Annotated Bibliography: Examples of Traditional Knowledges in Climate Research

This annotated bibliography is a supplement to the Guidelines for Considering Traditional Knowledges in Climate Change Initiatives and is intended to demonstrate the ways that existing is already considering TKs in law, policy and natural resource management. Additionally, this bibliography provides access to research which addresses ongoing issues surrounding the protection and use of TKs, including appropriation of Indigenous cultural and intellectual property, legal and policy hurdles that TK users and holders face in collaborating in an equitable manner with researchers, government agencies and others, and the development of research protocols to ensure just collaboration between TK holders and researchers. This bibliography was created to provide additional resources for agency staff, tribal staff and others to increase understanding of existing issues in research and collaboration with Indigenous people regarding TK and emerging opportunities for the involvement of TK holders and users in climate change initiatives.

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RESOLUTIONS

NCAI Resolution #PDX-11-036: Increasing Tribal Participation in Climate Adaptation.
Many inter-tribal organizations have taken a strong stance in favor of increased tribal participation in US government climate adaptation efforts. For example, the National Congress of American Indians (NCAI) created a Resolution entitled "Traditional Ecological Knowledge and Climate Change." In this resolution, the NCAI notes that given the relationship between the federal government and Tribes, the unique threats that climate change poses to Native people, and the value of TEKs held within Native communities, Tribes have a right to be involved in federal climate adaptation planning at all stages. The NCAI urges for the "inclu[sion] of Tribes in all climate change policies, programs and activities from the very start...," while also noting that it is essential that with increased collaboration comes greater safeguards for Tribal knowledge and increased respect in partnerships. The NCAI notes in their resolution that this issue is especially pertinent given the emphasis of the current administration to support Tribes as they adapt to climate impacts.

NCAI Resolution #PDX-11-036. 2011. Increasing tribal Participation in Climate Adaptation.
Type of Publication: Policy
Keywords: traditional knowledge, federal climate adaptation, trust responsibility

NCAI Resolution #REN-13-020: Adopting Guidance Principles to Address the Impacts of Climate Change.
This resolution describes the efforts of the NCAI to evaluate the effectiveness of the Executive Order 13175, and Secretarial Order 3289. The NCAI lays out a plan to collaborate with the Affiliated Tribes of Northwest Indians (ATNI) in order to do so. Furthermore, the NCAI describes plans to create a Tribal Climate Change Task Force, made up of tribal government representatives and others, in order to create and implement a plan of action regarding climate change.

NCAI Resolution #REN-13-020. 2013. Adopting Guidance Principles to Address the Impacts of Climate Change.
Type of Publication: Resolution
Keywords: climate adaptation planning, policy assessment

NCAI Resolution #REN-13-035: Request for Federal Government to Develop Guidance on Recognizing Tribal Sovereign Jurisdiction over Traditional Knowledge.
In this resolution, the NCAI describes traditional knowledges (TKs) and the inadequacy of current federal policies and practices with regards to the protection of TKs. The NCAI calls for the federal government to work with tribes to create gain a better understanding in federal agencies about TKs and that federal agencies reform their policies to reflect more respectful and appropriate practices regarding TKs.

NCAI Resolution #REN_13_035. 2013. Request for Federal Government to Develop Guidance on Recognizing Tribal Sovereign Jurisdiction over Traditional Knowledge.
Type of Publication: Resolution

Keywords: traditional knowledges (TKs), federal policy

POLICY AND LAW

[Abate and Kronk. 2013. Climate Change and Indigenous Peoples: The Search for Legal Remedies.](#)
This book is a collection of essays from legal scholars on issues facing Indigenous peoples regarding climate change. The book focuses on the role that law can play in creating solutions for Indigenous struggles. Contributions to the book are divided by world region, and cover a diverse range of issues, from tribal water rights in the US to climate issues facing small island states in the Pacific.

