Indigenous Knowledge and Data Sovereignty: Challenges and Opportunities

Frank K. Lake

- Education
  - 1995 B.S. University of California, Davis.
  - 2007 Ph.D Oregon State University
- USDA Forest Service-PSW Arcata/Orleans, Ca.
  - North Zone/Nor Cal. region
  - Tribal Liaison; WKRP and Redwood Ex. Forest Coordination
- Research
  - Traditional Ecological Knowledge and Ethnobiology
  - Fire Effects and Climate Change Impacts to Tribally Valued Habitats and Resources
- Management
  - Resource Advisor (REAF) on Wildland fires
  - Interdisciplinary team assignments

Field research with academic and tribal members: Photo Karuk Tribe

The findings and conclusions in this presentation are those of the author and should not be construed to represent any official USDA or U.S. Government or Tribe's determination of policy

Cal Poly Humboldt-INRSEP: 1 Feb 2023

My presentation objectives and intent are to:

- Address recent federal government acknowledgement and recognition of Indigenous Knowledge and Indigenous Science frameworks, applications and approaches.
- Provide for your consideration my research approaches and lessons learned for working with tribes and indigenous communities.
- Share and discuss aspects of Indigenous Knowledge and Data Sovereignty learned from research experiences of working with tribes in the western United States among various partnership entities.

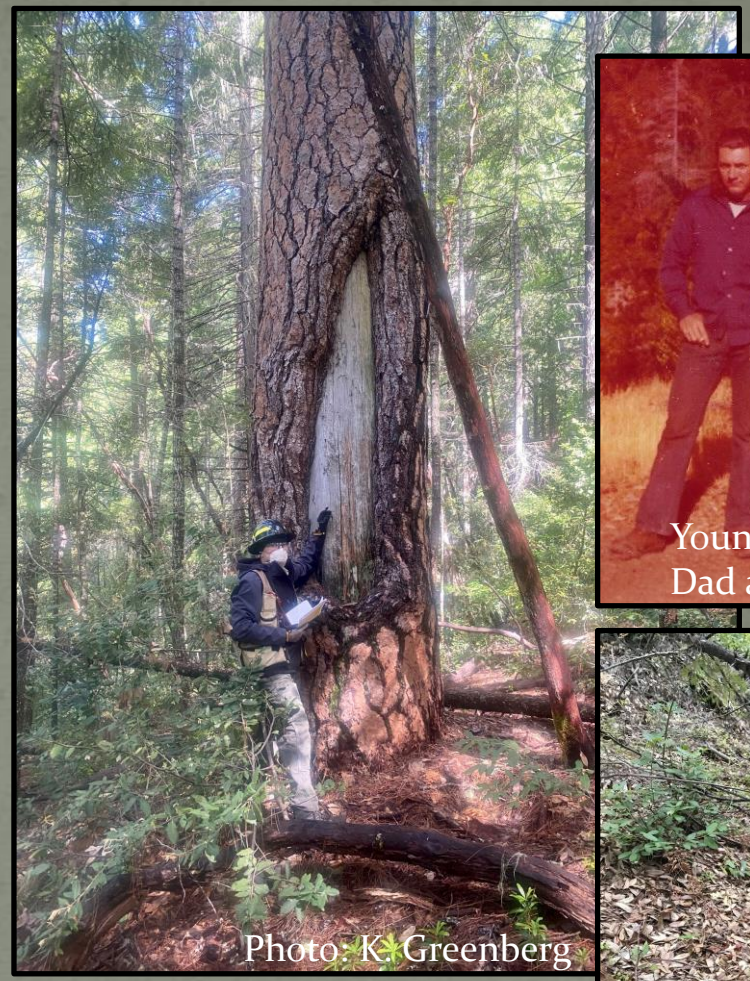


Photo: K. Greenberg

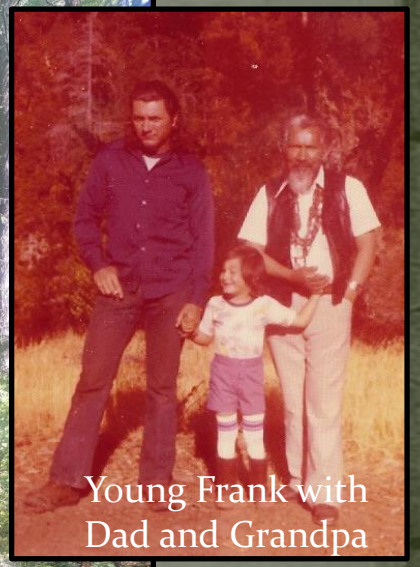
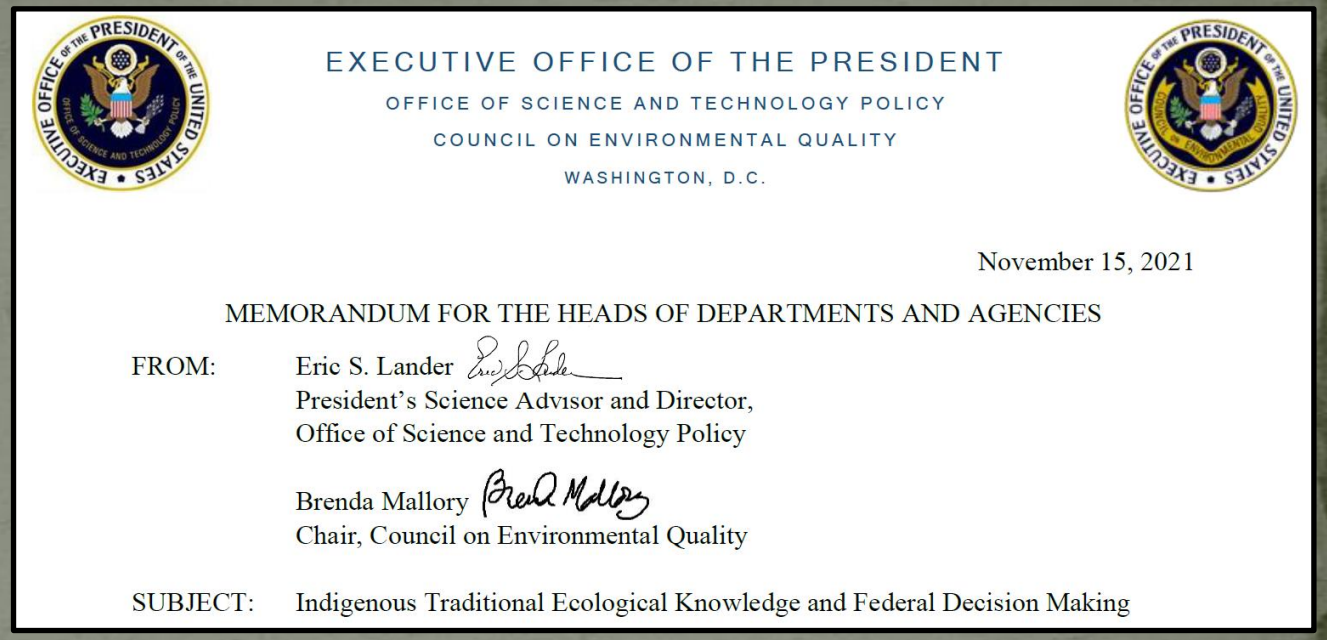

Young Frank with Dad and Grandpa


Photo: D. Sarna

To relate my lessons learned as a federal scientists and tribal knowledge holder/steward

Indigenous Traditional Ecological Knowledge:

- Biden-Harris Administration set for the national direction for federal departments and agencies consideration, acknowledgement, and applications of ITEK
- Federal Departments/Agencies are looking to tribes, tribal entities, internal subject matter experts to develop and revise existing guidance



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
COUNCIL ON ENVIRONMENTAL QUALITY
WASHINGTON, D.C.

November 15, 2021

MEMORANDUM FOR THE HEADS OF DEPARTMENTS AND AGENCIES

FROM: Eric S. Lander
President's Science Advisor and Director,
Office of Science and Technology Policy

Brenda Mallory
Chair, Council on Environmental Quality

SUBJECT: Indigenous Traditional Ecological Knowledge and Federal Decision Making

Consistent with the Administration's additional commitment to scientific integrity and knowledge- and evidence-based policymaking,[2] the White House Office of Science and Technology Policy (OSTP) and the White House Council on Environmental Quality (CEQ) issue this memorandum to recognize Indigenous Traditional Ecological Knowledge (ITEK)—a form of Indigenous Knowledge[3]—as one of the many important bodies of knowledge that contributes to the scientific, technical, social, and economic advancements of the United States and to our collective understanding of the natural world.

What is ITEK vs. TEK, TK, IK, Native Knowledge?

