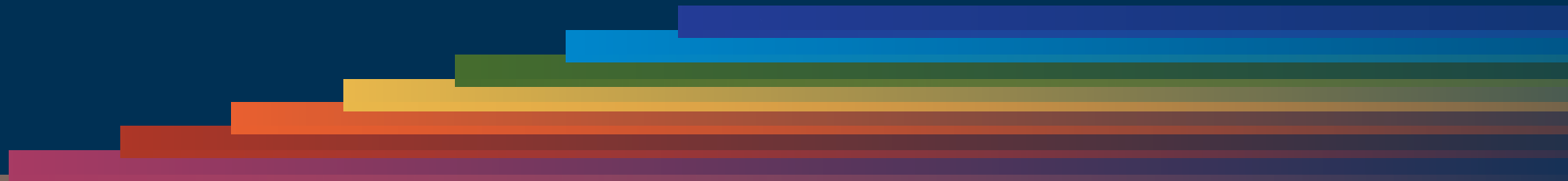


Department of the Interior

# *Procedures for the Inclusion and Application of Indigenous Knowledge* in the Actions of the Department



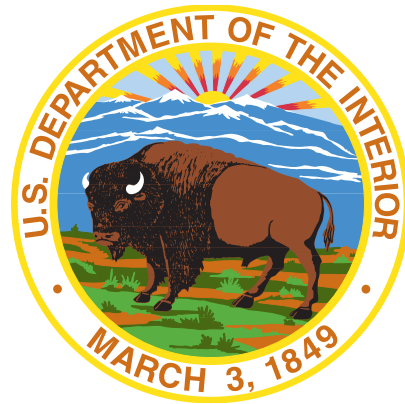
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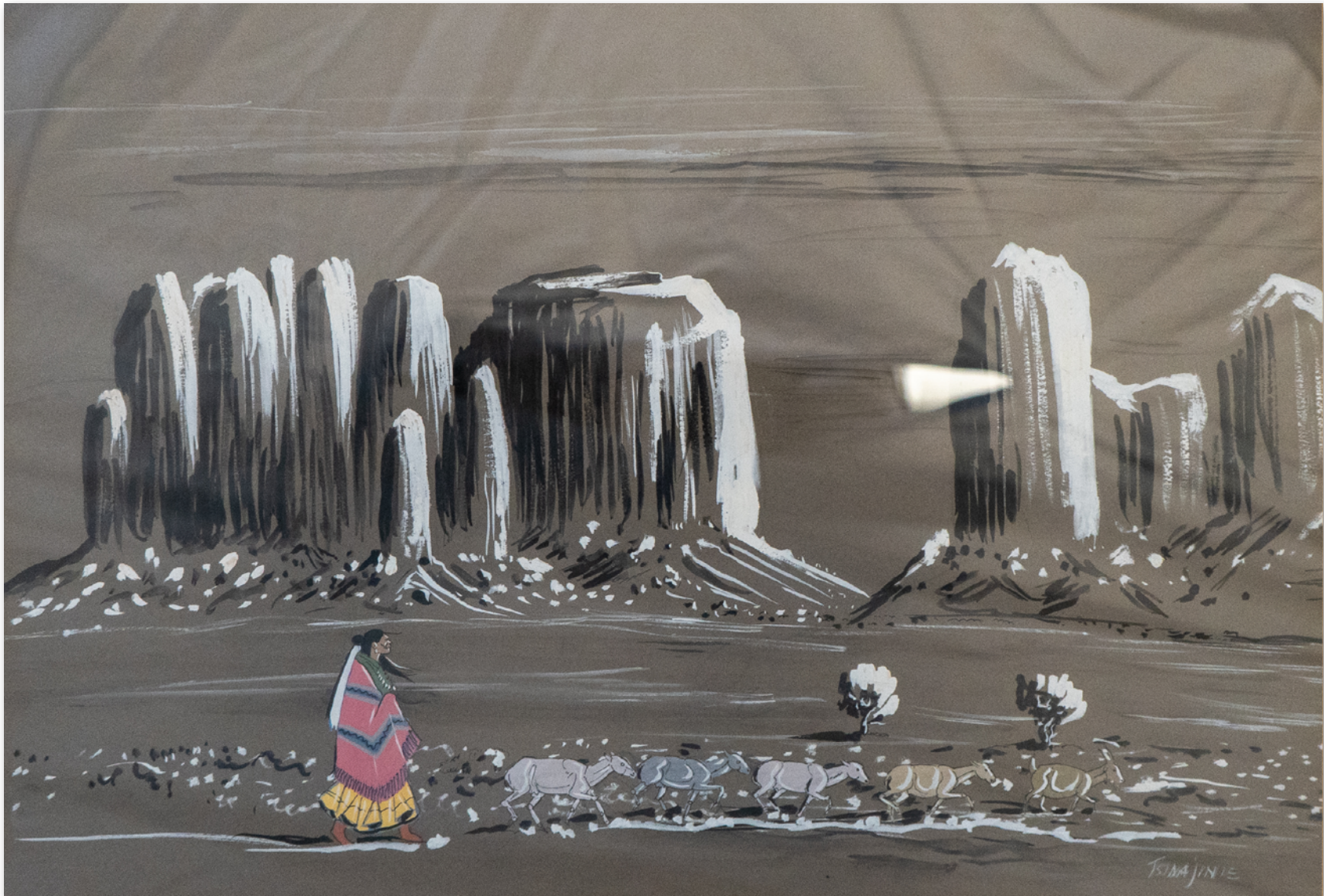
**U.S. Department of the Interior**

# **Procedures for the Inclusion and Application of Indigenous Knowledge in the Actions of the Department**



Handbook 301 DM7

**U.S. Department of the Interior**  
**U.S. Geological Survey**



A Diné (Navajo) person herds their sheep, recently sheered, in Monument Valley during the winter, used with permission by the Bureau of Indian Affairs Museum Program Collection.

## Foreword

The procedures found in this Handbook supplement the policies established by the Departmental Manual at part 301, chapter 7 (301 DM 7) and provide guidance on how to equitably promote the inclusion of Indigenous Knowledge in the Department of Interior's (Department or DOI) actions and scientific research.



A. Individual / Family B. Community / Culture C. Tribe D. Nation E. World

**Figure 1.** Confederated Salish and Kootenai Lifeways Model. Image by Michael Durglo Jr., Confederated Salish and Kootenai Lifeways Model, Confederated Salish and Kootenai Tribes, used with permission.

Indigenous Peoples have inhabited the land now known as the United States since time immemorial. During this time, they developed knowledge systems that comprise a deep understanding of landscapes and waterscapes based on interaction, observation, experimentation, and stewardship. These knowledge systems are called many things, including Indigenous Knowledge, Traditional Knowledge, and Traditional Ecological Knowledge. This Handbook uses the term Indigenous Knowledge. Indigenous Knowledge can be both written and oral and contains innovations, technologies, practices, and beliefs. Generation after generation, Indigenous Peoples have passed their knowledge down. However, Indigenous Knowledge is not static or based only in the past; it continues to develop and evolve today. Indigenous Knowledge is held and stewarded by Indigenous Peoples who have protected it throughout the turbulent history of this country, allowing it to survive today.

The inclusion of Indigenous Knowledge in the Department's actions should not be a parallel, yet separate, action. Instead, Indigenous Knowledge should be included with the data and information that inform the Department's actions. It should be included appropriately and with free, prior, and informed consent, and with compensation for the time and services Knowledge Holders provide.

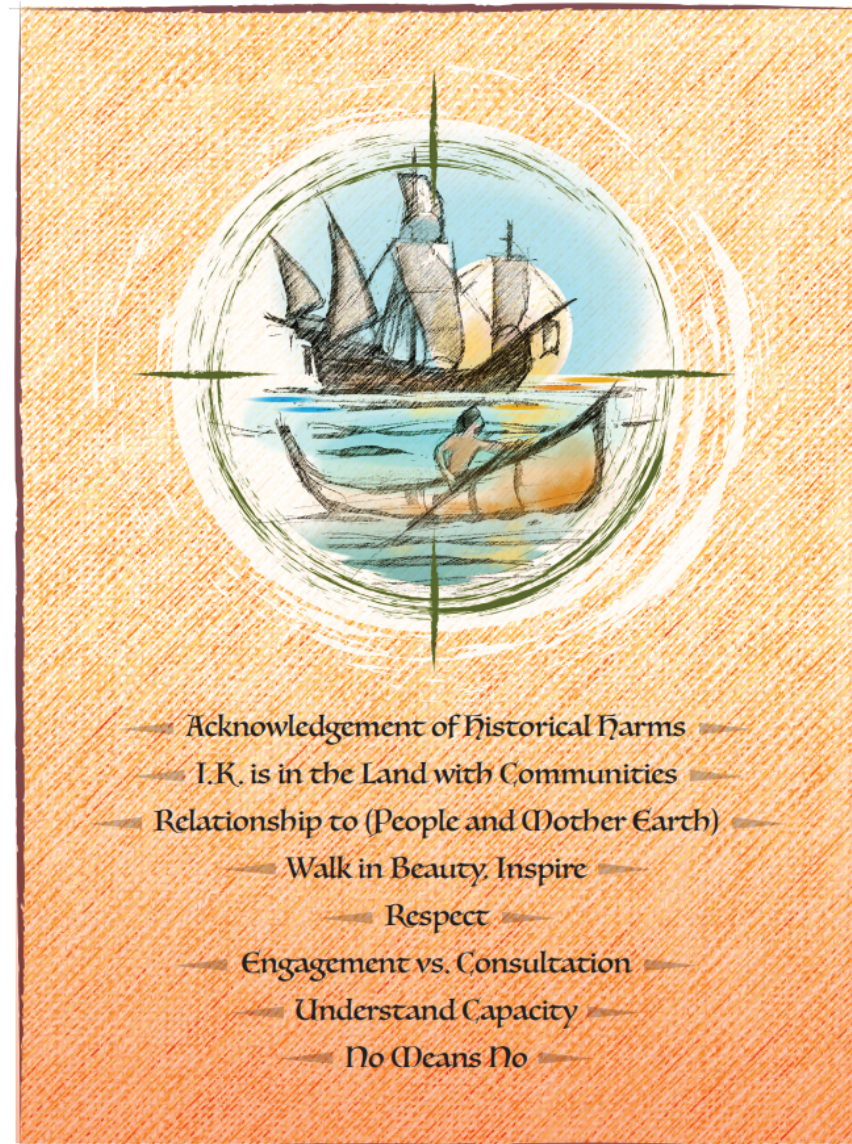
This Handbook is designed as a resource for Department employees with a role in decision making, resource management, program implementation, policy development, scientific research, and other actions that may involve collaboration with Tribal Nations or Indigenous communities to engage with Indigenous Knowledge. It offers promising practices and guidance to support the Department's commitment to elevate Indigenous Knowledge to be on equal footing with other scientific approaches in Department actions and scientific research.

This Handbook also provides employees practical tips and concepts for successful engagement with Indigenous Knowledge and Knowledge Holders. Employees are encouraged to approach engagement with Indigenous Knowledge and Knowledge Holders with respect and in a way that honors Indigenous ways of knowing and Indigenous approaches to the natural world. This Handbook encourages and provides opportunities to expand the breadth of knowledge systems employees use to accomplish the Department's mission.

This Handbook is not a step-by-step guide. Instead, it includes context, approaches, and ways of engaging, along with references to numerous existing resources where Department employees can learn more about a specific topic. The goal is for employees to have a foundation of knowledge to draw upon to create individualized processes as each situation arises in a respectful, equitable, and lasting way.

This Handbook is a reference, recognizing that the more Department employees engage in this work, the more they will learn how to develop promising practices into best practices and apply promising practices to unique situations—allowing employees to include Indigenous Knowledge more fully and meaningfully in an inclusive and equitable manner. The information in this Handbook is also an invitation for Department employees to learn more about Indigenous Knowledge and how to appropriately include it in their work.

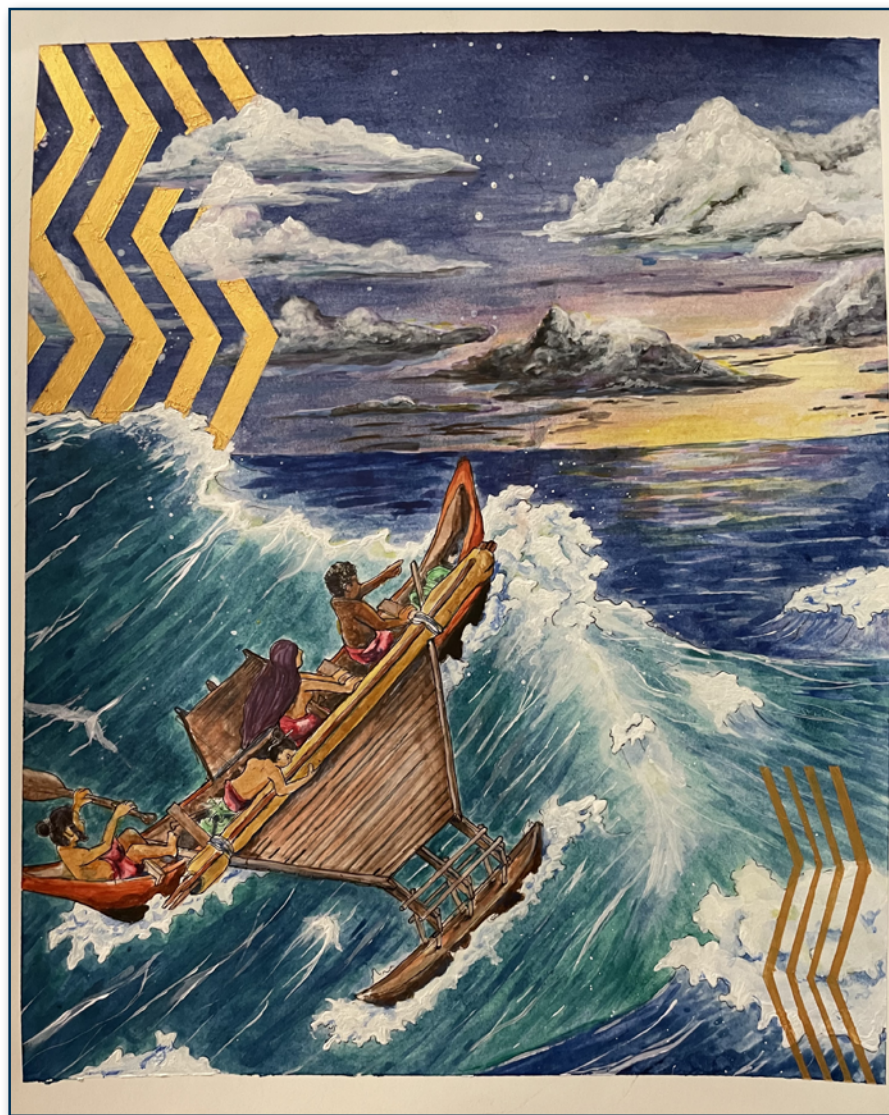
Figure 2 represents two different knowledge systems: Western knowledge systems represented by the ship and Indigenous Knowledge systems represented by the canoe, traveling in the same waters toward a shared goal. The text under the image highlights actions and concepts that are important for Department employees to put into practice and understand as they engage with Indigenous Knowledge.



**Figure 2.** Ship and canoe. Illustration by Ron Oden, courtesy of Michael Durglo Jr., Confederated Salish and Kootenai Tribes, used with permission.

As the image recommends, this work calls for an acknowledgement of historical harms, an understanding that Indigenous Knowledge resides in the land and with the people, and an honoring of the relationship between Indigenous Peoples and the Earth. Further, Department employees are encouraged to walk in beauty and inspiration as they work to elevate Indigenous Knowledge, to engage respectfully with Tribal Nations and Indigenous communities, and to understand the difference between engagement and consultation. Finally, employees should work to understand their own capacity as well as the capacity of Tribal and Indigenous partners to include Indigenous Knowledge in their work, and to respect the rights of Tribal Nations, Indigenous communities, and Knowledge Holders to decline to share Indigenous Knowledge with the Department.

This Handbook reflects feedback received during government-to-government consultation on the development of 301 DM 7 that was held in 2023 with federally recognized Tribes, Alaska Native Corporations, and the Native Hawaiian Community. A listening session also was held with Indigenous representatives from insular communities. Many individuals also contributed to the development of this Handbook, including Indigenous leaders, Knowledge Holders, Department employees, and scholars. The goal of all contributors was to develop guidance that is informative and comprehensive, provides employees information and tools to help them successfully include Indigenous Knowledge in their work.



Na Fangahāya Ham. Inspired by a chant written by defuntu Jeremy Cepeda, Na Fangahāya Ham. This piece and chant reflect that in every journey there are many trials and tribulations that one undergoes. It is in the experience of enduring the rough waters and resilience through the storm that there will calm waters to come after. Illustration by Joseph Certeza, used with permission by the Bureau of Indian Affairs Museum Program Collection.

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## Glossary

**Elevating Indigenous Knowledge** This phrase means promoting Indigenous Knowledge to be on equal footing with other scientific approaches and information in Department actions, including scientific research and decision-making.

**Federally Recognized Tribe or Tribal Nation** This term refers to an Indian or Alaska Native Tribe, band, Nation, pueblo, village, or community that the Secretary of the Interior acknowledges as a federally recognized Tribe pursuant to the Federally Recognized Indian Tribe List Act of 1994, 25 U.S.C. § 5130, and is generally eligible for the special programs and services provided by the United States to Indians because of their status as Indians.<sup>1</sup>

**Indigenous Knowledge** The following are generally agreed upon universal concepts that are often used to describe Indigenous Knowledge. Indigenous Knowledge is a body of observations, oral and written knowledge, innovations, technologies, practices, and beliefs developed by Indigenous Peoples through interaction and experience with the environment. It is applied to phenomena across biological, physical, social, cultural, and spiritual systems. Indigenous Knowledge can be developed over millennia, continues to develop, and includes understanding based on evidence acquired through direct contact with the environment and long-term experiences, as well as extensive observations, lessons, and skills passed from generation to generation. Indigenous Knowledge is developed, held, and stewarded by Indigenous Peoples and is often intrinsic within Indigenous legal traditions, including customary law or traditional governance structures and decision-making processes. Other terms, such as Traditional Knowledge(s), Traditional Ecological Knowledge, Genetic Resources associated with Traditional Knowledge, Traditional Cultural Expression, Tribal Ecological Knowledge, Native Science, Indigenous Applied Science, Indigenous Science, and others, are sometimes used to describe this knowledge system. This Handbook uses the term Indigenous Knowledge throughout while recognizing that diverse Indigenous Knowledge systems exist throughout the United States that are sometimes termed “Indigenous Knowledges.”

<sup>1</sup> See Indian Entities Recognized by and Eligible to Receive Services from the Bureau of Indian Affairs, 89 Fed. Reg. 944 (Jan. 8, 2024). This list is updated annually.

**Indigenous Peoples** “Indigenous Peoples” and “Indigenous communities” refer to people of Native American, Alaska Native, Native Hawaiian, Pacific and Caribbean Islander descent, and to Indigenous Peoples whose ancestors have occupied, since time immemorial, what is now known as the United States, including members of Tribal Nations. Congress regularly identifies Native Hawaiians as a distinct and unique Indigenous people with a historical continuity to the original inhabitants of the Hawaiian Islands. The terms “Indian” and “Tribe,” as used in the context of the U.S. Constitution and the plenary authority of Congress over Indian affairs, are inclusive of Native Hawaiians and the Native Hawaiian Community: “The authority of the Congress under the United States Constitution to legislate in matters affecting the aboriginal or indigenous peoples of the United States includes the authority to legislate in matters affecting the native peoples of Alaska and Hawaii.” 42 U.S.C. § 11701(17).

**Other scientific approaches** This Handbook uses the term “other scientific approaches” to refer to what is commonly called “Western science” because Western science incorporates scientific elements developed outside of the Western part of the world.<sup>2</sup> Additionally, it is important to qualify that the type of science referred to as Indigenous Knowledge is also considered to be science, and use of terminology such as “Indigenous Knowledge and science” can set up false dichotomies that imply that Indigenous Knowledge is not scientific.

**Promising practices** This Handbook uses the term “promising practices” rather than “best practices.” The Department’s practices to include Indigenous Knowledge will develop and evolve; thus, not all practices suggested in this Handbook can be elevated as the best; however, they hold promise as practices to include Indigenous Knowledge in equitable and inclusive ways.

**Rights-holder** An individual or group that has a particular entitlement in relation to decision making or the actions of an organization, action, or project. In general terms, all human beings are rights-holders. More specifically, Indigenous Peoples are rights-holders in relation to their lands and territories.

<sup>2</sup> Marwa Elshakry, *When Science Became Western: Historiographical Reflections*, 101 University of Chicago Press Journals (Mar. 2010), <https://www.journals.uchicago.edu/doi/full/10.1086/652691>.

## Section 1. How to Use this Handbook



This Handbook contains valuable information about the Department’s requirements contained in the Departmental Manual Part 301, Chapter 7 titled, “Departmental Responsibilities for Consideration and Inclusion of Indigenous Knowledge in Departmental Actions and Scientific Research” (301 DM 7; app. 1). It provides guidance, practical tips, and promising practices for engaging with Tribal Nations and Indigenous communities on the inclusion of Indigenous Knowledge. However, this Handbook will not provide a step-by-step or one-size-fits-all guide to working with Tribal Nations and Indigenous communities on the inclusion of Indigenous Knowledge because each situation is unique, as are Tribal Nations and Indigenous communities, and the actions and research of the Department’s Bureaus and Offices. It is important to note that 301 DM 7, and thus this Handbook, applies to Indigenous Peoples as defined in this Handbook.

The major sections in this Handbook are as follows:

**Section 1: How to Use this Handbook**—The current section outlines how to use this Handbook and how to get started; describes the intended audience; and provides an overview of the remaining content of this Handbook.

**Section 2: Embracing Indigenous Knowledge**—Section 2 describes Indigenous Knowledge; discusses benefits of elevating Indigenous Knowledge to be on equal footing with other scientific approaches and information; and emphasizes that ethics and equity should guide engagement with Knowledge Holders.

**Section 3: Historical Context of the Disruption of Indigenous Knowledge**—Section 3 outlines detrimental Federal policies; discusses the separation of Indigenous Peoples from ancestral homelands and accompanying loss of land; describes the impacts of assimilation and the loss of cultural identity; and acknowledges that disruption of Indigenous Knowledge continues today.

**Section 4: Elevating, Including, and Applying Indigenous Knowledge in Departmental Actions and Scientific Research**—Section 4 outlines how to plan one’s action or research; discusses compensating Knowledge Holders for their time and services; provides information on engaging Knowledge Holders, including obtaining free, prior, and informed consent; receiving Indigenous Knowledge from Knowledge Holders; and applying Indigenous Knowledge to one’s action or research. It also describes promising practices for protecting Indigenous Knowledge and disseminating results.

**Section 5: Case Study**—Section 5 provides information about the Alexander Archipelago Wolf Species Status Assessment as an example of including and applying Indigenous Knowledge to a Department action.

In addition, appendix 2 provides a reference that connects these sections with the requirements in 301 DM 7. Appendix 3 provides a flow chart with practical tips for elevating Indigenous Knowledge to be on equal footing with other scientific approaches and information in one’s actions and research. The remaining appendices provide additional information for implementing 301 DM 7; for example, appendix 9 describes performance standards for cultural competencies that could be adopted by Bureaus and Offices. Detailed descriptions of figures used to illustrate points throughout the Handbook can be found in appendix 11.

### Intended Audience

This Handbook is intended for Department employees who have a role in decision making, resource management, program implementation, policy development, scientific research, and other actions (other actions may include emergency or disaster response) that involve collaboration with Tribal Nations or Indigenous communities to engage with Indigenous Knowledge. After reading this Handbook, Department employees will understand the following:

- how Indigenous Knowledge may be described;

- the historical context of the disruption of Indigenous Knowledge in the United States and its continuing consequences for the work of the Department;
- the employee’s role in facilitating equitable processes to include Indigenous Knowledge in their work;
- the importance of ensuring that Tribal Nations, Indigenous communities, and Knowledge Holders understand the risks and benefits of sharing their knowledge with the Department; and
- the unique nature of Tribal Nations, Indigenous communities, and Knowledge Holders, requiring individualized processes that are often place-based or culturally based.

This Handbook will help Department employees understand how to create processes to collaborate with Tribal Nations and Indigenous communities in a respectful, equitable, and lasting way.

## Getting Started

The Department’s commitment to elevating Indigenous Knowledge to be on equal footing with other scientific approaches presents opportunities to learn about Indigenous Knowledge systems. Indigenous Knowledge may be appropriately applied in a variety of Department actions, including ecosystem and community resilience work, climate change scenario planning, environmental compliance work, and various environmental studies as well as emergency and disaster response. The following Departmental actions provide good examples of the inclusion of Indigenous Knowledge:

1. Bureau of Land Management (BLM), U.S. Forest Service (USFS), and Tribes of the Bears Ears Commission applying Indigenous Knowledge to management decisions through a formal co-stewardship agreement at the Bears Ears National Monument.<sup>3</sup>

<sup>3</sup> See Inter-Governmental Cooperative Agreement between the Tribal Nations Whose Representatives Comprise the Bears Ears Commission, et al., and the United States Department of the Interior, Bureau of Land Management and the United States Department of Agriculture, Forest Service for the Cooperative Management of the Federal Lands and Resources of the Bears Ears National Monument (June 2022), <https://www.blm.gov/sites/default/files/docs/2022-06/BearsEarsNationalMonumentInter-GovernmentalAgreement2022.pdf>.

2. BLM collaborating with the Mescalero Apache Tribe to identify healthy and sustainable populations of the agave plant that the Tribe could use as harvesting areas.<sup>4</sup>
3. U.S. Geological Survey partnering with the Yukon River Inter-Tribal Watershed Council on the Indigenous Observation Network, a community-based water-quality monitoring program that regularly includes Indigenous Knowledge as part of its monitoring activities to research, inventory, and monitor water quality in the Yukon River Basin.<sup>5</sup>

Department employees should use the information in this Handbook to strengthen their skills to build meaningful and ethical relationships with Indigenous Peoples as part of their work. This work may require some degree of self-reflection. Consider the following questions before moving forward:

- What emotions, assumptions, biases, and experiences do you bring to this topic, and how do they influence how you view Indigenous Knowledge?
- How do your history and culture influence how you value different types of knowledge?
- How do you determine what is true?
- What steps could you take to engage with other worldviews with equity, parity, and reciprocity?

<sup>4</sup> Bureau of Land Management, United States Department of the Interior, Fiscal Year (FY) 2022 Major Highlights-BLM New Mexico (2023), 2–2, <https://www.blm.gov/sites/default/files/docs/2022-11/new-mexico-annual-heritage-report-2022.pdf>.

<sup>5</sup> See Nicole Herman-Mercer, *Water-Quality Data from the Yukon River Basin in Alaska and Canada*: U.S. Geological Survey Data Release (2016), <https://dx.doi.org/10.5066/F77D2S7B>.

## Section 2. Embracing Indigenous Knowledge



Global recognition of the importance of Indigenous Knowledge has grown as communities across the world mitigate and adapt to climate change. Indigenous innovation, sustainability, and stewardship practices are being studied for their approaches to fire management,<sup>6</sup> climate adaptation,<sup>7</sup> food security,<sup>8</sup> and maintaining healthy fisheries<sup>9</sup> and ecosystems,<sup>10</sup> among other topics.<sup>11</sup> Furthermore, the tenets of Indigenous Knowledge systems, such as the relationship and interconnectedness of humans and ecosystems, are recognized as sound and necessary principles that can be relied upon in decision making.<sup>12</sup>

When working with Indigenous Knowledge, the Department employee's role is to engage Knowledge Holders and their appropriate governing bodies to determine if and how Indigenous Knowledge should be included and applied in the Department's actions and research. It is not the employee's role to determine if Indigenous Peoples should share their knowledge, unnecessarily acquire and keep Indigenous Knowledge, or validate Indigenous Knowledge using other scientific approaches. If sensitive Indigenous Knowledge is shared,

<sup>6</sup> See Kari Marie Norgaard and Sara Worl, *What Western States Can Learn from Native American Wildfire Management Strategies*, 2019, *The Conversation*, <https://theconversation.com/what-western-states-can-learn-from-native-american-wildfire-management-strategies-120731>.

<sup>7</sup> See Tristan Pearce, et al., *Inuit Traditional Ecological Knowledge (TEK), Subsistence Hunting and Adaptation to Climate Change in the Canadian Arctic* (2015), 68 *Arctic*, 233–245, <https://www.jstor.org/stable/43871322>.

<sup>8</sup> See *Inuit Circumpolar Council Alaska, Food Sovereignty and Self-Governance Workshop Summary Reports: Inuit Coming Together from Across Alaska and the Inuvialuit Settlement Region* (2022), <https://iccalaska.org/wp-icc/wp-content/uploads/2022/08/ICC-Compiled-Book-Lo-Res.pdf>.

<sup>9</sup> See Courtney Carothers, et al., *Indigenous Peoples and Salmon Stewardship: A Critical Relationship* (2021), 26 *Ecology and Society*, 16, <https://doi.org/10.5751/ES-11972-260116>; see also Andrea J. Reid, et al., “Two-Eyed Seeing”: An Indigenous framework to transform fisheries research and management. *Fish and Fisheries* (2020), v22(2): 243–261, <https://doi.org/10.1111/faf.12516>.

<sup>10</sup> See Richard W. Stoffle, et al., *Native Knowledge of Great Lakes Ecology: Climate Changes to Odawa Lands*, 5 *Frontiers in Climate*, (2023), <https://doi.org/10.3389/fclim.2023.979721>.

<sup>11</sup> The National Park Service maintains a website covering examples from methods to policies to applications at <https://www.nps.gov/subjects/tek/index.htm>.

<sup>12</sup> See Daniel R. Wildcat, *Red Alert! Saving the Planet with Indigenous Knowledge* (2009).

the Department should take steps to protect the knowledge to the extent possible by law (see the “Protecting Indigenous Knowledge and Disseminating Results” section).

### What is Indigenous Knowledge?

We are all situated within one or more knowledge systems that are culturally influenced and that shape the ways we perceive, interact with, and understand the world. Knowledge systems are the foundation of all societies; they are dynamic and may evolve over time. They support and guide behavior, communication, decision-making, and other aspects of life, including governance.<sup>13</sup> Knowledge systems comprise individuals, practices, and institutions that organize the production, transfer, and use of knowledge. The dominant knowledge system in the United States is a Western knowledge system that shapes our interactions with each other and with the natural environment.

There is no one universally accepted description of Indigenous Knowledge. Each description must be honored accordingly. Western descriptions and definitions of Indigenous Knowledge are defined in the English language and are often technical in nature. However, Western descriptions may lack the nuance of Indigenous languages and worldviews that embody Indigenous Knowledge. There are, however, generally agreed upon descriptions and foundational elements of Indigenous Knowledge.<sup>14</sup>

<sup>13</sup> See United States National Oceanic and Atmospheric Administration (NOAA) Fisheries and National Ocean Service, *Guidance and Best Practices for Engaging and Incorporating Traditional Ecological Knowledge in Decision-Making* (2019), <https://www.noaa.gov/sites/default/files/2021-11/19-065933-Traditional-Knowledge-in-Decision-Making-Documents-Signed.pdf>; see also NOAA *Tribal Resources*, <https://www.noaa.gov/legislative-and-intergovernmental-affairs/noaa-tribal-resources-updates>; United Nations Educational, Scientific and Cultural Organization (UNESCO), *Local and Indigenous Knowledge Systems (LINKS)*, <https://en.unesco.org/links>, <https://www.ipbes.net/glossary-tag/knowledge-system>; Jana Claudine Hertz, et al., *Knowledge Systems: Evidence to Policy Concepts in Practice* (2020), <https://doi.org/10.3768/rtipress.2020.pb.0024.2006>.

<sup>14</sup> See 301 DM § 7.4(A); see also U.S. Fish and Wildlife Service, *Traditional Ecological Knowledge for Application by Service Scientists* (2011), <https://www.fws.gov/sites/default/files/documents/TEK-Fact-Sheet.pdf>; Advisory Council on Historic Preservation, *Traditional Knowledge and the Section 106 Process: Information for Federal Agencies and Other Participants*, <https://www.achp.gov/sites/default/files/2021-05/TraditionalKnowledgePaper5-3-21.pdf>.

- Indigenous Knowledge systems are bodies of observations, oral and written knowledge, innovations, technologies, practices, and beliefs developed by Indigenous Peoples through interaction and experience with the environment as well as lessons and skills passed from generation to generation.
- Indigenous Knowledge is applied to phenomena across biological, physical, social, cultural, and spiritual systems.
- Indigenous Knowledge was developed over millennia and continues to develop.
- Indigenous Knowledge is developed, held, and stewarded by Indigenous Peoples and is often intrinsic within Indigenous traditions, customary law, or traditional governance structures and decision-making processes.
- Indigenous Knowledge uses systematic methodologies and verification through repetition and observation and is derived from relationships with the environment and new technologies. It continues to evolve over time as the Earth changes and new generations are born.
- Indigenous Knowledge rests upon the principle that all parts of our environment—the Earth, sky, animals (including humans), plants, waters, and fish—are important and related to one another. These relationships must be tended to and kept healthy and intact for future generations. Instead of viewing fish, wildlife, and plants as “resources,” Indigenous Knowledge considers them to be relations.

Indigenous Knowledge calls upon individuals, communities, organizations, governments, and others to act and make moral and ethical decisions in the best interest of multiple future generations, and place collective interests—including non-human interests—above individual interests.

Indigenous Peoples are unique. Each Tribal Nation and Indigenous community holds their own Indigenous Knowledge based on unique foundations and experiences as well as relationships within varied environments. Indigenous Knowledge is often deeply tied to specific landscapes and expressed through language. Some concepts in Indigenous languages may not have direct equivalents in English, making translation complex and potentially leading to a loss of nuance. Recognizing the challenges of translation and the richness of all languages is essential to understanding and respecting Indigenous Knowledge. Additionally, Indigenous Knowledge is distinct from local knowledge or individual knowledge, both of which are based on recent experiences that may not have been validated within the culture of an Indigenous group.

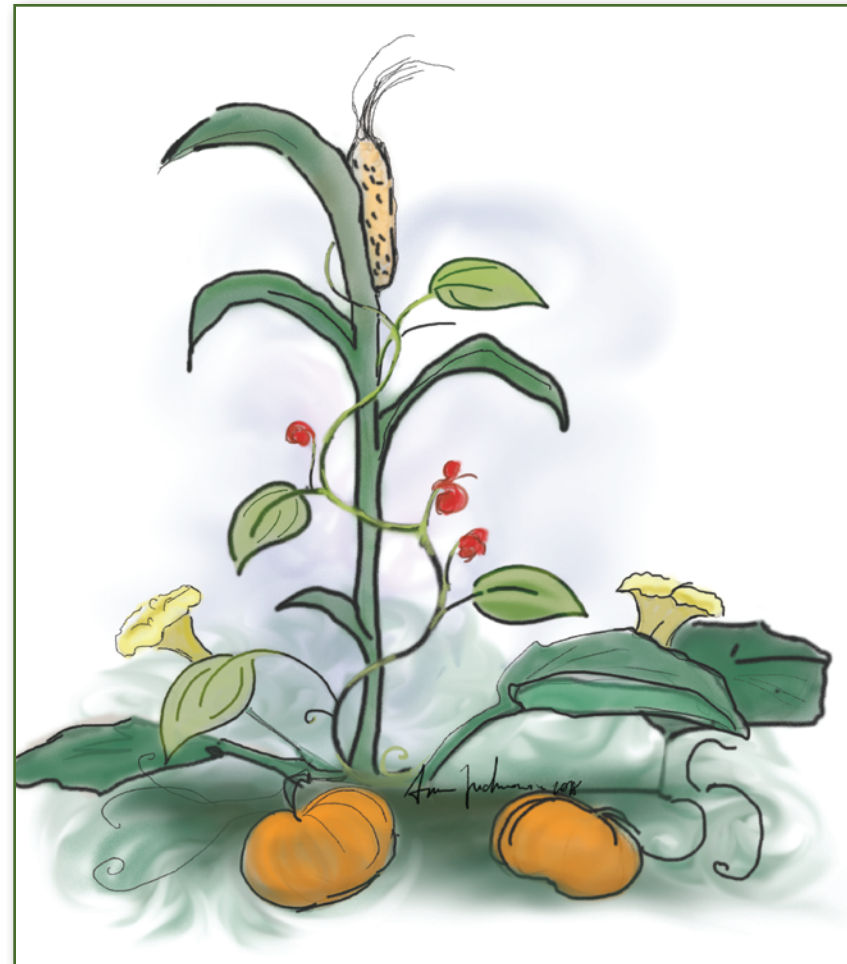
Indigenous Knowledge includes holistic approaches to complex systems and should not be separated from its cultural, biocultural, social, place-based, and ecological context or applied to a problem piecemeal. Indigenous Knowledge and other scientific approaches should not be used to validate each other. For example, the importance of stories in Indigenous Knowledge systems cannot be understated or minimized by other scientific approaches. Indigenous oral histories, traditions, and stories about the natural world inform everyday life.

## The Three Sisters

The intercropping or companion method of planting corn, beans, and squash together, commonly called the Three Sisters (fig. 3), can be viewed as a metaphor for understanding how Indigenous Knowledge and other scientific approaches may be woven together.<sup>15</sup> As Dr. Robin Wall Kimmerer, an Indigenous botanist and author, explains, “The Three Sisters offer us a new metaphor for an emerging relationship between Indigenous knowledge and Western science, both of which are rooted in the earth. I think of corn as traditional ecological knowledge, the physical and spiritual framework that can guide the curious bean of science, which twists like a double helix. The squash creates the ethical habitat for coexistence and mutual flourishing.”<sup>16</sup>

The Three Sisters highlights that Indigenous Knowledge and other scientific approaches can mutually support each other while retaining their distinct characteristics when woven together in a space of ethical and equitable knowledge production. In this ethical space, Tribal Nations, Indigenous communities, Knowledge Holders, and Department employees can collaborate to solve problems and answer questions of mutual concern to produce shared benefits.<sup>17</sup> This process can provide a foundation for improved implementation of Departmental actions, including agency decision making, resource management, program implementation, policy development, scientific research, and other actions.

Figure 4 illustrates that Indigenous Knowledge and other scientific approaches share similar methods of observation, verification, inference, and prediction. Indigenous Knowledge, however, is more encompassing than these methods. Though based in different worldviews, these ways of knowing can be complementary in increasing our knowledge of the world around us and creating shared solutions to common problems.



**Figure 3.** The Three Sisters companion planting technique. Image by Anna Juchnowicz, used under Creative Commons Attribution.

<sup>15</sup> Robin Wall Kimmerer, *Braiding Sweetgrass* (2013).

<sup>16</sup> *Id.* at 139.

<sup>17</sup> Roger Poole, *Towards Deep Subjectivity* (1972); Willie Ermine, et al., *The Ethics of Research Involving Indigenous Peoples, Report of the Indigenous Peoples' Health Research Centre to the Interagency Advisory Panel on Research Ethics* (2004), <https://gladue.usask.ca/sites/gladue1.usask.ca/files/gladue/resource385-2c4c0417.pdf>.

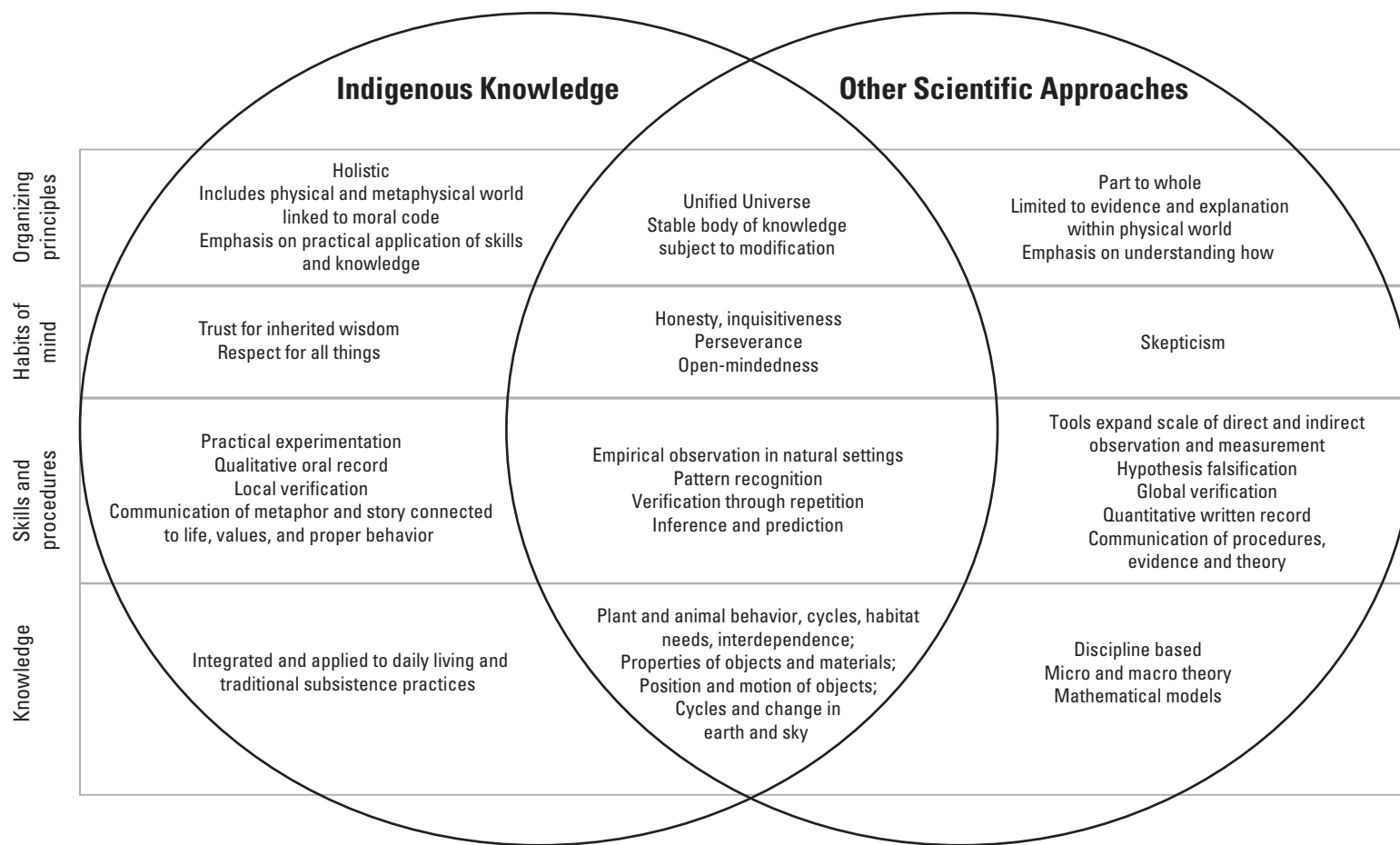


Image adapted from Barnhardt, R. and Kawagley, A.O., Indigenous Knowledge Systems and Alaska Native Ways of Knowing (2005), Anthropology and Education Quarterly; v36(1): 8–23, <https://doi.org/10.1525/aeq.2005.36.1.008>.