Abate, R.S., and E.A. Kronk Eds. 2013. [Climate Change and Indigenous Peoples](#): The Search for Legal Remedies. Edward Elgar Publishing: Northampton, MA.
Type of Publication: Book
Keywords: Climate change, legal remedies, Indigenous peoples

[African Regional Intellectual Property Organization (ARIPO). 2010. Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore.](#)
This protocol seeks to protect traditional knowledge from exploitation (e.g. commercial appropriation of traditional knowledge) and protect the rights of traditional knowledge holders. The protocols affirm the rights of traditional knowledge owners to keep their knowledge within its traditional context, and to prosecute those who exploit, steal or appropriate this knowledge. The protocol also establishes regulatory functions for ARIPO, which is responsible for maintaining and protecting records of traditional knowledge in their region, and for protecting traditional knowledge and knowledge holders from exploitation. The protocol relies on concepts of free, prior and informed consent, the rights of Indigenous communities to retain control over their knowledge and equitable benefit sharing. The protocol also establishes similar protections for folklore in the region. The protocol also establishes customary law and local courts as a mechanism through which ARIPO will try to resolve disputes.

- Guidelines for tribes and non-tribal governments: These protocols clearly establish the rights of traditional knowledge holders and folklore holders within the member countries of ARIPO, and establish ARIPO as an authority to protect these rights. The protocol takes the form of a legislative document such as a resolution or act, and could serve as a template for other organizations.

African Regional Intellectual Property Organization (ARIPO). 2010. [Swakopmund Protocol on the Protection of Traditional Knowledge and Expressions of Folklore.](#)
Type of Publication: Resolution, Protocol, Act
Keywords: traditional knowledge, folklore, Free Prior and Informed Consent, exploitation of traditional knowledge, equitable benefit sharing, protection of traditional knowledge

[Awan, Rachel. 2014. Native American Oral Traditional Evidence in American Courts: Reliable Evidence or Useless Myth?](#)

This article explores traditional use of oral traditional evidence in Native culture, and the subsequent marginalization and inconsistent handling of oral traditional evidence in US courts. The author proposes a rule of evidence for US courts similar to Canadian courts that accommodates aboriginal oral traditional evidence. Central to the debate in US legal circles about the validity of oral history and oral traditional evidence is the reliability of transmitting information from generation to generation. Within US courts, oral traditional evidences are sometimes claimed to be hearsay, as they are passed from person to person. These issues complicate the use of oral traditional evidence, which is frequently amongst the evidence that tribes have in land claims cases, attempts to repatriate sacred materials and remains, to prove status as a sovereign group, and to maintain aboriginal gathering rights. Awan explores past cases in US law that have treated oral evidence both favorably and unfavorably to demonstrate how current treatment of oral evidence is in need of reform.

Awan, Rachel. 2014. "[Native American Oral Traditional Evidence in American Courts: Reliable Evidence or Useless Myth?](#)" Penn State Law Review 118(3): 697-727.
Type of Publication: Law Review
Keywords: oral traditional evidence, oral history, US court, hearsay, admissible evidence

[Burkett. 2012. Indigenous Environmental Knowledge and Climate Change Adaptation.](#)

Burkett argues that Indigenous Environmental Knowledge (IEK) has enormous potential in increasing adaptive capacity of communities facing climate impacts, but that existing legal and governmental structures limit the potential for IEK to be effectively implemented. Burkett suggests that IEK be incorporated into western law and policy, so that legal structures reflect a worldview that emphasizes adaptive management. This management approach seeks to provide societies with the ability to adapt to changes as they come, as opposed to predicting and controlling possible impacts. Burkett explores how IEK has been, is being, and may continue to be incorporated into climate adaptation efforts (and by extension law and government structures).

- Guidelines for agencies and policymakers: Burkett argues for the incorporation of IEK worldview into legal systems and government policies. Specifically, Burkett notes the value of IEK frameworks that are based on increasing adaptive capacity to climate impacts.