ITEK is a body of observations, oral and written knowledge, practices, and beliefs that promote environmental sustainability and the responsible stewardship of natural resources through relationships between humans and environmental systems. It is applied to phenomena across biological, physical, cultural and spiritual systems. ITEK has evolved over millennia, continues to evolve, and includes insights 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. ITEK is owned by Indigenous people—including, but not limited to, Tribal Nations, Native Americans, Alaska Natives, and Native Hawaiians.[4]

"The Federal Government has previously received request to develop guidance for Federal agencies on how to partner with Tribal Nations and Native organizations regarding the application of ITEK…Where *appropriate*, ITEK can and should inform Federal decision making along with scientific inquiry…"

ITEK = IK: Revisions following Tribal and SME review

DECEMBER 01, 2022

White House Releases First-of-a-Kind Indigenous Knowledge Guidance for Federal Agencies

CEQ › NEWS & UPDATES › PRESS RELEASES

Indigenous Knowledge is a body of observations, oral and written knowledge, innovations, practices, and beliefs developed by Tribes and Indigenous Peoples through interaction and experience with the environment.

- To develop the guidance, OSTP and CEQ led a working group of more than 25 Federal departments and agencies. The White House engaged more than a thousand individuals, organizations, and Tribal Nations on elevating Indigenous Knowledge in Federal decision making. Engagement included Nation-to-Nation Consultation, meetings, and input from more than 100 Federally recognized Tribes, public listening sessions, Native Hawaiian and Pacific Islander Roundtables, a Native and Indigenous Youth Roundtable, conference outreach, and dozens of individual meetings with others with experience and expertise on Indigenous Knowledge. In summer 2022, a draft of the guidance was released to Tribal Nations for consultation. Input from that consultation has shaped the final guidance.

Inclusion of Federal/FS-PSW and Tribal/NW Cal. Case Study

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
COUNCIL ON ENVIRONMENTAL QUALITY
WASHINGTON, D.C.

November 30, 2022

MEMORANDUM FOR HEADS OF FEDERAL DEPARTMENTS AND AGENCIES

FROM: Arati Prabhakar, Ph.D.
Assistant to the President and Director
Office of Science and Technology Policy

Brenda Mallory
Chair, Council on Environmental Quality

SUBJECT: Guidance for Federal Departments and Agencies on Indigenous Knowledge

I. Introduction

B. Indigenous Knowledge as Evidence

Indigenous Knowledge is a valid form of evidence for inclusion in Federal policy, research and decision making. Indigenous Knowledge and other forms of knowledge do not depend on each other for validation, and each system can support the insights of the other. Indigenous Knowledge and non-Indigenous scientific methodologies share many common features. For example, they: (1) systematically understand and explain ways of knowing; (2) share attributes such as use of systematic observation, innovation, and verification through repetition; (3) are derived from direct contact with the environment and evolve over time in response to new inputs; (4) share the need to make sense of the world and the desire to conduct practical and curiosity-driven investigations; and (5) can use empirical approaches.
Indigenous Knowledge can provide accurate information, valuable insights, and effective practices that complement practices and knowledge derived from other approaches. For example,

Federal Research Engagement to Support Tribal Climate Adaptation Indigenous Fire Stewardship, and Eco-cultural Revitalization

The USDA Forest Service Pacific Southwest Research Station (PSWRS) is a cooperative research partner with the Karuk and other tribes of northwestern California. The Karuk Tribe develops and pursues research partnerships with other Tribal entities, Federal, state, academic, and non-governmental organizations regarding the inclusion of Indigenous Knowledge in the full cycle of research. These partnerships are to guide, inform, and document natural resources management and co-management strategies. The Karuk Tribe initially formed a research

White House guidance on Indigenous Knowledge

- Understanding Indigenous Knowledge
- Growing and maintaining the mutually beneficial relationships with Tribal Nations and Indigenous peoples needed to appropriately include Indigenous Knowledge
- Considering, including, and applying Indigenous Knowledge in Federal research, policies, management, and decision making

- So how and in which ways is this federal recognition and acknowledgement of IK pertain to academic or private lands, such as those University properties, Conservancies, Land Trust or other larger NGO jurisdictions?

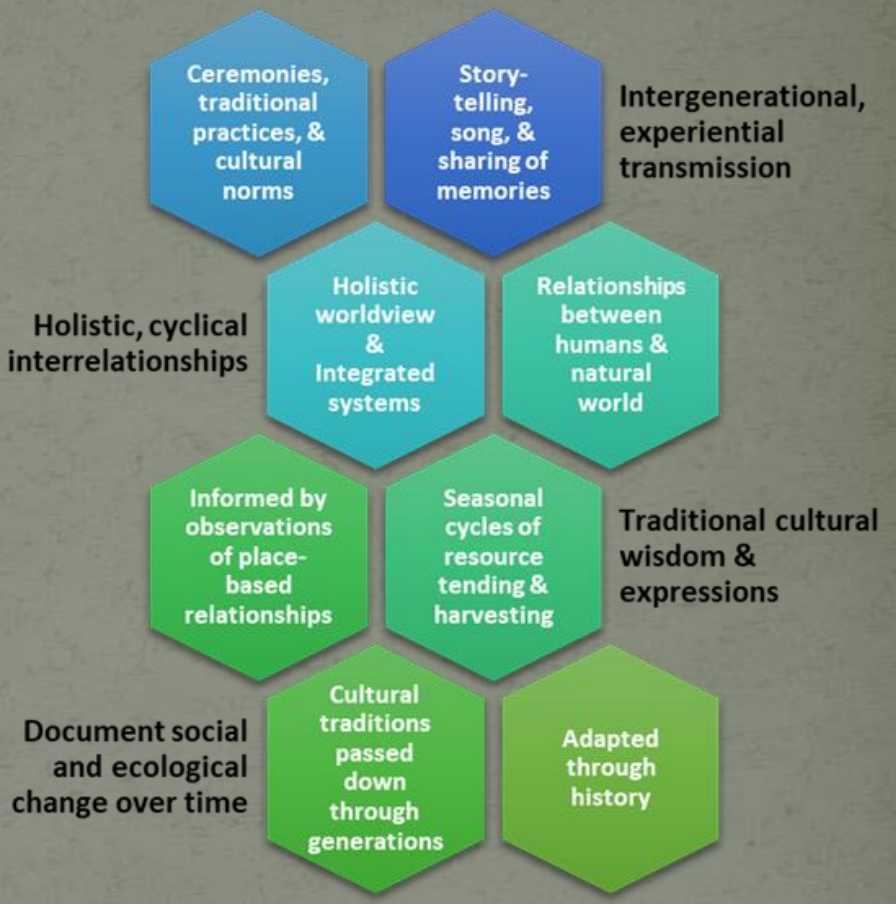
Example:
TNC-Indigenous Peoples and Local Communities: Building trust. Acknowledging the past. Listening always.
Lasting conservation must actively involve people and partners linked to the natural systems we seek to protect, and their voices must be at the center of what we do. We are continually learning and growing in how we show up as an authentic, ethical and effective conservation partner.

Why it is important to understand Tribal/Indigenous concerns for the use of IK?

- There is a Colonial history of federal actions against tribes/indigenous people that have sought to eliminate, degraded, reduced and hindered the use of IK and the associated cultural practices that support it.
  - Legacies of Genocide, Relocation, & Assimilation
- Colonial Western Academic's "Scientific Knowledge" has been purported as the "authoritative source" for evidence based, objective, rational guidance for research.
- There is history of Federal Government dismissal, exclusion, and marginalization of IK and often the opportunities to share it.
- Now IK is being sought and desired for research, management, and policy formation
  - Approaches are: Inclusive or Extractive?
- If shared, will IK be co-opted by science or management entities without adequate credit given to Tribes and Indigenous community members?
  - Intellectual property, knowledge sovereignty and genealogy of the IK that informed research.
  - How and who gets credit for IK?

