



# Local Knowledge, Traditional Knowledge, and Subsistence (LKTKS) Taskforce

*Update for the Bering Sea Fishery Ecosystem Plan Team, March 2022*

Co-Chairs:

Kate Haapala, Council staff

Sarah Wise, AFSC

# BS FEP Action Module

Protocols for Local Knowledge, Traditional Knowledge, and Subsistence

## Protocols for Local Knowledge, Traditional Knowledge, and Subsistence

- No specific action but we welcome feedback
- Review the LKTKS Taskforce's membership and goals
- Discuss progress to-date
  - Reviewed first draft of the protocol in January 2022
  - Walk through one guideline
- Next steps





# LKTKS Taskforce Membership

Mr. Toby Anungazuk Jr. (Golovin)  
Dr. Rachel Donkersloot (Coastal Cultures Research)  
Dr. Kate Haapala (NPFMC staff)  
Ms. Bridget Mansfield (NMFS, AKRO)  
Dr. Robert Murphy Jr. (Alaska Pacific University)  
Ms. Darcy Peter (Woodell Climate Research Center;  
Beaver)  
Dr. Julie Raymond-Yakoubian (Kawerak)  
Mr. Richard Slats (Chevak)  
Mr. Simeon Swetzof (St. Paul)  
Ms. Alida Trainor (ADFG Subsistence Division)  
Dr. Sarah Wise (AFSC)



# LKTKS Taskforce

## Goals:

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.

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



# Where is the Taskforce at?

## *Meeting Timeline*



## *Work Products Completed*

- ✓ Workplan
- ✓ Glossary of terms
- ✓ First draft of the protocol









How do we acknowledge difference and respect diverse cultural identities?





# Select Scientific Literature: Integrating LKTK in decision-making

## Climate Adaptations

- Alessa et al. 2016  
The role of Indigenous science and local knowledge in integrated observing systems: moving toward adaptive capacity indices and early warning systems. *Sustainability Science*, 11(1), 91-102.
- Eicken 2010  
Indigenous knowledge and sea ice science: What can we learn from indigenous ice users?. In *SIKU: Knowing our ice* (pp. 357-376).
- Makondo & Thomas 2018  
Climate change adaptation: Linking indigenous knowledge with western science for effective adaptation. *Environmental science & policy*, 88, 83-91.

## Fisheries

- Anderton & Frost (2002)  
Traditional/Local Knowledge Salmon Survey. Yukon River Panel Project CRE-16-02 Final Report.
- Chan et al. (2019)  
Exploring diversity in expert knowledge: variation in local ecological knowledge of Alaskan recreational and subsistence fishers. *ICES Journal of Marine Science*, 76(4), 913-924.
- Gordon (2021)  
Bridging Expert Knowledge and Fisheries Data to Inform Assessment and Management of Rockfishes in the Gulf of Alaska. University of Alaska Fairbanks.

## Local Knowledge Traditional Knowledge

## Environmental Observations

- Bielawski 2020  
Inuit indigenous knowledge and science in the Arctic (pp. 219-227).
- Raymond-Yakoubian 2014  
Indigenous knowledge and use of Bering Strait Region Ocean currents. Kawerak, Incorporated, Social Science Program.

## Sustainable management

- Danielsen et al. 2014  
Counting what counts: using local knowledge to improve Arctic resource management. *Polar Geography*, 37(1), 69-91.
- Hikuroa et al. 2011  
Integration of Indigenous Knowledge and Science. *International Journal of Science in Society*, 2(2).
- Rosellon-Druker et al. 2019  
Development of social-ecological conceptual models as the basis for an integrated ecosystem assessment framework in Southeast Alaska. *Ecology and Society*, 24(3).





# Protocol background

The protocol's content reflects consensus among Taskforce members. The seven main guidelines are also in line with the research and engagement principles outlined in the Alaska Federation of Natives Guidelines for Research and those developed by the National Science Foundation, Office of Polar Programs in its Principles for the Conduct of Research in the Arctic.

