Protocol for Identifying, Analyzing, and Incorporating Local Knowledge, Traditional Knowledge, and Subsistence Information into the North Pacific Fishery Management Council's Decision-making Process in the Bering Sea

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Abstract:

This Local Knowledge, Traditional Knowledge, and Subsistence Protocol provides guidance for identifying, analyzing, and incorporating Local Knowledge, Traditional Knowledge, and subsistence information into the Council's process.[1] [2] The protocol is the result of a collaborative, multi-year effort from the Council's Local Knowledge, Traditional Knowledge, and Subsistence Taskforce, which is a nominated body formed under the Bering Sea Fishery Ecosystem Plan Action Module 2. The scope of this protocol, and the information herein, is specific to the Council's work in the Bering Sea region, though it could be used more widely as the information within is relevant to Council and agency staff, Council advisory bodies, and the public. The full protocol provides the Council foundational information for working with Local Knowledge, Traditional Knowledge, and subsistence information. However, the primary content for how to best identify, analyze, and incorporate LK, TK, and subsistence information within the context of the Council's process is housed in the eight guidelines in Section 4 of the protocol. The guidelines provide the reader with best practices for engaging and working with Local Knowledge, Traditional Knowledge, and subsistence information and expertise. Each guideline is followed by some ideas illustrating options for moving forward to help the Council consider what it might look like to put the guidelines into practice.

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[1] The Taskforce chose to work with the term 'Traditional Knowledge' because it resonates with existing work on Indigenous knowledge systems in the Bering Sea region.

[2] The Council's January 2020 motion specifying the tasking for this Taskforce can be found here: https://meetings.npfmc.org/CommentReview/DownloadFile?p=ce213a15-6672-4d0b-9fad-6b0719388804.pdf&fileName=D3%20MOTION%20.pdf

Acknowledgment:

The tasks assigned by the Council are not easy. The Local Knowledge, Traditional Knowledge, and Subsistence Taskforce is diverse – our members hold different perspectives and worldviews, and we use different knowledge systems, training, and expertise. The Taskforce's diversity mirrors that which operates within and across the Council's decision-making process, and it provided opportunities and challenges when developing this Protocol to inform the Council's decision-making process. We embraced these: the opportunity to support new pathways forward to provide the best available science for fisheries management in the Bering Sea; and the challenge to confront our own assumptions and limitations and explore new ways of thinking and knowing the marine ecosystem.

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List of Acronyms

Acronym	Meaning
AFSC	Alaska Fisheries Science Center
AKFIN	Alaska Fisheries Information Network
ANILCA	Alaska National Interest Lands Conservation Act
BSFEP	Bering Sea Fishery Ecosystem Plan
Council	North Pacific Fishery Management Council
EBFM	Ecosystem-based Fisheries Management
EEZ	Exclusive Economic Zone
IRB	Institutional Review Board
FMP	Fishery Management Plan
FOIA	Freedom of Information Act
FPIC	Free, Prior, Informed Consent
LK	Local Knowledge
LKTKS	Local Knowledge, Traditional Knowledge, Subsistence
MSA	Magnuson-Stevens Fishery Conservation Management Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
SAFE	Stock Assessment and Fishery Evaluation Report
SOPP	Standard Operating Procedure
SSC	Science and Statistical Committee
SSPT	Social Science Plan Team
TK	Traditional Knowledge
TOR	Terms of Reference

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1. Introduction

The Bering Sea ecosystem is a rich area of marine productivity that supports many commercial, sport, and subsistence fisheries (Huntington et al., 2013; National Research Council 1996; Springer et al., 1996). Fishermen and subsistence gatherers[3] hold deep connections to the Bering Sea as they rely on the ecosystem and its resources, such as fish, marine mammals, seabirds and more, to provide economic livelihoods, cultural wellbeing, and food security (Fall et al., 2013; Huntington et al., 2016; Vonoit Baron 2019). Indigenous Peoples across the Bering Sea region including, but not limited to, the Unangax̂, Alutiiq, Athabascan, Cupik, Iñupiaq, Yupik, and St. Lawrence Island Yupik have been connected to, and relied on, the Bering Sea since time immemorial (Carothers et al., 2021). Amidst these long-term relationships, the Bering Sea is undergoing major ecological and climatological shifts that are increasingly extreme and difficult to accurately predict; these shifts include marine heat waves and chances in sea ice extent that impact seabird populations, marine mammals, forage fish populations, and more (Cheung & Frölicher 2020; Oliver et al., 2019; Pilcher et al., 2019; Reum et al., 2020; Thoman et al., 2020).

Figure 1-1   Map of the Bering Sea
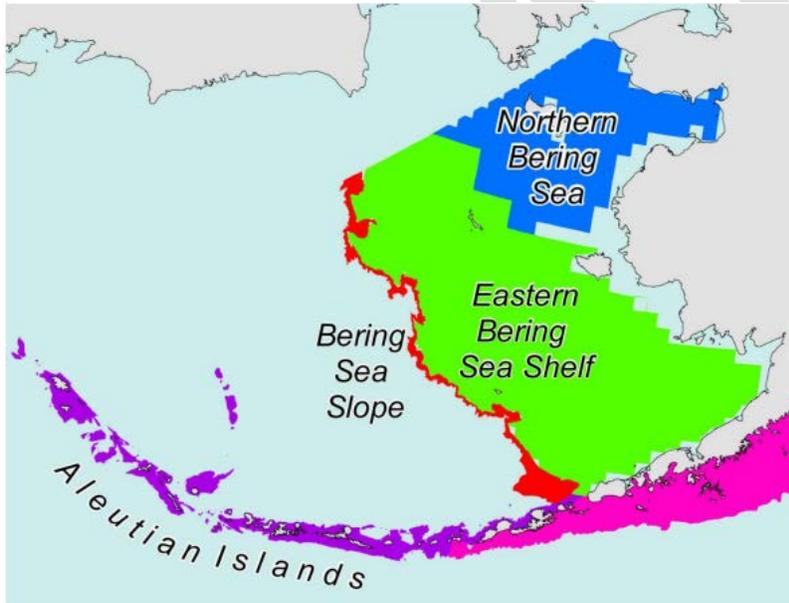
Source: Council BSAI Groundfish FMP. https://www.npfmc.org/wp-content/PDFdocuments/fmp/BSAI/BSAIfmp.pdf

The observable effects of climate change on the marine environment have resulted in a broader scope of scientific understanding of complex social-ecological systems like the Bering Sea and driven a shift towards ecosystem-based fisheries management (EBFM) approaches.[4] However, there is concern that western scientific methods of observation and study cannot keep pace with on-the-ground changes; and

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[3] The Taskforce discussed different terms for people and communities actively engaging subsistence harvesting activities. Input from Elders on the Taskforce residing in the Bering Sea region indicated the term gatherers would be the most inclusive to capture the breadth of subsistence activities and would be a term that is well understood in communities.

[4] Ecosystem-based fisheries management aims to maintain ecosystems in a healthy, productive, and resilient condition so they can provide the services humans want and need. Traditional fisheries management has focused on one species in isolation; however increased understanding of ecosystem processes and interactions has driven more effective management strategies including EBFM (NOAA 2022).

the current period of environmental changes is greatly impacting subsistence harvests and traditions (Ahmasuk et al., 2008; Bering Sea Elders Group 2011; Christie et al., 2018). Additionally, there is increased awareness that western science provides valuable data for fisheries management, but these approaches can be highly specified and ecologically and temporally narrow (Wheeler et al., 2020). The urgent need for multiple ways of knowing and understanding the marine environment is becoming more apparent (Hosen et al., 2020; Mustonen et al., 2021; Petzold et al., 2020) and is only expected to increase (Arsenault et al., 2019; Chapman & Schott 2020; Flynn et al., 2016; Latulippe & Klenk 2020; Zhongming et al., 2012).

National Standard 2 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires the best scientific information available be used to inform the North Pacific Fishery Management Council's (Council) decision-making. The best scientific information available includes western science *and* the knowledge gained and shared by people with diverse experiences working, living, and harvesting in the Bering Sea (Huntington 2000; Johannes and Nies 2007; Mulalap et al., 2020; Stephenson et al., 2016; Thompson et al., 2020). Local Knowledge (LK) and Traditional Knowledge (TK) holders may be some of the earliest observers of environmental changes because of their experiences working, living, and harvesting in specific areas (Gadamus & Raymond-Yakoubian 2015) (see Section 2 for descriptive definitions of LK and TK). LK and TK can inform understandings on fluctuations in species abundance, location, spawning areas, migrations, ocean currents, sea ice, and much more (see Johannes & Nies 2007 for an extended review on this point). These knowledge systems are not 'anecdotal' information but are rather complex systems of dynamic and living knowledge that are adaptive, and in the case of TK, is vetted by generations of knowledge holders based on the direct experiences of those that hold it, thereby undergoing their own forms of peer review and accountability just like the various western scientific disciplines (Barnhardt & Kawagley 2005; Houde 2007).

In response to increasing awareness of the value and importance of LK and TK, and the input gained from its advisory bodies, Alaska Native Tribes and Consortia, and fishery stakeholders throughout the multi-year process of developing the Bering Sea Fishery Ecosystem Plan (BSFEP), the Council initiated under Action Module 2 of the BSFEP in December 2018.[5] The Council appointed the Local Knowledge Traditional Knowledge and Subsistence (collectively LKTKS) Taskforce at its October 2019 meeting to complete the Action Module's work. At its February 2020 meeting, the Council received a report from the LKTKS Taskforce on its proposed workplan and subsequently adopted two goals for the LKTKS Taskforce:

1. To create processes and protocols through which the Council can identify, analyze, and incorporate LK and TK, and the social science of LK and TK, into the Council's decision-making process to support the use of best scientific information available in EBFM.[6]
2. To create a protocol and develop recommendations through which the Council can define and incorporate subsistence information into analyses and decision-making.

