ALASKA BOARD OF FISHERIES

Process Committee Meeting

Webconference | November 21, 2023

On-Time Public Comments

Ahtna Intertribal Resource Commission

PO Box 613 – Glennallen, Alaska 99588
Phone: (907) 822-4466 Fax: (907) 822-4406

www.ahtnatribal.org
connect@ahtnatribal.org

November 15, 2023

The Alaska Board of Fisheries
P.O. Box 115526
Juneau, AK
99811-5526

Subject: AITRC Support for the Incorporation of Traditional Ecological Knowledge in the BOF Process

Dear Chairmen Carlson-Van Dort and Board Members Wood and Svendsen,

I am writing on behalf of the Ahtna Intertribal Resource Commission (AITRC), which represents the eight federally recognized tribes (Cheesh'na Tribe, Gulkana Village Council, Mentasta Traditional Council, Native Village of Cantwell, Native Village of Chitina, Native Village of Gakona, Native Village of Kluti-Kaah, Native Village of Tazlina) and the two ANCSA Corporations (Ahtna Incorporated, Chitina Native Corporation) within the Ahtna Territory. Our Board of Directors, composed of representatives from each of these ten entities, possess deep connections to the land and have spent their lives fostering a profound understanding of the delicate balance between ecological systems and human activity. Through their invaluable guidance, AITRC is dedicated to harmonizing scientific best practices with our indigenous communities' wealth of Traditional Ecological Knowledge (TEK).

We commend the Alaska Board of Fisheries for convening the Committee on Process, Management, and Research to discuss how the Board can incorporate TEK into its processes. In fisheries management, incorporating TEK is crucial for enhancing population resilience and the sustainability of ecosystems by integrating indigenous knowledge accumulated over generations (Berkes, Colding, & Folke, 2000). This inclusive approach fosters a more comprehensive understanding of local ecosystems and promotes culturally sensitive and effective resource management strategies (Huntington, 2000).

Prioritizing tribes and tribal entities during the BOF process by providing a platform to speak directly following the Alaska Department of Fish and Game would allow for the incorporation of indigenous knowledge and perspectives to be heard before voting on regulations. Tribes are governments and deserve the same respect and inclusion as state and federal agencies in the BOF process. This includes allocating a comparable amount of time to speak and at a time slot that allows TEK to be heard, like agency reports.

Moreover, creating a Native seat on the board would provide an official channel for the direct inclusion of indigenous perspectives, ensuring that TEK is not merely considered but becomes an integral part of the decision-making. This would enhance the cultural relevance of fisheries management strategies and contribute to the effectiveness and long-term sustainability of Alaskan fisheries. We believe establishing a Native seat is a proactive step towards recognizing Alaska's indigenous peoples' rights, expertise, and scientific knowledge in the stewardship of their ancestral lands and resources. Indigenous knowledge is science. Therefore, its inclusion in the BOF process is imperative.

We recognize that incorporating TEK is a complex task that requires active collaboration and consultation with indigenous communities. We request that the Committee on Process, Management, and Research consider organizing localized meetings in the regions the Board of Fisheries serves. These meetings would provide a platform for tribal consultation, enabling direct engagement with indigenous knowledge holders and fostering a more participatory and community-driven approach to fisheries management decisions.

Thank you for your dedication to this critical matter, and we look forward to witnessing the positive outcomes of your discussions and the continued progress toward integrating Traditional Ecological Knowledge into the Board of Fisheries processes.

Sincerely,

Sterling Spilinek
AITRC Research Coordinator
sterling@ahtnatribal.org
907-822-4466

November 15, 2023

Alaska Board of Fisheries
P.O. Box 115526
Juneau, AK 99811-5526

Re: BOF Committee on Process, Management, and Research Needs and Traditional Ecological Knowledge (TEK)

Dear Committee Members,

We are writing you as scholars and researchers in Alaska working in the field of fisheries sciences and serving and working alongside Alaska Native Tribes and communities in various parts of Alaska. We appreciate the opportunity to provide comments to the Board regarding how to incorporate Traditional Ecological Knowledge (TEK) in the decision-making process. This question has been posed to managers and researchers for quite some time, and we hope this process and comments received will help guide Committee members in the right direction.

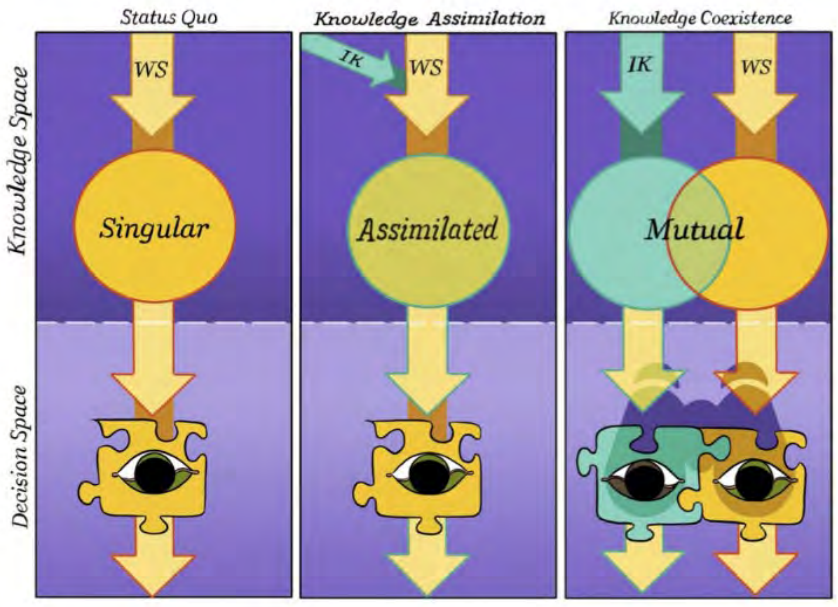
We would first like to address the BOF Committee's use of TEK and want to acknowledge that there are various terms that have been used to define Indigenous knowledge systems and ways of life, the relationship and responsibility with Creation and non-human relatives, including, but not limited to Indigenous knowledge (IK), Traditional Ecological Knowledge (TEK), Traditional Knowledge (TK) and Indigenous Science (Reid et al. 2022, Table 1). Indigenous scholar Deborah McGregor reflects on her first encounter with the term TEK, which was at a university from non-Indigenous scholars, where TEK was referred to as "the knowledge of Native people about their natural environment" (McGregor, 2004; Nakashima, 1993). In some ways, this definition fails to fully describe the richness, depth and meaning of our knowledge systems. We suggest the BOF follow current preferences in Indigenous scholarship and recent federal guidance (Whitehouse, 2022) to use terms Indigenous Knowledge or Traditional Knowledge. Regardless of what term is used, **it is most important to not limit these bodies of knowledge as in the past, static, and confined to connections with ecology and commodities able to be extracted and applied without its knowledge holders.**

We strongly encourage the Board to follow recent federal guidance that TEK/TK/IK is recognized as *best available science* and does not need validation by western science protocols (Whitehouse, 2022). Potawatomi scholar Kyle White's, views TEK as a "collaborative concept" (Whyte, 2013). He states any meaning of TEK can be accepted if it brings people working across institutions and disciplines together in a way that ultimately leads to a mutual respect for the knowledge source of those involved. He views TEK as a concept and opportunity to bridge cross-cultural divides in a way that is respectful and enables two-wayed learning (Whyte, 2013). With this in mind, and given the intent of this public meeting, we anticipate this step in meaningfully incorporating TEK into the Board's decision-making process as a mechanism for bridging some of the many divides between the Board processes and Tribal governments, Indigenous Peoples and communities across Alaska.

Anishinaabe scholar, Deborah McGregor described Indigenous knowledge (IK) as, "The responsibilities that one would assume would ensure the continuation of Creation (or what academics or scientists might call 'sustainability'" (McGregor, 2004). The Indigenous Peoples of Alaska have stewarded the lands, waters, fish, and wildlife since time immemorial, and the deep wisdom and knowledge Alaska Native knowledge holders carry is rooted in sustainability, care, and respect. Shawn Wilson (2008) indicates that this "…knowledge is part of the relationships

between us and cannot be owned." Gregory Cajete (1999) states that "…Understanding the relationship scientifically is not enough – living and nurturing these relationships is key." IK should be viewed more as an action, a way of life, a set of relationships with Creation as opposed to a noun and limited to a body of knowledge that can be extracted and/or utilized to fill data gaps in the sciences. This is critical when reflecting on current standards as well as historical approaches to working with Indigenous peoples and IK as a commodity or something that can be taken out of context and out of place, without its knowledge holders.

IK is "rooted in the long inhabitation of a particular place (and) offers lessons that can benefit everyone…as we search for a more satisfying and sustainable way to live on this planet (Kawagley & Barnhardt, 1998). This is critical and goes beyond some thinking that IK can only benefit the communities it is rooted in. IK is understood through all senses, and a critical part of learning and coming to know comes from intergenerational knowledge transmission. IK is subtle, but also… "consensual, replicable, …experimental and predictive" (Bielawski, 1990). IK is deeply rooted in daily lived experiences and connections with the land, the waters, the two-legged, the four-legged, the winged and spirit. IK is "inseparable from the peoples who hold it" (Assembly of First Nations, 1995; Roberts, 1996). You cannot attempt to use or allow IK to guide State policy, management or any actions without including Indigenous Peoples; doing so would be inappropriate. Elder Albert Marshall views "knowledge as spirit," not as a property or commodity (Bartlett et al., 2012). We encourage the Board to create space for spirituality and ceremony in their processes and accept IK and the knowledge holders for everything they bring to the table. The richness and depth of IK would be lost through translation of IK in State processes without involvement of Indigenous Peoples every step of the way. An additional consideration for review by the BOF Committee is the figure below created by Dr. Andrea Reid (Nisga'a), Elder Albert Marshall (Mi'kmaw), and colleagues (2020), illustrating a "one-eyed" approached, knowledge assimilation, and a two-eyed seeing approach or knowledge coexistence approach. **We believe that the last approach, the two-eyed seeing or knowledge co-existence approach is one way that the BOF Committee can work with knowledge holders to equitably ensure their knowledges are adequately and properly represented in BOF decision-making processes.**



In reflecting on how the BOF Committee should proceed with incorporating IK into current decision-making processes, we want to share this quote from an Alaska Native fisherman and scientist who participated in the Indigenizing Salmon Science and Management project (NSF #1936378).

"You can't have meetings with 50 people and the crowd and everybody sitting at a table but not you, you're sitting in the crowd, and then they have public testimony and you're gonna go share traditional knowledge that way? That's not conducive to the Native way, not the Yup'ik way. When they share traditional knowledge, it's never that way. It's not through Robert's rules of order. You know interpreters can be provided, and it needs to be in a setting that they're familiar with and comfortable with. Cause the last thing you want is someone that has something to share and they don't share it. That's the worst thing ever."

This quote captures some of the many barriers in the current BOF process being able to adequately and meaningfully being able to incorporate Indigenous Peoles and knowledge systems. **We encourage the BOF committee to thoroughly review the White House First-of-a-Kind Indigenous Knowledge Guidance document for Federal agencies (Whitehouse, 2022).** There are many excellent examples and guidance on how to go about doing this type of work that can help the BOF Committee when considering how to proceed with incorporating IK into their decision-making process. For example, the article specifically highlights that agencies should recognize and apply IK in decision-making, research and policy processes. The authors speak to the fact that IK systems do not need to be validated, judged, or evaluated through other knowledge systems. The guide also speaks to the harmful history of misuse of western science and research to harm Indigenous Peoples. That history must be acknowledged to start to repair relationships and provide space for healing. The guide states that,

"Agencies should also include Indigenous Knowledge as an aspect of best available science. A number of legal standards requiring the consideration of scientific information can also permit the consideration of Indigenous Knowledge. Agencies should consider evaluating the standards applicable to their work to decide whether the consideration of Indigenous Knowledge should be referenced explicitly in agency regulations or policies." (19)

"At times, Western science has been used as a tool to oppress Tribal Nations and Indigenous Peoples. Nations and Indigenous Peoples. Indigenous Peoples in the United States have experienced significant unethical health research abuses, including the use of genetic data and health records without their knowledge or consent. For example, the pseudoscience embodied in the eugenics movement, with the collaboration of scientists and medical providers, resulted in the forced sterilization of Indigenous women across the Nation. Indigenous Knowledge has also been historically marginalized in scientific communities and excluded from research and academic resources, funding, and other opportunities. Federal decision makers have also excluded Indigenous Knowledge from research and policy decisions. This marginalization has resulted from a lack of awareness, unfamiliarity and methodological dogma, and, too often, racism and imperialism. Some Federal decision makers have taken strides to address these historical wrongs and elevate Indigenous Knowledge, but more work remains. This guidance provides considerations and practices to further the important work of ensuring that Agencies appropriately include Indigenous Knowledge, while respectfully working with the Tribes and Indigenous Peoples who hold it." (5)

"Understanding the different experiences of Tribal and Indigenous Peoples is critical for Agencies to work with them and engage effectively with Indigenous Knowledge. Agencies should acknowledge the history of the department or agency they represent, and the Federal

Government broadly, when working with Tribes and Indigenous Peoples. Recognizing past injustice, while upholding Tribal treaty and reserved rights, and respecting Tribal and Indigenous communities, cultures, and values will assist Agencies in developing collaborative processes that are more equitable and inclusive of Indigenous Peoples and their knowledge systems." (8)

"Agencies must respect the sovereignty of Tribal Nations and conduct outreach through the appropriate forums and with respect for the Nation-to-Nation relationship and the United States' trust responsibilities. Agencies should discuss plans for direct engagement with Tribal Nations or Indigenous Peoples and ensure sustained engagement throughout the development or implementation of the activity. When engaging with Indigenous Knowledge holders who are members of Federally-recognized Tribes, Agencies should be mindful of Tribal sovereignty and recognize that Tribal leaders grant consent for the sharing of Indigenous Knowledge. Agencies should engage only with such individual knowledge holders designated by Tribal leadership." (10)

In addition to the Indigenous Knowledge Whitehouse Guidance document, the North Pacific Fishery Management Council (NPFMC) also adopted a protocol[1] and onramps[2] document centered around the systematic and equitable inclusion of local knowledge, Traditional Knowledge, and subsistence information in the Council's decision-making processes[3]. **The BOF Committee would also benefit from further reviewing products created by this NPFMC LKTKS task force**. These are a few of the many considerations for the BOF Committee to reflect on when thinking about how IK can properly inform State processes and policies.

