AD 1666-1784
HP004a	240±40	AD 1619-1685
HP004b	240±40	AD1619-1685
HP011	NA	Post contact
HP011	50±40	Post contact
HP 017	220±40	AD 1726-1813
HP021a	310±40	AD 1473-1653
HP021b	230±40	AD 1525-1557
HP038a	130±40	AD 1798-1896
HP038b	200±40	AD 1723-1816
HP042	250±40	AD 1617-1683
TYO-266, House B	160±30	AD 1670-1780
TYO-266, House B Cremation	NA	Post contact
TYO-266, House F	350±30	AD 1450-1640

Pre-Contact Subsistence

Based on ethnographic research in 1931, Cornelius Osgood (1976:27) identified the primary non-plant, fish, and sea mammal food resources harvested by the Tyonek Dena'ina at the ethnographic present and extending into contact times. His information for the Tyonek area is reproduced in Table 3. Osgood (1976:27) identifies 21 species of importance for either food or furs. The primary terrestrial food mammals are moose, caribou, bear, hare, porcupine, and beaver; fur bearers include hare, wolverine, ground squirrel, and lynx. All of these species occur

in the Ch'u'itnu watershed. Russell (1987) has identified over 80 food and medicinal plants that were used by traditional Dena'ina, most of which occur in the drainage and are still used today. This suite of extraordinarily rich and varied food and medicinal resources formed the basis of subsistence during pre-contact times, and continues to this day.

Table 3. Traditional Dena'ina fish, shellfish, and marine mammal resources. Adapted from Osgood (1976:27).

Species	Caught And Eaten	Rarely Caught And Eaten	Not Caught And Eaten
Humpback Salmon		X	
Dog Salmon		X	
Silver Salmon	X		
Red Salmon	X		
King Salmon	X		
Herring	X		
Halibut		X	
Candlefish	X		
Bullheads [Freshwater Sculpin]		X	
Tomcod	X		
Octopus			X
Clams			X ?
Mussels			X ?
Crabs	X		
Hair Seal	X		
Fur Seal			X
Sea Otter		X	
Sea Lion			X
Porpoise			X
Beluga	X		

Dena'ina oral tradition underscores the richness of the wild food resources of the Tubughna area. Fall (1987:35) cites an unnamed source who lived in the Susitna area as stating:

> The Tyonek people put up lots of food…They never went hungry because there was lots of seals and belukhas… They all came down to Tyonek to trade for oil. They kept coming, coming, getting this oil. They brought all kinds of fur blankets: parka squirrel, whistler, lynx, martin. And *K'enq'ena* [dentalium shells] and lots of caribou and black bear meat and beaver meat so they could buy all this oil…And the Tyonek people were rich from oil, and from dry fish too. They bought lots of dry fish too… They had a regular road down to Tyonek…a regular

> road for grease, seal meat, and fish…And this story is from long before the Russians came to this country, from a long time ago.

Underground Cold Storage (*Ełnen Tu'h*)

The evidence for pre-contact and early contact period Dena'ina subsistence is primarily ethnographic rather than archaeological, due to bone-burning practices described below in the Ritual Ecology section. However, there is physical evidence of salmon-based subsistence at Dena'ina sites within the Ch'u'itnu drainage, particularly near the river mouth, where archaeological survey work has been concentrated. Reliance on a dependable supply of salmon is indicated by permanent houses and underground cold storage pits. The underground cold storage pits, *ełnen tu'h,* were an innovation that solved the problem of how to store the great volume of anadromous salmon that come in the summer and fall months for winter and spring consumption. Many pre-contact peoples stored food in pits, but only the Dena'ina and contemporaneous Late Prehistoric Period Ahtna stored food in these unique pits, a feature that "possesses integrity of …design" in terms of National Register significance.

The cold storage pits found in the recorded Ch'u'itnu site complexes are found throughout Dena'ina and upper Ahtna territory after AD 1000. The simple but elegant underground cold storage pit is diagrammed in Figure 12. It is lined with two waterproof birch bark panels that are sewn together and glued with partially dried salmon eggs, with moss insulation sandwiched between the birch bark panels. When the ground freezes in the fall, fish from drying racks are placed in the pit and layered with grass or fireweed to facilitate removal in the course of the winter. The pit is covered with the same kind of stitched, glued, and insulated birch bark panels. The fish remain frozen because they are encased in this waterproof insulating envelope.

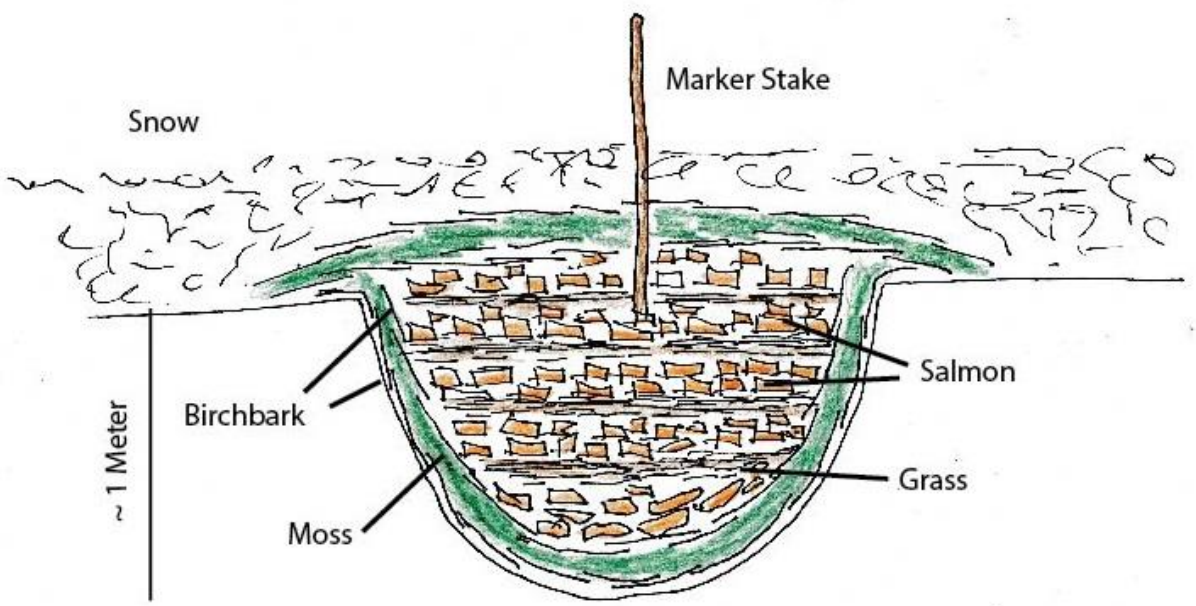

Figure 12. Schematic of a Dena'ina underground cold storage pit, ełnen tu'h. Drawing by Alan Boraas.

In "Story of Food Old People Used to Eat," Tyonek Elder and historian Nickafor Alexan (ca. 1957) writes:

> Old days they [Dena'ina] used to dig in the ground about four feet put some grass. And put some birch bark and cut the guts out of red and silver salmon and throw about fifty or hundred in there…[they] covered with birch bark and grass and then cover it with ground. Leave it till mid-winter, then they dig it out. Wash it, put it in boiling water, it get stiff, but they eat it. Its strong taste, made us cough, but we used to like, that's old timer best food.

Nondalton[17] Dena'ina Elders Ruth and Pete Koktelash provide further details of the waterproofing technique of *ełnen t'uh*, or underground cold storage pits.

> The fish cache underground is made this way. They dig way down underground and then they line it and then put that fireweed leaves in. That's what makes it taste better flavor. They take the birch bark and put it down on the bottom real tight next to the ground and then they have fish eggs ready on the drying rack. They test the fish eggs and if they are still soft in the middle, they take the fish eggs from the rack and take it to the fish pit, and they gum the seams of the bark that were attached by wooden pegs. They seal all the seams so no water will get through. There is no hole left after they seal it with the fish egg gum. And then

[17] Nondalton is an Alaska Native community on Sixmile Lake, southwest of Tyonek.

> they paint the whole bottom and sides with the fish egg gum. They paint the bottom real good before they start putting fish in there.
>
> When they start putting fish in there there's someone with brush swatting flies away so that flies don't get into the fish pit. They keep doing that, doing that until the hole is filled up. When they fill it up they don't cover it right away; when they cover the hole, they cover it real thoroughly…so that no kind of blow fly can crawl into it.
>
> And then the next day they reopen it and recheck it, and the fish is settled. It settles. And then put more fish in there too. And then they put a big, heavy flat rock on top of the fish and then they put the cover on; they seal it. You know that birch bark, it gets curled up on the outside? They curl it in to the inside [referring to the bark] and sew it together with tree roots [spruce roots]. Before they seal the top, they put that white moss on top. Oh, first they put fireweed leaves on top and then the white moss.
>
> And then they put the white moss on top real thick and then they bury it and before they bury it, they look up in the sky for the clouds. If there's a cloud in the sky over the hole, that's when they bury the place. When they see that cloud and bury the fish, they say "right under this cloud is where we bury the fish so we won't lose that place."
>
> That was long, long time ago they used to do that. Not these days. Then they watch that cloud. (Evanoff 2010:77-78)

As Koktelash and Koktelash indicate, bacteria and insect larvae were a significant concern with cold storage pit salmon preservation. Both sockeye and coho salmon are mentioned as being stored, but it is likely that coho salmon were the fish most commonly stored in the pits. In systems such as the Ch'u'itnu, coho are the last running fish of the year, and the time between catching and freezing would be minimized, thereby minimizing the chance of bacteria.

The large number of pits found at archaeological sites signifies overproduction as a hedge against bacteria, bears or wolverines decimating the food supply, and to accommodate sending food to a partner *qeshqa* when the need arose (see The *Qeshqa* System section below). The large number of underground cold storage pits found in the Ch'u'itnu drainage is a pattern repeated at many other pre-contact and early contact period Dena'ina sites.

Underground Cold Storage in Mid-Twentieth Century Tyonek

In Ronald Stanek's interview with Max Chickalusion Jr., Mr. Chickalusion (2014b: 26-36) described the use of cold storage pits in Tyonek in the mid-twentieth century. Before 1965, most of the houses at Tyonek were small log cabins with wood heat and no electricity, or with only a generator for part-time use. Mr. Chickalusion was a boy during that period, and remembers two types of underground cold storage pits: a smaller walk-down size and a larger size accessed by a ladder. These were variants on the old *elnen t'uh*; they kept wild foods frozen, and thus differed from the cool root cellars for vegetables common in non-Native homestead Alaska at that time. He stated that in addition to the village underground cold storage pits, pits were also used in places where people stayed for long periods of time, such as hunting camps. The people also smoked and salted meat for preservation.

Mr. Chickalusion (2014b:27) stated: "[T]he ones I seen were a little ways from the house." The people would pack snow in during the winter and use grass as an insulator. The frozen food would last several seasons if it was not consumed in one year. He remembers seeing these storage units at Bill's house (no last name given) and near the Albert Kaloa Sr. house seen in Figure 13. The Kaloa house is one of the few old structures remaining after the 1965 construction of the new village, when the old cabins were largely destroyed.

Figure 13. Albert Kaloa Sr. cabin in Tyonek, where the family maintained an underground cold storage unit up to the mid-1960s. Photograph by Alan Boraas.

The 1965 construction also brought electricity to the village, making cold storage pits unnecessary. In 1965, the federal court ruled that the Bureau of Indian Affairs (BIA) had no right to lease Tyonek Indian land for oil development without permission of the village. The village then sold rights to drill for oil and gas beneath the reservation to a group of oil companies for $12.9 million, and the BIA undertook a program to modernize the village. Old cabins were destroyed and new houses built in their place. A city power plant was connected to provide the new homes with electricity, which powered refrigerators and freezers. Today, salmon and other wild foods are kept frozen in freezers, so cold-storage pits are no longer necessary.

Intensive Salmon Subsistence Fishing

Intensive pre-contact Dena'ina salmon fishing, indicated by the large number of cold storage pits, was done with six techniques, all of which may have been used on the Ch'u'itnu and its nearby beaches.

Three methods were used to catch large numbers of salmon. The first of these was construction of a weir across a tributary creek, as diagrammed in Figure 14. A pole and stick lattice was made that blocked upstream salmon movement. Fish were pitched out and, when fishing was done, a gate was opened permitting escapement (Osgood 1976:99). The Ch'u'itnu itself would have been too large to allow building such a weir, but the tributary anadromous creeks were suited for such a technique.

A second method involved a variant on modern inter-tidal Cook Inlet beach fishing. As described by Elliott (1906:94) (Figure 15), a linear weir, built of a lattice of poles, was constructed in the intertidal zone of the Inlet as a beach weir. Salmon migrating along the shore were forced around the weir, where they were then dipped out with a net.

The third method was a further variant on intertidal beach fishing, described by Nickafor Alexan (1965). A drawing that accompanied Alexan's article is reproduced in Figure 16. Alexan writes (transcribed as published):

> First they go in the woods and get the small trees, roots [flexible small diameter spruce roots braided into rope] and all, about twenty of them. They trim the branches from the trees and then they dig holes in the beach and put this tree's roots down and pile heavy rocks round them. And then after they got all the trees

set up about ten or twelve feet apart down the beach they get smaller tree with roots and set that on ebb side, or rather south side. They pile heavy rocks on them and lean this smaller trees against that larger tree and tie it together with roots. Roots was only rope they used mostly. After all this trees sat up, then they get poles and lay them on ebb side about two feet apart and tie them with roots very tight all the way to top. Then they have few larger pole on side top of trap to walk on.

I understand there is lots of work on them, but all the village people work together. If any person not sick, but if he don't work on that trap, they won't let him fish on that trap. So everyone have to work. When the trap are finish they make their scoop [dip net], about four feet long, two feet wide, and one and a half feet deep, made of roots. And have strong five or six feet pole for handle. And then when they think fish are coming they sit on the lower poles, sat their scoop down low in the water. "When time coming in and come up to first or bottom pole, they move up to next pole. That way they could fish from low water to high water. A person that don't sleep good will get most fish those days.

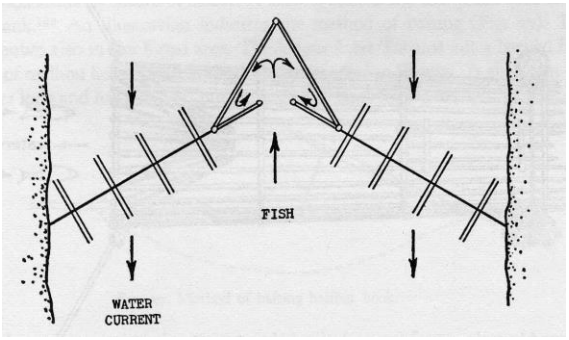

Figure 14. Dena'ina salmon weir (Osgood 1976:99)

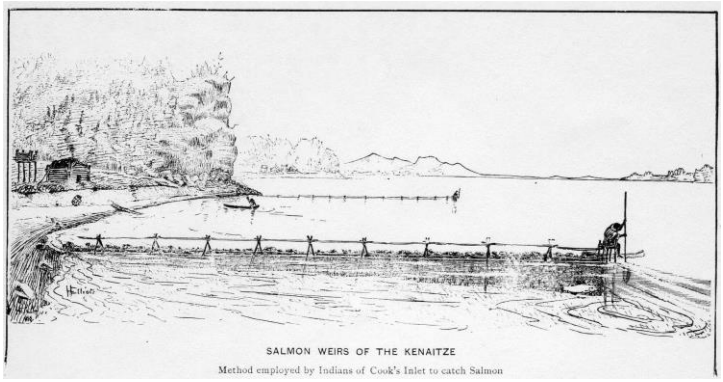

Figure 15. Coastal salmon weir (Elliott 1906:94)

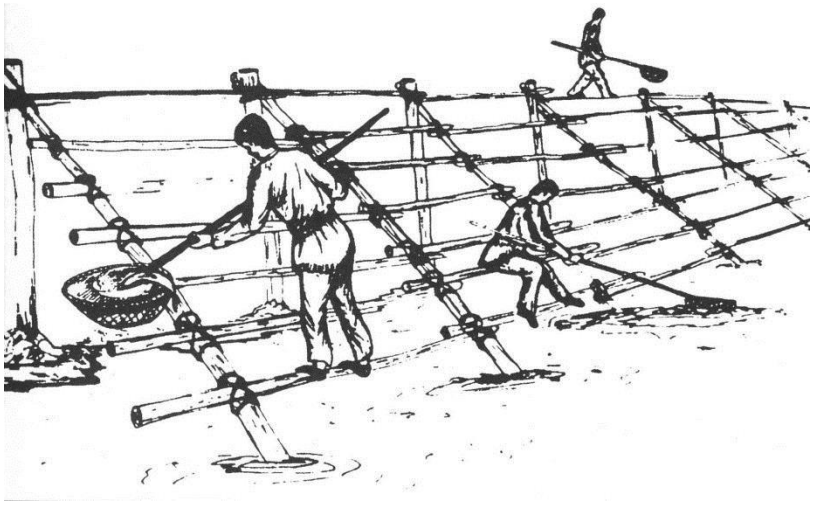

Figure 16. Tubughna salmon fishing platform (Alexan 1965)

Three other types of salmon fishing contributed smaller volumes of fish to the community. A salmon fish trap (Figure 17) would be placed directly in a stream. The device was as long as 12 feet, with an entrance spiked so as to prevent a fish from exiting once it had entered (Osgood 1976:100). This type of trap was used in most of the Northwest Coast salmon areas. Since the capacity of the fish trap was limited, this type of fishing would have been restricted to periods or areas of lower fish runs.

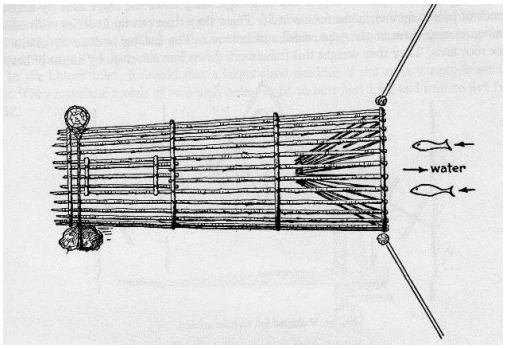

Figure 17. Dena'ina fish trap (Osgood 1976:100)

Osgood (1976:83) describes the use of fish spears like the one diagrammed in Figure 18, primarily for taking salmon, but occasionally for halibut or sea otter. The wooden shaft was as long as ten feet, and the detachable barbed bone point was set into a foreshaft. It could be used as a lance and the fish speared with the barbed point, or it could be thrown and the impaled fish retrieved by pulling on the sinew line, which could be as long as 24 feet. With either technique,

the line was coiled on the ground and held with the left hand, and the spearing or throwing was done with the right.

Figure 18. Dena'ina fish spear (Osgood 1976:84)

Lastly, Peter Kalifornsky described a spruce-root snare called *qunqelashi quggił*, used mainly for Chinook salmon. Figure 19 is a reproduction of Kalifornsky's hand drawing (Kalifornsky 1991:215). The forked pole is held in one hand and the spruce root line in the other. When the fish swims in, the fisher pulls on the line and retrieves the fish.

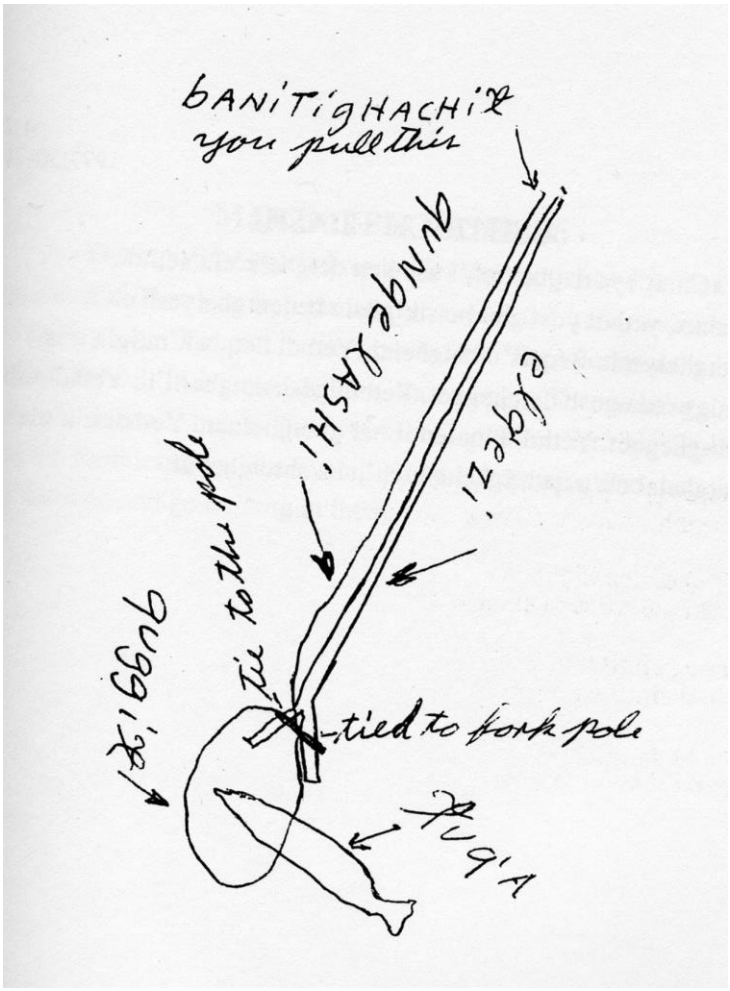

Figure 19. Hand operated salmon snare. Drawing by Peter Kalifornsky (Kalifornsky 1991:215).

Pre-Contact Sedentism

The development and maintenance of a sedentary lifeway based on hunting and gathering, but allowing for relatively large populations to live permanently in and near the Ch'u'itnu watershed, is another significant pattern in Tubughna cultural history that is closely related to salmon-based subsistence. Because salmon return in great volume to the same natal stream generation after generation in a predictable pattern, the development of intensive fishing with salmon as the keystone species allowed sedentism to develop. The *nichił* are traditional Dena'ina permanent houses, indicative of sedentary or semi-sedentary settlement patterns directly related to the development of means to store salmon for year-round use. Figure 21 is a field drawing of one of the houses in the Ch'u'itnu drainage, as recorded by archaeologists. Houses in the Ch'u'itnu drainage were described by Osgood (1976:55), and housepits in the Ch'u'itnu drainage conforming to Osgood's description were documented by multiple archaeological reports. These houses are primarily found near salmon spawning streams and associated with nearby underground cold storage pits, like most Dena'ina sedentary houses. Interpretive drawings are found in Figures 21 and 22.

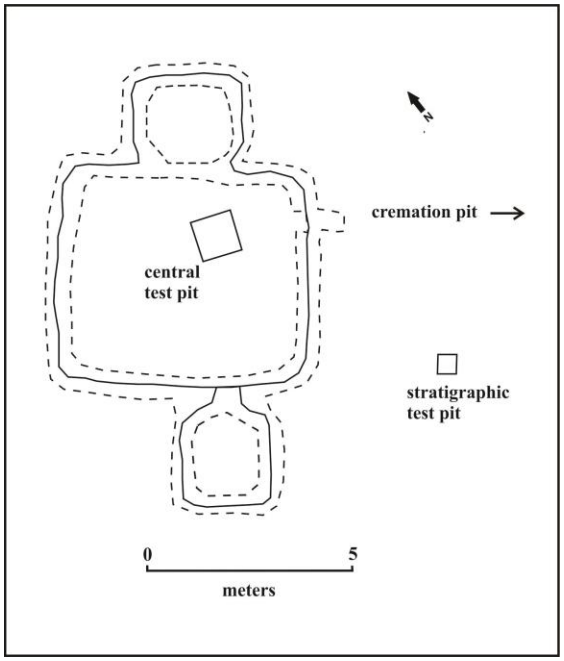

Figure 20. Sketch map of House "B," TYO-266 in the Ch'uit'nu Archaeological District. Scale is approximate. Drawing by Douglas Reger.

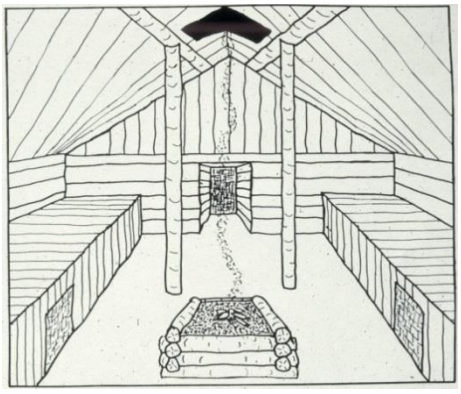

Figure 21. Interpretive sketch of the inside of a Dena'ina nichil. Drawing by Alan Boraas.

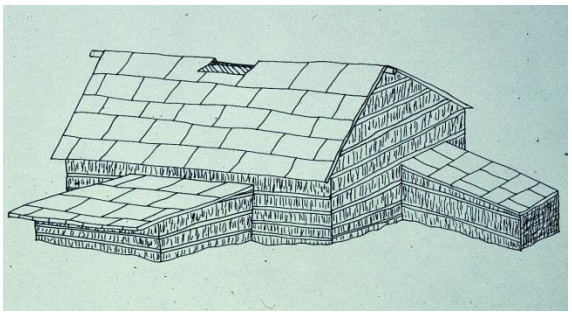

Figure 22. Interpretive sketch of the outside of a Dena'ina nichil. Drawing by Alan Boraas.