<http://www.ankn.uaf.edu/IKS/afnguide.html>  
<https://www.nsf.gov/geo/opp/arctic/conduct.jsp>



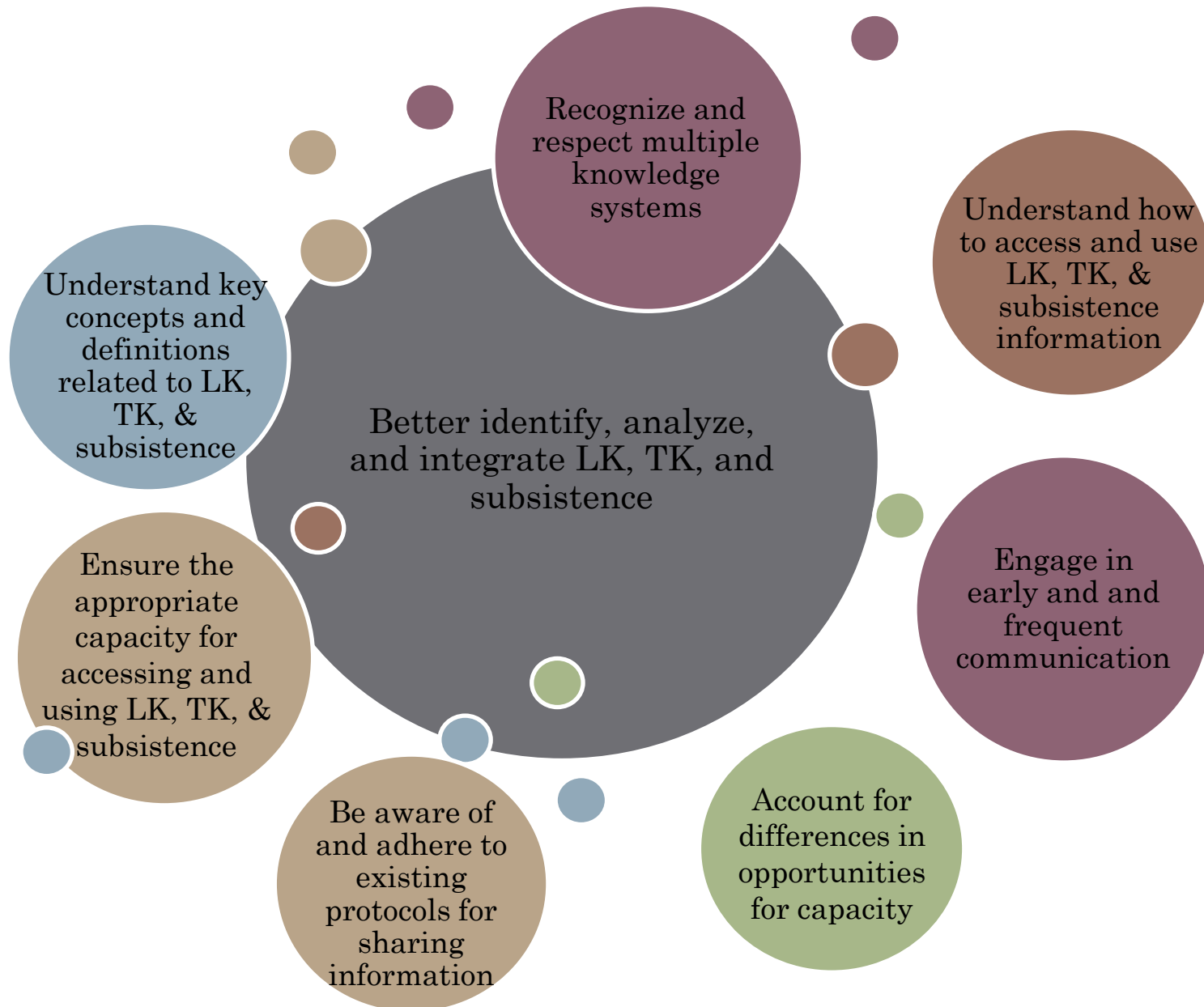
# Protocol – *setting the stage*

- No one component of this protocol should be separated from the whole
- The suite of guidance centers on relationships, cultural sensitivity, awareness, and respect
- The protocol is:
  - intentionally broad
  - specific to the Bering Sea region and fisheries management
  - action-informing