There are several distinct characteristics of Indigenous Knowledge systems

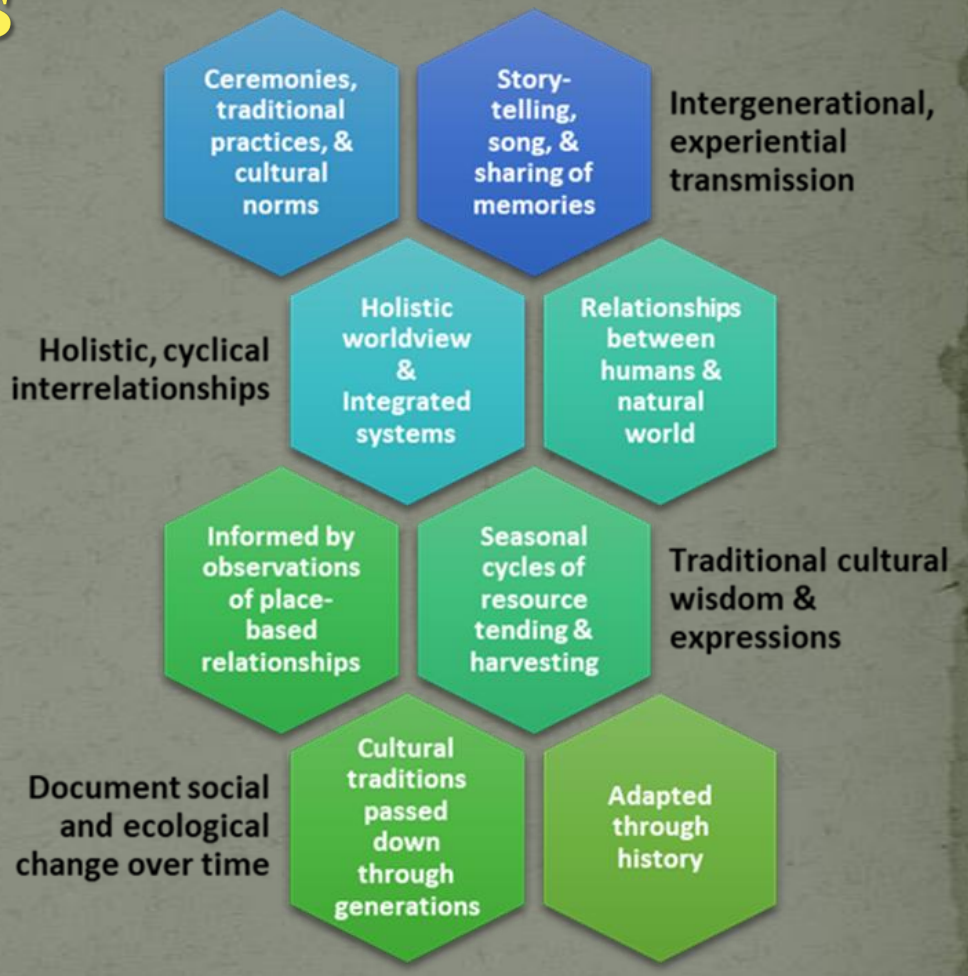
- 1. They are intergenerationally transmitted, often through ceremony and rituals, traditional practices, and cultural norms.
  - Oral tradition through storytelling, song, or wisdom recollection and sharing remains the primary mode of transmission.
- 2. Generally, they are based on a worldview of holistic, cyclical relationships between humans and the natural world throughout space and time (humans are an essential, fully integrated element of socioecological systems).



Approaches For Partnering With Tribal Nations in Research and Management: Steen-Adams et al. *In Press*

There are several distinct characteristics of Indigenous Knowledge systems

- 3. They are informed by observations of integrated human-nature systems that have accrued over multiple generations.
  - Knowledge has accrued often in association with the seasonal round of resource tending, such as fire use, and harvesting.
  - Such systems actively contribute to management decisions throughout a tribe's aboriginal territory.
- 4. They memorialize and integrate social and ecological changes over time into intergenerational cultural practices.
  - These practices, which have adapted throughout human history, have generated socially relevant and culturally appropriate intimate knowledge of natural processes and resources.



Approaches For Partnering With Tribal Nations in Research and Management: Steen-Adams et al. *In Review*

Reasons for Partnering with Tribes/Indigenous Communities?

Karuk Tribal Council meeting with Forest Service

Map: Yurok Tribe

Photo: Karuk Tribe

US Government to Tribal Government

[National to Local]:

Tribal Consultation directive, based in Federal Law and Trust Responsibility in

-Treaties

-Congressional Authorities

-Executive Orders

-Other Presidential, Legislative and Judicial directives.

Federal and Tribal Departments, Agencies, and Programs:

Resource management planning, research, and management, tribal ancestral territorial to landscape-level:

-Forests: Water/Fireshed landscapes

-Wildland Fire and Fuels: Regional to Treatment Units

-Climate vulnerability and adaptation

*Interdisciplinary multiple method approaches informed by ITEK

Crews/Families &

Person to Person:

Apply ITEK/Traditional Knowledge and Western Knowledge to area-site level planning, research & monitoring, and resource management and cultural stewardship activities by engagement of tribal elders/practitioners, scientists and resource specialists

Western Klamath Restoration Partnership Field Trip: USFS Scientists, Tribal & USFS District Staff and Tribal & Public Community Members

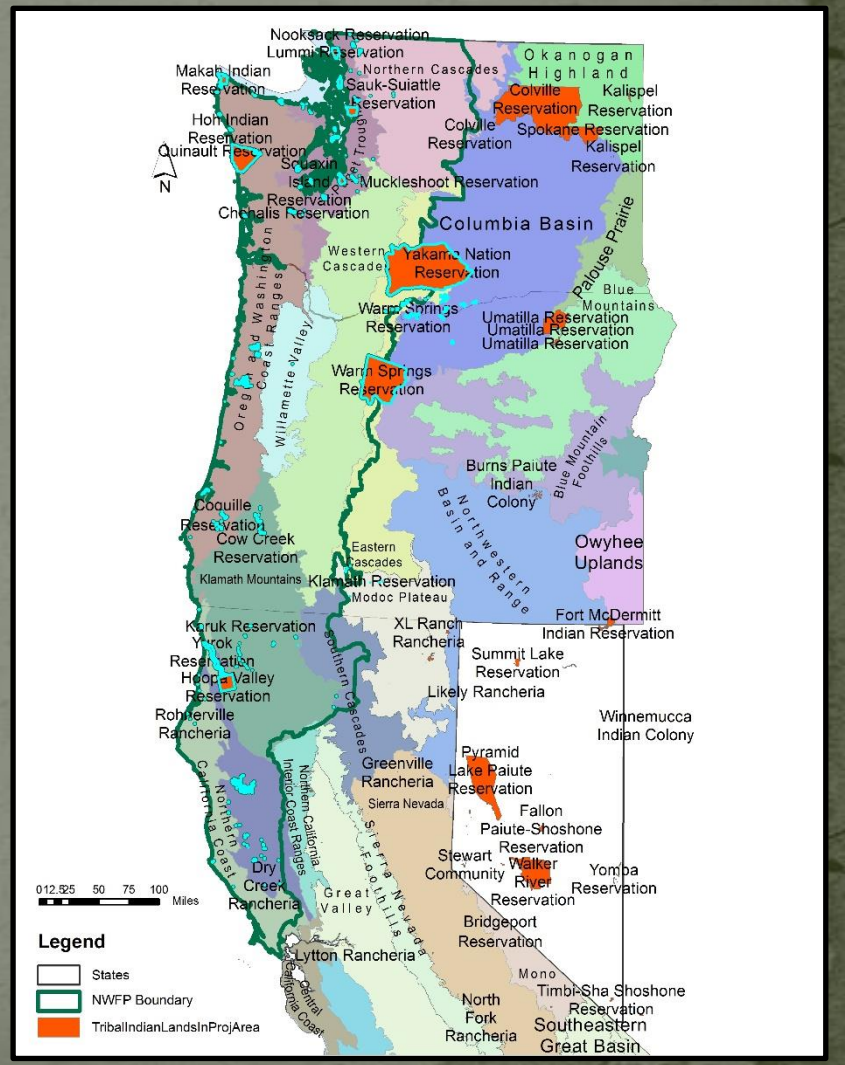
Federal Mandates/Direction or Organization Mission?
Inclusivity and Diversity of Scientific Approaches and Methods
Co-beneficiaries of Knowledge Systems Integration

Indigenous Knowledge Incorporation into Research, Management and Policies

- Indigenous Knowledge in the full cycle of creating the Best Available Science to inform management and with policy development resulting in co-beneficiaries and a form of justice.
  - Learning what the tribes and community/public science support needs and researchable questions are
  - IK/TEK to develop metrics, inform methodologies, analysis, results/findings, discussion, and recommendations -> *Best Available Science*
  - Application of Indigenous and Western Science improves management to achieve objectives and for socio-cultural values

Current efforts and expanding opportunities in working with Tribes through partnerships-

- Broadening and strengthening landscape, forest and watershed restoration research, planning, and management activities to fulfil federal Trust responsibilities and having Tribes and the public as co-beneficiaries as a result of the partnerships.
- Responding to the challenges of environmental degradation, conservation of at-risk species, wildfires, and climate change that acknowledge the strengths of tribal governance and socio-ecological systems for resilience and adaptation to benefit tribes and society.
  - Many federal and other funding entities have criteria for working with Tribes and Indigenous Communities



Partnership model considerations: Forest Landscape Restoration

Table 12.1 Partnership model types and scope of knowledge systems capacity for FLR