**Figure 4.** Qualities of Indigenous Knowledge and other scientific approaches. Image adapted from Barnhardt, R., and Kawagley, A.O., 2005, Indigenous Knowledge systems and Alaska Native ways of knowing, Anthropology and Education Quarterly, v. 36, no. 1, p. 8–23. [Available at <https://doi.org/10.1525/aeq.2005.36.1.008>.]

## The Benefits of Elevating Indigenous Knowledge to Be on Equal Footing with Other Scientific Approaches and Information

All knowledge systems have intrinsic value as they shape the ways in which we view and interact with the world. Indigenous Knowledge should be elevated to be on equal footing with other scientific approaches and information due to its intrinsic value. Further, including Indigenous Knowledge through a co-productive and collaborative approach can provide a more comprehensive review and outcome for Departmental actions and research.

Applying Indigenous Knowledge to Departmental actions and research can provide expert knowledge and insights not only about ecosystems and species, but also about our understanding of climate change and its socioenvironmental impacts. An Indigenous worldview often sees the world holistically, whereas a Western worldview often categorizes and separates systems that are linked. The consideration of multiple lines of evidence increases the breadth and depth of our understanding, and, thus, leads to better outcomes.<sup>18</sup>

Communities are the best judges of their own interests. Examining issues from the perspective of local communities, engaging community members, and taking their expertise into account when making decisions affecting them will lead to better outcomes. Departmental actions that impact Tribal Nations and Indigenous communities should give equal consideration to evidence provided by Indigenous Knowledge.<sup>19</sup> Diverse perspectives improve knowledge generation, incorporate a broader range of values into decisions, and reduce the probability of error. Examples from across the globe demonstrate that bringing knowledge systems together advances understanding and often improves the management of ecosystems, biocultural resources, and biodiversity.<sup>20</sup>

<sup>18</sup> National Congress of American Indians Policy Research Center and Center for Native Health Partnerships, *Walk Softly and Listen Carefully: Building Research Relationships with Tribal Communities* (2012), [https://archive.ncai.org/attachments/PolicyPaper\\_SpMCHTcjxRRjMEjDnPmesENPzjHTwhOIOWx1WOIWDsRykJuQggG\\_NCAI-WalkSoftly.pdf](https://archive.ncai.org/attachments/PolicyPaper_SpMCHTcjxRRjMEjDnPmesENPzjHTwhOIOWx1WOIWDsRykJuQggG_NCAI-WalkSoftly.pdf).

<sup>19</sup> Douglas Nakashima, *Astute Observers on the Sea Ice Edge: Inuit Knowledge as a Basis for Arctic Co-Management, in Traditional Ecological Knowledge: Concepts and Cases*, 121 (1993), [https://books.google.com/books?hl=en&lr=&id=J2CNS64AFvsC&oi=fnd&pg=PR6&ots=KCniyiqFr&sig=4k\\_dLLK3ErIDKdweNpqhQQPnD60#v=onepage&q&f=false](https://books.google.com/books?hl=en&lr=&id=J2CNS64AFvsC&oi=fnd&pg=PR6&ots=KCniyiqFr&sig=4k_dLLK3ErIDKdweNpqhQQPnD60#v=onepage&q&f=false).

<sup>20</sup> See Tyler D. Jessen, et al., *Contributions of Indigenous Knowledge to Ecological and Evolutionary Understanding*, 20 *Frontiers in Ecology and the Environment*, 93–101 (2022), <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/fee.2435>.

Indigenous Peoples have been, and continue to be, disproportionately impacted by climate change. Tribal Nations and Indigenous communities can provide real-time observations of environmental issues and conduct on-the-ground, frontline testing of adaptation strategies and mitigation efforts.<sup>21</sup> Increased inclusion of Indigenous Knowledge systems through a co-productive and collaborative approach can provide a clearer and more comprehensive view of issues employees address in their work.

## Ethics and Equity Should Guide Engagement with Knowledge Holders

Ethics and equity should inform and guide a Department employee's interactions with Indigenous Peoples and their approach to Indigenous Knowledge. Guidance on ethical action can be found in many resources (app. 10). The Belmont Report and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) provide particularly relevant guidance for interacting with Indigenous Peoples and Indigenous Knowledge.

### The Belmont Report

The Belmont Report<sup>22</sup> identifies principles that can guide an employee's interactions with Knowledge Holders. The report outlines three basic ethical principles:

1. **Respect for Persons:** Individuals should be treated as autonomous agents, and persons with diminished autonomy are entitled to protection.
2. **Beneficence:** Persons are treated in an ethical manner not only by respecting their decisions and protecting them from harm, but also by making efforts to secure their wellbeing.

<sup>21</sup> Status of Tribes and Climate Change Working Group, Institute for Tribal Environmental Professionals, Northern Arizona University, *Status of Tribes and Climate Change Report* (2021), [https://www7.nau.edu/itep/main/docs/publications/ITEP.STACC.Report\\_2021.pdf](https://www7.nau.edu/itep/main/docs/publications/ITEP.STACC.Report_2021.pdf).

<sup>22</sup> National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, *The Belmont Report* (1979), <https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/index.html>.



3. **Justice:** This principle includes deliberations about which entities or persons should receive the benefits of research and bear its burdens.

The Belmont Report, published in 1979 by the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, is the basis of the Health and Human Services Policy for the Protection of Human Subjects.<sup>23</sup> Subpart A of 45 C.F.R. Part 46, often referred to as the Common Rule, provides the basic policy for protection of human research subjects.

Interactions with Knowledge Holders may fall within the scope of the Common Rule if those interactions meet the definition of human subjects research. Under 45 C.F.R. Part 46, human subjects are individuals about whom a research investigator (whether professional or student) obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens.<sup>24</sup> In addition, research means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge.<sup>25</sup>

The Common Rule sets forth the function and process of Institutional Review Boards (IRB). The IRBs are administrative bodies, often affiliated with a university, that review human subjects research funded by Federal agencies that are signatories to the Common Rule. The IRB review ensures that human research subjects are protected, and that the research complies with regulations and meets ethical standards (see the “Qualitative Social Science Approaches” section and the “Human Subjects Review” section).

As of the effective date of this Handbook, the Department is not a signatory to the Common Rule, making it nonbinding on the Department’s work. However, the ethical principles of the Belmont Report can guide an employee’s work. If the Department becomes a signatory to the Common Rule, it may apply to an employee’s actions or research, and they may be required to seek IRB review.

<sup>23</sup> 45 C.F.R. Part 46.

<sup>24</sup> In full, “human subject” means a living individual about whom an investigator (whether professional or student) conducting research (i) obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or (ii) obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens. 46 C.F.R. § 46.102 (e)(1).

<sup>25</sup> In full, “research” means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Activities that meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program that is considered research for other purposes. For example, some demonstration and service programs may include research activities. 46 C.F.R. § 46.102 (l).

### First, Do No harm.

The principle of “first, do no harm” (the principle of *primum non nocere*, the principle of non-maleficence) is a core ethical principle in medicine and law, and it appears in the ethical guidelines of many professional societies in other disciplines. A prime directive of the Hippocratic Oath, it is the duty not to cause harm to others through any intervention (a negative duty). This principle is interpreted as having the duty to ensure that actions benefit everyone involved (a positive duty). Medical procedures, policy interventions, knowledge exchanges, and other actions are regarded as being acts of deliberate choice, and choices can have both beneficial and detrimental consequences for which one can be held ethically, morally, or legally responsible. The principle is an admonishment to look carefully at the potential consequences of decisions to act to ensure that all are made better off, and no one is made worse off. It is closely linked to the principle of beneficence, or the duty to do good, and the principle of due care, all foundations to good stewardship and rights relationships.<sup>26</sup>

## United Nations Declaration on the Rights of Indigenous Peoples and Free, Prior, and Informed Consent

Increased international attention to the rights of Indigenous Peoples was reflected in the creation of the United Nations Working Group on Indigenous Populations in 1982.<sup>27</sup> The Working Group’s efforts culminated in the adoption of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) in its General Assembly on September 13, 2007.<sup>28</sup> While not legally binding, the UNDRIP is considered the most comprehensive international document on Indigenous Peoples’ rights. Article 3 of the UNDRIP states that Indigenous Peoples have the right to self-determination, and several Articles note the importance of Indigenous Peoples giving their free, prior, and informed consent prior to actions being taken that may affect them.

<sup>26</sup> Climate and Traditional Knowledges Workgroup, Guidelines for Considering Traditional Knowledges in Climate Change Initiatives (2014), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2555299](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2555299).

<sup>27</sup> See United Nations Department of Economic and Social Affairs, *Indigenous Peoples at the United Nations*, <https://www.un.org/development/desa/indigenouspeoples/about-us.html#:~:text=In%201982%20the%20Working%20Group,their%20concerns%20at%20the%20UN>.

<sup>28</sup> United Nations Declaration on the Rights of Indigenous Peoples (2007), <https://documents.un.org/doc/undoc/gen/n06/512/07/pdf/n0651207.pdf>.

The announcement of U.S. support for UNDRIP states that the United States understands free, prior, and informed consent to call for a process of meaningful consultation with Tribal leaders, but not necessarily the agreement of those leaders before the action addressed in those consultations are taken.<sup>29</sup> When working with Indigenous Knowledge, the Department’s policy moves beyond meaningful consultation to agreement of Tribal and Indigenous leaders and Knowledge Holders to the sharing of Indigenous Knowledge. The Department’s Indigenous Knowledge Policy’s use of the term “free, prior, and informed consent” refers to Indigenous Peoples’ consent to share and include Indigenous Knowledge in a Department action or research, not for consent to any underlying project.<sup>30</sup>

### Free, Prior, Informed Consent (FPIC)

**Free:** Knowledge Holders should not be coerced or pressured into sharing Indigenous Knowledge with the Department.

**Prior:** Knowledge Holders should be involved at the earliest stage and consent should be received before Indigenous Knowledge is shared.

**Informed:** Knowledge Holders should be provided information regarding the Bureau or Office’s request for Indigenous Knowledge and understand the potential risks and opportunities of sharing their Indigenous Knowledge.

**Consent:** Affirms the right of Indigenous Peoples to (1) agree to participation, (2) decline or withdraw participation without any repercussions, legal or otherwise, or (3) agree with conditions.

<sup>29</sup>In 2010, President Obama declared that the United States would lend its support to the United Nations Declaration on the Rights of Indigenous Peoples. See [Announcement of U.S. Support for the United Nations Declaration on the Rights of Indigenous Peoples](#), On page one, the Announcement further states, “The United States supports the Declaration, which—while not legally binding or a statement of current international law—has both moral and political force. It expresses both the aspirations of indigenous peoples around the world and those of States in seeking to improve their relations with indigenous peoples. Most importantly, it expresses aspirations of the United States, aspirations that this country seeks to achieve within the structure of the U.S. Constitution, laws, and international obligations, while also seeking, where appropriate, to improve our laws and policies.”

<sup>30</sup> See 301 DM § 7.4 (D).

Obtaining free, prior, and informed consent is the foundation for working with Knowledge Holders and Indigenous Knowledge to ensure respect for Tribal sovereignty, Tribal self-determination, and individual autonomy to decide how to participate in projects or research that may impact them or their communities. The Department’s Indigenous Knowledge Policy<sup>31</sup> requires that free, prior, and informed consent be received from the appropriate Tribal or Indigenous governing body (if one exists) and Knowledge Holders when seeking to obtain and include Indigenous Knowledge in a Departmental employee’s work.<sup>32</sup>

Consent should be sought and obtained in advance of the potential sharing and application of Indigenous Knowledge. The consent must be informed by education that a Departmental employee provides about the action or research and its purpose, and the potential risks of disclosure, so that the appropriate governing body and Knowledge Holder(s) have enough information to make informed decisions about whether to share their Indigenous Knowledge. There are risks to Tribal Nations, Indigenous communities, and Knowledge Holders from sharing Indigenous Knowledge. These risks include the potential release of Indigenous Knowledge to the public, misuse or exploitation of intellectual property, and unintended applications of the Indigenous Knowledge (see the “Free, Prior, and Informed Consent” section and the “Protecting Indigenous Knowledge and Disseminating Results” section).

### Discontinued Engagement

Under the principles of free, prior, and informed consent, Indigenous Peoples do not have to engage or may discontinue their engagement with the Department on Indigenous Knowledge, even if they engage on other issues. Also, they may engage after previously declining. Similarly, Indigenous Peoples are not required to share their Indigenous Knowledge. Although the principle of free, prior, and informed consent, as articulated in UNDRIP, acknowledges the right of Indigenous Peoples to withdraw consent for the use of Indigenous Knowledge at any time in the process, including after it has been shared, the Department is constrained by several laws (for example, the Administrative Procedures Act, National Environmental Policy Act [NEPA], and Endangered Species Act [ESA]) from removing information from the

<sup>31</sup>See 301 DM § 7.6 (A)(2)(a)-(f).

<sup>32</sup>See also 301 DM §§ 7.4 and 7.6 (2).

official record once it comes into the Department's possession. It is crucial that a Department employee discuss the implications of sharing Indigenous Knowledge, including the Department's inability to remove Indigenous Knowledge from an official record once it has been shared. As such, once Indigenous Knowledge has been shared, consent to use that knowledge cannot be withdrawn unless the Department also consents to removal of that knowledge, in the specific and limited instances where it would be allowable.

## Indigenous Data Sovereignty

Indigenous data sovereignty refers to the rights and interests of Indigenous Peoples in relation to data about them, their territories, and their ways of life.<sup>33</sup> There can be tension between Indigenous data sovereignty and Federal data laws and policies. Department employees must take appropriate steps to navigate these tensions when including and applying Indigenous Knowledge in their work. Federal statutes, such as the Freedom of Information Act (FOIA),<sup>34</sup> under which members of the public can request access to

<sup>33</sup> See Stephanie Russo Carroll, et al., 18 *Indigenous Data Governance: Strategies from United States Native Nations*, *Data Science Journal*, 31 (2019) <https://datascience.codata.org/articles/10.5334/dsj-2019-031>; Stephanie Carroll Rainie, et al., *Data as a Strategic Resource: Self-Determination, Governance, and the Data Challenge for Indigenous Nations in the United States*, 8 *The International Indigenous Policy Journal*, 1–29 (2017), <https://nni.arizona.edu/publications/data-strategic-resource-self-determination-governance-and-data-challenge-indigenous-nations>; Tahu Kukutai and John Taylor, eds., *Indigenous Data Sovereignty, Toward an Agenda* (2016).

<sup>34</sup> 5 U.S.C. § 552.

Federal records, and the Open, Public, Electronic and Necessary Government Data Act (OPEN),<sup>35</sup> which generally requires Federal agencies to publish their information online as open data, can introduce barriers for Department employees in supporting Indigenous data sovereignty. Once Indigenous Knowledge comes into Federal possession, it can become difficult to protect the knowledge from public disclosure and potential reuse of information in ways different from those intended by the Department, Knowledge Holder, or governing body within the Tribal Nation or Indigenous community when consent was given (see the “Protecting Indigenous Knowledge and Disseminating Results” section).

The Department's Indigenous Knowledge Policy states that employees should exercise caution not to overstate or overcommit regarding the Department's ability to protect the confidentiality of Indigenous Knowledge when obtaining free, prior, and informed consent.<sup>36</sup> Ethical principles, such as the collective benefit, authority to control, responsibility, and ethics (CARE) principles for Indigenous data governance, can help guide Department employees in thinking through strategies for supporting Indigenous data sovereignty while meeting our responsibilities as Federal employees (see the “Protecting Indigenous Knowledge”).

<sup>35</sup> Title II of the Foundations for Evidence-Based Policymaking Act of 2018, Pub. L. 115-435.

<sup>36</sup> See 301 DM § 7.6 (A)(1)(b).



Salmon Dream by Roger Fernandes, used with permission by the Bureau of Indian Affairs Museum Program Collection.

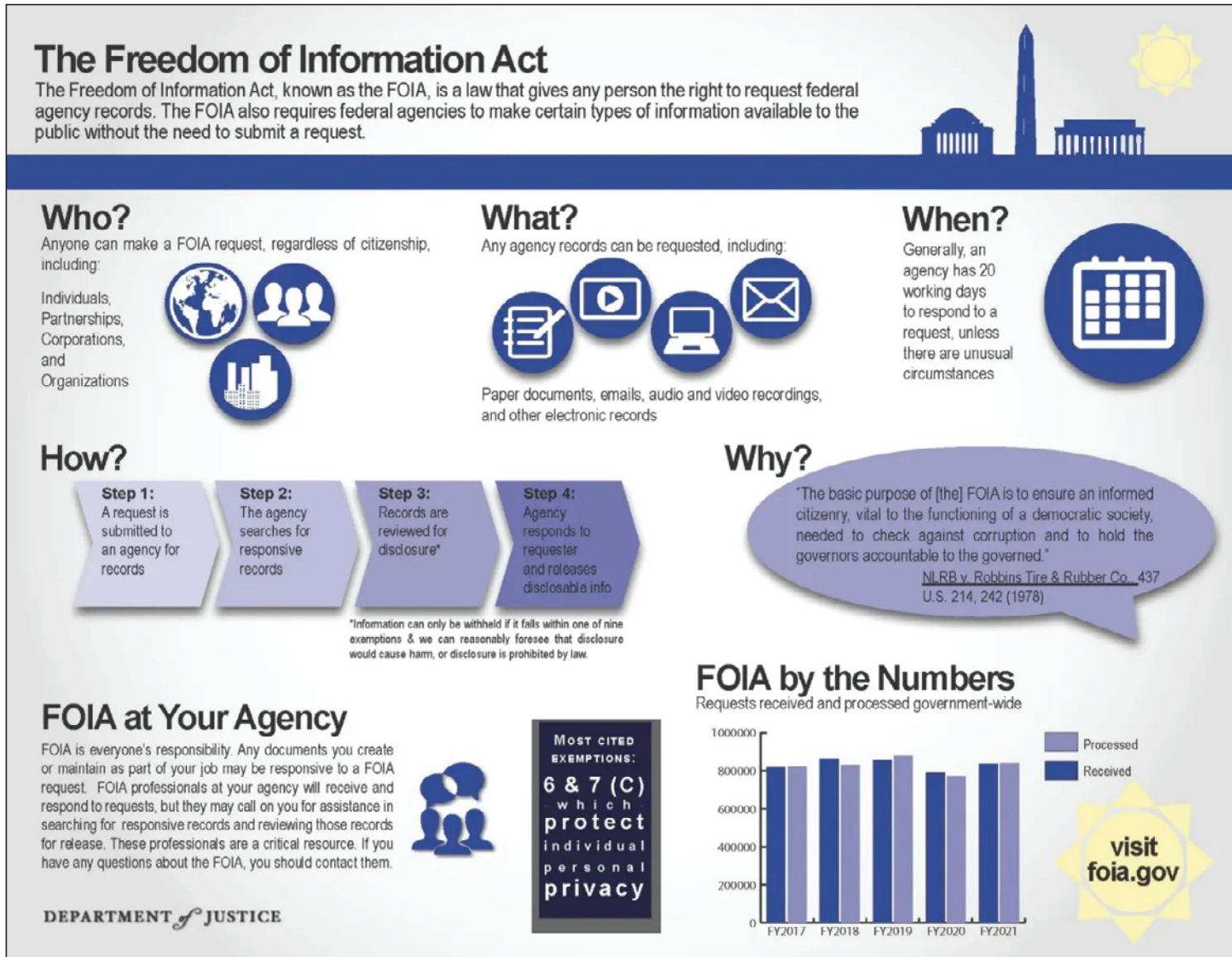


Figure 5. Department of Justice Freedom of Information Act infographic.

### Promising Practice: Ethics and Equity Should Guide Engagement with Knowledge Holders—Kūlana Noi'i

A practical example of how to approach ethical considerations in a research context can be found in the Kūlana Noi'i from the Hawaiian Islands. This guidance is composed of eight kūlana, or standards, reflecting common guidelines and practices for community/researcher partnerships:

- 1) **Respect:** The history, people, and place are respected through understanding, acknowledging, and honoring local culture, traditions, knowledge, and wisdom.
- 2) **Reciprocity:** The relationship between researchers and community is reciprocal rather than extractive.
- 3) **Self-Awareness and Capacity:** Be aware of and address one's position, intentions, power, and value to the place, both as an individual and a representative of a group or institution, such as a community organization, university, or government agency.
- 4) **Communication:** Pursue inclusive, transparent, and open communication throughout the research process.
- 5) **Maintaining a Long-Term Focus:** All research projects contribute positively to the effort (to mālama this wahi).
- 6) **Community Engagement and Co-Review:** Promote co-learning and co-development of methods, strategies, goals/objectives, and outputs/outcomes that are adaptable to local place, people, climate, resources, and needs.
- 7) **Knowledge Stewardship:** As part of their kuleana to place, ancestors, and descendants, communities have access to and the ability to utilize data. Communities have decision-making power in determining how information and data are shared.
- 8) **Accountability:** When a project fails to meet these kūlana, the community and researchers work together to identify problems and adjust the project accordingly.<sup>37</sup>

### Key Points: Ethics and Equity Should Guide Engagement with Knowledge Holders

- As of the effective date of this Handbook, the Department is not a signatory to the Common Rule; nevertheless, the ethical principles of the Belmont Report can guide the Department's work.
- Department policy requires that free, prior, and informed consent is received from the appropriate governing body (if one exists) and Knowledge Holders before Departmental employees engage with Indigenous Knowledge.
- Department policy states that employees should exercise caution not to overstate or overcommit regarding the Department's ability to protect the confidentiality of Indigenous Knowledge when obtaining free, prior, and informed consent.



Quinault decorative basket, depicting four whalers in a canoe harvesting from the sea, used with permission by the Bureau of Indian Affairs Museum Program Collection.

<sup>37</sup> Sea Grant, University of Hawaii, *Kūlana Noi'i*, <https://seagrant.soest.hawaii.edu/wp-content/uploads/2018/06/Kulana-Noii-low-res-web.pdf>.

## Section 3. Historical Context of the Disruption of Indigenous Knowledge

Indigenous Peoples have been living in what is now known as North America since time immemorial.<sup>38</sup> Before the arrival of Europeans to the Caribbean islands, Pacific islands, and the North and South American continents, Indigenous Peoples had been actively managing their lands for thousands of years.<sup>39</sup> Indigenous cultures practiced animal husbandry, cleared and maintained land through the use of fire, cultivated crops, built elaborate earthen works, and designed and constructed sophisticated irrigation technologies. They formed extensive travel and trading routes, some of which are still used as modern roads and highways today. Indigenous Peoples spoke 300–500 Indigenous languages in North America and lived in a world rich in art and technology, governed by complex social rules, informed by deep knowledge of nature, and guided by ethics and spiritual faith, all of which were rooted in Indigenous Knowledge.

The disruption of Indigenous Knowledge has had profound consequences for Indigenous Peoples, impacting their cultural identity, environmental stewardship, and overall well-being. In the United States, Federal policies severed Indigenous Peoples' relationships with the lands, waters, and social systems that were critical elements of their Indigenous Knowledge. Forced relocations, land dispossession, and assimilation disrupted the transmission of knowledge from one generation to the next. Over time, the Federal Government has changed its policies and acknowledged past harms.<sup>40</sup> The disruption of Indigenous Knowledge continues today, however. Western knowledge systems have been privileged as the dominant paradigm and have often dismissed Indigenous Knowledge as inferior. Scientific priorities and research questions often disregard Indigenous Knowledge. Research methodologies often exclude Indigenous perspectives, leading to incomplete understandings of ecosystems and biodiversity. When a Department employee

<sup>38</sup> Jeffrey S. Pigati et al., *Independent Age Estimates Resolve the Controversy of Ancient Human Footprints at White Sands*, 382 *Science*, 73–75 (2023), <https://www.science.org/doi/10.1126/science.adh5007>.

<sup>39</sup> Charles C. Mann, 1491: New Revelations of the Americas Before Columbus (2011).

<sup>40</sup> See Kevin Gover, Assistant Secretary—Indian Affairs, U.S. Department of the Interior, *Keynote Remarks on the 175th Anniversary of the Establishment of the Bureau of Indian Affairs* (March 1999), <https://www.bia.gov/sites/default/files/dup/assets/as-ia/opa/pdf/idc1-032248.pdf>.

understands the history of Indigenous Peoples and its impacts, the employee can address these ongoing challenges through their work by building enduring relationships with Tribal Nations and Indigenous Peoples and by including Indigenous Knowledge in the employee's actions and scientific research.

This section provides a very broad historical review of the Federal Government's policies that adversely impacted Indigenous Peoples and the development, continuation, and transmission of Indigenous Knowledge. This section is also an invitation for employees to learn more about Tribal Nations and Indigenous communities generally and about those with whom Department employees work.

### Detrimental Federal Policies

Disruptions to the development, continuation, and transmission of Indigenous Knowledge from one generation to another in the United States can be traced through two primary threads that run through the history of Federal Indian policy: dispossession and removal of Indigenous Peoples from their ancestral lands, forced assimilation, and cultural suppression.

From the earliest days of the Republic, the United States' official objective was to sever the cultural and economic connection between Indigenous Peoples and their territories.<sup>41</sup> The United States Senate later explained that policy as follows:

Beginning with President Washington, the stated policy of the Federal Government was to replace the Indian's culture with our own. This was considered 'advisable' as the cheapest and safest way of subduing the Indians, of providing a safe habitat for the country's white inhabitants, of helping the whites acquire desirable land, and of changing the Indian's economy so that he would be content with less land. Education was a weapon by which these goals were to be accomplished.<sup>42</sup>

<sup>41</sup> Bryan Newland, Assistant Secretary—Indian Affairs, *U.S. Department of the Interior; Federal Indian Boarding School Initiative Investigative Report* (2022) (hereafter *Boarding School Investigative Report*) at 93, [https://www.bia.gov/sites/default/files/dup/inline-files/bsi\\_investigative\\_report\\_may\\_2022\\_508.pdf](https://www.bia.gov/sites/default/files/dup/inline-files/bsi_investigative_report_may_2022_508.pdf).

<sup>42</sup> *Id.* at 21, citing Committee on Labor and Public Welfare, *Indian Education: A National Tragedy—A National Challenge*, S. Rep., No. 91-501 at 143 (1969).

Official Government policies aimed to physically and intellectually separate Indigenous Peoples from the places to which they were deeply connected. These policies severed their relationships with lands, waters, and social systems that were critical elements of their Indigenous Knowledge.<sup>43</sup>

### Separation from Ancestral Homelands and Land Loss

Like Great Britain, the United States negotiated and entered into formal treaties with Indian Tribes as separate and distinct sovereigns.<sup>44</sup> From 1722 to 1869, the British Crown and the Federal Government entered into at least 374 treaties with Indian Tribes,<sup>45</sup> which set the stage for the creation of Tribal reservations. These treaties were almost always signed under duress<sup>46</sup> and not always honored in good faith by the Federal Government, leading to significant losses of land. Through treaties and other agreements, Indian Tribes ceded approximately 1 billion acres of land to the United States.<sup>47</sup>

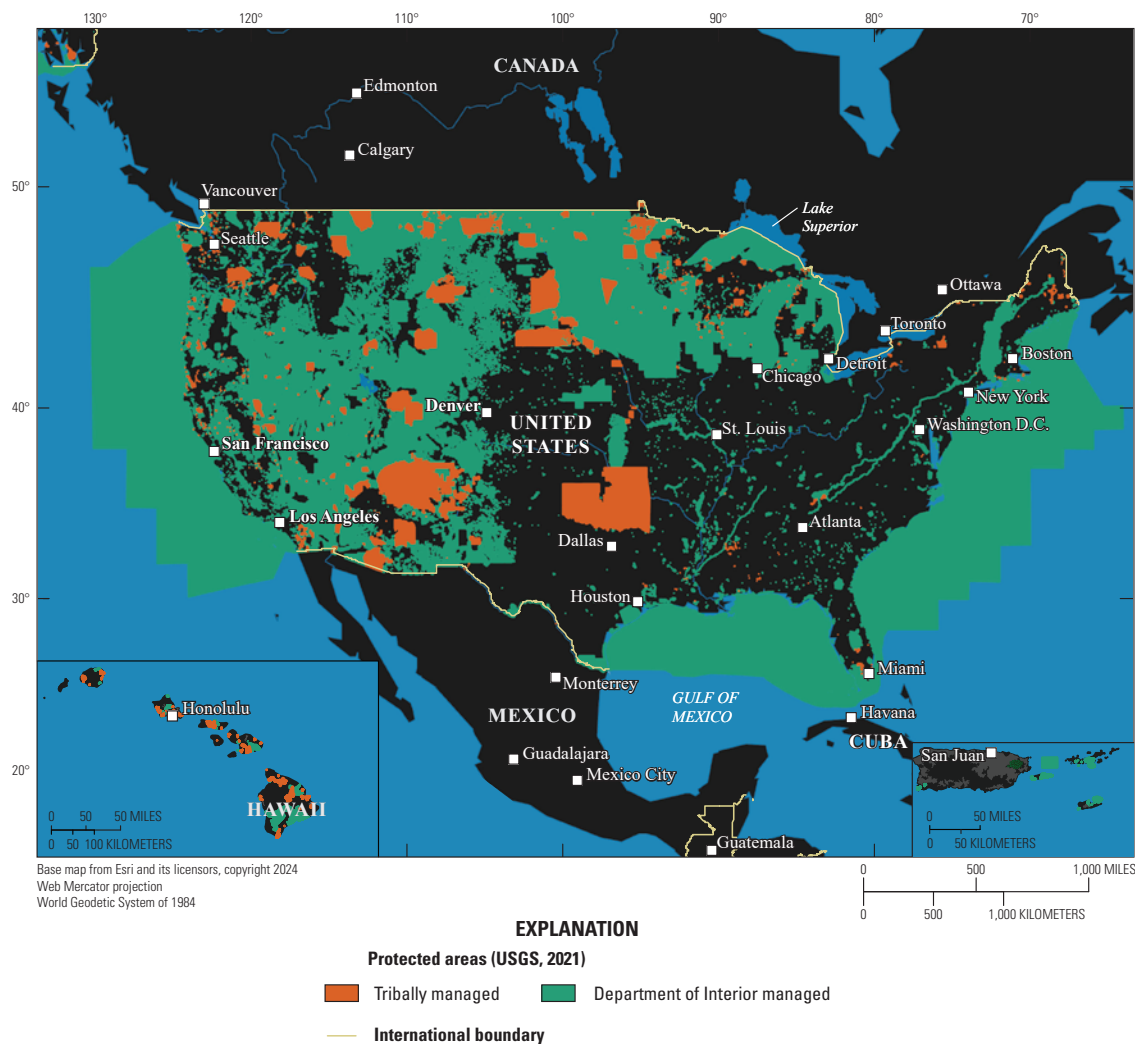
<sup>43</sup> See Guidance for Federal Departments and Agencies on Indigenous Knowledge <https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IG-Guidance.pdf>.

<sup>44</sup> Boarding School Investigative Report at 32.

<sup>45</sup> *Id.*

<sup>46</sup> *Id.* at 33.

<sup>47</sup> *Id.* at 32.



**Figure 6.** Tribally managed land and land managed by the Department.<sup>48</sup>

<sup>48</sup> U.S. Geological Survey, Gap Analysis Project (GAP), *Protected Areas Database of the United States (PAD-US) 3.0*: U.S. Geological Survey Data Release (2022), <https://doi.org/10.5066/P9Q9LQ4B>.

## Indian Removal Act of 1830

In 1830, Congress enacted the Indian Removal Act,<sup>49</sup> authorizing President Andrew Jackson to renegotiate treaties to exchange Tribal ancestral lands within the limits of any of the States or territories in the United States for lands west of the Mississippi River. By 1837, the President had signed into law nearly 70 removal treaties, which dispossessed Tribes from more than 25 million acres of land.<sup>50</sup> The Federal Government then forcibly removed the Tribes to the lands west of the river, mostly to present-day Oklahoma, including the disastrous Trail of Tears, which displaced more than 100,000 Tribal members.<sup>51</sup> During removal, Tribes faced violent confrontations, death from exposure and starvation, and significant loss of life. The forced removal from ancestral lands severed Tribal Nations from the sources of their Indigenous Knowledge that had been developed over thousands of years.

## General Allotment Act of 1887

The Indian Appropriations Act of 1851<sup>52</sup> provided funds to move Tribes onto reservations to promote farming, minimize conflicts with settlers, encourage assimilation, and bring Tribes under Federal control. These actions often ignored or undermined traditional Tribal communal land tenure systems and eroded Tribes' ability to manage and protect their lands.

Later, the General Allotment Act of 1887 (also known as the Dawes Act)<sup>53</sup> divided reservations into 40-, 80-, or 160-acre sections for agricultural or grazing purposes, and then allotted those sections to individual Tribal members. The Federal Government sold lands not allotted (so-called surplus lands) to non-Indians as homesteads.<sup>54</sup>

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<sup>49</sup> Act of May 28, 1830, 4 Stat. 411.

<sup>50</sup> U.S. Department of State, Office of the Historian, *Milestones: 1830–1860* <https://history.state.gov/milestones/1830-1860/indian-treaties>.

<sup>51</sup> U.S. Department of the Interior, National Park Service, *History and Culture*, <https://www.nps.gov/trte/learn/historyculture/index.htm>.

<sup>52</sup> Pub. L. 31–14 (Feb. 27, 1851).

<sup>53</sup> Act of February 8, 1887, Ch. 119, §1, 24 Stat. 388.

<sup>54</sup> Act of February 8, 1887, Ch. 119, 24 Stat. 388. Individual tribal members included heads of households, single adults, minor orphans, and other single minors. Some of the treaties between the United States and specific tribes contained similar allotting provisions. Other reservation-specific allotment acts had different requirements, *see* Act of May 30, 1908, P.L. 177, 35 Stat. 558.

The allotted lands were exempt from State or county taxation for 25 years, after which they were subject to taxation. Though intended for agriculture and grazing, most allotted lands were unsuitable for these purposes and insufficient as sustainable economic units. As a result, most allottees lost their land soon after the trust period expired when tax payments became due. Many acres of land were lost through sales to non-Indian buyers. Two-thirds of the Indian land base of 1887 was lost by 1933, leaving more than 90,000 Tribal members landless.<sup>55</sup> The Federal allotment policy resulted in the loss of more than 100 million acres of Tribal homelands.<sup>56</sup> Ultimately, peoples who had lived in communal societies since time immemorial were forced onto allotments that destroyed their communal lifeways, traditional norms of communal land ownership, and the sharing of knowledge between generations.

## Hawai'i's 1893 Illegal Overthrow and 1898 Annexation

Like Tribal Nations in the continental United States, Native Hawaiian people were systematically separated from their lands. At the time of European arrival in 1778, the Native Hawaiian people lived in a highly organized society based on a communal land tenure system with a sophisticated language, culture, and religion.<sup>57</sup> In the 1800s, westerners became increasingly involved in the economic and political affairs of the Kingdom of Hawai'i.<sup>58</sup> From 1820 to 1850, the Kingdom transformed the communal land tenure system to a private land ownership system following pressure from the United States and European nations who wanted stable land ownership for large-scale agricultural ventures.<sup>59</sup>

Believing a coup and annexation of the Kingdom of Hawai'i by the United States would remove the threat of a devastating tariff on their sugar, in 1893, a committee of American and European sugar planters, descendants of missionaries and financiers whose missionary organization received support from the United States to assist in the assimilation of Native people, overthrew the Kingdom of Hawai'i. The coup of the Kingdom of Hawai'i was undertaken

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<sup>55</sup> Senate Report 112–166, Amending the Act of June 18, 1934, to Reaffirm the Authority of the Secretary of the Interior to Take Land into Trust for Indian Tribes (May 17, 2012), at 4.

<sup>56</sup> *Id.*

<sup>57</sup> 20 U.S.C. § 7512(3).

<sup>58</sup> *Id.*

<sup>59</sup> *Id.* at 71.



with the support of the administration of U.S. President Benjamin Harrison who encouraged the takeover and dispatched sailors from the USS Boston to the islands. These sailors surrounded 'Iolani Palace, and the Kingdom of Hawai'i was overthrown with the leaders of the coup declaring it a republic, which in 1898, ceded 1.8 million acres of land to the United States without compensation or the consent of the Native Hawaiian people.<sup>60</sup> Congress then annexed the islands.<sup>61</sup>

The legacy of these policies (treaties, removal, allotment, and annexation), which the Federal Government established at its beginning, continue to adversely impact Native communities today. Land dispossession through treaties, the creation of reservations, and land allotments restricted Tribal access to ancestral territories. The significant loss of ancestral homelands on which Tribes and the Native Hawaiian Community had lived since time immemorial disrupted traditional ways of life, severing the connection between people and the land, which is central to many Indigenous Knowledge systems.



“Indigenous Knowledges as the ancient traditions of many peoples around the planet remind us, reside in the land, in the life that constitutes the ecologies in which we participate, and dwells within the Earth’s environments.”

-Daniel Wildcat, Red Alert: Saving the Planet with Indigenous Knowledge, 2009

## The Indian Reorganization Act of 1934

In 1928, the influential Meriam Report determined that the General Allotment Act was severely detrimental to Tribes.<sup>62</sup> The report led Congress to enact the Indian Reorganization Act (IRA) in 1934, which ended the

<sup>60</sup> Pub. L. 103–150, 107 Stat. 1510 (Nov. 23, 1993), Joint Resolution to acknowledge the 100th anniversary of the January 17, 1893 overthrow of the Kingdom of Hawaii, and to offer an apology to Native Hawaiians on behalf of the United States for the overthrow of the Kingdom of Hawaii.

<sup>61</sup> 30 Stat. 750-[No. 55] (July 7, 1898), Joint Resolution to provide for annexing the Hawaiian islands to the United States.

<sup>62</sup> Lewis Meriam, Institute for Government Research, *The Problem of Indian Administration* (1928).

allotment of Tribal reservations and authorized the Secretary of the Interior to purchase previously allotted lands, acquire additional lands, restore any remaining surplus allotment lands, and place those lands in trust. The IRA also encouraged Tribes to self-govern and provided financial aid for reservation infrastructure.

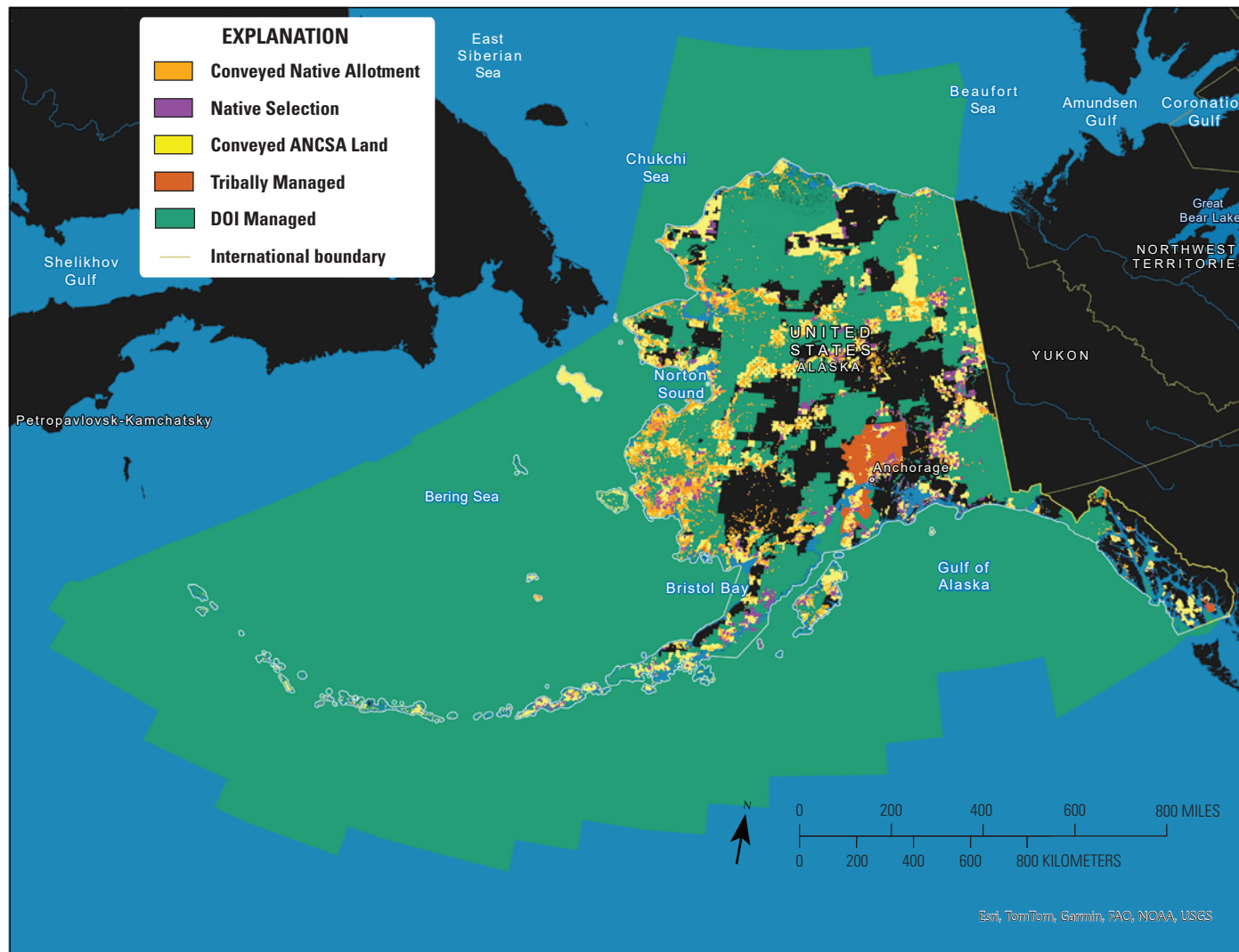
Today, the United States holds approximately 56 million acres of land in trust for the benefit of Tribes and individual Tribal members.<sup>63</sup> Placing land into trust is one of the most important means for Tribal Nations to establish Tribal jurisdiction, strengthen Tribal sovereignty, and acquire and protect homelands where citizens can maintain their Tribal existence and way of life.