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[5] The Council's motion from December 2018 adopting the BSFEP and initiating work on two action modules can be found here: https://meetings.npfmc.org/CommentReview/DownloadFile?p=748f93e9-6f46-4ff9-91b2-001fb8f08c66.pdf&fileName=C4%20MOTION%20.pdf
[6] The Taskforce made a distinction between LK and TK, and the social science of LK and TK because LK and TK exist regardless of whether social science has been conducted to understand, analyze, or synthesize them.

Through the Council's public decision-making process, the LKTKS Taskforce has received input from the Council and multiple advisory bodies (i.e., BSFEP Plan Team, Ecosystem Committee, Social Science Planning Team, Scientific and Statistical Committee (SSC), and Advisory Panel (AP)) to develop work products that achieve the Council's goals in an approachable and useful way. As such, the LKTKS Protocol contains foundational information, best practices, and examples for working with LK, TK, and subsistence information that are tailored to the Council's decision-making process.

The LKTKS Protocol is structured to streamline the background and contextual information for the reader. Following this introduction, **Section 2** provides extended descriptive definitions of LK, TK, and subsistence for the reader. **Section 3** outlines some of the potential challenges for the Council to consider with respect to achieving its goals related to LK, TK, and subsistence information. **Section 4** contains eight guidelines that articulate best practices for identifying, analyzing, and incorporating LK, TK, the social science of LK and TK, and subsistence information. The entire protocol document provides the Council foundational information for working with these knowledge systems, but **the primary content for how to best work with LK, TK, and subsistence information within the context of the Council's process is in the guidelines.** Each guideline is followed by some ideas illustrating options for moving forward to help the Council consider what it might look like to put the guidelines into practice. **Section 5** puts forward an 'LKTKS Policy' statement for the Council to consider which is based on the eight guidelines It is the Taskforce's vision that the guidelines in Section 4 would become a short and accessible 'LKTKS Policy' statement available on the Council's Management Policies webpage that informs the Council's decision-making process and provides a concise description of the Council's approach for working with LK, TK, and subsistence information.

It is important to note that demonstrating respect for LK and TK systems, and the people that hold it, is the foundation for this work and the protocol. The LKTKS Protocol is written to inform the Council's decision-making process in a holistic way. As such, it has an intentionally broad scope to have the best chance at being useful to the Council and those working within, or engaging, its decision-making (i.e., Council and agency staff, advisory body members, and more). However, the LKTKS Protocol is action informing and as such it does not force particular actions from the Council. Additionally, the LKTKS Protocol is specific to Federal fisheries management in the Bering Sea. Certain elements may be useful in other management contexts or regions, but caution should be used when doing so.

Finally, the Council could expect its process to change over time in several ways by adopting the LKTKS Protocol and/or initiating work on the onramp recommendations. Some of the concrete ways the Taskforce anticipates that the Council's process could change is to become more inclusive to a broader array of fishery stakeholders and knowledge holders; the suite of information available to inform decision-making would be broader and more robust; likewise, the Council could anticipate there may be new or additional qualitative analyses drawing on available LK, TK, and subsistence information in analytical documents. There could also be softer changes to the Council's decision-making process as a result of adopting the LKTKS Protocol. These changes include a broader and deeper sense of cultural awareness over time and increasing familiarity among Council members, staff, and Council advisory bodies with non-economic social science.

2. Background

LK and TK holders could be the first to notice changes in the Bering Sea ecosystem, such as shifts in resource abundance, shifts in species location, or habitat changes (Berkes 1993; Clark 2016; Close & Hall 2006; Neis & Felt 2000). Such was the case in the Northeast when commercial cod fishermen communicated their observations of a decrease in the cod spawning stock on their fishing grounds to the Northeast Council long before the biological collapse of their cod fishery (Johannes et al., 2000).[7] LK and TK are best understood as knowledge *systems* that are linked to skills, observations, and cultural meanings and values often gained through experience, story, and oral histories (Aporta 2002; Aporta & Higgs 2005; Folke 1999; John 2015). The holistic nature of these knowledge systems could help the Council achieve a better understanding of environmental and climate changes in the Bering Sea as well as the different potential impacts of management actions (Ban et al. 2017; Thornton et al. 2010).

Because of their specificity and connectivity to place, there is no universally agreed upon definition of LK or TK in international law or common discourse (Mulalap 2020), although there are several legal frameworks that describe and protect Indigenous Knowledge/Traditional Knowledge in particular (for examples see CBD 1992; ILO 169 1989; UNDRIP 2007). The absence of universally agreed upon definitions of LK, TK, and subsistence led the Taskforce to discuss the key elements of these concepts early in our work to have a common understanding while working together. Descriptive definitions of LK, TK, and subsistence (which is more appropriately read and understood as the 'subsistence way of life') that are relevant to the Bering Sea region are provided directly below.

2.1   Local Knowledge

LK develops from the observations and experiences of people living, working, harvesting, and processing in specific places (Close & Hall 2006; Martin et al., 2007; Neis & Felt 2000; PFRCC 2011), and LK holders may or may not be Indigenous Peoples. LK can evolve over time, but it is inherently the product of knowledge formation and dissemination based on personal and/or shared experience.

How to identify LK holders is central question for the LKTKS Protocol (see guideline 3 in Section 4 for more information on this point), and there is no one size fits all approach. LK holders can be local people residing in villages with place- and community-specific insights to share. LK holders also include commercial fishermen that generally live outside the Bering Sea region but work and harvest there. One important distinction of LK from TK, especially in the context of commercial fishermen, is that one does not necessarily need years of experience to hold LK about an ecosystem, fishery, or species of fish. LK holders may be first time participants in a commercial fishery that make relevant observations about fish behavior in and around fishing gear, for example. On the other end of the spectrum, they may be life-long captains of fishing vessels that have valuable insights into how ecosystems have changed over several decades.

For the purposes of this protocol, the term 'LK holder' is used in reference to any, and all, people that hold information relevant to Bering Sea (e.g., village residents, fishermen, gatherers, etc.), while 'LK

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[7] The term 'fishermen' is used throughout this document because it is the preferred term of both male and female fishers to identify themselves in Alaska.

expert' is more specific and acknowledges that an individual may hold above-average knowledge about a topic that is deep in breadth and scope. An 'LK expert' may also be recognized by their peers as such.

2.2   Traditional Knowledge

The term 'Traditional Knowledge' is used, rather than other terms like 'Traditional Ecological Knowledge' or 'Traditional Environmental Knowledge', because the knowledge that is relevant to Federal fisheries management goes beyond the 'ecological' or 'environmental' components of the knowledge system. Knowledge about human-animal and human-environment relationships, as well as values associated with the marine ecosystem (e.g., Raymond-Yakoubian and Daniel 2018), and other aspects of how to live in and with the natural world are all a part of TK, and are relevant to the Council's decision-making process (i.e., understanding the impacts to fishing dependent communities and Tribes, National Standard 8).

Traditional Knowledge is also used, rather than 'Indigenous Knowledge', because Indigenous Knowledge is knowledge held by any Indigenous person, whereas Traditional Knowledge is a form of Indigenous Knowledge rooted in deep history and often regarded as expert in nature. Indigenous Knowledge is an 'umbrella term' that encompasses TK. While all Indigenous people have Indigenous Knowledge, informed by their unique experiences in the world as Indigenous people, only some people are recognized by their peers and communities as being Traditional Knowledge holders (Alaska Native Elder, personal communication).

Knowledge holders on the Taskforce and from across the Bering Sea have stated 'Traditional Knowledge' is the preferred term for their knowledge systems. The Taskforce agreed to use the definition for TK put forward in Raymond-Yakoubian et al. (2017) because it is the product of extensive work and dialogue with Alaska Native Elders and TK holders from the Bering Sea region and is thus appropriate for the scope of this Taskforce's work. As the definition below implies, TK is a dynamic knowledge system that can change, grow, or be lost over time as it is discussed, shared, and practiced throughout communities across generations (Noongwook et al., 2007; Raymond-Yakoubian & Raymond-Yakoubian 2015). Traditional Knowledge is:

> *"A living body of knowledge which pertains to explaining and understanding the universe and living and acting within it. It is acquired and utilized by Indigenous communities and individuals in and through long-term sociocultural, spiritual and environmental engagement. [Traditional knowledge] is an integral part of the broader knowledge system of Indigenous communities, is transmitted intergenerationally, is practically and widely applicable, and integrates personal experience with oral traditions. It provides perspectives applicable to an array of human and nonhuman phenomena. It is deeply rooted in history, time, and place, while also being rich, adaptable, and dynamic, all of which keep it relevant and useful in contemporary life. This knowledge is part of, and used in, everyday life, and is inextricably intertwined with peoples' identity, cosmology, values, and way of life. Tradition – and [Traditional Knowledge] – does not preclude change, nor does it equal only 'the past'; in fact, it inherently entails change." (Raymond-Yakoubian et al., 2017).*

> *"TK been handed down, undergone its own form of testing generation after generation, and is the culmination of finding the best practical skills to support Alaska Natives' ways of life."*
> *– Alaska Native Elder, personal communication*

The Taskforce spent significant time early in its work to clearly define some of the main characteristics of TK within the Bering Sea region and clarify them based on existing scholarship and our collective expertise to help the Council and others be able to better identify TK systems and TK holders. TK is an *evolving* knowledge system *built over generations* as people learn from the places where they live, work, and interact with their surrounding environment. Thus, it is appropriate to engage with TK as a process because knowledge production is a *social process* with situated experience and *cultural meaning* (Berkes 2009, 151).