Ultimately, it is critical that Indigenous Peoples have equitable representation in State agencies, on the Board, at the meetings, and decision-making tables. In this regard, what can the Board do to enhance Tribal inclusion in their meetings and processes, especially when considering the fact that many Alaska Native communities are off the road system, and the cost to attend the Board meetings and effectively participate are exorbitant. In order for Indigenous Peoples to have equal representation at the meetings, there needs to be more funds allocated to Tribes to properly attend and engage in this space. Lee et al. (2019) emphasizes the need for power sharing, which in this particular case, would be between the Board and Tribal governments and communities. Power sharing is critical. As we mentioned above, Indigenous Peoples need equal representation at the table. Currently, how is subsistence and TEK represented and reflected in the Board leadership and more broadly, at the Alaska Department of Fish and Game? In thinking about power sharing, it is important for the Board to acknowledge the current power imbalances in order to move forward in a good way (Nadasdy, 1999).

In thinking about how the Board should reference and speak to TK, there should be no reference of TK, IK, or TEK as anecdotal (Merculieff, 1990). These bodies of knowledges should be valued and referred to as co-equal to western science and as best available science .

[1] 1 See Protocol for Identifying, Analyzing, and Incorporating Local Knowledge, Traditional Knowledge, and Subsistence Information into the North Pacific Fishery Management Council's Decision-making Process at: https://meetings.npfmc.org/CommentReview/DownloadFile?p=01d3b23b-0bf8-4abc-8e7a-6e58d3d619d4.pdf&fileName=D1%20LKTKS%20Protocol%20.pdf

[2] See Onramps for Local Knowledge, Traditional Knowledge, and Subsistence Information in the North Pacific Fishery Management Council's Process at: https://meetings.npfmc.org/CommentReview/DownloadFile?p=3ddcb128-3595-490d-a892-ad9579297276.pdf&fileName=D1%20Onramps%20for%20LKTKS%20Recommenda-ons.pdf

[3] See https://meetings.npfmc.org/CommentReview/DownloadFile?p=68fa4f9e-88d2-4e37-9ce1-f3828095dd7e.pdf&fileName=D1%20Council%20Mo-on%20LKTKS.pdf

Building trust and securing long-term funding to support the inclusion of IK and knowledge holders in the Board processes are essential (Lee et al., 2019). In order to build trust, the Board should consider how they can spend more time with Indigenous peoples in their communities, on their lands and waters, getting to know each other and learn from each other outside of office settings. Spending time with Indigenous Peoples in their home communities is where some of the true relationship building can occur. Relationships do not stop after ensuring IK successfully guides one or several policies and processes, but rather, these relationships and commitments to Indigenous communities are life-long.

We have heard from several Indigenous knowledge holders that the Board process is not conducive to sharing their knowledge for various reasons. Some of these reasons included the limited amount of time allocated to speakers during public testimony. When considering the language barriers for first language Indigenous speakers, this is inequitable. We suggest at the very least, Indigenous knowledge holders are given more time to speak during public testimony and language translators are provided free of cost. We also suggest the Board creating a specific agenda item where IK can be shared by specific knowledge holders following the definitions given above. While we value local knowledge, it does not carry or reflect the deep time, intergenerational component IK, TK, and TEK Indigenous Peoples carry, and thus, this is why there would be value in adding an agenda item to the Board process that allows for IK to be shared with the Board.

The Board must also recognize Indigenous Peoples as, "…self-determining nations with rights and responsibilities regarding their knowledge systems and lands" (Latulippe, 2019). As the Board identifies ways to include IK in their processes and policy, they must ensure these processes allow for increased understanding, equity and empowerment of Indigenous Peoples. All approaches must be guided by principles including relationality, responsibility, reciprocity, redistribution (Harris & Wasilewski, 2004; Wilson, 2008). IK is "…inseparable from the socio-cultural, political, legal and other grounded, largely place-based relations and obligations that give rise to holistic knowledge systems (Hitomi & Loring, 2018; Lickers, 1997; Parsons et al., 2016; Reo, 2019; Rosengren, 2018; Scoville-Simonds, 2018; Smith, 2018). Therefore, Tribal access to land and resources is central to the existence of IK (Latulippe, 2019). The Board must be ready to support Tribal governance systems, stewardship practices and the inherent rights of Indigenous Peoples to steward lands, waters and resources.

We also wonder whether the Board can help entities like the Alaska Department of Fish and Game be more accountable to Tribes and ensuring IK and knowledge holders play a key role in the decision-making processes that affect Tribes? Can the Board provide guidance to the Department on including IK in the research and management processes? While we think this committee is a step in the right direction, we also have to consider moving beyond just talking about the inclusion of IK in processes but also ensuring adequate representation of IK and knowledge holders in these processes.

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KUSKOKWIM RIVER
INTER-TRIBAL FISH COMMISSION
OUR RIVER, OUR PEOPLE, OUR FISH
P.O. Box 190 Bethel, AK 99559-0190 | (907) 545-7388 | info@kritfc.org | kuskosalmon.org

November 15, 2023

Committee on Process, Management, and Research Needs
Alaska Board of Fisheries
P.O. Box 115526
Juneau, AK 99811

Submitted online through the Board's website.

RE: Including Traditional Knowledge in Board Processes, Management, and Research

Dear Chair Carlson-van Dort and Members of the Committee:

The Kuskokwim River Inter-Tribal Fish Commission (KRITFC) provides the following comments for this Committee and the Board of Fisheries (Board) to consider including Traditional Knowledge (TK; also referred to as Traditional Ecological Knowledge) in its processes, management, and recommendations for further research. KRITFC represents the 33 federally recognized Tribes of the Kuskokwim River watershed in fisheries management, research, and monitoring, and works to protect and sustain our Kuskokwim salmon fisheries and traditional ways of life using both Traditional Knowledge and the best available Western science.

KRITFC is pleased to hear the Board is seeking recommendations to include TK equitably and meaningfully into its process. A dynamic, holistic body of knowledge and science held by Indigenous People and based on observations, beliefs, values, and relationships, our Yup'ik, Cup'ik, and Dené TK is a key part of KRITFC's salmon management and research. It has been a part of our Tribes' salmon stewardship, harvest practices, well-being, and ways of life for thousands of years, and our Elders continue to teach us this knowledge today. TK is a part of who we are as Kuskokwim Salmon People; there is no other way for us to monitor, harvest, protect, and respect our fish.

It has been demonstrated time and time again across the world that species conservation and management benefits from TK and local knowledge, especially that of Indigenous fishers, hunters, and gatherers who have stewarded traditional food resources for millennia. The data of TK, peer-reviewed over generations and dating back thousands of years, may prove especially helpful as the Board and Alaska Department of Fish & Game look for information beyond Western scientific data sets to adapt to climate change in fisheries management.

From KRITFC's experience, the best way to incorporate TK into management processes is by including TK holders in management bodies. Currently in the Board process, TK is often shared in public comments and at local advisory committees, and research documenting TK is

collected and disseminated by the Division of Subsistence. While these are notable, it is unlikely that TK will be fully included and utilized in Board processes and management considerations unless TK holders sit on the Board itself. To remedy this, **KRITFC supports adding designated seats on the Board for TK holders, who should also be Tribal citizens nominated and appointed by Tribes and/or Alaska Native Organizations.**

Additionally, the North Pacific Fishery Management Council recently adopted a comprehensive Local Knowledge, Traditional Knowledge, and Subsistence Information (LKTKS) Protocol, developed over the course of several years by an interdisciplinary LKTKS Task Force, as well as 10 of 11 Onramps recommended by the LKTKS Task Force to incorporate the Protocol into its management processes. **The Committee and Board may find the LKTKS Protocol and Onramps documents (appended to this letter) useful tools in determining pathways forward for including Traditional Knowledge into Board processes.**

Please reach out (kevinwhitworth@kritfc.org) if KRITFC can help the Committee and Board further with developing mechanisms to include TK in your process.

Tsen'anh, Quyana,

Kevin Whitworth
Executive Director

CC:
Art Nelson, Executive Director, Board of Fisheries

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

September 6, 2023

For further information contact: Kate Haapala, North Pacific Fishery Management Council
1007 W. 3rd Ave, Suite 400, Anchorage, AK 99501
(907) 271-2809

Abstract:

This Protocol provides guidance for identifying, analyzing, and incorporating Local Knowledge, Traditional Knowledge, and subsistence information into the Council's decision-making process. 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 Action Module 2 in the Bering Sea Fishery Ecosystem Plan. This Protocol is specific to 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 Local Knowledge, Traditional Knowledge, the social science of Local Knowledge and Traditional Knowledge, and subsistence information within the context of the Council's decision-making process is housed in the eight guidelines in Section 4 of the Protocol which provide the reader with best practices for engaging and working with these knowledge systems and expertise. Each guideline is followed by some ideas illustrating different ways to move forward related work to help the Council consider what it might look like to put the guidelines into practice.

Author Notes:

The Local Knowledge, Traditional Knowledge, and Subsistence (LKTKS) Protocol was prepared by the LKTKS Taskforce whose membership is listed directly below. The Taskforce's work also significantly benefitted from substantial contributions from members of the public in their dialogue with the Taskforce as well as public testimony at each Taskforce meeting.

Kate Haapala (Council staff)
Sarah Wise (Alaska Fisheries Science Center)
Toby Anungazuk Jr. (Golovin, AK)
Rachel Donkersloot (Coastal Cultures Research)
Bridget Mansfield (NMFS Alaska Regional Office)
Robert Murphy (Alaska Pacific University)
Darcy Peter (Alaska Conservation Foundation)
Julie Raymond-Yakoubian (Kawerak Inc.)
Richard Slats (Chevak, AK)
Simeon Swetzof (St Paul, AK)
Alida Trainor (Alaska Department of Fish & Game)

The Taskforce respectfully acknowledges that it has regularly met and conducted its work, both virtually and in-person, in Anchorage on Dena'ina homelands. The Taskforce wants to honor the Dena'ina, the Indigenous Peoples who have stewarded this land across generations and continue to do so. We are glad to be part of this community, and to honor the culture, resilience, and tradition of the Dena'ina people.

The Taskforce also respectfully acknowledges the Local Knowledge and Traditional Knowledge holders, and the Alaska Native Elders, who have guided this work including those ancestors who have passed.[1]

The LKTKS 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 that diversity 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 scientific information available for fisheries management in the Bering Sea; and the challenge to confront our own assumptions and limitations learning other ways of thinking and knowing the marine ecosystem and the people who depend on it.

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

List of Acronyms

Acronym	Meaning
AFSC	Alaska Fisheries Science Center
AKFIN	Alaska Fisheries Information Network
ANILCA	Alaska National Interest Lands Conservation Act
AP	Advisory Panel
Council	North Pacific Fishery Management Council
EBFM	Ecosystem-based Fisheries Management
EEZ	Exclusive Economic Zone
E.O.	Executive Order
FEP	Fishery Ecosystem Plan
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, recreational, and subsistence fisheries (Huntington et al., 2013; National Research Council 1996; Raymond-Yakoubian et al., 2017; Springer et al., 1996). Fishermen and subsistence gatherers 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).[2] Indigenous Peoples across the Bering Sea region including, but not limited to, the Unangax̂, Alutiiq, Athabascan, Cupik, Iñupiaq, Yup'ik, and St. Lawrence Island Yupik have been connected to, and relied on, the Bering Sea since time immemorial (Carothers et al., 2021; Oceana & Kawerak 2014). 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 changes 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).