## Alaska Native Claims Settlement Act of 1971

Alaska became part of the United States in 1867 when, after a century of colonization and exploitation, Russia sold Alaska to the United States. In Alaska, Congress took a different approach to Native land tenure with the Alaska Native Claims Settlement Act (ANCSA) of 1971.<sup>64</sup> ANCSA created 12 private, for-profit regional corporations and more than 200 private, for-profit Alaska Native village corporations. Instead of establishing reservations, ANCSA extinguished aboriginal land title in Alaska for which the Federal Government compensated the Alaska Native corporations \$962.5 million in a land settlement agreement. Additionally, the Federal Government transferred 44 million acres of land to Alaska Native regional and village corporations to be held in corporate ownership by Alaska Native shareholders—roughly 10 percent of the State. Metlakatla is the exception and is the only reservation in Alaska. A 13th regional corporation was later created for Alaska Natives who no longer resided in Alaska.

<sup>63</sup> United States Department of the Interior, Bureau of Indian Affairs, *Benefits of Trust Land Acquisition (Fee to Trust)*, <https://www.bia.gov/service/trust-land-acquisition/benefits-trust-land-acquisition>. In addition to trust lands, Tribes and individual Tribal members can hold land in fee simple and in fee subject to Federal restrictions against alienation, <https://www.bia.gov/bia/ots/fee-to-trust>.

<sup>64</sup> Pub. L. 92-203, § 2 (Dec. 18, 1971).



Base map from Esri and its licensors, copyright 2024  
Web Mercator projection  
World Geodetic System of 1984

**Figure 7.** Tribally managed land and land managed by the Department in Alaska.<sup>65</sup>

<sup>65</sup> BLM Conveyed Native Allotment includes Alaska Native Claims Settlement Act (ANCSA) regions or villages, conveyed native allotment parcels, and lands conveyed to individuals (homesteads, homesites, etc.), available at [BLM AK Conveyed Native Allotment | BLM GBP Hub \(arcgis.com\)](#). BLM Native Selection include Lands Selected and Rejected, Remains Topfiled by the State of Alaska, Native Selections, Native Allotment Selection, available at [BLM AK Native Selection | BLM GBP Hub \(arcgis.com\)](#). BLM Conveyed ANCSA Land includes lands conveyed to the State of Alaska, lands conveyed to ANCSA regions or villages, conveyed native allotment parcels, and lands conveyed to individuals (homesteads, homesites, etc.), available at [BLM AK Conveyed ANCSA Land | BLM GBP Hub \(arcgis.com\)](#). DOI Managed lands available at: U.S. Geological Survey (USGS) Gap Analysis Project (GAP), 2022, Protected Areas Database of the United States (PAD-US) 3.0: U.S. Geological Survey data release, <https://doi.org/10.5066/P9Q9LQ4B>.

## Assimilation and the Loss of Cultural Identity

As Tribal Nations and the Native Hawaiian Community were being systematically separated from their lands, Federal policies also worked to suppress their traditional cultures.

### Indian Boarding Schools, Language Loss, and Religious Conversion

Beginning with the Civilization Fund Act in 1819, the United States enacted laws and implemented policies establishing and supporting Indian boarding schools across the Nation.<sup>66</sup> Between 1819 and 1969, the Federal Indian boarding school system consisted of at least 408 Federal schools across 37 States (or then-territories).<sup>67</sup> The assimilation<sup>68</sup> of Indian children through the Federal Indian boarding school system was intentional and part of a broader goal of Indian territorial dispossession for the expansion of the United States.<sup>69</sup>

The purpose of Indian boarding schools was to assimilate Native children by forcibly removing them from their families and communities to distant residential facilities where their identities, languages, and beliefs were forcibly suppressed. For more than 150 years, hundreds of thousands of Indigenous children were taken from their communities and subjected to systematic militarized and identity-alteration methodologies to attempt to assimilate American Indian, Alaska Native, and Native Hawaiian children through

<sup>66</sup> Boarding School Investigative Report at 27.

<sup>67</sup> *Id.* at 6.

<sup>68</sup> Direct action taken to assimilate Indigenous Peoples and their knowledge systems has been termed epistemicide. Epistemicide is the killing, silencing, annihilation, or devaluing of a knowledge system. Epistemicide happens when epistemic injustices are persistent, systematic, and collectively work as a structured oppression of particular ways of knowing; see Beth Patin, et al., *Interrupting Epistemicide: A Practical Framework for Naming, Identifying, and Ending Epistemic Injustice in the Information Professions* (2017), <https://doi.org/10.1002/asi.24479>.

<sup>69</sup> Boarding School Investigative Report at 93.

education.<sup>70</sup> This process included, but was not limited to, renaming Indian children from Indian to English names, cutting children’s hair, discouraging or preventing Native religions and cultural practices, and having children perform military drills and forced labor.<sup>71</sup> Indian boarding schools are responsible for significant losses of language and culture and have had long-term traumatic impacts on Tribal Nations and Indigenous Peoples, including direct impacts to the survival of Indigenous Knowledge systems.

Similar attempts at assimilation occurred on Tribal reservations when missionaries sought to convert Tribal members to Christianity, often viewing their traditional beliefs and practices as pagan or inferior. Tribal members were encouraged, or forced, to wear non-Indian clothes and learn to read and write English, sew, and raise crops and livestock.<sup>72</sup> In some cases, the Federal Government criminalized traditional religious practices, such as the Sun Dance of the Tribes living on the Great Plains.<sup>73</sup> In Alaska, missionaries and civil authorities opposed Native religions and sought to suppress shamanism, seasonal festivals, and institutions, such as the Tlingit memorial ceremonies, the Iñupiaq Messenger Feast, and the Qasgiq (Yup’ik men’s house). The Kingdom of Hawai’i’s “English-mainly” policy of the late 1850s was replaced by the U.S. territorial government’s “English-only” policy and outright suppression of the Hawaiian language in public schools.<sup>74</sup>

<sup>70</sup> *Id.* at 7.

<sup>71</sup> *Id.*

<sup>72</sup> National Underground Railroad Freedom Center, <https://freedomcenter.org/learn/online-learning-resources/online-exhibits/us-settler-colonialism-and-native-american-resistance/>.

<sup>73</sup> Britannica, Sun Dance, <https://www.britannica.com/topic/Sun-Dance>.

<sup>74</sup> See Paul F. Lucas, *E Ola Mau Kakou I Ka Olelo Makuahine: Hawaiian Language Policy and the Courts*, 34 *Hawaiian J. Hist.* 1 (2000); see also Ralph S. Kuykendall, *The Hawaiian Kingdom Vol. I*, at 360–62 (1965). See generally, Maenette K.P. Ah Nee Benham and Ronald H. Heck, *Culture and Educational Policy in Hawaii: The Silencing of Native Voices* (ch. 3, 1998); *Native Hawaiian Law: A Treatise at 1259–72* (Melody Kapilialoha MacKenzie, Susan K. Serrano, and D. Kapuaala Sproat, eds., 2015).

## Termination of Federal Recognition and Relocation to Urban Areas

In 1953, Congress declared that the United States should abolish trustee relationships with Tribes, ushering in an era of termination. Between 1953 and 1964, the Federal Government terminated the federally recognized status of more than 100 Tribes,<sup>75</sup> ending the Federal Government's responsibility to those Tribes and the legal protections for reservation lands.<sup>76</sup> Approximately 2.5 million acres of trust land were removed from protected status during these years, with much of it sold to non-Indians.<sup>77</sup> Beginning in the 1970s, the Federal Government began restoring Federal recognition of some of the affected Tribes, but even today, some Tribes are still working to regain their Federal recognition and trust lands.

During the termination era, the Federal Government promoted voluntary relocation of individual Tribal members and their families from their rural Tribal lands to metropolitan cities.<sup>78</sup> This relocation attempted to assimilate Tribal members and terminate the Federal relationship. Beginning in 1951, more than 30,000 Tribal members relocated to urban areas, such as San Francisco and Chicago, with the Bureau of Indian Affairs (BIA) assisting with locating housing and employment.<sup>79</sup> Urban relocation presented challenges, however, including unemployment, cultural adjustments, loss of traditional cultural support systems, and discrimination. The resulting separation of individual Tribal members from their communities further eroded the continuation and transmission of Indigenous Knowledge.

<sup>75</sup> Senate Report 112-166 Amending the Act of June 18, 1934, to Reaffirm the Authority of the Secretary of the Interior to Take Land into Trust for Indian Tribes (May 17, 2012).

<sup>76</sup> See H. Con. Res. No. 108, 67 Stat. B132 (Aug. 1, 1953).

<sup>77</sup> David E. Wilkins and Heidi Kiiwetinepinesik, *American Indian Politics and the American Political System* (2d ed., 2006).

<sup>78</sup> S. Lyman Tyler, *The Recent Urbanization of the American Indian*, in *Essays on the American West, 1973–1974*, 44 (Thomas G. Alexander, ed., 1975).

<sup>79</sup> Larry W. Burt, *Roots of the Native American Urban Experience: Relocation Policy in the 1950s*, 10 *American Indian Quarterly*, 85–99 (Spring 1986), [https://www.jstor.org/stable/1183982?item\\_view=read\\_online](https://www.jstor.org/stable/1183982?item_view=read_online).

These forced assimilation policies enacted by the Federal Government left a devastating impact on the cultures and identities of Indigenous Peoples. As a result, Knowledge Holders have held some Indigenous Knowledge secret to protect it while some Indigenous Knowledge has been fragmented, destroyed, and disrupted.

### Territories and Freely Associated States

As of the effective date of this Handbook, the United States has relationships with five permanently inhabited territories and three freely associated states. The current U.S. territories are Puerto Rico and the U.S. Virgin Islands in the Caribbean Sea, Guam and the Northern Mariana Islands in the North Pacific Ocean, and American Samoa in the South Pacific Ocean. Compacts of Free Association are international agreements establishing and governing the relationship between the United States and the sovereign states of the Republic of the Marshall Islands, the Federated States of Micronesia, and the Republic of Palau, all of which are island nations in the Pacific Ocean. The territories and freely associated states are home to vibrant, sophisticated, and resilient Indigenous Peoples. The Indigenous Peoples of these islands have historically been the subject of colonialism imposed by several Western European and Asian nations and have been subjected to policies of land loss and forced assimilation similar to that experienced by Tribal Nations, Alaskan Natives, and Native Hawaiians. The Federal Government does not have a trust responsibility to the Indigenous Peoples of the U.S. territories as it does with federally recognized Tribes. However, the Department's Office of Insular Affairs coordinates Federal policy for the U.S. Virgin Islands, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

## Disruption of Indigenous Knowledge Continues Today

In 1975, the United States Congress enacted the Indian Self-Determination and Education Assistance Act,<sup>80</sup> which allowed Tribes to have greater autonomy and ushered in the era of self-determination. However, the Federal Government has acknowledged its role in the harms caused by its policies and is working to address the lasting consequences of those policies and the resulting intergenerational trauma.<sup>81</sup> The relocation of many Tribal Nations from their original homelands and forced assimilation has had traumatic impacts on their members, with enduring negative impacts on the social, cultural, spiritual, mental, and physical well-being of Indian Tribes, the Native Hawaiian Community, and Indigenous Peoples today.

Intergenerational trauma is a concept that describes the cumulative and intergenerational effects of trauma, including historical violence and the oppression of Tribal Nations and Indigenous Peoples that can impact the children of those who survive such trauma.<sup>82</sup> This trauma can manifest in psychological, social, and health problems, such as depression, substance abuse, and suicide, that can be passed from generation to generation.<sup>83</sup> Consequently, Tribal Nations and Indigenous communities may be reluctant to share their knowledge with institutions that have in the past suppressed and systematically disrupted their Indigenous Knowledge.

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<sup>80</sup> Public Law 93-638 (Jan. 4, 1975).

<sup>81</sup> See generally, Boarding School Investigative Report; see also Kevin Gover, Assistant Secretary—Indian Affairs, U.S. Department of the Interior, *Keynote Remarks on the 175th Anniversary of the Establishment of the Bureau of Indian Affairs* (March 1999), <https://www.bia.gov/sites/default/files/dup/assets/as-ia/opa/pdf/idc1-032248.pdf>.

<sup>82</sup> Tori DeAngelis, *The Legacy of Trauma*, 50 *Monitor on Psychology*, 36 (2019), <https://www.apa.org/monitor/2019/02/legacy-trauma>.

<sup>83</sup> See Peter Menzies, *Intergenerational Trauma from a Mental Health Perspective*, 7 *Native Social Work Journal*, 63–85 (2010), <https://www.collectionscanada.gc.ca/obj/thesecanada/vol2/OSUL/TC-OSUL-384.PDF>.

New factors continue to disrupt the development, continuation, and transmission of Indigenous Knowledge. Impacts from climate change are a growing threat to Indigenous Peoples who are facing impacts from drought, sea-level rise, coastal erosion, flooding, wildfire, and more extreme and unpredictable weather events. Indigenous communities in Alaska and the U.S. territories are particularly vulnerable. These impacts disrupt and contribute to the loss of cultural heritage, food sovereignty, safety and health, and the transmission of Indigenous Knowledge. Indigenous Peoples may have limited resources to adapt to these challenges, placing them at continued risk.

## Indigenous Resilience

Indigenous Peoples were not passive witnesses to history. Time and again, Indigenous Peoples asserted their sovereignty, resisted oppression and assimilation, and protected sacred sites, ceremonies, and Indigenous Knowledge. Today, Tribal Nations and Indigenous Peoples continue to experience the impacts of intergenerational trauma resulting from the legacies of these Federal policies. However, Tribes and Indigenous Peoples have demonstrated resiliency in maintaining and continuing to develop their Indigenous Knowledge. Despite the disruption discussed above, many Indigenous Peoples are actively engaged in reclaiming, revitalizing, and documenting their knowledge. For example, Tribal Nations and Indigenous communities are often at the forefront of applying Indigenous Knowledge for climate adaptation and other social issues.<sup>84</sup>

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<sup>84</sup> Kyle Whyte et al., *Tribes and Indigenous Peoples*, in *Fifth National Climate Assessment* (A.R. Crimmins et al., eds., 2023), <https://doi.org/10.7930/NCA5.2023.CH16>.

## Section 4. Elevating, Including, and Applying Indigenous Knowledge in Departmental Actions and Scientific Research

This section outlines steps Department employees should take to elevate, include, and apply Indigenous Knowledge in their actions and scientific research. The inclusion and application of Indigenous Knowledge in scientific research and other actions sponsored by the Department is intended to do the following:

- produce better and more equitable outcomes;
- support the implementation of management decisions through collaboration; and
- honor the sovereignty of Tribal Nations and the importance of Indigenous Peoples impacted by Department actions and research.

Figure 8 illustrates that the process of elevating, including, and applying Indigenous Knowledge is not linear. It is cyclical and often iterative, and steps may be revisited numerous times in the implementation of a specific action or research project. Two-way communication between employees and Tribal Nations, Indigenous communities, or Knowledge Holders, and ongoing evaluation are important.

This section describes requirements, guidance, practical tips, and promising practices that will allow an employee to take steps to elevate Indigenous Knowledge using the following processes:

- planning the action or research;
- engaging with Tribal Nations and Indigenous communities;
- obtaining free, prior, and informed consent;
- receiving Indigenous Knowledge from Knowledge Holders;
- applying Indigenous Knowledge; and
- protecting Indigenous Knowledge and disseminating results.

Engagement must meet the unique needs of the Tribal Nation or Indigenous community with whom an employee is working. This section provides considerations that an employee should make throughout engagement with Tribal Nations and Indigenous communities toward the inclusion of Indigenous Knowledge; each employee’s specific situation may require additional, or different, considerations. In addition to reading this Handbook, a Department employee should refer to their Bureau or Office’s Tribal Engagement Plan or Tribal Liaison Officer (TLO) for more information on engagement.

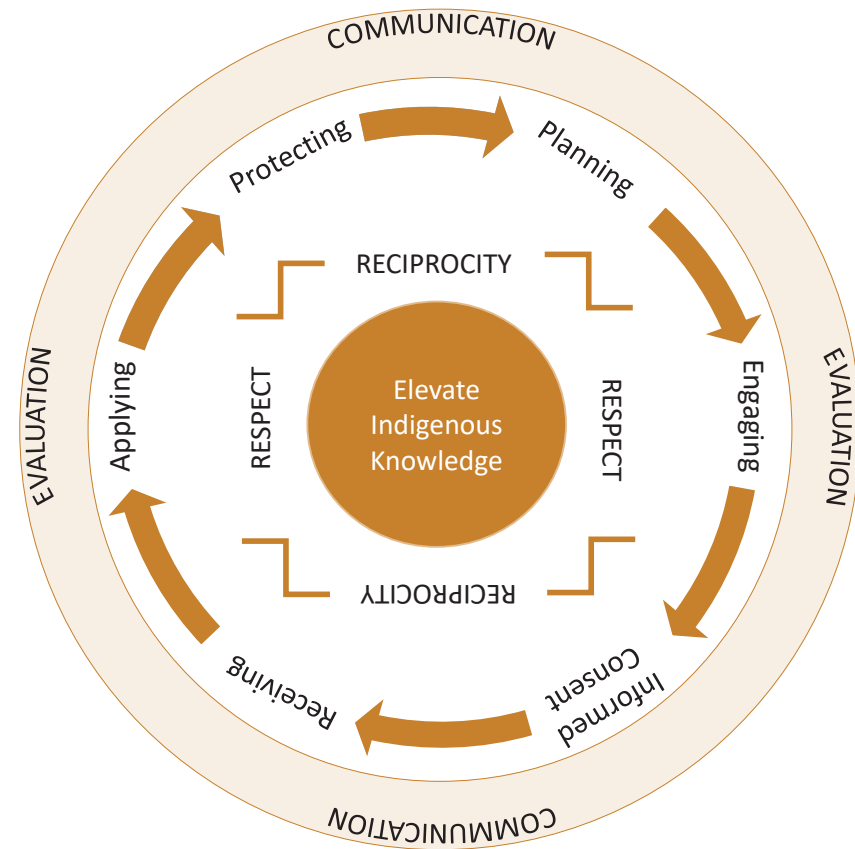


Figure 8. Promising practices for elevating and including Indigenous Knowledge.

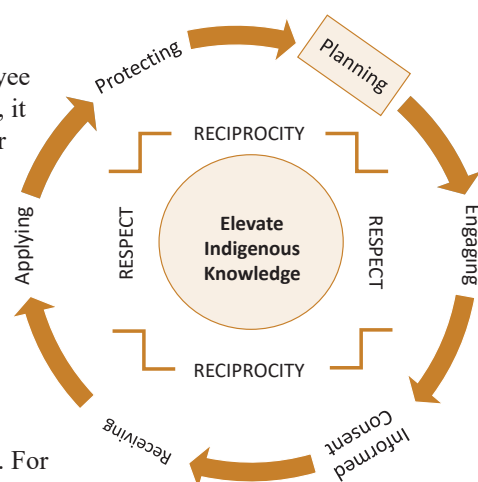
## Planning

When a Department employee is planning an action or research, it is critical to realistically consider the amount of time they have available to complete their action or research and how to best align their availability with the time required to receive and apply Indigenous Knowledge.

In some cases, there may be statutory or regulatory timing limitations, or project timelines may be limited for other reasons. For example, in responding to emergencies or natural disasters, it may be necessary to receive Indigenous Knowledge quickly in order to inform response actions and protect culturally significant areas. If the amount of time one has for in-depth engagement is reduced, a Department employee should inform the Tribal Nation, Indigenous community, or Knowledge Holders of the timing limitations and determine with them the scope of the Indigenous Knowledge that could realistically be included in the action or research given the time limitations. If an employee's initial timeline for including and applying Indigenous Knowledge is constrained, the employee should consider whether they can follow up with the Tribal Nation, Indigenous community, or Knowledge Holder after completion of the original action or research to conduct a more complete project.

There are several reasons why a timeline for including Indigenous Knowledge may be longer than a traditional timeline for a given action or research project. For example, it may take significant time for a Tribal Nation or Indigenous community to share their knowledge because information is not usually documented in databases or written files and may be dispersed in different locations and among more than one person. Often, such information, or permission to share such information, must be obtained from knowledgeable community members, Elders, preservation boards, cultural committees, Tribal Councils, or Elder advisory boards of a Tribal Nation or Indigenous community. In addition, Tribal Nations and Indigenous communities may be focused on other Tribal or community priorities requiring additional time for them to address a Department employee's research or action.

Tribal Nations and Indigenous communities may also have protocols that dictate if, how, or when they can divulge or discuss information about properties of religious and cultural significance. An employee should consider



such protocols, prohibitions, and priorities in their project timeline planning. If working with multiple Tribal Nations or Indigenous communities, be aware that each Nation or community may have different protocols and that each need to be considered in the project timeline. If necessary, shift action and research timelines to account for the additional time needed to engage with Tribal Nations and Indigenous communities to establish agreements for obtaining free, prior, and informed consent (see the “Free, Prior, and Informed Consent” section).

Also, time may be needed to develop agreements addressing Indigenous data sovereignty (see the “Protecting Indigenous Knowledge and Disseminating Results” section), plan for compensation (see discussion below), and plan for a Tribal Council review or IRB review (see the “Ethics and Equity Should Guide Engagement with Knowledge Holders” section and the “Human Subjects Review” section). Further, time must be built in to receive and apply Indigenous Knowledge (see the “Receiving Indigenous Knowledge” section and the “Applying Indigenous Knowledge” section).

A Department employee should discuss their action or research project's parameters with the Tribal Nation, Indigenous community, and Knowledge Holders, including, but not limited to, preferred methods for providing and receiving Indigenous Knowledge, timelines and the time needed to apply Indigenous Knowledge, preferred engagement methods, preferred meeting locations, and mechanisms for compensating Knowledge Holders (see discussion below). Develop agreements about how and which types of Indigenous Knowledge will be included in the Department employee's actions or research, and the type of products that are most appropriate to ensure sensitive Indigenous Knowledge is not exposed. Work collaboratively with the Tribal Nation or Indigenous community to create a schedule for continuing engagement.

A Department employee should identify Tribal Nations or Indigenous communities that may have an interest in their action or research or on whose lands an action or research project may take place during the planning process. Keep in mind that Tribal Nations or Indigenous communities may have been removed from their traditional homelands, but still have an interest in, and deep connection to those lands. Moreover, they may retain Tribal treaty and reserved rights within the landscape and have cultural connections even if they no longer reside there. The Department's Indigenous Knowledge Policy encourages ongoing relationships with Tribal Nations and Indigenous communities regarding Indigenous Knowledge. Sometimes, however, an action or research may arise that would benefit from the inclusion of Indigenous Knowledge, and which requires establishing a new relationship with a Tribal Nation or Indigenous community. In such cases, the Department employee must build in time during the planning phase for relationship building.

## Compensating Knowledge Holders for Time and Services

It is Departmental policy to compensate Knowledge Holders for the time, expertise, and services they provide while sharing Indigenous Knowledge.<sup>85</sup> Therefore, the Department employee should include funds for compensation while planning their action or research budget. The responsible manager within each Bureau and Office has the discretion, subject to the availability of appropriated funds, to compensate Tribal Nations for expenses related to formal government-to-government consultation; however, this compensation is not legally required or prohibited. Importantly, compensating Knowledge Holders does not transfer ownership of Indigenous Knowledge to the Department. While the Department may access and use it, as appropriate, Indigenous Knowledge always remains with and belongs to the Knowledge Holder because Indigenous Knowledge is inalienable from Indigenous Peoples.

Knowledge Holders are to be compensated for the time, expertise, and services they provide to the action or research, to the extent compliant with applicable fiscal and contracting rules governing expenditures of appropriated funds. It is important to work with the appropriate contracting office and to carefully articulate a statement of work that describes the specific Indigenous Knowledge and services that the Department wishes to receive from Knowledge Holders. Although there may be Tribal preferences available under the acquisition regulations, it is difficult to justify a sole source contract to one entity (app. 7), which is why it is important to be very specific about the Indigenous Knowledge that the Department seeks to receive.

Tribal Nations and Indigenous communities may have existing internal protocols, norms, and methods for compensating Knowledge Holders. Work with the appropriate persons, which may include the governing body, designated staff, or Knowledge Holders themselves to learn if such protocols exist. A Department employee should work with their contracting office to follow the Federal Acquisition Regulations (FAR) in determining what processes for compensation are appropriate for the Tribal Nation or Indigenous community and allowable under the FAR. Discussions about compensation should occur on a timely basis as would be performed with any other consultant or contractor.

In determining a compensation rate, the Department employee should seek to be consistent with rates set for “Subject Matter Expert 1” by the Department’s Office of Collaborative Action and Dispute Resolution

(CADR) as part of the Indefinite-Delivery/Indefinite-Quantity Contract for “Environmental Collaboration and Conflict Resolution Services.” Rates are updated annually. Contact CADR for the current rates or visit their website at <https://www.doi.gov/contact-us#no-back>.

Providing appropriate compensation when working with Tribal Nations, Indigenous communities, and Knowledge Holders is not always straightforward. In some cases, a Department employee may want to contract with the Tribal Nation or Indigenous community governing body so that they may compensate Knowledge Holders on behalf of the Department. In other cases, an employee might work with a third party or nonprofit partners, which may have more flexibility and additional mechanisms to support compensation to Knowledge Holders. Similarly, outside firms contracted by the Government to work on an action or research can hire or sub-contract to Knowledge Holders.

A Department employee should always consult their procurement and acquisition staff early in the process to determine the best and most appropriate method of compensation. When the Government is directly compensating an individual for travel, time, or expertise, there are a variety of available mechanisms (app. 7). Regardless of the mechanism used to compensate Knowledge Holders, the rates paid to Knowledge Holders should be consistent with the rates set by CADR.

## Hiring

Beyond compensating Knowledge Holders, Bureaus and Offices should consider other avenues to support greater Tribal and Indigenous engagement in actions and research that include Indigenous Knowledge. A Department employee should consider hiring a Tribal member or Indigenous community member to assist with the employee’s action or research project. Tribes and Indigenous Peoples are the experts of their own histories and are uniquely qualified to provide information and services related to Indigenous Knowledge. Additionally, work collaboratively with Tribes and Indigenous Peoples when engaging with Indigenous Knowledge and support Indigenous leadership and capacity whenever possible. Three tools are currently available to facilitate this process: (1) the Indian Preference Policy, (2) Intergovernmental Personnel Act Mobility Program, and (3) Indian Self-Determination and Education Assistance Act.

<sup>85</sup> See 301 DM §§ 7.6 (A)(6) and 7.6 (B)(5).



The Indian Preference Policy in hiring is a tool BIA uses. Congress authorized the policy to encourage qualified American Indians and Alaska Natives to seek employment with BIA.<sup>86</sup> The policy allows certain persons of American Indian or Alaska Native descent to receive preference when appointments are made to vacancies in positions within BIA and to other positions in the Department that directly and primarily provide services to Indians. To the extent authorized by law, Indian preference should extend to Federal contractors.<sup>87</sup>

The Intergovernmental Personnel Act Mobility Program<sup>88</sup> provides for the temporary assignment of personnel between the Federal Government and State and local governments, colleges and universities, Indian Tribal governments, federally funded research and development centers, and other eligible organizations.<sup>89</sup> Department employees should explore this program for its potential to bring individuals from a Tribal Nation into a Bureau or Office in support of longer term goals towards the inclusion of Indigenous Knowledge in Department research and actions.

Additionally, the Indian Self-Determination and Education Assistance Act<sup>90</sup> gives Tribes the authority to contract with the Federal Government to operate programs serving their Tribal members. These are commonly referred to as “638 Contracts” or “638 Compacts.” The Act seeks to increase Tribal participation in the management of Federal Indian programs to ensure the long-term financial stability for Tribe run programs and remove administrative and practical barriers to reaching those goals.

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<sup>86</sup> See Bureau of Indian Affairs, [https://www.bia.gov/jobs/Indian\\_Preference](https://www.bia.gov/jobs/Indian_Preference).

<sup>87</sup> See 41 C.F.R. § 60-1.5(a)(7).

<sup>88</sup> See U.S. Department of the Interior, Intergovernmental Personnel Act (IPA) Mobility Program, <https://www.doi.gov/pmb/hr/ipa-mobility-program>.

<sup>89</sup> 5 U.S.C. § 3371 *et seq.*; 5 C.F.R. Part 334.

<sup>90</sup> Pub. L. 93-638 (Jan. 4, 1975).

## Team Member Qualifications, Experience, and Training

When building a team to carry out an action or research project, ensure that team members have the appropriate qualifications or experience and training to work with and maintain relationships with Tribal Nations or Indigenous communities and receive Indigenous Knowledge.

A Department employee should seek out experts in the field of Indigenous Knowledge to be a part of their team or provide advice to their team. Other Department employees, including employees from other Bureaus and Offices, may either have experience in including and applying Indigenous Knowledge into research or actions, may be Indigenous Knowledge Holders themselves, or both. Department employees who are also Knowledge Holders can contribute their Indigenous Knowledge to an action or research project, but just as any other Knowledge Holder, they are not required to do so. All team members should become familiar with the Department’s Indigenous Knowledge Policy<sup>91</sup> and this Handbook, and complete the Department’s Indigenous Knowledge training, titled “[Indigenous Knowledge: Building Awareness of and Honoring Indigenous Knowledge](#),” available on DOI Talent.

Additionally, the Department’s Indigenous Knowledge Community of Practice (IK COP) can help employees find contacts and resources within the Department. The IK COP is a resource for Department employees to find more information and training materials for implementing the requirements of the Department’s Indigenous Knowledge Policy, as well as the guidance and promising practices described in this Handbook. Membership consists of employees from most Department Bureaus and Offices with subject matter expertise and experience engaging with Indigenous Peoples and Knowledge. Visit the [IK-COP SharePoint](#) site to find a subject matter expert from your Bureau or Office.

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<sup>91</sup> 301 DM 7.

## Promising Practices—Planning and Knowledge Co-Production

Knowledge co-production is a research framework for weaving Indigenous Knowledges<sup>92</sup> and other scientific approaches together to support collaborative research and decision-making that may be appropriate for a Department employee’s action or research. Knowledge co-production can be thought of broadly as the collaborative process of bringing several sources and types of knowledge together to address a defined problem and to build an integrated understanding of that problem.<sup>93</sup>

In addition to bringing together multiple knowledge systems, knowledge co-production should have equity as its foundation and seek to produce actionable science that supports decision-making.<sup>94</sup> Knowledge co-production moves beyond collaboration to partnership by equally sharing decision-making about research and explicitly including Indigenous Knowledges. When conducting knowledge co-production research, relationships between the Tribal Nation or Indigenous community and Department employees should begin early during the action or research planning phase. This step will ensure that the appropriate Tribal Nation or Indigenous community representatives participate in the planning phase of the action or research and can identify the level of participation and collaboration they are interested in, as well as the participating individual(s) from the Tribal Nation or Indigenous community. To fully co-produce knowledge, Tribal Nations and Indigenous communities should be full partners in the project by working collaboratively with Department employees to develop research questions, identify appropriate methods, test hypotheses, collect and analyze data, and interpret results. Full knowledge co-production research may not be appropriate for every action or research project or desired by every Tribal Nation or Indigenous community.

<sup>92</sup> The guidance provided in this diagram comes from Ellam Yua, et al., *A Framework for Co-Production Of Knowledge in the Context of Arctic Research*, 27 *Ecology and Society* (2022), <https://doi.org/10.5751/ES-12960-270134>. This article uses the plural Indigenous Knowledges throughout.

<sup>93</sup> See Derek Armitage, et al., *Co-Management and the Co-Production of Knowledge: Learning to Adapt in Canada’s Arctic*, 21 *Global Environmental Change*, 995–1004 (2011), <https://www.sciencedirect.com/science/article/abs/pii/S0959378011000665>.

<sup>94</sup> See Ellam Yua, et al., *A Framework for Co-Production Of Knowledge in the Context of Arctic Research*, 27 *Ecology and Society* (2022), <https://doi.org/10.5751/ES-12960-270134>.

As knowledge co-production research includes Tribal and Indigenous collaborators as full and equal partners, they should be fairly compensated for the work that they do. The research should seek to produce actionable science that answers questions that fulfill the mission and mandates of the Department and are also of interest and concern to the collaborating Tribal Nation or Indigenous community.

Department employees conducting knowledge co-production research must navigate how to share power and decision-making authority over the project with collaborating Tribal Nations or Indigenous communities and be honest and transparent about their ability or inability to fully share such authority. Research results should be reviewed by the collaborating Tribal Nation or Indigenous community when the research concludes and shared in ways that are useful to them as well as to the broader scientific community and the Department. This sharing may mean that results are communicated in multiple formats. Tribal or Indigenous collaborators should co-author publications or reports describing the results of the research as co-investigators on the project.

Many models of knowledge co-production have been developed. Before engaging in knowledge co-production research, a Department employee should research the various models and best practices and negotiate how to implement knowledge co-production with the Tribal Nation or Indigenous community during the planning phase of the employee’s action or research. Please see appendix 10 for a non-exhaustive list of resources on the topic of knowledge co-production.



**Figure 9.** Model of the co-production of knowledge. Image by Julie Raymond-Yakoubian, Raychelle Aluaq Daniel, and Carolina Behe, used with permission.

## Key Points–Planning

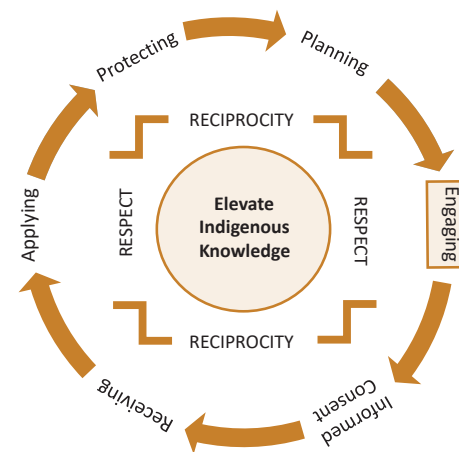
- Realistically consider the amount of time available to complete the action or research and how to best align with the time required to receive and apply Indigenous Knowledge, including any relationship building that may be necessary.
- Compensation is given in exchange for the time and services provided by the Knowledge Holder and does not transfer ownership of knowledge to the Department.
- This Handbook is concerned with compensation as it relates to the time and services provided by Knowledge Holders. Compensation for expenses related to government-to-government consultation, which is neither legally prohibited nor required, is at the discretion of the responsible manager within each Bureau or Office, and subject to the availability of appropriated funds.
- Ensure that team members have the appropriate qualifications or experience and training to work with and maintain relationships with the relevant Tribal Nation or Indigenous community and receive Indigenous Knowledge.
- Contact IK-COP for assistance in identifying team members or additional resources: [Indigenous Knowledge of Practice](#).



Tohono O'odham Man in the Maze basket, used with permission by the Bureau of Indian Affairs Museum Program Collection.

## Engaging

This section discusses techniques for engaging with Tribal Nations and Indigenous communities. Allocating time for engagement is key, and a Department employee should begin no later than the planning phase of their action or research. By doing so, the employee can better plan for the time needed to receive free, prior, and informed consent, address protocols, and then receive and apply Indigenous



Knowledge in the action or research. Engagement with Tribal Nations and Indigenous communities must be built on the principles of respect, reciprocity, and equity.<sup>95</sup> Respect means giving due regard for the feelings, wishes, rights, and traditions of others. Reciprocity refers to the practice of exchanging things with others for mutual benefit and includes outcomes and processes that ensure benefits are accrued by both entities. Equity refers to ensuring fairness and justice in the context of both engagement and decision-making.

## Government-to-Government Consultation

Engagement with Indigenous communities and Tribal Nations can take many forms, and different types of engagement may be appropriate in different circumstances. Departmental policy requires Bureaus and Offices to conduct formal government-to-government consultation with Tribal and Departmental officials when an action may have Tribal implications.<sup>96</sup> Part 512 chapters 4 and 5 of the Department Manual govern this process.<sup>97</sup> The Department also requires consultation with Alaska Native Settlement Act Corporations per 512 DM 6 and 7, and the Native Hawaiian Community per 513 DM 1 and 2.

<sup>95</sup> 301 DM § 7.6 A (1).

<sup>96</sup> “Departmental action with Tribal implications” means “any Departmental regulation, rulemaking, policy, guidance, legislative proposal, plan, programmatic or operational activity, or grant or funding formula changes that may have a substantial direct effect on a Tribe in matters...” 512 DM 4.3 (B).

<sup>97</sup> 512 DM 4, <https://www.doi.gov/document-library/departmental-manual/512-dm-4-department-interior-policy-consultation-indian-0>; 512 DM 5, [https://www.doi.gov/sites/doi.gov/files/elips/documents/512-dm-5\\_2.pdf](https://www.doi.gov/sites/doi.gov/files/elips/documents/512-dm-5_2.pdf).

Under the Department’s consultation policy, Bureaus and Offices must make good-faith efforts to invite Tribes to consult early in the planning process and throughout the decision-making process and engage in robust, interactive, pre-decisional, informative, and transparent consultation when planning actions with Tribal implications.<sup>98</sup> Bureaus and Offices should operate under the assumption that all actions with land or resource use or resource impacts may have Tribal implications and should extend consultation invitations accordingly.<sup>99</sup> Bureaus and Offices should also be aware that Tribes continue to have a connection and interest in their traditional homelands but may have been removed from those lands or may have reservations that are significantly reduced from their traditional homelands. Bureaus and Offices must consult with Tribes when Departmental actions with Tribal implications affect Tribes’ traditional homelands.<sup>100</sup>

However, when Indigenous Knowledge is relevant to Department actions, additional engagement is required. Formal government-to-government consultation is not sufficient for the inclusion of Indigenous Knowledge, as outlined in the Department’s Indigenous Knowledge Policy,<sup>101</sup> which requires free, prior, and informed consent to be received from the Tribal Nation or Indigenous community before Indigenous Knowledge is shared or applied.

### Relationship Building—Outreach and Coordination on Indigenous Knowledge

It is the Department’s policy to engage with Indigenous Peoples as true, vested, and enduring partners. In this way, relationships that produce benefits for Tribal Nations, Indigenous communities, and the Department may be built and sustained.

A Department employee should reach out to the leaders of a Tribal Nation or Indigenous community before seeking their free, prior, and informed consent to share Indigenous Knowledge. Indigenous leaders, Tribal governments, and their communities should be engaged first to build relationships and better understand the Tribal Nation or Indigenous community, leading to enhanced collaboration and partnership. Consider seeking out funding opportunities solely for relationship building and scientific needs assessments to support effective collaboration and coordination as opposed to combining relationship building with an action or a research project.

<sup>98</sup> 512 DM § 4.4.

<sup>99</sup> 512 DM 5.4 (A).

<sup>100</sup> *Id.*

<sup>101</sup> 301 DM § 7.6 (A)(2).

A Department employee should consider sending a letter to the leader of the Tribal Nation or Indigenous community from the appropriate level of authority within their Bureau or Office introducing the project manager or principal investigator and the action or research on which the employee wishes to collaborate. This letter should provide information to the Tribal Nation or Indigenous community rather than request information from them. Meaningful engagement begins by properly introducing the action or research without making assumptions about the Tribal Nation or Indigenous community’s experience, knowledge, capacity, or willingness and interest to engage.

Once initial outreach and introductions have taken place, the employee should invite the Tribal Nation(s) or Indigenous community(ies) to determine if and how they would like to participate in the action or research. Tribal Nations and Indigenous communities may participate in the Department’s actions and research in many ways, including through coordination or collaboration, which may be formalized through partnership agreements, as desired.

Place yourselves in the shoes of the community with which you are attempting to work and remember that what is important to the Department is not always important to the community. Consider times you have received communication from your local government to participate in a local planning meeting or to complete a survey: have you always been eager to attend those meetings or take the time to fill out that survey? Be persistent, but also recognize that, once a community says they are not interested in engaging with you on a project, their wishes must be respected.

At times, a Tribal Nation or Indigenous community may choose not to engage for a variety of reasons, including limited time, resources, or greater priorities. While respectful persistence is often key to successful collaboration, our Tribal and Indigenous counterparts, like our colleagues across the Department, must prioritize use of their time and resources. Aligning Departmental priorities with community priorities can ameliorate some of the barriers associated with engagement. Understanding Tribal Nation and Indigenous community priorities comes from having a relationship with the community. A Department employee should strive to work as collaboratively as possible when seeking to include Indigenous Knowledge in their actions or research, only limited by the Tribal Nation or Indigenous community’s interest in collaborating and sharing their Indigenous Knowledge.

Recognize that a relationship between a Tribal Nation or Indigenous community and the Department is a serious commitment. If a Department employee is seeking Indigenous Knowledge to meet an immediate need or does not have the capacity in their Bureau or Office to develop a long-term relationship, the a Department employee should be transparent and communicate this to the Tribal Nation or Indigenous community. The employee should not commit to a relationship if they are unsure of Bureau or Office capacity and ability to follow through on the commitment. Bureaus and Offices should seek to build enduring institutional relationships between the Department and the Tribal or Indigenous community that does not rely exclusively on individual relationships between an employee and Tribal Nation or Indigenous community members or staff. Institutional relationships will be more successful in the long term as people move on and staff changes.

Relationships between Tribal Nations, Indigenous communities, and the Department are based on unequal power relations. As such, developing relationships takes time and attention to power dynamics.

Although Department employees are building relationships on behalf of their Bureau or Office, they should introduce themselves as individuals, who they are, where they come from, and what motivates them, not just professional titles, and roles. Rapport, and thus relationships may be built on shared connections to land and familial roles of parent, child, or sibling, experiences that can transcend culture and build shared understanding (See app. 10 for additional resources on building relationships). Strive for reciprocal rather than transactional relationships that provide shared benefits to the Department and the Tribal Nation or Indigenous community. Be transparent about the Department's ability to share authority when working collaboratively. Decisions about what and how Indigenous Knowledge is shared to inform an action or research can only be made by the Tribal Nation, Indigenous community leadership, and Knowledge Holder(s). Decision-making authority regarding scientific outcomes or decisions on Departmental actions must be made by the Department.