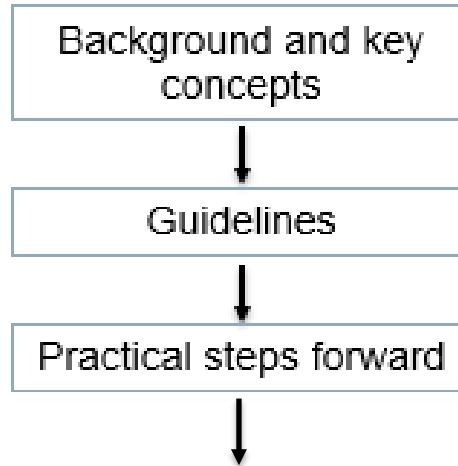
# Protocol guidelines





# Protocol structure

## LK, TK, and Subsistence Protocol



Improve understandings and provide analytical guidance to **identify, analyze, and include** LK, TK, and subsistence information into the Council's decision-making process



# Guideline 3

Recognize how to identify sources of LK, TK, the social science of LK and TK, and subsistence information.



*How can the Taskforce develop processes for identifying and defining sources of LK, TK, the social science of LK and TK, and subsistence information?*



Photo credit: Anna Henry



# LKTKS search engine

- A resource for analytical staff, researchers, and the public to more easily identify sources of LK, TK, the social science of LK and TK, and subsistence information.
- Sources of published or publicly available papers and reports related to LK, TK, or subsistence relevant to fisheries management and the North Pacific.

*When the fish come, we go fishing:*  
Local Ecological Knowledge  
of Non-Salmon Fish Used for Subsistence  
in the Bering Strait Region



**Subsistence Use and Knowledge of  
Salmon in Barrow and Nuiqsut, Alaska**

**Principal Investigator**  
Courtney Carothers  
School of Fisheries and Ocean Sciences  
University of Alaska Fairbanks

**Graduate Student Researchers**  
Shelley Colton, Katie Moerlein





# Finding the search engine: <https://lktks.npfmc.org/>



Additional suggestions for sources of local knowledge (LK), traditional knowledge (TK), the social science of LK and TK, as well as information about the subsistence way of life can be sent to [npfmc.lktks@gmail.com](mailto:npfmc.lktks@gmail.com)

All fields

---

Title

---

Author

---

Year From  Year To

---

Keywords

---

Groups

---

Methods

---

Species

---

Region

Title ↑	Author	Year	Link
Kusquqvagmiut Neqait: Fish and Food of the People of the Kuskokwim	Fienup-Riordan, Ann, Alice Rearden, and Marie Meade	2019	▼
Nunamta Ellamta-Ilu Ayuqucia/What Our Land and World are Like: Lower Yukon History and Oral Traditions	Rearden, Alice	2014	▼
'Always Taught Not to Waste': Traditional Knowledge and Norton Sound/Bering Strait Salmon Populations. 2015 Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative Project 1333 Final Product.	Kawerak, Inc., Brenden Raymond-Yakoubian, and Julie Raymond-Yakoubian	2015	<a href="#">Link</a> ▼
'We Monitor by Living Here': Actualization of a Social-Ecological Monitoring Program Grounded in Gitga'at Harvesters' Observations and Knowledge	Thompson, Kim-Ly	2018	<a href="#">Link</a> ▼
'What are you going to do, Protest the Wind?': Community Perceptions of Emergent and Worsening Coastal Erosion from the Remote Bering Sea Community of St. Paul, Alaska	Tran, Jessica, Lauren M. Divine, and Leanna R. Heffner	2020	<a href="#">Link</a> ▼
"A Bitter Taste of Fish: The Temporality of Salmon, Settler Colonialism, and the Work of Well-Being in a Yupiaq Fishing Village	Voinot-Baron, William	2020	<a href="#">Link</a> ▼
"A Preliminary Baseline Study of Subsistence Resource Utilization in the Pribilof Islands	Veltre, Douglas W., and Mary J. Veltre	1981	<a href="#">Link</a> ▼
"Alaska Native Subsistence: A Matter of Cultural Survival	Thornton, Thomas F	1998	<a href="#">Link</a> ▼
"Norton Sound Winter Red King Crab Studies, 2000	Brennan, Elisabeth L	2000	<a href="#">Link</a> ▼
"The Last Cowboys: Keeping Open Access in the Aleut Groundfish Fishery of the Gulf of Alaska	Reedy-Maschner, Katherine	2019	<a href="#">Link</a> ▼