TK is shared is usually *shared orally* through stories while learning under the guidance of *Alaska Native Elders* (FAI 2008). Alaska Native Elders are held in high regard in their communities and Tribes. The term 'Elder' carries responsibilities for those who bear the title as they provide critical connections to families, communities, and regions. Elders are knowledge bearers, language bearers, and culture bearers (*FAI, 2021, Alaska Native Governance and Protocols Dialogue*).

2.3   Subsistence

The State and Federal governments define and regulate '*subsistence uses*' rather than the core term of subsistence. The State of Alaska defines 'subsistence uses' as:

> [T]he noncommercial, customary and traditional uses of wild, renewable resources by a resident domiciled in a rural area of the state for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation, for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken for personal or family consumption, and for the customary trade, barter, or sharing for personal or family consumption (AS 16.05.940[33].

Federal policy, as designated under the Alaska National Interest Land Conservation Act (ANILCA) of 1980, recognizes the difference between Native and non-Native subsistence uses, notably the role of subsistence in Alaska Native cultural existence.

ANILCA also established a "rural preference" for subsistence uses and, among other things, Title VIII of ANILCA creates a priority for "subsistence uses" over the taking of fish and wildlife for other purposes on public lands (i.e., commercial and sport uses) (16 U.S.C. 3114). As such, ANILCA imposes obligations on Federal agencies with respect to decisions affecting the use of public lands, including a requirement that they analyze the impacts of those decisions on subsistence uses and needs (16 U.S.C. 3120). ANILCA defines "public lands" as lands situated "in Alaska" which, after December 2, 1980, are Federal lands, except those lands selected by or granted to the State of Alaska, lands selected by an Alaska Native Corporation under the Alaska Native Claims Settlement Act (ANCSA), and lands referred to in section 19(b) of ANCSA (16 U.S.C. 3102(3)).

There are some importance addendums to ANILCA. In 1987, the U.S. Supreme Court ruled that ANILCA's use of the phrase "in Alaska" refers to the boundaries of the State of Alaska and concluded that ANILCA does not apply to the outer continental shelf. Because the Council's jurisdiction on Federal waters falls on the exclusive economic zone under the (*Amoco Prod. Co. v. Village of*

Gambell, 480 U.S. 531, 546-47 (1987)). However, the Council and the National Marine Fisheries Service (NMFS) aim to protect subsistence uses within the Bering Sea EEZ, pursuant to other laws such as the National Environmental Policy Act (i.e., requires an analysis of the environmental and socioeconomic impacts of Federal actions) and the MSA (i.e., National Standard 8).

Understandings of 'subsistence' vary across Alaska Native cultures and communities, and those understandings may not align with State of Alaska and/or Federal definitions for subsistence because those definitions may not adequately capture what subsistence *means* to Alaska Natives but continuing to impact Alaska Natives' ways of living. The subsistence way of life is integral to the nutritional, spiritual, and economic wellbeing of Alaska Natives across the Bering Sea region (Callaway 2020; Green et al., 2020), and as such, extends well beyond quantifications of subsistence uses in economic terms related to production, distribution, and consumption, including comparative cost estimates and replacement values (e.g., Wolfe 2004). From an Alaska Native perspective, subsistence "encompasses hunting and gathering activities which have a deep connection to history, culture, and tradition, and which are primarily understood to be separate from commercial activities" (Raymond-Yakoubian, Raymond-Yakoubian, & Moncrieff 2017). This perspective does not suggest that Alaska Natives do not engage in commercial or cash economies. Rather, Alaska Natives can and do deliberately engage in commercial and market-oriented economies, while maintaining subsistence practices. The cash economy often supports subsistence activity through the purchase of gear, supplies, or other tools creating what is often referred to as 'mixed economies' (Aslaksen et al., 2008; Reedy-Maschner 2009).

Finally, it is important to note that subsistence practices and TK systems are inseparable. TK informs where, when, how, and why people practice subsistence activities that are central to sharing as well as food and water security (Kishigami 2021; Nissin & Evengard 2015; Panikkar & Lemmond 2020; Turner et al., 2013). In turn, the continuation and applicability of TK systems for subsistence depends on ongoing opportunities for people and their communities to practice their traditions as part of their subsistence way of life.

3. Challenges to achieving the Council's goals related to LK, TK, and subsistence

As stated in the Introduction, the LKTKS Protocol contains foundational information for the Council, staff, Council advisory bodies, and the public with respect to LK, TK, and subsistence information. The following section outlines some of the potential challenges the Council could expect moving forward, should it adopt the LKTKS Protocol. The discussion on these potential challenges precedes the guidelines as the primary protocol content because the substance of these challenges provides the reader with important context for understanding those guidelines. It is anticipated that these challenges could be mitigated over time by working to achieve the guidelines articulated in Section 4, but **achieving the Council's goals related to LK, TK, and subsistence would likely require new approaches for communication and coordination, building relationships and trust with LK and TK experts and subsistence gatherers, improving equity, and finding new ways to access and use information.**

3.1   Communication, coordination and buy-in

New processes to identify, analyze, and incorporate LK and TK, the social science of LK and TK, and subsistence information would likely require greater communication and coordination among the entities that produce materials that inform Council decision-making. When the Council created this Taskforce and tasked a protocol to be developed, the Council also expressed interest in having a protocol that could inform its decision-making *process* rather than a specific component(s) of it. The Council works closely with many partners including the NMFS Alaska Regional Office when developing recommendations for management measures. NMFS is the Federal agency responsible for implementing regulations that ensure the productivity and sustainability of Alaska's fisheries and fishing communities. The Council also works closely with the Alaska Fisheries Science Center (AFSC), a Federal entity that conducts research to monitor the health and sustainability of fish, marine mammals, their habitats, and the communities that depend on them.

If the Council the Council adopts the LKTKS Protocol, that action could act as a first step towards improving communications and coordination among these three primary entities by conveying the Council's expectation and approach to working with LK, TK, and subsistence information, especially as it relates to the guidelines in Section 4. However, it is anticipated that working to achieve the Council's LK, TK, and subsistence goals via the protocol would require greater collaboration and buy-in overtime (i.e., more than the Council adopting the protocol) from agency partners, staff, and others.

3.2   Engagement and equity

Encouraging broader engagement in the Council's decision-making process would be important for building the relationships necessary for working with LK and TK holders and incorporating their information into the Council's decision-making process. The Council's decision-making process is engaged by fishery stakeholders and Tribes from across Alaska and the nation. The Council has consistently heard from rural communities and Tribes from across the Bering Sea region about challenges to meaningfully participating in the Council's decision-making process (Raymond-Yakoubian 2009), and the Council has worked to improve its process as well as outreach and engagement through its Community Engagement Committee (formerly the Rural Outreach Committee) and initiating work on some of the committee's recommendations (i.e., assigning the Rural Fishing Community and Tribal Liaison responsibilities to Council staff, providing ongoing cultural awareness trainings, etc.).

However, as described above, LK and TK are knowledge systems that live with people. TK is usually shared orally so it would be important for Alaska Native Elders and potentially other TK holders (e.g., Elders in training) to have the means and ability to share their knowledge and perspectives with the Council and its advisory bodies. The travel costs associated with participating in Council and advisory body meetings can be significant. Additionally, English may be a second language for Alaska Native Elders that may want to share TK with the Council and the Council does not currently use language translation services (Berger 1985). Keeping these challenges in mind, the Taskforce has had dialogue and would encourage the Council to consider ways to create equity in its decision-making process in broader terms than the costs and benefits related to management actions (Anderson et al., 2019; Carothers 2011). Expanding conceptualizations of equity in the Council's decision-making process could include elements related to the ability of different identities and values to be represented and meaningfully engage the

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Council's decision-making process (Allison et al., 2012; Capistrano et al., 2012; Carothers et al., 2021; Ellam Yua et al., 2022; Donkersloot et al., 2021; McDermott et al., 2013; Schreckenberg et al., 2016).

There is no one size fits all approach to building equity and the Taskforce does not provide specific recommendations for doing so intentionally because what would constitute equity, or bring it about, is highly contextualized. Offering narrow definitions or examples for 'what is equitable' could limit the Council's ability to work towards equity over time.

3.3 Time and trust

Incorporating LK and TK into the Council's decision-making process is going to take time to build the requisite relationships and trust. Alaska's history is tied to the material and cultural displacement of Alaska Native peoples which has fostered mistrust between Alaska Natives and government agencies (Carothers 2010; Gritsenko 2018; Lyons et al., 2019; Stuhl 2016). Some Alaska Native Elders/TK holders that could engage with the Council and its decision-making process may be among some of the early generations taken from their families and communities to attend boarding schools (Torrey 1978) or impacted by other hurtful colonial activities. It would be important for the Council and those that work or engage in its decision-making process to be mindful of those histories when building relationships with Alaska Native Elders/TK holders (Ban et al., 2018; Hill et al., 2020; Lam et al., 2020; Mastrángelo et al., 2019; Wilson et al., 2003).

It is anticipated there could be additional sensitivities related to people's willingness to share knowledge with scientists, at Council workshops, or via public comments shared with the Council or its advisory bodies if doing so means they would lose control over how, where, or when that knowledge is interpreted and used (Kovach 2021; Lanzarotta 2020; Nixon 2011; Smith 2021). While unintended, it could be easy to share information in documents that inform Council decision-making (e.g., analyses, presentations, reports, etc.) in a way that does not reflect how the knowledge holders intended it to be conveyed which can erode trust.