### Promising Practices—Engagement and Getting Started

- **Reach out to Bureau or Office's Tribal Liaison Officer (TLO)** (<https://www.doi.gov/priorities/tribal-consultation/tribal-liaison-officers>). Tribal liaisons have different duties and roles within each Bureau and Office. However, beginning with a TLO will help a Department employee identify the right point of contact for initiating communication with a Tribe or Indigenous community. The TLO may be able to identify others within the Bureau or Office that already have a relationship with a particular Tribe or Indigenous community and may also assist in initiating communication with them. For example, some Tribes expect a certain level of formality in their dealings with the Federal Government commensurate with their status as sovereign nations, while others are comfortable with less formal relations. Knowing what is expected from Tribes will help the employee be successful in their initial communications.
- **Send a formal letter from the appropriate level within the Bureau or Office to the appropriate official within the Tribe or Indigenous community.** Consult the BIA Tribal Leaders Directory for current Tribal contact information (<https://www.bia.gov/service/tribal-leaders-directory>). Follow up on this letter with a phone call to

further discuss the project or action and how the Department employee and official may work together. Develop some basic and succinct talking points to facilitate this early engagement with the intention of further defining project goals and outcomes through collaboration.

- **With permission or invitation from the Tribal Nation or Indigenous community, visit the community in person or another location that is convenient.** Be aware of important days and seasons observed by the Tribal Nation or Indigenous community to avoid planning a visit that may conflict with important activities. The Department employee should make time to have formal meetings and informal conversations with Tribal Nation or Indigenous community leadership and the Department employee's counterpart in the Tribe or community to get to know one another and learn more about the work they both are doing. A Department employee should attend community events that are open to the public, get to know the community, and get to know the individuals with whom the employee is working.
- **Consider holding an open house to share information about a project or action or a listening session to hear from the Tribal Nation or Indigenous community more broadly (as opposed to only the leadership).** Host these events on Tribal lands or in Indigenous communities only with permission or at another location that is convenient to the Tribal Nation or Indigenous community.

## Assessing Capacity to Engage

Understanding Federal capacities and those of the groups with whom we engage is a fundamental component of successful engagement and collaboration. Capacity consists of both the *means* and *ability* to carry out a specific task.<sup>102</sup> These two components are equally important for successful engagement and collaboration. “Means” refers to having adequate resources, both monetary (enough funding to support the work) and human (the people to do the work, including scientists, liaisons, and administrative staff). “Ability” refers to having the appropriate tools, skills, and knowledge to do the work.

The capacity to share Indigenous Knowledge may differ depending on the scope and scale of the action or research. Tribal Nations and Indigenous communities may lack staff, leadership, or Knowledge Holders to work with the Department. In addition to capacity constraints, Tribal staff may be limited in what they are allowed to engage on in their positions with the Tribe. In such cases, the employee should seek to support the capacity of Tribal Nations and Indigenous communities to engage in actions and research where possible through, for example, cooperative agreements, technical assistance, grants, or other means, as appropriate. Tribal Nations and Indigenous communities should identify their own capacity and need for capacity building.

Federal capacity to adequately engage Tribal Nations and Indigenous communities varies across the Department. The Bureaus and Offices that have TLOs and outreach specialists view their roles and capacities differently, even between regions. In addition, some TLOs and Department employees may be new to working with Tribal Nations and Indigenous communities, whereas others may have decades of experience. Bureaus and Offices should strive to build institutional-based relationships with Tribal Nations and Indigenous communities because employee turnover can impact individual relationships that may have taken years to build.

When assessing capacities, consider the following:

- Is this Federal action or research a priority to the Tribal Nation or Indigenous community? If not, how can Tribal or Indigenous priorities be included?
- Will the outcomes of the Federal action or research produce shared benefits for the Tribal Nation or Indigenous community and the Department? If not, how can the action or research be modified to produce shared benefits?

- Does the Bureau or Office have staff members that are familiar with and comfortable working within Tribal Nations and Indigenous communities? If not, how can this be remedied?
- Does the Tribal Nation or Indigenous community have the staffing capacity to collaborate with the Department? If not, how can this be addressed to ensure effective collaboration? Could the Bureau or Office support capacity-building efforts with funding (in other words, fund a Tribal member or Indigenous community representative as a liaison for the work)?
- Can or will the Bureau or Office commit to an extended engagement with the Tribal Nation or Indigenous community on specific actions and research, ensuring effective future collaboration? If extended engagement is not possible, has this been communicated to the Tribal Nation or Indigenous community?
- What capacity does the Bureau or Office bring to the action or research (for example, scientific expertise or funding)? Are necessary capacities lacking? How can additional capacity needs be met?

## Engage with Respect

To engage with respect means to enter all interactions with openness and respect for others’ perspectives (humility), informed sensitivity to others’ histories (awareness), and good intentions (see also the “Creating an Ethical Space to Receive Indigenous Knowledge” section). Consider these three attitudes and how they shape meaningful engagement and relationship-building with Tribal Nations and Indigenous communities:

- **Humility:** Historically, the Department has taken actions and made assumptions based in Western knowledge systems and scientific approaches, which did not necessarily value or take into account Indigenous Knowledge. However, when seeking to include Indigenous Knowledge in Department actions, the validity of Indigenous Knowledge should be considered in its own right. Equal consideration must be given to evidence provided by Indigenous Knowledge and to evidence provided by other scientific approaches. Do not attempt to frame Indigenous Knowledge in Western terms. The Department employee should exercise humility and consider assumptions they might have about Indigenous Knowledge with an open mind.

<sup>102</sup> Ellam Yua, et al., *A Framework for Co-Production Of Knowledge in the Context of Arctic Research*, 27 Ecology and Society (2022), <https://doi.org/10.5751/ES-12960-270134>.

- **Awareness:** The Department employee must be aware of a Tribal or Indigenous community’s history before engagement. Tribal Nations, Indigenous communities, and Indigenous People have their own unique history and relationship with the Federal Government that informs how they build (or choose not to build) relationships with Federal agencies and employees. Awareness of the territories, homelands, cultural landscapes, protocols, and sacred sites of Tribal Nations and Indigenous communities is critical.
- **Good intentions:** Active and empathetic listening is central to working with and learning from Tribal Nations and Indigenous communities. Try to do more listening than speaking in meetings. Avoid framing interactions as the Department telling Tribes and Knowledge Holders what we think they need. Active listening involves hearing the perspective of the Tribal Nation or Indigenous community.

To incorporate these attitudes during engagement with Tribal Nations and Indigenous communities, learn the following:

- **Tribal or Indigenous history:** What is the history of this Tribal Nation or Indigenous community? Were they relocated or do they reside on their ancestral homelands? Each Tribal Nation and Indigenous community is unique, and each has a unique relationship with the Federal Government and the Department. It is the Department employee’s responsibility to learn this history and how it will impact their engagement and subsequent work with the Tribal Nation or Indigenous community. Attempt to learn this history through an Indigenous lens, not only a Western lens.
- **Tribal and Indigenous land:** Tribal Nations and Indigenous communities have various experiences in how they came to their current location and unique treaties and laws that govern their land ownership. Integral to understanding their perspective is understanding the history of their lands, including Tribal treaty rights and loss of lands. Though Tribal Nations and Indigenous communities generally hold a holistic view of the land, landscape, and waters to which they are connected, their lands vary in legal status. Further, Tribal Nations and Indigenous communities define and describe their lands in different ways. Common terms, some based in law, include aboriginal lands, ceded lands, usual and accustomed areas, ancestral lands or ancestral territory, current reservations, and historical reservation boundaries.

- **Political organization:** Tribal Nations are sovereign and have their own political organization and governments, which may differ among Tribes. Additionally, the U.S. territories and freely associated states have their own governing structure. A Department employee should understand a Tribal Nation’s or Indigenous community’s governing structure before engaging to ensure that they work with the appropriate individuals to receive official consent. Many Tribal Nations have Tribal Councils that meet at regularly scheduled intervals, and the employee may be required to meet with the Tribal Council or submit an official request for consent. The Department employee is responsible for learning when these meetings are scheduled and ensuring adequate time in the action or research project schedule to accommodate the Tribal Nation’s specific governing processes.
- **Tribal laws, Tribal constitutions, and treaties:** As sovereign nations, Tribes may have their own constitutions, laws, legal systems, courts, and health care and education programs and facilities. Conversely, a Tribe may rely on written and unwritten common law and tradition or cultural norms. Many, but not all, Tribal Nations also have treaties. Every treaty is unique, but they all outline the Tribal Nation’s reserved rights, among other things.<sup>103</sup>
- **Social organization:** The social organizations of Tribal Nations and Indigenous communities are unique. There are a diverse range of languages, architectures, subsistence practices, spiritualities, and cosmologies that vary from one Tribal Nation or Indigenous community to another. Being knowledgeable about historical and cultural relationships to other Tribal Nations and Indigenous communities in the area may be important for the action or research for which an employee is engaging with the Tribe or Indigenous community. Social organization also influences cultural practices or customs that are relevant to engagement with Tribal Nations and Indigenous communities. For example, in Alaska, multiple Tribes can exist within one community.

<sup>103</sup> See the Tribal Treaties Database, Oklahoma State University Libraries, to access Tribal treaties and agreements, <https://treaties.okstate.edu/>.

- **Important cultural, ceremonial and subsistence dates observed by Tribes and Indigenous communities:** Effective collaboration requires awareness of important cultural, ceremonial dates, and subsistence periods observed by Tribal Nations and Indigenous communities. Tribal and Indigenous community members' calendars are often based around ceremonies and opportunities to gather and harvest resources. Avoid scheduling meetings or review processes during those times. When planning an action or research project, a Department employee should ensure there is room in their timeline to avoid times of significance in Tribal and Indigenous communities. It is impossible to engage on Indigenous Knowledge, or any other matter, if Tribal or Indigenous community partners are out of the office.
- **Other relevant projects with Federal agencies:** Tribal Nations and Indigenous communities are often overburdened with requests for consultation by the Federal Government or inquiries from researchers (Federal and non-Federal) for project collaboration. Before reaching out to a Tribe or Indigenous community with a request for collaboration, try to ascertain the current involvement in or number of requests for participation in other Federal projects.

Tribal Consultation notices can sometimes be found in the Federal Register or on the Department's Consultation webpage,<sup>104</sup> and a Department employee may be able to find out about existing Department projects by reaching out to their Bureau or Office TLO.

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<sup>104</sup> Tribal Consultation Page, <https://www.doi.gov/priorities/tribal-consultation>.

## Protocols for Engaging Tribal Nations and Indigenous Communities

This subsection provides an overview of common protocols for engaging Tribal Nations and Indigenous communities with respect. These protocols, however, should not be considered an exhaustive list. Each Tribal Nation and Indigenous community is unique and may have its own protocols and expectations related to meetings and collaboration. The following guidance can help a Department employee get started and identify areas where more research may be needed on their part. Remember that mistakes are always part of the process when learning something new. If the Department employee interacts with an open mind—operating with humility, awareness, and good intentions—mistakes in protocol will be understood, corrected, and often excused by Tribal Nations and Indigenous communities. The employee's proficiency and understanding of protocols will increase while they develop meaningful relationships built from this perspective and these principles.

Meeting locations are important. Always ask Tribes and Indigenous communities where they would like to meet and honor their wishes on the appropriate season, location, day, and time. If a Department employee is invited to come to Tribal lands or other Indigenous homelands, that is an honored invitation, and every effort should be made to hold the meeting there. If the Tribal Nation or Indigenous community does not indicate a preference for a location, choose a convenient site that is easily accessible to all parties, including Tribal Elders. If the topic of the meeting includes a specific location or landscape, consider holding the meeting at that location and facilitate travel for Tribal and Indigenous members through funding, where available and appropriate.



## General Meeting Etiquette

- Plan meetings together with one's Tribal or Indigenous counterparts and use the work referenced above in the "Engage with Respect" section to inform the preparation work. Avoid important Tribal or Indigenous dates.
- Provide a draft agenda (if appropriate) well enough in advance of a meeting for Tribal or Indigenous partners to contribute and prioritize topics to discuss. Ask the Tribal Nation or Indigenous community if they would like to assist in the co-development of the agenda.
- Not all meetings require a detailed agenda and may only require a list of basic topics to be discussed without time limitations. Allow sufficient time for discussion without the pressure of other obligations. When developing agendas, ask if a Tribal Nation or Indigenous community representative would like to provide opening and closing remarks or a prayer.
- If the Department is hosting the meeting and if practical, provide food and appropriate beverages when authorized by the Bureau or Office's fiscal and other policies or statutory authorities.
- Designate a Department employee to take notes, or if appropriate, record the meeting. Allow time for Tribal Nations and Indigenous communities to review, clarify, and concur with the notes or the recordings. Seek consent to make recordings or take photos. Obtain a photo release form, if appropriate.

Giving gifts is often an important practice in Indigenous cultures to show gratitude and respect to one's collaborators and to acknowledge their efforts and knowledge. Appropriate gifts can include small handmade items, such as jewelry, crafts, or local foods. Small items that represent the Department or one's Bureau or Office, the project or action, or one's personal values and interests are also good. Using appropriated funds for such gifts, though, must be carefully considered, documented, and approved. The general rule is that appropriated funds may not be used for personal gifts unless there is specific statutory authority. Such statutory authority may exist, for instance, for those Bureaus and Offices that have what are known as reception and representation funds, with the purpose of essentially supporting official engagement with outside parties. Questions regarding whether one's Bureau or Office has such funds or other questions regarding the proper use of appropriated funds should be directed to the Bureau or Office's budget office or supporting Office of the Solicitor attorney.

If a gift is offered to a Department employee, they should consult an ethics official as soon as possible to obtain guidance on whether the gift may, or should, be accepted. Under the Federal ethics rules, persons or entities with matters before the Department, such as Tribal Nations, Indigenous communities, and Knowledge Holders, will generally be considered prohibited sources under the Federal ethics laws for gifts. Acceptance of a gift from these sources may be restricted or prohibited by Federal law or create an appearance of impropriety. Certain exceptions exist within the ethics rules that may permit the acceptance of a gift, but the application of these exceptions depends on the specific circumstances surrounding the gift. Though it is important to express gratitude and show respect when offered a gift, a Department employee should always consult an ethics official before retaining the gift. Please note that certain gifts, such as food, lodging, or travel expenses, should be reviewed by an ethics official before they can be accepted.



Hopi Nation members grind corn into flour using a mortar and pestle, used with permission by the Bureau of Indian Affairs Museum Program Collection.

### **Practical Tips—Ethics and Gifts of Food or a Shared Meal**

It is especially important to plan and consult an ethics official early in the process of planning an engagement with Tribal Nations and Indigenous communities to understand limits on allowable gifts and receiving food and beverages for meetings.

Once gifts of food have been accepted and they are consumed, there may be limited options if those gifts cannot be accepted consistent with the ethics limitations. For example, a gift of a meal cannot be returned, donated, or otherwise disposed of in the way that other tangible gifts could be handled if they are determined to be impermissible under the ethics rules. In these situations, a Department employee or their Bureau/Office might have limited corrective options and may be required to reimburse the offeror for the meal. The Departmental Ethics Office is available to provide guidance if food or refreshments, or any other gifts, may be offered in the context of meetings or other engagements.

When working with Tribal Nations, Indigenous communities, and Knowledge Holders, be respectful by being present and following protocol:

- Display respect to the Chair or other Tribal or Indigenous leader. If the meeting is taking place in their chamber or homeland, defer to them to lead the meeting.
- Use formal titles rather than first names until otherwise invited (for example, Madame Chairwoman, or Chairman/Chairwoman Smith, Councilman/Councilwoman Smith, Chief Smith).
- Defer speaking time to Tribal and Indigenous Elders, which is particularly important when time is limited. When an Elder wishes to speak, it is respectful to allow them to speak before oneself. It follows that, overall, listening more and talking less is good practice when meeting with Tribes and Indigenous communities.

- Do not interrupt Tribal or Indigenous speakers and avoid side conversations. Give the speaker full attention (for example, turn off cell phones and put them away even if others do not; avoid looking at a watch).
- If food or refreshments are offered, be aware that these qualify as gifts. Exceptions may apply that may allow a Department employee to accept the gift, but if they anticipate being offered food or refreshments at a meeting or event, they should consult an ethics official for guidance on whether the food items can be accepted given the circumstances of the situation. Sharing food is important in many Tribal Nations and Indigenous communities and is often central in relationship building and setting up subsequent discussions for a successful outcome, so it is important to consider the ethical implications ahead of time. It is also appropriate to have Tribal or Indigenous Elders go first or be served first. Oblige this request graciously as Elders hold a respected status in Tribal and Indigenous communities.
- Expect periods of silence and try to avoid filling them. The pace of dialogue or knowledge sharing may be slower or different than one is accustomed to in other contexts. Practice sitting with the silent moments and try to embrace the silence and tune in more completely.
- Although it may be challenging, attempt to remain engaged when difficult or emotional topics are being discussed. A speaker may show deep emotion or cry given the historical trauma they carry. Accept the words as a gift and be witness to what is being shared. It is important to be present and not ignore or avoid the topic. Take cues from the speaker; if appropriate, thank the speaker for sharing a difficult or emotional topic.
- When asking questions, frame questions to seek clarification or additional information and avoid questions that are, or appear to be, dismissive of Indigenous Knowledge.

## Key Points—Engagement

- Decisions about what and how Indigenous Knowledge is shared to inform an action or research project can only be made by the Tribal Nation, Indigenous community leadership, and Knowledge Holders.
- Communicate that decision-making authority regarding scientific outcomes or decisions on Department actions must be made by the Department and cannot be shared.
- Seek to build institutional relationships based on Bureau or Office roles as opposed to individuals.
- Communicate the ability to commit to a long-term or short-term relationship.
- Assess Federal as well as Tribal Nation and Indigenous community capacity to collaborate.
- Learn about the Tribal Nation or Indigenous community and protocols.
- Consult with the ethics office as necessary.

## Free, Prior, and Informed Consent

The Department’s Indigenous Knowledge Policy states that free, prior, and informed consent must be received from both the appropriate governing body of a Tribal Nation or Indigenous community (if such a body exists) and the Knowledge Holder prior to receiving or including and applying Indigenous Knowledge in the Department’s actions or research.<sup>105</sup> Both levels of consent are necessary because Indigenous Knowledge is often communally held; thus, the community, not just the Knowledge Holder, should be part of the process of consent (see the “Ethics and Equity Should Guide Engagement with Knowledge Holders” section). Additionally, in order to respect the sovereignty of Tribal Nations, Tribal governments should be aware of, and consent to, a Knowledge Holder sharing Indigenous Knowledge with the Department.

<sup>105</sup> 301 DM § 7.6 (A)(2).

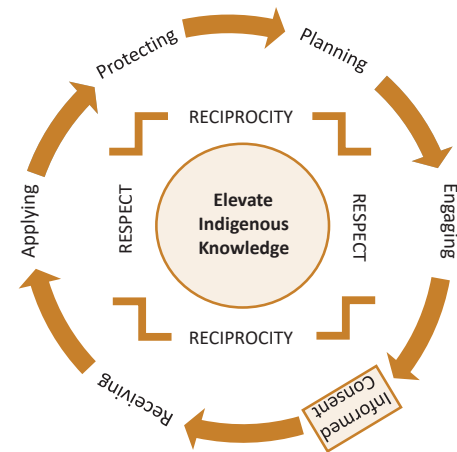
Free, prior, and informed consent relates to the requirement to obtain consent to receive, include, and apply Indigenous Knowledge. It is not consent or concurrence with the overall action, research, or final decision.

A Department employee should provide opportunities for the Tribal or Indigenous governing body and Knowledge Holder(s) to determine the processes for giving consent, consistent with applicable law and Department policy. Consent should be documented and include conditions and agreements set forth by the Tribal or Indigenous governing body and Knowledge Holder(s), and the agreed upon responsibilities of the Federal Government, Tribal or Indigenous governing body, and Knowledge Holder(s).

The consent phase is another opportunity for collaboration, discussing, and meeting the needs of both the Department and the Tribal Nation or Indigenous community sharing their Indigenous Knowledge. There may be cases in which the Tribal or Indigenous governing body does not wish to collaborate and withholds consent despite the desire of Knowledge Holders to work with the Department. If this situation arises, consult with the appropriate TLO and consider reaching out to the Indigenous Knowledge Community of Practice (IK COP) before engaging with Indigenous Knowledge.

As part of the process of receiving consent, the Department employee should transparently inform and explain the following to the Tribal or Indigenous governing body and the Knowledge Holder(s):

- All anticipated risks of disclosure and benefits of inclusion of their Indigenous Knowledge.
- The right to grant or withhold consent to share their Indigenous Knowledge with the Department.
- The right to discontinue sharing Indigenous Knowledge at any time.



- That consent for the inclusion and application of Indigenous Knowledge in Departmental actions and research cannot be withdrawn once the Department has received the knowledge. In addition, any Indigenous Knowledge received by the Department before sharing is discontinued cannot be removed from the official record.
- The Federal laws affecting the process of receiving, including, applying, or disclosing Indigenous Knowledge, including but not limited to, Administrative Procedures Act; OPEN Act;<sup>106</sup> the Paperwork Reduction Act (as applicable, see app. 7), FOIA; and Information Quality Act (IQA).
- The Department's legal obligations, including the extent to which the Bureau or Office will be able to maintain the confidentiality of Indigenous Knowledge once shared and what protocols the Bureau or Office will use to store, share, and access sensitive documents, information, or data.
- The action or research's purpose and scope, and how information shared by the Tribal Nation or Indigenous community, including Indigenous Knowledge, will be applied.
- The Department's inability to ensure a particular decision, outcome, or scientific conclusion in advance.
- The potential for re-use of the Indigenous Knowledge outside of the intended or original inclusion, and any limits on the Department's ability to control re-use. Ensure that the expression of consent provided by the Tribal Nation, Indigenous community, and Knowledge Holder clearly states their position regarding re-use.

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<sup>106</sup> Title II of the Foundations for Evidence-Based Policymaking Act of 2018, Public Law 115-435.

Obtaining consent should be an iterative process that provides opportunity for ongoing discussions among the Department, Tribal or Indigenous governing bodies, and Knowledge Holder about what information can and cannot be protected; allows for Tribal Nations, Indigenous communities, and Knowledge Holders to make informed decisions about what knowledge to share and if they would like to stop sharing; and outlines a process for the review of the results and products developed from the application of Indigenous Knowledge. It should be made clear during this iterative process of consent that the review of results and products does not equate to approval of findings, decisions, or actions; rather, it is a review of the interpretation and application of the Indigenous Knowledge as applied.

The Department employee should disclose the above bulleted information before Tribal Nations, Indigenous communities, and Knowledge Holders share Indigenous Knowledge and throughout the project, and discuss any information about the Tribe or Indigenous community's relevant protocols, laws, or resolutions related to the sharing of Indigenous Knowledge. For long-term or more complex projects, Bureaus and Offices should consider collaboratively developing a written agreement to document the process of sharing, receiving, applying, storing, protecting, and disseminating Indigenous Knowledge. Additionally, consider reaching out to the Office of the Solicitor to review their consent process and provide advice to understand if specific cases protecting Indigenous Knowledge from disclosure apply to the Department employee's scenario. If a Knowledge Holder wishes to withdraw consent for the use of Indigenous Knowledge, speak to the Solicitor's Office for advice.

The process for achieving free, prior, and informed consent can be complex. Consider reviewing training materials on asking for and receiving informed consent, available at some universities and affiliated institutions. The U.S. Department of Health and Human Services, Office of Human Research Protections, maintains a website with policy guidance, education and outreach, and many other topics.<sup>107</sup> Many professional organizations, including the Society for Applied Anthropology, American Anthropology Association, and the Oral History Association, offer guidance and training as well.

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<sup>107</sup> See U.S. Department of Health and Human Services, Office for Human Research Protections, <https://www.hhs.gov/ohrp/index.html>.

Human research protections, governed by IRBs, are designed to protect individual rights in a human subjects research setting (see the “Ethics and Equity Should Guide Engagement with Knowledge Holders” section, “Qualitative Social Science Approaches” section, and the “Human Subjects Review” section). However, not all instances of receiving Indigenous Knowledge will take place in a human subject research context. Additionally, given that, as of the effective date of this Handbook, the Department is not a signatory to the Common Rule, a Department employee’s research is not required to be reviewed by an IRB. Further, Indigenous Knowledge is often communally held as opposed to being held by an individual; thus, the employee should discuss all the risks and benefits of sharing Indigenous Knowledge with the Tribal Nation, Indigenous community, and Knowledge Holders to ensure protection. Insufficient protections or insufficient consent can harm the Tribal Nation or Indigenous community as a whole, not just the individual.<sup>108</sup> To avoid harm, it is vital to work with the appropriate governing or leadership body, in addition to Knowledge Holders, to ensure that all parties are properly informed and freely consent to the sharing and application of Indigenous Knowledge.

### Key Points—Free, Prior, and Informed Consent

- Department policy states that free, prior, and informed consent must be received from the appropriate governing body of a Tribal Nation or Indigenous community (if such a body exists) and the Knowledge Holder prior to receiving or including and applying Indigenous Knowledge in the Department’s actions or research.
- Tribal Nations, Indigenous communities, and Knowledge Holders have the right to withhold consent to share Indigenous Knowledge and to discontinue sharing at any time. However, any Indigenous Knowledge received by the Department before sharing is discontinued cannot be removed from the official record, which must be communicated as part of the process of receiving consent.

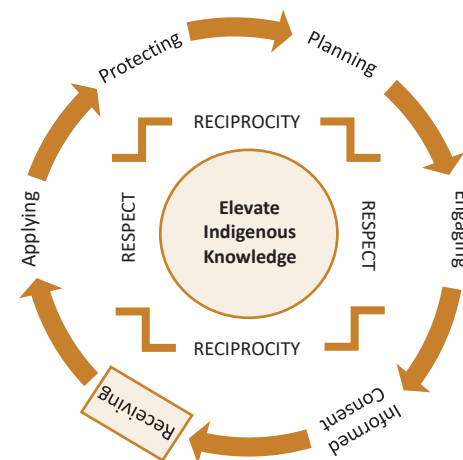
<sup>108</sup> U.S. Department of Health and Human Services, Office for Human Research Protections, *Supporting Ethical Research Involving American Indian/Alaskan Native (AI/AN) Populations*, <https://www.hhs.gov/ohrp/education-and-outreach/educational-collaboration-with-ohrp/workshops/ohrp-hosted-workshops-aug2021/index.html>.

## Receiving Indigenous Knowledge

Indigenous Knowledge is developed, held, and stewarded by Indigenous Peoples. Receiving Indigenous Knowledge is a privilege but does not make a Department employee a Knowledge Holder, nor does this work require that the employee become a Knowledge Holder.

Indigenous Knowledge systems have different levels of meaning, and persons within Tribal Nations and Indigenous communities have different levels of access to and understanding of Indigenous Knowledge. This difference is similar to levels of competency and understanding within Western knowledge systems and scientific approaches. Indigenous cultures have different names for the individuals with specific levels of knowledge, such as Knowledge Holder, Knowledge Bearer, and Culture Bearer. This Handbook uses the term Knowledge Holder.

A Department employee should work with the appropriate, designated individuals within the Tribal or Indigenous governing body to identify who will share Indigenous Knowledge on behalf of the community. Knowledge Holders are not necessarily officials within the government of a Tribal Nation or Indigenous community. Tribal and Indigenous communities are heterogeneous, with different opinions, skill sets, and experiences. All community members are not experts in all things; therefore, it is important to identify who the community believes may have the most relevant Indigenous Knowledge. In some cases, Knowledge Holders may be self-certifying, and there may be multiple individuals or groups who claim to be Knowledge Holders as well as divergent claims of relevancy within communities or groups. The Department employee should always work with the appropriate governing body within the Tribal Nation or Indigenous community to sort through these complexities and identify the appropriate Knowledge Holders for the employee’s project or action.



## Approaches for Receiving Indigenous Knowledge

Occasionally, Indigenous Knowledge may have been previously documented and stored by the Tribe or Indigenous community. In this case, including Indigenous Knowledge in a Department employee's action or research may require simply receiving free, prior, and informed consent to review and apply the previously documented information. However, in most cases, the employee will receive applicable Indigenous Knowledge directly from Knowledge Holders identified by the Tribal or Indigenous governance body.

When receiving Indigenous Knowledge, the Department employee should consider the methods, processes, and techniques developed by Indigenous Peoples and scholars for sharing Indigenous Knowledge, particularly from the Tribal Nation or Indigenous community with whom they are working. These processes and approaches should be led by members of the Indigenous community, if possible.

### Promising Practices: Receiving Indigenous Knowledge—Indigenous Methodologies

Research paradigms provide frameworks that guide disciplinary theories, practices, and ultimately, methods. Embedded in research paradigms are assumptions about the nature of reality (ontology), how knowledge is gained (epistemology), and the tools and approaches used to gain and validate knowledge (methodology). Indigenous paradigms and paradigms based in Western worldviews often differ in these embedded assumptions (ontology, epistemology, and methodology) that guide research. Indigenous methodologies are approaches to research, often led by Indigenous scholars and Peoples, that center Indigenous values and historical context and respect community members' authority over the research process.<sup>109</sup>

Indigenous methodologies generally include the following concepts:

- **Relationality:** Indigenous paradigms are based on the fundamental belief that knowledge is relational. Knowledge is shared with all of creation.<sup>110</sup>

- **Reciprocity:** The researcher and community both benefit from the research.
- **Responsibility:** Recognizes connections to Indigenous communities and the desire to continually develop sustainable, supportive relationships with them.
- **Valuing lived experience:** Indigenous methodologies acknowledge that knowledge is socially situated and grounded in the subjectivities and experiences of everyday life.<sup>111</sup>
- **Centering Indigenous Knowledge:** Indigenous methodologies center Indigenous Knowledge.

Including the concepts of relationality, reciprocity, and responsibility, as well as the value of lived experience and centering of Indigenous Knowledge, guides the choice of approach and scientific methods used to receive knowledge in Indigenous methodologies.

<sup>109</sup> Dominique M. David-Chavez and Michael C. Gavin, *A Global Assessment of Indigenous Community Engagement in Climate Research*, 13 *Environmental Research Letters* (2018), <https://tribalclimateguide.uoregon.edu/literature/global-assessment-indigenous-community-engagement-climate-research>; Anne D. Grant et al., *A Research Publication and Grant Preparation Program for Native American Faculty in STEM: Implementation of the Six R's Indigenous Framework*, 12 *Frontiers in Psychology* (2022), <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.734290/full>.

<sup>110</sup> Shawn Wilson, *What is an Indigenous Perspective*, 25 *Canadian Journal of Native Education*, 175–179 (2001), <https://ojs.library.ubc.ca/index.php/CJNE/article/view/196958/191991>.

<sup>111</sup> Aileen Moreton-Robinson and M. Walter, *Indigenous Methodologies in Social Research*, in *Social Research Methods* (A. Bryman, ed., 1999); Cora-Weber Pillwax, *Indigenous Research Methodology: Exploratory Discussion of an Elusive Subject*, 33 *The Journal of Educational Thought*, <https://www.jstor.org/stable/2e0c4d46-1e0a-323a-bdfe-0536b45cbcc2?read-now=1&seq=12>.

## Qualitative Social Science Approaches

Qualitative social science methods are commonly used for receiving Indigenous Knowledge. These methods can be used when no publicly available Indigenous Knowledge exists, when the Tribal Nation or Indigenous community does not have established Indigenous methods of sharing knowledge within the community, or when Indigenous leadership is not available to guide approaches for sharing Indigenous Knowledge with the Department. In such cases, appropriate methods to engage with and learn from Knowledge Holders will need to be identified.

A Department employee should be deliberate and intentional about the approach taken to receive Indigenous Knowledge with an understanding of how Indigenous Knowledge will inform their research or action. The appropriate approach will depend on the goals of the employee's action or research, the desires of the Tribal Nation, Indigenous community, and Knowledge Holder(s), the amount of time available to complete the work, and other considerations. The Department employee should work with experts in the field (for example, cultural anthropologists and social scientists) who are knowledgeable about appropriate and vetted social science methods and techniques and working with Knowledge Holders to identify the appropriate approach for and implementation of the specific action or research, as applicable.<sup>112</sup> The Department employee should reach out to colleagues within their Bureau or Office with experience working with Indigenous Knowledge, their TLO, or IK COP as needed to identify experts.

Qualitative social science methods that may be applicable to a Department employee's action or research include unstructured or semi-structured interviews,<sup>113</sup> focus groups,<sup>114</sup> workshops, and participatory mapping.<sup>115</sup>

<sup>112</sup> 301 DM § 7.6 (A)(4).

<sup>113</sup> See Henry P. Huntington, *Observations on the Utility of the Semi-Directive Interview for Documenting Traditional Ecological Knowledge*, 51 *Arctic*, 201–300 (1998), <https://journalhosting.ucalgary.ca/index.php/arctic/article/view/64121>. In the semi-directive interview, the participant or participants are guided in the discussions by the interviewer, but the direction and scope of the interview are allowed to follow the associations identified by the participant. There is no fixed questionnaire, nor is there a preset limit on the time for discussions, although a list of topics may be a useful reference, helping the interviewer cover important areas while allowing the participants to add or skip topics depending on their interest and expertise.

<sup>114</sup> See Thomas A. Schwandt. The Sage Dictionary of Qualitative Inquiry, "Interviewing, Types of." (2007).

<sup>115</sup> See Melinda Laituri, et al., *Questioning the Practice of Participation: Critical Reflections on Participatory Mapping as a Research Tool*, 152 *Applied Geography* (2023), <https://www.sciencedirect.com/science/article/abs/pii/S0143622823000310?via%3Dihub>.

Qualitative methods are based in the oral, observational, or experiential sharing of knowledge, which are often culturally appropriate ways to receive Indigenous Knowledge. Additionally, interviews and focus groups can assess community agreement on the validity of the knowledge (see the "Case Study—Alexander Archipelago Wolf Species Status Assessment" section for an example of qualitative methods).

## Human Subjects Research

The use of qualitative social science approaches in receiving Indigenous Knowledge may fall into the category of human subjects research (see the "Ethics and Equity Should Guide Engagement with Knowledge Holders" section).<sup>116</sup> Typically, human subjects research requires review by an IRB to ensure the protection of human subjects, compliance with regulations, and adherence to ethical standards. As of the effective date of this Handbook, the Department is not a signatory to the Common Rule and does not have an IRB that must be consulted. However, if a Department employee's action or research meets the definition of human subjects research, they should consider requesting review by an IRB to ensure ethical engagement in the receipt of Indigenous Knowledge from Knowledge Holders.

A Department employee's action may be considered human subjects research if it meets the definitions of both (1) human subject and (2) research.<sup>117</sup> Actions undertaken by Department employees to receive Indigenous Knowledge may meet these definitions when information is obtained through interactions that generate identifiable private information, and the results of the action are intended to contribute to generalizable knowledge.

<sup>116</sup> *Human subject* "means a living individual about whom an investigator (whether professional or student) conducting research (i) obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or (ii) obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens" 46 C.F.R. § 46.102 (e)(1). *Research* "means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Activities that meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program that is considered research for other purposes. For example, some demonstration and service programs may include research activities . . ." 46 C.F.R. § 46.102 (l). See also Jennifer Sepez, *Introduction to Traditional Environmental Knowledge in Federal Natural Resource Management Agencies*, 27 *Practicing Anthropology*, 2–6 (2005).

<sup>117</sup> 45 C.F.R. § 46.102(e)(1).

The National Institutes of Health (NIH) maintains a decision tree<sup>118</sup> that can help an employee determine if their action is human subjects research. Many university IRB websites host similar tools.<sup>119</sup> An IRB will also provide a determination if an employee's action or research constitutes human subjects research as part of their review.

Some human subjects research projects can be classified as posing no more than a minimal risk, defined as follows: “[T]he probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.”<sup>120</sup>

In such cases, the research typically receives an “exempt” determination from an IRB.<sup>121</sup> However, what is considered “minimal risk” or “exempt” by an IRB may pose substantial risk to Tribal Nations, Indigenous communities, and Knowledge Holders from disclosure of their Indigenous Knowledge. Accordingly, the Tribal Nation or Indigenous community may request IRB review of a Department employee's research methods, regardless of the Department's status as a signatory to the Common Rule, or they may request review by their own IRB.

In addition to considering an IRB review of their research, a Department employee should work with the appropriate Tribal or Indigenous governing or oversight body regarding the disclosure of Indigenous Knowledge to ensure that the employee's proposed action or research is reviewed and approved by the appropriate oversight body before receiving Indigenous Knowledge. The Department employee may be asked to submit their project plans to a Tribal IRB or to follow policies, processes, or protocols in addition to or in lieu of an IRB review before the Tribal Nation or Indigenous community consents to share their Indigenous Knowledge.<sup>122</sup>

<sup>118</sup> See The National Institutes of Health Decision Tool to Determine if Your Action is Human Subjects Research, <https://grants.nih.gov/policy/humansubjects/hs-decision.htm>.

<sup>119</sup> <https://www.colorado.edu/researchinnovation/irb/getting-started/does-my-research-require-irb-review>.

<sup>120</sup> 45 C.F.R. § 46.102(i).

<sup>121</sup> Subpart A of 45 C.F.R. Part 46, Basic HHS Policy For Protection of Human Subjects, as revised January 19, 2017, and amended on January 22, 2018, and June 19, 2018. §46.104 Exempt research.

<sup>122</sup> See National Park Service, Indigenous Knowledge and Traditional Ecological Knowledge, *Tribal Research Policies, Processes and Protocols*, <https://www.nps.gov/subjects/tek/tribal-policies-processes-and-protocols.htm>.

## Practical Tips—IRB Review

Human subjects research can be reviewed at no cost by a university with which a Department employee or other members of their project team have an affiliation. If the Department employee does not have a university affiliation or university partner, a private IRB can review the work for a fee. Fees often depend on the complexity of the project and typically range from \$1,000 to \$3,000. If the employee believes that their action or research will fall into the category of human subjects research, funds for IRB review should be included in the project budget. The amount of time required for IRB review varies from university to university and can range up to several months. Private IRBs can often reach a determination in 1 week. The IRBs require that all project personnel involved in the research complete human subjects research training and submit a certificate of completion along with other required documents.<sup>123</sup>

## Creating an Ethical Space to Receive Indigenous Knowledge

Receiving Indigenous Knowledge from a Knowledge Holder, regardless of the approach taken, requires creating an ethical space of engagement by honoring the principles of respect, reciprocity, and equity and by communicating effectively through empathetic speaking and listening. Empathetic listening requires listening to what others are saying, even if one does not agree with it. An empathetic listener attempts to understand the feelings of the speaker, staying mindful of the emotional content being delivered as well as the literal meaning of the words (see the “Engage with Respect” section).

When listening empathetically, ask mostly open-ended questions and avoid disputing facts or interjecting one's own understanding of the topic (that is, scientific understanding). Focus on what is being said and how the speaker feels. Pay attention to the speaker's and one's own nonverbal communication. In addition to being an empathetic listener, be an empathetic speaker. Speak plainly, avoiding scientific and governmental terminology and acronyms in order to be understood by those outside of one's Bureau, Office, or discipline.

<sup>123</sup> CITI Program, *Social-Behavioral-Educational (SBE) Comprehensive*, <https://about.citiprogram.org/course/human-subjects-research-2/>.



Using unfamiliar scientific terminology can make others feel disinvested, disrespected, or unwelcome, giving the impression that the speaker is not open to the input of others. Effective communication is not condescending and invites others into the conversation. It also requires more listening than speaking.

Receiving Indigenous Knowledge requires acknowledgment of potential and often unspoken tensions that may arise when Indigenous and Western cultures, worldviews, and beliefs interact.<sup>124</sup> The deliberate development of an ethical space of engagement can help bridge this tension.<sup>125</sup>

### Creating an Ethical Space of Engagement

“When we work to understand a perspective that is different from our own, and then examine that understanding with an eye to finding connections with our own perspective, or our own worldview, we begin to create an ethical space. The key is to link these worldviews in a way that does not diminish either, and that honors both. This new way, which reflects a deep understanding of varying perspectives and values, can result in an ethical space that transforms the way we work together.”

**Source:** Alberta Energy Regulator Agency, 2017, *Voices of understanding—Looking through the window*: Calgary, Alberta. [Available at [https://static.aer.ca/prd/documents/about-us/VoiceOfUnderstanding\\_Report.pdf](https://static.aer.ca/prd/documents/about-us/VoiceOfUnderstanding_Report.pdf).]

The concept of an ethical space of engagement<sup>126</sup> emphasizes the need to approach Knowledge Holders with respect and recognition that their knowledge comes from a worldview that is internally consistent, yet different from a Western worldview. Bridging Indigenous and Western worldviews allows different knowledge systems to co-exist. Working in an ethical space of engagement requires respect for each knowledge system.

<sup>124</sup> Roger Poole, *Towards Deep Subjectivity* (1972).

<sup>125</sup> Willie Ermine. *The Ethical Space of Engagement*. 6 *Indigenous Law Journal*, 193 (2007).

<sup>126</sup> See Compass, *Ethical Space: Indigenous Engagement for Environmental Science Professionals*, <https://www.compasscomm.org/ethical-space-indigenous-engagement-for-environmental-science-professionals/>.

When people from different knowledge systems come together in an ethical space of engagement, they must recognize and respect that, although they use similar methods of observations to understand the world, their knowledge systems are based in different foundations. Approaches to science and environmental management based in a Western worldview flow from policies and legal frameworks. Department employees may assume this is the basis for the work that is accepted by all. However, Indigenous beliefs often are not based on the same principles. For example, a Department employee may cite policy, legal statutes, or biological principles. A Knowledge Holder may communicate their laws for environmental management through story systems that expand and expound upon what they know from observations of nature, both theirs and their ancestors. Indigenous Knowledge includes both material and spiritual dimensions. It is important to listen fully and recognize that Indigenous ways of knowing are related to relationships among all aspects of the cosmos. Without this understanding, Department employees may easily misunderstand, attempt to subsume, or inadvertently misapply Indigenous Knowledge when seeking to include or elevate it.