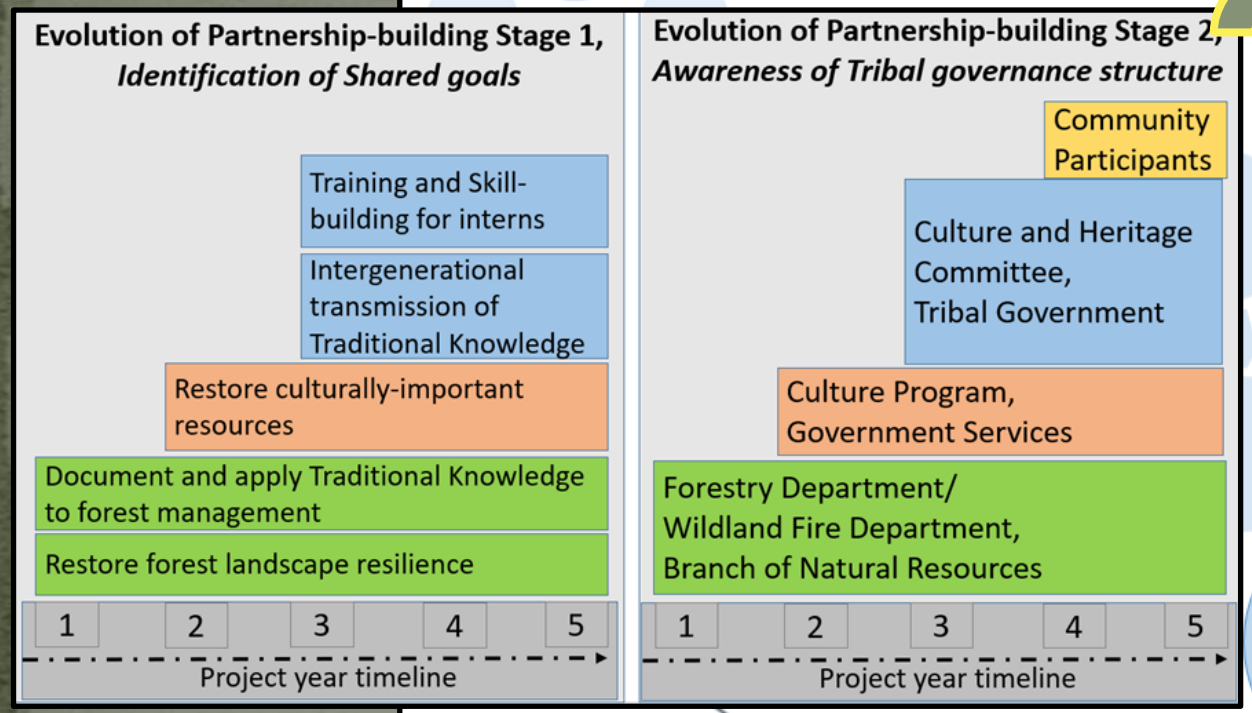
Model type	*Knowledge system application to FLR and resource management*	*Decision authority for resource use and management*	*Scope of expected landscape benefits (i.e. ecosystem services) to broader society versus local communities*	*Economic capacity affected by governance stability and global to local market economies*	*Rights to the management of specific geography: jurisdictional control or tenure ownership of resources*
Government	Western strongly favoured over local/Traditional	Centralized: government agency representatives often not living on the land	Broad, to address national-scale economic interest serving society, with some local resource interests	Higher to moderate, based on global to national capital market interest, e.g. carbon cap and trade revenue	Colonial-state controlled: national-scale policies/ authorities affect local community-scale rights
Collaborative	Both Western and local/Traditional, with the former often more prominent	Semi-centralized: mixed partner representatives, some living on land	Broad to regional, to support national economic interest and serving some local water, food and forest products interests	Moderate, based on national to regional market factors affecting resource and natural capital values	State/regional controlled: national scale with allowances for local stewardship and engagement
Community	Local/Traditional generally more prominent than Western	Decentralized: local/ traditional leadership living on land. Often hereditary or with elder councils	Regional to local, to support mostly local needs and serving some regional and fewer national resource interests	Lower to moderate, based on reduced dependency on national capital markets and greater reliance on local resources for security and livelihoods	Local/regional controlled: Usufruct and hereditary rights with traditional area or resource stewardship claims

Model Types: Understanding Governmental and Partnership Entities Political or Administrative Power Structures and Leadership

*Lake, F.K., Parrotta, J., Giardina, C.P., Davidson-Hunt, I. and Uprety, Y., 2018. 12 Integration of Traditional and Western knowledge in forest landscape restoration. Forest landscape restoration: Integrated approaches to support effective implementation (Mansourian, S. and Parrotta, J. eds.)

Partnership Cycle Stages Model:

Approaches For Partnering With Tribal Nations in Research and Management: Steen-Adams et al. *In Press*



Tribal communities and the public as co-beneficiaries of the application of ITEK and partnerships

History of partner interactions: current interactions are influenced by past interactions

Identify shared goals / Explore concerns *STAGE 1*

Develop orientation to tribal governance structure *STAGE 2*

Coordinate natural and social science frameworks *STAGE 3*

Forge partnership instruments *STAGE 4*

Adapt methods to tribal context *STAGE 5*

Conduct research / Implement management action *STAGE 6*

Give back: Provide deliverables that address shared goals *STAGE 7*

ITEK and WK for collaborative research that is co-development and co-production of the best available science to inform management and influence policy formation

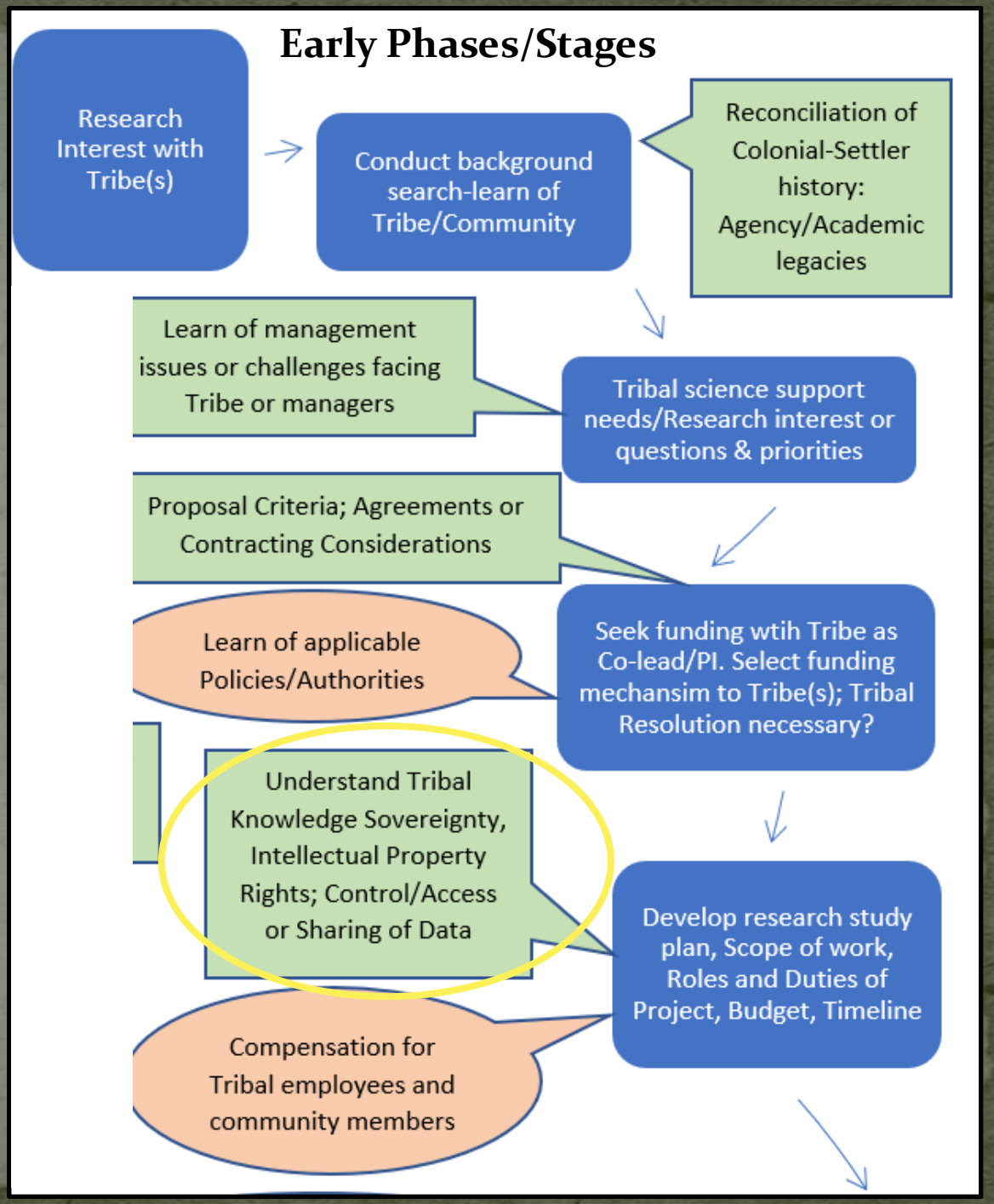
Considerations:

- Lessons learned from conducting research with various tribes and partnership entities.
- Each point in the process reveals federal-tribal-academic-NGO partnership entity workforce knowledge and experience limitations and innovations to success.
- Some challenges were addressed and became opportunities for understanding of and advancement for IK applications informed by tribes

*Figure: Lake for Steen-Adams *et al.* Working draft model

Considerations:

- Learn and understand as much about tribal and indigenous community histories (federal, state, and local relations) prior to contacting tribal representatives/members.
  - Is there an existing Research program and/or Cultural Committee to know of?
- Conduct multiple outreach and communication methods: call, mail, email, attend tribal open to public events, request visits and formal meetings (*go to them*!).
- What are the Tribes/Indigenous community's researchable questions and science support needs?
- Develop proposals, study plans, agreements, secure funding, and start project together.