As described by Osgood (1976:55-62), the houses were semi-subterranean, meaning the floor was several feet below ground level. Logs, shingled with beach rye or similar grass, formed the walls, held up by pairs of vertical poles set in the ground. The pitched post and beam roof was covered with birch bark or spruce bark over poles, and covered with sod for insulation. There were enclosed benches on either side. Married household members and unmarried girls slept in separate apartments underneath the benches, while boys and young men slept on top. The fire hearth consisted of an approximately four by four foot square by two foot high log crib filled with sand. The fire heated the room by convection, and the heated sand warmed the room by radiation after the fire went out at night. Once the house was abandoned, the log crib eventually decayed, and the hearths now appear as a lens of sand, fire-cracked rock, and charcoal. Charcoal is the source of most of the radiocarbon dates for pre-contact Dena'ina sites.

The *Qeshqa* System

One consequence of pre-contact sedentism and cold storage was increased social and political complexity. The village leader, called a *qeshqa*, controlled access to the primary food source, gathered by the *nakilaqa* (literally "clan helpers") or village members, in a redistributive economy diagrammed in Figure 23. Each *qeshqa* had a partner *qeshqa* in a distant village with whom he had a s*hluchin* relationship, meaning that either *qeshqa* would divert food resources from his food stores to the partner village if the need arose.

This ecological extension of resources through a political structure was made possible because of the development of underground cold storage pits. It enhanced survival rates, giving rise to an estimated Cook Inlet population of 5,000-6,000 (Alexan ca. 1957) and the creation of large residential and cold storage sites at salmon fishing areas such as at the Ch'u'itnu. The large number of underground cold storage pits at pre-contact or early contact period Dena'ina sites is due in part to over-production to accommodate *shluchin* redistribution.

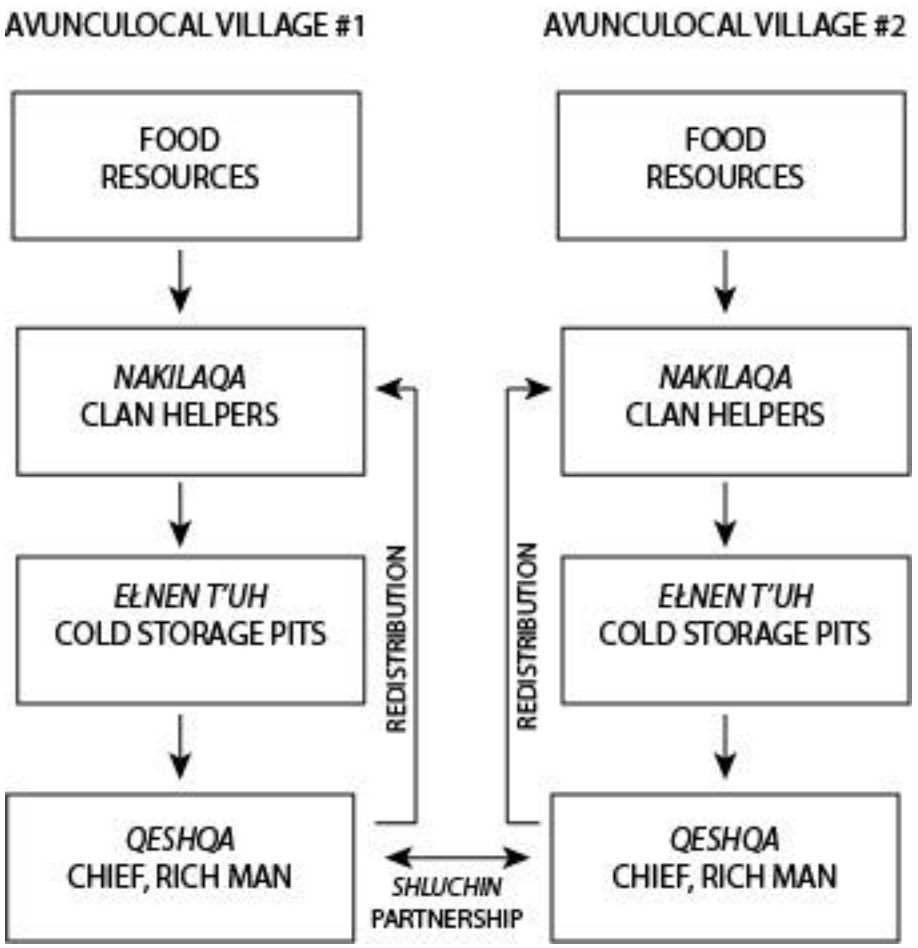

Figure 23. Qeshqa redistribution system.

The First Purchase of Salmon in Cook Inlet, 1778

Another important pattern of historical events in the Ch'u'itnu area, again featuring salmon subsistence and traditional Tubughna culture, involves interaction with European and Anglo-American explorers, missionaries and settlers.

Documentation of such events at or near the Ch'u'itnu began in April 1778, when Captains James Cook and James Clerke entered Cook Inlet on their mission to find a Northwest Passage for England. In subsequent years, Spanish explorers (Martinez in 1779; Fidalgo in 1790) and British explorers (Portlock and Dixon in 1785; Vancouver in 1794) came to Cook Inlet, though only the British voyages spent time in the vicinity of the Ch'u'itnu.

After determining that Cook Inlet was not a route to the Northwest Passage, Captain Cook anchored a few miles from the Tubughna villages on the way out of Cook Inlet. While

there, what may have been the first purchase of Cook Inlet salmon by Euro-Americans occurred on June 3, 1778. William Ellis, assistant surgeon on the voyage, wrote in his log (1969 [1782]:264):

> The next morning [June 3, 1778] about six, soon after we had anchored, a large canoe, entirely laden with fresh salmon came along side; the whole cargo was soon bought, and at a very moderate price, for half a salmon might be purchased for a nail or a button.

What was a good price for the British, it should be noted, was also a good price for the Dena'ina, because of their plentiful salmon supply and the relative rarity of European goods.

Eighteenth Century Shaman War

Russian mercantile companies began to occupy Cook Inlet starting in 1786, establishing a series of redoubts and artels. The redoubts were not military posts, but were palisaded compounds, occupied by mercantile companies authorized by the czar to have cannons (Lydia Black, personal communication, November, 1989). The artels were unpalisaded fur collecting compounds. One of the primary artels was located at Tyonek Creek (Third Village in Figure 24, sometimes called Second Tyonek, originally called *Tghes Ka'a Hnidghi'ut*). In his exploration of Cook Inlet in 1794, George Vancouver directed a junior officer, Joseph Whidby, to conduct explorations on the west side of Cook Inlet in a long boat, including a visit to the Russian Artel at Tyonek Creek. Whidby described the artel as a single building 50 x 24 feet and 10 feet high with 19 Russians stationed there under the direction of "an old man" (Vancouver 1798:112-122).

This artel was attacked in the Last Indian Wars, described by Dena'ina Elder and historian Nickafor Alexan (ca. 1957) and Dena'ina Elder Shem Pete in a story that Alexan calls "The last Indian Wars of Tyonek." Boraas and Leggett (2013) have analyzed and contextualized that story. The war was part of a larger set of battles around 1797, which ended would-be Russian dominance in Cook Inlet. The dynamics of the battles are complex, because some involved Dena'ina against Russian and some Dena'ina against Dena'ina, reflecting internal cultural tension between those willing to ally with the European occupiers and those opposing such alliances. The events illustrate how cultural harmony, manifested in alliances over salmon distribution, was disrupted by nineteenth century Western trade.

The setting is Tubughna, which the Cook Inlet Historic Sites Project (1975:103) defines as "a closely related group of villages which stretched from Beluga to Granite Point." Figure 24 identifies the villages and locations mentioned in Alexan (ca. 1957). Shem Pete uses the term Tubughna throughout, not differentiating among the various villages.

Figure 24. Tubughna villages of the late eighteenth century, identified by Nickafor Alexan (ca. 1957). Map by Alan Boraas.

According to Boraas and Leggett (2013) the story tells of a shaman war, the traditional Dena'ina way for resolving dissention within the culture. Narratives of shaman wars involve what to Western society are paranormal or mystical events between shamans or spiritually powerful individuals. While the conflict was resource based, the shaman war element suggests that it contained a spiritual dimension as well. Another shaman war occurred in the early twentieth century, and attempted to deal with the consequences of the 1918 influenza epidemic (Kalifornsky 1991:290-309).

The events center on two *qeshqas*, one from Tyonek and the other from Knik, who were partners or *shluchin*. This relationship meant that they obligatorily channeled resources, primarily salmon, between their villages as needed for survival. After the 1791 establishment of

the Russian fort at Kenai, Nikaevolsk Redoubt (Fort St. Nicholas), the Tyonek *qeshqa* gained disproportionate access to Russian trade goods. In turn, he traded to Dena'ina and other Denè of the Alaskan interior, via Merrill Pass and perhaps Lake Clark Pass. In time, the Tyonek *qeshqa* became rich and powerful beyond what was possible before the incursion of the Russians and their European trade goods. As a result, he began to ignore the needs of his partner *qeshqa* and the Knik village. This was a serious violation of the trust agreement between *shluchin* partners, and disrupted the traditionally balanced and generalized reciprocity and cultural harmony. Consequently, the Knik *qeshqa* had the Tyonek *qeshqa* killed, which was also a serious violation of traditional values.

The killing set off a firestorm of conflict, depicted in the story by a shaman turning a clump of sod upside down, symbolic of the world turning to chaos—a shaman war. Disorder and killing ensued, including the killing of 50 Russians at the artel located at Tyonek Creek (Alexan's Third Village). The artel killing was instigated by two brothers, Hkokuz and Huktoylas. Later, a massacre of Dena'ina by Dena'ina, involving the same two brothers, occurred at Blood Lake. Blood Lake is also called *Batutnalyuy Bena*, or "Killed in the Water Lake"; it is located a few miles from modern Tyonek in the Indian Creek drainage, immediately adjacent the Ch'u'itnu drainage (Figure 25). The place name *Batutnalyuy Bena* is recent, as the original name is so charged with the power of negative meaning that speaking it is taboo (Kari and Fall 2003:63). Traditional Dena'ina today avoid drinking the water from this lake because of its evil heritage.

Figure 25. *Batutnalyuy Bena* (Blood Lake), 2013. Photograph by Alan Boraas.

Salmon Canneries and the Village of Chubutna

After the United States purchased Alaska in 1867, a number of fur trading companies began operating in the Tubughna area. Shirpser, Haritonoff & Co. established a fur post in the area sometime before 1875 (DeArmond ca. 1969b:40); the Alaska Commercial Company built a station at Roberts Creek in 1875 (DeArmond ca. 1969b:37); and Faulkner, Bell & Co. established a fur post at or near modern Tyonek that same year (DeArmond ca. 1969b:40, 59). Nothing is known about the latter company after 1877 (DeArmond ca. 1969b:59).

In 1892, Charles D. Ladd opened a trading post at the mouth of the Ch'u'itnu (Figure 26), and bought the schooner *Anna Matilda* to transport furs to San Francisco (DeArmond ca. 1969b:61). Ladd diversified in 1893, and began salting salmon at Ch'u'itnu. The saltery operated until 1899 (DeArmond ca. 1969b:61). Moser (1899:143) states that the Ladd saltery produced about 100 barrels of salted salmon for local use.

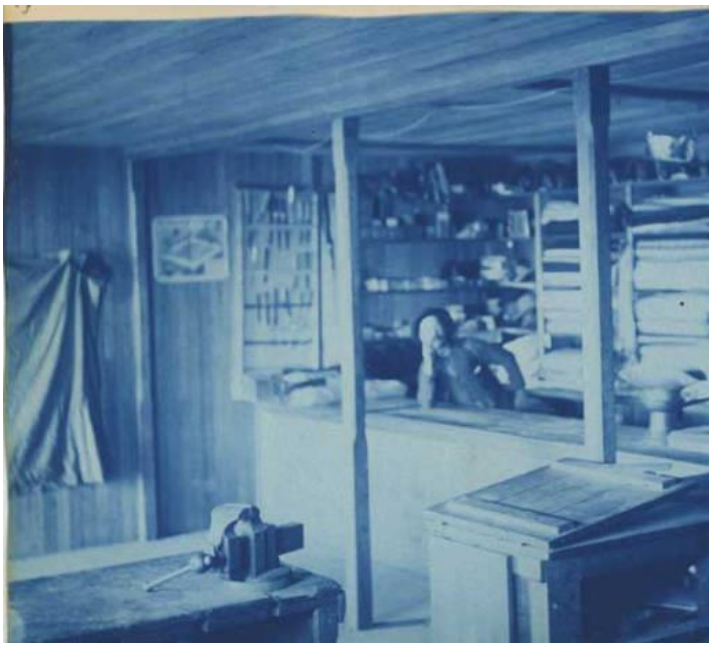

Figure 26. Inside of Ladd Station trading post, 1898. Edwin F. Glenn Papers, Archives and Special Collections, Consortium Library, University of Alaska Anchorage.

In 1900, the Alaska Salmon Association of San Francisco built a cannery on the left, or north, bank at the mouth of the Ch'u'itnu (See Figures 27 and 28). This was the fifth cannery to operate on Cook Inlet (DeArmond ca. 1969a:21), and one of three that operated in Cook Inlet in 1900. They put in four traps and used 20 gill net boats. The total pack was 4,893 cases and 47 barrels of salmon. The cannery had 105 employees: "51 chinese and 54 whites [*sic*]" (DeArmond ca. 1969a:21).

Figure 27. Looking across the Ch'u'itnu toward the Ladd Cannery site and Dena'ina village complexes, October 2012. Photograph by Alan Boraas.

Figure 28. Looking south toward the Ladd Cannery site with the Ch'u'itnu in the distance, 1898. Edwin F. Glenn Papers, Archives and Special Collections, Consortium Library, University of Alaska Anchorage.

After operating for three seasons, the cannery buildings were "washed away" by a Cook Inlet storm in 1902 (McKeown 1951:95). In 1912, the Alaska Packers Association applied for and received the land on which the Alaska Salmon Association had stood. The 1912 plat shows three buildings and a tent (Figure 29).

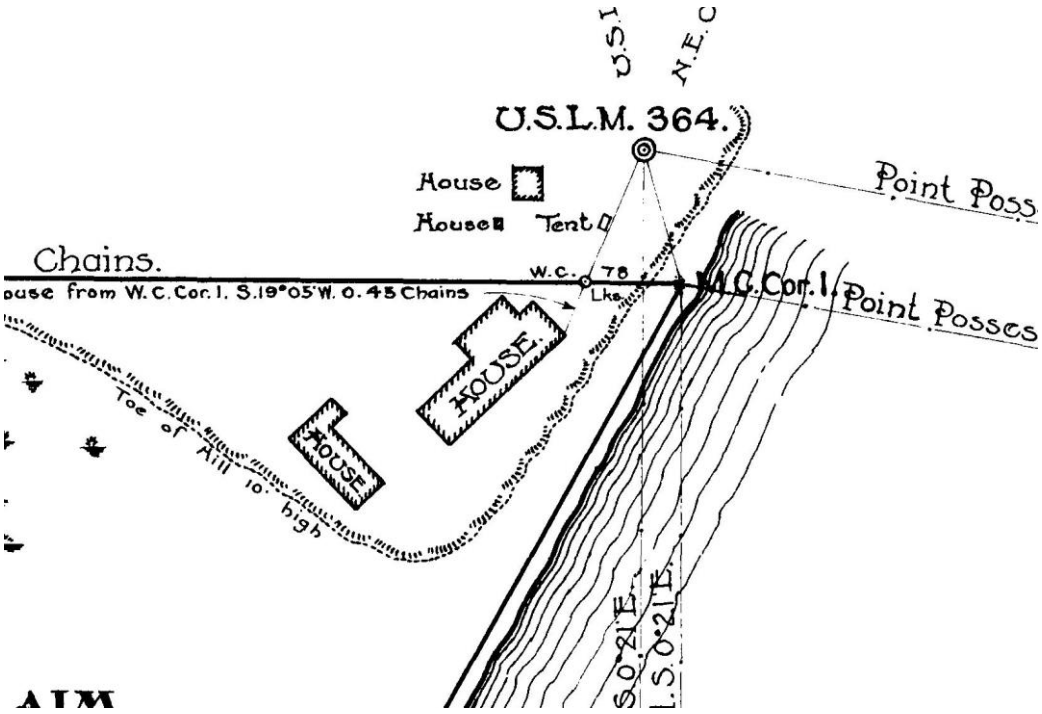

Figure 29. Cropped close-up of Plat 324, Ladd Station, 1912.

In 1912, the cannery surveyor wrote :

> A small native village of a few shacks adjoin the survey to the north. The buildings were in poor repair and were not considered suitable for bearing objects. None of these shacks are included within the boundaries of this survey. The river and adjacent waters are not fished by the claimants [Natives]. The natives are employed during the fishing season in the Inlet. (Braund 2007:25)

The village in question is Chubutna, associated with the Ladd processing facility established at the same location at the end of the nineteenth century (Figures 30 and 31). Photographs from the late 1800s and early 1900s of Chubutna, identified as Ladd Indian Station or Ladd, show typical late 1800s Dena'ina houses and food drying facilities, Dena'ina clothing, and period commercial fish cannery buildings. Wild subsistence foods typical of the time, including salmon and waterfowl, are shown on drying racks in the photographs, showing that the surveyor's statement that the "river and adjacent waters are not fished by claimants" was wrong. Note the fish drying racks and the above ground caches in the background of Figure 31: these indicate that traditional patterns of subsistence use in the Ch'u'itnu area were continuing for Dena'ina during this time period.

Figure 30. Chubutna Village, 1898. Edwin F. Glenn Papers, Archives and Special Collections, Consortium Library, University of Alaska Anchorage.

Figure 31. Chubutna Village, 1898. Note the above-ground subsistence caches. Edwin F. Glenn Papers, Archives and Special Collections, Consortium Library, University of Alaska Anchorage.

In *The Archaeology of Cook Inlet, Alaska*, written in 1934, Frederica de Laguna (1975[1934]:139) wrote that Chubutna was built on a Dena'ina Village. She states: "The modern village [Chubutna] is on an ancient site, Ts'uítna, from which the name of the river, Chuit, is probably derived." In her 1930 field notes, de Laguna (1930:59) wrote that a Dena'ina man named Nikita was her source. De Laguna's place name information suggests the Ladd trading posts, saltery, and commercial canning operation and the Dena'ina site complex comprise one contiguous, culturally interactive physical space.

The 1900 census was the first Alaskan census enumerated by household. Its data for the entry "Ladd Station"—that is, Chubutna—are presented in Table 4. Charles Ladd is listed, along with five other "Whites." Ladd identifies himself as a "merchant," and the others self-identify as "miners."

Table 4. 1900 Census for Ladd Station. Data from U.S. Census Office (1900:481).

Name	Home Address	Relation	Ethnicity	Sex	Age	Status	Tribe	Occupation, Ak
Ladd, Charles D.	San Francisco, Cal	Head	White	M	57	Married		Merchant
Litchfield, Harold	Minneapolis, Min	Head	White	M	30	Single		Miner
Litchfield, William	Minneapolis, Min	Brother	White	M	26	Single		Miner
Lokulstad, Olef	New York, NY	Head	White	M	32	Single		Miner
Lawy, James	Ontario, Canada	Head	White	M	42	Single		Miner
Moarston, William	London, England	Head	White	M	24	Single		Miner
Stephan		Head	Indian	M	35	Married	Shushitna	Hunting & Fishing
Stepanita		Wife	Indian	F	35	Married	Shushitna	Hunting & Fishing
Bukskin		Son	Indian	M	12	Single	Shushitna	Hunting & Fishing
Eaback		Son	Indian	M	10	Single	Shushitna	At Home
Wallalah		Sister in Law	Indian	F	20	Single	Shushitna	Hunting & Fishing
Nicki		Brother	Indian	M	7	Single	Shushitna	At Home
Nickoli		Brother	Indian	M	22	Single	Shushitna	Hunting & Fishing
Olga		Mother	Indian	F	60	Widow	Shushitna	At Home
Pitski		Head	Indian	M	55	Married	Shushitna	Hunting & Fishing
Lutchtitskunda		Wife	Indian	F	50	Married	Shushitna	At home
Baval		Son	Indian	M	17	Single		Hunting & Fishing
Nicholi		Son	Indian	M	10	Single	Shushitna	At Home
Kartini		Head	Indian	M	30	Married	Shushitna	Hunting & Fishing
Katrina		Wife	Indian	F	30	Married	Shushitna	Hunting & Fishing
Inga		Daughter	Indian	F	7	Single	Shushitna	At Home
Kaplola		Brother	Indian	M	27	Single	Shushitna	Hunting & Fishing

The 16 Natives at Ladd are from three extended families, identified as from the Shushitna (Susitna) tribe. Susitna Dena'ina moved to the Ch'u'itnu to work or trade at the Ladd Cannery, and established Chubutna nearby.

The occupation of the Native men on the 1900 census is identified as "Hunting and Fishing" (i.e., subsistence), while the occupation of all of the Native women is listed as "At Home." The "At Home" designation was given to all Native and non-Native women on the 1900 Cook Inlet census, and refers to the occupation of housewife. However, it should be noted that Dena'ina women were co-equal partners with men in the hunting, fishing, processing activities, so the "At Home" designation—which implies that women did not engage in subsistence gathering, only processing— is misleading. The occupational designation "Hunting and Fishing" indicates that in 1900, the Dena'ina of the Ch'u'itnu area were primarily engaged in subsistence activities in addition to working for the cannery.

Figure 32. Unidentified Dena'ina woman at Chubutna, 1898. Edwin F. Glenn Papers, Archives and Special Collections, Consortium Library, University of Alaska Anchorage.

Homesteader and Dena'ina Cooperation

The first homesteaders in the Tubughna area were Frank F. Smith, his wife Mary G. Smith, and their two small children. They occupied a site north of the Ch'u'itnu in 1926 and filed for a homestead patent in 1931. The Smith Homestead, TYO-259, is located within the Ch'u'itnu TCL, and has been described by Charles M. Mobley and Associates (Mobley and Mobley 2012:72-82).

Frank Smith died in a boating accident in Cook Inlet shortly after a homestead survey in 1931, and Mary Smith obtained title in 1936 (Figure 33). First one, then the other of her two boys also drowned in Cook Inlet, and Ms. Smith eventually moved to Anchorage. She deeded the land to the Catholic Church Charities, which in turn sold it to the Nature Conservancy in 2010.

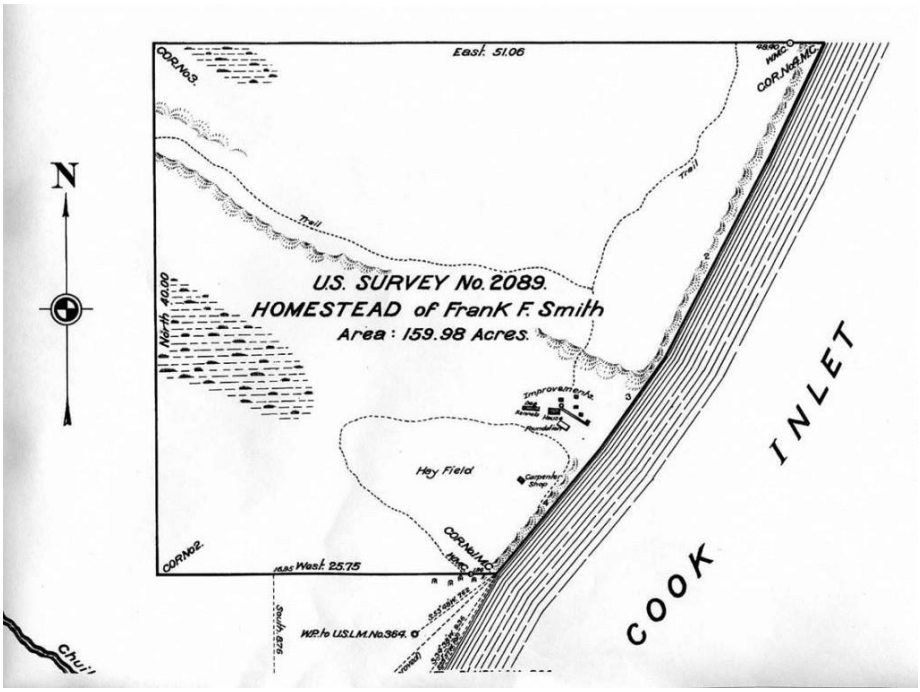

Figure 33. Patent survey of Smith Homestead, 1931. Note five crosses south of the southern boundary of the homestead line. U.S. Survey No. 2089.