3.4 Intellectual property rights and confidentiality

Working to build trust and acknowledge intellectual property rights in an appropriate way with LK and TK holders may require changes to how staff and/or AFSC scientists approach data sharing and use (Carroll et al., 2019; Ellam Yua et al., 2022; Johnson et al., 2015; Pulsifer et al., 2012; wilson et al., 2021). For example, the Freedom of Information Act (FOIA) provides the public the right to request access to records from any Federal agency. Federal agencies are required to disclose any information requested under the FOIA unless it falls under one of nine exemptions, which protect interests such as personal privacy, national security, and law enforcement. Although every effort to protect privacy and confidentiality of information may be made, **Federal processes are limited in ensuring full confidentiality given the possibility of a FOIA request.** This reality could impose constraints on people's willingness to engage and share their knowledge with the Council, staff, or AFSC scientists because full protections for privacy and confidentiality cannot be guaranteed.

FOIA is just one specific example given the MSA's procedural requirements dictate that the business of the Council (i.e., meetings) are open to the public. Moving forward, it would be important to ensure knowledge holders are fully aware of confidentiality limitations prior to information sharing. Free, Prior, and Informed Consent (FPIC) is a term used to indicate the need for a fully informed and transparent consent process before engaging in any activity which may affect past, present, or future research or decision-making. FPIC applies broadly but it is also understood in global governance settings as an underlying commitment to respect for the sovereignty and self-determination of Indigenous Peoples (UNDRIP 2007). As sovereign entities, Alaska Native Tribes have a unique political relationship with the United States government and require some additional considerations as Tribes hold independent rights to govern themselves (Lindemuth 2017).

3.5   Data availability

Being able to incorporate LK, TK, and subsistence information meaningfully and consistently into the Council's decision-making process would require increased social science capacity and prioritization of research related to LK, TK, and the subsistence. Council staff do not conduct original research when preparing analyses or papers that inform the Council on the potential impacts of management actions. Within a community, LK and TK are rarely recorded in written form (Burgess 1999). The social science of LK and TK often uses ethnographic research methods and oral histories to document these knowledge systems in a written format.

> *"In communities, TK is not compiled in print. The traditional ways of doing things have been handed down through generations by word of mouth and hands on learning by doing and living the life. Life experiences and observations have been to live the ways of their forefathers and to carry on their traditions, culture, and heritage for the next several generations."*
> *– Alaska Native Elder, personal communication*

Council staff's ability to use the social science of LK and TK in documents that inform the Council's decision-making hinges on the availability of that information and whether it can be accessed, analyzed, and incorporated in the timelines that analytical staff work under.

Recognizing this challenge, the Taskforce developed a new process for collating source of LK, TK and subsistence information in the LKTKS search engine. The search engine contains sources of LK, TK, the social science of LK and TK, and subsistence information including peer reviewed articles, databases, narrative sources of information, reports, technical memos, and other sources of information. While the search engine could be an important and meaningful step forward for making LKTKS information more accessible, there are significant data gaps. Staff have used the search engine when preparing recent Council analyses (e.g., the BSAI Halibut Abundance-based Management of Amendment 80 Prohibited Species Catch Limit, BSAI Pacific cod small vessel access, and the BSAI snow crab rebuilding analysis) that did not return robust results relevant to the region or scope of the Council's action in those specific instances.

The absence of accessible and usable LK and TK social science that is process- or action-specific does not mean these knowledge systems do not have contributions to make to the Council's decision-making process; rather, this observation indicates a need for building the necessary relationships to foster trust

and willingness to share knowledge, as well as additional social science of LK, TK and subsistence that is specific to the Council's jurisdiction. This would likely require additional capacity and human resources on multiple levels.

For example, AFSC provides the Council extensive scientific information to inform its decision-making, but there are limitations in AFSC's social science capacity. Nationally, there are 12,000 employees at NOAA (of which 4,200 are employed within NMFS) (NOAA 2021). Less than 1% of NOAA scientists are social scientists, and the vast majority of those are economists (Kast and Krepp in development). Within AFSC there are approximately 400 staff, two of whom are non-economic social scientists (ibid). This capacity gap presents a challenge to conducting the necessary social science to work with LK and TK systems to ensure this information could be incorporated into a variety of assessments, reports, and analyses that inform Council decision-making.

One approach to addressing this challenge could be the Council identifying specific social science research priorities. An additional approach to capacity building is through the Alaska Fishery Information Network (AKFIN). AKFIN is the primary platform through which analysts obtain raw fisheries data. While AKFIN does not currently house qualitative information (e.g., survey responses, interviews, oral histories), it may be possible to expand the database to include relevant qualitative data. Moving forward there could be new opportunities to partner with AKFIN to explore possibilities for greater access to social science data that could be used to inform Council decision-making. Doing so would require changes at the outset of project development and design to ensure participants are aware of how their shared information could be used.

4. Guidelines and best practices for LK, TK, and subsistence information

The full LKTKS Protocol provides the Council foundational information for working with these knowledge systems (e.g., by providing definitions, identifying possible challenges to incorporate LKTKS into the Council's decision-making process, and offering illustrative ideas to move this work forward, etc.). However, **the primary content for how to best identify, analyze, and incorporate LK, TK, and subsistence information within the context of the Council's process is housed in the following guidelines**. Each guideline is followed by some ideas illustrating options for moving forward to help illustrate for the Council what it might look like to put the guidelines into practice. It is important to note that, while the guidelines are presented individually, they should be considered as a package of information for the Council. In other words, the Taskforce does not intend the Council would pick a subset of guidelines to adopt but rather be adopting the guidelines as a package, should it adopt the LKTKS Protocol.

4.1 Guideline 1: Demonstrate respect for LK and TK systems

Demonstrating respect is foundational for achieving the Council's goals related to LK, TK, and subsistence (Bentley et al., 2019; Djenontin & Meadow 2018; Pelletier, Gélinas & Potovin 2019; Reid et al., 2021). Respect for LK and TK knowledge systems could be demonstrated in many ways throughout the Council's process, but three specific examples are expanded on here.

First, within the Council's decision-making process, there are multiple (and sometimes competing) perspectives and values. If LK or TK were to be shared directly with the Council (e.g., via public comment), with staff (e.g., personal communications informing their understanding of a fishery), or with AFSC scientists (e.g., during research activities), it would be important to *keep an open mind* when different worldviews or information related to fisheries and management are shared (Koleszar-Green 2018; Latulippe & Klenk 2020). For example, Figure 4-1 captures an extensive quote from an Alaska Native Elder explaining how commonplace terms like 'optimum yield' (i.e., National Standard 1) in the Council's decision-making process are not compatible with TK systems and Alaska Natives' cultural worldviews. This is just one example; but it illustrates the importance of being mindful of the underlying differences and assumptions in the knowledge systems (and their subsequent observations) brought forward to help inform the Council's decision-making.

Second and related, one way to demonstrate respect is to be aware that LK, and TK holders may feel dismissed when their knowledge is described as *'anecdotal'* (Huntington 2000; Johannes et al., 2000; Ruddle 1994). As described in Section 2, LK and TK are based on people's experiences, and describing that knowledge as 'anecdotal' as compared to western science could be offensive and erode the goodwill of knowledge holders to re-engage. There are some additional sensitivities with labeling TK systems as 'anecdotal' information as they are based on factual observations about the environment, current and past uses or relationships to particular resources, undergo forms of peer review through its testing across generations, as well as it being directly linked to key ethics and values that form culture, all of which are central to people's identities (Burgess 1999).

Finally, and more generally, when the Council or staff engage work with knowledge holders in any capacity—scheduling outreach and engagement trips, workshops, or working to identify or access LK and TK information for Council analyses— a best approach would be *moving at the pace of trust* (an idea shared by First Alaskans Institute, Alaska Native Governance Protocols Dialogue). Moving at the pace of trust could require adjusting working timelines to the extent practicable and intentionality with ensuring there is mutual understanding. One practical example could be extending the time between initial review and final action or between the adoption of alternatives and initial review.

Ideas for moving forward:
- Be clear and transparent about why staff is reaching out (e.g., to gain contextual information about how a fishery operates, to assess the public's interest in a potential workshop, to notify members of the public of an upcoming meeting, etc.), in what documents or aspects of the Council's process any shared knowledge may be used, and whether there are any foreseeable potential impacts to sharing knowledge in written or oral forms.
- Work to understand community and Tribal history (e.g., how the Tribe refers to itself, primary subsistence species or practices, etc.) when analyzing community impacts, or prior to participating in community engagement and outreach trips. This could help to build rapport and show respect by conveying and understanding of some cultural sensitivities.
- Try to understand the unique context of the LK and TK. Because this knowledge is experiential and multigenerational, it cannot be separated from the social and environmental context where it is gained or from who it is that holds it.

Figure 4-1 An example of different worldviews in fisheries management

Carothers et al. (2021) discuss the deep, interconnected relationship between salmon and Alaska Natives. Below is an extended quote from Ahtna Elder and coauthor Wilson Justin describing the differences between Eurocentric and Athabascan worldviews of fish and fishery management.

"We're all familiar with how, in English, things get broken into specific aspects of activities and defined by activities. You go to play a hockey game and you know what it's all about. Hockey game has rules. You don't play hockey in a basketball game. Doesn't work like that in Athabascan. It's all one game. It's all one resource. It's all one creation, and it's all one set of responsibility. So you have to learn not only how to accommodate salmon and river streams, you have to consider yourself a part of the salmon world. Not the other way where the salmon is a part of your entitlement for catch. You're intruding into salmon realm, and when you intrude into salmon realm, you have to give fair and just accounting of yourself. You do that with ceremony of prayers and songs. And then it goes another step further. You go caribou hunting. Well, there is no difference between hunting caribou and catching salmon. You still have to account to the caribou; you're still intruding in their world. Okay you go one step further, let's do sheep. Well there's no difference between sheep, caribou, and salmon. You're still assigned the responsibility of accounting for your intrusion into that world. Now that's extraordinarily easy to speak to in Athabascan, and I've found it extraordinarily, virtually impossible to speak to in English, in the western world.