Burkett, Maxine. 2012. "Indigenous Environmental Knowledge and Climate Change Adaptation." In:
[Climate Change and Indigenous Peoples The Search for Legal Remedies. Eds. Randall S. Abate and Elizabeth Ann Kronk](#). Edward Elgar Publishing: Northampton, MA.
Type of Publication: Academic Journal
Keywords: adaptive capacity, climate impacts, adaptive management, law, traditional knowledge

[Burkett. 2011. The Nation *Ex-Situ.*](#)

In this article, Burkett describes a dilemma facing small ocean states: the loss of their homelands due to climate impacts. Burkett proposes a legal remedy to this situation that she dubs "Nation Ex-Situ," in which these countries would be supported by the international community in retaining their sovereignty during and after the loss of their physical territory. Burkett notes that this idea is not novel, and provides examples of existing countries and quasi-governmental structures that exist without definite physical

territory. More broadly, Burkett argues that the world is entering a post-climate change era in which laws and policies will need to be re-tooled to address unanticipated and new problems. This point is especially prescient given that climate impacts are already having greater-than-anticipated impacts on infrastructure and the environment, and are therefore likely to have major legal and policy impacts in the near future.

Burkett, Maxine. 2011. "*The Nation Ex-Situ: On climate change, deterritorialized nationhood and the post-climate era.*" *Climate Law (2): 345-374.*
Type of Publication: Academic Journal
Keywords: small-ocean states, climate impacts, displacement, post-climate change era, law

Garrott, Sarah. 2014. New Ways to Fulfill Old Promises: Native American Hunting and Fishing Rights and Intangible Cultural Property.

This work explores Native American hunting and fishing rights through the lens of the international law concept of intangible cultural heritage. The article offers historical information on the development of current US law regarding hunting and fishing rights, explores these limitations, and demonstrates why these rights may be better understood as intangible cultural heritage, and explains what benefits this would lend. One area of focus is abrogation of hunting and fishing rights under current US law, and how intangible cultural heritage would form a legal protection that would provide more just and stable access to hunting and fishing rights for Native people. This paper also includes a discussion of how non-binding international law regarding indigenous peoples can have impacts on US laws and policies.

Garrott, Sarah. 2014. "*New Ways to Fulfill Old Promises: Native American Hunting and Fishing Rights and Intangible Cultural Property.*" *Oregon Law Review 92(2): 571-610.*
Type of Publication: Law Journal Article
Keywords: intangible cultural heritage, property law, hunting and fishing rights, abrogation, US law

Hershey, Robert A.; McCormack, Jennifer; Newell, Gillian E. 2014. Mapping Intergenerational Memories (Part 1): Proving the Contemporary Truth of the Indigenous Past.

This paper discusses the marginalization of oral history in western courts. Using examples of cases in which Indigenous people used innovative or otherwise successful methods to use oral history as evidence in court, the authors argue Indigenous people today must find media to convey oral history that encourage western law to treat it seriously. The authors note that transforming oral history into other media (especially maps) may not be a just solution in the long term, but that it in the short term it is a necessity for Indigenous people navigating western legal systems. The authors also explore the challenge of transforming oral history into maps while also retaining the integrity of the knowledge and community. The authors present mapping of oral history as a way to validate oral history in western legal systems while also retaining the integrity of oral history, and not fostering a dependence on outside experts or additional evidence to validate said oral history. The authors argue that western judges and others may have difficulty accepting oral history because of the extreme differences in conceptions of space and time that exist between western legal and Indigenous philosophies. Therefore, maps may cause judges to view oral history as more credible, as they are a form more familiar to

western law. They argue that maps can give Indigenous communities a way to self-authenticate knowledge without relying on non-Native experts to back the community, and that maps can also function without compromising sacred knowledge or devaluing the integrity of oral histories.

Hershey, Robert A.; McCormack, Jennifer; Newell, Gillian E. 2014. "Mapping Intergenerational Memories (Part 1): Proving the Contemporary Truth of the Indigenous Past." Arizona Legal Studies Discussion Paper No. 14-01.
Type of Publication: Scholarly Article
Keywords: oral history, oral testimony, western law, mapping, intergenerational knowledge

Kronk and Abate. 2013. International and Domestic Law Dimensions of Climate Justice for Arctic Indigenous Peoples.