Challenges & Opportunities of Tribal-Nontribal Partnerships

Type	Non-tribal Challenge	Tribal Challenge	Potential implication
Cross-organization	-Unwritten guidelines of culturally-acceptable communication practices and research methods - Unwritten guidelines of organizational structure -Legacies of past disputes and/ or unfulfilled commitments	-Dealing with colonial bias and cultural insensitivities of non-tribal entities -High rate of employee turnover of non-tribal entities - Disrupted professional rapports and agreements -Inconsistent knowledge retention	-Low participation rate -Community unresponsiveness to outreach efforts -High time investment / Productivity cost
Tribal organization, government, and community	-Varied, sometimes competing goals and priorities among tribal governmental entities and community groups -Uneven levels of resources	-Addressing and responding to different missions of various jurisdictions across the Tribe's aboriginal territory	-Conflict between tribal and nontribal entities over management and research priorities, due to overlapping jurisdictions among entities -Risk of impairment to project goal fulfillment, due to competing priorities and political alliances among various tribal entities

Best Practices For Partnering With American Indians and Alaska Natives in Research and Management: Steen-Adams et al. *In WO review*

Challenges and Opportunities of Tribal-Non-tribal Partnerships for research and management

Type	Non-tribal Challenge	Tribal Challenge	Potential implication
Data, especially of Traditional Knowledge (TK) or images/photos that depict tribal-indigenous community member conducting cultural activities/ITEK in action.	-Tribal community discomfort, in some instances, with publishing TK derived data; "Traditional Knowledge is sacred knowledge" concept: appropriate protocols -TK data quality limitation: limited precision regarding geospatial information (e.g., patch size, spatial extent) or capability with other data	-Discomfort with individuals speaking for the entire community's TK, (e.g., in oral history interview settings), among some tribal communities -Evolving and contextual nature of TK or cultural practices	-Risk of unpublishable data, due to unsuitability for public disclosure -Any TK that the tribal community chooses to share likely bears a commitment and responsibility to steward knowledge by the non-tribal partners -Potentially long learning curve to accrue understanding of potential sensitivities regarding TK public disclosure rules *Photos: Permission types?

IK as "data": Understanding Tribal Intellectual Property Rights, Knowledge Sovereignty, and Proprietary Knowledge
*Also consider use of photos of tribal/indigenous community member as "data" depicting IK in action. Permission?

Approaches For Partnering With Tribal Nations in Research and Management: Steen-Adams et al. *In press*

Approaches and Methods to Learn of and Engage Tribes

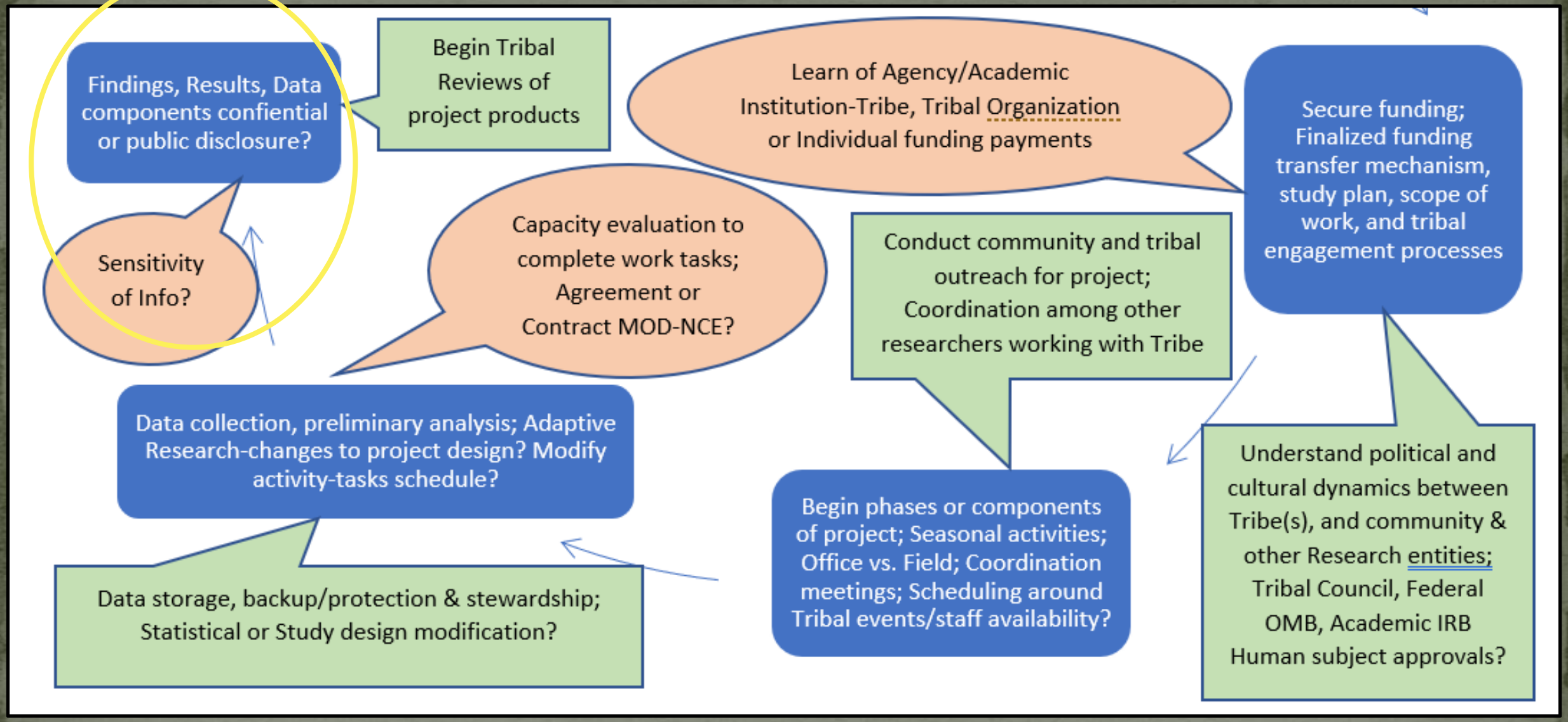
- Describe and characterize tribally valued forest resources and habitats [Ascribed or Tribal Determined?]
  - Importance of resources such as: water, foods, materials, medicines, regalia/ceremonial use species; and forest habitats used for ceremonial, subsistence, and economic resource use and stewardship practices
- Identify climate and wildfire impacts on tribally valued forest habitats and resources
  - Tribes utilize many species not emphasized in existing Western science-based climate syntheses (e.g., shrubs, forbs, and other forest resources)
  - Interdisciplinary approach to synthesize socio-cultural and ecological data to identify the climate related threats and stressor (ie. wildfires) to forested ecosystems and cultural practices for tribally valued habitats

Current project: NW CASC Lake, Long, Norgaard, Lynn

Indigenous Knowledge & Stewardship: Gender, Age, and Cultural Responsibilities

- Recognizing that different members of Indigenous communities hold different types of knowledge and practice various types of stewardship.
  - What is their responsibility and roles for fire use?
- Differences in IK & stewardship practices reflect roles based on spiritual/ceremonial, subsistence, utilitarian/domestic, and economic/security responsibilities and governance.
- Working with diverse indigenous communities (tribes/villages), groups (clans/families), and leaders supports inclusivity of a fuller range and types of Indigenous Knowledge Systems.