The main homestead house, one of nine structures, stood abandoned for over 70 years (Figure 34). When a team from Tyonek and NARF visited the cabin in 2013, the main homestead house, only a few miles from Tyonek, appeared untouched, apparently as Mrs. Smith had abandoned it. One of her dresses still hung by a hanger, there was a bear skin on the wall, and many pots and pans and tools of daily life were still on the shelves. In all those years, no one

from nearby Tyonek or Beluga had disturbed the house or its contents. Unfortunately, the Tyonek forest fire of 2014 burned the house to the ground (Figure 35).

Figure 34. Smith Homestead cabin, August 2013. Photograph by Alan Boraas.

Figure 35. Remains of the Smith cabin burned in the Tyonek wildfire of June 2014. Photograph by Alan Boraas.

According to nearby resident Agnes Brown, a Dena'ina Elder who knew the Smiths, there was close cooperation between them and her family, the Kaloas. This cooperation included sharing subsistence resources (Brown 2013a:21-25). Homesteading often caused conflict between the newcomers and indigenous peoples, but this does not appear to have been the case in the Ch'u'itnu drainage.

Contemporary Dena'ina Subsistence in the Ch'u'itnu Area

Data on Contemporary Subsistence Harvests

The traditional patterns of Tubughna subsistence and settlement, and the related cultural practices, continue today. Subsistence data collected by the ADF&G Division of Subsistence underscore the continuity of traditional forms of subsistence in the lives of contemporary Tyonek Dena'ina. Table 5 shows data for the per-capita harvest of subsistence foods for a number of Dena'ina villages, including Tyonek. The data indicate the villages continue to rely on wild subsistence foods, particularly wild salmon, as did their ancestors. In Tyonek, 70% of the per-capita harvest of wild foods is salmon.

Table 5. Contemporary Subsistence Use of Dena'ina Villages in Pounds Per Capita. Data from ADF&G, Division of Subsistence.

Reporting Year	Community	All Resources	Salmon	% Salmon	% Non-salmon	% Land Mammals	% Marine Mammals
2006	Tyonek	256	178	70.0%	4.8%	18.9%	18.8%
2004	Iliamna	469	370.1	78.8%	7.3%	7.0%	1.4%
2005	Kokhanok	680	512.8	75.5%	5.3%	14.1%	0.25%
2007	Lime Village	861	512	59.4%	5.3%	27.8	0
2004	Newhalen	692	502.2	72.6%	4.6%	15.1%	0.70%
2004	Nondalton	358	219.4	61.3%	9.5%	22.9%	0
2004	Pedro Bay	306	250.3	81.9%	5.0%	9.8%	0
	Kenai	Do not have full subsistence rights					
	Eklutna						

The Ch'u'itnu drainage has been a core area of subsistence activities for generations of Tyonek residents. Figure 36 shows the relative intensity of subsistence activities engaged in by Tyonek and nearby Beluga residents over twenty years. It is based on data gathered by Braund (2007) on subsistence use areas during the years 1987-2006; the source was household

interviews of 35 individuals in Tyonek[18]. The data reflect areas hunted, fished or gathered by each individual or family, focusing on the following species (Braund 2007:5):

1. Moose
2. Bear (black and brown)
3. Furbearers and small land mammals
4. Seals
5. Beluga
6. Wildfowl (migratory and upland)
7. Fish (salmon and non-salmon)
8. Marine invertebrates
9. Berries and plants

Over 100 species are represented in the data, although there is some overlap, because some species are referred to by multiple terms (Braund 2007:10-11).

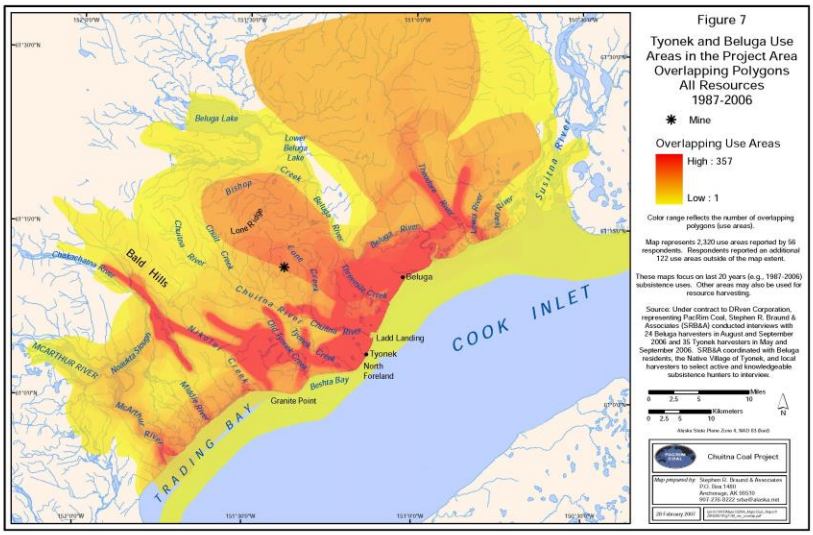

Figure 36. Relative intensity of subsistence resource harvest activities over a 20-year-period, 1987-2006. Reproduced from Braund 2007:28.

The individual use area data were transformed into polygons, digitally collated, and generalized according to color from high (red) to low (yellow). Red means an area was used a great deal over the twenty year period, by multiple individuals harvesting several species, while yellow indicates less intensive use.

[18] Some of the data are from Beluga, a small non-Native community to the north associated with commercial natural gas fields and a power plant.

The Seasonal Round

Dena'ina people typically follow a predictable annual cycle of resource harvest activities, requiring movement between resource-rich locations in order to take full advantage of concentrations of resources. This annual cycle occurred in times prior to contact with Europeans and Euro-Americans, and continues to the present day. Figure 37, reproduced from Fall et al. 1984:55, illustrates the seasonal cycle of subsistence harvest activities.

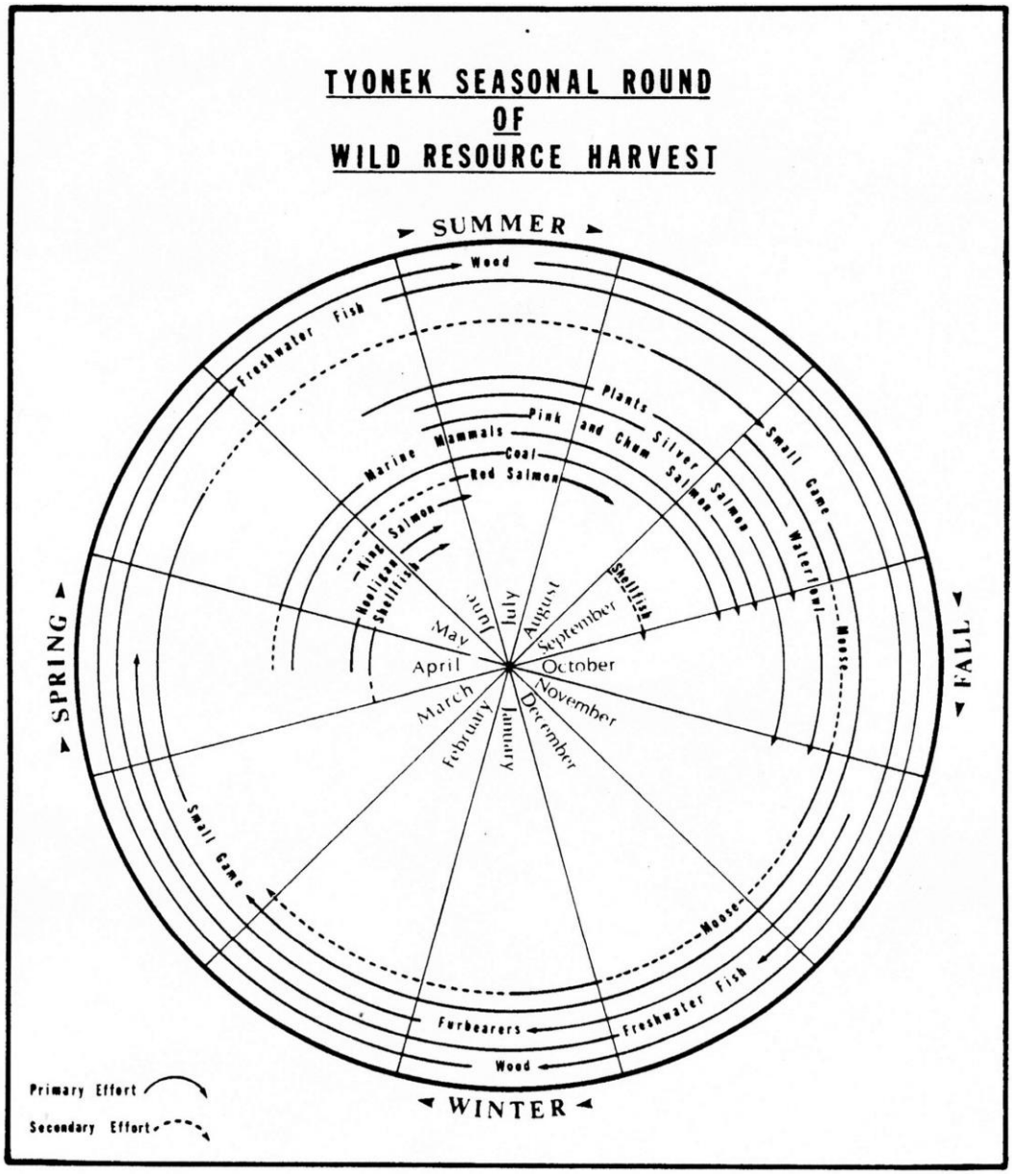

Figure 37. Tyonek Dena'ina seasonal round of subsistence resource harvest, 1978-1984 (Fall et al. 1984:55)

Table 6. Annual Cycle of Seasonal Harvest Activities, Tyonek, Alaska 1978-1982. From Fall et al. (1984).

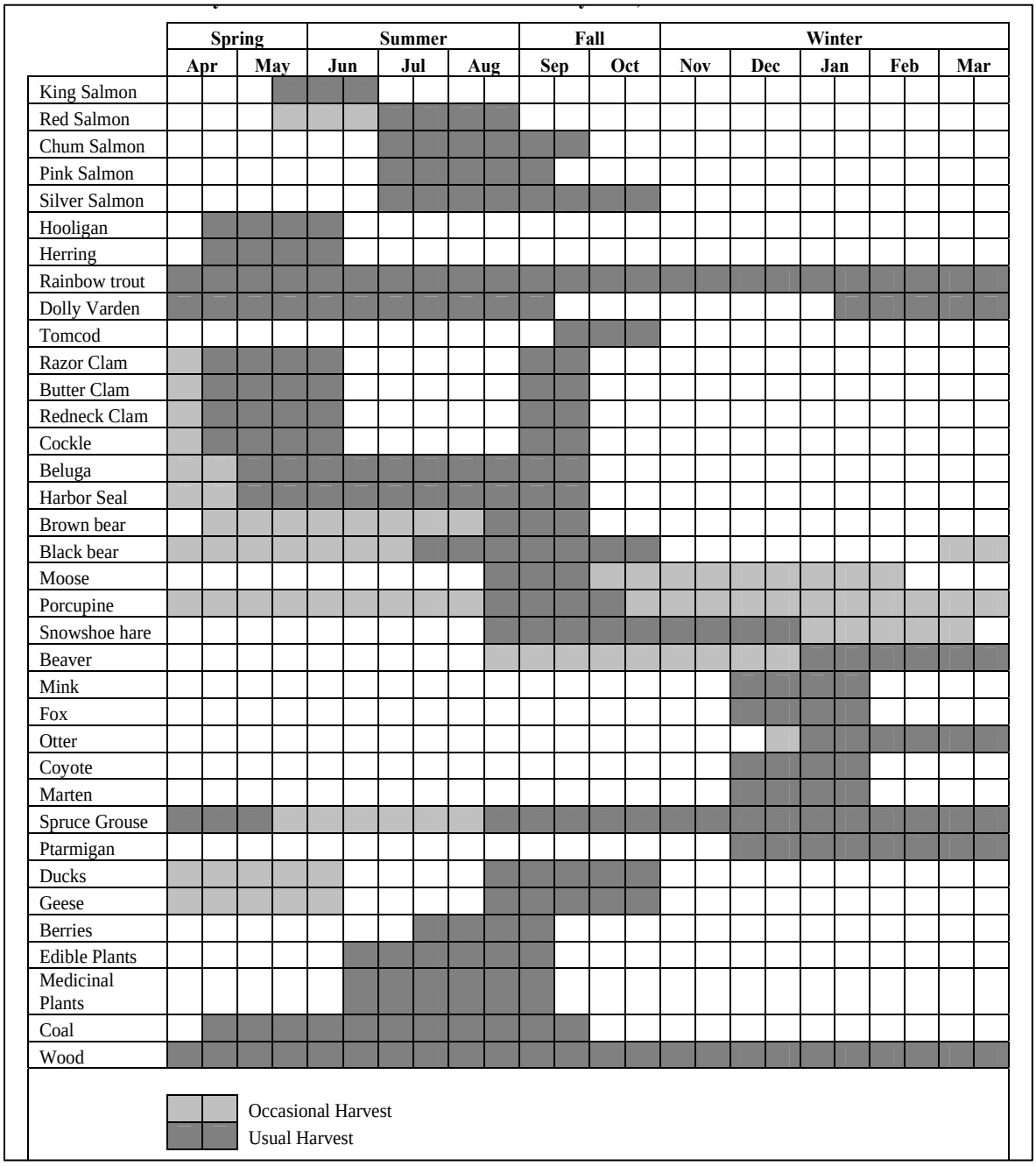

Table 6 illustrates the contemporary cycle followed by Tyonek residents, documented in the late 1970s and early 1980s and published in Fall et al. 1984. Most of these resources, with the exception of those like clams and cockles that occur farther south in the inlet, were and are available within the Ch'u'itnu TCL, either within the Ch'u'itnu drainage or near the mouth of the

Ch'u'itnu. Prior to the 1940s, caribou would have been more available than moose, as moose did not appear in the area in significant numbers until after that time. Caribou once ranged throughout the foothills of the Alaska Range, but because of habitat change, the lowland area became more desirable for moose. In pre-contact and early historic times, several additional species could be added to this list of resources, such as needle fish, saffron cod, halibut, tom cod, starry flounder, steelhead, long-fin smelt, and several species of geese including white-fronted, Canada, and snow geese. Harvest of a wide variety of plants would have spanned a broader range of months, and wild plants would have made up a greater portion of the diet prior to the introduction of cultivated garden produce and varieties supplied by stores in more recent times.

Salmon as a Keystone Species

Salmon are a keystone species in the Ch'u'itnu drainage in that they are a food source for bears, wolves, and many bird species as well as for humans. They are a vital source of nutrients for aquatic and terrestrial organisms, including plants. For generations, Dena'ina people living in and near the Ch'u'itnu drainage have harvested salmon in large numbers.

Seasonality is a significant factor in the salmon harvest, as different species return to the river from the ocean at different times throughout the spring, summer, and fall. Chinook, or king salmon are the first species to return to the upper inlet in the spring, beginning in April and May. Figure 38 identifies modern Chinook salmon subsistence harvest locations of Tyonek residents (from Holen and Fall 2011:6). The large kings move up the west side of Cook Inlet as they near their natal river, the Ch'u'itnu. Some residents employ set net beach fishing techniques to intercept the fish, while others fish the river after the fish have turned to move up to their spawning grounds.

The Tyonek people are well aware of the migratory patterns of salmon. Al Goozmer (2013:24), President of the Tyonek Tribal Council, said, "All the king salmon that is caught out here on the beach here is migratory, earmarked for the Chuitt River." He also voiced the people's concern for continued subsistence: "And if that river is destroyed or change the character of the river, those fish are not going to come back."

Figure 39, modified from Braund (2006), identifies coho salmon use areas at the mouth of the Ch'u'itnu (in red). Similar harvest patterns occur for sockeye (red) salmon (Braund 2006).

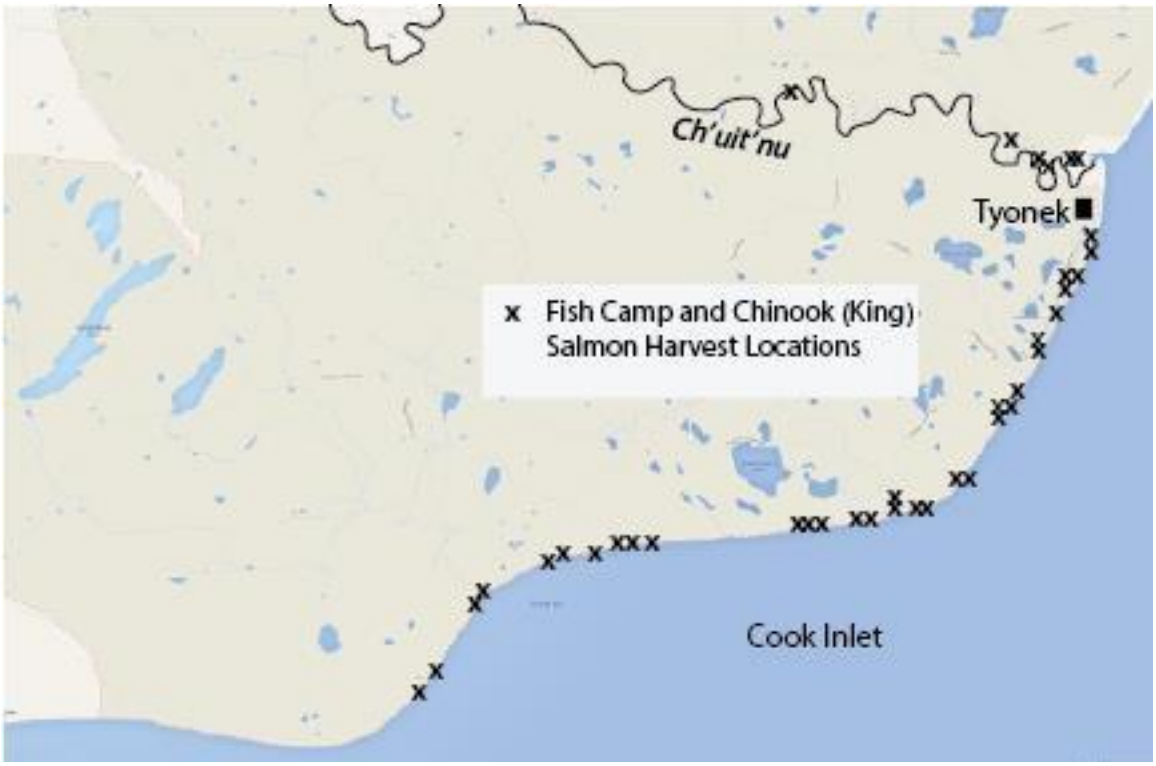

Figure 38. King Salmon fish camp and fishing localities, 2006. The x's identify the location of fish camps or king salmon fishing localities. Adapted from Holen and Fall 2011:6.

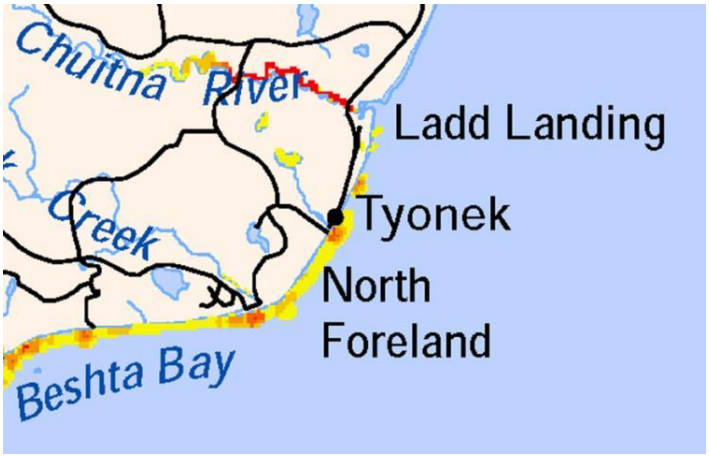

Figure 39. Coho salmon harvest intensity. Red corresponds to high intensity. Reproduced from Braund 2007.

Figure 40 tracks the Chinook (king), sockeye (red), and coho (silver) harvest by Tyonek Dena'ina from 1981-2010. Chum and pink salmon are omitted from the graph because their numbers are negligible (although their numbers are included in the "Total Salmon" plot line). The 2008 spike in the coho harvest is an outlier. The fish harvest data are plotted against Tyonek's population, which appears as the vertical gray bar graph.

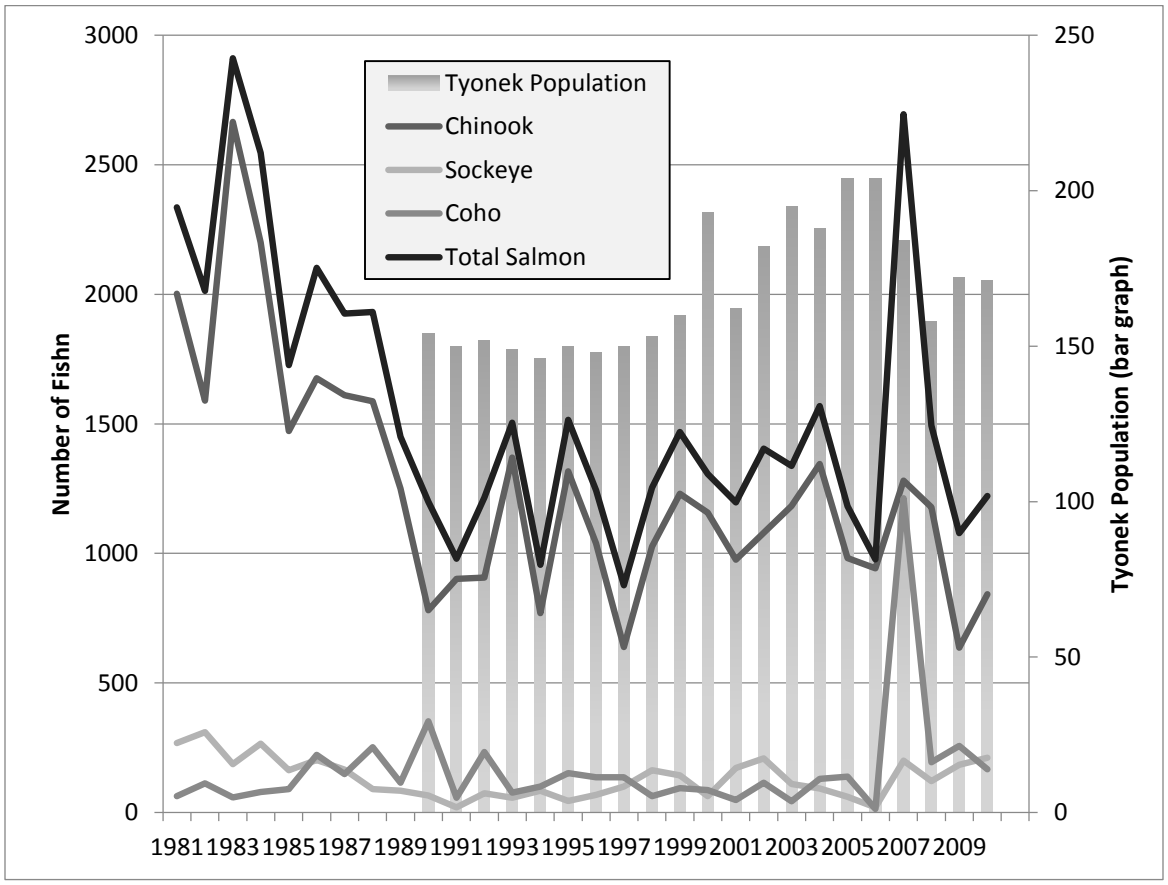

Figure 40. Salmon harvest 1981-2010, Tyonek, Alaska. Chum and pink salmon not included because of low numbers. Data from Fall et al. (2013).

Among the five salmon species, Chinook are clearly the preferred fish for subsistence consumption. However, while other species have remained relatively stable, Chinook harvests have been decreasing. The decreasing Chinook returns reflect a trend in Cook Inlet and through most of Alaska, with the exceptions of the Nushagak River in Southwest Alaska and the Stikine River in Southeast Alaska. The reasons for the decline are being studied, and are thought to relate to one or more of the following factors: ocean acidification, shifts in temperature changes, global warming, factory trawler by-catch, and in some places, habitat deterioration and northern pike predation. These are factors beyond the immediate control of the Tyonek people, and are a cause for serious concern. So far, habitat deterioration is not a factor in the Ch'u'itnu itself.

Table 7 contains Tyonek wild resource harvest data for all wild foods for the 2005-6 year (Stanek et al. 2007:88). It shows the diversity of wild foods that make up the Tyonek diet, and their relative importance through the measure of per-capita consumption in pounds. Salmon, specifically Chinook salmon, are the most important wild food and therefore the keystone

species today, as they have been for hundreds of years. The next most important food species is moose. Together, salmon and moose define Tyonek Dena'ina subsistence. All species are necessary, however, to provide variety to the diet and much needed nutrients.

Table 7. 2005-2006 harvest of wild resources in Tyonek. Data from Stanek et al. (2007:88).