Warner and Abate use existing case studies to demonstrate how Arctic Indigenous communities are environmental justice communities. They then use these case studies to compare how Indigenous environmental justice communities are both similar to and different from other environmental justice communities. They note that Indigenous people, like other environmental justice communities, face disproportionate impacts from environmental hazards and climate impacts which disrupt their ability to live healthy lives and adapt to adversity. Conversely, they note that tribal sovereignty creates a unique situation for Indigenous communities, and results in special cases with regards to environmental justice. They draw on two recent examples, the Inuit Circumpolar Council's petition to the Inter-American Commission on Human Rights and the village of Kivalina's lawsuit against several oil, energy and utilities companies, to explore legal issues surrounding sovereignty and environmental justice. The authors also argue that existing dismissal of the above legal case studies should be regarded as unjust because tribal sovereignty was not adequately considered in either case.

Kronk and Abate. 2013. "International and Domestic Law Dimensions of Climate Justice for Arctic Indigenous Peoples." R.G.D. (43): 113-150.
Type of Publication: Academic Journal, Policy and Law
Keywords: Arctic Indigenous communities, environmental justice, tribal sovereignty, climate impacts

Maldonado, Julie Koppel; Christine Shearer, Robin Bronen, Kristina Peterson, and Heather Lazrus. 2013. The Impact of Climate Change on Tribal Communities in the US: Displacement, Relocation, and Human Rights.

This study explores the displacement of indigenous communities in response to climate impacts and the human rights implications of these situations, using three case studies, one of the Alaska Native village of Kivalina, one of the Alaska Native village of Newtok, and the other of the Isle de Jean Charles Band of Biloxi-Chitimacha-Choctaw Indians (Louisiana). Issues such as sea level rise and increases in natural disasters are forcing indigenous communities to relocate from their homelands. The authors note that because these communities are not responsible for the impacts now forcing them to relocate, that the impacts they face constitute a human rights crisis. In addition the exploring these case studies, the authors broaden their discussion to include legal and policy implications of climate impact-induced relocations of indigenous people in the US. One concern raised by the authors is that current disaster

relief infrastructure is not set up to deal with the rapid changes and impacts associated with climate change. The authors also advocate for a human rights approach to relocation, which emphasizes the rights of people to exist and self-determine, even as they are faced with forced relocation due to climate disasters. This approach may become increasingly important for indigenous people to consider as they face more severe natural disasters and changes in climate (e.g. sea level rise).

- Guidelines for federal managers: This article exposes several limitations with current federal approaches to climate change-related relocations of indigenous communities, and in doing so offers opportunities to improve federal responses to climate disasters and support for indigenous communities.

Maldonado, Julie Koppel; Christine Shearer, Robin Bronen, Kristina Peterson, and Heather Lazrus. 2013.
"The Impact of Climate Change on Tribal Communities in the US: Displacement, Relocation, and Human Rights." Climatic Change 120: 601-614.
Type of Publication: Academic Journal
Keywords: Relocation, human rights, disaster, vulnerability, Newtok, Kivalina, Isle de Jean Charles

Rodriguez-Uribe, Natalia. 2014. Collective Legal Autonomy Concerning Traditional Ecological Knowledge: The Rights of Indigenous Peoples and Their Linkages to Biodiversity Conservation in Colombia and Australia.

This thesis attempts to provide a model for conservation law that optimizes both protection of biodiversity and protection of indigenous human rights. Using examples from Australia and Columbia to explore existing conservation laws and policies, Uribe proposes an alternative model based in the collective autonomy of Indigenous peoples to protect biodiversity. The paper is nearly four hundred pages long, and includes extensive background information about existing international law and policies towards indigenous peoples and biodiversity conversation. Uribe critiques existing biodiversity conservation management for its lack of emphasis on protecting human rights (especially indigenous peoples' rights). Uribe goes on to argue that an approach which recognizes indigenous rights to self-determination and management of landscapes using TEK/TKs has the potential to both maximize conservation benefits while maximizing benefits to indigenous communities.