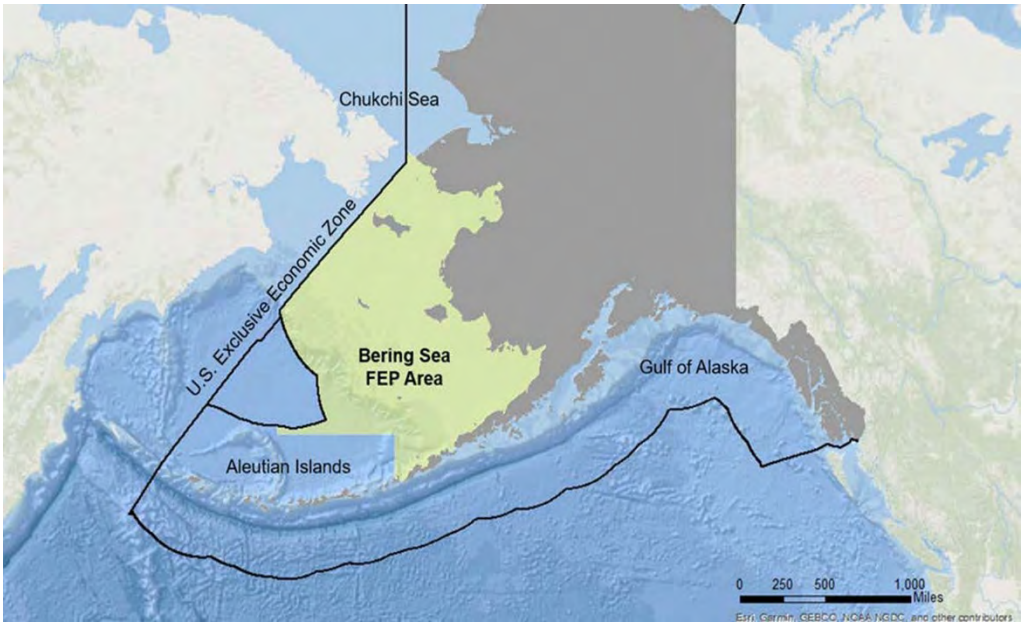

Figure 1-1 Map of the Bering Sea

Source: Bering Sea Fishery Ecosystem Plan

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 within Federal fisheries.[3] However, there is concern that western scientific methods of observation and study cannot keep pace with on-the-ground changes; and the current period of environmental changes is greatly impacting subsistence

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

[3] EBFM is a systematic approach to fisheries management in a geographically specified area that contributes to the resilience and sustainability of the ecosystem; recognizes the physical, biological, economic, and social interactions among the affected fishery-related components of the ecosystem, including humans; and seeks to optimize benefits among a diverse set of societal goals (NMFSPD 01-120, 23 May 2016).

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.[4][5] The best scientific information available includes western science *and* the relevant Local Knowledge (LK) and Traditional Knowledge (TK) (e.g., fishermen's empirical knowledge about the behavior and distribution of fish stocks), which should be considered where appropriate (see 50 CFR 600.315(a)). These knowledge systems can make meaningful contributions to the Council's decision-making process as they are based on the diverse experiences people and communities have working, living, and harvesting in the Bering Sea region (Huntington 2000; Johannes and Nies 2007; Mulalap et al., 2020; Raymond-Yakoubian et al., 2017; Stephenson et al., 2016; Thompson et al., 2020) (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. TK is tested by generations of knowledge holders based on the direct experiences of those that hold it, thereby undergoing their own forms of legitimate 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, fishery stakeholders, Alaska Native Tribes, and Tribal Consortia throughout the multi-year process of developing the Bering Sea Fishery Ecosystem Plan (FEP), the Council initiated Action Module 2 of the Bering Sea FEP in December 2018.[6] The Council appointed the 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:[7]

[4] United States marine fisheries in Federal waters between 3 and 200 nautical miles from shore are scientifically monitored, regionally managed, and legally enforced under a number of requirements including the 10 National Standards. The National Standards must be followed in all Fishery Management Plans to ensure sustainable and responsible fishery management.

[5] This document uses "Council decision-making" to denote a range of Council decisions and recommendations, from the selection of members for Council advisory bodies to the development of Council policies and practices to the Council process (often through initial and final review) that results in Council recommendations to NMFS. NMFS implements the Council's recommendations for FMPs, FMP amendments, and regulations only if those recommendations are consistent with the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations, the National Standards, the applicable fishery management plan(s), and other applicable law.

[6] The Council's motion from December 2018 adopting the Bering Sea FEP 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

[7] The Council's motion adopting the goals and objectives 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

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.[8]
2. To create a protocol and develop recommendations through which the Council can define and incorporate subsistence information into analyses and decision-making.

Through the Council's public decision-making process, the LKTKS Taskforce has received input from the Council and multiple advisory bodies (i.e., Bering Sea FEP 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 on 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 different ways to move work related to the guidelines forward to help the Council consider what it might look like to put the guidelines into practice. These ideas are not the Taskforce's onramp recommendations, which are presented to the Council in a separate document. **Section 5** puts forward an 'LKTKS Policy' statement based on the eight guidelines for the Council to consider. It is the Taskforce's vision that the short and accessible 'LKTKS Policy' statement would be available on the Council's Management Policies webpage, and that the statement would convey the Council's approach for working with LK, TK, LK and TK holders, 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 the Council's jurisdiction in the Bering Sea region (i.e., Federal waters between 3 to 200 nautical miles from shore). Certain elements from this Protocol may be useful in other management contexts or regions under the Council's jurisdiction, 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 related onramp recommendations. Some of the concrete ways the Taskforce anticipates that the Council's process could change is to have broader substantive representation of fishery stakeholders and knowledge holders (i.e., a more inclusive decision-making process); the suite of information available to inform decision-making would be broader and more robust over time; related, 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

[8] 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.

and/or initiating work on related onramp recommendations. 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 are on the front lines of climate change and could be the first to witness changes in the 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 Gulf of Alaska when Pacific cod fishermen communicated their observations of warming ocean temperatures as early as 2015, changes in spawning behavior, and a decrease in the amount of large fish on the grounds to the Council prior to the closure of the Pacific cod fishery in 2020 (Peterson Williams et al., 2022).[9] 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 the intellectual property rights of Indigenous Knowledge and 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 knowledge systems and related 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 formed based on personal and/or shared experience.

How to identify LK holders is a 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 can also be commercial fishermen that generally live outside the Bering Sea region but work and harvest there. One important distinction of LK from TK 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 hold meaningful 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 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.

[9] The term 'fishermen' is used throughout this document because it is the preferred term of identification for men and women fishing in Alaska.

Based on this definition, the Council's decision-making currently benefits from the observations and input from LK holders in a variety of ways. LK holders serve on the Advisory Panel, the IFQ Committee, Charter Halibut Committee, the Community Engagement Committee, and more. Notably, the Council receives input from LK holders and LK experts through oral and written public comments at its meetings.

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 Tribes and communities that are substantially dependent on or engaged in fishing as outlined in National Standard 8 (50 C.F.R. 600.345)).

'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 Peoples have Indigenous Knowledge, informed by their unique experiences in the world as Indigenous Peoples, only some people are recognized by their peers and communities as being Traditional Knowledge holders. Based on these definitions, the Council periodically receives input from Indigenous Knowledge holders via oral and written testimony, most often on issues related to subsistence.

Knowledge holders on the Taskforce and from across the Bering Sea have also 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 and 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 to 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 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 of Alaska and the U.S. Federal government both define and regulate '*subsistence uses*' rather than the core term of '*subsistence*'.[10] However, Federal policy regulating subsistence uses, 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).

The Council and the National Marine Fisheries Service (NMFS) aim to consider subsistence uses within the exclusive economic zone (EEZ) under the Council's jurisdiction (i.e., those waters between 3 and 200 nautical miles off Alaska's coast), pursuant to other laws such as the National Environmental Policy Act which requires an analysis of the environmental and socioeconomic impacts of Federal actions and National Standard 8 the MSA.[11] 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)). While 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), the U.S Supreme Court has ruled that this requirement does not apply to the outer continental shelf (an area of federal jurisdiction over submerged lands seaward 3 nautical miles from the coastline) where the Council has jurisdiction. *Amoco Prod. Co. v. Village of Gambell*, 480 U.S. 531, 546-47 (1987).

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 though they continue to impact Alaska Natives' ways of life. 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

[10] For example, 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).

[11] National Standard 8 states that "conservation and management measures shall, consistent with the conservation requirements of the Magnuson-Stevens Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that are based upon the best scientific information available in order to: 1) provide for the sustained participation of such communities; and 2) to the extent practicable, minimize adverse economic impacts on such communities.

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 Protocol contains foundational information for identifying, analyzing, and incorporating LK, TK, and subsistence information that is relevant to the Council, staff, Council advisory bodies, and others. The following section outlines some of the potential challenges to working with these knowledge systems for the Council to be aware of and could expect moving forward. The discussion on potential challenges precedes the guidelines as the primary Protocol content because the substance of these challenges provides the reader with important context for understanding the 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 engage or produce materials that inform Council decision-making. The Council works closely with NMFS and the Alaska Fisheries Science Center (AFSC). NMFS is the Federal agency responsible for implementing regulations that ensure the productivity and sustainability of Alaska's fisheries and fishing communities. AFSC is 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.

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. Adopting the LKTKS Protocol 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 would require greater collaboration and buy-in overtime from agency partners, staff, and others (i.e., adopting the Protocol would be a first step).

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 including multiple information systems within 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 Council's decision-making process (Allison et al., 2012; Cheung 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, so the Taskforce does not provide specific recommendations for doing so intentionally; because what constitutes equity, or bring it about, is highly contextualized and could be shared with the Council over time by fishery stakeholders and Tribes (ibid). 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 will 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 or impacted by other harmful colonial activities (Torrey 1978). It would be important for the Council and those that work within 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 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.

Lastly, it is important to highlight that the Council and its staff are not static bodies. The Council is composed of 15 members, 11 of which have voting rights. Voting members (other than principal State officials from Alaska, Washington, and Oregon, and the NMFS Regional Administrator or their designees) are appointed for a term of three years. Though voting members may be reappointed but cannot serve more than three consecutive terms. The natural turnover of Council members and staff may pose a challenge for building and maintaining relationships as knowledge holders get to know, and trust, individual Council members or staff over time.

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 and knowledge 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) is 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 is understood in global governance settings as an underlying commitment to respect for the sovereignty and self-determination of Indigenous Peoples (UNDRIP 2007). The United States recognizes the significance of FPIC, which is understood as a call for a process of meaningful consultation with Tribal leaders, and recent guidance on consultation indicates agencies should "strive for consensus with Tribes or a mutually desired outcome."[12] As sovereign entities, Alaska Native Tribes have a unique political relationship with the United States government and require some additional considerations as Tribes hold sovereign 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 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*

[12] See the Memorandum on Uniform Standards for Tribal Consultation, https://www.whitehouse.gov/briefing-room/presidential-actions/2022/11/30/memorandum-on-uniform-standards-for-tribal-consultation/

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 sources 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 that are relevant to the North Pacific. While the search engine could be an important and meaningful step forward for making LKTKS information more accessible, there are 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 a significant number of 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 research 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 research 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 for the Council to identify 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.

3.6 Regulatory fatigue

Knowledge holders that want to engage with the Council could participate in other decision-making processes such as the Board of Fisheries, the International Pacific Halibut Commission, co-management bodies, and other Federal committees or Taskforces. As highlighted in Guideline 6 below, capacity for participation varies across members of the public and knowledge holders. It can be time consuming for fishermen, Tribal representatives, and other fishery stakeholders to learn the nuanced details of the Council's process, as well as the points of jurisdictional overlap and distinction across fisheries, and among the other various decision-making/management processes. Productive engagement requires a substantial time commitment to be able to engage effectively in decision-making processes that can impact wellbeing, ways of living, and livelihoods. Additionally, there is a tradeoff for active fishermen and subsistence gatherers in that, the more time they spend learning and engaging the Council's process (and others), the less time they are actively participating in the lifestyle they are trying to protect.

Knowledge holders may experience 'regulatory fatigue,' a scenario described by members of this Taskforce that can result from impacted fishery stakeholders and/or Tribal representatives having to engage with multiple processes and meetings to make their perspectives, experiences, and asks known. The amount of time and learning required to meaningfully participate in decision-making processes were described as hurdles that contribute to 'regulatory fatigue.' Taskforce members have also discussed how fishery stakeholders and Tribes may feel discouraged and overwhelmed at times by the complexity of the decision-making/management processes they are engaging with. Over time, this can lead to reduced levels of meaningful participation—whether attending meetings, sharing knowledge, or providing other vital feedback. There are no easy solutions to address this cycle; however, it is worth noting that continued communication, greater outreach, two-way engagement, and ongoing relationship building and dialogue about the Council's decision-making process could help to mitigate this challenge over time.

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 intends the Council would adopt 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 perspectives, values, and needs. 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 potential impacts when writing an analysis), or with AFSC scientists (e.g., during research activities), it would be important to account for different worldviews when they are shared (Koleszar-Green 2018; Latulippe & Klenk 2020). The Council must balance the National Standards when taking action to make management recommendations to the U.S. Secretary of Commerce. Underpinning the Council's decision-making process are particular values that are reflected in management objectives; for example, National Standard 1 denotes "conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield (OY) from each fishery for the U.S. fishing industry." 'Optimum yield' or 'maximum sustained yield' are commonplace terms in fishery management that may not align with culturally held values within TK systems and Alaska Natives' worldviews (e.g., take only what you need or can use sustainably, waste nothing, and other values).

Figure 4-1 captures an extensive quote from an Alaska Native Elder on this point. 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. As LK and TK holders more regularly engage in the Council's decision-making process, or as LK and TK are incorporated into documents supporting Council decision-making,

without appropriately acknowledging the different worldviews in play, there is a risk that an understanding of how it is applicable to the Council's process could be missed.

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, diminishing 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 as individuals test knowledge 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 a pace that allows for relationship building, shared understandings of information, and consensus. 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 (see Section 3.4 for more information on FPIC principles).
- Work to understand community and Tribal history when analyzing community impacts, or prior to participating in community engagement and outreach trips (e.g., how the Tribe refers to itself, primary subsistence species or practices, etc.). This could help to build rapport and show respect by conveying and understanding of some cultural sensitivities.
    - Related, work to understand the unique context of the LK and TK. Because this knowledge is experiential and multigenerational, it cannot be separated from the environmental context where it is gained and the individuals who hold it.