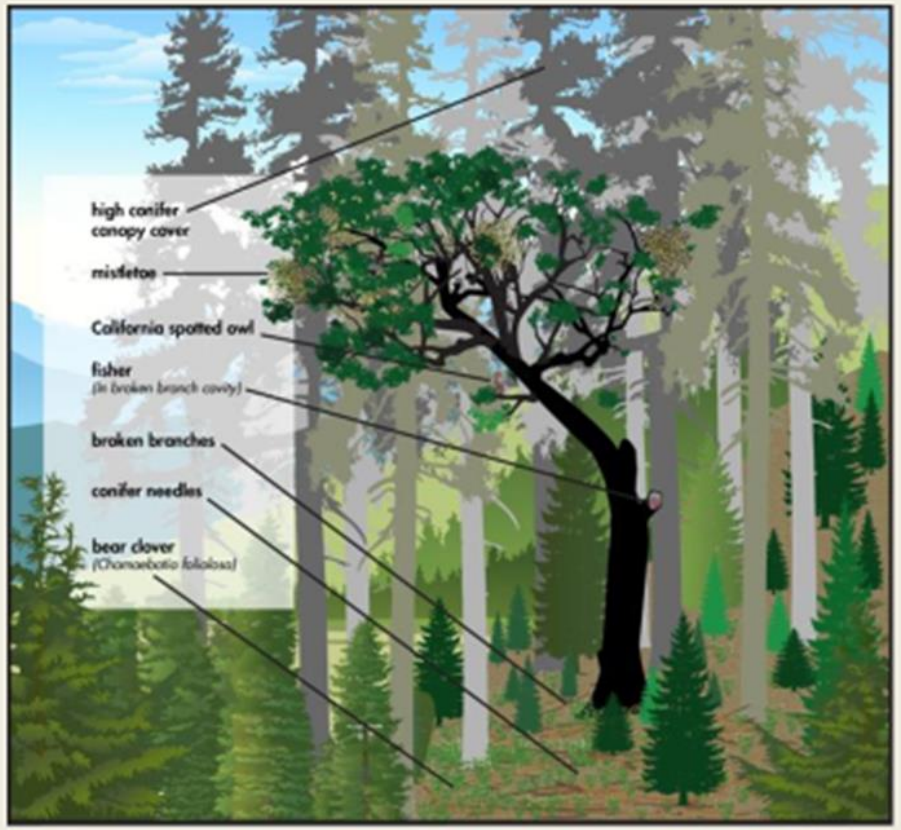
Considerations:



- During the research project follow-up, check-in learn of challenges facing partnership entities-researchers and tribal. *Gauge how things are going with individuals.

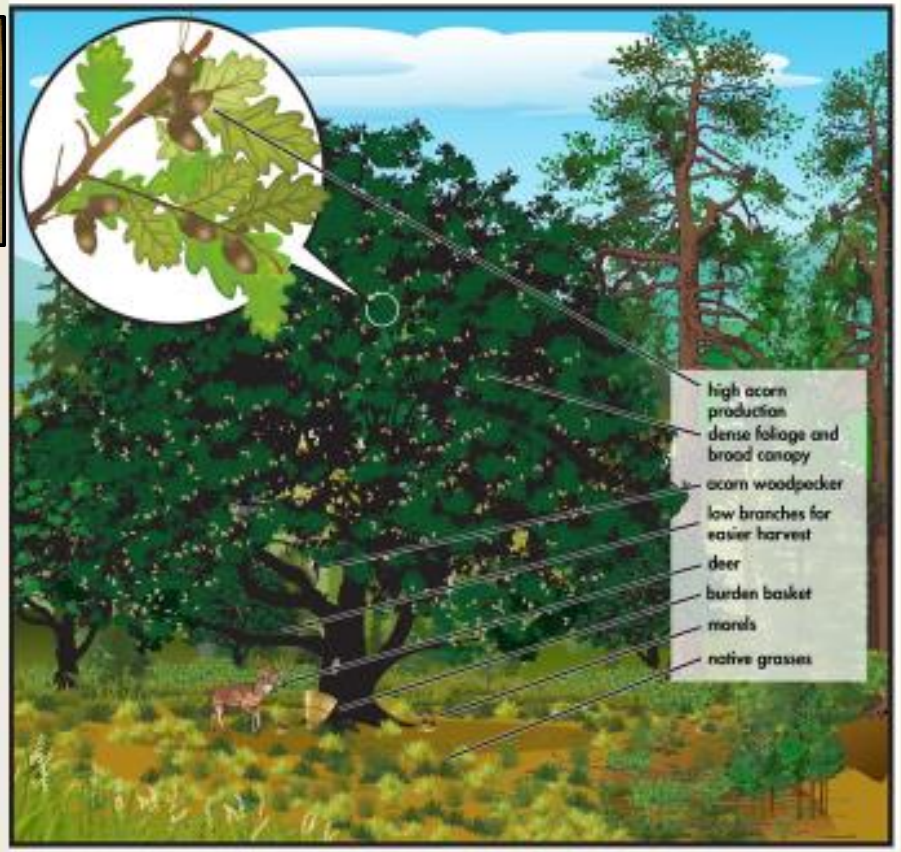
Example: TEK to Forestry and Fuels Metrics

Desired conditions for old-forest wildlife



ce : Jonathan Long, USFS-PSW. Tribal Research Partnership for Cal. Black Oak

Desired conditions for acorn gathering



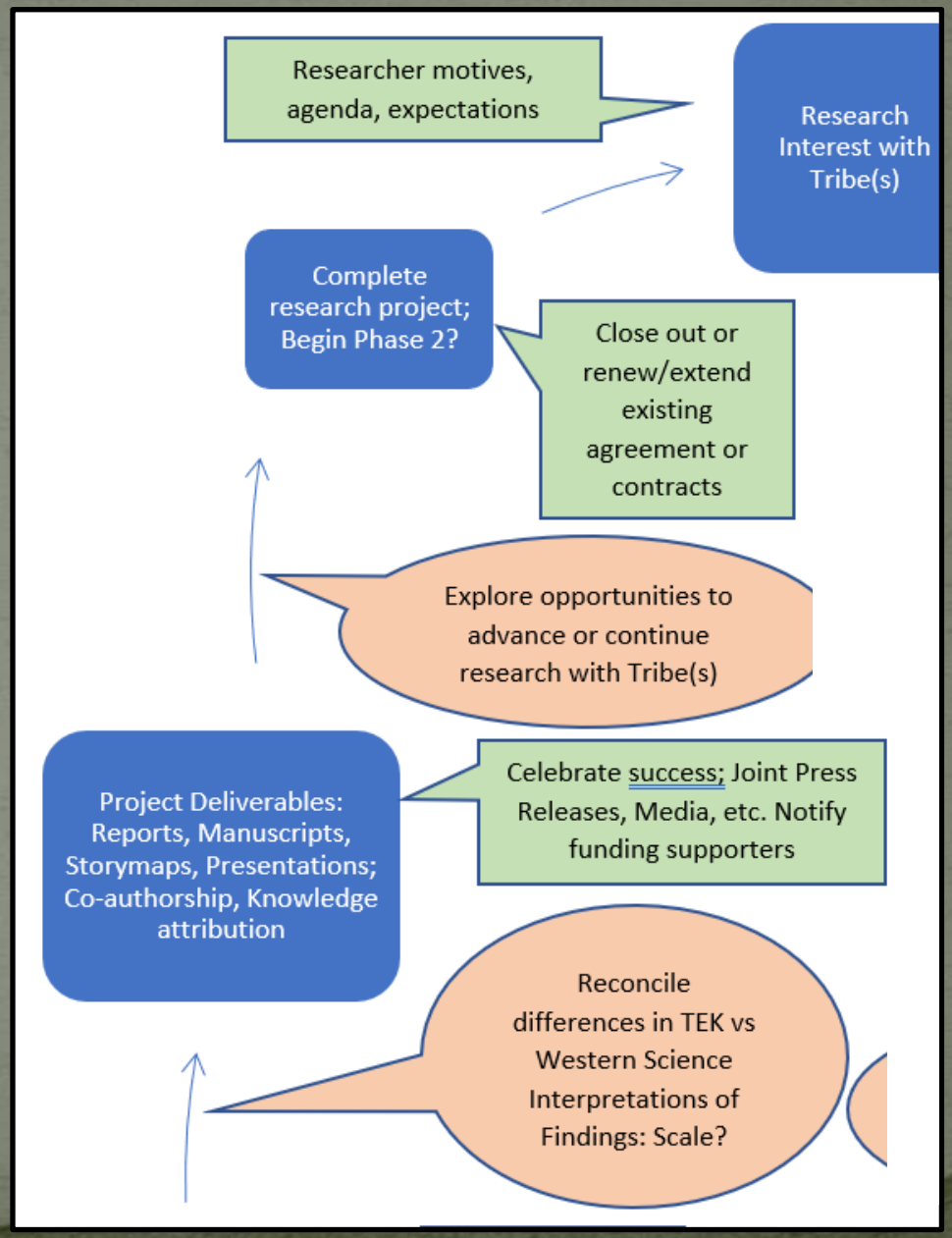
Slide and figure source : Jonathan Long, USFS-PSW. Tribal Research Partnership for Cal. Black Oak

- Tribal ITEK was collected (ethnographic data & field trips), all developed descriptions of forest, trees and fuels, and then translated that ITEK into stand and landscape scale desired conditions that improved the understanding of many forest related values.