Honest, respectful, and productive collaboration requires acknowledgement that there are different and equally valid ways of perceiving and experiencing the world, each with its own underlying assumptions. A Department employee should allow time and space for introspection and reflection on what beliefs and assumptions underlie their own worldview. As the guidance document “Kūlana Noi‘i” articulates, “Know yourself, your intentions, and your value to the place in which you work. These can be evolving but be aware and use this knowledge to work thoughtfully and effectively.”<sup>127</sup> Creating and working in an ethical space requires active listening and sharing of worldviews and an effort to build trust. Principles of respect, generosity, kindness, and reciprocity are paramount. In this way, the work we do with Knowledge Holders will be more authentic and will enable new understandings based on mutual respect to emerge and flourish.

<sup>127</sup> Sea Grant, University of Hawaii, *Kūlana Noi‘i*, <https://seagrant.soest.hawaii.edu/wp-content/uploads/2018/06/Kulana-Noii-low-res-web.pdf>.

### Key Points—Receiving Indigenous Knowledge

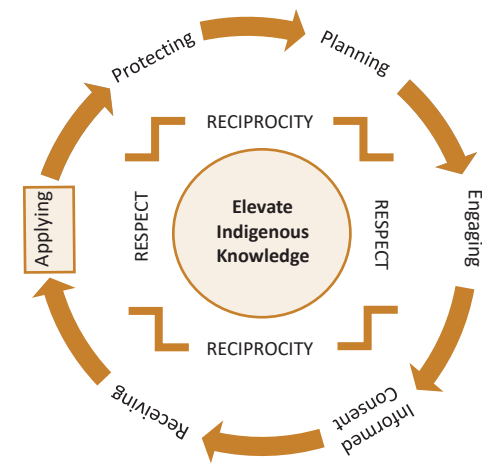
- Receiving Indigenous Knowledge does not make a Department employee a Knowledge Holder or require that they become a Knowledge Holder.
- A Department employee should work with the appropriate, designated individuals within the Tribal or Indigenous governing body to identify who will share Indigenous Knowledge on behalf of the Tribe or community.
- Use appropriate and ethical approaches for receiving Indigenous Knowledge.
- A Department employee should understand the Federal policies that provide for the ethical protection of human subjects during the receipt of Indigenous Knowledge and the employee’s responsibilities. Although the Department is not a signatory to the Common Rule as of the effective date of this Handbook, the Department employee should consider seeking review of their actions by an IRB before receiving Indigenous Knowledge if their actions meet the definition of human subjects research. The National Institutes of Health maintains a decision tree that can help Department employees determine if an employee’s action is human subjects research. Additionally, many university websites for IRBs host similar tools.
- It is the employee’s responsibility to work with the Tribal Nation or Indigenous community to ensure that the employee’s proposed action or research is reviewed and approved by the appropriate oversight body before receiving Indigenous Knowledge.

### Applying Indigenous Knowledge

After receiving free, prior, and informed consent and Indigenous Knowledge, the Department should ensure that Indigenous Knowledge is appropriately included in the action or research.

It may be difficult to know if Indigenous Knowledge will be appropriate and applicable to a Department action or research before that knowledge is shared. A Department employee should work iteratively with their Tribal

and Indigenous partners to determine which knowledge is appropriate and applicable and avoid seeking extraneous information. The employee should not seek Indigenous Knowledge unless they have a plan for how they will include and apply the knowledge in their action or research. Do not seek to receive Indigenous Knowledge simply for the sake of learning. Be deliberate about the information sought and avoid seeking more information than is necessary or relevant (see the “Planning” section).



Indigenous Knowledge may be appropriately applied in a variety of Department actions, including ecosystem and community resilience work, climate change scenario planning, environmental compliance work, and various environmental studies, as well as emergency and disaster response. Some Federal statutes that require consideration of scientific information, such as the ESA, allow the inclusion of Indigenous Knowledge under established standards (app. 4). In these cases, Department policy allows Indigenous Knowledge, when it is generally considered authoritative by the Indigenous Peoples who possess it, and access to that knowledge was gained through the free, prior, and informed consent of the appropriate governing body and Knowledge Holders, to be included as an aspect of best available science.

Determining how Indigenous Knowledge will be applied will depend on the goals of the action or research. Evaluating why Indigenous Knowledge is sought should direct the rest of a Department employee’s steps. For example, when establishing a species baseline to better understand climate impacts, Indigenous Knowledge may provide observations of ecological drivers of health and abundance. In contrast, including Indigenous Knowledge in the development of a co-stewardship strategy may require reframing Federal land management practices to include the consideration of caretaking of relationships among plants, animals, humans, ceremonies, and sacred sites.

## Interpretation of Indigenous Knowledge

A Department employee should discuss with the Tribal Nation, Indigenous community, and Knowledge Holders how their knowledge will be included, interpreted, and applied. Before reaching final decisions or conclusions, ensure that the interpretation is considered to be accurate and appropriate by those who shared their knowledge. This consideration does not mean that Department decisions, scientific conclusions, or underlying projects must be approved by Tribal Nations, Indigenous communities, or Knowledge Holders (see the “United Nations Declaration on the Rights of Indigenous Peoples and Free, Prior, and Informed Consent” section).

When applying Indigenous Knowledge to an action or a research project, it should not be assimilated into a Western worldview. In other words, when bringing together Indigenous Knowledge and Western knowledge, avoid seeking only to identify key similarities and differences such that the former can be simplified and consolidated into a Western worldview.<sup>128</sup> These two ways of knowing should be woven together as opposed to subsuming one into the other.<sup>129</sup> In this way, time-tested Indigenous Knowledge can be paired with revelatory insights from other scientific approaches.<sup>130</sup> For example, Indigenous Knowledge of the drivers of health and abundance of a species can be paired with regional climate models developed using other scientific approaches to understand how that species may be impacted by climate change.<sup>131</sup> Working collaboratively in either a coordinated or co-productive way with the Tribal Nation or Indigenous community will ensure that the knowledge received is appropriately applied to the research (see the “Promising Practices: Planning–Knowledge Co-production” section).

<sup>128</sup> See Erin L. Bohensky and Yiheyis Maru (2011), as cited in Reid, A.J., et al. “Two-Eyed Seeing”: An Indigenous Framework to Transform Fisheries Research and Management, 22 *Fish and Fisheries*, 243–261 (2021), <https://onlinelibrary.wiley.com/doi/full/10.1111/faf.12516>.

<sup>129</sup> See Arun Agrawal, *Dismantling the Divide Between Indigenous and Scientific Knowledge*, 26 *Development and Change*, 413–439 (1995), <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-7660.1995.tb00560.x>.

<sup>130</sup> See Alice Benessia et al. (2012); Jayalaxshmi Mistry and Andrea Berardi (2016); and Raymond Pierotti and Daniel Wildcat (2000), as cited in Andrea J. Reid, et al., “Two-Eyed Seeing”: An Indigenous Framework to Transform Fisheries Research and Management, 22 *Fish and Fisheries*, 243–261 (2021), <https://onlinelibrary.wiley.com/doi/full/10.1111/faf.12516>.

<sup>131</sup> See Nicole M. Herman-Mercer, et al. *Climate- and Disturbance-Driven Changes in Subsistence Berries in Coastal Alaska: Indigenous Knowledge to Inform Ecological Inference*, 48 *Human Ecology*, 85–99 (2020), at <https://link.springer.com/article/10.1007/s10745-020-00138-4>.

## Validity of Information

The validity of data and information is a key concern in the scientific processes within Western knowledge systems. Ensuring that Department decisions are consistent with the IQA,<sup>132</sup> Evidence Act,<sup>133</sup> and other statutes guiding the use of scientific information is necessary to maintain the public’s trust. However, employees do not need to judge, validate, or evaluate Indigenous Knowledge using Western knowledge systems to include Indigenous Knowledge in Department actions or research.<sup>134</sup>

The validity of data and information is assessed differently in various disciplines. For example, it is inappropriate to apply validity tests from quantitative physical sciences to qualitative social sciences because each has unique methods for achieving and measuring validity. The same is true for different knowledge systems. Scientific approaches situated in Western knowledge systems should not be used to validate information originating from Indigenous Knowledge systems. The inclusion of Indigenous Knowledge starts with recognizing that the practices and methodologies that underlie Indigenous Knowledge have been vetted within the community over time (fig. 10).<sup>135</sup>

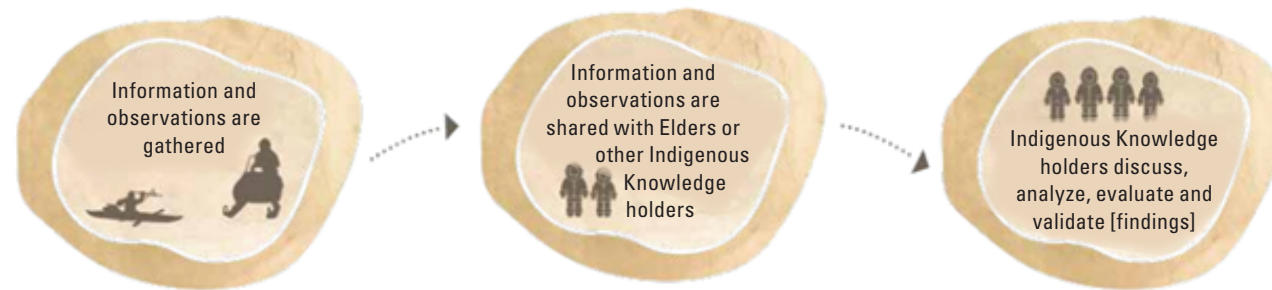
Some Indigenous Knowledge is shared and known among members of a community, whereas some is held by only a few individuals. These Knowledge Holders are trusted and respected within their community for holding knowledge that has been validated within the knowledge system over time and through application. Working collaboratively with the appropriate governing body or designated individuals of the Tribal Nation or Indigenous community to identify Knowledge Holders will ensure that the knowledge shared with the Department is considered valid by the community.

<sup>132</sup> See <https://www.doi.gov/ocio/policy-mgmt-support/information-and-records-management/iq> and Section 515 of <https://www.govinfo.gov/app/details/PLAW-106publ554> (Pub. L. No. 106-554, 114 Stat 2763, § 515 (codified at 44 U.S.C. §§ 3504(d)(1), 3516)).

<sup>133</sup> See <https://www.doi.gov/performance/evidence-doi> and <https://www.govinfo.gov/app/details/PLAW-115publ435>.

<sup>134</sup> See [www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf](http://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf).

<sup>135</sup> See Inuit Circumpolar Council Alaska, *Alaskan Inuit Food Security Conceptual Framework: How to Assess the Arctic from an Inuit Perspective—Technical Report* (2015), <https://repository.oceanbestpractices.org/handle/11329/1828>.



**Figure 10.** The process of validating Indigenous Knowledge. Image by Inuit Circumpolar Council Alaska (2015), used with permission.

Concepts, such as a multiple evidence base (MEB) approach, are also useful when working with Indigenous Knowledge. The MEB approach highlights the use of parallel sets of criteria in which knowledge systems develop their own validation standards.<sup>136</sup> Accordingly, Indigenous Knowledge systems should guide the metrics by which Indigenous Knowledge is evaluated. Knowledge Holders within the knowledge system can provide guidance on validation within their culture.

Include the time and resources needed to accomplish validation by individuals or communities and understand and communicate any Bureau and Office policies with regard to review of datasets and products. Good planning is needed to ensure enough time and understanding to allow internal Tribal and community processes to work together with Federal statutes and Bureau and Office policies in the review and release of data and products.

## The Information Quality Act

The IQA<sup>137</sup> requires that the Federal Government rely on information of appropriate quality for the decision being made. Quality in this context is defined as ensuring and maximizing the quality, objectivity, utility, and integrity of information.

<sup>136</sup> See Maria Tengö, et al., *Connecting Diverse Knowledge Systems for Enhanced Ecosystem Governance: The Multiple Evidence Base Approach*, 43 *Ambio*, 579–591 (2014). <https://link.springer.com/article/10.1007/s13280-014-0501-3> and Maria Tengö, et al., *The Multiple Evidence Base as a Framework for Connecting Diverse Knowledge Systems in the IPBES*. Discussion Paper 2012-06-04. Stockholm Resilience Centre (SRC), Stockholm University, Sweden (2014).

<sup>137</sup> Pub. L. No. 106-554 (Dec. 21, 2000), 114 Stat 2763, § 515 (codified at 44 U.S.C. §§ 3504(d)

Influential information products include Influential Scientific Information (ISI) defined as “scientific information the agency reasonably can determine will have or does have a clear and substantial impact on important public policies or private sector decisions” and Highly Influential Scientific Assessments (HISA) with “dissemination [that] could have a potential impact of more than \$500 million in any one year on either the public or private sector or that the dissemination is novel, controversial, or precedent setting, or has significant interagency interest.”<sup>138</sup> These types of products and assessments are required to provide sufficient transparency about data and methods to allow reproducibility of the results.<sup>139</sup> Products considered to be ISI or HISA are also required to undergo peer review. When the peer review of a product that includes Indigenous Knowledge is required, Department policy requires that at least one peer reviewer be a subject matter expert in the field of Indigenous Knowledge.<sup>140</sup>

(1), 3516).

<sup>138</sup> Office of Management and Budget, Final Information Quality Bulletin for Peer Review (Dec. 16, 2004), <https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/omb/memoranda/fy2005/m05-03.pdf>.

<sup>139</sup> Office of Management and Budget, Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies; Republication, 67 Fed. Reg. 8452 (Feb. 22, 2002), <https://www.federalregister.gov/d/R2-59>; Office of Management and Budget, Final Information Quality Bulletin for Peer Review, 70 Fed. Reg. 2664 (Jan. 14, 2005), <https://www.federalregister.gov/d/05-769>; Office of Management and Budget, Memorandum to the Heads of Executive Departments and Agencies, Improving Implementation of the Information Quality Act, M-19-15, (April 24, 2019), <https://www.cdo.gov/assets/documents/OMB-Improving-Implementation-of-Info-Quality-Act-M-19-15.pdf>.

<sup>140</sup> 301 DM § 7.6 (B)(4)(c).

## Reconciling Conflicts Between Knowledge Systems

Department employees often conduct actions and research that include multiple Tribal Nations or Indigenous communities. In some cases, Knowledge Holders within a Tribal Nation or Indigenous community or multiple Tribal Nations or Indigenous communities may hold conflicting Indigenous Knowledge. Employees may have to reconcile conflicting Indigenous Knowledge in those cases. In addition, employees may have to reconcile conflicts between Indigenous Knowledge and Western knowledge. Divergent perspectives between knowledge systems can be valid and true at the same time; however they are not always. In some cases, conclusions based in one, or both, knowledge system(s) and associated approaches may be incorrect. In seeking to build consensus, further exploration and understanding of the assumptions made that are leading to different conclusions may be necessary.

Decisions, resource management, program implementation, policies, scientific research, and other actions that simultaneously acknowledge and include divergent perspectives are often preferable to those that exclude perspectives. Conflicting and divergent perspectives can often lead to positive outcomes. In fact, disagreements in scientific approaches based in Western knowledge systems are not uncommon and are often a catalyst to advance knowledge.

### Consensus Building

Department employees should strive for consensus when engaging with Knowledge Holders. The Department's Policy and Procedures for Consultation with Tribes, 512 DM 4 and 5, state that it is the Department's policy to seek consensus with impacted Tribes. It further states that the basis of consultation is rooted in meaningful dialogue where the viewpoints of Tribes and the Department, including its Bureaus and Offices, are shared, discussed, and analyzed; the Department Manual provides a "Consensus-Seeking Model"<sup>141</sup> with a hierarchy of scenarios and guidance on when it is most important to seek consensus. Conflicts between different knowledge systems should be similarly approached.

Consensus building seeks to build the capacity of people to develop a dialogue with each other, either directly or indirectly, in order to move forward based on agreement. This approach generates mutual gains for all parties, with a minimum of compromise and trade-off. The fundamental principles of consensus building guide parties in conflict away from the following:

- Negotiating over their immediate demands and hostile positions, instead addressing the underlying needs that are the true motivating factors behind each side's perception of the conflict;
- Thinking about only one solution, instead considering the widest possible and most creative range of options for meeting the parties' underlying needs; and
- Making personalized or exaggerated demands, instead moving toward clarity and precision in describing parties' underlying needs and the range of proposed options.

Where conflicts arise involving the inclusion of Indigenous Knowledge, consider forming a working group of Department scientists or resource managers, Knowledge Holders and Tribal professionals, and others, as appropriate, to build consensus to achieve equitable, inclusive, and sound decisions that produce shared benefits.

### Accommodation, Compromise, and Consensus

Rather than a single approach to addressing and managing conflicts, a combination of strategies may be necessary. If conflict arises, consider using strategies of accommodation, compromise, and consensus to address and manage conflict.

Accommodating the perspectives and Indigenous Knowledge of a Tribal Nation or Indigenous community when their Indigenous Knowledge conflicts with other knowledge systems may be a sound strategy where the conflict is minor or does not impact the outcome of the action or research. For example, maintaining a strong and continuing relationship with the Tribal Nation or Indigenous community and honoring their sovereignty may be more important than reconciling divergent perspectives or knowledge systems. When accommodating Indigenous Knowledge, a Department employee should consider presenting the conclusions of both the Indigenous Knowledge and other scientific approaches in the final decision and avoid making claims about the correctness of either.

Sometimes, compromise may be necessary to reach a shared agreement. Certain methods can assist with decision making, such as stakeholder or rights-holder analysis and a systematic process of identifying, assessing, and understanding the distribution of impacts of decisions among individuals, groups, or organizations. This process identifies where the objectives or perspectives of the parties are contradictory and where they share elements. From this process, an optimal compromise may be constructed that minimizes a win-loss outcome.

<sup>141</sup> 512 DM 4, [https://www.doi.gov/sites/doi.gov/files/elips/documents/512-dm-4\\_2.pdf](https://www.doi.gov/sites/doi.gov/files/elips/documents/512-dm-4_2.pdf); see also 512 DM 5-6 for additional information on building consensus.

Although the process of consensus-building sometimes contains elements of compromise, there are key differences between the two approaches. As discussed above, consensus-building explicitly sets out to avoid trade-offs to achieve a win-win outcome. A compromise approach seeks to minimize what are considered to be inevitable trade-offs.



Hopi ring basket, made from the narrow-leaf yucca plant, used with permission by the Bureau of Indian Affairs Museum Program Collection.

### Office of Collaborative Action and Dispute Resolution

When working with multiple Tribal Nations or Indigenous communities that may share Indigenous Knowledge, a Department employee should consider having their team take training in conflict management and consensus building. The CADR offers information and assistance to anticipate and resolve conflicts and disputes, build stronger relationships, and achieve more effective and lasting results through services, such as consultation, coaching, training, mediation, and facilitation.<sup>142</sup> Contact the appropriate CADR representative for information and assistance, preferably during the planning stage of a project rather than after conflict is identified, because CADR can also help with relationship building.

<sup>142</sup> U.S. Department of the Interior, Office of Collaborative Action and Dispute Resolution, <https://www.doi.gov/pmb/cadr>.



### The Many Dimensions of Knowledge

“It is tempting, when engaging with a different system of knowledge or different type of expertise, to pick those facts and views that accord nicely with what we already believe. Accepting Indigenous observations as reliable contributions to the scientific knowledge base is engagement only at the superficial level. And even here, we may dismiss observations that do not accord with our understanding .... I suggest that everyone be more aware of the different dimensions of knowledge, Indigenous or scientific, and recognize what they are trying to achieve by engaging with one another. Difficulty is not a reason to abandon the attempt to engage with Indigenous knowledge, but rather a sign of how important it is to make that attempt rather than to accept disagreement and conflict as inevitable, particularly when differences in power make it possible for one side to brush off the other aside.

In short, finding ways to draw on Indigenous and scientific knowledge together is not a problem to be solved, but a journey to be taken. There will be many accomplishments along the way, as well as setbacks, and we should not expect to reach a final destination where every difficulty is resolved and every benefit has been realized. Instead, we should be open to ever deeper understanding, to the idea that we all have much to share and much to learn, and to a sense of shared purpose as we work together for a world we can be proud to pass to our children.”

**Source:** Huntington, H. 2019, The many dimensions of knowledge: National Park Service. [Available at <https://www.nps.gov/subjects/tek/henry-p-huntington.htm>.]

## Documenting the Inclusion of Indigenous Knowledge

As appropriate, and only with free, prior, and informed consent, a Department employee should document the application of Indigenous Knowledge in their decision or research findings. In cases where Indigenous Knowledge from multiple Tribal Nations or Indigenous communities is included, discuss the level of specificity each Tribal Nation or Indigenous community desires in the final product. The Department employee should first consider and consult with the Tribal Nation or Indigenous community about the level of detail and relevant Indigenous Knowledge necessary to document the final decision or research finding. Documentation should recognize the origin of the Indigenous Knowledge and give credit to the ideas, insights, and other forms of Indigenous Knowledge in ways requested by the Tribal Nation, Indigenous community, or Knowledge Holder. The documentation should describe how the Department employee applied Indigenous Knowledge in their final decision or research conclusion. Tribal Nations, Indigenous communities, and Knowledge Holders should have the opportunity to review the documentation of their contributions.

As part of ongoing communication and reciprocity, follow up with the Tribal Nation, Indigenous community, or Knowledge Holder to describe how their Indigenous Knowledge was included in the final decision or research conclusions and to share outcomes over time. A Department employee should consider how they can work with the Tribal Nation or Indigenous community to develop products related to the action or research findings that are beneficial to them. Examples include developing written materials about the action or research, online story boards or geonarratives, and presentations and webinars for Tribal or community members. As appropriate and desired by the Tribal Nation, Indigenous community, or Knowledge Holder(s), consider working with them to develop products that present the decision or research findings in Indigenous voice, language, and style by including your Indigenous partners as co-authors, using Indigenous words important to the decision or finding, or incorporating Indigenous artwork.

### Promising Practices—Citation and Metadata

When documenting the inclusion of Indigenous Knowledge in scientific publications, Departmental decisions, or other products, it is important to avoid the use of a personal communication citation: (name, personal communication, date). Personal communication citations do not carry the same weight as other types of citations in scientific publications and may be considered disrespectful by Knowledge Holders or Tribal Nations and Indigenous Peoples. There is a growing body of resources and literature on how best to cite Knowledge Holders in scientific documents and reports. Work with a TLO or approving official to determine which formats will work for each specific case.

The Government Publishing Office citation format does not directly address Indigenous Knowledge, but there are alternative approaches that better honor Indigenous voices:

**American Psychological Association (APA) citation format**—Commonly used in the behavioral and social sciences.

Example: Last name, first initial. Nation/community. Treaty territory if applicable. Where they live, if applicable. Topic/subject of communication if applicable. Personal communication. Month, date, year. The personal communication element is left in for the APA template as a nod to the official APA classification of oral knowledge.

**Modern Language Association (MLA) citation format**—Commonly used for academic writing and research, especially in the humanities.

Example: Last name, first name. Nation/community. Treaty territory, if applicable. City/community they live in, if applicable. Topic/subject of communication, if applicable. Date, month, year.

Additionally, metadata standards for storing and disseminating Indigenous Knowledge have been created by the “Local Contexts” initiative. Working with Indigenous groups, the initiative created labels to identify the provenance, protocol, and permissions of Indigenous Knowledge for protection and sharing. Discuss with the Tribal Nation, Indigenous community, and Knowledge Holders whether they would like to be credited for their knowledge in products and publications. When developing a data management plan for their project or action, a Department employee should consider whether data management standards like those developed by Local Contexts can add both protection and interoperability to Indigenous Knowledge shared with the employee.

**Source:** MacLeod, L. (2021). More than personal communication—Templates for citing Indigenous Elders and Knowledge Keepers, KULA, v. 5, no. 1, p. 1–5. [Available at <https://kula.uvic.ca/index.php/kula/article/view/135>; see also <https://localcontexts.org/labels/traditional-knowledge-labels>.]

## Key Points—Applying Indigenous Knowledge

- A Department employee should not seek Indigenous Knowledge unless they have a plan for how they will include and apply the knowledge in their action or research. Do not seek to learn Indigenous Knowledge simply for the sake of learning. Be deliberate about the information sought and avoid seeking more information than is necessary or relevant.
- Ensure that the interpretation of Indigenous Knowledge is considered accurate and appropriate by those who shared their knowledge before reaching final decisions or conclusions.
- Evaluate the goal of including Indigenous Knowledge and let that guide the application of Indigenous Knowledge.
- Department employees should not judge, validate, or evaluate Indigenous Knowledge using other knowledge systems to include Indigenous Knowledge in Department actions or research.
- When peer review of a product that includes Indigenous Knowledge is required, Department policy requires that at least one peer reviewer be considered a subject matter expert in the field of Indigenous Knowledge.
- Tribal Nations and Indigenous communities should be given the opportunity to review written documentation of their contributions.
- As part of ongoing communication, follow up with the Knowledge Holder to describe how Indigenous Knowledge was included in the final Federal action and share outcomes.

## Protecting Indigenous Knowledge and Disseminating Results

Knowledge Holders may be reluctant to share Indigenous Knowledge regarding resource locations and community held values for several reasons. First, historical relations between Indigenous Peoples and non-Indigenous Peoples have resulted in distrust of the Federal Government in many instances (see the “Historical Context of the Disruption of Indigenous Knowledge” section).

Second, many Indigenous Peoples have well-founded fears that sharing information with outsiders could result in exploitation of the knowledge either through commercialization, profiteering, or abuse of sacred sites and potential misuses of the information. Tribal Nations, Indigenous communities, and Knowledge Holders may fear loss of access, exploitation, or desecration of lands, waters, and other resources if certain information is shared with others. Tribal leaders or designated representatives are best positioned to identify what Indigenous Knowledge must be kept private, sensitive, or sacred, and Bureaus and Offices should recognize that Indigenous Knowledge freely shared by one community may be closely guarded by another.

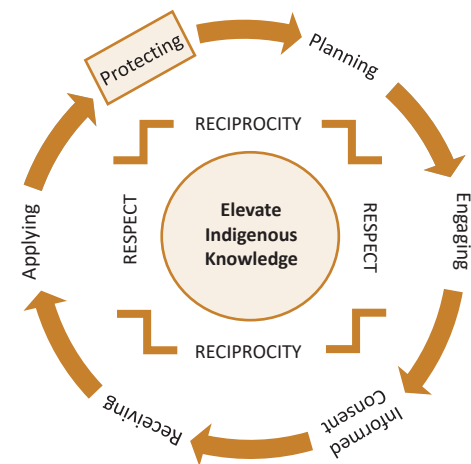
Third, once shared, a Department employee cannot always prevent Indigenous Knowledge from being released to the public (see app. 6 for a list of statutory protections of Indigenous Knowledge). For example, Indigenous Knowledge within the Department employee’s possession or control may be subject to disclosure pursuant to FOIA regulations.<sup>143</sup> The extent to which Indigenous Knowledge can be protected depends on whether it falls within one of the nine FOIA exemptions. Importantly, there is no exemption that explicitly protects Indigenous Knowledge from release (see the “Ethics and Equity Should Guide Engagement with Knowledge Holders” section).

Additionally, Indigenous Knowledge may be subject to release under the OPEN Act.<sup>144</sup> The OPEN Act requires Federal agencies to publish their information online as open data, using standardized, machine-readable data formats, with their metadata included in the [data.gov](https://data.gov) catalog. More broadly, open data are freely available to everyone to use and republish for their own purposes. Accordingly, all Federal Government data must be open for public review and use unless restricted by law or regulation. Bureaus and Offices may have internal policies with regard to the release of sensitive data, defined as “...data that, if made public, would result in an adverse effect on a taxon or a living individual...,” which allows for the protection of sensitive data by not requiring a data release<sup>145</sup> (see the “Ethics and Equity Should Guide Engagement with Knowledge Holders” section).

<sup>143</sup> 5 U.S.C. § 552.

<sup>144</sup> Title II of the Foundations for Evidence-Based Policymaking Act of 2018, Pub. L. 115–435.

<sup>145</sup> See U.S. Geological Survey Data Management Guidance, Proprietary and Sensitive Data, <https://www.usgs.gov/data-management/proprietary-and-sensitive-data>.





### Practical Tip—Open Data

Open Data refers to publicly available data structured in a way that enables the data to be fully discoverable and usable by end users. The term “data” means recorded information, regardless of form or the media on which the data are recorded. “Open Government data asset” is machine-readable; available (or could be made available) in an open format; not encumbered by restrictions, other than intellectual property rights; and based on an underlying open standard that is maintained by a standards organization. Additional supporting definitions are available at 44 USC § 3502.

[Resources.data.gov](https://resources.data.gov) is an online repository of policies, schema standards, tools, best practices, and case studies that provides agencies with a one-stop shop for resources related to Federal data management and use. The site meets the repository requirements of the Foundations for Evidence-based Policymaking Act and provides supplemental materials for the Federal Data Strategy.

Indigenous Knowledge may also be subject to release pursuant to statutes that do not specifically relate to open data. For example, Indigenous Knowledge may be released in NEPA Act<sup>146</sup> documents when it is used to inform a decision because the inclusion and reliance on such knowledge must be cited and documented. Certain other statutes, such as the Archaeological Resources Protection Act<sup>147</sup> and National Historic Preservation Act<sup>148</sup> provide only limited protections from disclosure for specific statutory purposes (app. 6).

These and other disclosure statutes require that a Department employee carefully consider how to receive and document Indigenous Knowledge. Department employees should work with the Tribal Nation or Indigenous community to develop a plan for receiving and documenting Indigenous Knowledge that minimizes harm to the Nation or community should Indigenous Knowledge be disclosed to the public. Reach out to the Solicitor’s Office for advice on other statutory protections that may apply to the specific situation. Receipt and documentation procedures should protect sensitive

<sup>146</sup> 42 U.S.C. § 4321 *et seq.*

<sup>147</sup> 16 U.S.C. § 470aa *et seq.*

<sup>148</sup> Pub. L. 89-665, 80 Stat. 915, as amended (Oct. 15, 1966).

information to the greatest extent possible. Avoid storing or maintaining Indigenous Knowledge unless requested or authorized by the Tribal Nation, Indigenous community, or Knowledge Holder. In some cases, however, it may be necessary to keep a record of sensitive information, as discussed below. Consider supporting the Tribal Nation and Indigenous community in building their capacity to store, manage, and protect their Indigenous Knowledge. In collaboration with the Tribal Nation or Indigenous community, consider whether the action or research requires that the Department possess the shared Indigenous Knowledge or just the conclusions from the interpretation of relevant Indigenous Knowledge. It may be appropriate to set up an agreement where the Tribal or Indigenous community members receive and interpret the relevant Indigenous Knowledge and only share conclusions with the Department in order to keep sensitive Indigenous Knowledge from becoming Federal records. Consult the appropriate FOIA Officer or the Solicitor’s Office for additional guidance on protecting Indigenous Knowledge.

### Informing Knowledge Holders about Potential Disclosure Risks

As part of the process of receiving free, prior, and informed consent, a Department employee should inform the Tribal Nation, Indigenous community, and Knowledge Holders of the types of information being sought and how the information will, and will not, be applied to Federal decisions or research. The employee should also inform the Tribal Nation, Indigenous community, or Knowledge Holder of the limits of their ability to protect the information from public disclosure. Open data policies and FOIA mean that Indigenous Knowledge that is shared for particular research, decision-making, or other action may later be published and disseminated to non-Indigenous audiences and reused for purposes other than those outlined when consent for sharing knowledge was obtained. This situation poses a risk of Indigenous Knowledge being used out of context or being used inappropriately, for example, by only using parts of a holistic knowledge system or being applied to a question it was not intended to answer. There are additional concerns that Indigenous Knowledge that has been held by a Tribe or Indigenous community since time immemorial may be used without proper attribution if made publicly available.

When discussing potential risks, do not overcommit or overstate the ability to protect information from disclosure. A Tribal Nation, Indigenous community, and (or) Knowledge Holder(s) must freely, and with all pertinent information available to them, assess the risk that certain information shared with a Departmental employee may, in the end, be publicly disclosed before sharing such information.

## Protecting and Storing Indigenous Knowledge

If requested or authorized, or if necessary, a Department employee must, in collaboration with the Tribe, Indigenous community, or Knowledge Holder, carefully maintain and securely store sensitive information relating to Indigenous Knowledge. Sensitive information can include interview transcripts, maps, recordings, and other types of information.

Sensitive information should be maintained through physical means, such as a locked file cabinet for documents and electronic storage devices, and procedural means, such as those found in the Privacy Act and Federal privacy policies,<sup>149</sup> to ensure secure file maintenance and management. Metadata should clearly indicate that such files are confidential. Moreover, access to sensitive information should be limited to employees working on the action or research requiring access.

### Practical Tips—Protecting Indigenous Knowledge

- Existing data management plan templates should be modified to include protection of Indigenous Knowledge. Work with the Tribal Nation, Indigenous Community, and (or) Knowledge Holder to develop a data management plan that can meet open data policies while protecting sensitive information by aggregating and redacting information that poses a privacy risk and communicating the private nature of the information through metadata. Contact the appropriate FOIA Officer or Privacy Officer for more information. Consult the appropriate TLO or Records Officer with questions about how best to protect sensitive information.
- Although exemptions to FOIA may be applicable, the Department employee should assume that an exemption will not apply and should disclose that fact to Indigenous Knowledge Holders prior to any information sharing. Knowledge Holders should be informed that they should only share information or material that the Knowledge Holder is willing to release as part of the public record.

<sup>149</sup> See U.S. Department of the Interior Privacy Policies and References, <https://doi.gov/privacy/policies-references>.

## Indigenous Data Sovereignty and Ethics

Indigenous data sovereignty asserts the rights and interests of Indigenous Peoples in relation to data about them, their territories, and their ways of life.<sup>150</sup> It refers to the right of Indigenous Peoples to own, control, access, and possess data that derive from them and pertain to their members, knowledge systems, customs, or territories. Federal open data statutes and polices can conflict with Indigenous data sovereignty (see the “Ethics and Equity Should Guide Engagement with Knowledge Holders” section).

<sup>150</sup> See Stephanie Russo Carroll, et al., *Indigenous Data Governance: Strategies from United States Native Nations*, 18 *Data Science Journal*, 31 (2019), <https://datascience.codata.org/articles/10.5334/dsj-2019-031>; Stephanie Carroll Rainie, et al., *Data as a Strategic Resource: Self-Determination, Governance, and the Data Challenge for Indigenous Nations in the United States*, 8 *The International Indigenous Policy Journal*, 1–29 (2017), <https://nni.arizona.edu/publications/data-strategic-resource-self-determination-governance-and-data-challenge-indigenous-nations>; Tahu Kulutai and John Taylor, eds., *Indigenous Data Sovereignty, Toward an Agenda* (2016).



Woman Skinning Seal by Bernard T. Katexac, used with permission by the Bureau of Indian Affairs Museum Program Collection.

## Promising Practices—Indigenous Data Governance

The University of Arizona’s Native Nations Institute provides recommendations for Indigenous data governance. As Tribal Nations and Indigenous communities begin replacing external norms and priorities with Indigenous systems that define data, control how it is collected, and influence how it is used, the following should be considered a partial list:

- Acknowledge Indigenous data sovereignty as an objective and incorporate it into Indigenous community, Federal, and other entities’ data policies;
- Generate resources and build support for Indigenous data governance, including the governance of Indigenous data by others;
- Grow Indigenous community data capacities, including establishing data governance policies and procedures and recruiting and developing data stewards;
- Establish strong relationships between Indigenous leaders and data stewards;
- Create Indigenous institutions dedicated to data leadership and building data infrastructure and support for communities; and
- Build connections among Indigenous Peoples and communities, domestically and internationally, for the sharing of strategies, resources, and ideas.

**Source:** List adapted from Carroll, R.S., Rodriguez-Lonebear, D., and Martinez, A. 2017, Policy brief: Indigenous data sovereignty in the United States: Tucson, Native Nations Institute, University of Arizona. [Available at <https://nnigovernance.arizona.edu/sites/nnigovernance.arizona.edu/files/resources/Policy%2520Brief%2520Indigenous%2520Data%2520Sovereignty%2520in%2520the%2520United%2520States.pdf>.]

The tension between Indigenous data sovereignty and Federal policies can be ameliorated with an ethical approach to data and evidence, which facilitates implementation of the Evidence Act and open data principles and provides a framework for working with Indigenous communities and Tribal Nations to respectfully approach the subject of data and evidence. Consistent with Executive Order 13175, titled “Consultation and Coordination with Indian Tribal Governments” (2000), formal Tribal Consultation should also include discussion of ethical consideration of data, evidence, and sovereignty.<sup>151</sup>

For comparison, FAIR and CARE principles are summarized below, followed by the transparency, responsibility, user focus, sustainability, and technology (TRUST) principles for digital repositories and the Federal Data Strategy—Data Ethics Framework (see the “Ethics and Equity Should Guide Engagement with Knowledge Holders” section). Department employees should be aware of and consider the implications of all these frameworks to guide meaningful discussions with Tribal Nations and Indigenous communities.

The FAIR guiding principles provide direction to data publishers and stewards to assist in the evaluation of data management and dissemination choices.<sup>152</sup> These principles do not suggest any specific technology, standard, or implementation solution. Instead, they are a list of standards that, when followed, promote open science and information.

- **Findable:** persistent identifier; rich, clear, and explicit metadata; indexed and searchable.
- **Accessible:** open, free, implementable, accessible (even if only metadata because actual data are no longer available).
- **Interoperable:** broadly applicable, uses a common vocabulary, references other metadata as appropriate.
- **Reusable:** accurate and relevant, clear license, detailed provenance, appropriate community standards identified.

<sup>151</sup> 65 Fed. Reg. 67249 (Nov. 6, 2000).

<sup>152</sup> Mark D. Wilkinson, et al., *The FAIR Guiding Principles for Scientific Data Management and Stewardship*, 3 Scientific Data (2016), <https://doi.org/10.1038/sdata.2016.18>.

The CARE principles of Indigenous data governance describe actions applicable within research, government, and institutional data settings. Data governance must address all the CARE principles to fully implement the CARE process. The goal is for data stewards and other users of Indigenous data to implement CARE and FAIR principles in tandem.

- **Collective benefit:** provides inclusive, improved governance, and equitable outcomes.
- **Authority to control:** recognizes the rights and interests of Tribal Nations and Indigenous communities, supports data for governance and governance of data.
- **Responsibility:** expands positive relationships, capability and capacity, is for Indigenous languages and worldviews.
- **Ethics:** minimizes harms and maximizes benefit, for justice, for future use.

Incorporating the CARE principles into a data management plan requires that the Tribal Nation or Indigenous community with whom a Department employee is working benefits from the sharing of Indigenous Knowledge. Equally important is discussing what Indigenous data sovereignty means to the Tribal Nation or Indigenous community the employee is working with, and tailoring a data management plan that supports that effort. The TRUST principles for digital repositories provide a common framework to facilitate discussion and implementation of best practices in digital preservation in an inclusive manner.<sup>153</sup>

- **Transparency:** to be transparent about specific repository services and data holdings that are verifiable by publicly accessible evidence.

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<sup>153</sup> See Dawei Lin, et al., *The TRUST Principles for Digital Repositories*, 7 *Scientific Data*, (2020), <https://doi.org/10.1038/s41597-020-0486-7>.

- **Responsibility:** to be responsible for ensuring the authenticity and integrity of data holdings and for the reliability and persistence of its service.
- **User focus:** to ensure that the data management norms and expectations of target user communities are met.
- **Sustainability:** to sustain services and preserve data holdings for the long term.
- **Technology:** to provide infrastructure and capabilities to support secure, persistent, and reliable services.

The Federal Data Strategy–Data Ethics Framework (see the “Ethics and Equity Should Guide Engagement with Knowledge Holders” section) includes tenets to help Federal data users make decisions ethically and to promote accountability throughout the data lifecycle as data are acquired, processed, disseminated, used, stored, and disposed.<sup>154</sup> The Federal Data Strategy—Data Ethics Tenets are as follows:

- Uphold applicable statutes, regulations, professional practices, and ethical standards.
- Respect the public, individuals, and communities.
- Respect privacy and confidentiality.
- Act with honesty, integrity, and humility.
- Hold oneself and others accountable.
- Promote transparency.
- Stay informed of developments in the field of data management and data science.

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<sup>154</sup> See Federal Data Strategy—Data Ethics Framework (2019), <https://resources.data.gov/assets/documents/fds-data-ethics-framework.pdf>.

### **Key Points—Protecting Indigenous Knowledge and Dissemination of Results**

- There is no FOIA exemption that explicitly protects Indigenous Knowledge from release.
- A Tribal Nation, Indigenous community, and Knowledge Holder must freely and with all pertinent information available to them, assess the risk that certain information shared with a Department employee may, in the end, be publicly disclosed before sharing such information.
- Indigenous Knowledge may be subject to release under the OPEN Act. Exercise caution to not overstate or overcommit the ability to protect the confidentiality of Indigenous Knowledge.
- Plan ahead for how sensitive information will be stored and released in manners that protect it.
- Tension between Indigenous data sovereignty and Federal policies can be ameliorated with an ethical approach to data and evidence, including consideration of both FAIR and CARE principles.



Handmade Alaskan Native doll, used with permission by the Bureau of Indian Affairs Museum Program Collection.

## Section 5. Case Study—Alexander Archipelago Wolf Species Status Assessment

The Alexander Archipelago wolf is a subspecies of gray wolf that occurs along the mainland of Southeast Alaska and coastal British Columbia west of the Coast Mountains (fig. 12). Populations also exist on many of the larger outlying islands in Southeast Alaska and British Columbia. In July 2020, the U.S. Fish and Wildlife Service (FWS) received a petition from the Center for Biological Diversity, Alaska Rainforest Defenders, and Defenders of Wildlife to list the wolf for protection under the ESA. This petition was the third that FWS had received for the wolf, having previously found in 1997 and 2016 that listing was “not warranted” because the subspecies was determined to be stable or increasing throughout almost all of its range. Further, none of the identified stressors, such as timber harvest, road development, oil development, and climate-related events on wolf habitat, were having population-level or range wide-level effects on the wolf or were likely to in the foreseeable future.