- Council staff typically include a section on the regulatory context for a proposed conservation or management action within an analysis that explains the Council's jurisdiction or how Federal laws, Executive Orders (E.O.), and other Presidential Memoranda are related to the Council's decision-making process and/or the specific action. Council staff could work to account for the different worldviews operating in the Council's decision-making process within analytical documents, including Social Impact Assessments when applicable.

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

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

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). 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 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 dynamics 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 analytical documents specific to the Bering Sea, and staff learn a community, Tribe, or Tribal Consortia, have alternative definitions of LK, TK or subsistence, it is recommended that staff include a description of 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 use of best scientific information available 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 skippers, crew members, 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. 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 particularly high level of 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 millennia 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.

> *"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. 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.

Ideas for moving forward:

- If a public testifier clearly identifies themselves as an LK or TK holder, and that they are sharing their knowledge in public comment, it would be appropriate for the Council and/or its advisory bodies to accept that identification. However, it is important to note that knowledge holders may not always explicitly identify themselves as such.
- The Council's process is open to the public, and its meetings are part of the public record. The SSC and AP are also recorded but may only be available temporarily. LK and TK may be shared in these public meetings and is therefore captured in those recordings, which are publicly available and may be further disseminated in response to specific FOIA requests or litigation. General reference to the substantive content of the public comment(s) would be appropriate in meeting reports to the Council or in an analytical document.
    - However, prior to those comments being *directly quoted* with personally attributable information, a best approach would be to talk with the testifier to ensure the context and intent of the knowledge shared is accurately captured and understood. It would also be important to understand how the testifiers would like to be attributed (e.g., are they testifying on behalf of themselves, a community, a Tribe, or a fishing cooperative/association?).
- 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, and others) 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, it is recommended Council staff work with Tribes or Tribal Consortia who may be able to identify communities and Tribes 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 (e.g., outreach trips or staff presentations). Staff could also share this information with agency partners to support any potential future engagement sessions or Tribal Consultations if appropriate and helpful.
- Council 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. 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.
- As appropriate and needed, staff could have open dialogue with LK and TK holders about confidentiality constraints (i.e., federal records, FOIA and litigation, and the Council's public process more broadly) and whether they would be identified/attributed in analytical documents or presentations. Before information is shared with staff, staff may engage NOAA Office of General Counsel, Alaska Section for a discussion whether specific information could be exempted from disclosure under FOIA.

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 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.** Sometimes these are formal protocols guiding the official business of a company, association, or Tribe while other times they could be informal codes of conduct.

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 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."*[13]

The Native Village of Kotzebue specifically crafted these principles related to communication, planning, confidentiality, intellectual property rights, and other issues 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, how information could be shared, and any limits to confidentiality. 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, written materials are available online, and recordings and materials may be further disseminated in response to specific FOIA requests or litigation.

> *"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 confidentiality (just as it is working with Alaska Native Tribes and communities).

[13] *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*

> "*…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)*

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, as well as potential dissemination in response to specific FOI requests or litigation). While unintended, not following these 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 people 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 to the Council) 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. Tribal governments and Tribal Consortia are also charged with coordinating multiple services including healthcare, childcare, housing, and more.

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.
- 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.
- 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.
- 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.

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 to work with these knowledge systems; opportunities to build capacity include cultural awareness trainings, working with staff or bridging people with the appropriate disciplinary backgrounds, and other tools. In the case of TK, 'appropriate capacity' also includes an understanding of Indigenous worldviews, histories, and values that inform TK.

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. Building capacity in the form of access to additional social science research on LK and TK that is process- and action-specific is an important component of meaningfully incorporating LK, TK, and subsistence information into the Council's decision-making process. Council staff do not perform primary/original research, instead staff rely on secondary data and published research when preparing analytical documents to inform Council decision-making.

Building 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 existing capacity; 4) diversify expertise and representation on Council advisory bodies and 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 look for opportunities to engage in a national-level dialogue on whether there is a need for increasing non-economic social science expertise, especially as it relates to LK, TK, and subsistence information. This national-level dialogue could help all Regional Fishery Management Councils be more responsive to the Presidential Memorandum of November 30, 2022 (Guidance for Federal Departments and Agencies on Indigenous Knowledge). One opportunity may be through the Council Coordination Committee, as their agenda permits.

- The Council could consider ways to expand 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 of AFSC and Council staff.
    - Should the Council reconstitute the Social Sciences Planning Team, or if there is capacity to task Council staff, a priority could be revisited and complete the Data Gaps Analysis that identifies current data gaps, priorities, and synergies.
    - The Council could consider expanding non-economic social science expertise that is specific to LK and TK on the SSC.

4.8 Guideline 8: Understand how to navigate multiple knowledge systems

LK and TK have pragmatic and unique value. Incorporating TK could enrich and inform the Council's decision-making process, but successfully accounting for multiple knowledge systems may be challenging given underlying differences in training, worldviews, and understandings of how the world works (e.g., see Figure 4-1). Because of these differences, there is potential that people working to include LK and TK into analytical documents or reports as well as the advisory bodies that review those documents may be 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 questions.

When there is a lack of understanding, 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 as issues of scale and scope arise (Ristoph 2019,121; Wrakberg and Granqvist 2014).

However, as with any data, there will be instances in which LK, TK, and western science are incongruent. When the different knowledge systems answer a question differently or shine line light on different components of an issue, those instances be used to reflect on the question, clarify new directions of exploration, and provide deeper understanding. It would be short-sighted (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 differing 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.

Ideas for moving forward:

- Staff could work to provide transparency and clarity about the knowledge sources used in documents prepared to inform Council decision-making, including oral information (e.g., in an analysis, workshop report, etc.).
- Staff producing reports or analyses could highlight points of agreement among western science and LK and TK, as well as ways these knowledge systems may diverge.
    - Expanding the SSC's membership to include more LK, TK, and subsistence expertise could provide a meaningful opportunity to assist the Council in making sense of those instances where LK and TK diverge from western scientific information.
- In the methods used for impact assessment of a Council analysis, or in the description of the general analytical approach, staff could clarify the approach taken to collect LK, TK, and subsistence information, an explanation of why those sources were selected, as well as any other specific parameters related to the secondary data collection and how that information was evaluated/analyzed.
    - It would be important to thoroughly document knowledge including the environmental context of where that knowledge is produced as well as related cultural values, and in those instances where staff reach out to knowledge holders directly (e.g., during outreach trips or presentations), be clear on the context of that knowledge that is shared which could include an individual's social position within a Tribe or community among other things.

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 incorporating 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 approach to working with LK, TK, and subsistence information.

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 of 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.

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 and are impacted by, the fisheries managed by the Council. Effective fisheries management that supports sustainable fisheries and ecosystems 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's LKTKS Policy defines the Council's approach to working with these knowledge systems, and 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.*
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. *The Council recognizes the importance of, and will work to prioritize, 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 others.*
5. *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 others).*
6. *The Council 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 identifying and working with LK and TK systems and subsistence information. The Council will work to identify opportunities to increase this capacity and engage in opportunities for increasing LK, TK, and subsistence capacity as able.*
8. *The Council, staff, and advisory bodies intend to equitably work across and account for multiple knowledge systems.*

6. Conclusions

The LKTKS Protocol provides information and best practices for identifying, analyzing, and incorporating LK, TK, and subsistence information into the Council's decision-making process that is relevant to the Council, staff, its advisory bodies, and others. 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 due to 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. Incorporating LKTKS information into the Council's decision-making process would also require building capacity to work with these knowledge systems.

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[14]:

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.

[14] 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 Memorandum of November 30, 2022 (Guidance for Federal Departments and Agencies on Indigenous Knowledge) provides Federal agencies with guidance to assist in *"(1) understanding Indigenous Knowledge, (2) growing and maintaining the mutually beneficial relationships with Tribal Nations and Indigenous Peoples needed to appropriately include Indigenous Knowledge, and (3) considering, including, and applying Indigenous Knowledge in Federal research, policies, and decision making."* The guidance *"is intended to promote and enable a Government-wide effort to improve the recognition and inclusion of Indigenous Knowledge."*

The Presidential Memorandum of November 30, 2022 (Memorandum on Uniform Standards for Tribal Consultation) establishes baseline standards for Federal agencies for noticing, conducting, and recording tribal consultations, including when determining whether consultation is appropriate, and emphasizes that consultation requires that information obtained from Tribes be given meaningful consideration and that agencies should strive for consensus with Tribes or a mutually desired outcome.

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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Onramps for Local Knowledge, Traditional Knowledge, and Subsistence Information in the North Pacific Fishery Management Council's Process

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For further information contact: Kate Haapala, North Pacific Fishery Management Council
1007 W. 3rd Ave, Suite 400, Anchorage, AK 99501
(907) 271-2809

Abstract:
The Council's motion from its February 2020 meeting directs the Local Knowledge, Traditional Knowledge, and Subsistence Taskforce to identify potential onramps (or points of entry) for incorporating Local Knowledge, Traditional Knowledge, the social science of Local Knowledge and Traditional Knowledge, and subsistence information into its decision-making process. This document contains eleven different onramp recommendations for the Council to consider changes to its current decision-making process. Each onramp recommendation is presented individually to provide the Council a highly flexible approach to deciding whether to take action and initiate future work on any individual onramp(s). The onramp recommendations are directly related to the eight guidelines housed in the *Local Knowledge, Traditional Knowledge, and Subsistence Protocol*. Together, the Protocol and onramp recommendations provide the full suite of information for the Council to consider how it could achieve its goals of better identifying, analyzing, and incorporating LK, TK, and subsistence information into its decision-making process.

1. Introduction

The Council directed the Local Knowledge (LK), Traditional Knowledge (TK), and Subsistence Taskforce to identify potential onramps (or points of entry) to incorporate LK, TK, the social science of LK and TK, and subsistence information into the Council's decision-making process.[1] [2] This document contains eleven onramp recommendations for the Council to consider making changes to its current decision-making process to better incorporate these knowledge systems. The onramp recommendations are directly related to the eight guidelines in the LKTKS Protocol and can be understood as eleven different opportunities for the Council to implement those guidelines. Together, the LKTKS Protocol guidelines and onramp recommendations are the full suite of information for the Council to consider how it could achieve its goals of better identifying, analyzing, and incorporating LK, TK, and subsistence information into its decision-making process.

While there are interlinkages among the LKTKS Protocol guidelines and the onramp recommendations, the onramps are presented separately to provide the Council an opportunity to consider each document separately. By adopting the LKTKS Protocol, the Council would not also be adopting and therefore initiating work on the related onramp recommendations. Rather, the onramp recommendations are presented separately from the LKTKS Protocol, and as individual recommendations, to provide the Council a highly flexible approach for deciding whether to initiate future work on the individual onramp(s). To help the Council in its decision-making, the Taskforce has provided additional context and rationale for each onramp recommendation as well as some initial ideas for how to move them forward. While there are eleven distinct recommendations, they are not numbered to not signal a prioritization; each onramp recommendation offers different opportunities for incorporating LK, TK, the social science of LK and TK, and subsistence information.

When evaluating these onramp recommendations, it is important the Council also consider their implications for Council and staff time commitments and capacity. Additionally, if the Council initiates work on any individual onramp(s), the Council would need to consider and provide feedback on *who* should move the work forward. Would the Council's preference be for staff to move forward with further developing these onramps, this Taskforce as a reconstituted body, or a Taskforce with new or modified membership? The Taskforce was originally formed to complete its work over a 2–3-year period, after which it would disband. The Taskforce recommends it disband after the Council takes final action, in line with the Council's original intent for this body.[3] As such, the ideas and next steps for moving each onramp forward are written in a way that indicates Council staff would carry out any future work because of the Council's original intent was to disband the Taskforce after its final products and report is presented.

[1] The Council's motion from its February 2020 meeting adopting the goals and objectives 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

[2] This document uses "Council decision-making" to denote a range of Council decisions and recommendations, from the selection of members for Council advisory bodies to the development of Council policies and practices to the Council process (often through initial and final review) that results in Council recommendations to NMFS. NMFS implements the Council's recommendations for Fishery Management Plans (FMPs), FMP amendments, and regulations only if those recommendations are consistent with the Magnuson-Stevens Fishery Conservation and Management Act and implementing regulations, the National Standards, the applicable fishery management plan(s), and other applicable law.

[3] For more information on the Taskforce's rationale for this recommendation, see the written report from the Taskforce's March 2023 meeting: https://meetings.npfmc.org/CommentReview/DownloadFile?p=e80ce6e5-b04c-4599-b36e-51b1c30c698a.pdf&fileName=March%20Minutes.pdf

2. LK, TK, and subsistence information onramp recommendations

The Taskforce recommends the Council adopt the LKTKS Protocol

The Taskforce developed the LKTKS Protocol over a multi-year process in response to the Council's adopted goals for this body. The LKTKS Protocol provides foundational information for working with LK, TK, and subsistence information, and its content is based on the diverse expertise and consensus of Taskforce members. Over the last three years (2020-2023), the LKTKS Taskforce has had significant public engagement in its meetings and received input from the Council and its advisory bodies including the Bering Sea Fishery Ecosystem Plan Team, Ecosystem Committee, Social Science Planning Team, Scientific and Statistical Committee, and the Advisory Panel. Adopting the LKTKS Protocol would demonstrate the Council's commitment and approach to working with LK, TK, and subsistence information.