Resource	**Harvest in pounds**				**Percentage of households that:**			
	Total	Household	Per capita		Used	Harvested	Received	Gave
All Resources	43829.2	664.1	216.7		95.7%	93.6%	91.5%	83.0%
Fish	32556.7	493.3	161.0		87.2%	74.5%	59.6%	66.0%
Salmon	30447.5	461.3	150.6		85.1%	74.5%	38.3%	61.7%
Chum	0.0	0.0	0.0		0.0%	0.0%	0.0%	0.0%
Coho	4762.1	72.2	23.6		68.1%	57.4%	25.5%	40.4%
Chinook	24104.0	365.2	119.2		85.1%	72.3%	29.8%	46.8%
Pink	17.7	0.3	0.1		6.4%	6.4%	0.0%	0.0%
Sockeye	1557.5	23.6	7.7		34.0%	31.9%	10.6%	17.0%
Spawnouts	6.1	0.1	0.0		2.1%	2.1%	0.0%	2.1%
Non-Salmon Fish	2109.3	32.0	10.4		57.4%	27.7%	42.6%	29.8%
Hooligan	1811.8	27.5	9.0		44.7%	19.1%	31.9%	17.0%
Land Mammals	8277.7	125.4	40.9		83.0%	31.9%	76.6%	51.1%
Large Land Mammals	8071.7	122.3	39.9		83.0%	19.1%	76.6%	42.6%
Black Bear	488.7	7.4	2.4		4.3%	4.3%	0.0%	2.1%
Moose	7583.0	115.0	37.5		83.0%	19.0%	77.0%	43.0%
Small Land Mammals	206.1	3.1	1.0		25.5%	17.0%	8.5%	14.9%
Marine Mammals	857.3	13.0	4.2		46.8%	4.3%	42.6%	27.7%
Harbor Seal	157.3	2.4	0.8		10.6%	4.3%	4.3%	6.4%
Belukha	700.0	10.6	3.5		46.8%	2.1%	42.6%	27.7%
Migratory Birds	413.0	6.0	2.0		32.0%	26.0%	11.0%	21.0%
Ducks	238.6	3.6	1.2		31.9%	25.5%	11.0%	21.3%
Geese	127.0	1.9	0.6		14.9%	14.9%	2.0%	12.8%
Other Birds	153.3	2.3	0.8		27.7%	25.5%	4.3%	14.9%
Grouse	94.0	1.0	0.5		26.0%	23.0%	4.0%	13.0%
Ptarmigan	59.0	1.0	0.3		11.0%	11.0%	0.0%	6.0%
Clams	249.0	4.0	1.2		40.4%	9.0%	34.0%	6.0%
Vegetation	1322.8	20.0	6.5		91.5%	91.5%	38.3%	63.8%

Almost every Tyonek household—95.7%—uses wild foods, and 93.6 % of households are engaged in the harvest of wild subsistence foods. Only the old or infirm do not actively

harvest wild foods. However, Elders and others unable to fish or hunt receive wild foods through sharing, reflected in the "Received" column in Table 7.

Table 8 reflects changes in per capita food consumption between 1983 and 2006. The data indicate that per capita consumption of fish—mainly salmon—has increased, while the consumption of moose has decreased. Moose populations in the Tyonek area have fallen during this period, and many Tyonek residents attribute the decline in part to wanton waste by employees of Kodiak Lumber and other resource extraction companies, who maintained active operations in the Tyonek area in the 1980s. Tyonek residents observed that during logging by the Kodiak Lumber Company, workers shot moose for sport—killing 28 one year—and buried them with a backhoe. That year, no subsistence moose were taken by Tyonek residents. Residents are concerned that the moose might not come back, because in Dena'ina tradition, an animal mistreated in death may choose not to return for use by the people (Stanek et al. 2007:20).

Table 8. Changes in per capita food consumption in Tyonek, 1983-2006. Data from Fall et al. (1984); Stanek et al. (2007).

	1983 (Population 273)		**2006 (Population 204)**	
	Total pounds	Per capita	Total pounds	Per capita
Salmon	33928.3	124.2	30447.5	150.6
Black Bear	0	0	488.7	2.4
Moose	16200	59.3	7583.0	37.5
Harbor Seal	0	0	157.3	0.8
Belukha	700	2.6	700.0	3.5
Ducks	216	0.8	238.6	1.2
Geese	19.1	0.07	127.0	0.6
Grouse	55.3	0.2	94.0	0.5
Ptarmigan	13.3	0.05	59.0	0.3
All Resources	51132	187.3	43829.2	216.7

Hunting, Fishing and Gathering Territories

Though clan-based village territories no longer operate, they have been replaced by extended family-based subsistence territories (Figure 41). Head men in these kin groups usually hold usufruct[19] rights to areas of land, fishing sites along the beach, plant gathering areas, cabins, and brush camps. [20] Most fishing takes place at fish camps (Figure 42).

Although these land use rights were not strictly enforced, there was, and still is, recognition by other village members of these rights. Extended kin will not usually directly request to use the areas, but may receive tacit permission to do so from the headmen, through conversations relating to the harvester's intentions. Figure 41 maps the family-based territories as of 2013.

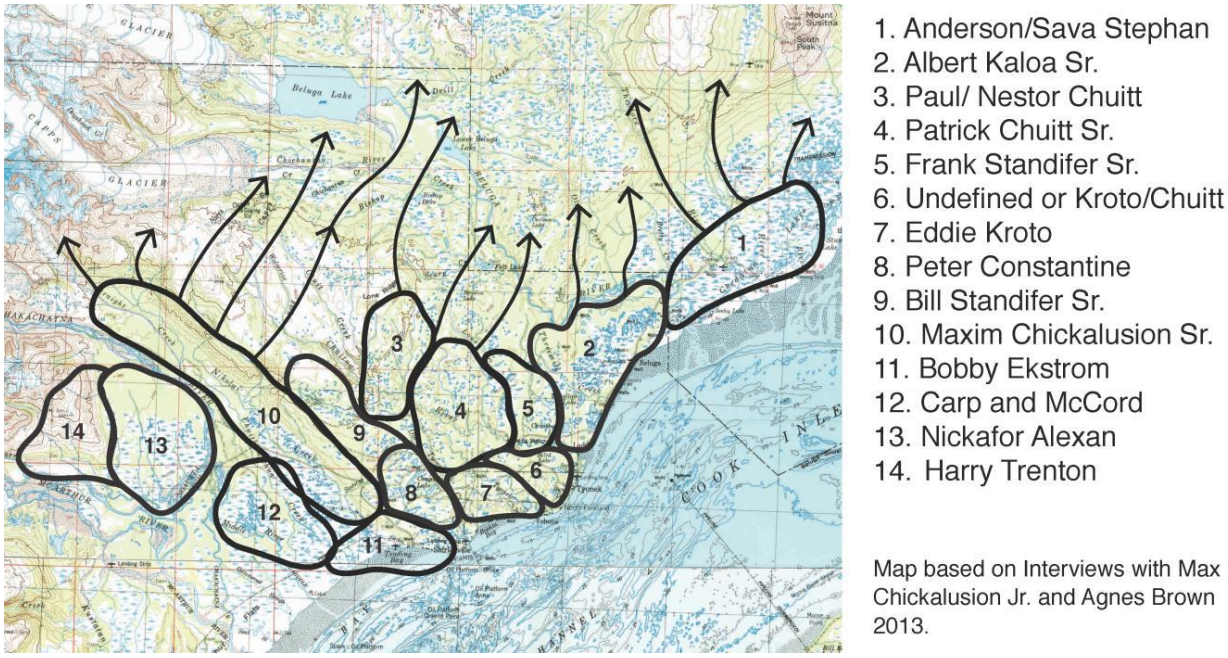

Figure 41. Contemporary Tubughna Dena'ina use areas by family, 2013. Map by Ronald Stanek.

Recognition of these territories today is often expressed by referring to the name of a specific area's original owners or their successors. For example, several members of the Chuitt

[19] The right to use something that is not one's own individual property.

[20] A brush camp is a temporary hunting or traveling shelter. A pole is lashed horizontally between two trees on which additional poles are placed at an angle to the ground and covered with brush and branches. One side is open and a fire built just far enough from the overhang to keep smoke from swirling inside (the horizontal pole is parallel to the prevailing wind) but allowing heat from the fire to radiate in to the occupants' sleeping area.

family trapped the area in the upper Ch'u'itnu drainage between the 1930s and 1970s. Paul Chuitt was the father of Patrick Chuitt Sr. and Nestor Chuitt, and each of these men had Native allotments along the upper Ch'u'itnu and in the Lone Hills above Lone Creek. Their descendants own these properties today. Hunters going to these areas often refer to Patrick's former area as "Pat's Country" and Nestor's as "Nestor's Country" (Brown 2013a:34-35; Chickalusion, M. 2013:7-14).

Other prominent individuals who had use areas in the Ch'u'itnu drainage include Frank Standifer Sr., Albert Kaloa Sr., and Albert's wife Alexandra [Stephan], who had the use area and property near the mouth of the Ch'u'itnu and around Chuitbuna Lake, later willed to family members. Kaloa, Standifer, and Chuitt family heirs today own these Native allotments and other property within the boundaries of the Ch'u'itnu district.

Figure 42. Fish camp at Tyonek Creek, September 2013. Photograph by Alan Boraas.

Moose Hunting: A Case Study

As the ADF&G subsistence data indicate, moose are the second most important wild food by volume to the Tyonek people (Stanek et al. 2007:89; Table 7, above). In 2007, 115 pounds of moose were harvested per household (37.5 pounds per capita), still far behind salmon at 461.3 pounds per household (150.6 pounds per capita). Unlike salmon, where 74.5% of the villagers participated in the harvest, only 19.1% participated in a successful moose harvest. In the cooperative activities of fish camp, young and old can all participate according to their abilities, but moose hunting is a more rigorous activity, typically carried out by small numbers of able adults. It is often done in difficult terrain far from the village and involves butchering and packing out moose that, in quarters, can total over a thousand pounds of meat weight per moose. However, the villagers participate in an extensive moose sharing tradition, indicated by the fact that 77.0% of the villagers received moose.

Figure 43 shows one hunter's recent activity in the area of the Ch'u'itnu TCL. It is representative of many who hunt moose. Max Chickalusion Jr. lives in Tyonek and Anchorage, and is a descendent of an important line of Tyonek leaders.[21] He was interviewed in Anchorage about moose hunting by one of this document's co-authors, Ronald Stanek, on November 22 and 24, 2014 (Chickalusion 2014a; Chickalusion 2014b). The following information is from that interview.

The original hunting territory of Max Chickalusion Sr. was along Nikolai Creek and extended to the McArthur River. Max Chickalusion Jr. (2014b:13) stated:

> So a long time ago they used to stay down there though [McArthur River], they had upper cabin and lower cabin. The upper cabin would be Nikolai, so that was the first place they would have stopped; and then they would go up to the upper cabin. Then they would stay there, you know, through the winter and hunt and trap up there all winter long -- my dad and his -- rest of the family -- the Chickalusion family.

[21] Max Chickalusion Jr.'s grandfather, Theodore Chickalusion, was a Tyonek leader in the early 20th century and the chief at Polly Creek and Kustatan. Theodore's sister, Max Jr.'s great aunt, was Agrifina Chickalusion Kalifornsky, mother of noted Dena'ina scholar and writer, Peter Kalifornsky. His father, Max Sr., and mother, Nellie Chickalusion, were important Tyonek elders in the mid-twentieth century. In addition to being community leaders, both made important contributions to Tyonek cultural history and Dena'ina language.

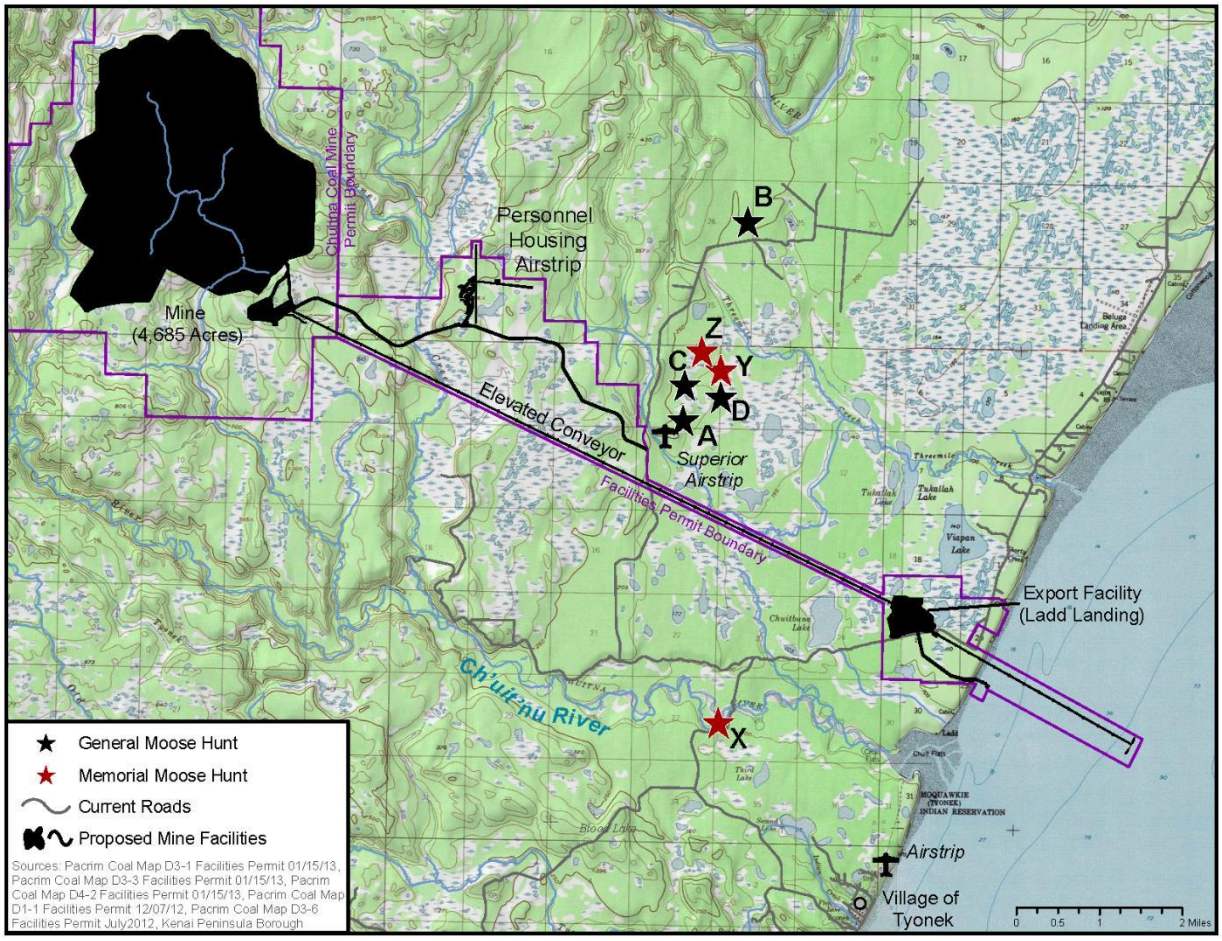

Figure 43. Locations of recent moose kills. Black stars correspond to kills by Max Chickalusion Jr. in 2011-2014; red stars correspond to memorial moose hunt locations for Tyonek Elders' funerals in 2012, 2013, and 2014. Map by Doug Tosa.

In the 1950s, others from Tyonek hunted moose in the McArthur River area. Another area frequently hunted was the Chackachatna River area. Sometime, perhaps in the 1960s, according to Max Chickalusion Jr., his father and family of that generation began going up to "Nestor's Area" in the Lone Ridge area. "Nestor" is Nestor Chuitt, whose son, Pat Chuitt, holds a Native allotment in the Lone Creek area. The hunting party would travel up the west side of the Chu'it'nu to a place where they crossed to the east side on a coal outcropping that made the river shallow. They would then take a trail that led to the higher brush country of Lone Ridge and hunt moose after the freeze-up in the fall. Max Chickalusion Jr. (2014b:7-8) reported that there were brush camps "all over up there," referring to Lone Creek and Lone Ridge. The moose meat was transported back to the village by dog team.

In the 1960s, seismic testing and some road and airstrip building was done in the Tyonek area. The seismic trails and roads made moose hunting easier, and small Jeeps were driven from Tyonek to Lone Ridge to hunt and to pack the meat back to the village. Today people continue this practice, although four-wheelers or pick-ups are used instead of small Jeeps. A favorite camping area is around the Superior Airstrip (Chickalusion 2014b:18-19). Mr. Chickalusion was successful in 2011, 2012, 2013, and 2014; his moose kill locations are indicated in Figure 43.

Dena'ina Language and Landscape

The Sapir-Whorf Hypothesis[22] predicts that if salmon, other fish, and water are important to the Dena'ina, there should be a large lexicon to describe these culturally important categories. This is indeed the case. Appendix A lists the many words for salmon, fish, and water that have evolved over the centuries to express these important areas of Dena'ina life.

The landscape is also reflected in the language. The Dena'ina directional system does not consist of the cardinal directions, but is based on the concept of upstream and downstream. To refer to a point west of Tyonek, you would say the place where you are (Tyonek), a stem meaning "upstream," and a prefix meaning either far or near. Similarly, to refer to a point east of Tyonek, you would say "Tyonek," a stem meaning "across the stream," and a prefix meaning either far or near (Kari 2007). In this way, where you are in a watershed expresses where you are in the world.[23]

Kari and Fall (2003:48-75) have listed 118 Tubughna area place names. Evanoff (2010:149-153) has mapped and identified many of these same place names. Before paper maps and digital/web-based maps, place names served as a cognitive map of territory; they still fill that role today. When Tyonek Dena'ina were asked if they needed a GPS to move around their territory, they laughed at the question; whether or not they still use the old names, they know the territory intimately.

[22] The Sapir-Whorf Hypothesis, as it was originally conceived, suggests that language and culture interact and shape one another.

[23] The name for Cook Inlet was "Tikahtnu," meaning "Big Water River." By referring to it as a river, it fit within the Dena'ina directional system.)

Sharing

Traditional clan organization began to disappear in the late nineteenth century, and by the mid-twentieth century, it no longer functioned to regulate marriage and organize labor for salmon harvesting. Today, many Tyonek people know their clan affiliation, but it is not as significant a factor in identity as it appears to have been in earlier times: marriage patterns have changed and labor is no longer organized by clan-structure. However, during the twentieth century, comparable patterns of social organization emerged. Figure 44 from Fall et al. (1984:76) illustrates one example of a complex network of resource harvest distribution, recorded in Tyonek in the 1980s. The diagram illustrates family groups harvesting moose, salmon and clams, then sharing those resources with other extended family members. Similar distribution networks exist today, having arisen from earlier networks. Matriarchs and patriarchs, who typically have amassed considerable investment in equipment and facilities and are of high status in the community, head these distribution networks. One or more elder women or matriarchs usually direct the actual distribution of harvest. The roles of individuals change over time as key leaders age or pass away, and younger members of the networks now have their own families and take lead roles and responsibilities.

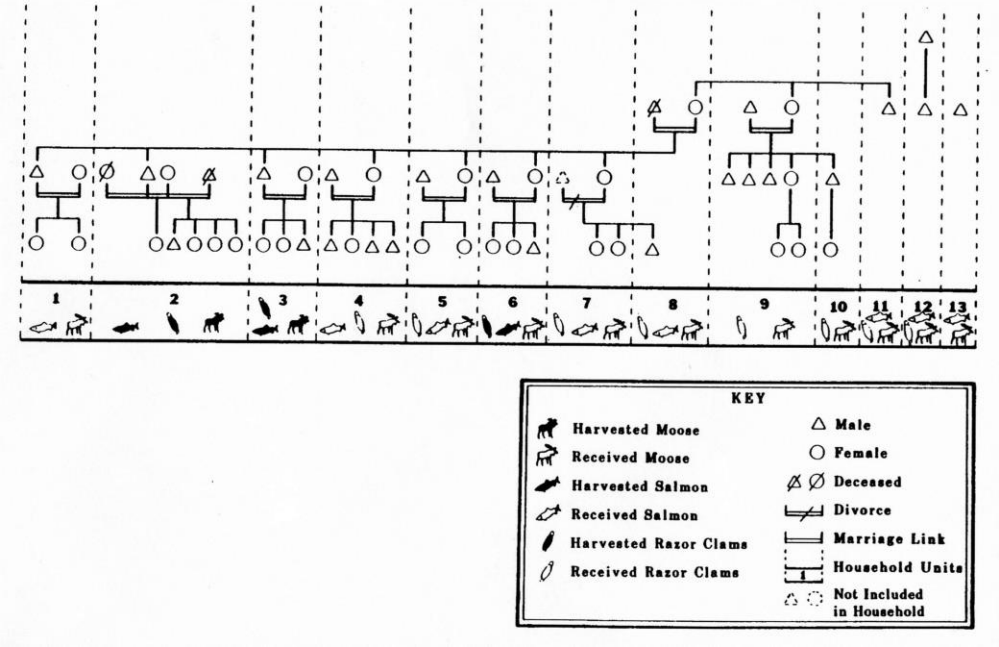

Figure 44. Extended family hunting, gathering and sharing of moose, salmon and clams. Tyonek, Alaska 1983-84. Numbers indicate households. (Fall et al. 1984:76)

Table 7 provides data on the custom of sharing beyond the extended family networks described above. The table indicates that in 2005-06, 93.6% of the households in Tyonek participated in the harvest of wild foods. Of those same households, 91.5% also received subsistence foods from others, and 83.0 % gave food. For some Elders and needy people, receiving shared food is necessary for life, and it is willfully given. Al Goozmer (2013:23) noted: "If you have extra food and then somebody asks for it, you'll gladly share it with them. That's what we do." Pat Chuitt Jr. put it this way: "I usually share [salmon] with my brother and my mom and whoever didn't get any sometimes. But like the Elders say…always help out your neighbor because your neighbor might help you out someday" (Chuitt and Chickalusion 2013:29). John Standifer (2013:31) described bringing salmon to an Elder this way:

> I just sent some Elder quite a few king salmon the other day. She say, you don't how much I appreciate this. And I said, yes, I do. You know, I said, I've been doing this all my life… [getting salmon] for people that can't get it; and I think they should have it…because, they're…mostly like me that can't eat the white man foods.

The Table 7 data also support the conclusion that in many cases, the sharing of wild food resources is not necessarily need-based. If 93.6% of households harvested wild foods and 91.5 % received wild foods, the sharing could not all be based on need. The act of giving a jar of salmon to a friend whether they need it or not says, "I recognize you as one of us." Though reciprocation is not considered to be required, a return gift always seems to happen, and the message is the same. Consequently, by sharing wild food caught and processed by themselves and their family, they are participating in a social act of generalized reciprocity identifying both the giver and the receiver as members of the community. The sharing network becomes the social "glue" that holds a village together, becoming part of identity. This glue is visceral. When Violet Kroto (2013:21) was asked how it made her feel to receive salmon, she said, "Makes me feel good. I say, oh, they care about me." When asked how she felt when she shared fish with others, she said, "It makes me feel good [that] I could share my fish with them" (Kroto 2013:34). Consequently, to lose salmon or other wild food resources is not only to lose much-needed food nutrients, but to lose the social fabric of the community. Without these resources, sharing them—the act that defines the community—is no longer possible. When Pat Chuitt Jr. was asked what would happen to Tyonek if they didn't have salmon to share, he answered simply: "[Tyonek] goes away" (Chuitt and Chickalusion 2003:32).

Social Aspects of Fish Camp

Fish camp (Figure 45) is a feature common to most indigenous Alaskan villages where subsistence salmon are harvested. While some salmon are caught in set-nets within walking or four-wheeler distance of the village, in most cases extended families spend the fishing months at their fish camp.

Figure 45. Fish camp activities on the Ch'u'itnu showing "multi-generational meaningful work." Photograph by Ronald Stanek.

Katherine Chickalusion said:

> We went to the fish camp probably the day after school was out, or a couple days after school was out, and we didn't return until sometimes the day school started again…. We had a smokehouse and steambath down there, so we never came up to the village during the summer. They only came up to get supplies that they needed and then came right back down to the fish camp. (Chuitt and Chickalusion 2013:17)

Family members living in Anchorage or elsewhere usually take vacation time to go "home" to help out. The camp often consists of three or four generations, presided over by a

matriarch, a patriarch, or both. The family sleeps, cooks, and eats in an uninsulated cabin, but most of the activity takes place outside. Nets are hung, prepared, and deployed. Salmon are picked and cleaned. Most of the fish is jarred or smoked on the premises (Figure 46). Boraas and Knott (2014) have called this "multi-generational meaningful work." A precious food resource is caught and prepared, while a curriculum of attitudes toward nature, proper treatment of Elders, and the transmission and enforcement of traditional values, among other things, is imparted to younger family members. For the youth, fish camp is Dena'ina summer school.

Figure 46. Salmon drying at a Tyonek smokehouse, July 2014. Photograph by Alan Boraas.

Subsistence and Wealth

Wealth in Tyonek is more related to the products of subsistence than to money or to the material trappings of wealth. Salmon and wild foods are an integral part of the perception of wealth to Tyonek people. Modern subsistence does require some cash: aluminum skiffs, rifles,

nylon nets, and other tools of subsistence cost money to buy and operate. But a full-time, year-round job takes time away from subsistence activities. Many Tyonek Dena'ina perform a seasonal balancing act, in which part-time or temporary full-time employment provides cash for the family's needs, but allows time to harvest salmon when the fish are running, go moose hunting when the season is open, or cut fire wood in winter.