Rodriguez-Uribe, Natalia. 2014. Collective Legal Autonomy Concerning Traditional Ecological Knowledge: The Rights of Indigenous Peoples and Their Linkages to Biodiversity Conservation in Colombia and Australia. Thesis presented to Macquerie University Law School: Sydney, Australia.
Type of Publication: Thesis
Keywords: conservation, fortress conservation, self-determination, traditional ecological knowledge (TEK), traditional knowledges (TKs), collective legal autonomy, community-based conservation (CBD)

Tulalip Tribes. Intangible Cultural Heritage Protection Act.

This draft act of the Tulalip Tribe is intended to protect the cultural heritage of the Tribe. The Act calls for Tulalip customary and traditional law to be applied to Tulalip cultural heritage. The basis of the act is that the Tribe retains its sovereignty and that current US intellectual property law has been imposed upon tribes without proper consideration of tribal laws regarding intellectual and cultural property. The act includes protocols for conducting research in collaboration with the Tulalip Tribe, or on Tulalip land,

measures to protect Tulalip arts, measures to prevent wrongful or exploitative copyrights of Tulalip cultural property, and measures to ensure that tribal heritage is not alienated from tribal business.

- Guidelines for tribes: This document provides a template for other tribes seeking to strengthen the protection of TK and cultural heritage.

Tulalip Tribes. Intangible Cultural Heritage Protection Act.
Type of Publication: Legislative document
Keywords: cultural heritage, intellectual property law, copyright, research protocol, traditional arts, Tulalip Tribe

UN Human Rights Committee. Concluding observations on the fourth report of the United States of America.

Following the "Fourth Periodic Report of the United States of America to the United Nations Committee on Human Rights Concerning the International Covenant on Civil and Political Rights," the Committee created concluding remarks that offer recommendations and suggestions to the US government. These recommendations target areas of human rights abuses that still exist in US law and society, and recommend actions to remedy these abuses. Indigenous peoples are mentioned several times in the concluding observations, including a call to end high rates of domestic violence against American Indian and Alaska Native women. Most relevant to a discussion of traditional knowledges (TKs) is the final section addressing the rights of Indigenous peoples. In this section, the committee expresses concern over the desecration of sacred sites and the impacts to wellbeing and culture that the loss of sacred sites has on Indigenous people. Furthermore, they recommend that the US work harder to ensure that Indigenous people are consulted on all projects and development that may impact sacred sites, using the process of free, prior and informed consent (FPIC).

- Guidelines for policy and law-makers: This document is intended primarily to point out existing or continuing human rights abuses in the US, with an eye for legislative and legal solutions. The report recommends that US state actors remedy these abuses by reforming their laws to be in compliance with the International Covenant on Civil and Political Rights.

UN Human Rights Committee. Concluding observations on the fourth report of the United States of America.
Type of Publication: Technical Report
Keywords: Human rights, sacred sites, Free Prior and Informed Consent (FPIC), civil rights

Williams, Terry and Hardison, Preston. 2013. Policy Maker White Paper on Traditional Knowledge Governance.

This paper describes the need for governance around and increased legal protections for TK, describes how current laws fail to protect TK, and discusses opportunities to better the relationship between western science and TKs. Given that tribes are facing significant impacts from climate, and that little of

the responsibility for these impacts falls on tribes, issues of TK and climate impacts are also an issue if justice. The authors propose that TKs should be governed by tribes, according to each tribe's legal system and customary laws, in order to ensure protection of TKs, and appropriate use of TKs in natural resource management. This is especially important given the historical context in the US, in which indigenous knowledge and knowledge-holders have been habitually mistreated. The authors argue that because current collaboration between TK holders and outside researchers/policymakers is occurring without formal guidance, there are issues surrounding ownership of knowledge produced through collaborative efforts, consent of access, knowledge exchange and ownership. The authors describe some common aspects of TKs in order to explain why traditional governance and recognition of tribal customary laws are vital for fair and justice collaboration between tribes and others.

- Guidelines for TK holders and policymakers: This document provides a thorough and succinct summary of issues facing tribes as they attempt to protect and advocate for TKs. The authors call for increased recognition of tribes' rights to regulate and manage their own knowledge systems is an important step in creating mutually beneficial relationships between tribes and non-tribal resource managers and policymakers.