**Figure 11.** The Alexander Archipelago wolf. Photograph by Bob Armstrong, used with permission.



**Figure 12.** The Alexander Archipelagos Wolf's range.

In 2021, FWS found that there was substantial information suggesting the wolf might be warranted for listing. In 2022, FWS initiated a Species Status Assessment (SSA or wolf SSA) to review whether listing was warranted. During this process, FWS found that there were important knowledge gaps concerning the wolf. Additionally, a thorough examination of previous assessments, literature reviews, and public meeting transcripts showed a critical category of information was missing—Indigenous Knowledge. The following section outlines the process by which FWS received and applied Indigenous Knowledge to the SSA.

Alaska is the only State where the subsistence use of fish and game is given the highest priority for consumptive use. Congress acknowledged this use when enacting the Alaska National Interest Lands Conservation Act (ANILCA) in 1980.<sup>155</sup> The ANILCA provides a detailed definition of subsistence, including its utility for personal and family consumption as well as for communities.

Under the legal framework of subsistence management provided by ANILCA, FWS is part of the Federal Subsistence Management Program. Alaska has 10 federally managed subsistence regions, each having a regional advisory council (RAC), to guide management decisions. Each RAC is comprised of community leaders who collectively represent the people of their regions rather than a particular resource user group, organization, or community. The FWS attends RAC meetings in various roles: as in-season managers, as representatives for ESA or NEPA issues, or as proponents for regulatory proposals.

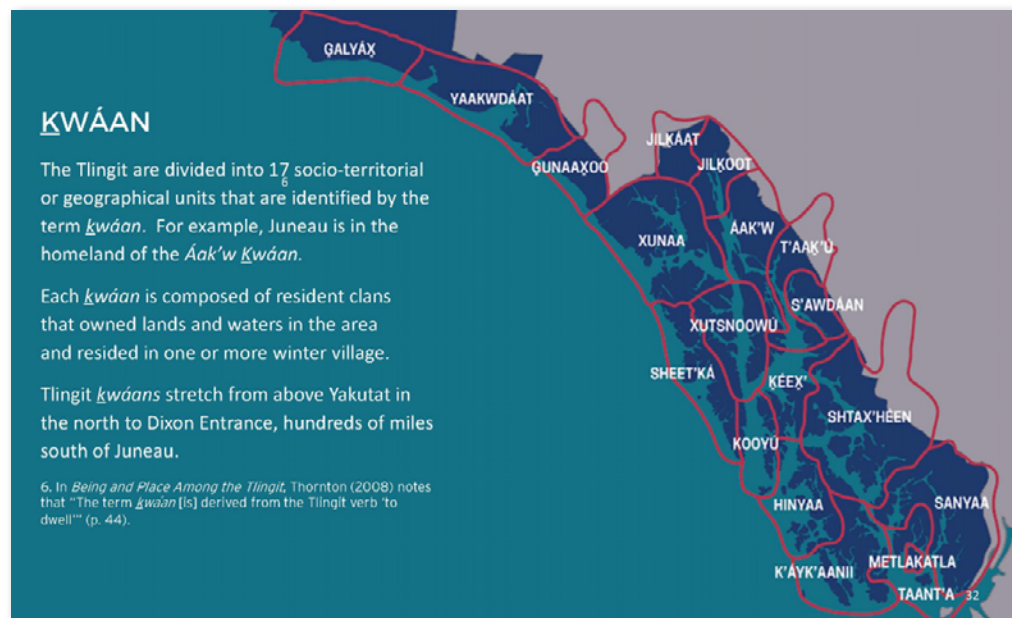
In the fall of 2021, FWS was invited by the Southeast Alaska RAC to present an update on their response to the wolf petition. Council members and the public expressed concern over the implications of a potential wolf listing. Wolves and subsistence hunters depend upon the same prey sources, placing wolves and subsistence users in competition with one another. The public perception is that if the wolf were listed, it could restrict their ability to manage both populations by hunting wolves to maintain prey population levels. Increases in wolf populations could reduce deer populations, making them unavailable for subsistence use. Recognizing the public concern for, and importance of, subsistence management, FWS assured the RAC that there would be meaningful opportunities for Indigenous perspectives to be heard and included.

Wolves have coexisted with Indigenous Peoples in Southeast Alaska for thousands of years. Southeast Alaska is home to three distinct Native Tribal groups: the Tlingit, Haida, and Tsimshian. The Tlingit and Haida were the Indigenous occupants in the region when European explorers arrived in the

<sup>155</sup> Pub. L. 96-487 sec. 101, 94 Stat. 2371 (Dec. 2, 1980).

late 18th century. Figure 13 shows Tlingit *Kwáans* (or socio-territorial units), and also shows Haida territories represented by the K'ayk'aanii unit and Tsimshian territories, which are represented by Metlakatla.

The Indigenous Peoples of Southeast Alaska have ancient, and continuously evolving, sociocultural and socioecological relationships with wolves, extending at least back to the time of the mammoths.<sup>156</sup> These relationships are not frozen in time, and the Indigenous Peoples living in Southeast Alaska continue to apply their own cultural and ecological models of coexistence with wolves and other species in their homelands.<sup>157</sup>



**Figure 13.** The Indigenous socio-territorial units of Southeast Alaska. Image by Sealaksa Heritage Institute, used with permission.

<sup>156</sup> Jeffrey J. Brooks, et al. *Indigenous Knowledge and Species Assessment for the Alexander Archipelago Wolf: Successes, Challenges, and Lessons Learned*, 88 *Journal of Wildlife Management* (2024), <https://doi.org/10.1002/jwmg.22563>.

<sup>157</sup> Steve J. Langdon, *Spiritual Relations, Moral Obligations and Existential Continuity: The Structure and Transmission of Tlingit Principles and Practices of Sustainable Wisdom*, in *Indigenous Sustainable Wisdom: First-Nation Know-How for Global Flourishing* (Darcia Narvaez, Four Arrows (Don Trent Jacobs), Eugene Halton, Brian Collier, and Georges Enderle, eds., 2019); and Jeffrey J. Brooks, et al., *Indigenous Engagement with the Alexander Archipelago Wolf: An Applied Study of Culture and Traditional Ecological Knowledge*, Interim Report Published with the Species Status Assessment (2022), [https://www.fws.gov/media/2023\\_Brooksetal\\_AAWolf\\_TEK](https://www.fws.gov/media/2023_Brooksetal_AAWolf_TEK).

## Planning

The FWS had approximately 6 months to complete the SSA for the wolf even though an Indigenous Knowledge study alone can take several years to complete. Given the challenging timeline, obtaining FWS leadership buy-in and support was a key first step. Also, FWS Alaska Native Affairs Specialist was critical in supporting the development of the Indigenous Knowledge framework. The FWS Alaska region also offers a week-long Alaska Native Relations training, providing the wolf SSA team with a foundation to understand the importance of Indigenous Knowledge and how to apply it. With this guidance and support, the wolf SSA team convened several internal planning meetings to brief regional leadership and develop a framework for the inclusion of Indigenous Knowledge in the SSA. Plans were made to ensure leadership was well-informed throughout the process.

Due to time constraints, FWS focused on Indigenous communities in Southeast Alaska for the purposes of the SSA and did not include British Columbia though First Nations hold a wealth of Indigenous Knowledge about the wolves located in British Columbia as well. The most significant and challenging aspect of including Indigenous Knowledge in the SSA was developing a team of people with existing relationships with Tlingit and Haida communities and experience and training in appropriate research methods.

Early in the process, FWS was invited by the Tribal Conservation District from Prince of Wales Island in Southeast Alaska to join one of their quarterly meetings to discuss the wolf petition and the potential for the inclusion of Indigenous Knowledge. The environmental planner recommended that FWS reach out to a professor emeritus in anthropology at the University of Alaska Anchorage, who had worked with Indigenous communities in Southeast Alaska for decades and was highly trusted by the Tribes there. Shortly thereafter, FWS connected with a social scientist at the Bureau of Ocean Energy Management (BOEM) in Anchorage and an ethnographer at the Sealaska Heritage Institute (Sealaska), a Native non-profit based in Southeast Alaska. All three Indigenous Knowledge experts agreed to lead various aspects of the study; without their dedication and expertise, this study would not have been completed in time for use in the SSA.

One of the first steps for including Indigenous Knowledge in the SSA was to develop a scope of work and budget for an Indigenous Knowledge study and discuss options for FWS funding mechanisms to outside organizations. Leadership agreed to set aside approximately \$55,000 for the study from

the Alaska region's "Listing" budget. This money paid for two external anthropologists, two project liaisons, honoraria for Knowledge Holders, transcription and linguist costs, and travel costs (because all interviews were to be conducted in person).

A cooperative agreement was set up between FWS and Sealaska, which has existing financial mechanisms in place for cooperative agreements with the Federal Government. Sealaska was also the perfect partner because they conduct their own scientific and public policy research and have transcribers and linguists on staff. They also maintain a substantial archive of Southeast Alaskan Native ethnographic material, which was an important asset for the literature review component of the Indigenous Knowledge study. The partnership with Sealaska made for a relatively easy, quick agreement, where Sealaska could accept Federal funds and pay for/conduct the various tasks under the scope of work.<sup>158</sup>

## Engaging

It was also important to have FWS project managers (charged with coordinating and facilitating the SSA process) who prioritized this Indigenous Knowledge study for the wolf SSA. Their support was integral for ensuring that there was space and time set aside for the wolf team to plan the Indigenous Knowledge study and apply it in the SSA, especially given the tight timeline.

FWS initially sent letters to all local Tribes to announce the initiation of the SSA prior to requesting and arranging for a virtual government-to-government consultation. Tribal consultation is a policy mandate and an essential first step in the SSA process. Seven Tribal leaders, representatives, and staff attended the first consultation. Insights shared by Tribal leaders during the consultation supported the design of the Indigenous Knowledge study and ultimately contributed to the resulting Indigenous Knowledge report. FWS also arranged for a second government-to-government consultation after the Indigenous Knowledge report had been drafted. Participation was low, however, most likely due to timing conflicts with summer fishing activities. Two community leaders from Alaska Native corporations participated in the consultation. The Regional Director for FWS in Alaska was on the call with 11 staff members.

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<sup>158</sup> Sealaska Heritage Institute, Research Policy (2004).



## Informed Consent

Early in the process, the Indigenous Knowledge study team had an open and honest discussion about the concept of free, prior, and informed consent and how it would be applied in the collection of wolf knowledge from Indigenous experts. From these conversations, the team developed a consent form that required a signature from all Indigenous experts participating in the study before interviews and conversations could be initiated. Each Indigenous Knowledge Holder was provided the informed consent form to read and sign before the interview, which was also signed by the interviewer (one of the contracted external anthropologists). Each Knowledge Holder was compensated with an honorarium, and all agreed to be identified by name as the interviewees. The study team followed the ethical research principles and guidelines of Sealaska, the Alaska Native Knowledge Network,<sup>159</sup> and the United States Interagency Arctic Research Policy Committee.<sup>160</sup> The audio recordings and transcripts of interviews were securely archived for storage and controlled access at Sealaska in Juneau, Alaska.

## Learning

Because the wolf team had less than 6 months to complete the study, a hybrid research approach was employed that combined principles and methods from three well-established and compatible techniques in anthropology. These included rapid appraisal, ethnography, and grounded theory.<sup>161</sup>

Rapid appraisal is used to expeditiously develop a preliminary, qualitative understanding of a situation, such as Indigenous Peoples' knowledge of wolves and how it may inform a wildlife status assessment. Ethnographic semi-directed interviews were conducted with nine Knowledge Holders that were representing six large geographic areas and communities in Southeast Alaska as part of the rapid appraisal.

Several methods and sources of information were utilized, including reviews of Tlingit ethnographies and other literature, records of Tribal consultation, informal conversations with Indigenous wolf experts, a mapping

<sup>159</sup> Alaska Native Knowledge Network. Guidelines for Respecting Cultural Knowledge (2000), <http://ankn.uaf.edu/Publications/Knowledge.html>.

<sup>160</sup> Interagency Arctic Research Policy Committee. Principles for Conducting Research in the Arctic (2018).

<sup>161</sup> *Id.* at 156.

exercise, and personal history narratives with recognized cultural experts and longtime wolf trappers and hunters. Inductive coding was utilized in the analysis of the interviews, literature, and other records to interpret where and how the Indigenous Knowledge informed the SSA. Inductive coding is a method of qualitative data analysis in which codes or themes are developed as they emerge from the raw data as opposed to being developed beforehand. This type of data analysis is a hallmark of grounded theory in which conclusions or theories are grounded in the data.

Wolves in Southeast Alaska are cryptic and secretive, making sightings uncommon unless considerable effort is made to track their populations. In addition, Southeast Alaska is remote and not easily accessed by managers and scientists, limiting available data. As a result, knowledge about these wolves is lacking outside of Indigenous communities that regularly engage with them.

Scientific approaches based in Western knowledge systems have illuminated certain aspects of the subspecies' biology and status in specific portions of the wolf's range, but there is still much to learn, especially in more remote regions. To inform and focus the ethnographic semi-directed Indigenous Knowledge interviews, FWS first developed a list of knowledge gaps:

- wolf habitat use;
- wolf distribution, dispersal patterns, and home range size;
- wolf population trends and the population trends of their primary prey;
- impacts (both positive and negative) to wolves and their primary prey from land use activities, especially timber harvest, road development, and wolf harvest regulations; and
- gaps in geographic coverage of existing data (for example, there were data for Prince of Wales Island, but substantially less information for other parts of Southeast Alaska).

The only member of the team who conducted interviews and had conversations with Indigenous experts was the University of Alaska anthropologist contracted by FWS. Because this anthropologist had existing relationships with each Knowledge Holder, they felt comfortable sharing with him. Semi-directed interviews were used to construct the personal narratives, and none of the Knowledge Holders were asked the exact same questions. Open-ended conversations involving experiences with wolves were encouraged.

Audio recordings were made and transcribed by staff at Sealaska, and the transcripts were proofed and corrected for English and Tlingit language. The social scientist from BOEM led the analyses of the transcripts and applied coding labels to sections of the text to identify responses to questions as well as emergent and unexpected narratives. Memoranda were written under the codes in comment bubbles, providing summary impressions and assessments of how cultural understanding and Indigenous Knowledge might inform the SSA. Within-interview and within-area analyses were conducted because Indigenous Knowledge is closely tied to specific ecosystems, relationships, and places where Indigenous experts have gained extensive experience through being on the land and engaging their cultures.

## Applying

An Indigenous Knowledge report was ultimately submitted to FWS for application to the SSA, and the Indigenous Knowledge Holders were provided the opportunity to review the report ahead of time to ensure their accounts were accurate. The first step in applying Indigenous Knowledge to the SSA was for the FWS's assessment team to review the Indigenous Knowledge Report and identify relevant information for inclusion in the SSA. All Indigenous Knowledge included in the body of the SSA report was cited in a standard scientific format, and the entire Indigenous Knowledge report was also attached as an appendix to the SSA report.

To properly understand the value and utility of Indigenous Knowledge, non-Indigenous managers and decision-makers must accept the personal and spiritual relationships between Indigenous Peoples and wildlife as real and valid for informing science and management.<sup>162</sup> For the wolf SSA, FWS decision-makers were informed at the outset about the sociocultural context and historical origins of this knowledge for Tlingit society, way of life, and cultural practice. In addition, the introduction of the SSA report provides a summary of the Indigenous Knowledge study design, briefly describes the Indigenous way of knowing, and encourages readers to review the full Indigenous Knowledge report prior to reviewing the Indigenous Knowledge included throughout the body of the SSA.

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<sup>162</sup> *Id.*

The Indigenous Knowledge study provided new information about wolves in Southeast Alaska and added to the existing body of knowledge collected using other scientific approaches. In the SSA, Indigenous Knowledge was applied in five of the seven chapters. Some of the quantitative Indigenous Knowledge was also included in wolf population models developed for the SSA.

## Protecting

FWS employees who collect data or provide funding for data collection need to follow the FAIR principles—data need to be findable, accessible, interoperable, and reusable. Unfortunately, the emphasis on greater data sharing can create tension for Indigenous Peoples who are also asserting greater control over the application and use of Indigenous data and Indigenous Knowledge for collective benefit.

Therefore, when conducting studies of this nature, it is also important to consider the CARE principles for Indigenous data governance—collective benefit, authority to control, responsibility, and ethics. These principles are people- and purpose-oriented and reflect the crucial role of data in advancing Indigenous self-determination. A significant benefit of FWS partnering with Sealaska for this project was that they were able to archive all the raw transcripts from interviews with Indigenous experts. However, these raw transcripts may still be subject to FOIA because FWS provided the funding for Sealaska to house the records. Therefore, it is important to discuss any potential safeguarding issues with a FOIA coordinator or Solicitor's Office attorney ahead of time and, most importantly, to be clear with Indigenous experts about the information we can and cannot protect.

## Dissemination

Once the Indigenous Knowledge report had been reviewed and applied to the SSA by the FWS assessment team, the draft SSA, with the full Indigenous Knowledge report included as an appendix, was distributed for peer and partner review. Peer reviewers included outside technical experts who had not been involved in the SSA. They consisted of researchers in the fields of carnivore and wolf ecology; human dimensions of wildlife; Indigenous Knowledge systems; and population, landscape, and climate modeling.

The partner review team was comprised of individuals who had contributed to the SSA, including experts from the State of Alaska, the Tongass National Forest, and the social scientists from the Indigenous Knowledge study team. The Indigenous Knowledge Holders interviewed for the Indigenous Knowledge study were also invited to participate as partner reviewers. Unfortunately, none of the nine interviewees provided comments on the SSA, likely due to difficulties with the timing of the 30-day review window that conflicted with subsistence fishing seasons and with accessing the technology needed to review the complete SSA. This issue is discussed further in the next section.

On August 23, 2023, FWS published a “not warranted” finding for the wolf. Ultimately, the Alexander Archipelago Wolf SSA and Indigenous Knowledge report were published concurrently with the listing determination. Since then, the Indigenous Knowledge study team has continued to expand the breadth of the report by interviewing additional Knowledge Holders in other locations across Southeast Alaska. The “Alexander Archipelago Wolf Indigenous Knowledge Report” was finalized in late 2023.<sup>163</sup> All Indigenous experts who contributed knowledge were consulted about the accuracy of the transcriptions and listed as authors on the report, with their permission.

## Planning

Overall, the Indigenous Knowledge study was very successful, and FWS’s understanding of wolves in Southeast Alaska was greatly improved because of it. The knowledge shared by the Indigenous wolf experts addressed all primary knowledge gaps identified by FWS prior to the study.<sup>164</sup> As a result, the SSA was more rigorous, and the decision-making process was better informed. This effort substantially improved the agency’s awareness of the scope of both cultural and ecological knowledge held by Indigenous Peoples in Southeast Alaska, and FWS is better positioned to work effectively with local partners and Tribes to study and manage the wolf and its habitat.

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<sup>163</sup> See Stephen J. Langdon, et al., Sealaska Heritage Institute, Indigenous Engagement with the Alexander Archipelago Wolf: Cultural Context and Traditional Ecological Knowledge, Final Report, Cooperative Agreement Number F22AC00887 (2023), Submitted to the U.S. Fish and Wildlife Service, <https://www.fws.gov/AAWolf-FinalReport>.

<sup>164</sup> *Id.* at 156.

This project also helped facilitate long overdue conversations between FWS and Tribes in Southeast Alaska about a controversial topic that holds significance for both. FWS now has a foundation on which to build future dialogues and relationships with Tribes about other species and habitats in Southeast Alaska. Most importantly, this study ensured that Indigenous voices and Indigenous Knowledge were and will continue to be meaningfully represented and acknowledged in a space where they previously were not. At a broader scale, this project has increased the recognition of Indigenous Knowledge as an important contribution to the conservation work being done by FWS in Alaska.

Two of the most significant challenges encountered throughout the process were related to time and funding constraints. Because the study was triggered by a listing petition, FWS was held to strict timelines. For example, the project was started before the program budget was received, and funding for the external cooperators had to be processed within the strict timeline. Therefore, the ability to complete comprehensive Indigenous Knowledge research was restricted, resulting in the study being inherently reactive rather than proactive. In addition, few FWS employees are trained to execute anthropological studies, not to mention Indigenous research, and those skills are critical for ensuring Indigenous Knowledge studies are done appropriately and efficiently. The agency was fortunate to find external social scientists who were able to dedicate substantial time and resources to this effort with very little notice. This circumstance is unlikely to be the case for future assessments of this nature.

Another major challenge faced during this study was distrust. Like many other areas of the world where wolves and humans coexist, the relationship among State, Federal, and Tribal governments in Alaska is fraught with tension and distrust when it comes to wolf management. The Alexander Archipelago wolf has been petitioned for listing under the ESA three separate times in 28 years, and each time there has been intense disagreement about whether protections are necessary. Therefore, it was contentious to initiate an Indigenous Knowledge study under these circumstances. FWS did not want individual opinions about the listing decision to influence the interviews, nor did the agency want Knowledge Holders to feel uncomfortable sharing their knowledge.

As alluded to earlier, FWS also faced challenges during the peer and partner review process for the SSA. The review was conducted via an online portal to ensure digital copies of the SSA could not be distributed outside the selected review group. Because many of the Indigenous Knowledge Holders live in remote areas with limited access to computers and unpredictable Internet connectivity, they faced greater challenges using the portal than other reviewers. Reviewers that could not use the portal were allowed to review a hardcopy version of the SSA. However, portions of the hardcopy had to be redacted before distribution to safeguard predecisional information, which likely discouraged some reviewers from providing comments.

Finally, FWS ran into some difficulties meaningfully applying Indigenous Knowledge during the SSA process. First, the Indigenous Knowledge received was applied to a Western knowledge framework that was not developed with Indigenous Knowledge in mind, leaving little room for the cultural and spiritual context that is imperative for appropriately understanding and meaningfully applying Indigenous Knowledge.<sup>165</sup> The ESA decisions are also inherently species-centric, whereas the Indigenous experts in this study employed a multi-species model focused on a human-wolf-deer system.

A similar challenge that FWS decision-makers noticed during the internal review process was whether science based in a Western worldview or Indigenous Knowledge was “right” or “more valid.” There was concern that there would be conflict between the two, and that one or the other would need to be “chosen” to decide. Rather than viewing these two ways of knowing in opposition, leaders were challenged to view them as complementary, or as two tools used together to answer a single question. Framing the issue this way seemed to help decision makers realize that having both types of information was a good thing, and often, they found that the two ways of knowing supported one another. Of course, there were cases where the two knowledge systems did not come to the same conclusions, just as two scientific studies based in a Western worldview may not. In these cases, it was important to share all uncertainties and assumptions with both ways of knowing, so that leaders could evaluate the information just as they would when faced with scientific disagreements.

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<sup>165</sup> *Id.*

## Acknowledgments



This Indigenous Knowledge Handbook represents the perspectives, ideas, and expertise of many individuals. In June 2023, a team of employees representing a number of the Department’s Bureaus and Offices met with Indigenous leaders, scholars, experts, and Knowledge Holders at the FWS National Conservation Training Center in Shepherdstown, West Virginia. Attendees discussed the importance of Indigenous Knowledge and the importance of elevating Indigenous Knowledge to be on equal footing with other scientific approaches and information in the Department’s work. This Handbook takes into consideration the individual views and expertise presented at that workshop and reviews by subject matter experts.

This Handbook would not have been possible without the sustained hard work of the dedicated writing team who drafted this Handbook over approximately 9 months while continuing to maintain the workload of their day-to-day jobs. The guidance, feedback, and encouragement received from Indigenous subject matter experts was critical to making this Handbook what it is. The constructive feedback we received from expert peer reviewers helped us to refine messaging and avoid missteps. It is with deep gratitude for the effort, thoughtful consideration, and support received from each of these groups that we humbly present this Handbook to Department employees to guide their interactions with Tribal Nations and Indigenous communities as they work to include Indigenous Knowledge in their actions to carry out the mission of the Department of the Interior.

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## Appendix 1. 301 DM 7: Departmental Responsibilities for Consideration and Inclusion of Indigenous Knowledge in Departmental Actions and Scientific Research

301 DM 7 establishes Department of the Interior (Department) policies, responsibilities, and procedures to respect, and equitably promote the inclusion of, Indigenous Knowledge in the Department's decision making, resource management, program implementation, policy development, scientific research, and other actions. See full text here: <https://www.doi.gov/document-library/departamental-manual/301-dm-7-departamental-responsibilities-consideration-and>

## Appendix 2. Understanding Your Proficiency to Include Indigenous Knowledge

You may be new to working with Indigenous Knowledge, and you may find it challenging to understand how to include Indigenous Knowledge in existing actions or research. As you become more familiar with Indigenous Knowledge, you should strive to include Indigenous Knowledge where appropriate and applicable. The inclusion of Indigenous Knowledge should not be a parallel, yet separate action undertaken simply to “check the box” and meet a requirement. Instead, you should work with Tribal Nations and Indigenous communities to appropriately include Indigenous Knowledge with other types of data and information that inform your actions and scientific research. To do so, you should seek free, prior, and informed consent and compensation for Knowledge Holders.

The following questions will help you understand your current proficiency with the concepts of Indigenous Knowledge and engagement with Knowledge Holders, as presented throughout this Handbook. The questions will help identify areas where you need more information.

- 1) I have read about and can describe Indigenous Knowledge systems and how they relate to my work.

- a) Yes: I have read about and can describe Indigenous Knowledge to others and regularly include Indigenous Knowledge in my work.
    - i) Refer to the “Elevating, Including, and Applying Indigenous Knowledge in Departmental Actions and Scientific Research” section and the “Case Study—Alexander Archipelago Wolf Species Status Assessment” section as needed to stay current with your understanding and consider assisting other employees in developing their understanding.
  - b) Mixed: I am familiar with the concept of Indigenous Knowledge but not confident in my description.
    - i) Review the “What is Indigenous Knowledge” section and seek out other resources on this topic as needed ([app. 10](#)).
  - c) No: I am not familiar with the concept of Indigenous Knowledge.
    - i) Read the “What is Indigenous Knowledge” section, seek out other resources on this topic, and discuss with your colleagues who have experience in this area, including your Tribal Liaison Officer (TLO) or your Bureau or Office Indigenous Knowledge Community of Practice (IKCOP) representative and other knowledgeable staff to increase your proficiency before engaging with Knowledge Holders.
- 2) I have learned the history of Indigenous Peoples, the relationships between Indigenous Peoples and Knowledge Holders, and the historical context of Indigenous Knowledge in the United States.
- a) Yes: I have done extensive reading and had dialogues to understand the relationship between Indigenous Peoples and Knowledge Holders, and the historical context of Indigenous Knowledge in the United States.
    - i) Refer to Section 3 section Historical Context of the Disruption of Indigenous Knowledge as needed to stay current with your understanding and consider assisting other employees in developing their understanding.
  - b) Mixed: I have some experience reading or discussing this historical context.

- i) Review Section 3 section Historical Context of the Disruption of Indigenous Knowledge and discuss it with both my colleagues who have experience in this area, and if the appropriate opportunity arises, ask Indigenous Knowledge Holders with whom you are working for their perspectives on the history of Indigenous Knowledge, and the roles of the Federal Government and the Department.
- c) No: I have almost no experience reading or discussing this historical context.
  - i) Read “Section 3. Historical Context of the Disruption of Indigenous Knowledge” and discuss it with your colleagues who have experience in this area, and if the appropriate opportunity arises, ask Indigenous Knowledge Holders with whom you are working for their perspective on the history of Indigenous Knowledge and the roles of the Federal Government and the Department.
- 3) I am building and strengthening relationships with those who hold Indigenous Knowledge that may inform my actions in advancing the mission of the Department and my Bureau or Office.
  - a) Yes: I have existing long-term relationships with Tribal Nations, Indigenous communities, and Knowledge Holders and regularly include Indigenous Knowledge in my work.
    - i) Refer to “Section 4. Elevating, Including, and Applying Indigenous Knowledge in Departmental Actions and Scientific Research” and “Section 5. Case Study–Alexander Archipelago Wolf Species Status Assessment” as needed to stay current with your understanding and consider assisting other employees in developing their understanding.
  - b) Mixed: I have some experience engaging with Tribal Nations, Indigenous communities, and Knowledge Holders and including Indigenous Knowledge in my work.
    - i) Review the “Engaging” section and discuss it with your colleagues who have experience in this area and with the Knowledge Holders with whom you are working.
- c) No: I have no experience engaging with Tribal Nations, Indigenous communities, or Knowledge Holders or including Indigenous Knowledge in my work.
  - i) Read the “Engaging” section and discuss it with your colleagues who have experience in this area and with your TLO or your Bureau or Office IK COP representative to further your understanding.
- 4) I understand that Indigenous Knowledge is valid in its own right, can be considered an aspect of best available science, and does not require validation by other scientific approaches.
  - a) Yes: I have extensive experience receiving Indigenous Knowledge and know how to navigate the validation and verification of Indigenous Knowledge within the appropriate knowledge system and community. I also understand how to include and apply Indigenous Knowledge in a manner that does not foster assimilation of Indigenous Knowledge into Western worldviews.
    - i) Refer to “Section 4. Elevating, Including, and Applying Indigenous Knowledge in Departmental Actions and Scientific Research” and “Section 5. Case Study–Alexander Archipelago Wolf Species Status Assessment” as needed to stay current with your understanding and consider assisting other employees in developing their understanding.
  - b) Mixed: I have participated in Departmental actions or research that have included Indigenous Knowledge, but I was not the individual primarily responsible for applying Indigenous Knowledge to the action or research.
    - i) Review the “Applying Indigenous Knowledge” section and discuss with your colleagues who have experience in this area and with your TLO or Bureau or Office IK COP representatives as necessary and Knowledge Holders before applying Indigenous Knowledge to an action.
  - c) No: I have no experience applying Indigenous Knowledge to a Departmental action or research.

- i) Read the “Applying Indigenous Knowledge” section and seek out other resources on this topic (app. 10). Discuss with your colleagues who have experience in this area and with your TLO or Bureau or Office IK COP representative as necessary and Knowledge Holders prior to attempting to apply Indigenous Knowledge to an action or research.
- 5) I am trained in and have experience implementing approaches and techniques to engage with and learn Indigenous Knowledge, including the principles of the Belmont Report and the Common Rule<sup>166</sup> and how Institutional Review Boards (IRB) may intersect with my work, although as of the effective date of this Handbook, the Department is not a signatory to the Common Rule.
- a) Yes: I have extensive experience engaging with Indigenous Knowledge, have a degree or training in appropriate techniques to learn Indigenous Knowledge (for example, social science methods), and understanding the principles of the Belmont Report).
    - i) Refer to “Section 4. Elevating, Including, and Applying Indigenous Knowledge in Departmental Actions and Scientific Research” and “Section 5. Case Study–Alexander Archipelago Wolf Species Status Assessment” as needed to stay current with your understanding and consider assisting other employees in developing their understanding.
  - b) Mixed: I have some experience including and applying Indigenous Knowledge and have assisted with the implementation of techniques to learn Indigenous Knowledge (for example, social science methods). I have heard of The Belmont Report, but I am not fluent in the principles.
    - i) Review the “Ethics and Equity Should Guide Engagement with Knowledge Holders” and “Receiving Indigenous Knowledge” sections. Complete human subjects research training as necessary and discuss with colleagues who have experience in receiving IRB review of their research before seeking Indigenous Knowledge that may be applicable to your work.
- c) No: I have no experience or training in techniques for seeking Indigenous Knowledge (for example, social science methods). I have not heard of the Belmont Report.
- i) Review the “Ethics and Equity Should Guide Engagement with Knowledge Holders” and “Receiving Indigenous Knowledge” sections and ensure that, if you participate in research involving learning Indigenous Knowledge for inclusion in Department actions, the team is properly trained and aware of processes and procedures required to be followed in human subjects research.
- 6) I can clearly explain and am implementing the principles of free, prior, and informed consent when working with Tribal Nations, Indigenous communities, or Knowledge Holders as they decide whether and how to share their knowledge with the Department:
- a) Yes: I have extensive experience obtaining free, prior, and informed consent. I understand how to clearly explain the risks and benefits of sharing Indigenous Knowledge to Tribal Nations, Indigenous communities, and Knowledge Holders, including the Department’s statutory and regulatory limitations in protecting such information.
    - i) Refer to “Section 4. Elevating, Including, and Applying Indigenous Knowledge in Departmental Actions and Scientific Research” and “Section 5. Case Study–Alexander Archipelago Wolf Species Status Assessment” as needed to stay current with your understanding and consider assisting other employees in developing their understanding.
  - b) Mixed: I have been involved in actions or research where free, prior, and informed consent was obtained, but I was not the primary individual obtaining consent.

<sup>166</sup> <https://www.hhs.gov/ohrp/regulations-and-policy/regulations/finalized-revisions-common-rule/index.html>.



- i) Review the “Free Prior, and Informed Consent” section and discuss with your colleagues who have experience in this area and with your TLO or your Bureau or Office IK COP representative as necessary before seeking to include Indigenous Knowledge in your work.
- c) No: I have not heard of free, prior, and informed consent as it relates to the sharing of Indigenous Knowledge.
  - i) Read the “Free Prior, and Informed Consent” section and discuss with your colleagues who have experience in this area and with your TLO or your Bureau or Office IK COP representative as necessary before engaging with Knowledge Holders on the potential sharing of their Indigenous Knowledge.
- 7) I can clearly explain and am implementing the principles of Indigenous Data Sovereignty in my work and understand the tensions between Federal open data policies, the Freedom of Information Act (FOIA), and protection of Indigenous Knowledge.
  - a) Yes: I have experience developing Indigenous Data Sovereignty agreements with Tribal Nations, Indigenous communities, and Knowledge Holders that protect Indigenous Knowledge and comply with Federal open data policies while upholding the collective benefit, authority to control, responsibility, and ethics (CARE) principles.
    - i) Refer to “Section 4. Elevating, Including, and Applying Indigenous Knowledge in Departmental Actions and Scientific Research” and “Section 5. Case Study–Alexander Archipelago Wolf Species Status Assessment” as needed to stay current with your understanding and consider assisting other employees in developing their understanding.
  - b) Mixed: I understand what Indigenous Data Sovereignty is and the tension between Federal open data policies, FOIA, and protection of Indigenous Knowledge, but I do not have experience implementing agreements with Tribal Nations, Indigenous communities, or Knowledge Holders.
    - i) Review the “Protecting Indigenous Knowledge” section and seek out additional resources as needed (app. 10).

c) No: This is the first time I have heard of Indigenous Data Sovereignty.

- i) Read the “Protecting Indigenous Knowledge” section discuss with your colleagues who have experience in this area, your TLO or your Bureau or Office IK COP representative and data management and FOIA specialists in your Bureau or Office and seek out additional resources as needed (app. 10).



Alupai (Dolphin), 2012. In the region of the Pacific where Guam is located, the alupai or dolphin is a symbol that honors seafarers who marked their skin to protect them while at sea. Illustration by Joseph Certeza, used with permission.

## Appendix 3. Quick Reference—Key Points and Actions in Elevating Indigenous Knowledge To Be on Equal Footing with Other Scientific Approaches and Information

Key points	Requirements from 301 DM 7
<b>Planning</b>	
Time: Develop appropriate timelines that account for engagement and collaboration with Tribal Nations and Indigenous communities.	—
Compensation: Consider your budget, compensation mechanisms available at your bureau and office, and compensation policies of the Tribal Nation or Indigenous community.	§ 7.6 (A)(6) § 7.6 (B)(5) § 7.6 (B)(4)(a)
Team member qualifications: Ensure that team members have the appropriate qualifications, experience, and (or) training. <ul style="list-style-type: none"> <li>• All team members should become familiar with the Indigenous Knowledge Handbook and complete Department-offered Indigenous Knowledge training.</li> </ul>	§ 7.6 (A)(4) § 7.6 (B)(9) § 7.8 (C)(3)
<b>Engaging</b>	
Relationship building: Tribal governments, Indigenous leaders, and Knowledge Holders must be engaged with as true, vested, enduring, and equal partners.	§ 7.6 (A)(1)
Outreach and coordination: Invite the Tribal Nation or Indigenous community to determine how they would like, if at all, to participate in your action or project. <ul style="list-style-type: none"> <li>• Include outreach and engagement in work plans.</li> <li>• Assess whether government-to-government consultation should be offered.</li> <li>• Communicate honestly and transparently about the needs of the Department, what the Department can offer in terms of reciprocal relationships, and the Department’s ability to share authority.</li> </ul>	§ 7.6 (A)(1) § 7.6 (B)(4)(a)
Assessing capacity: Understand both your team’s means and ability to undertake a project with a Tribal Nation or Indigenous community that includes and applies Indigenous Knowledge and the Tribe or communities means and ability to work with you. <ul style="list-style-type: none"> <li>• Understand and support the capacity of Tribal Nations and Indigenous communities to engage in actions and projects.</li> </ul>	—
Engage with respect: Enter all interactions with openness and respect for others’ perspectives (humility), informed sensitivity to others’ histories (awareness), and good intentions. <ul style="list-style-type: none"> <li>• Accept the validity of Indigenous Knowledge in its own right.</li> <li>• Be informed on the history, culture, and socio-political organization of the Tribe or Indigenous community before outreach and engagement.</li> </ul>	§ 7.6 § 7.6 (A)(1)

Key points	Requirements from 301 DM 7
<b>Engaging—Continued</b>	
<p>Protocols: Carefully select the location of meetings with guidance from the Tribe or community, follow general meeting etiquette, and be fully present during interactions.</p> <ul style="list-style-type: none"> <li>• Seek advice from your ethics office on providing and receiving food or gifts when planning a meeting.</li> </ul>	—
<b>Free, prior, and informed consent</b>	
<p>Free, prior, and informed consent (FPIC) must be received from Tribal Nation or Indigenous community leadership or the appropriate governance body (if such a governance body exists) as well as from Knowledge Holders prior to learning from Indigenous Knowledge Holders or including and applying Indigenous Knowledge in the Department’s actions.</p> <ul style="list-style-type: none"> <li>• Consider training for your team in how to ask for and receive FPIC.</li> </ul>	<p>§ 7.4 (D) § 7.5 § 7.6 (A)(2)(a)-(f)</p>
<b>Receiving Indigenous Knowledge</b>	
<p>Work with the appropriate, designated individuals to identify who will share Indigenous Knowledge for the Tribal Nation or Indigenous community.</p>	§ 7.5
<p>Ethical space: Acknowledge power dynamics and honor the validity and uniqueness of different ways of knowing. Seek ways to link knowledge systems.</p>	§ 7.5
<p>Principles and communication: Apply respect, reciprocity, and equity to your work with Tribal Nations and Indigenous communities as employees seek to elevate, include, and apply Indigenous Knowledge.</p> <ul style="list-style-type: none"> <li>• Be an empathetic listener. Focus on what the other person is saying. The speaker should avoid using jargon, acronyms, and abbreviations.</li> </ul>	§ 7.6 (A)(1)
<p>Introspection and reflection: Reflect upon your identity, your intentions, and your position in relation to the Tribal Nation or Indigenous community with whom you are building a relationship.</p>	§ 7.5
<p>Approaches: Collaborate with the Tribal Nation or Indigenous community or those individuals who have been designated to work with employees to identify Knowledge Holders and appropriate methods for learning Indigenous Knowledge.</p> <ul style="list-style-type: none"> <li>• Use appropriate methods, preferably those developed by the Indigenous Peoples and scholars, if possible, from the Tribal Nation or Indigenous community with whom employees are working.</li> <li>• When Indigenous methods and Indigenous leadership are not available, work with experts in the field who are knowledgeable about appropriate, vetted social science methods and techniques.</li> <li>• Consider using a knowledge co-production framework.</li> <li>• Follow all appropriate processes and protocols to receive approval for your action or project (for example, a university IRB, Tribal IRB, other Tribal or community review processes, Paperwork Reduction Act, and so on).</li> </ul>	<p>§ 7.4 § 7.5 § 7.6 (A)(1) § 7.6 (A)(4), (7), (8) § 7.6 (A)(2)(c) § 7.6 (A)(2)(e) § 7.6 (B)(3)</p>

Key points	Requirements from 301 DM 7
<b>Applying Indigenous Knowledge</b>	
Ensure that Indigenous Knowledge is appropriately included in the action or project: Only seek Indigenous Knowledge that you anticipate applying.	§ 7.5 § 7.6 (A)(3)
Interpretation: Ensure that interpretation is considered appropriate by those who have shared their knowledge before final products and decisions have been reached.	§ 7.5 § 7.6 (A)(5)
<ul style="list-style-type: none"> <li>• Avoid assimilating Indigenous Knowledge into other scientific approaches.</li> </ul>	
Validation: Do not attempt to validate Indigenous Knowledge using other scientific approaches.	§ 7.5
<ul style="list-style-type: none"> <li>• Work with the appropriate governance body, appointed contacts, and (or) Knowledge Holders to ensure internal validation of the knowledge that has been shared with the Department.</li> </ul>	§ 7.6 (A)(4) § 7.6 (A)(5)
<ul style="list-style-type: none"> <li>• Use appropriate methods to engage with and learn from Knowledge Holders and assess within-community agreement.</li> </ul>	§ 7.6 (B)(1)(b) § 7.6 (B)(4)(c)
<ul style="list-style-type: none"> <li>• When a peer review of a product that includes Indigenous Knowledge is required, at least one peer reviewer must be considered a subject matter expert in the field of Indigenous Knowledge.</li> </ul>	§ 7.7 (A)(9)
Reconciling conflicting Indigenous Knowledge: When working with multiple Tribal Nations or Indigenous communities, consider training in conflict management and consensus building for your team.	—
<ul style="list-style-type: none"> <li>• Reach out to the Department’s Office of Collaborative Action and Dispute Resolution.</li> <li>• Use strategies of accommodation, compromise, and consensus.</li> <li>• Follow the consensus building model from 512 DM 4.</li> </ul>	
<b>Protecting Indigenous Knowledge and disseminating results</b>	
Exercise caution so that you do not overstate or overcommit the Department’s ability to protect the confidentiality of Indigenous Knowledge, including recognizing the limitations of protections, such as exemption requirements from the Freedom of Information Act (FOIA), or regarding the outcome of a decision-making process or a conclusion of scientific research.	§ 7.5 § 7.6 (A)(1)(b) § 7.6 (A)(2)(a)-(f)
<ul style="list-style-type: none"> <li>• There is no FOIA exemption that will specifically protect Indigenous Knowledge from release.</li> <li>• There is no exemption for the National Environmental Policy Act (NEPA) public disclosure requirements.</li> </ul>	§ 7.6 (B)(1)
Indigenous data sovereignty: Asserts the rights and interests of Indigenous Peoples in relation to data about themselves, their territories, and their ways of life.	—
<ul style="list-style-type: none"> <li>• Use the findable, accessible, interoperable, and reusable (FAIR), collective benefit, authority to control, responsibility, and ethics (CARE), and transparency, responsibility, use focus, sustainability, and technology (TRUST) principles to guide discussion with Tribal Nations and Indigenous communities about protection and storage of information.</li> </ul>	

Key points	Requirements from 301 DM 7
Protecting Indigenous Knowledge and disseminating results–Continued	
Documenting the inclusion of Indigenous Knowledge: Give Knowledge Holders and appropriate governance bodies the opportunity to review written documentation of their contributions.	§ 7.6 (A)(1)(c) § 7.6 (B)(1)(c)
<ul style="list-style-type: none"> <li>• Appropriately acknowledge Knowledge Holder, Tribal Nation, and Indigenous community contributions in documentation and products.</li> <li>• Follow up with the Knowledge Holder, Tribal Nation, and Indigenous community to describe how Indigenous Knowledge was included in the final Federal action and share outcomes.</li> <li>• Any Indigenous Knowledge shared should be returned to the Tribal Nation or Indigenous community.</li> </ul>	

## Appendix 4. Practical Tips Flow Chart–Elevating Indigenous Knowledge

### Initial Planning

**Goal:** Do you have a clear goal for including Indigenous Knowledge and understanding of how Indigenous Knowledge will be applied to the problem/decision?