The Taskforce recommends the Council express support for the use of the LKTKS search engine and dedicate Council staff time to maintaining it as needed.

In response to the Council's motion directing the Taskforce to create *processes* and protocols for identifying, analyzing, and incorporating LK, TK, and subsistence information into the Council's decision-making process, the Taskforce developed 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. The search engine is one process that could help analytical staff identify sources of LK and TK, the social science of LK and TK, and subsistence information in the timelines that analytical staff work under.

Ideas for moving forward

- To move forward with this onramp recommendation, the Council could express its support for the continued use of the LKTKS search engine.
- The Taskforce does not anticipate the time or resources required to achieve this onramp to be significant, but it is important for the Council to be aware of and consider among its staffing priorities. Moving forward with this onramp recommendation would require Council staff to find ways to keep new sources of information flowing into the search engine and to maintain it over time. Currently, there is an email address (npfmc.lktks@gmail.com) for members of the public to submit sources of information to be added to the search engine. The Taskforce has discussed that advertising the search engine at events like the Alaska Marine Science Symposium or coordinating with the North Pacific Research Board could provide opportunities to gain a broader range of information inputs and lessen the burden on staff to actively search out new sources over time.

The Taskforce recommends the Council initiate a process whereby Tribes could engage directly with the Council.

Council staff worked with NOAA General Counsel to understand what would be feasible for the Council with respect to Tribal engagement. There are two engagement pathways available to the Council for its consideration.

Option 1: The Council or one of its advisory bodies could host informal engagement session(s) with Tribes and/or Tribal Consortia. There is flexibility for the form of these sessions, meaning engagement sessions could occur under an agenda item at a Council meeting (e.g., during the B reports) or as a separate meeting between Tribes and the Council when requested by Tribes or the Council. In either scenario, procedural requirements of the Magnuson-Stevens Fishery Conservation and Management Act

(MSA) would apply to any engagement session hosted by the Council or a Council committee (16 U.S.C. 1852(e), (g), (i)). That means Council-Tribal engagement sessions in any form must be noticed and open to the public, interested persons must be allowed to submit oral or written comments, and detailed minutes must be kept (a requirement that is fulfilled in practice by the Council through meeting reports and/or recordings). Because these would be publicly noticed sessions, a quorum of Council members could attend. It is important to note that this approach is different from formal Tribal Consultations held by Federal agencies, which are non-public meetings with single or multiple Tribes that do not trigger the MSA's procedural requirements.

Option 2: A second pathway available to the Council is to participate in engagement trips that provide opportunities for two-way dialogue and knowledge sharing as the Council has done in the past. When participating in these trips, a non-quorum (i.e., no more than 5) of Council members can participate without the trip requiring notice as a public meeting or the other procedural formalities under the MSA (16 U.S.C. 1852(e), (g), (i)), though that does not prohibit members of the public who are not Tribal members or officials from attending.

The Taskforce has discussed the input from NOAA General Counsel and agrees that both pathways for Tribal engagement are important for hearing from knowledge holders. While there could be some sensitivities with Council-Tribal engagement sessions being hosted as a public meeting, the Taskforce's dialogue on the issue has noted that Tribes could choose to engage and share on some topics with the Council in a public format while reserving more sensitive issues for Tribal Consultations with NMFS.

The Council has experienced consistent and increased engagement from Alaska Native Tribes and Tribal Consortia in its decision-making process. Alaska Native Tribes are sovereign governments with constitutions, bylaws, and a right to self-determination. This legal status distinguishes Tribes from other fishery stakeholder groups that engage the Council's decision-making process. The Taskforce understands the National Marine Fisheries Service is the Federal agency responsible for undertaking Tribal Consultations under Executive Order (EO)13175, and it is not suggesting the Council lead formal Tribal Consultations as Tribal Consultations are government-to-government relations.

Implementing a process for Council-Tribal engagement could provide the Council, Alaska Natives Tribes and/or Tribal Consortia meaningful opportunities for deliberative and inclusive dialogue as well as opportunities to build relationships and mutual trust. Additionally, LK and TK resides within people, and especially TK is usually shared orally (though the lack of written TK does not mean knowledge does not exist for a particular action or issue). It is possible but not guaranteed that LK and/or TK could be shared directly with the Council during these engagement sessions by Tribal members. The oral nature of sharing these knowledge systems can make it challenging for Council staff to attain and use written forms of LK and TK, or the social science of LK and TK, to include in analytical documents that inform a broad range of Council actions. Council-Tribal engagement could also mitigate challenges for staff as they identify TK and work with TK and TK holders.

Ideas for moving forward:

- To move forward with option 1, the Council would need to consider its goals for hosting Council-Tribal engagement sessions (e.g., receiving input on management actions, information sharing, receiving information updates from Tribal and community members on ecosystem changes, etc.).
    - The Council could task Council staff with developing a discussion paper outlining a conceptual model(s) for Council-Tribal engagement. Points for consideration that would need further exploration in the conceptual model include the timing of engagement sessions (e.g., would engagement sessions be a defined time and time limit during a Council meeting or a separate meeting?), how the outcomes would be recorded or reported, among other details that would need to be

considered. This approach would provide the Council, Tribes, and other members of the public additional opportunities to engage with, and provide feedback on, the ideas put forward in the discussion paper.

- To move forward with option 2, the Council would also need to consider its goals for outreach and engagement. The Council could direct the Community Engagement Committee with creating a strategic engagement plan. This plan could include key meetings for staff presentations, communities to target for engagement trips, and more. The Council and/or the Community Engagement Committee could consider whether an over-arching strategic outreach and engagement plan would be appropriate or whether the plan and related efforts would be more effective at an action- or issue-specific level.

The Taskforce recommends the Council request NMFS lead Consultations with Tribes early in the Council's decision-making process, and that a non-quorum of Council members participate in these sessions when requested by NMFS or Tribes.

This recommendation is in line with the Council's previously expressed support for working with NMFS to receive and understand the results of Tribal Consultation meetings as early as possible in its process.[4] Council staff worked with NOAA General Counsel to understand whether the Council could participate in the Tribal Consultations led by NMFS to improve direct communication between Tribes and the Council. NMFS is the Federal agency responsible for implementing regulations that ensure the productivity and sustainability of Alaska's fisheries and fishing communities. The Council works closely with the NMFS Alaska Regional Office, the regulatory agency that is responsible for overseeing the science-based stewardship of living marine resources and their habitat in the North Pacific and Arctic Oceans off Alaska, and the Alaska Fisheries Science Center (AFSC), the entity within NMFS that conducts research to monitor the health and sustainability of fish, marine mammals, their habitats, and the communities that depend on them.

NOAA General Counsel provided input that EO 13175 directs agencies to have "an accountable process to ensure meaningful and timely input by Tribal officials in the development of regulatory policies that have tribal implications." To be meaningful and timely, NMFS should consult with Tribes prior to promulgating any regulatory policy that has Tribal implications. Under EO 13175, policies have Tribal implications when they have "substantial direct effects on one or more Indian Tribes, on the relationship between the Federal government and Indian Tribes, or on the distribution of power and responsibilities between the Federal government and Indian Tribes." EO 13175 also directs Federal agencies to have "an accountable process to ensure meaningful and timely input by Tribal officials in the development of regulatory policies that have tribal implications."

Additionally, the November 30, 2022, Presidential Memorandum on Uniform Standards for Tribal Consultation directs: If there is a reasonable basis to believe that a policy may have Tribal implications, consistent with the definition in EO 13175, Federal agencies shall follow the applicable requirements for consultation. An agency may still engage in Tribal consultation even if the agency determines that a policy will not have Tribal implications and should consider doing so if the agency determines that a policy is of interest to a Tribe or Tribes.

[4] See the Council's motion from the February 2021 meeting related to the Community Engagement Committee for more information: https://meetings.npfmc.org/CommentReview/DownloadFile?p=2c4a513f-889d-4647-9bea-29ed4bde660f.pdf&fileName=D1%20Motion.pdf

NOAA General Counsel also clarified that a non-quorum of Council members and any number of Council staff could participate in formal Consultations when their participation is requested by NMFS or Tribes.[5] However, while a non-quorum of Council members could participate in Tribal Consultations, those members in attendance could not speak on behalf of the Council as a whole at those meetings. The Council has received consistent feedback from Alaska Native Tribes, Tribal Consortia, and their representatives on the importance of ongoing and meaningful Tribal Consultations. The Council has also received input on the importance of the results of those Consultations being communicated to the Council early in its decision-making process so the substantive dialogue and outcomes of Tribal Consultations could inform the Council's decision-making. NMFS has historically conducted Tribal Consultations after the Council selects a Preferred Alternative and this can make it challenging for Tribes and their representatives to having meaningful and timely input in the development of fisheries management and regulations. NMFS is not obligated to consult only after a Preferred Alternative is selected, though it is historical precedent.

The information shared at Tribal Consultations could help the Council to better understand Tribal perspectives and knowledge on the potential impacts of different actions. The rationale for how this onramp recommendation could better incorporate LK and TK into the Council's decision-making process is largely the same as the onramp for Council-Tribal engagement above. However, it is important to note that TK may be more likely to be shared in Tribal Consultations because they are not public meetings, though there is no guarantee that TK would be shared.

Ideas for moving forward:

- To move forward, the Council could express its commitment to have a non-quorum of Council members participate in Tribal Consultations when requested by NMFS or Tribes.
- The Council could also task Council staff with coordinating with staff from NMFS Alaska Region, and particularly their Tribal Liaison and Tribal Engagement Team, to develop a process for communicating the results and outcomes of Tribal Consultations that are relevant to, or have a clear nexus with, the Council's process. This would take cooperation and collaboration from the agency, but the liaison role could anchor a direct pathway for communication among Tribes, the Council, and the agency. The communication plan could be brought back to the Council for the Council to consider and the public to weigh in on. The communication plan would also need to address expectations about confidentiality and how information gleaned from Tribal Consultations, and that inform Council decision-making, would become part of the record for supporting the Council's recommendation and NMFS's implementation.

The Taskforce recommends the Council request Federal agencies that provide relevant presentations or reports to the Council with Tribal co-management partners extend invitations to Tribal partners to present on co-management activities during the B reports.

The Taskforce is aware that Tribal co-management partners are periodically invited to provide presentations to the Council or committees alongside Federal agency staff (e.g., Norther Fur Seals). However, there are differences in when this form of engagement occurs. The intent of this onramp recommendation is to increase consistency and equity for Tribal co-management partners, and for the Council to express its expectation that those Federal agencies that engage in co-management with Tribes

[5] It is important to keep in mind that, in this instance, a non-quorum of Council members would be a count of four members in addition to the NMFS Regional Administrator who often participates in formal Tribal Consultations.

(e.g., NMFS has eight co-management agreements) and provide reports to the Council would invite Tribal co-management partners to participate in these presentations to the Council. The Taskforce is not recommending it be mandatory for Tribal co-management partners to be present, rather that agency staff coordinate with their Tribal partners and extend an invitation to participate in the presentation.

Ideas for moving forward

- The Council could task Council staff to modify working practices and approaches for organizing the Council's B reports. Should the Council initiate action on this onramp, the onus would be on Council staff to remind agencies periodically about the Council's intent and interest to have co-managers part of the agency presentations.

The Taskforce recommends the Council modify the Council Statement of Organization, Practices, and Procedures (SOPPs) and/or terms of reference (TOR) for advisory bodies to include specific language to add designated Alaska Native Tribal seat(s) to be held by Tribal representatives.

Taskforce members have noted their support for the Council's recent action to add one designated Alaska Native Tribal seat to its Advisory Panel at the October 2022 meeting. This onramp recommendation looks to build on that Council action to facilitate expanded Alaska Native Tribal representation across the Council's advisory bodies (meant collectively to include Plan Teams, Committees, and the Scientific and Statistical Committee (SSC)). Modifying the TOR and/or Council SOPPs to add designated Alaska Native Tribal seat(s) across Council advisory bodies could encourage Alaska Native Elders, Tribes, and communities to participate in the Council's process, feeling as though added representation is a meaningful invitation to participate.

Because there is a wide range of capacity and expertise among Alaska Native Tribes, the Taskforce is not recommending specific advisory bodies for additional designated seat(s). Likewise, the Taskforce is not recommending a particular count of seats to not be overly restrictive should there be a number of well-qualified nominees; though, the intent of this recommendation is that there would be at least one Alaska Native Tribal seat held on each Council advisory body to be filled by a Tribal representative. The Taskforce intentionally chose the language "Alaska Native Tribal seat" because the intent is that these seats would be filled by a designated representative of an Alaska Native Tribe or Tribal Consortia. If a Tribal representative is not an LK or TK holder, Tribes could provide LK or TK to the Tribal representative to share on their behalf at advisory body meetings. The Taskforce has agreed that Tribes and/or Tribal Consortia are best equipped to recommend highly qualified individuals who have the skill set and authority for specific Council bodies.

Ideas for moving forward:

- To help its decision-making, a first step for the Council could be tasking Council staff with developing a brief discussion paper that identifies (among other things pending Council input) a) the affiliation, discipline, and representation within all Council bodies (e.g., this would include disciplinary training, fisheries sector, regional and organization affiliation, and more); b) an approach and timeline for how the Council could consider adding one designated Alaska Native Tribal seat to its advisory bodies (e.g., take a tiered approach to ensure the Council is not reviewing all nominations at one time). The Council would need then to consider the advisory bodies for which it may want to solicit nominations, how many seats the Council would consider, and whether regional or issue/action-specific expertise would be most beneficial. The Council would then need to task staff with drafting solicitation language or other points of consideration.