There have been many attempts to place a monetary value on wild subsistence foods. Often these efforts are made when seeking a replacement value that can compensate for the loss of wild subsistence foods, or to provide a basis for compensatory mitigation. If a development affects salmon, the argument goes, the developer can compensate with money or other domestic food products. For most Tyonek members, this form of compensatory mitigation would fail to capture the true value that subsistence provides.

John Standifer (2013:62) stated:

> I believe I am more wealthy than anyone in this world by having all the fish and game and the land with it, and that's what it means to me. Money don't mean nothing to me. It means trouble, or it means somebody's trying to get something from you.

Max Chickalusion Jr. (2013:72-75) of Tyonek had this to say about wealth:

> Well, wealth is not going to buy you…happiness. [It] will probably buy you good things but…our ancestors didn't have all that, and they lived a good life. So if you talk to me about what is wealth, I would say, well, I got a moose, I'm rich. If I got fish in my freezer, I'm rich.

An interchange between Katherine Chickalusion and Violet Kroto of Tyonek described wealth this way:

> Katherine Chickalusion: People my age…we think back to when we were kids and we were poor, we didn't know we were poor. We had everything; we had food on the table.
>
> Violet Kroto: Yeah. We were rich. (Kroto 2013:41)

These sentiments were echoed by Mary Chuitt (2013:45) when asked what a freezer full of salmon meant to her. She said, "That means you're rich, really rich…you know you got something for winter."

Spiritual Practices Particularly Related to Salmon Subsistence

The historical pattern of salmon subsistence, with all its cultural associations, has influenced and continues to influence Tubughna spiritual beliefs. Such beliefs, even when recast in the context of Orthodox Christianity, reflect deep associations with the landscape and its wild animals and plants. Animals, including salmon, are widely understood to have wills, and to interact with humans voluntarily.

Ritual Ecology

At pre-contact and early contact Dena'ina archaeological sites, there are few animal bone remains indicating wild food consumption. This is not because the Den'ina did not eat wild foods; rather, it is because they practiced a ritual ecology involving the disposal of bones from water animals they had eaten in the water and burning the bones of land animals in the fire hearth (Boraas and Peter 2008; Boraas 2013:104-106). Boraas and Peter (2008) report that analysis of Dena'ina hearths at archaeological sites indicates significantly higher bone content than in nearby control soils. The chemical analysis indicates pre-contact and early contact Dena'ina performed the ritual of burning bones in the fire hearths of their houses. From this evidence, it is almost certain that these rituals occurred throughout the pre-contact and early contact sites in the Ch'u'itnu drainage. Peter Kalifornsky also reported that in the early twentieth century at Kalifornsky Village on the Kenai Peninsula, the people would save water animals' bones (those of fish, sea mammals, etc.) and distribute them in the water when the ice went out in the spring (personal communication to Alan Boraas, September 22, 1990). It is a reasonable assumption that this practice occurred in villages of the Ch'u'itnu as well, both before and after contact.

Traditionally, the Dena'ina believed that each animal had a spirit, like a soul, that was permanent and willful like a human soul. Peter Kalifornsky has written, "They always prayed to plants and to all living things" (Kalifornsky 1991:13). By "pray," he meant a form of earnest, heartfelt communication directed at and received by the animal or plant. They believed that if one had a "good heart," animals would allow themselves to be taken for human consumption. By performing fire and water rituals—burning bones or distributing them in the water—the Dena'ina believed they were releasing the animal's spirit to go to a "reincarnation place," presided over by *K'unk'da Jelen*, "The Mother of Everything Over and Over" (Kalifornsky

1991:40). There, they would "put on their clothes again" and return to the human land to be animals.

There were dire consequences for someone who did not perform the requisite rituals. This would, in effect, stop the return of animals for human use. For example, in the story "Belief in Things one Can See and Belief in Things One Cannot See" (Kalifornsky 1991:45), a young man doubted the wisdom of the Elders. He was at a hunting camp and mice were bothering him, so he poured scalding water on them to get rid of them. To kill for no reason is a significant violation of Dena'ina ethical tenets, and the act would have been horrific then and now. He began to have nightmares. He dreamed of a place where the animals were reincarnated, where *K'unk'da Jelen* appeared as a beautiful woman. "I know you," she said in his dream, and showed him the animals he had mistreated. They were disfigured and could not turn into animals again, thus interrupting the ecological cycle. Then, she showed him the animals that were properly treated by Dena'ina, who had burned their bones in a fire or deposited them in the water. They were returning to the "human land" as healthy animals. In his dream, she was looking away from him, and when she turned to him, she became an ugly woman. At that point, he would awake from his nightmare, ashamed to have mistreated nature, the provider of the Dena'ina. In the end he confessed his error to the village, but the story did not end well for him: "Afterward he thought a great deal about his dream, and, although he didn't exactly go crazy, he was not himself anymore" (Kalifornsky 1991:45).

This and other stories portray ritual ecology, expressing the belief that correct and respectful attitudes conveyed in ritual toward a sensate nature result in sustainable harvest practices. Plants and animals continue to be respected in the traditions of subsistence hunters and gatherers. This is illustrated by the following exchange between Katherine Chickalusion and Alan Boraas in the 2013 NARF Tyonek Interviews:

> Katherine Chickalusion: I thank God for everything, the wood we get for our wood stove because we're warm in the wintertime. Any kind of food we get, plants we get, I thank God for it.
> Alan Boraas: So you say – when you gather the plant, you say a little prayer?
> Katherine Chickalusion: Uh-huh. Then you leave a gift….Otherwise that plant won't come back. It won't grow back. You thank the fish for coming to you, the moose for coming to you and letting them -- letting you get them, [if you don't thank them] they won't come back.

> Alan Boraas: So when you get a moose or catch a fish, do you say a prayer?
> Katherine Chickalusion: Yes.
> (Chuitt and Chickalusion 2013:42)

Traditional Dena'ina World View: Spirits, Ancestor Spirits and Naq'eltani

Dena'ina tradition has a number of spirits who can change shape and take different forms. These spirits and the stories associated with them contribute to Dena'ina ritual ecology; through them the land, its ecological health, and the history of good and bad events are interpreted with reference to the spirits that occupy it. Whether the spirits actually exist or not is immaterial. Spirit belief is a way to interpret the landscape, and affects perceptions of the landscape and behavior of people in relation to it.

Some spirits were generally good and some were generally bad, but only *K'unk'da Jelen,* "The Mother of Everything" mentioned above, was good all the time, and only *Nantina,* "The One Who Steals Us*,"* was evil all of the time (Boraas 2013:110-114). *K'unk'da Jelen's* husband was *Gujun*, "The Father of the Animals." Together they represent the Dena'ina version of Sky Father and Earth Mother, a theme that is present in many Native American belief systems.

Table 9, from Boraas and Peter (2008:220), identifies many of the traditional Dena'ina spirits. There are probably more that have not been reported because knowledge of them is privileged cultural property. Note that many of the spirits' names contain the term *dnayi*, which means "people."

Dena'ina traditions associate *beggesh*, a bad essence, with places where a bad event happened, and *beggesha*, a good essence, with places where a good event happened. These places were often described as being populated by good or bad *Ch'wal'a Dnayi* ("tree people"), or by other spirits of place identified in Table 9 (Boraas 2013:114). If the event was powerful, the place might also be considered a sacred place, and may have stories tied to it.

Places such as the Ch'u'itnu and its watershed were populated by these forces of good or bad. Traditional Dena'ina do not separate the natural from the supernatural. Spirituality or the spiritual characteristics of nature are its animating force, and are considered real. Osgood (1976:169) captured this concept when he wrote:

> The religion of the Tanaina [sic] is a respectful consciousness of the activity of an animated semi-visible world which exists as a shadow of their own physical environment. As far as individuals are concerned, this consciousness is a periodical thing which depends upon their temperament and is conditioned by their surroundings. The night creeping into a temporary camp as the long shadows wrap each occupant in a blanket of isolation is the introduction to the supernatural.

Ancestor spirits in Dena'ina are *q'egh nutnughel'an*, "spirit of the recent dead" (literally: "the one seeing his tracks again") (Kari n.d.:789; Kari 2007:310). Part of the function of the cremation ritual and subsequent Memorial Potlatch, the most important ritual event, was to propitiate the spirit of the ancestors, who were ominous to the living because they knew one's thoughts (Boraas 2013:109-110). Ancestor spirits could be present anywhere in the Ch'u'itnu drainage, particularly in the areas around cremations.

Naq'eltani is the word Christian Dena'ina often use for God. It is an essence present everywhere. It is not unlike the Navajo concept of *hozjo*, thought of as pure beauty or pure truth (Boraas 2013:115-116). To traditional Dena'ina, *Naq'eltani* would be present throughout the Ch'u'itnu drainage.

Table 9. Examples of Dena'ina spirits or medicine people. From Boraas and Peter (2008); Kalifornsky (1991); Osgood (1976); Kari (2007).

Attributes	Name	Dena'ina Name
Powerful, Good	Mother of Everything	K'unk'da Jelen
Powerful, Good or bad	Mountain People, Giants	K'eluyesh Gujun
	Mountain People, Little People	Dghili Dnayi
	Fire Spirit, Ancestor Spirit	
	Household Spirits	Yuh Ht'ana or Kin'i
	Steambath Spirit	Neli Qelch'eha
	Spirit of the Recent Dead Leaving his/her Spirit	q'egh nutnughel'an
Spirits of Place, good, or bad	Chinook Wind People	chuł dnayi
	Glacier People	łi dnayi
	Lake People	ven'at dnayi
	North Wind People	ezhi'i dnayi
	Rock People	tsayan dnayi
	Sky People	yuht'ana
	Sunshine People	n'uyi dnayi
	Tree People	ch'wal'a dnayi
	Marmot People	sq'uła dnayi
Powerful, Evil	Evil Spirit	Nantina (Nakahni, Windego-Algonquin)
Ominous, Powerful	Dead That Holler From the Grave	nuqnujełen
	detached hand	qujeza

Spirits in Contemporary Tyonek Culture

Dena'ina continue to interpret the landscape in terms of spiritual forces, sometimes combined with or superseded by Christian concepts. Katherine Chickalusion said:

> Some people can feel something watching them, but when you look around, you don't see it. Some people could feel it, but now when I'm out there, I'm praying all the time when I'm out there because it's just -- you're by yourself and thanking God for this beautiful day and for putting me here at this spot. Nothing bothers me. (Kroto 2013:52-53)

Spirits or forces seen today are often referred to as hairy men, medicine people, or boogeymen. These are a traditional extension of spirits from pre-contact times described above, called *Nantina*. To traditional Dena'ina, the name "*Nantina*" is taboo to say, hence the more common euphemistic English language words.

Some of the medicine people are not harmful, but others are potentially threatening. Max Chickalusion Jr. (2013:93-94) described some this way:

> Well, I know it's a boogeyman; but I -- it's a pretty crazy story, scary stories…I want to say maybe four pressure points [places] on the beach there where they tell us not to go on some certain nights -- and at nighttime mostly….Like… down Granite Point in that area, like around (indiscernible) camp and Georgie's camp, in between there -- and one of them was in between Robert's camp and Sergei's camp, in between there. Another place was by…Carp's camp. Oh, you want to see spooks, you go there. Or you want to hear spooks, you go there.

In 1998 James Kari interviewed Sava Stephan, a respected Elder of Tyonek. Mr. Stephan told Kari about seeing two figures who were hairy men, an ominous force. Stephan would not say the Dena'ina name because, as indicated above, to traditional Dena'ina, speaking the name aloud might call the evil spirit to them. The spirits were probably two *Nantina* (Stephan 1998; audio transcribed and translated by Alan Boraas).

SS Sava Stephan JK James Kari

SS …I don't say that word [indicating a powerful evil spirit]. Twice I saw it.
JK How did you see them?
SS. (Answers in Dena'ina) *Ka'a qutan qilan* [they were big people].
JK What were they wearing?
SS Just like us. Clothes just like us.
JK Did they say anything?

SS No. They don't talk. They can't talk. I talk to them, they don't talk. They don't answer me back.
JK How far away were they?
SS From here to that wall over there.
JK Where? [in Dena'ina]
SS Tyonek fish camp.

John Standifer (2013:67-68) reported that Tyonek people still talk about the hairy man or boogeyman. While these stories are very real to those that experience them, they also allegorically communicate the spirit-based personification of a landscape in peril. Chad Chickalusion stated there have been increased hairy man sightings in recent years (personal communication to Alan Boraas, February 2013).

Wolves and other animals continue to have spirits, as in the old days. John Standifer (2013:68-69) told a story of an ominous wolf spirit:

> I saw wolf spirits. I was waking up… and heard a little twig break. And I look -- left side, and there was a wolf in the air-- just going through the air you know…And then I said, oh, shit, this is it, you know-- and I turned around and looked, and there was another one on my other side. And they were… just like they were made out of clouds or something. They weren't all there, but you could see the fronts of them just. They followed me all the way down [stairs]. And then they disappeared after I got down here.

Many Tyonek Dena'ina feel the presence of ancestor spirits. In 1994, a Tyonek woman visiting the Kenai Peninsula College office of Alan Boraas abruptly stopped the conversation for about a minute. After the pause, she said, "We were visited by an ancestor."

Graves and Cremations

The Tyonek people have long been concerned about identification and protection of burial sites. Braund (2006a:63) reported concern by Tyonek residents for protection of grave sites in his 2006 report. At an August 8, 2012 Section 106 consultation meeting in Anchorage, Native Village of Tyonek Council President Frank Standifer stated that the permitting process for PacRim Coal's mine had not done enough to identify grave or cremation sites that are considered sacred to the Tyonek people. Agnes Brown, Tyonek Elder, also reports that while she was CEO of Tyonek Native Corporation, she and the board took measures to protect graves from development that would disturb them (Brown 2013b:6-7).

After Russian Orthodoxy was introduced to the Tubughna in the eighteenth century, Christian priests prohibited cremations, and the exact locations of cremation burials outside of the Orthodox cemeteries ceased to be passed down to younger generations. Consequently, knowledge of the exact location of those cremations was lost. However, members of the younger generations were told by their elders to stay away from certain locations, without a specific reason being given other than they were spiritually powerful places. Agnes Brown (2013b:7-8) suggested that these warnings may be connected with the possibility of burials.

Frank Standifer reported that according to oral tradition, the graves or cremations were located in the vicinity of ancient houses in the Ch'u'itnu area (Rob Rosenfeld, personal communication to Alan Boraas, September 25, 2013). In interviews in Tyonek on March 13, 2013, Chad Chickalusion (2013:117) said:

> There's got to be graveyards in the whole area around in there [Ch'u'itnu area archaeological village sites]. It's just not marked, you know. There's people that died, they just buried them and didn't put no markers up there or nothing.

The presence of cremations was confirmed by the discovery of cremated remains at the location referred to by archaeologists as TYO-266, and by further identification of burial sites by a forensic canine team.

Cremation at TYO-266

In 2013, a cremation was found at TYO-266 in the CAD (Boraas et al. 2013a). At the direction of the Native Village of Tyonek Village Council, a non-invasive descriptive osteological analysis was undertaken by David McMahan (2013), which indicated that the cremation was that of a Dena'ina woman, probably in her early 20s. Associated artifacts included a crooked knife (Figure 47), beads (Figure 48), and an iron awl, suggesting that she was born in the early to mid-1800s, in the post-contact time period. The trade items are clearly post-contact, while the cremation indicates a time before conversion to Orthodox Christianity, which prohibits cremation.

Figure 47. Curved knife with glass beads fused to it from cremation fire. Photograph by Alan Boraas.

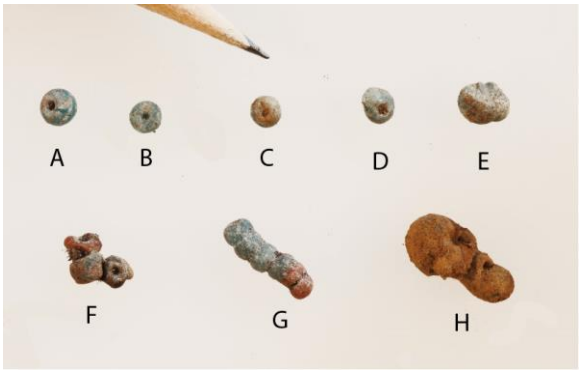

Figure 48. Glass beads, some partially melted or fused, from cremation fire. Photograph by Alan Boraas.

In October 2014, a team of archaeologists working with NARF (Douglas Reger, David McMahan, and Alan Boraas), along with tribal archaeologists from the Native Village of Tyonek, worked with three handlers and three dogs from the Institute for Canine Forensics to search portions of the CAD for cremations (Institute for Canine Forensics 2014). Working independently, the dogs "alerted" (sat down as they are trained to do when they scent human remains) on the known cremation at TYO-266 (Figure 49), verifying their reliability in the subarctic. The dogs found evidence of additional cremations in the vicinity of the first, plus a second likely concentration of buried human remains. The dogs also substantiated the previously known historic cemetery (Figure 49). In total, the dogs alerted at some 50 specific locations. The two pre-contact or early contact cremation locations will be discussed here; an early twentieth century historic cemetery will be discussed later. These areas are sacred ground to the Tyonek Dena'ina.

Figure 49. "Jasper" alerting on the location of a known cremation, TYO-266. October 2014. Photograph by Alan Boraas.

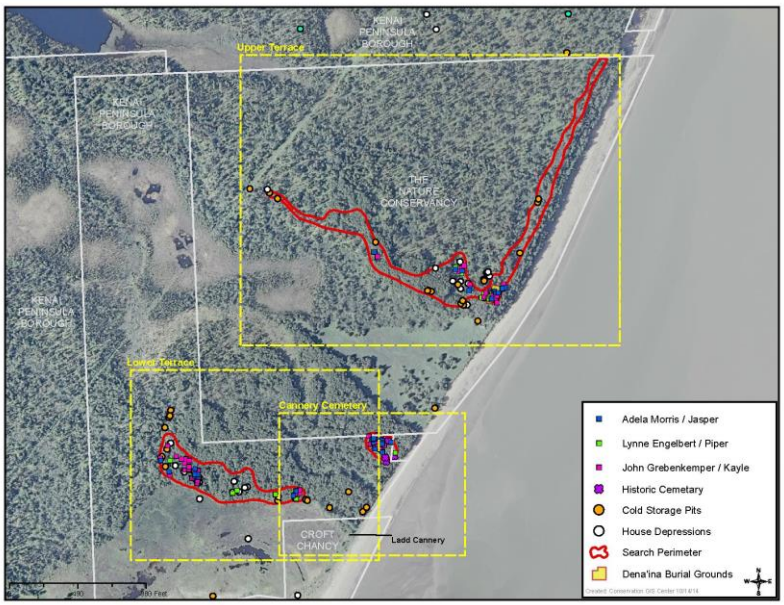

Figure 50. Areas outlined in red are areas searched by canines at the Ch'u'itnu Archaeological District for cremations or human burials in October 2014. Blue (Jasper), green (Piper) and pink (Kayle) dots are alerts identified by the dogs. Map by Doug Tosa.

A cremation complex was identified at TYO-266, in the vicinity of the original cremation located in 2013, on an upper terrace overlooking Cook Inlet and the Ch'u'itnu valley. This cremation area is near house pits and cold storage pits, as indicated in Figure 51.

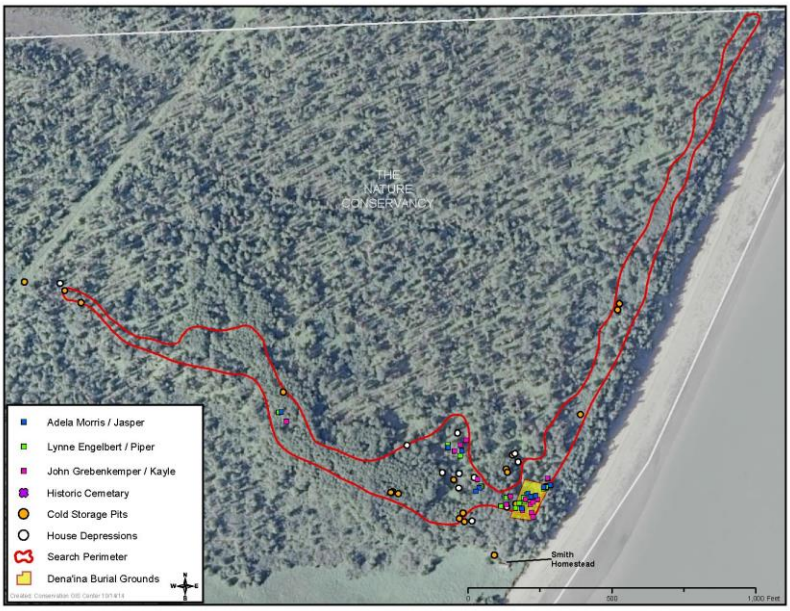

Figure 51. Upper Terrace burial grounds cremation complex in the vicinity of TYO-266. Map by Doug Tosa.

A second probable cremation complex consisting of two localities was found by the dogs on the lower terrace, in the vicinity of the Chubutnu site archaeologically known as TYO-252 (Figure 52). This complex is also associated with classic *nichił* house depressions and cold storage pits. It is not known if this is a pre-contact or contact-era site complex.

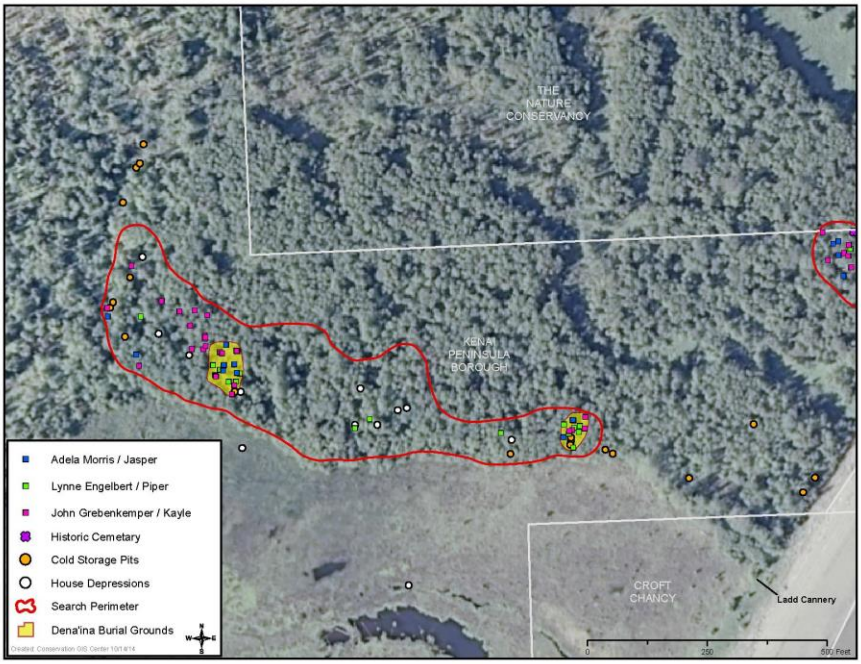

Figure 52. Lower Terrace burial grounds cremation complex identified by canines. Map by Doug Tosa.

Cultural Context for Dena'ina Cremation

The cremation at TYO-266, and the information known at this point about the other cremations, conform to what is known about pre-Orthodoxy Dena'ina cremations. In 2008, Alan Boraas and Donita Peter (now Donita Slawson) wrote:

> Before the introduction and spread of Orthodoxy, the Dena'ina cremated their dead (Osgood 1976:165-168), a practice directly related to a belief in human reincarnation (Osgood 1976:160). It was the function of the cremation ceremony to resolve the interpersonal conflicts that had accumulated between the deceased and the living and is based on the premise that after death the shadow spirit [soul] of the deceased knew the thoughts of the living. After death the body was attended by close relatives in a twenty-four hour watch during which conciliation in the form of prayers, songs, or one's personal thoughts was sought with the deceased's shadow spirit regarding unresolved conflicts during life. Normally, balance and order were achieved by a simple recognition, spoken, sung, or thought of the things unsaid during life. Sometimes, however, the nature of the relationship was

> such that the apology took the form of hysterical grief involving uncontrolled crying, self-torture, and occasionally suicide, sometimes carried out at the cremation ceremony itself (Osgood 1976:168). The "dead that holler from the grave" *(nuqnujelen)* (Kari 2007:309) are distraught ancestor spirits potentially harmful to humans whose spirit has not been propitiated…. (Boraas and Peter 2008:219-220)

Osgood (1976:166) describes the cremation process as follows:

> When the fire burns itself out, the people gather together the human remnants and ashes. The Kachemak Bay Tanaina [sic] put the charred pieces of bone in a bag and bury them. Above the grave they erect a pole to mark it. On the pole are tied the record strings showing the number of potlatches given by the deceased At Iliamna the ashes are sometimes buried and sometimes saved. Kenai people bury the ashes and erect above them a pole about ten feet long and three or four inches in diameter. In the Upper Inlet, after the ashes have been put together, the Indians build a little fence around the place of cremation to keep out animals.