Just think of this term "sustained yield." {laughing} In Indian, that would translate to, say into salmon, "You owe me your life, so get up here right now and die." That's the way it would translate in Athabascan from English, the sustained yield concept. That's why you never hear me say sustained yield—you just can't do that. The salmon, you're intruding in the salmon's world. So, it would be so offensive in our way that if you spoke like that they would run you out of camp until you go back to where you come from. That would be enough for the traditional marriages to be broken up and separated, which is almost impossible to do. So that's the level of offense you're looking at when you use these doggone terms like sustained yield. Wilson Justin, interview, Anchorage, Alaska, USA, September 2019

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4.2 Guideline 2: Understand and use the appropriate concepts for LK, TK, and subsistence

Having a sound understanding of LK, TK, and subsistence and using mutually understood terminology when working with LK, TK, and/or subsistence information is essential for creating shared understanding and improving communication and collaboration among the Council, staff, knowledge holders, and other members of the public. For this reason, the Taskforce has put forward descriptive definitions for LK, TK, and subsistence that are specific to, and appropriate for, the Bering Sea region (see Section 2).

For example, and as stated above, the Taskforce intentionally chose 'Traditional Knowledge' rather than 'Indigenous Knowledge' or 'Traditional Ecological Knowledge' because 'Traditional Knowledge' better reflects how Alaska Native Tribes and communities throughout the Bering Sea understand and communicate their own knowledge systems. While TK is held and transferred across generations by Indigenous Peoples, not all people who are Indigenous hold TK (Mauro & Hardison 2000; IPCC 2022; UNESCO 2022; PFRCC 2011). Additionally, phrases like 'Traditional Ecological Knowledge' may not accurately reflect the ways Indigenous communities think about their knowledge and ways of being.

Nevertheless, definitions for LK, TK, and subsistence do vary across communities, Tribes, and regions so it is important to avoid assumptions that by using the same word, everyone has the same understanding. If or when Tribes hold different definitions for TK, it would be appropriate to use Tribal-specific definitions for their knowledge systems which are more likely to be highly specific and contextualized (Whyte 2013). These dynamic underscores the importance of working to understand community and Tribal history to understand how they may refer to their knowledge systems (see guideline 1, ideas for moving forward).

Ideas for moving forward:
- To the extent practicable and needed, adjust action planning or work timelines to allow for adequate time to ensure mutual understandings of these key concepts and to demonstrate respect (see guideline 1).
- If or when staff are working on documents specific to the Bering Sea, and entities have alternative definitions of LK, TK or subsistence, staff could include a description the alternative definition in the document under review to provide additional context for the Council and its advisory bodies.

4.3 Guideline 3: Appropriately and accurately identify LK and TK, LK and TK holders, the social science of LK and TK, and subsistence information

Appropriately and accurately identifying LK, TK, LK and TK holders, the social science of LK and TK, and subsistence information is essential for ensuring the best scientific information available is used to inform the Council's decision-making process as well as demonstrating respect for knowledge holders. That being said, there is no one-size-fits-all approach for identifying LK or TK holders, subsistence gatherers, or subsistence information more broadly. The following discussion highlights different ways the Council, analytical staff, and Council advisory bodies could utilize best

practices for identifying knowledge holders or experts as well as different types of subsistence information.

Within the context of the Council's decision-making process, LK holders could be fishermen, community residents, shoreside processing workers, and more. As described in Section 2, one does not necessarily need years of experience to hold LK. LK holders that fish commercially may have on-water or shoreside experience gained from one or many seasons. A community-based approach to identifying LK holders could focus on identifying residents that are youth, adults, or Elders. LK holders within a community would know the timing of the different harvesting or gathering seasons and have gained their knowledge from experience, oral histories, or books and articles (Alaska Native Elder, personal communication). However, if the Council aims to identify LK *experts*, they should seek input from appropriate organizations, fishing associations, communities, and groups of stakeholders, as LK *experts* could be identified by their peers as having a particular level of experience and expertise.

One of the key differences between LK and TK holders is the length of study and depth of understanding that is gained over years or decades as compared to centuries of accumulated learning and place-based observation (Absolon 2022; Berkes 2017). A second key difference between LK and TK holders that can help to identify this expertise is that LK holders may or may not be Indigenous whereas TK is held only by Indigenous Peoples. TK holders could be identified by their peers as being Alaska Native Elders who go out and gather, people who have had lifelong mentors, know how to gather and prepare food, where to go for the seasonal migrations, know and make oral histories and know the real life histories, can predict climate or weather patterns based on prior incidents, and have fished every seasons for over 60 years (Alaska Native Elder, personal communication).

> *"When citing experience of others, the Yupik will identify the source or sources of information and the people through whom it has been transmitted. When a person's own observations and experience confirm such information, then a person can describe it as a known fact to him or her... [TK] is continually discussed in the community and while engaging in the activities that develop and require traditional knowledge, such as hunting, boating, or traveling over or amid sea ice. Children and youth are taught to remember stories and information accurately, to 'put it into your body,' by techniques such as keeping one's head still while listening. Songs may also be used to memorialize notable events. The Yupik language is a key element of knowledge transmission..." – Noongwook et al., 2007, 48*

TK holders that are identified by their peers as someone with the expertise and authority to share knowledge are often Alaska Native Elders, and they are in service to their community sharing knowledge, history, language, and other aspects of their culture. However, it is important to note that a community may sometimes identify someone as an Alaska Native Elder, though the Elder may not see themselves that way. Some Alaska Native Elders are among the first generations removed from their communities to attend boarding schools, or other experiences to separate them from their communities and cultures and may feel they are still learning. Other knowledge holders may also be Elders-in-training, individuals that are younger and learning. Finally, there are Alaska Native Elders who bear the title because of their age but they may not necessarily have knowledge to share.

Sharing TK is not taken lightly as holders are recognized as being responsible for protecting and caring for this knowledge and are accountable to their Tribes and communities (*FAI, 2021, Alaska Native*

Governance and Protocols Dialogue). As such, TK systems have their own integrity and means for peer review and determining what western science calls validity as TK holders undergo processes that identify them as experts as the knowledge is vetted across generations (Callaway 2020; Donkersloot et al., 2021; Barnhardt & Kawagley 2005).

Subsistence information encompasses a range of technical and cultural knowledge and practices. For example, subsistence information can include knowledge and data on subsistence uses, harvest areas, and practices, including sharing networks within and between kin and communities. It can also include information relating to the non-economic and communal dimensions of subsistence, such as cultural values and relationships. Broadly speaking, subsistence information is inclusive of basic information on subsistence users (i.e., who), as well as the social, economic, and institutional aspects of subsistence conditions, patterns, and changes (i.e., how, where, why, and when). Subsistence harvesters and gatherers could be identified as residents of a community, having experience as active gatherers (though they may be inactive currently), having experience preserving most foods, and hunt or fish all seasons. There may also be differences between the followers and leaders within a community to be aware of (Alaska Native Elder, personal communication).

Ideas for moving forward:
- If a public testifier clearly identifies themselves as an LK or TK holder, and that they are deliberately sharing their knowledge in public comment, it would be appropriate for the Council and/or its advisory bodies to accept that identification. The Council's process is open to the public and its meetings, as well as the SSC and AP, are recorded. While LK and TK may be shared in these public meetings, prior to those comments being directly quoted, such as in an SSC report to the Council explaining its management recommendations, there could be additional steps to ensure permission has been given to share or use that knowledge further. General reference, however, would be appropriate.
- As appropriate, engage and work with people who can effectively work across different boundaries– these are people familiar with the Council process (e.g., have a sense of the timing of upcoming meetings and agendas) and may know who in their network, community, Tribe or fishing association could provide relevant knowledge and be willing to connect. This approach could be relevant for many elements of the Council's process, but especially as staff work to schedule workshops, outreach trips, or inform Alaska Native Tribes about upcoming actions.
- When staff are preparing analyses to inform the Council's decision-making, they could use the LKTKS search engine as a first stop to understand whether there are written sources of LK, TK, the social science of LK and TK, or subsistence information that could be available to inform an analysis of impacts. The search engine contains sources of LK, TK, the social science of LK and TK, as well as subsistence information including peer reviewed articles, databases, narrative sources of information, reports, technical memos, and other sources of information.
    - AFSC scientists may also find the LKTKS Search Engine useful as they develop project proposals, publications, and annual reports that inform the Council.
- To the extent practicable, documents prepared to inform Council decision-making that include LK or TK should describe the *type* of information that was identified, the source that is being

used, and any permissions that were obtained to access and use them if such permissions were required.

4.4   Guideline 4: Engage in early and frequent communication with relevant entities

Engaging in early and frequent communication with all relevant entities (examples include Alaska Native Tribes or Tribal Consortia, fishing or processing associations, co-management bodies, CDQ groups, etc.) can help build relationships and to provide sufficient time to partner with LK and TK holders or subsistence gathers so the best information can be included to inform the Council's decision-making.

What is considered "early" communication would likely differ depending on who is being engaged and in what context. For example, 'early' in the Council's decision-making process could be as soon as the Council initiates an action with a discussion paper. From a Tribal government's perspective, early could mean receiving notice of a Council issue or action at least a month in advance so the Tribe has the capacity to place the issue on its upcoming agenda(s). Likewise, "early" could mean having opportunities to engage with NMFS Alaska Regional Office, the Council, and Council staff via Tribal Consultations as soon as a discussion paper is tasked by the Council or even earlier as ideas on issues take shape. Two-way dialogue and opportunities to participate are meaningful to Tribes and communities, and they could help to show the Council is listening to Tribal concerns in a meaningful way (Personal communication, Alaska Native Elder).