The Taskforce recommends the Council solicit nominations for expanded LK and TK social science expertise on the Scientific and Statistical Committee (SSC).

The Scientific and Statistical Committee (SSC) plays a vital role in the Council's process by reviewing all assessments, analyses, and reports for their scientific/analytical approaches, validity, and utility to inform the Council's decision-making. The Taskforce is not asking for a designated LK and TK social science seat or for a particular count of seats. Expanding the SSC's existing expertise related to LK and TK systems would support the use of best scientific information available across the Council's decision-making process, and in turn, improve the SSC's overall recommendations to the Council.

More specifically, in a future where there is greater access and inclusion of LK, TK, and subsistence information in Council decision-making documents, the SSC and the Council would benefit from broadening that specific expertise to provide input and feedback on analytical reports and documents. For example, additional LK and TK social science expertise could help the SSC and Council navigate those instances where LK and TK yield different insights that western scientific information (Guideline 8). Expanded LK and TK expertise on the SSC could also provide analytical staff and AFSC scientists additional feedback on the methods or approaches used for assessments, analytical documents, and other reports through the Council's iterative process.

Ideas for moving forward:

- The Council could direct staff to write a solicitation for SSC nominations that includes explicit language signaling the Council's interest and intent for soliciting nominations from social scientists with experience working with LK and TK systems.

The Taskforce recommends the Council host a workshop in concert with its research priorities process to solicit broad public input on selecting core research questions to assist the Council in managing the nation's resources.

Section 302(h)(7) of the MSA directs that the Councils shall "develop, in conjunction with the scientific and statistical committee, multi-year research priorities for fisheries, fisheries interactions, habitats, and other areas of research that are necessary for management purposes." The Council's research priority process starts with the Plan Teams (Gulf of Alaska and Bering Sea Aleutian Island Groundfish, crab, and Scallop) which review existing research priorities and make recommendations for modifications or additions to the list, as needed. The research priorities that emerge from the Plan Team process often focus on stock assessment priorities and are then reviewed by the SSC which holds broader membership and expertise prior to their review by the Council. The Council currently reviews research priorities on a triennial basis.

The Council has received public comment from Alaska Native Tribes, Tribal Consortia, and fishery stakeholders that the current research priorities process can be difficult to navigate and lacks transparency. It can also be challenging for the public, particularly those that reside in remote communities, to participate across multiple Plan Team meetings.

The Taskforce is making this recommendation because a workshop held in advance of the SSC's review of Plan Team research priorities could provide a meaningful opportunity for the SSC and Council to solicit broad input on the key research questions and needs for future management. This could augment the current research priorities process, particularly related to LK and TK observations or changes to subsistence practices or uses of resources. Additionally, a workshop could provide a streamlined and inclusive opportunity for Alaska Native Tribes and Consortia, industry, community representatives and more to bring forward their proposals and ideas on these important questions or topics. The Taskforce has noted there could be challenges for setting the scope of the workshop, and the Council could find it more effective to host region-specific workshops.

Ideas for moving forward:

- The Council could task staff with developing a workshop prior to, or in conjunction with, the research priorities process so the Scientific and Statistical Committee and the Council receive streamlined recommendations from Alaska Native Tribes and Consortia, the fishing industry, and community representatives on the key research questions and topics to inform fisheries management. If the Council would like to initiate a workshop, it would be ideal for the Council to provide input on whether it would like that workshop to have a regional focus (e.g., Bering Sea), the scope of the workshop, whether it envisions a planning subgroup and broad input on who would compose that subgroup (e.g., SSC members, AFSC staff, Council staff, etc.).

The Taskforce recommends the Council implement the LKTKS template for working with LK, TK, and Subsistence information to formalize a process for incorporating LK, TK, the social science of LK and TK, and subsistence information into the Council's decision-making process.

The Taskforce developed a template that includes guiding questions for analytical staff to consider as they build out their analyses to facilitate the consistent inclusion of LK, TK, and subsistence information. This template is one approach to formalizing a process for incorporating these knowledge systems in a more standardized way to support Council decision-making. The guiding questions are broad enough to be applied across a range of Council actions, though it is expected that the subsequent information identified and its use in documents to support Council decision-making will be diverse.

The template is not intended to prescribe a narrow approach for staff. Rather, it aims to provide a starting point for staff analyses. This template is meant to be used in conjunction with other staff analytical templates and the LKTKS Protocol, as needed and appropriate. It is envisioned that this template will be modified and evolve over time as it is put into practice by analytical staff. When engaging work with TK systems, it is important to be mindful of whether there is appropriate expertise, training, and resources available to work with TK systems and TK holders. The template could also be shared with AFSC and NMFS Alaska Regional Office staff, if appropriate.

Ideas for moving forward:

- The Council could express its support for Council staff to implement the LKTKS analytical template (see Appendix A).

The Taskforce recommends the Council modify its public comment procedures to allow testifiers to provide introductions without it counting against their allowed time limit for oral public comments at Council, Scientific and Statistical Committee, and Advisory Panel meetings.

The Taskforce has discussed how Alaska Native peoples have ways of introducing themselves. Traditional introductions often center the person in relationship with their family and community among other things, emphasizing the importance of the connections between people as well as people and places. This onramp recommendation is related to Guideline 6 and the local or cultural protocols guiding how individuals engage in the Council's process. However, to provide balance and equity, the Taskforce is recommending that all members of the public participating in the Council's process be allowed to introduce themselves before their timer for oral comments begins. This would be a gesture to demonstrate respect.

Ideas for moving forward:

- The Council could task staff with updating its SOPPs to reflect these changes to public comment procedures to allow all members of the public to provide introductions without those introductions counting towards their allowed time limit.

The Taskforce recommends the Council develop a plan to increase capacity in non-economic social sciences, and LKTKS expertise.

The Taskforce has consistently defined 'capacity,' 'increasing capacity,' or 'capacity building' broadly because there are many approaches that could be taken. Better incorporating LK, TK, the social science of LK and TK, and subsistence information into analytical documents that inform Council decision-making would require more social science research to ensure action- and process-specific work based on these knowledge systems is available for staff to use. While the LKTKS search engine is a useful tool, and it is anticipated it could help analytical staff more easily locate sources of LKTKS information, there continues to be a dearth of social science research specific to the fisheries under the Council's jurisdiction.

As stated above, LK and TK can yield broad and timely observations about environmental and climate changes, shifts in species distribution, the importance of particular cultural or subsistence practices, and more. The non-economic social sciences (e.g., anthropology, sociology, human geography, political science, and others) are uniquely positioned to collect and analyze LK and TK because of the methodologies that are required to work with these knowledge systems.

Ideas for moving forward:

- The Council could write a letter to the Alaska Fisheries Science Center expressing its support for additional non-economic social science staff, particularly with an emphasis working with LK or TK systems.
- The Council could support specific social science research priorities once identified by either the Social Sciences Planning Team, SSC, or other process (e.g., new public research priorities workshop onramp). This could be achieved by tasking the Social Sciences Planning Team with completing the Data Gaps Analysis which identifies current data gaps, priorities, and synergies for social science relevant to the Council's process. This would require the Council to reconstitute the Social Sciences Planning Team. Alternatively, the Council could task staff with conducting a Social Science Data Gaps Analysis.
    - Potential examples of such projects include large-scale, regularly occurring IFQ holder surveys, oral histories with Bering Sea crab skippers, and others. These types of social science research projects could be designed to achieve multiple research goals (e.g., understanding social and economic impacts or changes in a fishery as well as environmental observations). This analysis is an important first step towards understanding the current gaps and opportunities for social science, but particularly LK, TK, and the social science of LK and TK, in the Council's process.

Table 1 provides a crosswalk of the onramp recommendations with the LKTKS Protocol guidelines to help illustrate where the Taskforce envisions interlinkages between each onramp recommendation and guideline at a high-level. As stated in the Introduction, the onramp recommendations could be considered as 11 different opportunities to implement the guidelines.

Table 1 Crosswalk of onramp recommendations to the related LKTKS Protocol guidelines

Onramp recommendation	Related Guidelines
Adopt the Protocol	Guidelines 1-8
Support for, and dedicated staff time to maintain, the LKTKS search engine	Guideline 3 and 7
Initiate a process whereby Tribes could engage with the Council	Guideline 1-4, 6 and 7; Guideline 5 would inform how the onramp would be carried out
NMFS led Consultations occur early in the decision-making process and a non-quorum of Council members participate, when invited	Guideline 1-4, 6 and 7; Guideline 5 would inform how the onramp would be carried out
Request Federal agencies with co-management partners extend invitations to present to Tribal partners	Guidelines 1, 3, 5, 6, and 7
Expand designated Alaska Native Tribal seats to be held by Tribal representatives across advisory bodies	Guidelines 1-4, 7 and 8
Solicit nominations for expanded LK and TK social science expertise on the SSC	Guidelines 1-4, 7 and 8
Workshop to solicit broad input from the public and knowledge holders during research priorities process	Guidelines 1-4, 6-8; Guideline 5 would inform how the onramp would be carried out
Implement template with guiding questions for LKTKS information	Guidelines 1-4 and 7; Guideline 5 would inform how the onramp would be carried out
Modify public comment procedures to allow for introductions	Guidelines 1, 3, and 5
Plan to increase non-economic social science capacity and LKTKS expertise more specifically	Guidelines 2, 3, 7, and 8

3. Capacity and resources required for LKTKS Protocol and onramp implementation

At the April 2023 Council meeting, the Council requested input from the Taskforce on the capacity and other resources required for implementing the LKTKS Protocol and onramp recommendations. The Taskforce has identified three primary resources needed for implementation: **personnel, time, and partnerships.**

The Taskforce agrees that implementing the Protocol and onramp recommendations to their fullest potential, and in a holistic way, would require additional analytical staff and social scientists at AFSC with the expertise (i.e., capacity) to work with LKTKS information. The Taskforce understands the Council is currently limited in its ability to hire additional analytical staff and it is beyond the Council's purview to influence hiring decisions at AFSC. The potential tension here is twofold. Upon implementation, it is expected that analytical staff would be expected to increase their workload (e.g., by adding new sections to analytical documents or participating in Council-Tribal engagement sessions or NMFS led Tribal Consultations) without having additional personnel to disperse tasking. Additionally, 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.

In light of the considerations related to analytical workload, the Taskforce discussed the importance of providing analytical staff sufficient (if not additional) time to incorporate LKTKS information into their analyses. The Taskforce is aware of the tradeoff – allowing for longer analytical timelines (i.e., more time prior to Initial Review) would potentially slow down an action's timeline which may be undesirable for some Tribes, communities, and fishery stakeholders. However, National Standard 2 requires the use of the best scientific information available which includes LK and TK. Therefore, it is important to provide sufficient time (to the extent practicable) to allow analysts to fully explore the scope of information that may be available to inform Council decision-making.

Considering the current capacity constraints (e.g., analytical staff workloads and tradeoffs with Council priorities, limited funding to hire additional staff, among other considerations), the Council could consider formal partnerships (e.g., a Memorandum of Understanding) with Tribal Consortia and other organizations that have access to LK and TK or currently have social science research programs focused on fisheries. These agreements could function as data sharing agreements which could be discrete and formed for a specific issue or a standing agreement. Forming such agreements could take two to three months at the start of an action.

Table 2 below captures the level of resources required for each onramp to be implemented. This is a somewhat subjective assessment as the level of resources are categorized as high, medium, or low. Within this context, "resources" are conceptualized as analytical staff time, time on the /Council meeting agenda, and the relative time invested from the public to understand or provide input on potential process changes.

Table 2 Summary of onramp recommendation, resources required for implementing each onramp recommendation, and the corresponding level of staff resources required

Onramp recommendation	Resources required for implementation	Level of staff resources required
Adopt the Protocol	• Update management policies webpage	Low
Support for, and dedicated staff time to maintain, the LKTKS search engine	• Staff periodically (e.g., twice annually) update search engine with new sources • Staff use the search engine to inform analyses, including summary of when no results were returned • Outreach to advertise the search engine to individuals and organizations that work with LK and TK holders and/or conduct research related to LK and TK. (i.e., to facilitate a flow of new sources to the search engine)	Low to medium
Initiate a process whereby Tribes could engage with the Council	• As conceptualized, staff would need to write a discussion paper outlining conceptual model for Tribal engagement based on the Council's goals • Staff support for Community Engagement Committee	High
NMFS led Consultations occur early in the decision-making process and a non-quorum of Council members participate, when invited	• Participate in Tribal Consultations as invited	Low to Medium
Request Federal agencies with co-management partners extend invitations to present to Tribal partners	• Staff periodically remind agencies of the Council's intent and interest in co-managers being involved and present at presentations as able	Low
Expand designated Alaska Native Tribal seats to be held by Tribal representatives across advisory bodies	• Staff write a discussion paper summarizing the backgrounds of the advisory body members • Staff update Council SOPPs to indicate dedicated Tribal seats reserved across bodies	High or low depending on preferred pathway forward
Solicit nominations for expanded LK and TK social science expertise on the SSC	• Staff write a solicitation for new SSC membership	Low

Onramp recommendation	Resources required for implementation	Level of staff resources required
Workshop to solicit broad input from the public and knowledge holders during research priorities process	• Staff work with SSC research priorities subgroup, public, and other staff for planning	High
Implement template with guiding questions for LKTKS information	• Staff add to suite of internal analytical template documents, and it may need to be updated over time	Low to add template to other guidance documents, high to implement and use in analytical documents
Modify public comment procedures to allow for introductions	• Staff update SOPPs to reflect public comment changes • Admin staff monitor introductions in meetings	Low
Plan to increase non-economic social science capacity and LKTKS expertise more specifically	• Staff write letter to AFSC expressing Council's support for additional non-economic social science expertise • Staff support Social Sciences Planning Team • Staff involvement in Data Gaps Analysis	Medium to high depending on preferred pathway forward

Appendix A Template for working with Local Knowledge, Traditional Knowledge, and Subsistence Information

1. Background

This document contains several guiding questions that can help inform the development of discussion papers and analyses when staff identify or work with LK, TK, the social science of LK and TK, and subsistence information. This template is not intended to prescribe a narrow approach for staff, but instead provides a starting point as staff work to include these knowledge systems in products used to inform Council decision-making. This template is meant to be used in conjunction with other staff analytical templates and the LKTKS Protocol, as needed and appropriate. It is envisioned that this of questions will be modified and evolve over time as it is put into practice by analytical staff, and that responses to these questions may inform the methods for impact analysis, description of fisheries, and other sections of analytical documents. When engaging work with TK systems in particular, it is important to be mindful of whether there is appropriate expertise, training, and resources available to work with TK systems and TK holders.