The cremation also ritually purified artifacts of *beggesh*, a kind of encoding of information in an artifact that could be detected, like a scent, and could cause animals to withdraw from an area (Boraas and Peter 2008:216-215). Boraas and Peter (2008:219-220) wrote:

> Regarding personal artifacts of the deceased, Osgood (1976:166) states they were burned in the funeral pyre along with the body: "Outside [of the village], about two or three miles away, the Indians make a crematory by building up a pier of logs. On the top they finally place the body together with the particular implements and necessaries of the deceased." In addition to sending the soul to be reincarnated, the funeral pyre ritually purified the artifacts of *beggesh*, and hence any stone points or similar durable objects that survived the fire would not affect the animals or spirits while nondurable artifacts would, of course, be consumed by the fire.

We can therefore assume that from a traditional Dena'ina perspective, the artifacts associated with cremation at TYO-266 were both important to the person and ritually purified so as to no longer exude potentially bad information.

The cremation of this young woman would likely have been followed by a memorial potlatch. Boraas and Peter (2008:219-220) wrote:

> The memorial potlatch (big potlatch) followed the cremation after a year or so and ritually commemorated the fact that all the bad feelings between the deceased and the living had been resolved during or after the cremation ceremony.

> The memorial potlatch was a powerful liminal state of renewal reestablishing harmony in the social order. Details of the ceremony varied, though it always involved memorial songs, adulatory speeches, feasting, games, and gifts from the deceased's moiety. Gift-giving at a memorial potlatch was not purely a materialistic transfer of goods….Rather, what was given were artifacts imbued with *beggesha*, or "love,"[the opposite of *beggesh* which was bad information] intended to commemorate the reestablishment of harmony both within the human dimension and the ancestor dimension of the now deceased.

With the introduction of Orthodoxy, cremation was discouraged by the church. According to George Grabbe (1970), Russian Orthodoxy generally forbids cremation for two reasons. First, Grabbe points out, the church considers church custom to be law (citing the canonical writings of St. Basil the Great). Thus, it would be would be an affront to the church to change the Russian custom of burial of the deceased to cremation. Second, citing Biblical texts, Grabbe points out that life, death, and subsequent decay of the body are regarded as parts of God's plan, and to interfere with that process through cremation would be to interfere with the natural order. It is further believed that God can interrupt the natural process of decay and preserve the bodies of saints which, of course, could not be done in case of cremation.

The Cemetery of TYO-275 and the Influenza Epidemic of 1917-1918

A cemetery designated TYO-275 (Mobley and Mobley 2012; Boraas et al. 2013a) is identified on Kenai Peninsula Borough land documents based on U.S. Survey 4544 (Figure 53). When the Frank F. Smith Homestead was surveyed in 1931, the surveyor, Betts, drew a number of crosses just south of the southern homestead boundary and indicated "Indian graves scattered between survey No. 364 and this survey" (Mobley and Mobley 2012:75). An August 2013 archaeological survey (Boraas et al. 2013a) found seven depressions, but no grave markers.

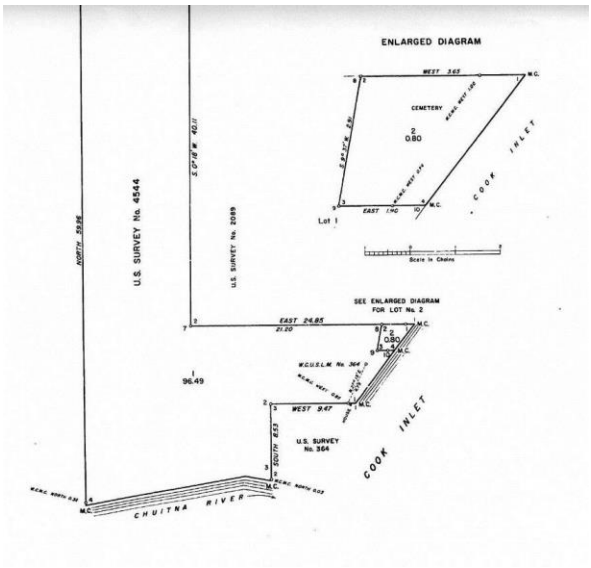

Figure 53. Cemetery Plat No. 364, U.S. Survey 4544, of TYO-275

In October 2014, the NARF/Tyonek team brought the Institute for Canine Forensics dogs to the area. The dogs alerted at numerous locations coinciding with the probable grave concentration, shown in Figure 54 (Institute for Canine Forensics 2014). Figure 56 is a photograph of "Piper" alerting on one of the seven graves identified in Boraas et al. 2013. Tyonek residents report that graves have often emerged out of the eroding Cook Inlet bluff in the same vicinity.

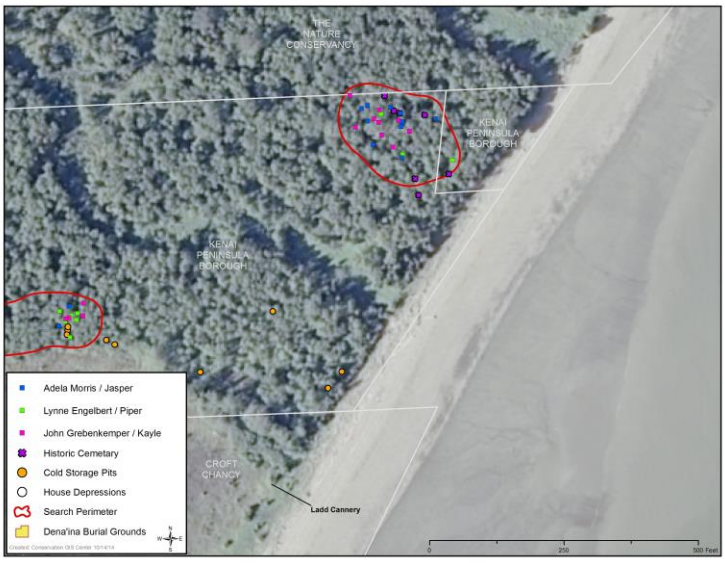

Figure 54. Graves of TYO-275. Purple identifies shallow depressions, colored circles indicate dog alerts. October 2014. Map by Doug Tosa.

Figure 55. Shallow grave depression, TYO-275. Photograph by Alan Boraas.

Figure 56. "Piper" alerting on a grave at TYO-275. Photograph by Alan Boraas.

The graves are likely Native graves, as Betts indicated, and may be associated with the cannery or trading posts or with the 1918 influenza epidemic. According to James Fall (1987:19), the Tyonek Dena'ina were afflicted by two major epidemics in the eighteenth and nineteenth centuries. Fall writes that at least 50% of the Dena'ina population died as a consequence of the horrific small pox epidemic between 1836 and 1840; the population dropped

to a low of 816 in 1845. The worldwide 1918-19 influenza epidemic, the Spanish Flu, also decimated the Dena'ina. Fall reports that few Tyonek people survived. Fall states, "At Susitna Station most everyone was sick; there was no one strong enough to bury the dead, and the coffins piled up in the church." The Susitna area was largely depopulated as a consequence of the epidemic. Fall states that most of the survivors moved to Tyonek in 1934. Dena'ina historian Nickafor Alexan (ca. 1957) estimates that an original pre-contact Dena'ina population of 5,000-6,000 dropped to about 1,000 as a consequence of the epidemics.

Some of the human remains that reportedly emerge regularly from the eroding Cook Inlet bluff are almost certainly related to these gruesome circumstances, in which people were dying in great numbers and had to be buried quickly. The graves at TYO-275 may be evidence of these horrific events, and should be treated as such until proven otherwise. Figure 57 is a photograph of the orphan children at the Tyonek Orphanage in 1921, a tragic reminder of the devastating impact of the epidemic and the legacy of those so hurriedly buried in the Tubughna bluffs.

Figure 57. Tyonek Orphanage, 1921.

The First Salmon Ceremony

To the Dena'ina of the Tyonek/Ch'u'itnu area, salmon fishing was a sacred act based on stories (*sukdu*) that described the interaction between fish and fisherman. In "Story of Food Old People Used to Eat," Alexan (ca. 1957) described the process of fishing for salmon using traps, then drying and storing it, emphasizing how the process was infused with spiritual attitudes toward salmon. Another story, "The Girl Who Became a Salmon" (Osgood 1976:148-149), allegorically describes how the Dena'ina collective identity could not be separated from the salmon:

> One time a rich man [*qeshqa*] had a daughter whom he told not to go near his fish trap. But being a determined girl, she insisted that she wanted to know what was in the trap and, ignoring his admonition, promised soon to return. When she arrived at the fish trap, she saw a king salmon and began to talk to him. As the conversation went on, she gradually transformed into a fish and, slipping into the water and disappeared with him. The rich man did not cease to look for her, but she was never found.
>
> The next year when the salmon began to run, the rich man visited his trap and collected a number of fish which he threw out on the grass. Then he picked them all up but one little one which he forgot. After he had finished cleaning his fish, he returned for the small one which had been left behind. He was surprised to find, however, that instead of the little king salmon which he had forgotten, there was a small boy sitting in the grass where the fish had been. The boy only nodded his head. Then the rich man saw a resemblance to the daughter he had lost and, after walking around the boy three times, he realized that he was his grandson. Finally the boy spoke to the rich man and told him the things which should be done if the people wished to have plenty of salmon every year….He explained the ceremonial which he said should be done every year and warned if these things were not done, he would never return.

This story became the basis for the First Salmon Ceremony, versions of which are still practiced by Tyonek people today. Osgood identified The First Salmon Ceremony as one of the major ceremonies of the Dena'ina, and describes it as follows:

> At the beginning of the run of king salmon each year when the first are caught, an annual ceremony takes place. The natives lay down fresh grass in front of the houses and carefully spread the salmon upon it. The fish are never brought into the house. Then the people take a sweat bath and put on their best clothes, painting and decorating their hair. After that a "lucky" weed found near the timber line is burned [probably false hellebore]. When these preparations have been carried out, the people gather on the fresh grass. They clean and cook the fish

> without breaking the backbone, throwing the entrails back into the water---because the salmon want their clothes. Then the people eat together. (Osgood 1976:148)

Today, as with most indigenous salmon cultures (Gunther 1926), a version of the First Salmon Ceremony is practiced among the Tyonek Dena'ina, although it is more informal and perhaps more variable today than it was in the past. The First Salmon Ceremony takes place where the first salmon are caught, usually at fish camp. Like the ancient ceremony, the first salmon are placed on grass and covered for several days before they are shared (Fall et al. 1984:98).

Figure 58. First Salmon Ceremony, Tyonek, 1980s. Chinook salmon placed on vegetation as part of a world renewal ceremony. Photograph by Ronald Stanek.

Al Goozmer (2013:22) described the First Salmon Ceremony this way:

> The very first salmon that is caught… it's cut up and it's shared with other families. There's no hoarding. There's no greed. There's no animosity. I mean, you got four or five salmon on your first catch, and then it goes out to everybody or whoever don't have any will get that first salmon. That first salmon tastes like no other salmon you've ever tried in your whole life.

Max Chickalusion Jr. (2013:82) said, "If you catch a salmon early that's kind of given out to probably mostly Elders in the village and family members; and it's always been like that. I mean, as far as I can remember….It's respect of the fish and respect of the people."

It is a sharing ritual, and thus one of unification, as well as a humble ceremony recognizing world renewal. After a long winter, when you may be low on salmon, the salmon return as they have done for centuries. The ceremony is a recognition that life and subsistence will continue for another year, and is practiced today as it has been in the past. As such, it represents a place-based continuance of subsistence tradition and a survivance of culture.

The Great Blessing of the Water

Boraas and Knott (2014:126-131) have described the Great Blessing of the Water in the Yup'ik villages of the Nushagak and the nearby Dena'ina villages of the Kvichak drainage. The Great Blessing of the Water is ideally performed on January 19, when the Orthodox Church celebrates the Feast of Theophany, marking John the Baptist's baptism of Jesus. A church service is held the evening before, and another in the morning. The participants then follow the priest onto the ice, where an Orthodox cross has been cut. There, the priest holds a baptism service for the water itself (Figure 59). Symbolically, or literally to many of the faithful, the ritual removes sin in the form of human-caused pollution, preparing the river for the return of the salmon. After the priest dips the cross into the water for the third time, the water is sanctified and ready for the return of the salmon. The water is considered holy, and people gather it in buckets and jugs for use during the year for its curative powers .

The Great Blessing of the Water has been held in Cook Inlet since at least 1862 (Znamenski 2003:94), and perhaps earlier. The first recorded Great Blessing of the Water in Tyonek occurred between July 10 and July 17, 1893. Father Aleksandr Iaroshevich, the priest at Kenai, accompanied by Father Vladimir Donskoi, visited Kustatan, Tyonek, and Susitna, where they performed a prayer service and conducted a water-blessing (Znamenski 2003:160-163). One hundred and thirty people attended this service at Tyonek. Initially, the water blessing was not held on Theophany, because the priest traveled about once every two years (by bidarka or kayak) and could not always reach the outlying parishes on the appointed day. Later, a resident priest was stationed at the St. Nicholas Orthodox Church in Tyonek, and The Great Blessing of the Water was held annually until sometime in the 1980s, when a resident priest was no longer stationed there.

Figure 59. The Great Blessing of the Water, Nondalton, Alaska. 2009. Photograph by Hannah Craig.

When asked about the Great Blessing, Violet Kroto (2013:45-46) said:

> Yeah, a priest used to bless the waters, bless, you know -- bless the lake or bless the people and then bless the Inlet. Holy water, makes holy water, and everybody has holy water. I even have holy water right now in my home. You know, when you get our kids are sick, you say a prayer and you give that to your kids.

Many Dena'ina continue to believe the water is *beggesh qul'i miłne, "*water without impurity," or sacred water. Violet Kroto (2013:49) put it in terms of need, saying, "We need the water, you know. Just like we need our fish." Elder Max Chickalusion Jr. (2013:81) stated:

> The water is sacred to us, because….that's where you get all your food from, you know, in the water; you know, there are fish; there are clams. Just everything that's in there…seal, beluga. So it is sacred to us.

Spiritual Forces, Luck and the First Moose

Luck, in Dena'ina tradition, is not a random event, but a kind of force that exists everywhere and can be captured with proper behavior. An example of this is the ritual surrounding the first moose kill, intended to capture luck for the young hunter. As previously discussed, subsistence data indicate that moose are the second most important subsistence food.

When a young person kills his or her first moose, the meat is shared with close relatives and around the village, especially with the Elders. The ritual begins at the place of the kill, where meat is shared with relatives who accompanied the young man or woman on the hunt. Many of these informal rituals have occurred within the Ch'u'itnu drainage, and people can take a visitor to the site of their first moose kill.

Ethnographic research indicates that the ritual associated with the first moose is a coming-of-age ceremony for a young man or young woman. That ritual is considered to be good luck. Max Chickalusion Jr. (2013:83) states, "Their belief is that if it's given out… to everybody, you know, it's good luck; so they know that."

Memorial Moose

Today, when Elders die, a commemorative village-wide celebration is held, in addition to a church service, to honor the deceased. This commemorative celebration is sometimes called a funeral potlatch. According to Max Chickalusion Jr. (2014a 19-37), traditional foods—particularly moose—are served at the celebration. If possible, a moose is shot for the event, usually by a good hunter or hunters, although members of the immediate family are always included because it is part of their responsibility to provide wild foods for the celebration. Figure 43 indicates where some of the most recent memorial moose have been taken in the Ch'u'itnu TCL. Max Chickalusion Jr. shot a moose at Location X soon after his father died. Locations Y and Z are where moose were taken for previous memorial services in recent years.

The moose is butchered and parts are shared around the village. The special parts—nose, kidney, etc.—are shared with people who know how to prepare those parts. On the day of the memorial, everyone brings the moose they have prepared, as well as other foods for the celebration of the life of the deceased. The hunting, killing, and butchering of the moose is thus part of a spiritual, place-based ritual to give homage to the deceased.

Freedom and Bond to the Place

Perhaps the most pervasive of the ways in which the Ch'u'itnu watershed's cultural associations influence life today is through the people's feelings about their identity and personal freedom. To the people of Tyonek, freedom means operating on the landscape following cultural

traditions, with actions answerable to those traditions and to one's own decision-making. John Standifer (2013:43-44) commented on freedom:

> You feel like a -- it's hard to describe what you feel like, because it's such a great feeling to be out in the wilderness with no cars, no trucks honking or nobody driving by. It's peaceful; it's quiet. I use my camp on the beach all the time. I say I got to go talk to my Elders and I got to go solve this problem I have. And I'd go for a long walk on the beach, you know, think about it -- think about it; and I would eventually get it solved. You know, it -- yeah, -- it means a lot to everybody around here.

Going up the Ch'u'itnu toward his family's traditional territory, Pat Chuitt Jr. said:

> It feels more free and we feel more at ease and peaceful. If you go up that way and you look around, all you see is beauty and peace and quiet…On a good day like this you could see right across towards Anchorage and I ask myself, why do they want to destroy this? I mean, this is beautiful land. Why do they want to come around and do this to us? (Chuitt and Chickalusion 2013:40-41)

Katherine Chickalusion described the Tyonek Dena'ina relationship to the land as follows:

> I always think we were put here for a reason because God, the great spirit, knew we was going to respect this land, that we were going to care for it, and we were going to take care of it and then look where we are, fighting a coal company now. (Chuitt and Chickalusion 2013:45)

Today the traditions of the Tubughna are being passed on through institutions such as culture camps. Recent camps have taught Tyonek children the importance of cultural resource protection and the significance these sites have with respect to traditional and cultural practices. Elders have engaged with teens as they share oral history of the Tubughna and their relationship to the land. Through practices such as the culture camps, traditional cultural knowledge continues to be passed from one generation to the next. (Figure 60).

Figure 60. Tyonek Youth Culture Camp performing a spiritual song in preparation for visiting sites in the Ch'u'itnu TCL in 2014. Photograph by Alan Boraas.

Summary: NRHP Eligibility Under Criterion A

The culturally and historically significant events that have taken place and continue to take place in the Ch'u'itnu watershed comprise complex patterns of human activity and belief, all organized around and fundamentally influenced by salmon subsistence. The Tubughnu relationship with salmon has defined the culture's use of the land and its plants and animals; it has defined Tubughnu social organization and settlement patterns; and it has greatly influenced the people's spiritual beliefs and practices. The relationship between the people, the land, and the salmon has been imprinted on the landscape through centuries of subsistence use, and is fundamental to the people's sense of freedom, identity, and self-worth.

V. Criteria C and D: A "Distinguishable Entity," with Potential to Yield Important Information

Overview

As discussed above, for the Native Village of Tyonek, the cultural significance of the Ch'u'itnu watershed is best captured by NRHP Criterion A (36 C.F.R. § 60.4(a)). Application of this criterion alone, as outlined in the preceding section, is sufficient to demonstrate NRHP eligibility. However, the watershed landscape as a district also meets two additional NRHP criteria that should be noted.

Criterion C: A Distinguishable Entity

A place may be eligible for the NRHP under Criterion C (36 C.F.R. § 60.4(c)) if it "represent(s) a significant and distinguishable entity whose components may lack individual distinction." The significance of the landscape has been explained in the preceding section. The landscape is "distinguishable" in that it constitutes a clearly defined set of landforms—the Ch'u'itnu watershed and its culturally significant immediate surroundings, as shown in Figure 10.

The Ch'u'itnu TCL thus constitutes an historically and culturally significant entity even if individual components within it—such as an individual residence, a cold storage pit, or a fishing site—are regarded as lacking distinction.

Criterion D: Potential to Yield Important Information

According to National Register Bulletin 15 (Andrus and Shrimpton 2002), two requirements must be met for a property, including a district, to be eligible for the NRHP under Criterion D (36 C.F.R. § 60.4(d)):

1. The property must have, or have had, information to contribute to our understanding of human history or prehistory, and
2. The information must be considered important.

Bulletin 15 (Andrus & Shrimpton 2002) goes on to suggest that Criterion D applies best to properties (such as districts) with reference to testable hypotheses. As synopsized below, the

Ch'u'itnu TCL District manifestly has the potential to yield important information related to such hypotheses. Because questions related to sacred or spiritual sites can be de-humanized by the scientific hypothesis testing process, we also provide examples of relevant non-hypothesis based research.

Hypotheses Relevant to Archaeological Survey

Only three areas in the Ch'u'itnu TCL have been archaeologically surveyed: the area near the Cook Inlet coast, the proposed Chuitna Mine footprint,[24] and the transportation corridor from the proposed mine to the coast. This work has revealed a major concentration of house sites, cold storage pits, and burial areas, designated the Ch'u'itnu Archaeological District, around the mouth of the Ch'u'itnu. The rest of the Ch'u'itnu and its tributary creeks have not been archaeologically surveyed.

The confluences of tributary creeks with the main stem of the river are of particular significance. On the Kenai Peninsula, prehistoric Dena'ina sites or probable Dena'ina sites have been mapped on tributary creeks of the Kenai River (Beaver Creek, Slikok Creek, Soldotna Creek, Funny River, and Killy River) and the Kasilof River (Crooked Creek, Coal Creek). The tributary creeks are the main spawning creeks for king salmon and coho salmon, target species for pre-contact Dena'ina. One would expect a similar pattern among pre-contact Ch'u'itnu Dena'ina.

> ***Hypothesis 1:*** Sedentary Dena'ina sites occur near the mouth of tributary creeks to the Chu'it'nu. These sites should consist of multiple-room house depressions and underground cold storage pits, and are likely be on terraces above the lowest river terrace.
>
> ***Hypothesis 2:*** Riverine Kachemak tradition cultures did/did not occur on the Ch'u'itnu. Evidence of a culture known as Riverine Kachemak has been found in most of Cook Inlet, including along the Kasilof, Kenai, and Susitna Rivers and at Kustatan. No archaeological work has been done to identify Riverine Kachemak sites on the Ch'u'itnu or nearby McArthur and Beluga Rivers. Positive or negative results from such a survey would further refine the prehistoric culture history of the west side of Cook Inlet.

[24] Little was recorded by archaeological surveyors within the mine footprint, probably because the kinds of cultural activities engaged in there (hunting, gathering, and spiritual activities) left little or nothing that archaeologists can observe.

Hypotheses Relevant to Archaeological Excavation

The primary focus of archaeological work thus far in the Ch'u'itnu area has been on reconnaissance survey. Very limited site excavation has been done relative to the large number of known sites and probable number of additional sites that would likely be identified. The large number of sites suggests a number of testable hypotheses, including, but not limited to:

Hypothesis 3: House sites in a locality are not of the same age. It is likely that radiocarbon dates from central fire hearths will indicate that not all houses at a particular locality are of the same age. The probable explanation is that houses were rebuilt at a sedentary fishing locality as logs decayed, but eventually, new house sites were chosen in the same vicinity because of proximity to a salmon stream. This information will provide the basis for population estimates, since all houses at a locality cannot be assumed to be contemporaneous.

***Hypothesis 4*:** Underground cold storage pits are/are not contemporaneous at a given locality. Through excavation and collection of dateable carbon, an estimate can be made of whether the underground cold storage pits were all used at a given time period, or whether, alternatively, they represent a range of years and were not all used at the same time.

Hypothesis 5: Primary faunal and artifact remains are located in middens located near house entrances. Dena'ina house excavations famously yield little artifact or faunal information. Location and excavation of small middens, known to occur about 8-10 meters from a house entrance, will potentially yield important artifact and faunal information. Investigation of middens, hearth deposits and floor deposits from houses constructed successively over centuries will allow documentation of changes in subsistence resource use seasonally and over long periods of time.

Hypothesis 6: Middens contain few faunal remains, because such remains were burned by the Tubughna people so as not to discourage animal spirits from returning.

Potential Non-Hypothesis Based Research

In addition to research aimed at addressing specific hypotheses like those outlined above, there are bodies of descriptive data that it would be useful to obtain about the Ch'uit'na watershed for purposes of ongoing respectful management. These include:

Identification of the Location of Burials and Cremations: The NARF/Tyonek archaeological excavations (Boraas et al. 2013) and the Institute for Canine Forensics (2014) surface examination both indicated the presence of cremations and burials in the

Ch'u'itnu TCL. Given the sacred importance of burials and cremations to the Tyonek people, use of canines to identify such sites should be undertaken with the close cooperation and direction of the Tyonek Tribal Council. Such work is non-invasive and could be combined with ground-penetrating radar to verify the presence of cremations or burials. This information can then be used by the Tyonek Tribal Council to formulate plans to protect sacred sites.

Mapping Spiritual Sites: The historical, oral historical and ethnographic information presented above indicates that the TCL of the Tubughna contains many spiritual sites as well as burials and cremations. These include places where hunting or fishing rituals or spirit sightings have occurred. None are likely to be identifiable by archaeologists. All involve privileged cultural property rights, and can only be identified with the full approval of the Native Village of Tyonek tribal council. Identifying such locations would provide a more thorough understanding of the landscape's meaning to the Tubughna, and would also facilitate protecting such places and their surroundings from inadvertent disturbance or inappropriate use.