Williams, Terry and Hardison, Preston. 2013. Policy Maker White Paper on Traditional Knowledge Governance.
Type of Publication: White Paper
Keywords: traditional knowledges (TKs), traditional governance, knowledge co-creation, intellectual property rights, customary law, Freedom of Information Act (FOIA), Free Prior and Informed Consent (FPIC)

Wolfley, Jeanette. 2014. Tribal Environmental Programs: Providing Fair and Meaningful Involvement.

This paper explores impacts to public and stakeholders that may result from tribal environmental laws and regulations and posits that tribal institutions are best suited to articulate a fair process for public participation according to tribal cultural and social norms (390-2). This article includes a discussion of the development of federal law recognizing tribal environmental regulations, and ongoing legal disputes about current tribal environmental regulatory actions (393-9). The article argues that public participation and due process, when tribally-led, have the potential to 1) promote good governance, 2) respect community member interests and 3) protect and promote tribal sovereignty (399-409). Wolfley also cautions against using federal or state court concepts of meaningful involvement and fair treatment, as these due process principles may translate poorly into a tribal context. Instead, this article advocates for tribes to develop their own definitions, based on tribal values and laws, including customary and traditional laws (411-413). Wolfley includes examples of existing definitions of due process developed by tribal courts and others (411-412). This article also explores how existing legislation has shaped and defined tribal due process (414-421). Finally, the article explores types of processes for establishing public participation and due process, providing case studies of existing tribal processes (422-437).

Wolfley, Jeanette. 2014. "[Tribal Environmental Programs: Providing Fair and Meaningful Involvement.](#)"
Journal of Environmental Law and Litigation 29: 389-442.
Type of Publication: Academic Journal
Keywords: Due process, public participation, oral tradition, environmental regulation, tribal court, federal environmental regulations, US Environmental Protection Agency, tribal law, customary law

PROTOCOLS

[Akwesasne Task Force on the Environment. 1996. Protocol for Review of Environmental and Scientific Research Proposals.](#)

The Akwesasne Task Force on the Environment (ATFE) has developed a review board to ensure that research projects involving tribal members are done so in a way that benefits the community and does not misrepresent their community. This website details the principles behind the ATFE, and provides a complete guide for researchers seeking to do research in the community. Ideas included in the protocol for research review are FPIC, mutual benefit and respect, and an emphasis on drawing from Akwesasne values and principles to guide all work, research and review.

- Guidelines for tribes/TEK holders: This website provides a template for tribes to create an internal research and review board. The protocol detailed by the ATFE offers an example of how a tribe can ensure that outside research benefits the tribe, does not exploit tribal members. Additionally, the protocol provides a template that ensures that power over research and research products stays within the tribal community
- Guidelines for researchers: The protocol developed by the ATFE was created to ensure that benefits of research are afforded to the tribal community. This protocol also ensures a productive and mutually beneficial relationship between researchers and the tribal community. Included in the protocol are larger guidelines about ethical research practices (e.g. cultural sensitivity training, hiring preference to tribal members, embodying community values in research, working with the community from the inception of the research project, giving communities ample time to review).

Akwesasne Task Force on the Environment. 1996.[Protocol for Review of Environmental and Scientific Research Proposals.](#)
Type of Publication: Protocol
Keywords: Research protocols, Akwesasne, research protocol template, cultural sensitivity, community-led research

[Alberta Mental Health Board. 2006. Aboriginal Research Protocols: Healthy Aboriginal People in Healthy Communities.](#)

This document is the result of collaboration amongst several Canadian health boards and First Nations community members and leaders. The document provides protocols for conducting research on mental health in First Nations communities. These protocols emphasize the importance of considering family in mental health and acknowledging the role of elders in First Nations communities. Furthermore, the protocols note that research must be made available to community members in their local language, whether or not that language is English. The protocols also offer the insights of two elders, who give perspective into what mental health means in First Nations communities. This document also provides an annotated bibliography on research protocols for Aboriginal peoples.