2. Overarching questions and guidance related to LK, TK, and subsistence information

1. Are there any known impacts to subsistence resources and their uses resulting from this action? If so, see Section 4 below.
2. Have any Tribal Consultations or engagement sessions relevant to this action occurred? If so, work with NMFS to synthesize those meetings.
3. Have staff engaged with the LKTKS Protocol to identify and describe relevant information for the analysis? (This could include a literature review or outreach as needed or appropriate.)
4. Have staff used the LKTKS search engine to identify written sources and other types of LKTKS information?
    - Who has developed the data or information that is being reviewed by analysts? There may be different methods and approaches in use depending on the funding source and/or author.
5. How was the information and/or knowledge holders that are included in the analysis identified?

3. Questions and guidance related to LK and TK

1. What kinds of information could LK and/or TK contribute to the analysis?
    a. What chapters (e.g., EA, RIR, or SIA) or sections of the analysis would LK and TK contribute to?
2. If staff are reaching out to fishing associations, communities, or Tribes, is there a protocol for sharing knowledge in place (e.g., do crew members need permission from vessel captains to share certain information?)
    a. If so, see guideline 5.
3. Have other definitions for LK, TK, or subsistence been provided? If so, by whom and can those alternative definitions be shared or described in the analytical document being prepared?
4. Do staff need to identify LK and TK experts?
    a. If yes, see guideline 3 of the LKTKS Protocol. If no, why not?
    b. Have knowledge holders been asked how, or if, they would like to be attributed?
5. How representative is the collected LK and/or TK of the action and issue of interest that is relevant to the action and/or alternatives developed by the Council?

   a. If the analysis covers a large geographic extent and affects multiple types of users, LK or TK could be published in existing formats from multiple users reflecting that diversity. If the LK or TK is NOT fully representative of the action or issue of interest, this is to be clearly noted with mention to the regions/users that have not been included.
6. Are there elements or dimensions of LK and/or TK (e.g., intangible, cultural) that do not easily fit within the current structure of analyses (i.e., description of issues and/or management impacts) that should be included in analyses?
7. How do the communities potentially affected by the action being analyzed value the resource/habitat/ecosystem/practices/etc. that are being analyzed? Do we know? What can we say about it?
8. Identify possible conflicts or omissions in the process. How might the selection of knowledge for inclusion inform or weight your findings? How are you managing bias?

4. Analytical questions and guidance related to subsistence

The following questions provide a starting point for analytical consideration while analysts evaluate the potential impacts of a Council action on subsistence uses or users of a resource. These questions represent some of the categories of impacts to subsistence that could result from Council action and decision-making.

1. Is there a long-term and consistent pattern of use and dependence on the resource for subsistence purposes?
   a. Have there been disruptions to the pattern of use and dependence on the resource for subsistence purposes? If so, what? Disruptions may include changes beyond a gatherer's control (e.g., changes in species abundance or distribution due to climate change, regulatory changes, and more).
2. When in the calendar year is the resource being harvested?
   a. Are there specific harvesting practices that can be described (e.g., fishing gear types)?
   b. Are there means of handling, preparing, preserving, or storing resources that can be described?
3. What is the area where there are long-term and consistent patterns of taking and use of the resource for subsistence purposes?
   a. Have there been disruptions to subsistence user's ability to reach an area where there are long-term and consistent patterns of taking and use of the resource for subsistence purposes?
   b. Are subsistence gatherers or communities making adjustments to harvest other resources to compensate for a loss of resource access?
   c. Are subsistence gatherers or communities making adjustments to harvest resources on a different pattern, timescale, or gear types in light of environmental changes?
4. Are there patterns of use that include handing down knowledge of resources, skills, values, and more across generations?
5. What is the pattern of harvesting and use where the harvested resource is shared or distributed among kin and/or communities?
6. What is the pattern of harvesting, use, or reliance for subsistence purposes that provides substantial economic, cultural, social, or nutritional elements for the subsistence way of life?

PC04

Lake and Peninsula Borough
P.O. Box 495
King Salmon, Alaska 99613

Telephone: (907) 246-3421
Fax: (907) 246-6602

November 14, 2023

Alaska Board of Fisheries
P.O. Box 115526
Juneau, AK 99811-5526

Re: BOF Committee on Process, Management, and Research Needs & Traditional Ecological Knowledge (TEK)

Dear Committee Members,

The Lake and Peninsula Borough (LPB) appreciates the opportunity to comment on the Board's expressed interest in meaningfully including Traditional Ecological Knowledge (TEK) in their decision-making process.

LPB is comprised of 17 communities of Yup'ik, Dena'ina, and Alutiiq heritage with deep knowledge of and connection to our lands and waters and the resources they provide. The Borough spans three distinct areas of southwestern Alaska: the Lake Iliamna Area, the Upper Peninsula Area, and the Chignik Area. Our region is diverse, but LPB communities and residents all share in relying on and greatly valuing continued access to the resources and practices that make our communities healthy, and sustainable and equitable management of fisheries and fishing opportunities.

LPB commends the Committee on recognizing the role of Traditional Ecological Knowledge (TEK) in sustainable management and improved decision-making. Our comments are brief at this initial stage and are explained in more detail below.

Firstly, identifying, defining, and adopting clearly defined and appropriate terms and processes is integral to more robust and improved management and decision-making processes. For example, Indigenous Knowledge (IK) and Traditional Knowledge (TK) are often cited as more appropriate terms than TEK. There are many examples from around the globe that demonstrate how use of TEK limits the scope of what knowledge and information is considered to be valuable or relevant in decision-making processes. This has created scenarios whereby IK and TK have been extracted, evaluated, and misused by western scientists in determining what knowledge is useful or valid. A more comprehensive understanding of TK and IK ensures improved understanding of not only ecological dimensions and change, but also social and cultural dimensions, among others, that are essential to science-based and sustainable management and decision-making.

The North Pacific Fishery Management Council (NPFMC) recently adopted a protocol[1] and onramps document[2] to ensure systematic and equitable inclusion of Local Knowledge, Traditional Knowledge, and subsistence information (LKTKS) in the Council's decision-making processes.[3] This was a multi-year process advanced by a task force created by the NPFMC that was made up of diverse expertise and knowledge holders. We encourage the Board to look to these recent efforts by the NPFMC when moving forward in their own process.

Local knowledge and Traditional Knowledge are explicitly identified in National Standard 2 of the Magnuson Stevens Act, which mandates use of best available science. Similar to the NPFMC LKTKS protocol and process, the Board should create a process that ensures that knowledge holders are able to use their preferred terms (e.g., IK or TK) and ensure that there is shared understanding of these terms as applied in Board processes.[4] Recent federal guidance[5] and a large literature on this subject will be highly valuable and should inform the Board's process moving forward.

Finally, LPB recognizes that the State is currently operating under budget and capacity constraints that greatly impact how effectively the State can monitor and manage resources and fisheries. Tribes and Indigenous Peoples across our region and Alaska have been respectfully and patiently requesting adequate consideration of their knowledge in science and decision-making processes for many decades. We have a successful and multigenerational track record in sustainable management and want to be part of the process moving forward in such challenging and consequential times. There are a number of issues that will need to be addressed as the Board advances this work, and we encourage the Board to move forward in a careful and considerate way to ensure respectful and sustained engagement with Indigenous and Traditional Knowledge holders and knowledge systems. Thank you for your time and effort in taking this important first step.

Sincerely,

Nathan Hill
Borough Manager

[1] See *Protocol for Identifying, Analyzing, and Incorporating Local Knowledge, Traditional Knowledge, and Subsistence Information into the North Pacific Fishery Management Council's Decision-making Process* at: https://meetings.npfmc.org/CommentReview/DownloadFile?p=01d3b23b-0bf8-4abc-8e7a-6e58d3d619d4.pdf&fileName=D1%20LKTKS%20Protocol%20.pdf

[2] See *Onramps for Local Knowledge, Traditional Knowledge, and Subsistence Information in the North Pacific Fishery Management Council's Process at: https://meetings.npfmc.org/CommentReview/DownloadFile?p=3ddcb128-3595-490d-a892-ad9579297276.pdf&fileName=D1%20Onramps%20for%20LKTKS%20Recommendations.pdf*

[3] See https://meetings.npfmc.org/CommentReview/DownloadFile?p=68fa4f9e-88d2-4e37-9ce1-f3828095dd7e.pdf&fileName=D1%20Council%20Motion%20LKTKS.pdf

[4] See https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf

[5] See White House Releases First-of-a-Kind Indigenous Knowledge Guidance for Federal Agencies at: https://www.whitehouse.gov/ceq/news-updates/2022/12/01/white-house-releases-first-of-a-kind-indigenous-knowledge-guidance-for-federal-agencies/

November 15, 2023

Alaska Board of Fisheries
P.O. Box 115526
Juneau, AK 99811-5526

Re: BOF Committee on Process, Management, and Research Needs and Traditional Ecological Knowledge (TEK)

Dear Committee Members,

We are writing you as scholars and researchers in Alaska working in the field of fisheries sciences and serving and working alongside Alaska Native Tribes and communities in various parts of Alaska. We appreciate the opportunity to provide comments to the Board regarding how to incorporate Traditional Ecological Knowledge (TEK) in the decision-making process. This question has been posed to managers and researchers for quite some time, and we hope this process and comments received will help guide Committee members in the right direction.

Before we go into greater detail, we want to get across four main points to the BOF Committee for consideration:

1. In order for Indigenous knowledge to be adequately included in the BOF decision-making process, it has to be fully integrated into state fisheries management and research processes. We recommend providing the Alaska Department of Fish and Game Subsistence Division with increased funding to have adequate staff and resources needed to ensure Indigenous knowledge is included in research, in addition to increasing recruitment and retention of Alaska Native hires.
2. In order for Indigenous knowledge to be adequately included in the BOF decision-making process, Alaska Natives must be more adequately represented at the BOF.
3. In order for Indigenous knowledge to be adequately included in the BOF decision-making process, opportunities for Alaska Native participation in the BOF decision-making process including both testimony and committee of the whole should include online and telephonic options.
    a. Given the fact that Alaska Natives living in rural Alaska collectively spend hundreds of thousands of dollars to travel and participate in the BOF process, and the fact that they receive minimal to zero funding to do so exhibits a clear barrier to adequately engaging in the BOF process, and thus ensuring inclusion of IK in this process.
4. Given that subsistence is a state priority, yet less than one percent of the overall take is categorized as subsistence, we urge the BOF Committee to integrate Alaska Native subsistence users into the BOF process and other research and management that the Board and Alaska Department of Fish and Game is involved with.