Early and frequent communication would likely require well-established communication pathways, but often the most effective communication happens through shared reciprocal relationships. If a long-standing relationship exists, and it is one built on trust and respect, people can pull from that history to re-engage with each other. While a particular action may end, the relationships with knowledge holders could continue.

Ideas for moving forward:
- If or when the Council is looking to engage entities (e.g., provide outreach presentations, participate in outreach trips, create communications materials about its decision-making process) that may be impacted by a management action, Council staff could prioritize work with AKFIN to identify those communities and associated Tribes or Tribal Consortia most substantially engaged in, or dependent on, the Federal fisheries likely to be impacted by the action. Additionally, Council staff could work with Tribal Consortia who may be able to identify Tribes and/or communities that may also be impacted but are not substantially engaged in or dependent on Federal fisheries (e.g., in-river salmon users). With this information in hand, staff could then identify the appropriate bridging people and/or knowledge holders with whom to engage, and staff could share this information with agency partners to support any potential future engagement or Consultation sessions.
- To the extent practicable, staff could continue to look for opportunities to print and mail Council or advisory body meeting materials, participate in outreach presentations as requested by Tribes, communities, or the meetings of other regulatory bodies.

- As appropriate and needed, staff could have open dialogue with LK and TK holders about confidentiality constraints (i.e., FOIA and the Council's public process more broadly) and whether they would be identified/attributed in analytical documents or presentations.

4.5 Guideline 5: Adhere to local and cultural protocols that entities have established for sharing and communicating LK, TK, or subsistence information

One key issue for this protocol to address is that of whether knowledge holders are informed and agree to share information. Many Alaska Native Tribes, communities, and fishing associations have protocols in place for sharing information and intellectual property. **Adhering to these existing local and cultural protocols that entities have established for sharing and communicating LK or TK is foundational for demonstrating respect and a first step towards providing opportunities for free, prior, informed consent to information sharing.** The following discussion provides different examples for adhering to protocols for information sharing established by Tribes, communities, and fishery stakeholders (though primarily through fishing associations).

Council staff may look to LK or TK holders that are members of Alaska Native Tribes or residents of Tribal communities for a variety of reasons that could require asking whether local protocols for information sharing exist (e.g., requesting access to a Tribal archive, scheduling outreach trips, engaging in workshop planning, noticing of public meetings, etc.). In these instances, staff could contact those people who span multiple boundaries (see guideline 2) and may point staff to the appropriate contact or reach out to Tribal/Alaska Native Tribal Consortia/Organization's offices directly (see guideline 3), but it would be important to make this effort early in the process to allow for adequate time for meaningful engagement and thoughtful dialogue (see guideline 4).

It is expected that Tribal protocols could vary across communities and Tribes and from this protocol which was developed for the Council and its decision-making process. For example, the Native Village of Kotzebue developed a protocol that is specifically for researchers working in that community which outlines clear principles for researchers to follow when engaging with the village.

> *"All researchers working in **Qikiqtaġruŋmiut** (Native Village of Kotzebue Citizens) territory or with **Qikiqtaġruŋmiut** have an ethical responsibility towards our Tribal culture, environment and citizens. The following principles have been adopted to provide guidance for researchers in any and all fields. This statement intends to promote mutual respect and communication between scientists and the Tribe."*[8]

The Native Village of Kotzebue specifically crafted these principles related to communication, planning, confidentiality, Intellectual Property Rights, etc. to reflect the ideas and concerns resonate within that community. Other Tribes or communities may also have protocols, but which are not written down. It is important to ask if protocols exist, if they are written, or if the Tribe or community would like to share them orally.

If Tribal entities or communities do not have local and cultural protocols in place for information sharing and communication, it would still be important for staff to convey their purpose for reaching out and how

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[8]*The full Native Village of Kotzebue Research Protocol can be found here:*
https://www.arcus.org/files/page/documents/27026/native_village_of_kotzebue_research_protocol_updated_july_2018.pdf

information could be shared. Knowledge holders may feel uncomfortable or be reluctant to share information because the Council's process is open to the public, the meetings are recorded, and written materials are available online.

> *"No library is safe. As with the unwritten laws, some things are not ever in print. If TK is stored, it will only collect dust. There needs to be TK holders in place for the benefit of the Council."*
> *—Alaska Native Elder*

Just as Tribes and communities have protocols in place for information sharing, so too do different fishery stakeholder groups but especially fishing associations. Staff looking to identify and engage LK holders or experts could consider the different fishery sectors of interest, who may represent them, and who may have the appropriate decision-making authority and personnel relevant to the Council's action or objectives. When engaging fishermen or associations to work with LK holders, it is important to clearly describe the purpose of the work, how the shared information would be used, and any limits to data confidentiality (just as it is working with Alaska Native Tribes and communities).

> *"…working with an owner-operated fleet may require a broad outreach campaign. Alternatively, achieving credibility with a rationalized fleet may necessitate conversations with the fishing cooperative to design methods that reflect the fleet's collective nature. Unlike owner-operated fisheries, fishing and business decisions in rationalized fleets are not made solely by the captain, but as a collective of multiple corporate- and vessel-based perspectives.*" *–Murphy et al. (2020 Marine Policy)*

Staff working with entities sharing or representing knowledge holders would likely need to adjust their timelines for completing work to the extent practicable to allow for early and ongoing communication to determine what information could be shared publicly. All parties would need to have a clear understanding of how information could be used in the Council's decision-making process and where (e.g., written documents and/or presentations). While unintended, not following local or cultural protocols could have unintended negative consequences for knowledge holders (e.g., reputational and economic costs) as well as the Council's overall decision-making process (e.g., loss of rapport, impacts to relationships, individual's loss of willingness to engage in the future).

Ideas for moving forward:
- The Council could consider MOUs for long-term and specific data-use agreements with Tribes and communities providing LK and TK information, such as environmental changes and/or spatial mapping of subsistence harvest and processing activities.

- As able, staff could ask questions to better understand an entity's established hierarchy for sharing information (e.g., a crew member may need permission from the captain to share information) and share how other existing protocols informed their methods and approach in an impact analysis.

- It would be important for the Council, staff, and advisory body members to be mindful of the questions they ask and who may be in the room when information is shared. For example, some fishermen might prefer to talk 1:1 or be hesitant to discuss their operations in public testimony.

4.6 Guideline 6: Acknowledge and account for differences in capacity among relevant entities

There could be different opportunities for individuals, communities, fishing associations, Tribes, etc. that may hold or be able to share LK and TK to engage the Council's decision-making process, which could in turn impact the extent to which the Council is able to engage and incorporate these knowledge systems. **Acknowledging and accounting for differences in capacity among relevant entities is important for constructing an environment that is inclusive of LK, TK and subsistence experts and building relationships with them.**

For example, some fishing associations or Tribal Consortia have full-time staff that regularly engage the Council's process while others do not. Representation can provide opportunities for two-way information sharing (e.g., fishing sectors learn about upcoming issues that may impact their fishery and in turn provide public comments) and relationship-building as people participate in the Council process and become familiar with one another. Additional differences in capacity to engage could include ceremonies and celebrations occurring in Tribal communities as well as key subsistence harvesting seasons/activities that overlap with Council or advisory body meeting dates.

The Council has received public testimony from Alaska Native Tribes and their representatives, as well as rural communities, about the logistical challenges to participating in its process. The Council has also worked to address these challenges through its Community Engagement Committee (formerly the Rural Outreach Committee). There is significant overlap between this Taskforce and the Community Engagement Committee on some aspects of the Taskforce's work because incorporating LK, TK, and subsistence information would likely require stronger relationships with, and greater engagement with knowledge holders and their communities in the Council's process.

Ideas for moving forward:
- The Council and its advisory bodies could work to continue to prioritize virtual participation options for their meetings.
- To the extent practicable and depending on the advisory body's membership or the anticipated attendance, advisory body meetings could be scheduled to avoid key ceremonies, celebrations, and subsistence activities. More generally, it would be important to avoid making assumptions about capacity and be aware that a lack of initial response may not necessarily signal disinterest in participating.
- As staff are able, solicitations for nominations to Council advisory bodies could be written to include information on the Council's ability to facilitate or support participation on the advisory body as opposed to waiting to include that information in (or refer the nominee to) the Terms of Reference.
- As staff are able, preparing, posting, emailing, and even mailing meeting materials could be a meaningful approach to accounting for capacity differences. People value time to digest information and opportunities to share their notes or comments with their community, Tribe, or other leadership prior to participating in meetings.

4.7   Guideline 7: Build appropriate capacity for working with LK and TK systems and subsistence information

Achieving the Council's goals with respect to LK, TK, and subsistence would require ensuring there is the appropriate capacity to work with these knowledge systems within and across the Council's decision-making process. The LKTKS Protocol refers to capacity building in broad terms because it involves having the means and ability, such as cultural awareness trainings, disciplinary backgrounds, etc., to work with these knowledge systems. In the case of TK, this includes an understanding of Indigenous worldviews, histories, and values that inform TK.

This effort would require a prioritization of LK, TK, and subsistence research by the Council, AFSC, and related funding entities such as the North Pacific Research Board. As described in Section 3, there is a need for greater scientific information related to LK, TK, and subsistence that is specific to the marine environment and fisheries under the Council's jurisdiction. In many ways, increased capacity in the form of accessible and effective social science based on LK and TK (that is appropriately process- and action-specific) is at the crux of meaningfully incorporating LK, TK, and subsistence information into the Council's decision-making process. Council staff do not perform primary/original research, instead relying on secondary data and published research when preparing analytical documents. Increasing capacity could include enhancing non-economic social science expertise across each stage of the Council's decision-making process to: 1) increase the utilization of existing data, 2) identify and evaluate that data; 3) increase collaboration with AFSC to strengthen knowledge sharing and communication, and , leverage capacity; 4) Diversify expertice and representation on Council bodies and staff (e.g., the Science and Statistical Committee (SSC), AP, Ecosystem Committee, and Council analytical staff).