VI. Integrity of the Ch'u'itnu TCL

To be eligible for the NRHP, a place must "possess integrity of location, design, setting, materials, workmanship, feeling, and association." 36 C.F.R. § 60.4. "Integrity is the ability of a property to convey its significance" (Andrus and Shrimpton 2002). A property with integrity will usually have most of the listed aspects of integrity, but their relative importance depends on the significance of the property: "why, where, and when a property is important" (Andrus and Shrimpton 2002). For properties that are eligible under Criterion A, integrity of design and workmanship might not be as important to the significance as other aspects, and might not be relevant at all if the property is a site. A basic test of integrity for such properties is "whether a historical contemporary would recognize the property as it exists today" (Andrus and Shrimpton 2002).

The aspects of integrity are discussed in detail in *How to Apply the National Register Criteria for Evaluation*, by Andrus and Shrimpton (2002). Their application in the landscape context is described in *Guidelines for Evaluating and Documenting Rural Historic Landscapes* by McClelland et al. (1999). Parker and King (1998:11) also state: "In the case of a traditional cultural property, there are two fundamental questions to ask about integrity. First, does the property have an integral relationship to traditional cultural practices or beliefs; and second, is the condition of the property such that the relevant relationships survive?"

This section documents the integrity of the Ch'u'itnu drainage as a TCL, with reference to the guidelines contained in the works mentioned above. It first summarizes the significance of the TCL as discussed in Sections IV and V, because "[i]ntegrity is based on significance … Only after significance is fully established can you proceed to the issue of integrity" (Andrus and Shrimpton 2002). It then addresses each of the seven elements of integrity in 36 C.F.R. § 60.4, as well as the two fundamental questions for the traditional cultural context given by Parker and King (1998).

Traditional Cultural Significance

A place has traditional cultural significance if it has an "association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community" (Parker and King

1998:1). A place with traditional cultural significance can be eligible for the NRHP under any of the four criteria for inclusion. It may meet Criterion A if it is "associated with events, or series of events, significant to the cultural traditions of a community" (Andrus and Shrimpton 2002). It may meet the final portion of Criterion C if its components "lack individual distinction, provided that the grouping achieves significance as a whole within its historic context" (Andrus and Shrimpton 2002). It may be eligible under Criterion D if it has the potential to provide important information about history or prehistory. Usually, however, the potential of a traditional cultural property to yield information is secondary to its association with its traditional cultural group (Parker and King 1998:14).

The Ch'u'itnu TCL is associated, both from a historical and contemporary standpoint, with the Native Village of Tyonek. The people of Tyonek are heirs to the subsistence heritage of their ancestors, and they continue those subsistence practices to this day, incorporating the use of modern technology. Subsistence involves interaction with the natural environment and its wild, non-farmed, non-hatchery produced, and non-genetically modified species. As demonstrated in Section IV, beliefs and practices with ancient roots continue today and form the cultural identity of the people of Tyonek.

The Ch'u'itnu TCL is a living traditional cultural landscape. The Tubughna people continue to consume salmon, moose, and other wild foods from the landscape as their ancestors did. The techniques are different, but the result is the same; sharing and consumption of wild foods. Although all the foods are interrelated, the keystone food is salmon, particularly Chinook salmon. Without the Chu'it'nu, the drainage where salmon spawn, there would be no salmon subsistence, and it would be the end of centuries of traditional indigenous cultural practice. The Ch'u'itnu and its tributary salmon streams are essential physical features for the significance of the landscape.

This pattern of cultural practice is not only a matter of physical harvesting and consumption. The entire web of Tubughna social and spiritual practices have been shaped by subsistence, exemplified by the Tubughna sense of being "salmon people." The significance of the landscape is derived from the uninterrupted millennium or more of salmon-centered subsistence, the associated social and spiritual practices, and the resources nourished by the Ch'u'itnu watershed that are the foundation of Tubughna society.

Integrity of Location

The integrity of location is among the most important attributes of a TCL (McClelland et al. 1999; Birnbaum 1994). Location refers to "the place where the significant activities that shaped a property took place" (McClelland et al. 1999:22). A landscape has integrity of location if its "characteristics retain their historic location" (McClelland et al. 1999:22).

The Tubughna subsistence landscape consists of the Ch'u'itnu watershed and accompanying small creeks, including the river, its tributaries and the land. The integrity of the Ch'u'itnu watershed has not changed over time, and it continues to be a living cultural landscape. The river continues to flow, and the salmon continue to spawn and migrate within it as they have for centuries. Significant land features such as Lone Creek and Lone Ridge, where Max Chickalusion Jr. recalled generations of moose hunting (see Moose Hunting: A Case Study), remain intact. Although Tyonek itself has moved, the significance of the landscape lies not in the location of the village, but in the historic and continuing use of the entire area for subsistence, and in the use of wild resources that depend on the river for life. The physical features of the landscape that make those uses possible and give the landscape its significance are in the same location today that they were in pre-contact times, and therefore have integrity of location.

Integrity of Design

Design refers to "the composition of natural and cultural elements comprising the form, plan, and spatial organization of a property" (McClelland et al. 1999:22). In the district or landscape context, design can be seen in the relationships among those elements, including their spatial organization and their location in relation to natural features (Andrus and Shrimpton 2002, McClelland et al. 1999:22). A property has integrity of design if its elements still evidence their historic design. Fundamental changes in land use may affect integrity, but do not necessarily, especially if historic use patterns remain in place. (McClelland et al. 1999:22).

The relationship between Tubughna cultural features and the natural landscape that supports subsistence use constitutes the design of the property, and retains integrity. The Dena'ina use of the Ch'u'itnu watershed is organic in the sense that activities and sites are determined by, not forced on, features of the ecological landscape. Pre-contact sites are located near anadromous

streams, as are historic and contemporary settlements and fish camps, and hunting localities are where the game are. Dena'ina spirituality is also rooted in the ecological landscape: rituals such as the First Salmon Ceremony and a young hunter's first moose kill occur on the spot of the catch or kill, and traditional Dena'ina today associate particular spots with spirit forces, just as their ancestors did. Although the practices and beliefs of the Tyonek Dena'ina have changed over time, their fundamentals have not, and the ongoing subsistence-based land use patterns, as well as the land that supplies those resources, therefore exhibit integrity of design.

Integrity of Setting

Setting is the physical environment of a property, and differs from location in that it refers to "the *character* of the place in which the property played its historical role" (Andrus and Shrimpton 2002), not simply its physical description. "Large-scale features, such as bodies of water" (McClelland et al. 1999:22), are particularly important to integrity of setting, and small-scale elements can be cumulatively important as well.

The most obvious large-scale element of the Ch'u'itnu TCL is the Ch'u'itnu itself. As discussed above, the Ch'u'itnu and its drainage retains integrity of location; it also retains its significance to the people of Tyonek, and most importantly, it retains its character as a salmon stream. The river and tributaries comprise the ecological basis for the salmon to thrive. Eggs are deposited in the hyporheic gravels, uniquely structured by repeated Pleistocene glaciations to form a perfect habitat for the salmon fry. The fry hatch, grow, become smolt, and swim to sea, finally returning to their natal stream, where some are intercepted by Dena'ina fishermen for subsistence. The streams of south-central Alaska are unequaled as habitat for salmon, due in particular to their hyporheic and riparian zones. Without the river and its intricate habitat, there would be no salmon and no salmon subsistence. The river also supports other species important for Tubughna subsistence, including other fish, water-based fur bearers such as beaver, and land-based meat and fur-bearing animals.

The Ch'u'itnu TCL remains largely undeveloped, as does the surrounding region. Although some development has occurred, most notably the Beluga Gas Fields and a small gravel road system, most of the Ch'u'itnu watershed as well as the surrounding land retains its wild character. It continues to be home to subsistence resources, as well as to spirit forces, both

of which give the landscape much the same character for contemporary Tyonek Dena'ina as it would have had for their ancestors. As a whole, the Ch'u'itnu and its tributaries, the land they drain, and the surrounding area exhibit clear integrity of setting.

Integrity of Materials

A property has integrity of materials if it "retain[s] the key exterior materials dating from the period of its historic significance." In particular, "[i]ndigenous materials are often the focus of regional building traditions and thereby help define an area's sense of time and place" (Andrus and Shrimpton 2002). Materials can include construction materials, vegetation, and natural materials such as minerals or stone.

The significance of the Ch'u'itnu TCL comes from its uninterrupted subsistence use from AD 1000 to the present. The materials that relate to its significance are therefore the materials from which subsistence tools such as fish snares and weirs were made, as well as the materials from which distinctive cultural features such as *ełnen tu'h* (underground cold storage pits) and *nichił* (traditional log houses) were made. Materials used in rituals are also significant. These materials are all derived from the vegetation or animal resources of the area, and all are still present today in the Ch'u'itnu TCL.

Alexan (1965), Osgood (1976), and Kalifornsky (1991) all describe traditional fishing methods using spruce root or sinew lines. Wood was used to build weirs and fishing platforms, and to make fishing spears. Wood logs were also used to build *nichił*, and birch or spruce bark covered by sod formed their roofs (Osgood 1976:55-62). Birch bark was also essential for the waterproofing properties of the *ełnen tu'h*. Salmon eggs used as glue and moss used as insulation also made the *ełnen tu'h* possible, and, of course, salmon themselves frozen in the *ełnen tu'h* made Dena'ina sedentism possible. All of these materials – spruce, birch, animal sinew, salmon, moss – are present in the landscape today. More generally, the vegetation and animal resources of the Ch'u'itnu watershed are "similar to historic species in scale, type, and visual effect" (McClelland et al. 1999:23), and are significant because they are what made centuries of continued subsistence use possible.

Integrity of Workmanship

Workmanship is "the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory" (Andrus and Shrimpton 2002). In the landscape context, this includes "the ways in which people have fashioned their environment for functional and decorative purposes" (McClelland et al. 1999:23). McClelland et al. note that traditional or historic methods of harvesting crops, although seasonal and impermanent, can enhance integrity; this can be analogized to the salmon harvest, to the extent that it too reflects traditional or historic methods.

Underground cold storage pits (*ełnen tu'h*) made sustainable salmon subsistence possible in Cook Inlet and "reveal individual, local [and] regional … applications of … technological practices" (Andrus and Shrimpton 2002). These pits effectively created an insulated, waterproof laminate around dried salmon and solved the problem of preserving salmon caught in the summer and fall for consumption in winter and spring. They are unique to the Dena'ina and Ahtna and contributed to cultural complexity among Denè Athabascans. The *nichił* also demonstrate Dena'ina workmanship. Like the *ełnen tu'h*, these grass-shingled log houses of prehistory have melded with the landscape, but have left buried expressions that are examples of the workmanship of their builders.

Subsistence practices themselves demonstrate considerable workmanship. Although nets are now made of nylon rather than sinew, modern intertidal fishing techniques still resemble those used by pre-contact Dena'ina (see Intensive Salmon Subsistence Fishing, above). The importance of sharing salmon and other wild resources with family and other community members traces back to the *qeshqa*-led redistribution systems. Spiritual elements associated with subsistence also demonstrate integrity of workmanship: much like traditional farming techniques might prepare the land for planting, the First Salmon Ceremony, the Great Blessing of the Water, and the general practice of respect for all living things are used to ensure a successful subsistence harvest.

Integrity of Feeling

Feeling "is evoked by the presence of physical characteristics that reflect the historical scene" (McClelland et al. 1999:23). It relates to the other elements of integrity, in that setting,

design, materials, and workmanship all combine to create a particular sense of time and place. (McClelland et al. 1999:23).

In this case, the historic scene comprises the natural environment and traditional Tyonek Dena'ina interactions with it. To walk the Ch'u'itnu watershed is to walk a landscape that has changed little since Dena'ina first settled there. The resident or knowledgeable visitor has a sense of being in a cultural landscape that has been and is sustainable because of food sovereignty based on salmon and other wild resources, and because of social and spiritual dimensions that incorporate ecological concepts into social and spiritual practice. For Tyonek residents, the landscape evokes a strong feeling of belonging and continuity; as Al Goozmer said in the NARF Tyonek Interviews (2013:34), "That Chuitt River is ours. It's always been ours."

Integrity of Association

A place has integrity of association if it reflects its relationship with the historic events that shaped it (McClelland et al. 1999:23). "Continued use and occupation help maintain a property's historic integrity if traditional practices are carried on" (McClelland et al. 1999:23). Other links between a property's past and present such as continued family ownership or revived traditional practices also enhance integrity of association.

The Dena'ina have used the Ch'u'itnu watershed at least since AD 1000. The Ch'u'itnu is one of the few places in the United States where an indigenous people has been able to make the transition from pre-contact times to the present based on the same keystone species as their ancestors—wild salmon. The Tyonek Dena'ina are the direct descendants of the people who began intensive salmon fishing and fish preservation using underground cold storage pits (*ełnen tu'h*) and who lived in log houses (*nichił*). They continue to harvest and process wild salmon and other wild food resources according to the same seasonal cycle as their ancestors, and they do so using traditional practices such as fish camps, the First Salmon Ceremony and sharing subsistence resources. The association between the Ch'u'itnu watershed and its historic significance – a millennium of Tubughna subsistence based on the salmon of the Ch'u'itnu, and the related social and spiritual practices – is clearly reflected in present-day land use patterns, as well as by the yearly return of the salmon, the enduring seasonal subsistence harvest cycle, and the Tyonek Dena'ina society built upon those things.

Integrity of Relationship to Traditional Cultural Practices or Beliefs

Integrity of relationship is a consideration for traditional cultural properties that incorporates some of the above-listed aspects of integrity into an inquiry that relates more specifically to properties with traditional cultural significance. Parker and King (1998:11) write that "[i]f the property is known … by a traditional group as important in the retention of transmittal of a belief, or to the performance of a practice, the property can be taken to have an integral relationship with the belief or practice …." The central issue here is how the associated traditional group views the property.

Tyonek Dena'ina know that the Ch'u'itnu watershed provides the ecological basis for salmon and other wild food resources. It is also the landscape on which cultural practices play out and have played out since the advent of sedentary fishing in AD 1000, if not earlier. A number of cultural practices and beliefs are central to traditional cultural life on this landscape. Most fundamentally these involve sharing, which literally defines community. More specific institutions include the First Salmon Ceremony, The Great Blessing of the Water, the concept of interaction with the land and its spirits, the concept of proper interaction with sensate, willful animals, and the identification and protection of grave and cremation locations which are understood to house ancestor spirits. These are all parts of the culture of sustainable subsistence, and structure the traditional relationship between Tyonek society and the Ch'u'itnu drainage. The beliefs and practices of the Tyonek Dena'ina relate to and depend on the wild resources of the river and its watershed, and on their own uninterrupted relationship with the landscape. The Ch'u'itnu watershed therefore has integrity of relationship with Tyonek Dena'ina beliefs and practices.

Integrity of Condition

Integrity of condition is the second consideration for traditional cultural properties listed by Parker and King (1998). It relates to physical changes to the property, and includes the physical aspects of integrity discussed above: location, design, setting, and materials. If the physical elements of the property that give it traditional cultural significance have been altered, the property may not have integrity of condition. However, not all physical changes mean a loss of integrity; "[c]ultural values are dynamic, and can sometimes accommodate a good deal of

change" (Parker and King 1998:12). The key is in the perceptions of the traditional cultural group for whom the property is significant. "If its integrity has not been lost in their eyes, it probably has sufficient integrity to justify further evaluation" (Parker and King 1998:12).

As discussed above, the Ch'u'itnu watershed has integrity of location, design, setting, and materials, and therefore has integrity of condition. Most importantly, the people of Tyonek view it as having that integrity. The NARF Tyonek Interviews reveal an intimate knowledge of, and strong sense of connection to, the Ch'u'itnu watershed. The Tyonek residents interviewed describe the significance of the river itself, its salmon runs, their family's traditional territories, and their sharing traditions, among other things, all with reference to the long history of subsistence traditions that those places and practices represent. Because the physical features of the landscape, including its location, design, setting, and materials, are intact, and because the Tyonek Dena'ina view them as having cultural and historic significance, the Ch'u'itnu watershed has integrity of condition.

VII. Conclusion

Based on the above descriptions and analyses, grounded in its own millennium-old cultural traditions, the Native Village of Tyonek asserts that the Ch'u'itnu watershed, as shown in Figure 10, is eligible for the NRHP as a traditional cultural landscape district, and should be regarded as such for purposes of project review under Section 106 of NHPA.

Appendix A: Glossary of Fish-Related Dena'ina Words

Dialect notations: I=Inland, U=Upper Inlet, O=Outer Inlet, L=Lime Village, Il=Iliamna, S=Seldovia, Lk-i=Kuskokwim Deg=H'tan, Su=Susitna Station, E=Eklutna, Ty=Tyonek, T=Talkeetna, Kn=Knik. All translations from Kari 2007.		
English Term	**Dena'ina Word**	**Meaning**
		x means literal translation same as English term.
salmon (generic) *(Oncorhynchus spp.)*	*łiq'a (IU)* *łuq'a (OSl)*	X x
Male fish	*Hest'a, qest'a (IO)* *Tl'ech'I (U)*	
Female fish	*Q'in'i* *Q'inch'eya (IO)* *Q'inch'ey (U)*	'roe one'
Small fish	*Chagela gga (U)* *Shagela gguya (I)* *Shagela ggwa (O)*	
Fry, baby fish	*Lch'eli, dghelch'eli*	'shiny one'
Bottom fish	*Tahliq'a (IU)* *Tahluq'a (O)*	'underwater fish'
Spring fish run	*Łitl'eni (UI)*	x
Spring fish caught under ice	*Ten t'uhdi (U)*	x
king salmon, Chinook salmon *(O. tschawytscha)*	*łiq'aka'a (IU)* *łuq'aka'a (O)* *chavicha, tsavija (O)*	"big salmon' Russian origin
king; *salmon sizes*: smallest	*łiq'agga (U)* *ggas ten'a (L)*	'small salmon' 'king salmon's handle'
two-foot king salmon	*q'inagheltin (U)*	
largest king salmon	*łiq'aka (U)* *vigit'in (L)*	'big salmon' x
middle-sized king salmon	*tl'istqeyi (U)*	x
humpback salmon, pink salmon *(O, gorbuscha)*	*qughuna (OUSl)*	'humped'
red salmon, sockeye salmon *(O. nerka)*	*łiq'a (I)* *t'q'uya (LNOSl)* *k'q'uya ON)*	**x** 'ridged'

	q'uya (U)	
nickname	*veghutna qilin (I)*	'it exists for people'
old fall sockeye	*bendashtggeya (U)* *dghelbek'i (UO)*	'partially white' *a rare verb stem*
dog salmon, chum salmon *(O. keta)*, (I) early summer chum salmon	*alima (OIl)* *seyi (U)* *nulay (NL)*	Eskimo origin **x** 'runs again'
August run dog salmon	*shighat'iy (Lk-i)*	
silver salmon, coho salmon *(O. kisutch)*	*nusdlaghi (I)* *nudlaghi (O)* *nudlegha, nudleghi (U)*	'one that swims back'
steelhead trout *(Salmo gairdneri)*	*usdlaghi (O)* *telaghi (Il)* *tuni, tuni denłkughi (N)* *shagela (U)*	? 'one that swims past' 'one that runs' 'water one' 'fish'
running salmon	*tuzdlaghi (OI)* *tuydlaghi (U)*	'one swimming in water'
fish laying eggs	*taq'innelyaxi (I)* *taq'innelyashi (UO)*	x
spawned-out salmon	*nudujuzhi, dujuzhi (I)* *dujuyi (U)* *itak'i (O)*	x x x
dead salmon	*tiłani*	X
fall salmon, esp. sockeye	*hey łuq'a (O)* *hey łiq'a (IU)*	'winter salmon'
fingerling, baby salmon, alevin	*tuyiga (OI)* *łiq'agga (U)* *łiq'a gguya*	'water spirit' 'little salmon'
first fish run	*qtsa ghelehi*	x
last fish run	*q'ech'en ghelehi (I)* *unhtl'uh ghelehi (UO)* *unhtl'uyeh (I)*	x
old female salmon	*q'in ch'ezhi (I)* *q'in ch'eya (U)*	'infested roe'
red-colored salmon	*nuditq'azhi (I)* *nishtudghiłtani (U)*	'one that is red' 'that which floats in midstream'
spring (early) salmon run	*ts'iluq'a (O)* *łitl'eni (UI)*	'straight salmon' 'spring one'
summer salmon run, sockeye season	*chiluq'a (O)* *hchiliq'a (UI)*	x

	shanlaghi (UI)	‘summer run’
fall-winter running salmon	*tuleha (OU)* *tulehi (I)*	‘one running in water’
dead salmon that drift ashore	*niqatayilaxi (I)*	x
salmon captured in weir	*q’anughedeɬi*	‘those swimming back’
Non-salmon fish	*Shagela (IO)* *Chagela (UIl)* *Chebay (U)*	‘fish’
Alaska blackfish	*Huzheghi, huzhehi (L,N)*	‘gaping thing pointing up’
Freshwater sculpin	*Ch’qenɬt’emich’a* *Ch’qenɬt’emch’a (NL)* *Ch’qeɬdemich’a (Il)* *Ts’est’ugh’I, ts’est’uhdi (U)*	‘the one beneath rocks’
Burbot, lingcod	*Ch’unya (I)* *Ch’anya (U)* *K’ezex (Lk-i)*	
Burbot’s chin barbell	*Veyada k’ich’aynanik’et’i*	‘one that hands out from chin’
Arctic char	*Vat (NL)*	
Eel, lamprey	*Suy ɬiq’a* *Ɬiq’a q’ints’a* *Ɬiziɬ (O)* *Tl’eghesh (I)*	‘sand fish’ ‘salmon roe female’ ‘dog windpipe’
Large lamprey	*Ts’ilten hutsesa (U)*	‘arrow nock’
grayling	*Ch’dat’an (I)* *Ch’dat’ana (U)*	‘one with a blanket’
Grayling’s dorsal fin	*Vech’eda*	‘It’s blanket’
Freshwater herring, least cisco	*Ghelguts’I k’una (N)*	‘pike’s food’
Three-spined stickleback	*Dghezhi, dghezha (O)* *Dgheyay (U)* *Dghezhay (I)* *Vek’eha qilani (NL)* *Tuyiga (Il)*	‘thorny one’ ‘one with quills’ ‘water spirit’
Spawning stickleback	*Bente qiyuya (U)*	‘one going in lakes’
Northern pike	*Ghelguts’I (I)*	‘swift swimmer’
Small pike	*Tl’egh tuzhizha*	‘grass water beak’
sheefish	*Shish (L)* *Zdlaghi (L)*	 ‘one that runs’
sucker	*Duch’ehdi (IU)*	‘open mouth one’

	Dehch'udya € *Łih (O)*	
Brook trout, Landlocked Dolly Varden char	*Dghili juna (NL)* *Dghili chuna (Il)* *Dghelay tsebaya (T)*	'mountain dark one' 'mountain fish'
Lake trout	*Zhuk'udghuzha (I)* *Bat (Su)*	'spiny mouth'
Rainbow trout	*Tuni (I)* *Telaghi (U)* *Shagela (Il)*	'water one' 'one that swims, runs' 'fish'
Dolly Varden trout	*Qak'elay (I)* *Qak'elvaya (Il)* *Telch'eli (O)* *Chebay (U)* *Łiq'a k'qen (I)*	 'shiny one' 'fish' 'salmon's husband'
Whitefish (any)	*Łih (UI)*	
Alaska whitefish	*Hulehga (I)* *Q'untuq' (Lk-i)*	'runs up' 'ridge on top'
Broad whitefish	*Telay (L)*	'swimmer'
Broad whitefish stomach	*K'jida (I)* *K'eghezh (Lk-i)*	'oval'
Round whitefish, pin-nose whitefish	*Hasten (IT)*	'pus handle'
Fish guts (all)	*K'inazdliy, vinazdliy*	'inner objects'
Fish bones	*K'iztin (IO)* *K'iytin (U)*	'inner long object'
Fish backbone	*K'eyena*	x
Fish belly	*K'eveda*	x
Dark fish blood along backbone	*K'tl'ech' (I)* *K'kuhchashga (I)* *K'kukelashch'a (L)* *K'chashga (U)* *K'kuhchash'a (O)*	x
Dark salmon meat near skin	*Beyes tut' tsen (UO)*	
Fins (any)	*K'ts'elghuk'a (I)* *K'ch'elna (OU)* *K'tay'a (U)*	x 'wings' 'paddle'
Pectoral fin	*K'ch'enla (U)* *K'ts'elghuk'a (I)*	'wing'
Dorsal fin	*K'iniq' ts'elghuk'a*	'back fin'