We would first like to address the BOF Committee's use of TEK and want to acknowledge that there are various terms that have been used to define Indigenous knowledge systems and ways of life, the relationship and responsibility with Creation and non-human relatives, including, but not limited to Indigenous knowledge (IK), Traditional Ecological Knowledge (TEK), Traditional Knowledge (TK) and Indigenous Science (Reid et al. 2022, Table 1). Indigenous scholar Deborah McGregor reflects on her first encounter with the term TEK, which was at a university from non-Indigenous scholars, where TEK was referred to as "the knowledge of Native people about their natural environment" (McGregor, 2004; Nakashima, 1993). In some ways, this

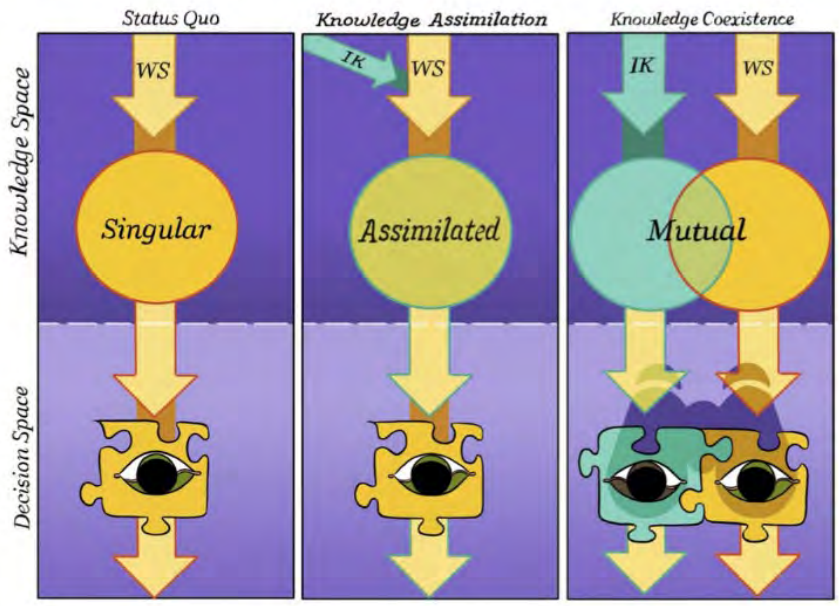
definition fails to fully describe the richness, depth and meaning of our knowledge systems. We suggest the BOF follow current preferences in Indigenous scholarship and recent federal guidance (Whitehouse, 2022) to use terms Indigenous Knowledge or Traditional Knowledge. Regardless of what term is used, **it is most important to not limit these bodies of knowledge as in the past, static, and confined to connections with ecology and commodities able to be extracted and applied without its knowledge holders.**

We strongly encourage the Board to follow recent federal guidance that TEK/TK/IK is recognized as *best available science* and does not need validation by western science protocols (Whitehouse, 2022). Potawatomi scholar Kyle White's, views TEK as a "collaborative concept" (Whyte, 2013). He states any meaning of TEK can be accepted if it brings people working across institutions and disciplines together in a way that ultimately leads to a mutual respect for the knowledge source of those involved. He views TEK as a concept and opportunity to bridge cross-cultural divides in a way that is respectful and enables two-wayed learning (Whyte, 2013). With this in mind, and given the intent of this public meeting, we anticipate this step in meaningfully incorporating TEK into the Board's decision-making process as a mechanism for bridging some of the many divides between the Board processes and Tribal governments, Indigenous Peoples and communities across Alaska.

Anishinaabe scholar, Deborah McGregor described Indigenous knowledge (IK) as, "The responsibilities that one would assume would ensure the continuation of Creation (or what academics or scientists might call 'sustainability'" (McGregor, 2004). The Indigenous Peoples of Alaska have stewarded the lands, waters, fish, and wildlife since time immemorial, and the deep wisdom and knowledge Alaska Native knowledge holders carry is rooted in sustainability, care, and respect. Shawn Wilson (2008) indicates that this "…knowledge is part of the relationships between us and cannot be owned." Gregory Cajete (1999) states that "…Understanding the relationship scientifically is not enough – living and nurturing these relationships is key." IK should be viewed more as an action, a way of life, a set of relationships with Creation as opposed to a noun and limited to a body of knowledge that can be extracted and/or utilized to fill data gaps in the sciences. This is critical when reflecting on current standards as well as historical approaches to working with Indigenous peoples and IK as a commodity or something that can be taken out of context and out of place, without its knowledge holders.

IK is "rooted in the long inhabitation of a particular place (and) offers lessons that can benefit everyone…as we search for a more satisfying and sustainable way to live on this planet (Kawagley & Barnhardt, 1998). This is critical and goes beyond some thinking that IK can only benefit the communities it is rooted in. IK is understood through all senses, and a critical part of learning and coming to know comes from intergenerational knowledge transmission. IK is subtle, but also… "consensual, replicable, …experimental and predictive" (Bielawski, 1990). IK is deeply rooted in daily lived experiences and connections with the land, the waters, the two-legged, the four-legged, the winged and spirit. IK is "inseparable from the peoples who hold it" (Assembly of First Nations, 1995; Roberts, 1996). You cannot attempt to use or allow IK to guide State policy, management or any actions without including Indigenous Peoples; doing so would be inappropriate. Elder Albert Marshall views "knowledge as spirit," not as a property or commodity (Bartlett et al., 2012). We encourage the Board to create space for spirituality and ceremony in their processes and accept IK and the knowledge holders for everything they bring to the table. The richness and depth of IK would be lost through translation of IK in State processes without involvement of Indigenous Peoples every step of the way. An additional consideration for review by the BOF Committee is the figure below created by Dr. Andrea Reid (Nisga'a), Elder Albert Marshall (Mi'kmaw), and colleagues (2020), illustrating a "one-eyed" approached, knowledge assimilation, and a two-eyed seeing approach or knowledge

coexistence approach. **We believe that the last approach, the two-eyed seeing or knowledge co-existence approach is one way that the BOF Committee can work with knowledge holders to equitably ensure their knowledges are adequately and properly represented in BOF decision-making processes.**



In reflecting on how the BOF Committee should proceed with incorporating IK into current decision-making processes, we want to share this quote from an Alaska Native fisherman and scientist who participated in the Indigenizing Salmon Science and Management project (NSF #1936378).

"You can't have meetings with 50 people and the crowd and everybody sitting at a table but not you, you're sitting in the crowd, and then they have public testimony and you're gonna go share traditional knowledge that way? That's not conducive to the Native way, not the Yup'ik way. When they share traditional knowledge, it's never that way. It's not through Robert's rules of order. You know interpreters can be provided, and it needs to be in a setting that they're familiar with and comfortable with. Cause the last thing you want is someone that has something to share and they don't share it. That's the worst thing ever."

This quote captures some of the many barriers in the current BOF process being able to adequately and meaningfully being able to incorporate Indigenous Peoles and knowledge systems. **We encourage the BOF committee to thoroughly review the White House First-of-a-Kind Indigenous Knowledge Guidance document for Federal agencies (Whitehouse, 2022).** There are many excellent examples and guidance on how to go about doing this type of work that can help the BOF Committee when considering how to proceed with incorporating IK into their decision-making process. For example, the article specifically highlights that agencies should recognize and apply IK in decision-making, research and policy processes. The authors speak to the fact that IK systems do not need to be validated, judged, or evaluated through other knowledge systems. The guide also speaks to the harmful history of misuse of western science and research to harm Indigenous Peoples. That history must be acknowledged to start to repair relationships and provide space for healing. The guide states that,

"Agencies should also include Indigenous Knowledge as an aspect of best available science. A number of legal standards requiring the consideration of scientific information can also permit the consideration of Indigenous Knowledge. Agencies should consider evaluating the standards applicable to their work to decide whether the consideration of Indigenous Knowledge should be referenced explicitly in agency regulations or policies." (19)

"At times, Western science has been used as a tool to oppress Tribal Nations and Indigenous Peoples. Nations and Indigenous Peoples. Indigenous Peoples in the United States have experienced significant unethical health research abuses, including the use of genetic data and health records without their knowledge or consent. For example, the pseudoscience embodied in the eugenics movement, with the collaboration of scientists and medical providers, resulted in the forced sterilization of Indigenous women across the Nation. Indigenous Knowledge has also been historically marginalized in scientific communities and excluded from research and academic resources, funding, and other opportunities. Federal decision makers have also excluded Indigenous Knowledge from research and policy decisions. This marginalization has resulted from a lack of awareness, unfamiliarity and methodological dogma, and, too often, racism and imperialism. Some Federal decision makers have taken strides to address these historical wrongs and elevate Indigenous Knowledge, but more work remains. This guidance provides considerations and practices to further the important work of ensuring that Agencies appropriately include Indigenous Knowledge, while respectfully working with the Tribes and Indigenous Peoples who hold it." (5)

"Understanding the different experiences of Tribal and Indigenous Peoples is critical for Agencies to work with them and engage effectively with Indigenous Knowledge. Agencies should acknowledge the history of the department or agency they represent, and the Federal Government broadly, when working with Tribes and Indigenous Peoples. Recognizing past injustice, while upholding Tribal treaty and reserved rights, and respecting Tribal and Indigenous communities, cultures, and values will assist Agencies in developing collaborative processes that are more equitable and inclusive of Indigenous Peoples and their knowledge systems." (8)

"Agencies must respect the sovereignty of Tribal Nations and conduct outreach through the appropriate forums and with respect for the Nation-to-Nation relationship and the United States' trust responsibilities. Agencies should discuss plans for direct engagement with Tribal Nations or Indigenous Peoples and ensure sustained engagement throughout the development or implementation of the activity. When engaging with Indigenous Knowledge holders who are members of Federally-recognized Tribes, Agencies should be mindful of Tribal sovereignty and recognize that Tribal leaders grant consent for the sharing of Indigenous Knowledge. Agencies should engage only with such individual knowledge holders designated by Tribal leadership." (10)

In addition to the Indigenous Knowledge Whitehouse Guidance document, the North Pacific Fishery Management Council (NPFMC) also adopted a protocol[1] and onramps[2] document

[1] 1 See Protocol for Identifying, Analyzing, and Incorporating Local Knowledge, Traditional Knowledge, and Subsistence Information into the North Pacific Fishery Management Council's Decision-making Process at: https://meetings.npfmc.org/CommentReview/DownloadFile?p=01d3b23b-0bf8-4abc-8e7a-6e58d3d619d4.pdf&fileName=D1%20LKTKS%20Protocol%20.pdf

[2] See Onramps for Local Knowledge, Traditional Knowledge, and Subsistence Information in the North Pacific Fishery Management Council's Process at: https://meetings.npfmc.org/CommentReview/DownloadFile?p=3ddcb128-3595-490d-a892-ad9579297276.pdf&fileName=D1%20Onramps%20for%20LKTKS%20Recommenda-ons.pdf

centered around the systematic and equitable inclusion of local knowledge, Traditional Knowledge, and subsistence information in the Council's decision-making processes[3]. **The BOF Committee would also benefit from further reviewing products created by this NPFMC LKTKS task force**. These are a few of the many considerations for the BOF Committee to reflect on when thinking about how IK can properly inform State processes and policies.

Ultimately, it is critical that Indigenous Peoples have equitable representation in State agencies, on the Board, at the meetings, and decision-making tables. In this regard, what can the Board do to enhance Tribal inclusion in their meetings and processes, especially when considering the fact that many Alaska Native communities are off the road system, and the cost to attend the Board meetings and effectively participate are exorbitant. In order for Indigenous Peoples to have equal representation at the meetings, there needs to be more funds allocated to Tribes to properly attend and engage in this space. Lee et al. (2019) emphasizes the need for power sharing, which in this particular case, would be between the Board and Tribal governments and communities. Power sharing is critical. As we mentioned above, Indigenous Peoples need equal representation at the table. Currently, how is subsistence and TEK represented and reflected in the Board leadership and more broadly, at the Alaska Department of Fish and Game? In thinking about power sharing, it is important for the Board to acknowledge the current power imbalances in order to move forward in a good way (Nadasdy, 1999).

In thinking about how the Board should reference and speak to TK, there should be no reference of TK, IK, or TEK as anecdotal (Merculieff, 1990). These bodies of knowledges should be valued and referred to as co-equal to western science and as best available science . **Building trust and securing long-term funding to support the inclusion of IK and knowledge holders in the Board processes are essential** (Lee et al., 2019). In order to build trust, the Board should consider how they can spend more time with Indigenous peoples in their communities, on their lands and waters, getting to know each other and learn from each other outside of office settings. Spending time with Indigenous Peoples in their home communities is where some of the true relationship building can occur. Relationships do not stop after ensuring IK successfully guides one or several policies and processes, but rather, these relationships and commitments to Indigenous communities are life-long.

We have heard from several Indigenous knowledge holders that the Board process is not conducive to sharing their knowledge for various reasons. Some of these reasons included the limited amount of time allocated to speakers during public testimony. When considering the language barriers for first language Indigenous speakers, this is inequitable. We suggest at the very least, Indigenous knowledge holders are given more time to speak during public testimony and language translators are provided free of cost. We also suggest the Board creating a specific agenda item where IK can be shared by specific knowledge holders following the definitions given above. While we value local knowledge, it does not carry or reflect the deep time, intergenerational component IK, TK, and TEK Indigenous Peoples carry, and thus, this is why there would be value in adding an agenda item to the Board process that allows for IK to be shared with the Board.

The Board must also recognize Indigenous Peoples as, "…self-determining nations with rights and responsibilities regarding their knowledge systems and lands" (Latulippe, 2019). As the Board identifies ways to include IK in their processes and policy, they must ensure these processes allow for increased understanding, equity and empowerment of

[3] See https://meetings.npfmc.org/CommentReview/DownloadFile?p=68fa4f9e-88d2-4e37-9ce1-f3828095dd7e.pdf&fileName=D1%20Council%20Mo-on%20LKTKS.pdf

Indigenous Peoples. All approaches must be guided by principles including relationality, responsibility, reciprocity, redistribution (Harris & Wasilewski, 2004; Wilson, 2008). IK is "…inseparable from the socio-cultural, political, legal and other grounded, largely place-based relations and obligations that give rise to holistic knowledge systems (Hitomi & Loring, 2018; Lickers, 1997; Parsons et al., 2016; Reo, 2019; Rosengren, 2018; Scoville-Simonds, 2018; Smith, 2018). Therefore, Tribal access to land and resources is central to the existence of IK (Latulippe, 2019). The Board must be ready to support Tribal governance systems, stewardship practices and the inherent rights of Indigenous Peoples to steward lands, waters and resources.

We also wonder whether the Board can help entities like the Alaska Department of Fish and Game be more accountable to Tribes and ensuring IK and knowledge holders play a key role in the decision-making processes that affect Tribes? Can the Board provide guidance to the Department on including IK in the research and management processes? While we think this committee is a step in the right direction, we also have to consider moving beyond just talking about the inclusion of IK in processes but also ensuring adequate representation of IK and knowledge holders in these processes.

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