- Guidelines and best practices for researchers: A critical point made by this document is that there are a diversity of experiences and ways to view reality, and that researchers must have the capacity to work with and respect these multiple worldviews. This fact holds true on many scales (e.g. between researchers and Indigenous community, within an Indigenous community, between two individuals, etc.)

Alberta Mental Health Board. 2006. Aboriginal Research Protocols: Healthy Aboriginal People in Healthy Communities. Edmonton: Alberta, Canada.
Type of Publication: Protocol
Keywords: research, First Nations, mental health, elders, Native language

American Indian Law Center. 1999. Model Tribal Research Code.

This document provides guidance for tribes and tribal organizations to develop research codes/protocols for outside parties seeking to work with Native peoples. It also provides a list of grievances that Native peoples may have towards researchers due to past and ongoing abuses (1-2). The document also explains existing federal and state regulations surrounding research, including those designed specifically for Native people (such as Indian Health Services' IRB process). The authors provide guidance about how to use this document, as a template and starting place for discussions around developing one's own research code, and caution against adopting or rejecting the document wholesale. The model code that is provided is highly detailed (e.g and provides information about how to develop codes) and provides step-by-step guidance about common features of research codes. In addition to a complete model code, the authors explain each section of the model code, and highlight potential points of concern for tribes as they develop their own codes.

American Indian Law Center. 1999. Model Tribal Research Code. American Indian Law Center: New Mexico.
Types of Publication: Protocol, code
Keywords: Protocol, research, code, ethics, law, Institutional Review Board (IRB), intellectual freedom

Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS). 2012. Guidelines for Ethical Research in Australian Indigenous Studies.

This document identifies fourteen principles to guide research that occurs in collaboration with indigenous Australian and Torres Strait peoples. Two noteworthy aspects of the document are the recognition that indigenous research participants are also researchers and deserve to be viewed and treated as equals to researchers, the recognition that research protocols are a human rights issue in addition to an ethical issue. For each principle found within the document, the authors also provide guidance about how to apply the principle to research. For example, principle 4 reads "rights in the traditional knowledge and traditional cultural expressions of Indigenous people must be respected, protected and maintained," (3) and the authors offer that in order to apply this principle one should "discuss co-ownership of intellectual property, including co-authorship of published and recorded works and performances…" (4). The authors also discuss Free, Prior and Informed Consent as a prerequisite for ethical research. Additionally, the guidelines include a requirement that researchers conduct research that takes into account Indigenous languages, customary laws and traditions. One additional point of emphasis is the importance of incorporating flexibility and change into research, as responsibilities to negotiate and consult indigenous people are ongoing before, during and after research. The principles are too numerous to be listed here, but all fourteen provide valuable insights into conducting ethical research.

- Guidelines for researchers: While this document was designed specifically for researchers operating under AIATSIS, many of the guidelines are directly applicable to other researchers working with Indigenous peoples. The emphasis on partnership, the importance of FPIC, the risks facing TK in research situations, and the equal standing between researchers and indigenous people are all lessons that can be applied to research protocols in a North American context.

Australian Institute of Aboriginal and Torres Strait Islander Studies (AIATSIS). 2012. Guidelines for Ethical Research in Australian Indigenous Studies.
Type of Publication: Protocol
Keywords: research protocol, traditional knowledges (TKs), co-production, intellectual property, ethics

Boles et al. 2008. Report: Taskforce to Review Protocols for Native American Archival Materials.

This document is a record of a meeting of the Society of American Archivists (SAA) discussing whether to adopt guidelines for archivists suggested by the SAA's Native American Roundtable. These guidelines are included in the appendices (31). The meeting notes include an appendix of the recommendations offered by the Native American Roundtable, as well as notes of the arguments of both those opposed and in favor of adopting the guidelines. Within the recommendations are several guidelines for federal managers and archivists.

- Guidelines for federal managers/archivists: Recommendations include greater consultation with tribes, restricting public access to culturally sensitive material, consideration of cultural and intellectual property rights and repatriation of culturally important items (see Appendix 2).