Ideas for moving forward:
- The Council could continue to provide cultural awareness trainings on an ad hoc basis for advisory bodies, new staff, and Council members.
- The Council could consider additional non-economic social science expertise across the Council's decision-making process.
    - This could include support for additional non-economic social science expertise at AFSC, encouraging cross-functional workgroups composed to AFSC and Council staff to collaboratively identify data gaps, priorities, and synergies that could be reviewed by the Social Science Planning Team, should the Council choose to reconstitute that body with a Chair or co-Chairs.
    - The Council could consider adding non-economic social science expertise to its advisory bodies, such as the SSC.

4.8   Guideline 8: Understand how to navigate multiple knowledge systems

LK and TK have pragmatic and unique value. It is appropriate to hold TK equivalent (in terms of its validity) to western science because of how it is embodied, accumulated over time, vetted, and understood. Incorporating TK into the Council's decision-making process could enrich and inform the Council's decision-making process, but successfully accounting for multiple knowledge systems may be challenging given the underlying differences in training, worldviews, and understandings of how the world works (e.g., see Figure 4-1). Because of these differences, and the potential that people are

unfamiliar with how to make sense of, and work across, different knowledge systems, there are several examples of failed attempts to include TK in resource management and decision-making. For example, it is not a productive approach to use TK to "validate" or "support" western scientific ideas because it positions western science as the dominant (and assumably correct) source of information. It would instead be more appropriate and productive for multiple knowledge systems to be considered together, unfolding, and illuminating patterns, trends, and concepts side by side to answer underlying questions.

Lacking understanding and experience engaging with multiple knowledge systems can lead to discomfort in working with, and bringing together, such information sources. In many cases, the challenges to working effectively with multiple knowledge systems may stem from tensions, mistrust, and inadequate relationships among government entities and Indigenous communities. Other contributing factors include the dismissal and ensuing conflict over the perceived incompatibility of LK and TK with western science (Ristoph 2018, Wrakberg and Granqvist 2014). Conflicts may also arise as a matter of scale and scope of understandings. As well, western scientists may lack the expertise, resources, and training to understand LK and TK (Ristoph 2019, 121).

However, as with any data, there will be instances in which LK, TK, and western science conflict. These points of disagreement can be used to reflect on the question, clarify new directions of exploration, and provide deeper understanding. It would be short-sited (and biased) to disregard or dismiss any one type of information based on incongruence. When LK or TK and western science lead to different conclusions or observations, it would be important to clearly and respectfully document information and sources according to best practices (see Guideline 5). As with any contradictory findings, consideration of factors contributing to conflicting understandings, observations, and knowledge should be clearly documented, cited, and explained. Better understanding how the information is positioned within an individual (e.g., as an Elder, experienced user, or "bridging person"), a Tribe, or a region can help to inform how multiple knowledge streams may (or may not) intersect and the underlying reasons for that. This process, while taking additional time, is considered appropriate due diligence when working with multiple data sources as well as knowledge systems.

Opportunities to better understand and work with multiple knowledge systems in the Council process can range from minimal representation of LK and TK holders, such as providing information and observations to western scientists, to more direct engagement in collaboration in research with entities like AFSC, to knowledge gathered jointly in participatory research (i.e., co-production) and management (i.e., co-management) (Stephenson et al. 2016, 1460). Along this spectrum, LK and TK could be better incorporated as part of the scientific basis that underpins and informs the Council's decision-making process.

Ideas for moving forward:
- Be clear and transparent about knowledge sources being used including oral information (e.g., in an analysis, workshop report, etc.).
- Thoroughly document knowledge including the context of knowledge sharing and how the individual may be positioned socially with respect to the geographic area, topic of research, social organizations, or Tribe.

- Identify areas of agreement between western science, LK and/or TK and where they contradict among the information threads being analyzed or presented.
- Be clear about parameters of selection for consideration. Why were specific information, data points, or knowledge included (e.g., in analysis)?

5. LKTKS Policy Statement

As stated above, the eight guidelines and the related information are the primary content that responds to the Council's motion for the Taskforce to create processes and protocols for identifying, analyzing, and identifying LK, TK, the social science of LK and TK, and subsistence information. **If the Council adopts the protocol, the Taskforce envisions the eight guidelines would become a short and accessible 'LKTKS Policy' statement available on the Council's** Management Policies webpage **to inform the Council's decision-making process.** The entire protocol document (i.e., all sections and appendixes) would exist as a foundational reference tool for the Council, staff, advisory bodies and the public to understand that LKTKS Policy statement. The intent of the LKTKS Policy statement is not to be overly prescriptive or force particular actions from the Council. Rather, it is intended to demonstrate the Council's commitment to the guidelines over the long-term rather than its consideration of them, should the Council adopt the LKTKS Protocol.

Thus, **it is the Taskforce's vision that, in the future, if someone wanted to know the Council's approach to working with LK, TK, and subsistence information they could reference the LKTKS Policy statement on the Council's** Management Policies webpage **and then turn to the full LKTKS Protocol to understand the context that policy statement.**

Directly below is draft language in italics to illustrate this approach. The Taskforce developed language for an LKTKS Policy statement to help the Council and public understand the Taskforce's vision and intent, and to provide a clear example for dialogue and feedback. If the Council adopts the LKTKS Protocol, that would signal its support for the Taskforce's work and a commitment to the protocol's guidelines given they are the primary content satisfying the Council's goals for this body. The full LKTKS Protocol provides the reader with a substantial amount of background information to properly situate the guidelines within the best available science, regional context, and cultural understanding of the knowledge systems. Should the Council adopt the protocol, the guidelines as a policy statement would provide a clear, concise expression of the Council's approach to working with LK, TK, and subsistence information. However, it is important to note that the Council could provide feedback to modify the language, adopt the guidelines and policy statement as is, or take no action.

Draft LKTKS Policy Statement Language:

At the [insert Council meeting and date], the Council adopted the Local Knowledge (LK), Traditional Knowledge (TK), and Subsistence Protocol (LKTKS Protocol). The LKTKS Protocol provides foundational information and context for identifying, analyzing, and incorporating LK, TK, and

subsistence information into the Council's decision-making process. At the core of this work is the recognition of diversity among the people that engage in, and depend on, the fisheries managed by the Council. Effective fisheries management that supports sustainable fisheries requires robust science and an inclusive decision-making process that fosters relationships and trust.

The Council recognizes the importance of the LKTKS Protocol for informing its decision-making process and envisions it will foster a more inclusive decision-making process, expand its information base, and improve the robustness of the best scientific information available to inform its decision-making. The Council intends that its decision-making process and fishery management takes into consideration the primary LKTKS Protocol. Specifically:

1. *The Council, staff, and advisory bodies intend to demonstrate respect for LK and TK systems, LK and TK holders, the social science of LK and TK, and subsistence gatherers and/or their information.*
2. *The Council, staff, and Council advisory bodies recognize the importance of understanding and using the appropriate terms for LK, TK, and subsistence information while carrying out their work in the Bering Sea region.*
3. *The Council, staff, and advisory bodies are committed to taking the appropriate steps to accurately identify LK and TK holders, the social science of LK and TK, and subsistence information.*
4. *To the extent practicable, the Council prioritizes early and ongoing communication with relevant entities holding or representing LK and TK systems. This includes but is not limited to Tribes, Alaska Native Organizations, fishermen, fishing or processing associations as well as cooperatives, and more.*
5. *To the extent practicable, the Council will endeavor to acknowledge and account for capacity differences among the entities (i.e., Tribes, Alaska Native Organizations, fishermen, fishing associations or cooperatives, and more).*
6. *The Council is committed to acknowledging and will endeavor to adhere to local and cultural protocols that entities have established for sharing and communicating LK, TK or subsistence information when they are shared with the Council, staff, or its advisory bodies.*
7. *The Council acknowledges the importance of having the appropriate capacity for LK and TK systems and subsistence information. To the extent practicable, the Council will identify opportunities for capacity building in its process.*
8. *The Council, staff, and advisory bodies intend to work to bridge multiple knowledge systems.*

6. Conclusions

The protocol provides guidance to the Council for identifying, analyzing, and incorporating LK, TK, the social science of LK and TK, and subsistence information. There are at least three key takeaways for the Council to consider. First, achieving the Council's goals related to LK, TK, and subsistence (namely better incorporating these knowledge systems into its decision-making process) *would take time*. In part, this is because of the *vital importance of building relationships and rapport with knowledge holders*. Because LK and TK are living knowledge systems, relationships and trust are foundational for moving

forward. Additionally, incorporating LKTKS information into the Council's decision-making process would require *additional capacity*. As stated above, the Taskforce has defined capacity building broadly. However, incorporating these knowledge systems into analyses, reports, and other scientific documents or processes that inform Council decision-making would require additional social science of LK and TK that is relevant to the Council's jurisdiction and process.

7. Contributors

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Appendix A   Taskforce Ground Rules

The LKTKS Taskforce is a nominated Council advisory body composed of Indigenous and non-Indigenous experts with diverse backgrounds

The Taskforce began its work with a flagship meeting in Anchorage, Alaska in January 2020. It was decided during the first meeting to use a consensus model to identify and prioritize objectives given the diverse worldviews and knowledge systems present in the group. The Taskforce planned for two to three meetings per year over the duration of the Taskforce's projected existence (projected for 2-3 years, i.e., 2020-2023). The anticipated timing of the meetings (e.g., January, April, and November) reflects the prioritization of subsistence hunting and fishing seasons and scheduled Council meetings. With the onset, and continuation, of the global COVID-19 pandemic, the Taskforce moved to a virtual setting in April 2020.