Yes?	No?
Great!	Reevaluate why you are seeking Indigenous Knowledge and work with the Tribe or Indigenous community to decide whether the inclusion of Indigenous Knowledge has the potential to produce shared benefits for the Department and Tribe or Indigenous community.

**Qualifications:** Is your team qualified?

Yes?	No?
Great!	Training is available through the Department. Consider seeking out qualified partners.

**Resources:** Do employees have the time and financial resources to support Tribal or Indigenous community engagement and to compensate Knowledge Holders?

Yes?	No?
Great!	Investigate the possibility of adding additional financial resources and time.

**Relationship:** Do you have an existing relationship with the Tribal Nation or Indigenous community?

Yes?	No?
Reach out to your contact and discuss the project or activity.	<p>Identify an engagement strategy and timeline. Do your homework—learn about the Tribe or Indigenous community, preferably from their perspective.</p> <p>Are you seeking a long-term relationship or meeting a short-term need?</p> <ul style="list-style-type: none"> <li>• <b>Long-term relationship?</b> Assess capacity to maintain relationships.</li> <li>• <b>Short-term need?</b> Communicate that your project meets a short-term need and that you do not have the capacity to sustain a long-term relationship at this time.</li> </ul> <p>Meet with the Tribe or Indigenous community and see if they would like to collaborate and believe they have Indigenous Knowledge to share. Work with the Tribe or Indigenous community to collectively assess their capacity to collaborate.</p>

**Interested:** Are they interested in collaborating?

Yes?	No?
Great!	<p>Respect their wishes and rights not to participate.</p> <p>Document that a request to work with the Tribal Nation or Indigenous community was made and that they declined to participate. Consider sharing the results of the study with the Tribal Nation or Indigenous community when completed and, if possible, leave the door open for collaboration in the future.</p>

## Developing a Workplan

Once the Tribal Nation or Indigenous community has agreed to participate in the project or activity, the next step is to develop a workplan to outline how the Indigenous Knowledge will be shared, protected, and applied. A Department employee should develop the workplan in collaboration with individuals designated to work with them by the Tribal Council or Indigenous governance body. The level of detail in the Department employee's workplan should be scaled to match the depth of the action or research and should include the following components:

## Knowledge Sharing Process

Consider how the knowledge will be shared in terms of the following:

- Literature search?
- Oral histories?
- Interviews with Knowledge Holders?

If the Indigenous Knowledge will be shared by the Knowledge Holders, consider these questions:

1. How will Knowledge Holders be identified?
2. What approach will be used? (interviews, talking circles, and so on)
3. How will Indigenous Knowledge be stored and protected?
4. Who will the Indigenous Knowledge be shared with? (Department employees, external collaborators, Tribal employees, and so on)
5. What process will be used to receive free, prior, and informed consent from appropriate governing bodies and Knowledge Holders?
6. What mechanism will be used to compensate Knowledge Holders?
7. Is the chosen approach considered human subjects research?
  - Consider IRB review.
  - Find out if the Tribe has an IRB or requires IRB review.

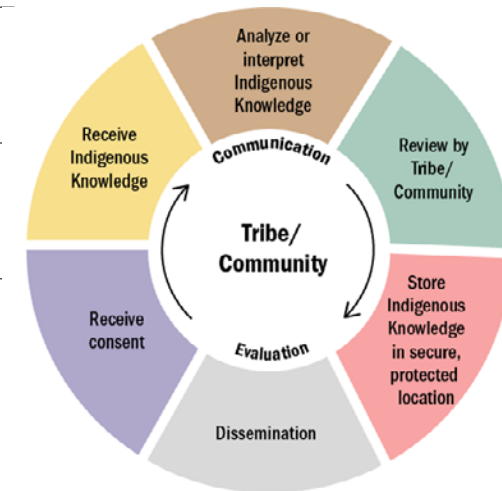


Pâgo I Lahi, 2014. There is much to account for when assuming responsibility of being a man in Guam. This piece reflects the artists assumed responsibilities as a young man at the time. Illustration by Joseph Certeza, used with permission.

## Executing the Project/Action

### Communication and Evaluation with Tribe/Community

<b>Receive consent</b>	Receive free, prior, and informed consent from the Knowledge Holder and appropriate governing body before receiving Indigenous Knowledge.
<b>Receive Indigenous Knowledge</b>	Qualified team members, external partners, or Tribe or Indigenous community staff receive Indigenous Knowledge from Knowledge Holders using approach identified in the workplan.
<b>Analyze and interpret Indigenous Knowledge</b>	Analyze and interpret Indigenous Knowledge for application to the action or research. Avoid subsuming Indigenous Knowledge into other scientific approaches by reducing Indigenous Knowledge to only its similarities with other data or information.
<b>Review by Tribe or Indigenous community</b>	Allow Knowledge Holders to review interpretation of the Indigenous Knowledge they have shared, or if possible, prepare the interpretation. If Indigenous Knowledge was learned from existing documents, allow the Tribe/Indigenous community to review.
<b>Store Indigenous Knowledge in secure, protected location</b>	<p><b><i>If Department team members received Indigenous Knowledge:</i></b> The raw information (for example, interview transcripts) should be stored on a two-factor authenticated Government computer, and access should be controlled.</p> <p><b><i>If a data release or other type of public disclosure is required:</i></b> Information must be aggregated to a level that does not disclose personally identifiable information or sensitive sites and locations.</p> <p><b><i>If an external partner received Indigenous Knowledge:</i></b> Ensure they have sufficient capacity and processes to protect information. Whenever possible, support the Tribe's or Indigenous community's ability to store and protect their own information.</p>
<b>Dissemination</b>	If a product requires a Bureau or Office peer review, ensure at least one peer reviewer is a subject matter expert in Indigenous Knowledge. Share the results of the project or action with the Tribe or Indigenous community in a way that is understandable, useful, and useable. Solicit feedback from Tribe or Indigenous community on the overall process and outcomes.





## Appendix 5. Elevating Indigenous Knowledge in Statutes and Regulations

### National Environmental Policy Act

The National Environmental Policy Act (NEPA)<sup>167</sup> requires Federal agencies to analyze, consider, and disclose the effects of major Federal actions unless otherwise exempted, on the quality of the human environment. The human environment is defined as “comprehensively the natural and physical environment and the relationship of present and future generations with that environment.”<sup>168</sup> The NEPA also directs Federal agencies to “utilize a systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man’s environment.”<sup>169</sup> In addition, the Council on Environmental Quality’s (CEQ) NEPA-implementing regulations also direct Federal agencies to “use high-quality information, including reliable data and resources, models, and Indigenous Knowledge” in carrying out their responsibilities under NEPA.<sup>170</sup> That regulation allows for the incorporation of Indigenous Knowledge within the NEPA process.

Tribal Nations and Indigenous Peoples hold relevant Indigenous Knowledge, information, and perspectives about the environment that can inform a NEPA analysis. Tribal Nations and Indigenous Peoples may also have special expertise with respect to environmental and community impacts informed by Indigenous Knowledge.

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<sup>167</sup> 42 U.S.C. § 4321 *et seq.*

<sup>168</sup> 40 C.F.R. § 1508.1(r).

<sup>169</sup> 42 U.S.C. § 4332 (A).

<sup>170</sup> 40 C.F.R. § 1502.15(b).

Consistent with NEPA and the CEQ NEPA regulations, NEPA practitioners should provide federally recognized Tribal Nations with opportunities to serve as joint lead agencies or cooperating agencies in the development of environmental impact statements (EIS) or environmental assessments (EA) when they meet the definition of a lead or cooperating agency, as applicable. Identification of cooperating or joint lead agencies should occur prior to publication of the Notice of Intent for an EIS or start of an EA process.

As noted in the Department’s NEPA implementation procedures, Bureaus and Offices should work with cooperating agencies to develop and adopt a memorandum of understanding that includes their respective roles, assignment of issues, schedules, and staff commitments so that the NEPA process remains on track and within the time schedule.<sup>171</sup> A memorandum of understanding must be used in the case of non-Federal agencies and must include a commitment to maintain the confidentiality of documents and deliberations during the period prior to the public release by the Bureau or Office of any NEPA document, including drafts.

The Tribal Nation, as joint lead or cooperating agency, can help in the following ways:

- Identify issues to be addressed;
- Arrange for the collection and (or) assembly of necessary resource, environmental, social, economic, and institutional data;
- Analyze data;
- Develop alternatives;
- Evaluate alternatives and estimate the effects of implementing each alternative; and
- Carry out any other task necessary for the development of the environmental analysis and documentation.

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<sup>171</sup> 43 C.F.R. § 46.225(d).

When preparing an EIS, NEPA practitioners must use scoping to engage potentially affected Federal, State, and local agencies and Tribal governments.<sup>172</sup> Scoping is “an early and open process...to determine the scope of issues for analysis in an environmental impact statement, including identifying important issues.”<sup>173</sup> The scoping process should be focused on determining the extent and nature of issues and alternatives that should be considered during a NEPA review. When conducting scoping, Bureaus and Offices should evaluate the inclusion of Indigenous Knowledge. Note that, because scoping is a public process, Bureaus and Offices should also conduct Tribal consultation with Tribal Nations to identify opportunities for inclusion of Indigenous Knowledge in the NEPA document.

The NEPA practitioners should encourage Tribal Nations and Indigenous communities to suggest ways to include Indigenous Knowledge to inform the development of alternatives, analysis of effects, and when necessary, identification of mitigation measures.

## Endangered Species Act

According to FWS, the [Endangered Species Act](#) (ESA)<sup>174</sup> establishes protections for fish, wildlife, and plants that are listed as threatened or endangered; provides for adding species to and removing them from the list of threatened and endangered wildlife and threatened and endangered plants, and for preparing and implementing plans for their recovery; provides for interagency cooperation to avoid take of listed species and for issuing permits for otherwise prohibited activities; provides for cooperation with States, including authorization of financial assistance; and implements the provisions of the Convention on International Trade in Endangered Species of Wild Flora and Fauna.

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<sup>172</sup> 40 C.F.R. § 1502.4; 43 C.F.R. § 46.235(a).

<sup>173</sup> 40 C.F.R. § 1502.4.

<sup>174</sup> 16 U.S.C. § 1531 *et seq.*; *see also* <https://www.fws.gov/program/cites>.

The ESA requires Federal agencies to use science and evidence to make decisions, such as listing and delisting species, developing biological opinions, and designating critical habitat. The ESA directs the U.S. Fish and Wildlife Service (FWS) to list species that meet the definition of either threatened or endangered using the “best scientific and commercial data available.” In addition, section 7 of the ESA requires Federal agencies to consult with the FWS when any action they authorize, fund, or carry out may affect a listed species or designated critical habitat.

A joint Secretary’s Order between the Department of the Interior and the Department of Commerce, Secretary’s Order 3206, titled “American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act,”<sup>175</sup> directs that whenever Bureaus or Offices “are aware that their action planned under [ESA] may impact Tribal trust resources, the exercise of Tribal rights, or Indian lands, they shall consult with, and seek the participation of, the affected Indian tribes to the maximum extent practicable. This shall include providing affected tribes adequate opportunities to participate in data collection, consensus seeking, and associated processes.”

In many instances, Indigenous Knowledge Holders may have relevant information about species locations, behaviors, habitats, population and recruitment information, and changes over time that can be applied to ESA classification determinations and critical habitat designations, Species Status Assessments, section 7 consultations, and conservation decisions. Indigenous Knowledge should also be considered when Bureaus and Offices manage the land for the conservation and recovery of federally listed species and species that are at risk of being listed. Bureaus and Offices should work cooperatively with Indigenous Knowledge Holders to develop ecosystem management approaches to protect essential habitats on lands and develop species-specific strategies to achieve conservation objectives across the range of species.

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<sup>175</sup> Joint Secretarial Order No. 3206, American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act (June 5, 1997), [https://www.doi.gov/sites/doi.gov/files/elips/documents/3206\\_-\\_american\\_indian\\_tribal\\_rights\\_federal-tribal\\_trust\\_responsibilities\\_and\\_the\\_endangered\\_species\\_act.pdf](https://www.doi.gov/sites/doi.gov/files/elips/documents/3206_-_american_indian_tribal_rights_federal-tribal_trust_responsibilities_and_the_endangered_species_act.pdf).

## Tribal Forest Protection Act

The Tribal Forest Protection Act (TFPA)<sup>176</sup> authorizes the Secretaries of Agriculture and the Interior to give special consideration to tribally proposed projects on land managed by the USFS or BLM and to protect bordering or adjacent Indian trust resources from fire, disease, or other threat from land managed by the U.S. Forest Service (USFS) or Bureau of Land Management (BLM). When BLM evaluates and considers entering into agreements or contracts with Tribal Nations under the TFPA, BLM should give specific consideration to Indigenous Knowledge.

In entering into an agreement or contract in response to a request from a Tribal Nation, the Secretary may consider tribally related factors in the proposal. These factors include (among others) the cultural, traditional, and historical affiliation of the Tribal Nation with the land subject to the proposal; the treaty rights or other reserved rights of the Tribal Nation relating to the land subject to the proposal; and the Indigenous Knowledge and skills of members of the Tribal Nation.

If the Secretary denies a Tribal request, a notice of denial is required that does the following:

- identifies the specific factors that caused, and explains the reasons that support, the denial;
- identifies potential courses of action for overcoming specific issues that led to the denial; and
- proposes a schedule of consultation with the Tribal Nation for the purpose of developing a strategy for protecting the Indian forest land or rangeland of the Tribal Nation and interests of the Tribal Nation in Federal land.

## National Historic Preservation Act

The National Historic Preservation Act (NHPA)<sup>177</sup> creates a framework for the preservation of important cultural resources and establishes a procedural process for the consideration of the effects of Federal

undertakings on historic properties. The term “historic property” means any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places.

The NHPA acknowledges the importance of preserving our Nation’s diverse heritage and directs Federal agencies to act as responsible stewards of historic properties, including those of religious and cultural significance to Tribal Nations and Native Hawaiian Organizations.<sup>178</sup> Section 106 of the NHPA establishes a process to ensure that Federal agencies consider the effects of projects they carry out, license, or assist on historic properties. This section also requires Federal agencies to consult with any Tribal Nation or Native Hawaiian Organizations that may attach religious and cultural significance to a property within the undertaking’s area of potential effects. The NHPA directs Federal agencies to recognize the special expertise of Tribal Nations and Native Hawaiian Organizations in the Section 106 process, offering an opportunity for the inclusion of Indigenous Knowledge.

The NHPA clarifies that properties of religious and cultural importance to a Tribal Nation or Native Hawaiian organization may be determined eligible for inclusion on the National Register of Historic Places. Therefore, these properties must be considered in the Section 106 review process. The special expertise, or Indigenous Knowledge, brought to the process by Indigenous Peoples is frequently the basis for identifying these locations, evaluating them for National Register eligibility, and resolving any potential adverse effects.

When conducting Section 106 consultation, a Department employee should include Indigenous Knowledge Holders early on in project planning and consult with them at every step of the process, as required in the NHPA regulations. The inclusion of Indigenous Knowledge in the Section 106 process is a critical component in the identification and evaluation of historic properties.

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<sup>178</sup> Native Hawaiian organizations serve as the informal representatives of the Native Hawaiian Community. See 502 DM 1.5G; U.S. Department of the Interior Office of Native Hawaiian Relations Standard Operating Procedures for Consultation with the Native Hawaiian Community, Section 1B.

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<sup>176</sup> Pub. L. 108-278 (July 22, 2004).

<sup>177</sup> Pub. L. 89-665 (Oct. 15, 1996).

## Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA)<sup>179</sup> and its implementing regulations at 43 CFR part 10, provide a process for Federal agencies and museums to repatriate or transfer ancestral Native American human remains and cultural items—funerary objects, sacred objects, and objects of cultural patrimony—to lineal descendants, federally recognized Indian Tribes, or Native Hawaiian organizations. NAGPRA encourages a continuing dialogue among Federal agencies, museums, lineal descendants, federally recognized Indian Tribes, and Native Hawaiian organizations to promote a greater understanding between the groups.

The implementing regulations provide a process for Federal agencies to address new (after the November 16, 1990, enactment date of NAGPRA) discoveries of ancestral Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony excavated or discovered on Federal or Tribal lands.

Consultation with lineal descendants, federally recognized Indian Tribes, and Native Hawaiian organizations is a critical component for addressing identification, treatment, and disposition of ancestral Native American human remains and cultural items.

NAGPRA specifies forms of Indigenous Knowledge, such as linguistic, folkloric, oral traditional evidence, and Tribal expert opinion, as necessary information for determining the affiliation and repatriation of ancestral Native American human remains and cultural items in addition to consideration of Native American Traditional Knowledge.<sup>180</sup>

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<sup>179</sup> Pub. L. 101-601 (Nov. 16, 1990).

<sup>180</sup> 43 C.F.R. Part 10, especially the definitions of human remains and types of cultural items in Section 10.2 and the criteria for determination of cultural affiliation in Section 10.3(a)(1)(x).

## Appendix 6. Statutory Protections of Indigenous Knowledge

### Archaeological Resources Protection Act

The Archaeological Resources Protection Act (ARPA)<sup>181</sup> prohibits public disclosure of sensitive information, specifically the nature and location of archeological resources.<sup>182</sup> However, the ARPA’s confidentiality requirement is limited. First, the statute only protects information about “archaeological resources,” which include “material remains of past human life or activities which are of archaeological interest” and are at least 100 years of age. Thus, any information concerning a resource from within the last 100 years would not fall under this disclosure protection. Second, the Federal land manager has discretion to release this information if doing so would be consistent with the purposes of ARPA and not create a risk of harm to the resource. Third, if the State’s Governor submits a sufficient request for the archaeological resource information, a Federal land manager must provide it. The statute requires the Governor’s written commitment to adequately protect the confidentiality of the information;<sup>183</sup> however, there is little recourse if a State fails to uphold that commitment.

### National Historic Preservation Act

The National Historic Preservation Act (NHPA)<sup>184</sup> provides that the head of a Federal agency conducting NHPA consultation shall, after consulting with the Secretary of the Interior, “withhold from disclosure to the public information about the location, character, or ownership of a historic property”

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<sup>181</sup> Pub. L. 96-95 (Oct. 31, 1979); *see also* <https://www.nps.gov/subjects/archeology/archaeological-resources-protection-act.htm>.

<sup>182</sup> 16 U.S.C. § 470hh.

<sup>183</sup> 16 U.S.C. § 470hh (b)(3).

<sup>184</sup> See footnote 5 in appendix 4.

if the Secretary and the Federal agency conclude that disclosure would do any of three things: (1) cause a significant invasion of privacy, (2) risk harm to the historic resource, or (3) impede the use of a traditional religious site by practitioners.<sup>185</sup>

The main limitation with using this protection is that it does not automatically apply but must be invoked upon request to the Secretary through the National Register Program. Additionally, this protection is limited to information that pertains to a historic property, that is, a property included in or eligible for inclusion on the National Register of Historic Places (National Register). Not all sites of importance to a Tribal Nation (for example, a sacred site) will necessarily fit the definition of a historic property. The Advisory Council on Historic Preservation has released guidance on the use of 54 U.S.C. § 307103<sup>186</sup> to protect sensitive information about historic properties that should be followed when applying the provisions.

## Appendix 7. Mechanisms for Compensating Knowledge Holders and Payments to Support Tribal and Indigenous Participation

Several examples of possible compensation mechanisms and types of payment are listed below. Use of these methods will vary, and not all Bureaus or Offices may be able to use all of the mechanisms listed below, nor will they apply to all possible Indigenous Knowledge situations. As rules vary, it is important to work with procurement and acquisition staff early in the process to determine the best mechanism for the action or research project. There are various policies, regulations, and guidance documents that direct the use of these mechanisms. These include the Federal Acquisition Regulation,<sup>187</sup> DOI Acquisition Regulation,<sup>188</sup> DOI Office of Acquisition and

<sup>185</sup> 54 U.S.C. § 307103—Access to information, typically still referred to by its original codification, Section 304.

<sup>186</sup> Advisory Council on Historic Preservation, *Frequently Asked Questions on Protecting Sensitive Information About Historic Properties Under Section 304 of the NHPA*, <https://www.achp.gov/digital-library-section-106-landing/frequently-asked-questions-protecting-sensitive-information>.

<sup>187</sup> See U.S. Department of the Interior, *Acquisition*, <https://www.acquisition.gov/>.

<sup>188</sup> See U.S. Department of the Interior, *Acquisition Regulation*, <https://www.acquisition.gov/diar>.

Property Management,<sup>189</sup> and U.S. Government Accountability Office.<sup>190</sup> There are two general types of compensation mechanisms, procurement and non-procurement instruments.

## Procurement Instruments

**Sole or single source contracts:** A procurement contract issued without a competitive solicitation process, only after the contracting officer determines that only one source can, or is, authorized by statute to do the work. This mechanism requires the Knowledge Holder or Tribe to be registered in the System for Award Management (SAM).<sup>191</sup> Although there may be Tribal preferences available under the acquisition regulations, it is difficult to justify a sole source contract to one entity.

**Contracts using Indian Small Business Economic Enterprise (ISBEE) set-asides:** A procurement contract reserved for a qualifying Indian economic enterprise. The Government limits the competition to ISBEEs by setting aside all or a portion of contract dollars for ISBEEs.<sup>192</sup>

**Financial assistance agreements:** Federal financial assistance instrument (grant or cooperative agreement) used to transfer money or property to a recipient to accomplish a public purpose of support or stimulation authorized by Federal statute.<sup>193</sup> The applicant must be registered in SAM.

<sup>189</sup> See U.S. Department of the Interior, *Office of Acquisition and Property Management*, <https://www.doi.gov/pam>.

<sup>190</sup> See U.S. Government Accountability Office, *The Red Book*, <https://www.gao.gov/legal/appropriations-law/red-book>.

<sup>191</sup> See [www.sam.gov](http://www.sam.gov).

<sup>192</sup> See the Primer on the Buy Indian Opportunity at [https://www.bia.gov/sites/default/files/dup/assets/as-ia/ieed/Primer%20on%20Buy%20Indian%20Act%20508%20Compliant%202.6.18\(Reload\).pdf](https://www.bia.gov/sites/default/files/dup/assets/as-ia/ieed/Primer%20on%20Buy%20Indian%20Act%20508%20Compliant%202.6.18(Reload).pdf) and DIAR Part 1480 Acquisitions under Buy Indian Act at <https://www.acquisition.gov/diar/part-1480-acquisitions-under-buy-indian-act>.

<sup>193</sup> See DOI Office of Grants Management at <https://www.doi.gov/grants> and the Code of Federal Regulations at <https://www.ecfr.gov/current/title-2/subtitle-B/chapter-XIV/part-1401?toc=1>.

**Micro purchase for services via a charge card or convenience check:** A method of purchase or payment by Government Purchase Card (GPC) for goods and services in support of official Federal Government business. The micro-purchase threshold for services is \$2,500, and supplies or services not applicable to or exempt from the Service Contract Labor Standards (formerly Service Contract Act) are \$10,000. A GPC is used as the preferred method over convenience check.<sup>194</sup> The Knowledge Holder or Tribe must be able to accept a charge card as a form of payment.

## Non-Procurement Instruments

**Declining balance cards:** A Government issued purchase card with a set starting balance used for certain types of authorized travel expenses.

**Bureau 638 contracts or compacts:** A non-procurement funding instrument (not an acquisition or financial assistance agreement) that transfers responsibility and funds for a Federal program, function, service, or action that usually benefits a Tribe, or a portion thereof, from the Federal Government to the Tribe. There are distinct differences between a 638 compact and contract. Consult the Office of the Solicitor if contemplating this instrument.<sup>195</sup>

**Bureau of Indian Affairs (BIA) interagency agreement pass through to use a BIA 638 contract or compact:** Because the BIA has existing 638 contracts and compacts with

federally recognized Tribes, other Department Bureaus and Offices may enter into an interagency agreement with BIA to utilize their existing contracts.<sup>196</sup>

**Invitational travel orders:** A Bureau or Office may reimburse authorized travel costs for Tribes or Tribal representatives. All travel costs reimbursed will require the Bureau or Office to complete a Concur government edition user-profile request and a Financial and Business Management System (FBMS)<sup>197</sup> vendor master setup for the Tribal representative.

**Honoraria:** When a Tribal government or representative provides training, education, or knowledge about their Tribe or culture, a consultant fee may not be appropriate or accepted by the Tribe because of customs. An honorarium for a nominal amount may be issued directly to the Tribe, or the individual, and shall be documented as an honorarium and not a fee, payment, service, or acquisition. These can be made by Government-wide purchase card or convenience check and are subject to the micro-purchase threshold mentioned above.

**Miscellaneous obligations:** A type of non-procurement funding instrument processed through FBMS, not acquisition, and may include items, such as inter/intra-agency agreements, travel, training, charge card, and other authorized purchases that cannot be purchased or paid through other existing instruments. Because it is processed through a Bureau or Office's internal financial system without an approval workflow, a miscellaneous obligation is only appropriate under limited circumstances that require external approvals and supporting documentation.

<sup>194</sup> See DOI Purchase Card Policy, Purchase Card Program Policy - <https://www.doi.gov/pam/charge-card>.

<sup>195</sup> See Office of Small and Disadvantaged Business Utilization, <https://doi.gov/pmb/osdbu>

<sup>196</sup> See Intra and Inter Agreement Policy, <https://www.doi.gov/pam/acquisition/policy>.

<sup>197</sup> See U.S. Department of the Interior, *Financial and Business Management System* <https://www.doi.gov/pmb/fbms>.

## Appendix 8. Paperwork Reduction Act

The Paperwork Reduction Act of 1995 (PRA; 44 U.S.C. 3501, et seq.) and its implementing regulations at 5 C.F.R. § 1320 govern Federal agencies' collection of information from the American public, including Tribal members and Indigenous Peoples. The goals of the PRA include but are not limited to the following:

- minimizing the paperwork burden imposed on the American public;
- ensuring maximum utility and quality of Federal information;
- ensuring the use of information technology to improve Government performance; and
- improving the Federal Government's accountability for managing information collection activities.

Information collection under the PRA occurs when an agency seeks information from 10 or more people (or fewer than 10 if they constitute a majority of a sector or industry) over a 12-month period and thus may apply to techniques used to learn Indigenous Knowledge. Common types of information collection that require PRA clearance include the following:

- forms, both hardcopy and electronic;
- surveys (in-person, electronic, telephone, or mail), such as customer satisfaction or behavioral surveys;
- program evaluations; and
- research studies and focus groups with a set of the same questions or tasks.

Generally, open-ended requests seeking comments or general feedback, information requested from fewer than 10 people who do not represent the majority or all of a sector or industry, and requests for comments in rulemakings do not require PRA clearance.

The PRA clearance takes time, often from 6 to 9 months, and up to 2 years or more. Requests for information collections subject to PRA require two public comment periods (60 and 30 days) in the Federal Register, review by the Department Information Collection Clearance Officer (D-ICCO), and approval by the Office of Management and Budget. An employee, therefore, must be cognizant of this clearance process, building time into their action and work with the Tribal Nation or Indigenous community to develop the appropriate methods for learning and including Indigenous Knowledge.

At the Department, the Office of the Chief Information Officer manages the PRA. All information collection program responsibilities are delegated to the D-ICCO. Each Bureau and Office has an Information Collection Clearance Officer (ICCO), a list of whom can be found at this webpage: <https://www.doi.gov/ocio/practacts>. Always work with the appropriate ICCO when collecting any information from the public to ensure that PRA clearance is not needed.

More information on PRA can be found at these websites:

1. <https://www.doi.gov/ocio/policy-mgmt-support/paperwork-reduction-act>
2. <https://www.govinfo.gov/content/pkg/USCODE-2008-title44/pdf/USCODE-2008-title44-chap35-subchapI.pdf>
3. <https://www.ecfr.gov/current/title-5/chapter-III/subchapter-B/part-1320?toc=1>

## Appendix 9. Potential Performance Standards for Cultural Competencies

Bureaus and Offices should identify positions that have Indigenous Knowledge responsibilities and develop Senior Executive and General Schedule performance standards to ensure the inclusion of Indigenous Knowledge in Department actions and scientific research. Examples of performance standards include the following:

## Senior Executive Service Performance Requirements

- The Executive demonstrates commitment to promote and support the inclusion of Indigenous Knowledge in Department actions and scientific research, and integrate these practices into the Department's strategic mission, policies, handbooks, manuals, plans, and outcomes. The Executive demonstrates management and program accountability related to implementing the inclusion of Indigenous Knowledge. The Executive proactively supports the inclusion of Indigenous Knowledge and identifies and initiates opportunities to engage and work with Tribal Nations and Indigenous communities to support the inclusion of Indigenous Knowledge.
- The Executive proactively assesses and strengthens the inclusion of Indigenous Knowledge, outcomes, and benefits to Tribal Nations, Indigenous communities, partners, and stakeholders. The Executive identifies weaknesses and improvement opportunities and initiates measures to strengthen the adoption and inclusion of Indigenous Knowledge in working with and serving external entities.
- The Executive is accountable for and holds managers and employees accountable for embracing and elevating Indigenous Knowledge and working with Tribal Nations and Indigenous communities at every stage of the inclusion process, including recruitment, development, and retention of employees who have experience working with Tribal Nations, Indigenous communities, and Indigenous Knowledge Holders, and including Indigenous Knowledge in Federal agency actions and scientific research. The Executive equips subordinate leaders and employees with the tools necessary to develop and sustain the inclusion of Indigenous Knowledge, and to advance the inclusion of Indigenous Knowledge in its mission objectives, including training on best practices, assessing program deficiencies, ensuring the inclusion of Indigenous Knowledge in Bureau and Office planning, including the inclusion of Indigenous Knowledge in employee performance planning and appraisal and removing impediments to the inclusion of Indigenous Knowledge in Departmental actions and scientific research.

## Examples of General Service Performance Standards

- Establishes and maintains regular contact with Tribal Nations, Tribal organizations, Indigenous communities and (or) other agencies involved in the inclusion of Indigenous Knowledge in Department actions and scientific research. Facilitates and attends in-person meetings with Tribal Nation and Indigenous community representatives and follows up on issues discussed.
- Responds to Tribal Nation and Indigenous community inquiries and outreach with accurate and timely information. Communicates information in a clear and easily to understand manner and facilitates open dialogue with Tribal Nation and Indigenous community representatives. Proactively works with Tribal Nation and Indigenous community representatives and provides information on ways that Tribal Nation and Indigenous community input is used, or, when necessary, why input could not be incorporated.
- Routinely develops and implements plans to achieve program objectives and assess and improve work products, services, and processes, and demonstrates measurable results in program accomplishment and improvement to support the inclusion of Indigenous Knowledge.
- Routinely provides comprehensive guidance through a variety of communications methods, including briefings, meetings, teleconferences, emails, and training sessions for technical and administrative purposes.
- When necessary, solicits active participation from, or provides information to, Bureau or Office work groups concerned with the inclusion of Indigenous Knowledge.
- Routinely reviews new and existing laws, regulations, and Department policies and guidance to determine needed changes or modifications and makes appropriate recommendations.



- Develops new and modifies existing Bureau or Office policies and procedures when necessary, and consistently provides clear and accurate information to the supervisor and senior management to obtain necessary approvals.
- Ensures that staff is fully trained in the program areas for which each employee is responsible.
- Ensures that hiring of qualified and competent staff is achieved for specific program areas.
- Ensures that program areas are sustainable through appropriated funds (base funding).
- Ensures that grant application competitions include Indigenous Knowledge elements as essential components for such grants.
- Facilitates equitable access of Department resources and science communications.

## Appendix 10. Additional Resources

The following is a non-exhaustive list of resources on topics presented in this Handbook. Inclusion of a non-governmental resource in this list is not an endorsement of that resource or its contents.

## History of Indigenous Peoples of the Americas and the United States

- Guampedia, 2024, Guam's political development, at <https://www.guampedia.com/guams-political-development/>
- Mann, C.C., 2006, 1491—New revelations of the Americas before Columbus (2d ed.): New York, Vintage Books, 541 p.
- PBS, 2018, Native America—Season 1, at <https://www.pbs.org/native-america/seasons/season-1/#about>.

## Indigenous Knowledge

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- Kimmerer, R.W., 2013, *Braiding sweetgrass—Indigenous wisdom, scientific knowledge, and the teachings of plants*: Minneapolis, Minn., Milkweed Editions, 390 p.
- Inuit Circumpolar Council, 2024, Indigenous knowledge: Inuit Circumpolar Council web page, at <https://www.inuitcircumpolar.com/icc-activities/environment-sustainabledevelopment/Indigenous-knowledge>.
- National Park Service, 2023, Indigenous knowledge and traditional ecological knowledge, National Park Service web page, at <https://www.nps.gov/subjects/tek/guides.htm>.
- Nelson, M. K., and Shilling, D., eds, 2018, *Traditional ecological knowledge—Learning from indigenous practices for environmental sustainability*: Cambridge, United Kingdom, Cambridge University Press, 276 p.
- United Nations, 2014, *The knowledge of indigenous peoples and polices for sustainable development—Updates and trends in the second decade of the world's indigenous people*: United Nations report, 15 p., at [https://www.un.org/en/ga/69/meetings/indigenous/pdf/IASG%20Thematic%20Paper\\_%20Traditional%20Knowledge%20-%20rev1.pdf](https://www.un.org/en/ga/69/meetings/indigenous/pdf/IASG%20Thematic%20Paper_%20Traditional%20Knowledge%20-%20rev1.pdf).
- U.S. Geological Survey, 2023, Webinar series—Incorporating indigenous knowledges into Federal research and management: U.S. Geological Survey web page, at <https://www.usgs.gov/programs/climate-adaptation-science-centers/webinar-series-incorporating-indigenous-knowledges>.
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Whyte, K., 2018, What do indigenous knowledges do for indigenous peoples?, chap. 4 of Nelson, M.K., and Shilling, D., eds., Traditional ecological knowledge—Learning from indigenous practices for environmental sustainability: Cambridge, United Kingdom, Cambridge University Press, p. 57–82. [Available at [https://nrd.kbic-nsn.gov/sites/default/files/What\\_do\\_Indigenous\\_Knowledges\\_do.pdf](https://nrd.kbic-nsn.gov/sites/default/files/What_do_Indigenous_Knowledges_do.pdf).]

Wildcat, D.R., 2009, Red Alert!—Saving the planet with indigenous knowledge: Golden, Colo., Fulcrum Publishing, 143 p.

Wilson, S., 1996, Gwitch'in native elders—Not just knowledge, but a way of looking at the world: Fairbanks, Alaska Native Knowledge Network, 62 p.

Windchief, S. and Ryan, K.E., 2019, The sharing of indigenous knowledge through academic means by implementing self-reflection and story: AlterNative—An International Journal of Indigenous Peoples, v. 15, no. 1, p. 82–89, <https://doi.org/10.1177/1177180118818188>.

## Indigenous Rights and Sovereignty

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United Nations, 2007, United Nations declaration on the rights of indigenous peoples: United Nations Resolution, 32 p., at [https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP\\_E\\_web.pdf](https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf).

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## Training

[DOI University Consultation Training](#)

[COMPASS: Ethical Space: Indigenous Engagement for Environmental Science Professionals](#)

[What is Cultural Humility? The Basics | Division of Equity and Inclusion](#)

## Human Subjects Research Ethics

[American Anthropology Association: Handbook on Ethical Issues in Anthropology](#)

[National Institutes of Health Decision Tool for Human Subjects Research](#)

[The Belmont Report](#)

[The CITI Program: The Trusted Standard in Research, Ethics, Compliance, and Safety Training](#)

[U.S. Department of Health and Human Services: Draft Guidance—Key Information and Facilitating Understanding in Informed Consent](#)

[U.S. Department of Health and Human Services: Human Research Protection Training](#)

[U.S. Department of Health and Human Services: Office for Human Research Protections](#)

[U.S. Department of Health and Human Services: Supporting Ethical Research Involving American Indian/Alaskan Native \(AI/AN\) Populations](#)

## Appendix 11. Detailed Image Descriptions

The following long descriptions detail the design elements, including all of the relevant text, for each figure in this Handbook.

**Figure 1.** A circular illustration showing 5 spheres surrounding an individual. A central diamond shows a human figure within the “A, Individual/Family sphere.” A larger yellow diamond surrounds this for the “B, Community/Culture” sphere, with the words “Traditions,” “Spirituality,” “Song,” and “Ceremony.” Eight stylized turquoise and orange arrows are arranged equally around the surrounding ring, labelled “C, Tribe.” The arrows point to a circle of linked words for the “D, Nation” sphere; the words are “Air,” “Forest,” “Wildlife,” “Fish,” “Water,” “Infrastructure,” “People,” and “Lands.” This circle is surrounded by a sweetgrass braid, smoking gently, for the “E, World” sphere. The arrow lines cross the braid to a final circle with sketches illustrating each of the eight areas, over a light brown background evoking tree rings, and a purple, blue, and yellow outer border.

[Return to figure 1 caption](#)

**Figure 2.** A sketch of a sailing ship and a person in a canoe navigating the same waters, followed by text summarizing the actions and concepts for Department of the Interior employees when engaging with Indigenous Knowledge: acknowledgement of historical harms; Indigenous Knowledge is in the land with communities; relationship to people and Mother Earth; walk in beauty, inspire; respect; engagement vs consultation; understand capacity; and no means no.

[Return to figure 2 caption](#)

**Figure 3.** A watercolor painting of the intercropping method of planting corn, beans, and squash together. The three plants are weaving together as they grow.

[Return to figure 3 caption](#)

**Figure 4.** A 2-circle Venn diagram over a 4-row table to show how Indigenous Knowledge and other scientific approaches diverge or combine with relation to organizing principles, habits of mind, skills and procedures, and knowledge.

The organizing principles of Indigenous Knowledge are holistic, include the physical and metaphysical world linked to a moral code, and have an emphasis on practical application of skills and knowledge. The organizing principles of other scientific approaches are part to whole, are limited to evidence and explanation within the physical world, and have an emphasis on understanding how. When integrated, these two knowledge systems have the organizing principles of a unified universe and a stable body of knowledge subject to modification.

The habits of mind of Indigenous Knowledge are a trust for inherited wisdom and respect for all things. The habit of mind in other scientific approaches is skepticism. The habits of mind for an integrated knowledge system are honesty, inquisitiveness, perseverance, and open-mindedness.

The skills and procedures within Indigenous Knowledge are practical experimentation, a qualitative oral record, local verification, and communication of metaphor and story connected to life, values, and proper behavior. The skills and procedures for other scientific approaches are tools to expand the scale of direct and indirect observation and measurement, hypothesis falsification, global verification, quantitative written record, and the communication of procedures, evidence, and theory. Integrating the two knowledge systems would have the skills and procedures of empirical observation in natural settings, pattern recognition, verification through repetition, and inference and prediction.

Knowledge within Indigenous Knowledge systems is integrated and applied to daily living and traditional subsistence practices. Within other scientific approaches, knowledge is discipline based, includes micro and macro theory, and uses mathematical models. Integrated Indigenous and other scientific knowledge systems would include plant and animal behavior, cycles, habitat needs, and interdependence, the properties of objects and materials, the position and motion of objects, and cycles and change in the earth and sky.

[Return to figure 4 caption](#)

**Figure 5.** A Department of Justice Freedom of Information Act (FOIA) infographic, showing the who, what, when, how, and why of FOIAs. More information on the FOIA process can be found at foia.gov.

[Return to figure 5 caption](#)

**Figure 6.** A map of the contiguous United States, Hawaii, and the U.S. Caribbean showing the distribution of tribally managed lands and Department managed lands. The majority of both types of lands are located in the western half of the country, the northern plains, and the Upper Midwest. Department managed lands make up a much larger portion than tribally managed lands. Department managed lands also extend into the Pacific Ocean, Great Lakes, and Atlantic Ocean.

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**Figure 7.** A map of Alaska showing the distribution of tribally managed lands, Alaska Native villages, and Department managed lands. The majority of tribally managed lands are located around Anchorage. Department-managed lands make up a substantially larger portion than tribally managed lands. Department-managed lands also extend into the Bering Sea, Beaufort Sea, and Gulf of Alaska.

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**Figure 8.** An image showing the cyclical nature of elevating and including Indigenous Knowledge. In the outermost ring are the words “communication” and “evaluation.” In the next inner ring are the following words, with arrows between each: “planning,” “engaging,” “informed consent,” “receiving,” “applying,” “protecting.” In the center is a circle with the following text: “elevate Indigenous Knowledge.” Surrounding that are the words “reciprocity” and “respect.”

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**Figure 9.** An image of a circle with multiple ring layers. The center of the circle reads as follows: “co-production of knowledge.” The next outer ring reads as follows: knowledge systems. The second outer ring is split into nine equal sections, with each section containing a step. Steps include the following: “define problem,” “identify question,” “develop methods,” “gather information,” “analyze information,” “perform communications,” “review results,” “control information,” and “practice reciprocity.” The third outer ring is split into nine equal sections. Each section contains one concept. Concepts include the following: “trust and respect,” “relationships,” “empowerment, means and ability,” “capacity,” “deliberate and intentional,” “ethical,” “decolonization,” and “sovereignty.” The outer most layer contains four bi-directional arrows, with each arrow pointing to the word “equity.”