*Research partnership: USFS PSW & Sierra NF, NRCS, North Fork Mono and Chukchansi Tribes-Ca. Black Oak

Considerations: Nearing the end or a new beginning?

- Data analysis and interpretation of results/findings of study.
- Address how findings will be discussed and related. Are the initial IK information supported, refuted, similar or different than scientific hypothesis, assumptions, or models?
  - Develop manuscripts/reports and presentations for public sharing/distribution. Seek approvals.
- Upon publishing, report submission, and project completion. Coordinate publicity of findings or political relevance of work.
- Close out existing agreements (-reporting) requirements. Evaluate interest for next project or expanding the current work.



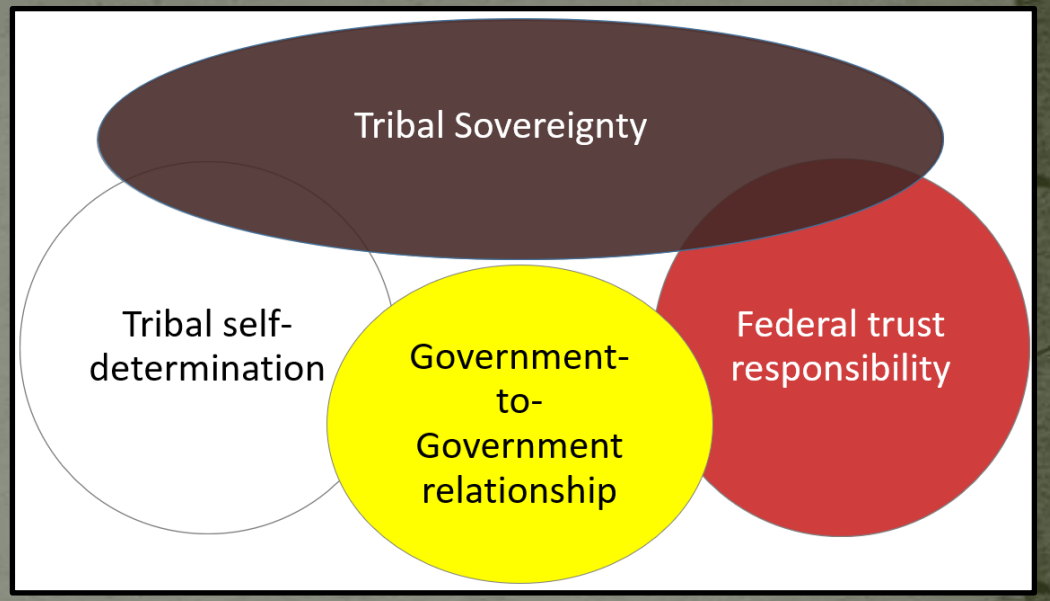
Current efforts and expanding opportunities in working with Tribes through partnerships-

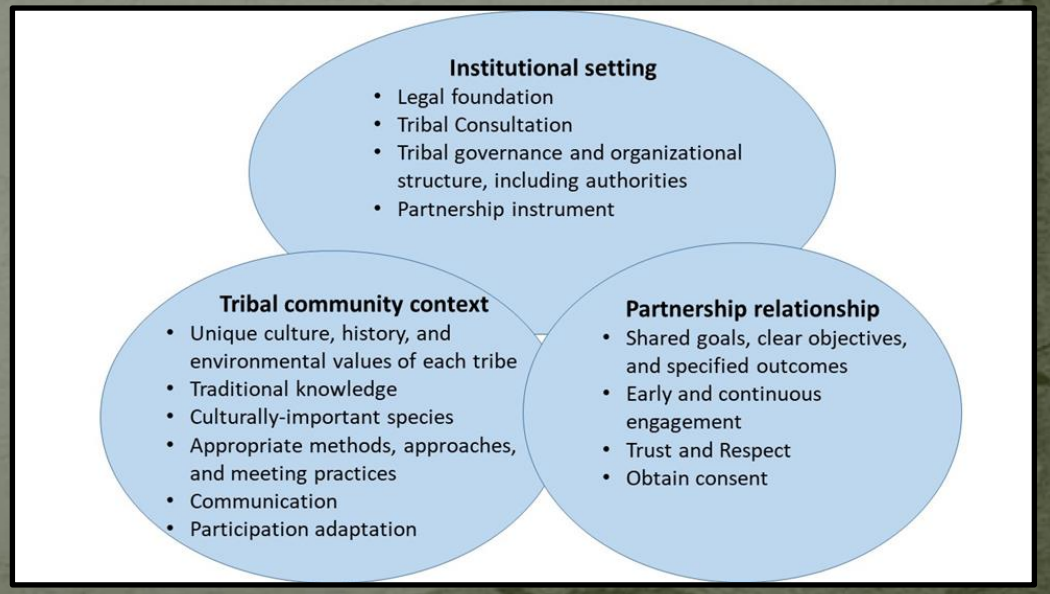
- Collaborative research, adaptive management, and monitoring to evaluate the achievement of Land and Resource Plan objectives and goals of Federal/State agencies, Tribes, Organizations, and other partnership entities.
- Governance leadership, administrative departments and operational programs that support project activities to accomplish the above and below approaches. Use of and formation of agreements, compacts and MOUs.
- Achievements reflected in enhanced lands, waters, resources, and socio-ecological communities well-being.

Reconciliation, Repatriation, Restoration and Revitalization-

- *Reconciliation*-Acknowledging the dispossession, genocide, and other Colonial atrocities against Tribes historically and as legacy factors that continue to limit Tribe's capacities to accomplish their goals.
- *Repatriation*-Actions to return land, co-governance across jurisdictions, provide access, and create mechanisms for the recovery of Tribal management and cultural stewardship practices, including but not limited to agro-forestry, "pyro-silviculture", wildland fire and wildlife use.
- *Restoration*-The integration of traditional with modern management approaches to enhance landscapes, waterways, and cultural practices that foster tribal and ecological wellbeing and integrity. Ecosystem and public benefits attained.
- *Revitalization*-Increasing opportunities for Tribal governance and management to support their traditional and modern cultural practices across jurisdictions within their ancestral territories to achieve shared values and resource objectives.

What are some of the socio-cultural or political challenges?





Indigenous Intellectual Property Rights and Knowledge Sovereignty: Multiple Approaches

- As Sovereign nations Tribes have developed or are developing Intellectual Property Rights Agreements
- As Sovereign nations Tribes have developed or are developing Knowledge and Data Agreements
- How do these tribal assertation of intellectual property over their members and descendants pertain to an individual's knowledge sovereignty?

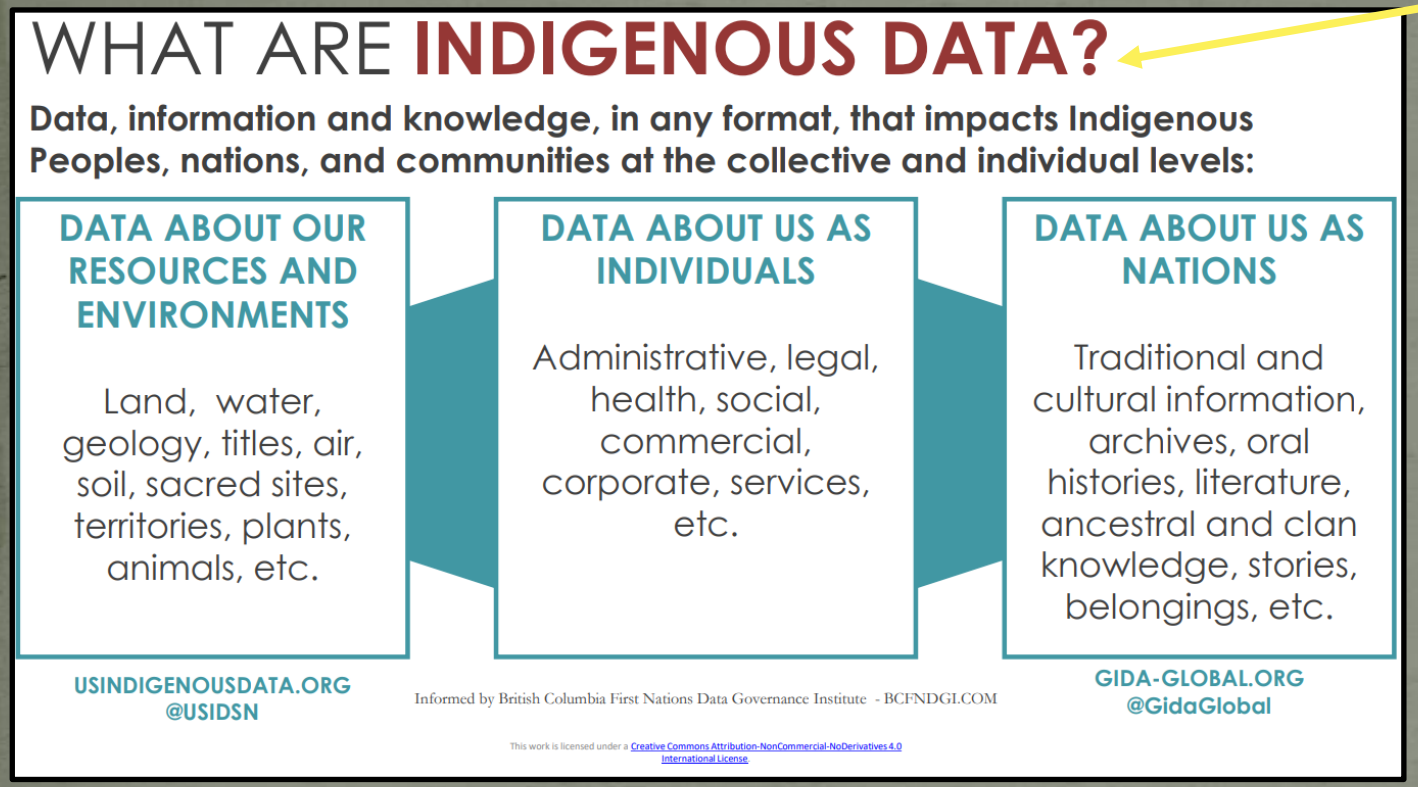
Karuk Tribe
Protocol with Agreement for Intellectual Property Rights of the Karuk Tribe
Research, Publication and Recordings