At the February 2020 Council meeting, the Council gave direction to the Taskforce for the duration of its work by taking the following action[9]:

The Council adopted two overarching goals, five related objectives, and several final work products:

Goals

1. To create processes and protocols through which the Council can identify, analyze, and consistently incorporate TK and LK and the social science of TK and LK into Council decision-making processes to support the use of best available scientific information in ecosystem-based fishery management.
2. To create a protocol and develop recommendations through which the Council can define and incorporate subsistence information into analyses and decision-making.

Objectives

1. Identify and define sources of LK and TK, and the social science of LK and TK, to support the use of best scientific information available in Council decision-making.
2. Provide guidance and analytical protocols to the Council on how to evaluate and analyze LK and TK, and the social science of LK and TK.
3. Provide guidance on how LK and TK, and the social science of LK and TK, could be included in Council decision-making processes.
4. Identify relevant and appropriate sources of subsistence data and information to use in Council decision-making processes.
5. Provide guidance on how subsistence data and information can be included in Council decision-making processes.

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[9] The Council's motion from February 2020 can be found here:
https://meetings.npfmc.org/CommentReview/DownloadFile?p=ce213a15-6672-4d0b-9fad-6b0719388804.pdf&fileName=D3%20MOTION%20.pdf

Work Products

1. Glossary of Terms.
2. Onramps (or 'points of entry') document that identifies where within the Council process to include LKTKS information and data (e.g., public testimony, analyses, etc.).
3. Protocol outlining best practices for the Council to identify, analyze, and incorporate TK and LK into Council decision-making documents as appropriate.
4. Guidelines or protocols for Council staff for soliciting/identifying, analyzing, and using subsistence data and information in analyses.
5. Final report for the Council.

Appendix B   Related Executive Orders and Federal policy directives

Adopted and put into practice, the LKTKS Protocol could help the Council's decision-making process be more responsive to a myriad of Executive Orders and Federal policy directives:

Executive Order (EO) 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) was signed on February 11, 1994, and was a response to broader social and environmental concerns (59 Federal Register [FR] 7629; February 16, 1994). This EO directed Federal agencies *"to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."*

EO 13175 (Consultation and Coordination with Indian Tribal Governments) was signed on November 6, 2000 (65 FR 67249; November 9, 2000). This EO was promulgated *"in order to establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes."*

The Presidential Memorandum of January 26, 2021 (Tribal Consultation and Strengthening Nation-to-Nation Relationships) affirms that the Administration *"…is committed to honoring Tribal sovereignty and including Tribal voices in policy deliberation that affects Tribal communities. The Federal Government has much to learn from Tribal Nations and strong communication is fundamental to a constructive relationship"* (86 FR 7491, January 29, 2021).

EO 13985 (Advancing Racial Equity and Support for Underserved Communities Through the Federal Government) was signed in January 2021 and requires federal agencies to pursue a *"comprehensive approach to advancing equity for all, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality"* (86 FR 7009; January 25, 2021).

EO 14008 (Tackling the Climate Crisis at Home and Abroad) was also signed in January 2021 and directs federal agencies to *"make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities, as well as the accompanying economic challenges of such impacts"* (86 FR 7619; February 1, 2021).

The Presidential Memorandum of November 30, 2022 (Guidance for Federal Departments and Agencies on Indigenous Knowledge) recognizes the valuable contributions of Indigenous Knowledge held by Indigenous Peoples and Tribal Nations, and the critical importance of ensuring *"Federal departments and agencies' consideration and inclusion of Indigenous Knowledge is guided by respect for the sovereignty and self-determination of Tribal Nations…"*

Appendix C Working with Alaska Native Tribes and their members

- *Understand and respect the sovereignty, intellectual property rights, and confidentiality of Tribes.*
- *Learn how a community refers to itself as a group of people (e.g., what is the Tribe's name?).*
- *Be honest and clear about who you are and the organization(s) you represent.*
- *Create long term relationships that are not solely for you or your organization(s) benefit or agenda.*
- *Listen and observe more than you speak.*
- *Be comfortable with long pauses in conversations and learn to value quiet moments.*
- *Casual conversation is important for building rapport – be genuine and a person first.*
- *Avoid jargon and acronyms.*
- *Be open about your knowledge of Alaska Native cultures and invite people to educate you on the cultural protocols in their community.*
- *If you are visiting a community and offered food or beverage, it is important to accept it as a sign of respect.*
- *Make promises you can keep.*
- *Obtain Free, Prior, and Informed Consent before conducting any research or using any information that you hear. Use only that information which is gained by working in the community for presentations, case studies, research, reports, technical memos, and so on with the expressed written consent of the individual, Tribal government, or Alaska Native Consortia you are working with.*
- *Allow people to introduce themselves and tell a story before asking questions.*
- *Be mindful of the questions you are asking and try to avoid intrusive questions early in the conversation. As trust builds, more personal and specific questions may be possible.*
- *Be patient and allow conversations to flow freely without being rushed.*
- *Ask for permission to take pictures or record meetings.*

Language adapted from "American Indian and Alaska Native Culture Card: A Guide to Build Cultural Awareness." https://store.samhsa.gov/sites/default/files/d7/priv/sma08-4354.pdf

Appendix D   Additional Resources

- American Indian and Alaska Native Culture Card: A Guide to Build Cultural Awareness. https://store.samhsa.gov/sites/default/files/d7/priv/sma08-4354.pdf.

- For additional Community Engagement Committee's final report. https://meetings.npfmc.org/CommentReview/DownloadFile?p=7b10e15f-e306-446b-9f49-21b33e04ff1a.pdf&fileName=D1%20CEC%20Report%20February%202021.pdf

- Working Effectively with Alaska Native Tribes and Organizations. 2010. USFWS. https://www.acf.hhs.gov/sites/default/files/documents/ana/native_affairs_desk_guide_fws.pdf

- Principles for Conducting Research in the Arctic, National Science Foundation. https://www.nsf.gov/geo/opp/arctic/conduct.jsp

- Circumpolar Inuit Protocols for Equitable and Ethical Engagement. 2022. https://iccalaska.org/wp-icc/wp-content/uploads/2022/06/EEE-Protocols-LR-1.pdf

- United Nations Development Group's Guidelines on Indigenous Peoples' Issues. 2009. https://unsdg.un.org/resources/united-nations-development-groups-guidelines-indigenous-peoples-issues

Appendix E   Glossary of Terms

At its January 2020 meeting, the Council tasked a glossary of terms be completed by the Taskforce to guide its internal work. Those terms are directly below.

Local Knowledge

Local Knowledge includes the observations and experiences of local people in a region, and people with significant experience or expertise related to a region, species, or fishery (e.g., people from outside the Bering Sea region may be considered Local Knowledge holders). Local Knowledge is often acquired over the course of a few generations or less, and it is the product of knowledge formation and dissemination based on personal, shared and inherited experience.

Traditional Knowledge

"A living body of knowledge which pertains to explaining and understanding the universe and living and acting within it. It is acquired and utilized by Indigenous communities and individuals in and through long-term sociocultural, spiritual and environmental engagement. [Traditional knowledge] is an integral part of the broader knowledge system of Indigenous communities, is transmitted intergenerationally, is practically and widely applicable, and integrates personal experience with oral traditions. It provides perspectives applicable to an array of human and nonhuman phenomena. It is deeply rooted in history, time, and place, while also being rich, adaptable, and dynamic, all of which keep it relevant and useful in contemporary life. This knowledge is part of, and used in, everyday life, and is inextricably intertwined with peoples' identity, cosmology, values, and way of life. Tradition – and [traditional knowledge] – does not preclude change, nor does it equal only 'the past'; in fact, it inherently entails change."—Raymond-Yakoubian et al., 2017

Subsistence

There are different ways of understanding or defining subsistence in Alaska, and those understandings influence how communities access resources and engage a subsistence way of life. For example, the State of Alaska has historically approached defining subsistence as traditional or customary use of resources and considers all Alaska residents qualified subsistence users. Federal policy, as designated under the Alaska National Interest Land Conservation Act of 1980, also focuses on the uses of wild resources while establishing a "rural preference" for subsistence rights for resource access and use on federal lands (Anderson 2016). While the State and Federal policies diverge on who can participate in subsistence activities, both definitions focus on the use and harvest of wild resources without recognizing the broader context in which they exist. An "Indigenous perspective" expands the understanding of subsistence by recognizing how hunting and gathering related activities are deeply connected to history, culture, and tradition (Raymond-Yakoubian, Raymond-Yakoubian, Monicreff 2017). The importance of subsistence for Alaska Native communities, and the continuation of subsistence-related practices, is that it is a critical linkage to linguistic and cultural survival (Active 1999). Participation provides opportunities for different generations to learn from one another and pass on critical knowledge and value systems. As such, subsistence practices are meaningful beyond the harvest of nutritional and cultural goods as they create and reproduce linkages across multiple social and ecological domains.

Subsistence Data

Information which can be, or has been, observed and recorded as it relates to subsistence. Recorded subsistence data may include oral, written, or living memories of values and practices.

Protocol

A framework which articulates a series of steps or procedures to be followed in each situation. In the context of the Council, a protocol may explicate a series of best analytical practices for engaging and respecting human subjects on work related to Local Knowledge, Traditional knowledge, and Subsistence.

Consent

In the Council context, consent is a voluntary acknowledgment and agreement to participate in research, or to have one's information available or used, for analysis in decision-making. Consent is a process where the participant (i.e., individual or entity) is informed of both potential risks and benefits.

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