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**Figure 10.** Three light brown and irregular (but roughly circular) stones, connected by dashed arrows, illustrating the process of validation for Indigenous Knowledge. The first shows a

dark brown silhouette of a person in a canoe and a person guiding a sled, with this text: “Information and observations are gathered.” The second shows a dark brown silhouette of two people, with this text: “Information and observations are shared with Elders or other Indigenous Knowledge Holders.” The final stone shows a dark brown silhouette of four people standing together, with this text: “Indigenous Knowledge Holders discuss, analyze, evaluate, and validate information.”

[Return to figure 10 caption](#)

**Figure 11.** A photo of a black wolf standing in snow.

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**Figure 12.** A map showing the distribution of the Alexander Archipelago wolf in Southeast Alaska and coastal British Columbia. The wolf’s range remains close to the coast and stretches from Vancouver Island, British Columbia, to just north of Chichagof Island, Alaska.

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**Figure 13.** A map of the 17 Tlingit K̄wáans in Southeast Alaska. Text on the map states: “Tlingit are divided into 17 socio-territorial or geographic units that are identified by the term K̄wáan. For example, Juneau is the homeland of the Áak’w K̄wáan. Each K̄wáan is composed of resident clans that owned lands and waters in the area and resided in one or more winter village. Tlingit K̄wáans stretch from above Yakutat in the north to Dixon Entrance, hundreds of miles south of Juneau.”

[Return to figure 13 caption](#)

## Footnotes

<sup>1</sup> See Indian Entities Recognized by and Eligible to Receive Services from the Bureau of Indian Affairs, 89 Fed. Reg. 944 (Jan. 8, 2024). This list is updated annually.

<sup>2</sup> Marwa Elshakry, *When Science Became Western: Historiographical Reflections*, 101 University of Chicago Press Journals (Mar. 2010), <https://www.journals.uchicago.edu/doi/full/10.1086/652691>.

<sup>3</sup> See Inter-Governmental Cooperative Agreement between the Tribal Nations Whose Representatives Comprise the Bears Ears Commission, et al., and the United States Department of the Interior, Bureau of Land Management and the United States Department of Agriculture, Forest Service for the Cooperative Management of the Federal Lands and Resources of the Bears Ears National Monument (June 2022), <https://www.blm.gov/sites/default/files/docs/2022-06/BearsEarsNationalMonumentInter-GovernmentalAgreement2022.pdf>.

<sup>4</sup> Bureau of Land Management, United States Department of the Interior, Fiscal Year (FY) 2022 Major Highlights-BLM New Mexico (2023), 2–2, <https://www.blm.gov/sites/default/files/docs/2022-11/new-mexico-annual-heritage-report-2022.pdf>.

<sup>5</sup> See Nicole Herman-Mercer, *Water-Quality Data from the Yukon River Basin in Alaska and Canada*: U.S. Geological Survey Data Release (2016), <https://dx.doi.org/10.5066/F77D2S7B>.

<sup>6</sup> See Kari Marie Norgaard and Sara Worl, *What Western States Can Learn from Native American Wildfire Management Strategies*, 2019, The Conversation, <https://theconversation.com/what-western-states-can-learn-from-native-american-wildfire-management-strategies-120731>.

<sup>7</sup> See Tristan Pearce, et al., *Inuit Traditional Ecological Knowledge (TEK), Subsistence Hunting and Adaptation to Climate Change in the Canadian Arctic* (2015), 68 *Arctic*, 233–245, <https://www.jstor.org/stable/43871322>.

<sup>8</sup> See *Inuit Circumpolar Council Alaska, Food Sovereignty and Self-Governance Workshop Summary Reports: Inuit Coming Together from Across Alaska and the Inuvialuit Settlement Region* (2022), <https://iccalaska.org/wp-icc/wp-content/uploads/2022/08/ICC-Compiled-Book-Lo-Res.pdf>.

<sup>9</sup> See Courtney Carothers, et al., *Indigenous Peoples and Salmon Stewardship: A Critical Relationship* (2021), 26 *Ecology and Society*, 16, <https://doi.org/10.5751/ES-11972-260116>; see also Andrea J. Reid, et al., “Two-Eyed Seeing”: An Indigenous framework to transform fisheries research and management. *Fish and Fisheries* (2020), v22(2): 243–261, <https://doi.org/10.1111/faf.12516>.

<sup>10</sup> See Richard W. Stoffle, et al., *Native Knowledge of Great Lakes Ecology: Climate Changes to Odawa Lands*, 5 *Frontiers in Climate*, (2023), <https://doi.org/10.3389/fclim.2023.979721>.

<sup>11</sup> The National Park Service maintains a website covering examples from methods to policies to applications at <https://www.nps.gov/subjects/tek/index.htm>.

<sup>12</sup> See Daniel R. Wildcat, *Red Alert! Saving the Planet with Indigenous Knowledge* (2009).

<sup>13</sup> See United States National Oceanic and Atmospheric Administration (NOAA) Fisheries and National Ocean Service, *Guidance and Best Practices for Engaging and Incorporating Traditional Ecological Knowledge in Decision-Making* (2019), <https://www.noaa.gov/sites/default/files/2021-11/19-065933-Traditional-Knowledge-in-Decision-Making-Documents-Signed.pdf>; see also *NOAA Tribal Resources*, <https://www.noaa.gov/legislative-and-intergovernmental-affairs/noaa-tribal-resources-updates>; United Nations Educational, Scientific and Cultural Organization (UNESCO), *Local and Indigenous Knowledge Systems (LINKS)*, <https://en.unesco.org/links>, <https://www.ipbes.net/glossary-tag/knowledge-system>; Jana Claudine Hertz, et al., *Knowledge Systems: Evidence to Policy Concepts in Practice* (2020), <https://doi.org/10.3768/rtipress.2020.pb.0024.2006>.

<sup>14</sup> See 301 DM § 7.4(A); see also U.S. Fish and Wildlife Service, *Traditional Ecological Knowledge for Application by Service Scientists* (2011), <https://www.fws.gov/sites/default/files/documents/TEK-Fact-Sheet.pdf>; Advisory Council on Historic Preservation, *Traditional Knowledge and the Section 106 Process: Information for Federal Agencies and Other Participants*, <https://www.achp.gov/sites/default/files/2021-05/TraditionalKnowledgePaper5-3-21.pdf>.

<sup>15</sup> Robin Wall Kimmerer, *Braiding Sweetgrass* (2013).

<sup>16</sup> *Id.* at 139.

<sup>17</sup> Roger Poole, *Towards Deep Subjectivity* (1972); Willie Ermine, et al., *The Ethics of Research Involving Indigenous Peoples, Report of the Indigenous Peoples' Health Research Centre to the Interagency Advisory Panel on Research Ethics* (2004), <https://gladue.usask.ca/sites/gladue1.usask.ca/files/gladue/resource385-2c4c0417.pdf>.

<sup>18</sup> National Congress of American Indians Policy Research Center and Center for Native Health Partnerships, *Walk Softly and Listen Carefully: Building Research Relationships with Tribal*

*Communities* (2012), [https://archive.ncai.org/attachments/PolicyPaper\\_SpMCHTcJxRRjMEjDnPmesENPzjHTwhOlOWxIWOIWdSrykJuQggG\\_NCAI-WalkSoftly.pdf](https://archive.ncai.org/attachments/PolicyPaper_SpMCHTcJxRRjMEjDnPmesENPzjHTwhOlOWxIWOIWdSrykJuQggG_NCAI-WalkSoftly.pdf).

<sup>19</sup> Douglas Nakashima, *Astute Observers on the Sea Ice Edge: Inuit Knowledge as a Basis for Arctic Co-Management*, in *Traditional Ecological Knowledge: Concepts and Cases*, 121 (1993) [https://books.google.com/books?hl=en&lr=&id=J2CNS64AFvsC&oi=fnd&pg=PR6&ots=KCniyirqFr&sig=4k\\_dLLK3ErIDKdweNpqhQQPnD60#v=onepage&q&f=false](https://books.google.com/books?hl=en&lr=&id=J2CNS64AFvsC&oi=fnd&pg=PR6&ots=KCniyirqFr&sig=4k_dLLK3ErIDKdweNpqhQQPnD60#v=onepage&q&f=false).

<sup>20</sup> See Tyler D. Jessen, et al., *Contributions of Indigenous Knowledge to Ecological and Evolutionary Understanding*, 20 *Frontiers in Ecology and the Environment*, 93–101 (2022), <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/fee.2435>.

<sup>21</sup> Status of Tribes and Climate Change Working Group, Institute for Tribal Environmental Professionals, Northern Arizona University, *Status of Tribes and Climate Change Report* (2021), <https://nau.edu/stacc2021>.

<sup>22</sup> National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, *The Belmont Report* (1979), <https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/index.html>.

<sup>23</sup> 45 C.F.R. Part 46.

<sup>24</sup> In full, “human subject” means a living individual about whom an investigator (whether professional or student) conducting research (i) obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or (ii) obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens. 46 C.F.R. § 46.102 (e)(1).

<sup>25</sup> In full, “research” means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Activities that meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program that is considered research for other purposes. For example, some demonstration and service programs may include research activities. 46 C.F.R. § 46.102 (l).

<sup>26</sup> Climate and Traditional Knowledges Workgroup, *Guidelines for Considering Traditional Knowledges in Climate Change Initiatives* (2014), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2555299](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2555299).

<sup>27</sup> See United Nations Department of Economic and Social Affairs, *Indigenous Peoples at the United Nations*, <https://www.un.org/development/desa/indigenouspeoples/about-us.html#:~:text=In%201982%20the%20Working%20Group,their%20concerns%20at%20the%20UN>.



<sup>28</sup> United Nations Declaration on the Rights of Indigenous Peoples (2007), <https://documents.un.org/doc/undoc/gen/n06/512/07/pdf/n0651207.pdf>.

<sup>29</sup> In 2010, President Obama declared that the United States would lend its support to the United Nations Declaration on the Rights of Indigenous Peoples. See [Announcement of U.S. Support for the United Nations Declaration on the Rights of Indigenous Peoples](#), On page one, the Announcement further states, “The United States supports the Declaration, which—while not legally binding or a statement of current international law—has both moral and political force. It expresses both the aspirations of indigenous peoples around the world and those of States in seeking to improve their relations with indigenous peoples. Most importantly, it expresses aspirations of the United States, aspirations that this country seeks to achieve within the structure of the U.S. Constitution, laws, and international obligations, while also seeking, where appropriate, to improve our laws and policies.”

<sup>30</sup> See 301 DM § 7.4 (D).

<sup>31</sup> See 301 DM § 7.6 (A)(2)(a)-(f).

<sup>32</sup> See also 301 DM §§ 7.4 and 7.6 (2).

<sup>33</sup> See Stephanie Russo Carroll, et al., 18 *Indigenous Data Governance: Strategies from United States Native Nations*, Data Science Journal, 31 (2019) <https://datascience.codata.org/articles/10.5334/dsj-2019-031>; Stephanie Carroll Rainie, et al., *Data as a Strategic Resource: Self-Determination, Governance, and the Data Challenge for Indigenous Nations in the United States*, 8 The International Indigenous Policy Journal, 1–29 (2017), <https://nni.arizona.edu/publications/data-strategic-resource-self-determination-governance-and-data-challenge-indigenous-nations>; Tahu Kukutai and John Taylor, eds., *Indigenous Data Sovereignty, Toward an Agenda* (2016).

<sup>34</sup> 5 U.S.C. § 552.

<sup>35</sup> Title II of the Foundations for Evidence-Based Policymaking Act of 2018, Pub. L. 115-435.

<sup>36</sup> See 301 DM § 7.6 (A)(1)(b).

<sup>37</sup> Sea Grant, University of Hawaii, *Kūlana Noi ‘i*, <https://seagrant.soest.hawaii.edu/wp-content/uploads/2018/06/Kulana-Noii-low-res-web.pdf>.

<sup>38</sup> Jeffrey S. Pigati et al., *Independent Age Estimates Resolve the Controversy of Ancient Human Footprints at White Sands*, 382 *Science*, 73–75 (2023), <https://www.science.org/doi/10.1126/science.adh5007>.

<sup>39</sup> Charles C. Mann, 1491: New Revelations of the Americas Before Columbus (2011).

<sup>40</sup> See Kevin Gover, Assistant Secretary—Indian Affairs, U.S. Department of the Interior, *Keynote Remarks on the 175th Anniversary of the Establishment of the Bureau of Indian Affairs* (March 1999), <https://www.bia.gov/sites/default/files/dup/assets/as-ia/opa/pdf/idc1-032248.pdf>.

<sup>41</sup> Bryan Newland, Assistant Secretary—Indian Affairs, *U.S. Department of the Interior, Federal Indian Boarding School Initiative Investigative Report* (2022) (hereafter Boarding School Investigative Report) at 93, [https://www.bia.gov/sites/default/files/dup/inline-files/bsi\\_investigative\\_report\\_may\\_2022\\_508.pdf](https://www.bia.gov/sites/default/files/dup/inline-files/bsi_investigative_report_may_2022_508.pdf).

<sup>42</sup> *Id.* at 21, citing Committee on Labor and Public Welfare, Indian Education: A National Tragedy—A National Challenge, S. Rep., No. 91-501 at 143 (1969).

<sup>43</sup> See Guidance for Federal Departments and Agencies on Indigenous Knowledge <https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf>.

<sup>44</sup> Boarding School Investigative Report at 32.

<sup>45</sup> *Id.*

<sup>46</sup> *Id.* at 33.

<sup>47</sup> *Id.* at 32.

<sup>48</sup> U.S. Geological Survey, Gap Analysis Project (GAP), *Protected Areas Database of the United States (PAD-US) 3.0*: U.S. Geological Survey Data Release (2022), <https://doi.org/10.5066/P9Q9LQ4B>.

<sup>49</sup> Act of May 28, 1830, 4 Stat. 411.

<sup>50</sup> U.S. Department of State, Office of the Historian, *Milestones: 1830–1860* <https://history.state.gov/milestones/1830-1860/indian-treaties>.

<sup>51</sup> U.S. Department of the Interior, National Park Service, *History and Culture*, <https://www.nps.gov/trte/learn/historyculture/index.htm>.

<sup>52</sup> Pub. L. 31–14 (Feb. 27, 1851).

<sup>53</sup> Act of February 8, 1887, Ch. 119, §1, 24 Stat. 388.

<sup>54</sup> Act of February 8, 1887, Ch. 119, 24 Stat. 388. Individual tribal members included heads of households, single adults, minor orphans, and other single minors. Some of the treaties between the United States and specific tribes contained similar allotting provisions. Other reservation-specific allotment acts had different requirements, see Act of May 30, 1908, P.L. 177, 35 Stat. 558.

<sup>55</sup> Senate Report 112–166, Amending the Act of June 18, 1934, to Reaffirm the Authority of the Secretary of the Interior to Take Land into Trust for Indian Tribes (May 17, 2012), at 4.

<sup>56</sup> *Id.*

<sup>57</sup> 20 U.S.C. § 7512(3).

<sup>58</sup> *Id.*

<sup>59</sup> *Id.* at 71.

<sup>60</sup> Pub. L. 103–150, 107 Stat. 1510 (Nov. 23, 1993), Joint Resolution to acknowledge the 100th anniversary of the January 17, 1893 overthrow of the Kingdom of Hawaii, and to offer an apology to Native Hawaiians on behalf of the United States for the overthrow of the Kingdom of Hawaii.

<sup>61</sup> 30 Stat. 750–[No. 55] (July 7, 1898), Joint Resolution to provide for annexing the Hawaiian islands to the United States.

<sup>62</sup> Lewis Meriam, Institute for Government Research, *The Problem of Indian Administration* (1928).

<sup>63</sup> United States Department of the Interior, Bureau of Indian Affairs, *Benefits of Trust Land Acquisition (Fee to Trust)*, <https://www.bia.gov/service/trust-land-acquisition/benefits-trust-land-acquisition>. In addition to trust lands, Tribes and individual Tribal members can hold land in fee simple and in fee subject to Federal restrictions against alienation, <https://www.bia.gov/bia/ots/fee-to-trust>.

<sup>64</sup> Pub. L. 92–203, § 2 (Dec. 18, 1971).

<sup>65</sup> U.S. Geological Survey, Gap Analysis Project (GAP), *Protected Areas Database of the United States (PAD-US) 3.0*: U.S. Geological Survey Data Release (2022), <https://doi.org/10.5066/P9Q9LQ4B>; Bureau of Indian Affairs, *Alaska Native Villages GIS Layer* (2022), [https://biamaps.geoplatform.gov/server/rest/services/RegARO/Alaska\\_Native\\_Villages/MapServer](https://biamaps.geoplatform.gov/server/rest/services/RegARO/Alaska_Native_Villages/MapServer); Secretariat of the Pacific Regional Environment Programme Environmental Monitoring and Governance, *Pacific Island Region Spatial Data* (2022), <https://pacific-data.sprep.org/dataset/pacific-island-region-spatial-data>.

<sup>66</sup> Boarding School Investigative Report at 27.

<sup>67</sup> *Id.* at 6.

<sup>68</sup> Direct action taken to assimilate Indigenous Peoples and their knowledge systems has been termed epistemicide. Epistemicide is the killing, silencing, annihilation, or devaluing of a knowledge system. Epistemicide happens when epistemic injustices are persistent, systematic, and collectively work as a structured oppression of particular ways of knowing; see Beth Patin, et al., *Interrupting Epistemicide: A Practical Framework for Naming, Identifying, and Ending Epistemic Injustice in the Information Professions* (2017), <https://doi.org/10.1002/asi.24479>.

<sup>69</sup> Boarding School Investigative Report at 93.

<sup>70</sup> *Id.* at 7.

<sup>71</sup> *Id.*

<sup>72</sup> National Underground Railroad Freedom Center, <https://freedomcenter.org/learn/online-learning-resources/online-exhibits/us-settler-colonialism-and-native-american-resistance/>.

<sup>73</sup> Britannica, Sun Dance, <https://www.britannica.com/topic/Sun-Dance>.

<sup>74</sup> See Paul F. Lucas, *E Ola Mau Kakou I Ka Olelo Makuahine: Hawaiian Language Policy and the Courts*, 34 *Hawaiian J. Hist.* 1 (2000); see also Ralph S. Kuykendall, *The Hawaiian Kingdom Vol. I*, at 360–62 (1965). See generally, Maenette K.P. Ah Nee Benham and Ronald H. Heck, *Culture and Educational Policy in Hawaii: The Silencing of Native Voices* (ch. 3, 1998); Susan K. Serrano, and D. Kapuaala Sproat, eds., (2015).

<sup>75</sup> Senate Report 112–166 Amending the Act of June 18, 1934, to Reaffirm the Authority of the Secretary of the Interior to Take Land into Trust for Indian Tribes (May 17, 2012).

<sup>76</sup> See H. Con. Res. No. 108, 67 Stat. B132 (Aug. 1, 1953).

<sup>77</sup> David E. Wilkins and Heidi Kiiwetinepinesik, *American Indian Politics and the American Political System* (2d ed., 2006).

<sup>78</sup> S. Lyman Tyler, *The Recent Urbanization of the American Indian*, in *Essays on the American West, 1973–1974*, 44 (Thomas G. Alexander, ed., 1975).

<sup>79</sup> Larry W. Burt, *Roots of the Native American Urban Experience: Relocation Policy in the 1950s*. 10 *American Indian Quarterly*, 85–99 (Spring 1986), [https://www.jstor.org/stable/1183982?item\\_view=read\\_online](https://www.jstor.org/stable/1183982?item_view=read_online).

<sup>80</sup> Public Law 93–638 (Jan. 4, 1975).

<sup>81</sup> See generally, Boarding School Investigative Report; see also Kevin Gover, Assistant Secretary—Indian Affairs, U.S. Department of the Interior, *Keynote Remarks on the 175th Anniversary of the Establishment of the Bureau of Indian Affairs* (March 1999), <https://www.bia.gov/sites/default/files/dup/assets/as-ia/opa/pdf/idc1-032248.pdf>.

<sup>82</sup> Tori DeAngelis, *The Legacy of Trauma*, 50 *Monitor on Psychology*, 36 (2019), <https://www.apa.org/monitor/2019/02/legacy-trauma>.

<sup>83</sup> See Peter Menzies, *Intergenerational Trauma from a Mental Health Perspective*, 7 *Native Social Work Journal*, 63–85 (2010), <https://www.collectionscanada.gc.ca/obj/thesescanada/vol2/OSUL/TC-OSUL-384.PDF>.

<sup>84</sup> Kyle Whyte et al., *Tribes and Indigenous Peoples*, in *Fifth National Climate Assessment* (A.R. Crimmins et al., eds., 2023), <https://doi.org/10.7930/NCA5.2023.CH16>.

<sup>85</sup> See 301 DM §§ 7.6 (A)(6) and 7.6 (B)(5).

<sup>86</sup> See Bureau of Indian Affairs, [https://www.bia.gov/jobs/Indian\\_Preference](https://www.bia.gov/jobs/Indian_Preference).

<sup>87</sup> See 41 C.F.R. § 60-1.5(a)(7).

<sup>88</sup> See U.S. Department of the Interior, Intergovernmental Personnel Act (IPA) Mobility Program, <https://www.doi.gov/pmb/hr/ipa-mobility-program>.

<sup>89</sup> 5 U.S.C. § 3371 *et seq.*; 5 C.F.R. Part 334.

<sup>90</sup> Pub. L. 93-638 (Jan. 4, 1975).

<sup>91</sup> 301 DM 7.

<sup>92</sup> The guidance provided in this diagram comes from Ellam Yua, et al., *A Framework for Co-Production Of Knowledge in the Context of Arctic Research*, 27 *Ecology and Society* (2022), <https://doi.org/10.5751/ES-12960-270134>. This article uses the plural Indigenous Knowledges throughout.

<sup>93</sup> See Derek Armitage, et al., Co-Management and the Co-Production of Knowledge: Learning to Adapt in Canada's Arctic, 21 *Global Environmental Change*, 995–1004 (2011), <https://www.sciencedirect.com/science/article/abs/pii/S0959378011000665>

<sup>94</sup> See Ellam Yua, et al., *A Framework for Co-Production Of Knowledge in the Context of Arctic Research*, 27 *Ecology and Society* (2022), <https://doi.org/10.5751/ES-12960-270134>.

<sup>95</sup> 301 DM § 7.6 A (1).

<sup>96</sup> “Departmental action with Tribal implications” means “any Departmental regulation, rulemaking, policy, guidance, legislative proposal, plan, programmatic or operational activity, or grant or funding formula changes that may have a substantial direct effect on a Tribe in matters...” 512 DM 4.3 (B).

<sup>97</sup> 512 DM 4, <https://www.doi.gov/document-library/departamental-manual/512-dm-4-department-interior-policy-consultation-indian-0>; 512 DM 5, [https://www.doi.gov/sites/doi.gov/files/elips/documents/512-dm-5\\_2.pdf](https://www.doi.gov/sites/doi.gov/files/elips/documents/512-dm-5_2.pdf).

<sup>98</sup> 512 DM § 4.4.

<sup>99</sup> 512 DM 5.4 (A).

<sup>100</sup> *Id.*

<sup>101</sup> 301 DM § 7.6 (A)(2).

<sup>102</sup> Ellam Yua, et al., *A Framework for Co-Production Of Knowledge in the Context of Arctic Research*, 27 *Ecology and Society* (2022), <https://doi.org/10.5751/ES-12960-270134>.

<sup>103</sup> See the Tribal Treaties Database, Oklahoma State University Libraries, to access Tribal treaties and agreements, <https://treaties.okstate.edu/>.

<sup>104</sup> Tribal Consultation Page, <https://www.doi.gov/priorities/tribal-consultation>.

<sup>105</sup> 301 DM § 7.6 (A)(2).

<sup>106</sup> Title II of the Foundations for Evidence-Based Policymaking Act of 2018, Public Law 115-435.

<sup>107</sup> See U.S. Department of Health and Human Services, Office for Human Research Protections, <https://www.hhs.gov/ohrp/index.html>.

<sup>108</sup> U.S. Department of Health and Human Services, Office for Human Research Protections, *Supporting Ethical Research Involving American Indian/Alaskan Native (AI/AN) Populations*, <https://www.hhs.gov/ohrp/education-and-outreach/educational-collaboration-with-ohrp/workshops/ohrp-hosted-workshops-aug2021/index.html>.

<sup>109</sup> Dominique M. David-Chavez and Michael C. Gavin, *A Global Assessment of Indigenous Community Engagement in Climate Research*, 13 *Environmental Research Letters* (2018), <https://tribalclimateguide.uoregon.edu/literature/global-assessment-indigenous-community-engagement-climate-research>; Anne D. Grant et al., *A Research Publication and Grant Preparation Program for Native American Faculty in STEM: Implementation of the Six R's Indigenous Framework*, 12 *Frontiers in Psychology* (2022), <https://www.frontiersin.org/articles/10.3389/fpsyg.2021.734290/full>.

<sup>110</sup> Shawn Wilson, *What is an Indigenous Perspective*, 25 *Canadian Journal of Native Education*, 175–179 (2001), <https://ojs.library.ubc.ca/index.php/CJNE/article/view/196958/191991>.

<sup>111</sup> Aileen Moreton-Robinson and M. Walter, *Indigenous Methodologies in Social Research*, in *Social Research Methods* (A. Bryman, ed., 1999); Cora-Weber Pillwax, *Indigenous Research Methodology: Exploratory Discussion of an Elusive Subject*, 33 *The Journal of Educational Thought*, <https://www.jstor.org/stable/2e0c4d46-1e0a-323a-bdfe-0536b45cbcc2?read-now=1&seq=12>.

<sup>112</sup> 301 DM § 7.6 (A)(4).

<sup>113</sup> See Henry P. Huntington, *Observations on the Utility of the Semi-Directive Interview for Documenting Traditional Ecological Knowledge*, 51 *Arctic*, 201–300 (1998), <https://journalhosting.ucalgary.ca/index.php/arctic/article/view/64121>. In the semi-directive interview, the participant or participants are guided in the discussions by the interviewer, but the direction and scope of the interview are allowed to follow the associations identified by the participant. There is no fixed questionnaire, nor is there a preset limit on the time for discussions, although a list of topics may be a useful reference, helping the interviewer cover important areas while allowing the participants to add or skip topics depending on their interest and expertise.

<sup>114</sup> See Thomas A. Schwandt. *The Sage Dictionary of Qualitative Inquiry*, “Interviewing, Types of.” (2007).

<sup>115</sup> See Melinda Laituri, et al., *Questioning the Practice of Participation: Critical Reflections on Participatory Mapping as a Research Tool*, 152 *Applied Geography* (2023), <https://www.sciencedirect.com/science/article/abs/pii/S0143622823000310?via%3Dihub>.

<sup>116</sup> *Human subject* “means a living individual about whom an investigator (whether professional or student) conducting research (i) obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or (ii) obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens” 46 C.F.R. § 46.102 (e)(1). *Research* “means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Activities that meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program that is considered research for other purposes. For example, some demonstration and service programs may include research activities . . . .” 46 C.F.R. § 46.102 (l). See also Jennifer Sepez, *Introduction to Traditional Environmental Knowledge in Federal Natural Resource Management Agencies*, 27 *Practicing Anthropology*, 2–6 (2005).

<sup>117</sup> 45 C.F.R. §46.102(e)(1).

<sup>118</sup> See The National Institutes of Health Decision Tool to Determine if Your Action is Human Subjects Research, <https://grants.nih.gov/policy/humansubjects/hs-decision.htm>.

<sup>119</sup> <https://www.colorado.edu/researchinnovation/irb/getting-started/does-my-research-require-irb-review>.

<sup>120</sup> 45 C.F.R. § 46.102(i).

<sup>121</sup> Subpart A of 45 C.F.R. Part 46, Basic HHS Policy For Protection of Human Subjects, as revised January 19, 2017, and amended on January 22, 2018, and June 19, 2018. §46.104 Exempt research.

<sup>122</sup> See National Park Service, *Indigenous Knowledge and Traditional Ecological Knowledge, Tribal Research Policies, Processes and Protocols*, <https://www.nps.gov/subjects/tek/tribal-policies-processes-and-protocols.htm>.

<sup>123</sup> CITI Program, *Social-Behavioral-Educational (SBE) Comprehensive*, <https://about.citiprogram.org/course/human-subjects-research-2/>.

<sup>124</sup> Roger Poole, *Towards Deep Subjectivity* (1972).

<sup>125</sup> Willie Ermine. *The Ethical Space of Engagement*. 6 *Indigenous Law Journal*, 193 (2007).

<sup>126</sup> See Compass, *Ethical Space: Indigenous Engagement for Environmental Science Professionals*, <https://www.compasscomm.org/ethical-space-indigenous-engagement-for-environmental-science-professionals/>.

<sup>127</sup> Sea Grant, University of Hawaii, *Kūlana Noi‘i*, <https://seagrant.soest.hawaii.edu/wp-content/uploads/2018/06/Kulana-Noii-low-res-web.pdf>.

<sup>128</sup> See Erin L. Bohensky and Yiheyis Maru (2011), as cited in Reid, A.J., et al. “*Two-Eyed Seeing*”: *An Indigenous Framework to Transform Fisheries Research and Management*, 22 *Fish and Fisheries*, 243–261 (2021), <https://onlinelibrary.wiley.com/doi/full/10.1111/faf.12516>.

<sup>129</sup> See Arun Agrawal, *Dismantling the Divide Between Indigenous and Scientific Knowledge*, 26 *Development and Change*, 413–439 (1995), <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-7660.1995.tb00560.x>.

<sup>130</sup> See Alice Benessia et al. (2012); Jayalaxshmi Mistry and Andrea Berardi (2016); and Raymond Pierotti and Daniel Wildcat (2000), as cited in Andrea J. Reid, et al., “*Two-Eyed Seeing*”: *An Indigenous Framework to Transform Fisheries Research and Management*, 22 *Fish and Fisheries*, 243–261 (2021), <https://onlinelibrary.wiley.com/doi/full/10.1111/faf.12516>.

<sup>131</sup> See Nicole M. Herman-Mercer, et al. *Climate- and Disturbance-Driven Changes in Subsistence Berries in Coastal Alaska: Indigenous Knowledge to Inform Ecological Inference*, 48 *Human Ecology*, 85–99 (2020), at <https://link.springer.com/article/10.1007/s10745-020-00138-4>.

<sup>132</sup> See <https://www.doi.gov/ocio/policy-mgmt-support/information-and-records-management/iq> and Section 515 of <https://www.govinfo.gov/app/details/PLAW-106publ554> (Pub. L. No. 106-554, 114 Stat 2763, § 515 (codified at 44 U.S.C. §§ 3504(d)(1), 3516)).

<sup>133</sup> See <https://www.doi.gov/performance/evidence-doi> and <https://www.govinfo.gov/app/details/PLAW-115publ435>

<sup>134</sup> See [www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf](https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf).

<sup>135</sup> See Inuit Circumpolar Council Alaska, *Alaskan Inuit Food Security Conceptual Framework: How to Assess the Arctic from an Inuit Perspective—Technical Report* (2015), <https://repository.oceanbestpractices.org/handle/11329/1828>.

<sup>136</sup> See Maria Tengö, et al., *Connecting Diverse Knowledge Systems for Enhanced Ecosystem Governance: The Multiple Evidence Base Approach*, 43 *Ambio*, 579–591 (2014). <https://link.springer.com/article/10.1007/s13280-014-0501-3> and Maria Tengö, et al., *The Multiple Evidence Base as a Framework*

for Connecting Diverse Knowledge Systems in the IPBES. Discussion Paper 2012-06-04. Stockholm Resilience Centre (SRC), Stockholm University, Sweden (2014).

<sup>137</sup> Pub. L. No. 106-554 (Dec. 21, 2000), 114 Stat 2763, § 515 (codified at 44 U.S.C. §§ 3504(d)(1), 3516).

<sup>138</sup> Office of Management and Budget, Final Information Quality Bulletin for Peer Review (Dec. 16, 2004), <https://obamawhitehouse.archives.gov/sites/default/files/omb/assets/omb/memoranda/fy2005/m05-03.pdf>

<sup>139</sup> Office of Management and Budget, Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies; Republication, 67 Fed. Reg. 8452 (Feb. 22, 2002), <https://www.federalregister.gov/d/R2-59>;

Office of Management and Budget, Final Information Quality Bulletin for Peer Review, 70 Fed. Reg. 2664 (Jan. 14, 2005), <https://www.federalregister.gov/d/05-769>;

Office of Management and Budget, Memorandum to the Heads of Executive Departments and Agencies, Improving Implementation of the Information Quality Act, M-19-15, (April 24, 2019), <https://www.cdo.gov/assets/documents/OMB-Improving-Implementation-of-Info-Quality-Act-M-19-15.pdf>.

<sup>140</sup> 301 DM § 7.6 (B)(4)(c).

<sup>141</sup> 512 DM 4, [https://www.doi.gov/sites/doi.gov/files/elips/documents/512-dm-4\\_2.pdf](https://www.doi.gov/sites/doi.gov/files/elips/documents/512-dm-4_2.pdf); see also 512 DM 5-6 for additional information on building consensus.

<sup>142</sup> U.S. Department of the Interior, Office of Collaborative Action and Dispute Resolution, <https://www.doi.gov/pmb/cadr>.

<sup>143</sup> 5 U.S.C. § 552.

<sup>144</sup> Title II of the Foundations for Evidence-Based Policymaking Act of 2018, Pub. L. 115-435.

<sup>145</sup> See U.S. Geological Survey Data Management Guidance, Proprietary and Sensitive Data, <https://www.usgs.gov/data-management/proprietary-and-sensitive-data>

<sup>146</sup> 42 U.S.C. § 4321 *et seq.*

<sup>147</sup> 16 U.S.C. § 470aa *et seq.*

<sup>148</sup> Pub. L. 89-665, 80 Stat. 915, as amended (Oct. 15, 1966).

<sup>149</sup> See U.S. Department of the Interior Privacy Policies and References, [doi.gov/privacy/policies-references](https://www.doi.gov/privacy/policies-references).

<sup>150</sup> See Stephanie Russo Carroll, et al., *Indigenous Data Governance: Strategies from United States Native Nations*, 18 Data Science Journal, 31 (2019), <https://datascience.codata.org/articles/10.5334/dsj-2019-031>; Stephanie Carroll Rainie, et al., *Data as a Strategic Resource: Self-Determination, Governance, and the Data Challenge for Indigenous Nations in the United States*, 8 The International Indigenous Policy Journal, 1–29 (2017), <https://nni.arizona.edu/publications/data-strategic-resource-self-determination-governance-and-data-challenge-indigenous-nations>; Tahu Kulutai and John Taylor, eds., *Indigenous Data Sovereignty, Toward an Agenda* (2016).

<sup>151</sup> 65 Fed. Reg. 67249 (Nov. 6, 2000).

<sup>152</sup> Mark D. Wilkinson, et al., *The FAIR Guiding Principles for Scientific Data Management and Stewardship*, 3 Scientific Data (2016), <https://doi.org/10.1038/sdata.2016.18>.

<sup>153</sup> See Dawei Lin, et al., *The TRUST Principles for Digital Repositories*, 7 Scientific Data, (2020), <https://doi.org/10.1038/s41597-020-0486-7>.

<sup>154</sup> See Federal Data Strategy—Data Ethics Framework (2019), <https://resources.data.gov/assets/documents/fds-data-ethics-framework.pdf>.

<sup>155</sup> Pub. L. 96-487 sec. 101, 94 Stat. 2371 (Dec. 2, 1980).

<sup>156</sup> Jeffrey J. Brooks, et al. *Indigenous Knowledge and Species Assessment for the Alexander Archipelago Wolf: Successes, Challenges, and Lessons Learned*, 88 Journal of Wildlife Management (2024), <https://doi.org/10.1002/jwmg.22563>

<sup>157</sup> Steve J. Langdon, *Spiritual Relations, Moral Obligations and Existential Continuity: The Structure and Transmission of Tlingit Principles and Practices of Sustainable Wisdom*, in *Indigenous Sustainable Wisdom: First-Nation Know-How for Global Flourishing* (Darcia Narvaez, Four Arrows (Don Trent Jacobs), Eugene Halton, Brian Collier, and Georges Enderle, eds., 2019); and Jeffrey J. Brooks, et al., *Indigenous Engagement with the Alexander Archipelago Wolf: An Applied Study of Culture and Traditional Ecological Knowledge*, Interim Report Published with the Species Status Assessment (2022), [https://www.fws.gov/media/2023\\_Brooksetal\\_AAWolf\\_TEK](https://www.fws.gov/media/2023_Brooksetal_AAWolf_TEK).

<sup>158</sup> Sealaska Heritage Institute, Research Policy (2004).

<sup>159</sup> Alaska Native Knowledge Network. Guidelines for Respecting Cultural Knowledge (2000), <http://ankn.uaf.edu/Publications/Knowledge.html>.

<sup>160</sup> Interagency Arctic Research Policy Committee. Principles for Conducting Research in the Arctic (2018).

<sup>161</sup> *Id.* at 156.

<sup>162</sup> *Id.*

<sup>163</sup> See Stephen J. Langdon, et al., Sealaska Heritage Institute, Indigenous Engagement with the Alexander Archipelago Wolf: Cultural Context and Traditional Ecological Knowledge, Final Report, Cooperative Agreement Number F22AC00887 (2023), Submitted to the U.S. Fish and Wildlife Service, <https://www.fws.gov/AAWolf-FinalReport>.

<sup>164</sup> *Id.* at 156.

<sup>165</sup> *Id.*

<sup>166</sup> <https://www.hhs.gov/ohrp/regulations-and-policy/regulations/finalized-revisions-common-rule/index.html>

<sup>167</sup> 42 U.S.C. § 4321 *et seq.*

<sup>168</sup> 40 C.F.R. § 1508.1(r).

<sup>169</sup> 42 U.S.C. § 4332 (A).

<sup>170</sup> 40 C.F.R. § 1502.15(b).

<sup>171</sup> 43 C.F.R. § 46.225(d).

<sup>172</sup> 40 C.F.R. § 1502.4; 43 C.F.R. § 46.235(a).

<sup>173</sup> 40 C.F.R. § 1502.4.

<sup>174</sup> 16 U.S.C. § 1531 *et seq.*; see also <https://www.fws.gov/program/cites>.

<sup>175</sup> Joint Secretarial Order No. 3206, American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act (June 5, 1997), [https://www.doi.gov/sites/doi.gov/files/elips/documents/3206\\_-\\_american\\_indian\\_tribal\\_rights\\_federal-tribal\\_trust\\_responsibilities\\_and\\_the\\_endangered\\_species\\_act.pdf](https://www.doi.gov/sites/doi.gov/files/elips/documents/3206_-_american_indian_tribal_rights_federal-tribal_trust_responsibilities_and_the_endangered_species_act.pdf).

<sup>176</sup> Pub. L. 108-278 (July 22, 2004).

<sup>177</sup> Pub. L. 89-665 (Oct. 15, 1996).

<sup>178</sup> Native Hawaiian organizations serve as the informal representatives of the Native Hawaiian Community. See 502 DM 1.5G; U.S. Department of the Interior Office of Native Hawaiian Relations Standard Operating Procedures for Consultation with the Native Hawaiian Community, Section 1B.

<sup>179</sup> Pub. L. 101-601 (Nov. 16, 1990).

<sup>180</sup> 43 C.F.R. Part 10, especially the definitions of human remains and types of cultural items in Section 10.2 and the criteria for determination of cultural affiliation in Section 10.3(a)(1)(x).

<sup>181</sup> Pub. L. 96-95 (Oct. 31, 1979); see also <https://www.nps.gov/subjects/archeology/archaeological-resources-protection-act.htm>

<sup>182</sup> 16 U.S.C. § 470hh.

<sup>183</sup> 16 U.S.C. § 470hh (b)(3).

<sup>184</sup> See footnote 5 in Appendix 4.

<sup>185</sup> 54 U.S.C. § 307103—Access to information, typically still referred to by its original codification, Section 304.

<sup>186</sup> Advisory Council on Historic Preservation, *Frequently Asked Questions on Protecting Sensitive Information About Historic Properties Under Section 304 of the NHPA*, <https://www.achp.gov/digital-library-section-106-landing/frequently-asked-questions-protecting-sensitive-information>

<sup>187</sup> See U.S. Department of the Interior, *Acquisition*, <https://www.acquisition.gov/>

<sup>188</sup> See U.S. Department of the Interior, *Acquisition Regulation*, <https://www.acquisition.gov/diar>

<sup>189</sup> See U.S. Department of the Interior, *Office of Acquisition and Property Management*, <https://www.doi.gov/pam>

<sup>190</sup> See U.S. Government Accountability Office, *The Red Book*, <https://www.gao.gov/legal/appropriations-law/red-book>

<sup>191</sup> See [www.sam.gov](http://www.sam.gov)

<sup>192</sup> See the Primer on the Buy Indian Opportunity at [https://www.bia.gov/sites/default/files/dup/assets/as-ia/ieed/Primer%20on%20Buy%20Indian%20Act%20508%20Compliant%202.6.18\(Reload\).pdf](https://www.bia.gov/sites/default/files/dup/assets/as-ia/ieed/Primer%20on%20Buy%20Indian%20Act%20508%20Compliant%202.6.18(Reload).pdf) and DIAR Part 1480 Acquisitions under Buy Indian Act at <https://www.acquisition.gov/diar/part-1480-acquisitions-under-buy-indian-act>

<sup>193</sup> See DOI Office of Grants Management at <https://www.doi.gov/grants> and the Code of Federal Regulations at <https://www.ecfr.gov/current/title-2/subtitle-B/chapter-XIV/part-1401?toc=1>

<sup>194</sup> See DOI Purchase Card Policy, Purchase Card Program Policy - <https://www.doi.gov/pam/charge-card>.

<sup>195</sup> See Office of Small and Disadvantaged Business Utilization, <https://doi.gov/pmb/osdbu>

<sup>196</sup> See Intra and Inter Agreement Policy, <https://www.doi.gov/pam/acquisition/policy>.

<sup>197</sup> See U.S. Department of the Interior, *Financial and Business Management System* <https://www.doi.gov/pmb/fbms>.



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