Rows per page:  1-10 of 343 < >

# Building the search engine

The search engine contains LK, TK, the social science of LK and TK, and subsistence information (empirical and non-western scientific) related to the Council's jurisdiction.

Multi-step and iterative approach:

1. Retrieving sources – Taskforce expertise, Web of Science, Google Scholar, NOAA Voices, etc.
2. Examples of search terms “LK,” “TK,” “subsistence,” “fisheries management,” “climate change,” “wellbeing,” etc. to saturation.
3. To be included it must have a substantive focus based on specific parameters for the Council's jurisdiction (e.g., region and species), and refer to or be focused on LK, TK, and subsistence.
4. Then used an inductive approach to include thematically linked literature (e.g., equity, co-production, climate change, wellbeing, etc.) (Guest et al., 2006; Strauss and Corbin 1997).
5. Designed to be adaptive and evolve over time.
  - New submissions should be sent to [npfmc.ltkts@gmail.com](mailto:npfmc.ltkts@gmail.com)



# Identifying LK

- Asking fishing organizations or associations to identify cohorts of commercial fishers to talk to, and entities prepare a list of individuals who are well known with that specialized knowledge (Ames 2007).
- In communities, LK holders may be people who have experience with food preservation, learn from books and articles, and observers gathering (Alaska Native Elder, personal communication).





# Identifying TK

*“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*



# Know the Lay of the Land

- There is a real need to understand the various entities you're working with rather than designing a new system
- Different roles and responsibilities of agencies and key actors
- “Who do I talk to for this, for that, and the other?”