The purpose of this Protocol with Agreement is to protect the Karuk Tribe's rights to privacy and Karuk Tribal Members' and Descendants' rights to individual and collective intellectual property. As a result of acts of misrepresentation and appropriation of tangible and intangible culture, the Karuk Tribe has developed this Protocol with Agreement [i] specifically for all projects and activities that involve collaboration, consultation and engagement with the Karuk Tribe. The aim is to protect the rights of present and future generations of the Karuk People and to recognize the inherent tribal sovereignty that the Karuk Tribe asserts over all tribal knowledge, heritage and cultural resources. This Protocol with Agreement is to be implemented in all future authorized collaborations.

6. ***Karuk Traditional Knowledge and Cultural Heritage*** includes beliefs, knowledge (agricultural, technical, medicinal, ecological), movable and immovable cultural properties (human remains; sacred burial and prayer grounds), customary laws, traditions, human and genetic resources, seeds, medicines and knowledge of the properties of fauna and flora, arts and artistic works, and other forms of cultural expression, handed down through the generations.[ii]

8. Intellectual Property Products includes all original materials produced in the course of a research project including but not limited to written materials, transcriptions, translations, photographs, recordings collected or produced by the researcher and/or funding institution pursuant to this Protocol with Agreement. These are considered to have been produced through consultation and engagement with the Karuk Tribe as the primary legal and cultural owners and custodians. Therefore they shall remain the sole property of Tribe unless otherwise specified in the proposal agreement (see Procedure 1.a.). In many instances, the Karuk Tribal Council will grant co-ownership and/or appropriate licenses to the researcher and/or funding institution for future use including research, education and publication.

Indigenous Knowledge and Data Sovereignty: What it is or What can it be?



Global Indigenous Data Alliance. (2022). 'Indigenous Data Sovereignty and Governance.'

- **Resources:**
  - https://www.gida-global.org/care
  - https://www.stateofopendata.od4d.net/chapters/issues/indigenous-data.html
  - https://guides.lib.utexas.edu/c.php?g=531053&p=8783894
  - Carroll, S.R., Rodriguez-Lonebear, D. and Martinez, A., 2020. Indigenous Data Governance: Strategies from United States Native Nations. Data Science Journal, 18(1), p.31. DOI: http://doi.org/10.5334/dsj-2019-031
  - Tsosie, Rebecca A. 2019. Tribal Data Governance and Informational Privacy: Constructing 'Indigenous Data Sovereignty' 80 Montana Law Review 229 (2019), Arizona Legal Studies Discussion Paper No. 19-19, Available at SSRN: https://ssrn.com/abstract=3454632
  - UNDRIP reaffirms Indigenous People's rights to self-determination as political entities and honors the principle of Indigenous control over Indigenous data

Leader's Intent: Direction on how to do business

- **Federal**:
  - Acts, Authorities, Executive Orders, Sec. Orders, and other initiatives relating to department and agency missions
- Academic:
  - Regents or other institutional boards cross Institutes, Universities, and Colleges
  - Department or Programs
  - Professor/Researcher-Committee chair
- Non-Governmental Organizations
  - Board, Director(s), Management
- Tribal:
  - Council, Committees, Departments, Programs

- How do organizational leadership learn of, understands and acknowledges the manner and ways in which Tribes and Indigenous communities are, will or may evolve processes to assert sovereignty over their knowledge and various forms of "data?"
- If non-federal entities are receiving and have federal funding to conduct research, do they or should they adhere to similar federal directives in working with Tribes and Indigenous communities?

Questions for Academic Institutions: How well are we preparing our students to succeed?

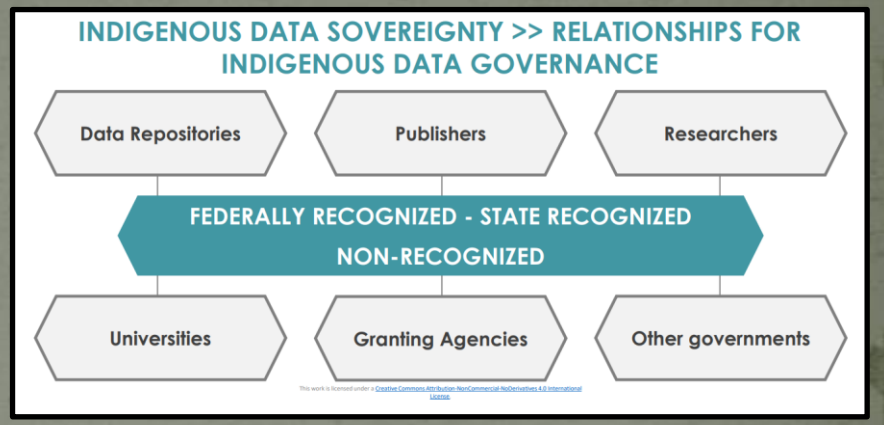
- How do we prepare our tribal and non-tribal academically trained students to be aware of and provide guidance for trying to navigate this current place of emerging challenges for potential opportunities over Indigenous Intellectual Property, Knowledge/Data Sovereignty?
- What will the academic institution have to do in response to what Tribes are wanting and will want?
- How do students or the professors they work with gain the knowledge on how to and skills to navigate these tensions, working from challenges to productive respectful opportunities?


Community Forestry: PAR


Photo: Karuk Tribe.

Tribal FPIC & Capacity to Engage: *Priorities & Time*

- Tribe's assert that they want and will have control over information that is associated with their cultural knowledge, beliefs, practices, and various sources of data
  - Challenges:
    - Tribal priorities vs. your request/needs
    - Existing staff and leadership availability to formulate expectations, engage/respond and develop the types of agreements scaled to the project or your vs. their needs
    - Many funding sources and project timelines want to advance faster than tribes have the ability to engage and respond *Federal consultation requirements.
  - Opportunities:
    - Inclusiveness of multiple entities for shared understandings, develop processes and finalize agreements.



Global Indigenous Data Alliance. (2022). 'Indigenous Data Sovereignty and Governance.'

Indigenous Knowledge and Colonial Western Data as valid forms of Scientific Evidence: IK > = < Western Colonial Factual Information

- Often the colonial western academic's "scientific knowledge" has been purported as the "authoritative source" for evidence based, objective, rational guidance for research and with informing management
- There is history of federal government and academic dismissal, exclusion, and marginalization of IK/TEK and often the opportunities to share it.
  - Now IK/TEK is being sought and desired for research, management and policy formation.

- *"Indigenous Knowledge is a valid form of evidence for inclusion in Federal policy, research and decision making"* (OSTP/CEQ 2022:4, Guidance for Federal Departments and Agencies on Indigenous Knowledge)

Frank's Dad and Grandpa

Indigenous Knowledge and Colonial Western Data as valid forms of Scientific Evidence: IK > = < Western Colonial Factual Information

- Are such approaches inclusive or extractive process of how tribes and indigenous communities contribute their IK/TEK with or without their Free Prior and Informed Consent?
- How will researchers and partnership entities address and reconcile differences *if and when* existing factual based "colonial" western science is at odds or related information is different than IK/TEK?
  - *Decolonize, Deconstruct, Indigenize*
  - How to retain and apply useful aspects of Colonial western science frameworks and data systems?
- What are or can be respectful disagreement, or acknowledgement of differing understanding of tribal histories, ecologies, and for the scope or confidence of IK/TEK?
- What are or will be the mediation and resolution processes to find agreement?
  - Encountering Tribal fragility or denial of western science that differs from their beliefs and own understandings?