	Ghuk'a (I) *Biniq' ch'elna (U)* *K'inhdegga (O)*	'back swimmer' 'back wing' 'back collarbone'
Pelvic fin	*K't'egha (U)* *niłk'degga (O)* *k'eveda degga (I)* *nich' k'eltin'a (O)*	'paddle' 'paddles together' 'belly fin' 'one in the middle'
Anal fin and cartilage	*K'tselts'ena (U)* *K'tseldegga (IO)*	'anal bone' 'anal collarbone'
Adipose fin	*K'tagh'a (IO)* *K'tach'ełvasha (N)* *Tak'ełbasha,* *k'tach'ebasha (OU)*	'paddle' 'submerger'
Tail fin	*K'kalt'a degga (O)* *K'kalt'a ts'elghuk'a (I)*	x
Fresh air sack	*K'kuhlet'*	x
Fish collarbone, pectoral girdle	*K'degga*	x
Fish head gristle	*K'enchigija*	'head cartilage'
Fish meat	*K'enut'* *Duni (Il)*	x 'food'
Fish tail	*K'kalt'a*	x
Meat next to fish tail	*K'kalt'a veghun*	'body of fish tail'
gills	*K'q'eshch'a*	x
Gut with stringy end (pyloric caecum)	*K'delchezha (OIl)* *K'delcheya (U)* *K'jida*	'rattle'
Fish heart	*K'ggałggama (I)* *K'ggałggamam'a (IlOL)* *K'ghałggamama (U)* *K'qałdema (T)*	x
Hump on salmon's back	*K'eyenghezha (OI)*	x
Male sperm sac	*Hest'a vekuhlashga (I)*	x
Sperm, milt	*K'tl'ech'*	x
Nose cartilage	*K'ingija, k'engija (IOU)* *K'ingeja (Il)*	x
Oily strip of meat in front of dorsal fin of salmon	*K'ints'isq'a (U)* *K'yin tseq'a (I)* *K'intsiq'a (OI)*	'back strip'
Roe, fish eggs	*Q'in*	x
Roe sac	*K'q'in yes*	x

scales	*K'gguts'a (O)* *K'ggisga (IU)*	x
Fish slime	*K'eshtl'a (OIl)* *K'tl'eshch'a (IU)*	x
net-making tool, net stringer	*tahvił veł k'etl'iyi,* *tahvił qeyłtl'ixi* *tahvił dugula (I)*	'with it he weaves net'
net rack	*veq' k'etl'iyi* *veq' nuk'detggeni*	'on it he weaves something.' 'on it, it is dried'
net mesh measure	*ve» k'ettl'iyi*	'with it, it is woven'
fishing clothes	*va łiq'a ch'el'ihi*	x
awl for stabbing salmon	*ts'entseł (U)*	
bale of fish	*vava hał*	'dry fish pack'
cutting board	*veq' huts'k'det'esi*	x
dipnet, long-handled dipnet	*tach'enił'iyi (UO)* *nch'equyi (LN)*	x
short-handled dipnet	*tach'enił'i (I)*	x
salmon dipnet (longer handle)	*shanlaghi tach'nił'iy (I)*	'summer run dipnet'
trout dipnet	*taztin (I)*	x
dipnet frame	*taztin duves (I)*	x
fish bait (on hook)	*k'enełneha (O)* *k'inłneha (I)* *k'indneha (U)* *k'egh dghichedi* *beł ch'k'nułneq'i (O)*	x
rabbit or ptarmigan guts used for tomcod bait	*k'entleh, k'entleq' (U)*	x
natural rock hole fish bin	*tsaq'a (I)*	x
rock fish bin, fish cutting hole	*k'usq'a (NL)* *k'esq'a (OIl)* *k't'usq'a (U)*	'cutting cavity'
fish box	*shagela yashiga*	x
fish club, seal club	*tsik'nigheli (IO)*	x
angled fish fence, dipnetting dock	*tanatl'ini*	'woven into water'
fish fermenting hole	*chuqilin q'a (O)* *chaqilin q'a (IU)*	x
gaff hook, branch hook, leister	*qishehi (IU)* *k'isheq'i (Il)*	'hooker'

	sheh (L) *shehi (O)*	
fish hook	*ihshak, iqshak (OI)* *k'inaq'i, k'eninaq'i (U)*	Eskimo origin
Note: eleven separate types of named fish hooks		
fishing hole, fish trap location	*k'enq'a (OU)* *k'inq'a, -k'inq'a'a (I)*	x
fish trap location	*tach'k'eł'unt*	'where we set object'
fish jigging hole in ice	*tasaq'a* *tatsiq'a (Il)* *ges aq'a (L)*	'water head hole'
fishing line	*shehi tl'ila (O)* *k'inaq'i tl'ila (U)* *iqshak tl'ila (I)*	'hook line'
fishing pole	*iqshak ten (IO)* *shehi ten (O)* *k'inaq'i ten, k'inaq'i nikena, k'niten, k'neten (U)*	x
fishing reel	*shehi tl'ila telcheshi (UO)*	
fishnet	*tahvił*	'underwater snare'
net-like fish drag	*nich' nuk'tasdun (SlTy*	'in back is hole'
Russian-era fishnet	*sétga (O)* *satga (U)*	Russian origin
drift net	*te»edi (I)*	'one that floats'
gunny sack net	*chida yiztl'ini tahvi» (I)*	
seine net	*veł niqak'idzehi* *nébod (O)*	'with it one scrapes in circle' Russian origin
sinew net	*ts'ah tahvił*	x
twisted willow bark fiber net	*ch'eq' tahvił (IU)*	x
small hole, net mesh,	*k'eniq' (IO)* *k'eneq' (OU)*	x
net drying rack	*tahvił denluh*	x
lead line	*duyeh vetsik'teh'i* *duyeh vetsittehi (I)*	x
corks, floats	*tahvił ts'esa (IO)* *tahbił jija (U)*	x
cork line	*vetsik'teh'i*	x

fish pew, pike	*łiq'a eł dalyashi (OU)* *łiq'a veł telyayi (I)*	x
fish scaler, ulu knife	*vashla* *beł k'elggits'i (U)*	'little stone'
fish spreader stick	*k'enun'i* *nuk'ilqeyi*	x
hoop fish spreader	*dnalch'ehi (I)*	x
small fish spreader	*t'utseyŷi (O)*	x
hand-held fish snare with handle	*k'entsa quggił (I)*	x
spruce root fish snare	*qunqelashi quggił (OU)*	x
fish stringer	*k'e'esh tl'ił (OU)*	x
willow fish stringer	*q'eyk'eda (IU)*	'tough willow'
fishtrap, woven basket style trap	*taz'in (IO)* *tay'in (U)*	'object that is in water'
Note: Seventeen types of fishtraps for different species and conditions		
fishtrap funnel	*k'eshjaya (I)*	x
inner basket	*k'jaya (OU)*	'heart'
angled leads to trap	*taztin (I)*	'long object that is set'
long stick ribbing on fishtrap	*talyagi (IO)* *talyashi (U)*	x
spiral sticks on fishtrap	*k'etnalvesi (L)*	x
branch drag material put in weir	*k't'un dighali (U)* *k't'un dalghali (I)*	x
inner spruce bark reflectors pinned to bottom of weir	*tah'iggeyi (U)* *vejink'ehi (I)*	'under water turns white' 'stg. swims over it'
vertical stakes for weir	*dik'ali*	x
fish wheel	*niqak'uquł i (I)* *niqaghetesi (U)* *naqak'ułqu»i taz'in (O)*	'scoop that turns'
lead line	*duyeh vetsik'teh'i* *duyeh vetsittehi (I)*	x
net-making tool	*tahvił veł k'etl'iyi* *tahvił dugula (IL)*	x
net rack	*veq' k'etl'iyi* *veq' nuk'detggeni*	x

Appendix B: Native American Rights Fund Tyonek Interviews

In 2013, Alan Boraas and Ronald Stanek conducted interviews with Tyonek elders and culture bearers selected by the tribal council of the Native Village of Tyonek for the purpose of understanding subsistence and the social and spiritual dimension of subsistence. The interviews were conducted in Tyonek in February using semi-structured questions. They were recorded and transcribed and referred to in this document as NARF Tyonek Interviews 2013.

In 2014, Ronald Stanek conducted further interviews using the same protocols. These are referred to in the document as NARF Tyonek Interviews 2014. Some of these interviews took place in Anchorage, but are referred to as part of the "Tyonek Interviews" because they include Tyonek Elders and are about their home village.

References Cited

ACHP (Advisory Council on Historic Preservation)
2012 Native American Traditional Cultural Landscapes and the Section 106 Review Process: Questions and Answers. http://www.achp.gov/docs/landscapes q & a 7-11-12.pdf, last modified July 11, 2012.

Alexan, Nikefor
ca. 1957 Nikefor Alexan stories. Archives and Special Collections, Consortium Library, University of Alaska Anchorage.
1965 How Old People Used to Eat. Alaska Sportsman 31(1): 38-39, 59-60.

Andrus, Patrick W. and Rebecca H. Shrimpton
2002 How to Apply the National Register Criteria for Evaluation. National Register Bulletin 15. Washington, D.C.: National Park Service.

Berger, Thomas R.
1985 Village Journey: The Report of the Alaska Native Review Commission. New York: Hill & Wang.

Berkes, Fikret
2012 Sacred Ecology. New York: Routledge.

Birnbaum, Charles A.
1994 Protecting Cultural Landscapes: Planning, Treatment, and Management of Historic Landscapes. National Park Service Preservation Brief 36. Washington, D.C.: National Park Service.

Boraas, Alan
2007 Dena'ina Origins and Prehistory. *In* Nanutset ch'u Q'udi Gu: Before Our Time and Now. Karen Gaul, ed. Pp. 31-40. Anchorage: Lake Clark National Park and Preserve.
2009 A Northern Dené Perspective of Place: The Moral Landscape of the Alaska Dena'ina. Paper presented at Cultural Landscapes, Places, Identities, and Representations Research Cluster, Arizona State University, Tempe, Arizona, March 31.
2013 "What is Good, What is Not Good"; The Traditional Dena'ina Worldview. *In* Dena'inaq Huch'ulyeshi: The Dena'ina Way of Living. Suzi Jones, James A. Fall, and Aaron Leggett, eds. Pp 103-120. Fairbanks: University of Alaska Press.

Boraas, Alan S. and Catherine H. Knott
2014 Traditional Ecological Knowledge and Characterization of the Indigenous Cultures of the Nushagak and Kvichak Watersheds, Alaska. *In* An Assessment of Potential Mining Effects on Salmon Ecosystems of Bristol Bay, Alaska. App. D. Washington, D.C.: U.S. Environmental Protection Agency.

Boraas, Alan and Aaron Leggett
2013 Dena'ina Resistance to Russian Hegemony, Late Eighteenth and Nineteenth Centuries: Cook Inlet, Alaska. Ethnohistory 60(3):485-504.

Boraas, Alan and Donita Peter (now Donita Slawson)
2008 "The Role of *Beggesh* and *Beggesha* in Precontact Dena'ina Culture." Alaska Journal of Anthropology 6 (1 & 2):211-224.

Boraas, Alan, Douglas Reger, Ronald T. Stanek, Al Goozmer, Chad Chickalusion, Chris King, Stand Bismark, Roland Standifer, and Rob Rosenfeld
2013a Ch'u'itnu Area Archaeological Investigations, Cook Inlet, Alaska: Report on Cultural Resources of Nature Conservancy, Alaska Property. Prepared for Native American Rights Fund and Native Village of Tyonek.

Boraas, Alan S., Ronald T. Stanek, and Douglas R. Reger
2013b The Case for Criterion A and an Expanded Ch'u'itnu Archaeological District, Cook Inlet Alaska. Prepared for Native American Rights Fund and the Native Village of Tyonek.

Braund, Stephen R. and Associates
2006a PacRim Coal Chuitna Coal Project: Section 106 Report: Determination of Eligibility for the National Register of Historic Places, Literature Review, Field Survey and Recommendations 2006 Field Season. Stephen R. Braund and Associates. Prepared for DRven Corporation.

2006b PacRim Coal Chuitna Coal Project: Subsistence Literature Review. Stephen R. Braund and Associates. Prepared for DRven Corporation.

2006c PacRim Coal Chuitna Coal Project, West Cook Inlet, Alaska: Subsistence and Traditional Knowledge Studies: Subsistence Use Areas and Traditional Knowledge Study for Tyonek and Beluga, Alaska. Stephen R. Braund and Associates. Prepared for DRven Corporation.

2007 PacRim Coal Ch'u'itnu Coal Project, West Cook Inlet, Alaska: Subsistence and Traditional Knowledge Studies: Subsistence Use Areas and Traditional Knowledge Studies for Tyonek and Beluga, Alaska. Stephen R. Braund and Associates. Prepared for DRven Corporation.

Brink, Frank and Jo Brink
1988 Tubughna: The Beach People. Video recording. Anchorage, Alaska: CIRI Foundation.

Brown, Agnes
2013a Interview by Alan S. Boraas and Ronald T. Stanek, September 26, 2013. Transcript, NARF Tyonek Interviews. On file with NARF.

2013b Interview by Alan S. Boraas and Ronald T. Stanek, October 4, 2013. Transcript, NARF Tyonek Interviews. On file with NARF.

Chickalusion, Chad
2013 Interview by Alan S. Boraas and Ronald T. Stanek. Transcript, NARF Tyonek Interviews. On file with NARF.

Chickalusion, Max, Jr.
2013 Interview by Alan S. Boraas and Ronald T. Stanek, August 2, 2013. Transcript, NARF Tyonek Interviews. On file with NARF.
2014a Interview by Ronald T. Stanek, November 22, 2014. Transcript, NARF Tyonek Interviews. On file with NARF.
2014b Interview by Ronald T. Stanek, November 24, 2014. Transcript, NARF Tyonek Interviews. On file with NARF.

Chickalusion, Max, Sr. and Nellie Chickalusion
1979 Tubughna Ełena: The Tyonek People's Country. James Kari, ed. Fairbanks: Alaska Native Language Center.

Chuitt, Mary
2013 Interview by Alan S. Boraas and Ronald T. Stanek, March 13, 2013. Transcript, NARF Tyonek Interviews. On file with NARF.

Chuitt, Pat, Jr. and Katherine Chickalusion
2013 Interview by Alan S. Boraas and Ronald T. Stanek, March 12, 2013. Transcript, NARF Tyonek Interviews. On file with NARF.

Cook Inlet Historic Sites Project
1975 Cook Inlet Region Inventory of Native Historic Sites and Cemeteries. Anchorage: Cook Inlet Native Association.

de Laguna, Frederica
1930 Report on Archaeological Investigations in the Prince William Sound and Cook Inlet Districts, Alaska, June-October, 1930. Unpublished MS, Penn Museum Archives, University of Pennsylvania Museum of Archaeology and Anthropology.
1975 [1934] The Archaeology of Cook Inlet, Alaska. Anchorage: The Alaska Historical Society.

DeArmond, Robert N.
ca. 1969a The Cook Inlet Fishing Industry. Manuscript, Robert N. DeArmond Collection, 1861-1995: Box 4. Alaska State Library Historical Collections, Juneau, Alaska. http://library.alaska.gov/hist/hist_docs/docs/asl_ms39_4_4.pdf.
ca. 1969b The Fur Trade of Cook Inlet: 1867-1900. Manuscript, Robert N. DeArmond Collection, 1861-1995: Box 4. Alaska State Library Historical

Collections, Juneau, Alaska.
http://library.alaska.gov/hist/hist_docs/docs/asl_ms39_4_3.pdf.

Department of Natural Resources
2013 Commissioner's Decision on Request for Reconsideration of the October 24, 2011 Detailed Statement of Findings and Decision….
http://dnr.alaska.gov/mlw/mining/coal/chuit/72613_Commissioner_Decision_on_Request_for_Reconsideration_Chuitna_LUP_FINAL.pdf, last modified July 19, 2013.

Elliott, Henry
1906 Our Arctic Province: Alaska and the Seal Islands. New York: Charles Scribner's Sons.

Ellis, William
1969 [1782] Authentic Narrative of a Voyage Performed by Captain Cook and Captain Clerke in His Majesty's Ships Resolution and Discovery During the Years 1776 to 1780: In Search of a North-West Passage Between the Continents of Asia and America, vol. I. New York: Da Capo Press.

Evanoff, Karen, ed.
2010 Dena'ina Ełnena, A Celebration: Voices of the Dena'ina. Anchorage: Lake Clark National Park and Preserve.

Fall, James A.
1987 The Upper Tanaina: Patterns of Leadership Among an Alaskan Athabaskan People, 1741-1918. Anthropological Papers of the University of Alaska 21(1 & 2):1-80.

Fall, James A., Andrew R. Brenner, Sarah S. Evans, Davin Holen, Lisa Hutchinson-Scarbrough, Bronwyn Jones, Robbin La Vine, Terri Lemons, Meredith Ann Archioni, Elizabeth Mikow, Joshua T. Ream, Lauren A. Sill, and Alida Trainor
2013 Alaska Subsistence and Personal Use Salmon Fisheries 2011 Annual Report. Technical Paper No. 387. Anchorage: Division of Subsistence, Alaska Department of Fish and Game.

Fall, James A., Dan J. Foster, and Ronald T. Stanek
1984 The Use of Fish and Wildlife Resources in Tyonek, Alaska: *Tubughna Ch'adach' Elnen Ghuhdilt'a.* Technical Paper No. 105. Anchorage: Division of Subsistence, Alaska Department of Fish and Game.

Finney, Bruce P., Irene Gregory-Eaves, Marianne S.V. Douglas and John P. Smol
2002 Fisheries Productivity in the Northeastern Pacific Ocean over the Past 2,200 Years. Nature 416: 729-733.

Finzel, Emily S., Robert J. Gillis, Kenneth A. Ridgway, and David L. LePain

2009 Preliminary Evaluation of Basin Margin Exhumation and Provenance of Cenozoic Strata, Chuitna and Beluga Rivers Area, Cook Inlet Forearc Basin, Alaska. Preliminary Interpretive Report 2009-4. Fairbanks: Alaska Division of Geological and Geophysical Surveys.

Goozmer, Al
2013 Interview by Alan S. Boraas and Ronald T. Stanek, March 12, 2013. Transcript, NARF Tyonek Interviews. On file with NARF.

Grabbe, George
1970 Cremation. Orthodox Christian Information Center. http://orthodoxinfo.com/death/cremation.aspx, accessed March 23, 2015.

Gunther, Erna
1926 An Analysis of the First Salmon Ceremony. American Anthropologist 28(4):605-617).

Haviland, William A., Harald E. L. Prins, Bunny McBride and Dana Walrath
2011 Cultural Anthropology. Belmont, CA: Wadsworth.

Holen, Davin and James A. Fall
2011 Overview of Subsistence Salmon Fisheries in the Tyonek Subdistrict and Yentna River, Cook Inlet, Alaska. Special Publication No. BOF 2011-01. Anchorage: Alaska Department of Fish and Game, Division of Subsistence.

Institute for Canine Forensics
2014 Native Village of Tyonek, Alaska Cultural Sites Client Report, Version 5.2. Institute for Canine Forensics. Prepared for NARF and Native Village of Tyonek.

Jones, Suzi, James A. Fall, and Aaron Leggett, eds.
2013 Dena'inaq Huch'ulyeshi: The Dena'ina Way of Living. Fairbanks: University of Alaska Press.

Kalifornsky, Peter
1991 K'tl'eghi Sukdu: The Collected Writings of Peter Kalifornsky. James Kari and Alan Boraas, eds. Fairbanks: Alaska Native Language Center.

Kari, James
1988 Some Linguistic Insights into Dena'ina Prehistory. *In* Late Prehistoric Development of Alaska's Native People. Robert Shaw, Roger Harritt, and Don Dumond, eds. Pp. 319-338. Aurora: Alaska Anthropological Association Monograph Series No. 4.

2007 Dena'ina Topical Dictionary. Fairbanks: Alaska Native Language Center.

n.d. Dena'ina Verb Dictionary. Unpublished MS, on file with Alan Boraas.

Kari, James and James Fall, eds.
2003 Shem Pete's Alaska: The Territory of the Upper Cook Inlet Dena'ina. 2nd edition. Fairbanks: University of Alaska Press.

Kroto, Violet
2013 Interview by Alan S. Boraas and Ronald T. Stanek, March 12, 2013. Transcript, NARF Tyonek Interviews. On file with NARF.

Malcom, Iain A., Stuart M. Greig, Alan F. Youngson, and Chris Soulsby
2008 Hyporheic Influences on Salmon Embryo Survival and Performance. *In* Salmonid Spawning Habitat in Rivers: Physical Controls, Biological Responses, and Approaches to Remediation. David A. Sear and Paul DeVries, eds. American Fisheries Society Symposium 65. Bethesda, MD: American Fisheries Society.

McClelland, Linda Flint, J. Timothy Keller, Genevieve P. Keller, and Robert Z. Melnick.
1999 Guidelines for Evaluating and Documenting Rural Historic Landscapes. National Register Bulletin 30. Washington, D.C.: National Park Service.

McKeown, Martha Ferguson
1951 Alaska Silver: Another Mont Hawthorne Story. New York: Macmillan Company.

McMahan, David J.
2013 Report on Cremated Human Ontological Remains from Tyonek (TYO-266). McMahan Consulting. Prepared for Native American Rights Fund.

Mobley, Charles M. and Charles Ottar Mobley
2012 Archaeological Survey for Apache Alaska Corporation's 2011 Cook Inlet 3D Seismic Project, Alaska. Charles M. Mobley & Associates. Prepared for SAExploration, Inc.

Moser, Jefferson F.
1899 The Salmon and Salmon Fisheries of Alaska: Report of the Operations of the United States Fish Commission Steamer Albatross for the Year Ending June 30, 1898. *In* Bulletin of the U.S. Fish Commission XVIII:1-178. Washington, D.C.: Government Printing Office.

NPS (National Park Service)
2010 Determination of Eligibility Notification: Nantucket Sound. Washington D.C.: National Register of Historic Places, National Park Service. http://www.nps.gov/nr/publications/guidance/NantucketSoundDOE.pdf, last modified January 4, 2010.

2014 Determination of Eligibility Notification: Ch'u'itnu Archaeological District. Washington D.C.: National Register of Historic Places, National Park Service.

Osgood, Cornelius
1976 [1937] The Ethnography of the Tanaina. Yale University Publications in Anthropology, No. 16. New Haven, CT: Human Relations Area Files Press.

PacRim Coal, LP
n.d. Chuitna Coal Project. http://www.chuitnacoalproject.com/, accessed March 23, 2015.

Parker, Patricia L. and Thomas F. King
1998 Guidelines for Evaluating and Documenting Traditional Cultural Properties. National Register Bulletin 38. Washington, D.C.: National Park Service.

Pete, Shem
1985 Story of Quq'ey and Betuyelash. Unpublished MS, preliminary of audio tape transcribed by James Kari. Audio tape on file, Alaska Native Language Center, Fairbanks, Alaska.

Rappaport, Roy A.
1999 Ritual and Religion in the Making of Humanity. Cambridge Studies in Social and Cultural Anthropology. Cambridge: University of Cambridge Press.

Reger, Douglas
1998 Archaeology of the Northern Kenai Peninsula and Upper Cook Inlet. *In* Arctic Anthropology 35(1):160-171.

Russell, Priscilla
1987 Tanaina Plantlore, Dena'ina K'et'una: An Ethnobotany of the Dena'ina Indians of Southcentral Alaska. Fairbanks: Alaska Native Language Center.

Schindler, Daniel E., Mark D. Scheuerell, Jonathan W. Moore, Scott M. Gende, Tess B. Francis, and Wendy J. Palen
2003 Pacific Salmon and the Ecology of Coastal Ecosystems. Frontiers in Ecology and the Environment 1(1): 31-37.

Schmoll, Henry R. and Lynn A. Yehle
1992 Geologic Map of the Lower Beluga-Chuitna Area, Tyonek A-3 and A-4 Quadrangles, South-Central Alaska. U.S. Geological Survey Open-File Report.

Standifer, John
2013 Interview by Alan S. Boraas and Ronald T. Stanek. Transcript, NARF Tyonek Interviews. On file with NARF.

Stanek, Ronald T., Davin L. Holen, and Crystal Wassillie
2007 Harvest and Uses of Wild Resources in Tyonek and Beluga, Alaska, 2005-2006. Technical Paper No. 321. Anchorage: Alaska Department of Fish and Game, Division of Subsistence.

Stephan, Sava with James Kari
1998 Tyonek Beach. Alaska Native Language Center audio recording ANLC 3740. July 30. http://www.uafanlc.arsc.edu/data/Online/ANLC3740/ANLC3740.wav, accessed March 23, 2015.

U. S. Census Office
1900 12th Census of Population, 1900: Alaska, vol. 5: Southern District. https://archive.org/details/12thcensusofpopu1831unit, accessed March 25, 2014.

Vancouver, George
1798 A Voyage of Discovery to the North Pacific Ocean and Round the World…vol. 3. Robinson, Paternoster-Row & Edwards, Pall-Mall: London.

Vizenor, Gerald
2008 Aesthetics of Survivance. *In* Survivance: Narratives of Native Presence. Gerald Vizenor, ed. Pp. 1-23. Lincoln: University of Nebraska Press.

Wallace, Anthony F.C.
1966 Religion: An Anthropological View. New York: Random House.

Znamenski, Andrei A. (trans.)
2003 Through Orthodox Eyes: Russian Missionary Narratives of Travels to the Dena'ina and Ahtna, 1850s-1930s. Rasmuson Library Historical Translation Series, vol. 13. Fairbanks: University of Alaska Press.