# LAY OF THE LAND NORTON SOUND REGION

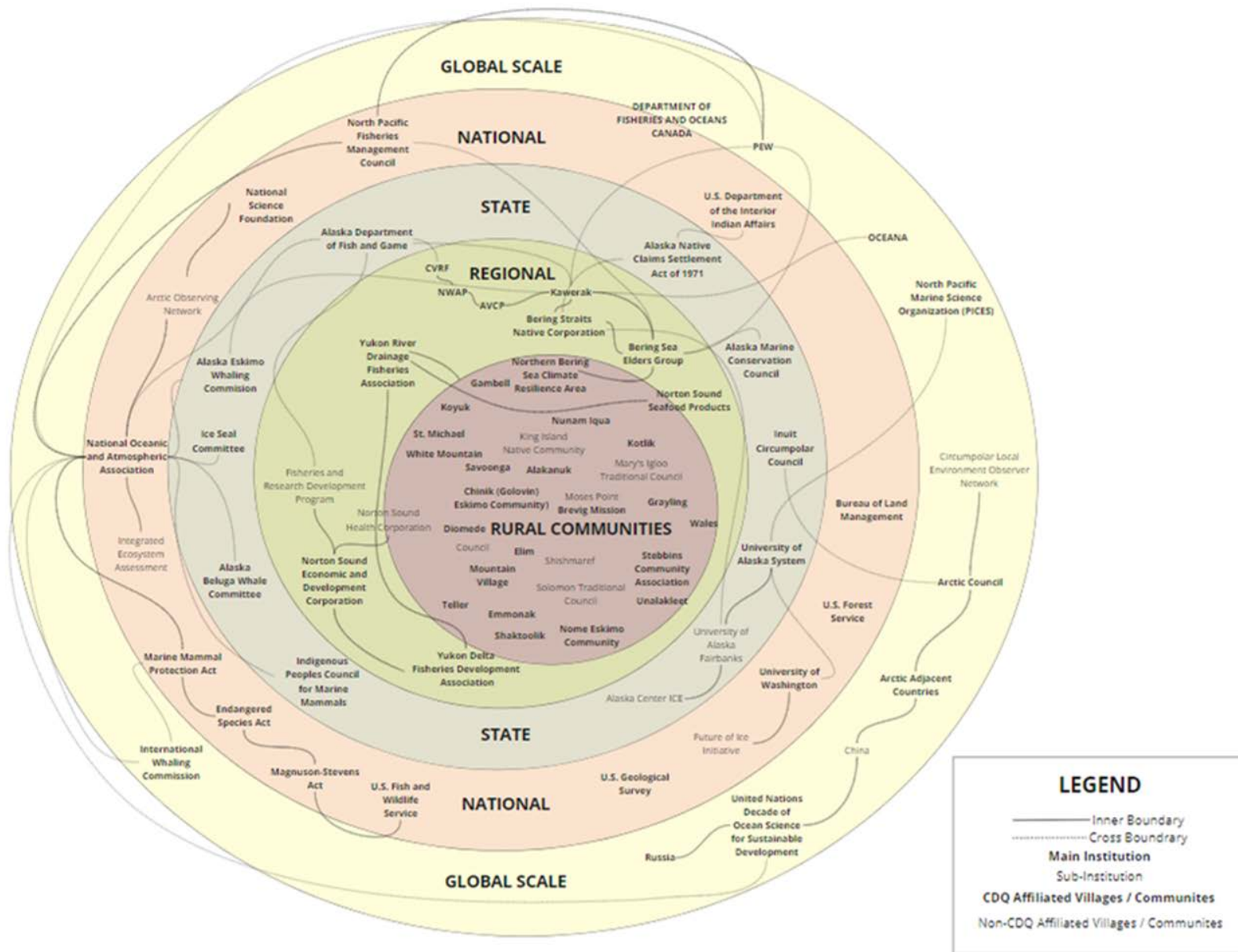


FIGURE 1: INITIAL OUTLINE OF VARIOUS INSTITUTIONS AND POLICIES INFLUENCING FISHERIES MANAGEMENT AND POLICY CREATION WITHIN THE NORTON SOUND REGION OF ALASKA ON GLOBAL, NATIONAL, STATE, REGIONAL, AND LOCAL SCALES



# Key takeaways

- Strengthening relationships and rapport.
- Acknowledge difference and respect diverse cultural values and identities.
- Taking a layered approaches to providing guidance that is practically useful.
- Support the Council in being responsive to a variety of Presidential Memorandums, Executive Orders, and legislation...



# Broader policy connections

**Magnuson Stevens Act** – National Standard 2 and 8

**Executive Order 12898** – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 16, 1994)

**Executive Order 13175** – Consultation and Coordination with Indian Tribal Governments (November 9, 2000)

**Presidential Memorandum** – Tribal Consultation and Strengthening Nation-to-Nation Relationships (January 26, 2021)

**Executive Order 13985** – Advancing Racial Equity and Support for Underserved Communities Through the Federal Government (January 25, 2021)

**Presidential Memorandum** – Indigenous Traditional Ecological Knowledge in Federal Decision-making (November 15, 2021)



# Next Steps

- ✓ The LKTKS Taskforce will have its next meeting in Fall 2022
  - Review a second draft protocol and further the discussion on potential onramps.
- ✓ The Taskforce intends to review a final protocol in January 2023 for Council review in early 2023, at which point the Council could consider adopting the protocol to inform its decision-making process.





# Questions?

[Kate.Haapala@noaa.gov](mailto:Kate.Haapala@noaa.gov)