Boles, Frank, David George-Shongo and Christine Weideman. 2008. "Report: Taskforce to Review Protocols for Native American Archival Materials." Society of American Archivists Council Meeting, February 7-10, 2008.
Type of Publication: Protocol
Keywords: Society of American Archivists (SAA), consultation, culturally sensitive material, repatriation

Canadian International Development Agency (CIDA). n.d. Handbook of CIDA Project Planning and Indigenous Traditional Knowledge.

This document was intended to inform the Canadian International Development Agency (CIDA) when implementing international projects affecting Indigenous people and traditional knowledge. The document emphasizes that it is not intended as a field guide or set of hard guidelines, but instead as a marker for checking that indigenous peoples and their knowledge are being respected during CIDA projects. The document has a broad scope, including definitions of traditional knowledge and Indigenous people, case studies of successful collaborations between Indigenous peoples and CIDA, discussion of traditional knowledge holders in Indigenous communities (e.g. gender differences, the role of elders), the difference between local and Indigenous knowledge systems, best practices for "acquiring" traditional knowledge for projects, the importance of financial and decision-making empowerment of Indigenous peoples, discussion of intellectual property rights, traditional rights to resources. For each topic discussed in the report, the authors offer a value, recommendation or

guideline for carrying out CIDA projects. Some notable recommendations include allowing for protection/non-disclosure of sensitive traditional knowledge, involving Indigenous people in decided whether or not a development project should proceed and transferring benefits and value-added outcomes to Indigenous communities. The document includes a great deal of relevant information. However, this information is not easily accessible. The report is organized loosely, making it difficult to find particular guidelines or recommendations. The recommendations cover, amongst others, issues of intellectual property rights, Indigenous title to homeland, meaningful Indigenous involvement in project development, locally appropriate negotiation/collaboration/planning techniques, relationship-building between Indigenous people and the project team, and protocols for gathering and protecting traditional knowledge. The report offers appendices including a comparison of traditional knowledge and western scientific knowledge, and bibliographies of useful resources and Indigenous knowledge organizations. Of particular note is appendix 6, which plainly states a list of best practices for planning with traditional knowledge—this appendix summarizes the report in an organized manner.

- Guidelines for planners: These guidelines, and especially the list found in appendix 6, offer recommendations to guide projects working with Indigenous people. These guidelines are aimed at promoting meaningful Indigenous involvement, and consideration and care in international aid planning.

Canadian International Development Agency (CIDA). n.d. Handbook of CIDA Project Planning and Indigenous Traditional Knowledge.
Type of Publication: Technical Report, Protocol
Keywords: traditional knowledges (TKs), international development, intellectual property rights, collaborative project planning, traditional rights, Indigenous languages,

Canadian International Development Agency. n.d. General Guidelines.

These guidelines were created for government officials, NGOs and others who may be working with Indigenous communities. CIDA provides seven guidelines for working with Indigenous people. The authors address each guideline in a subsection of the report. The seven guidelines are 1) locate and identify Indigenous people in the area of your project, 2) respect the traditional rights of Indigenous people, 3) plan for sustainability, protect the long-term, 4) understand the nature of Indigenous knowledge before attempting to collect or use it (this step advocates strongly for bringing Indigenous knowledge holders into all stages of project planning), 5) build on the strengths of Indigenous knowledge, 6) include Indigenous knowledge and peoples from the very beginning, 7) acquire Indigenous knowledge on the basis of trust, respect, equity and empowerment. This document also discusses complications of current intellectual property laws when applied to traditional knowledge. The guidelines investigate legal approaches—use of international law, "soft" law, and other approaches to aid in protecting Indigenous knowledge—to protecting Indigenous knowledge when there are inadequate local laws or legislation to protect Indigenous peoples. Within guideline seven is a five-point strategy for acquiring traditional knowledge and partnering with Indigenous people. These five points emphasize the importance of partnership, and mutual benefits.

- Guidelines for agency staff and researchers: This document clearly lays out seven guidelines for those working with Indigenous communities.

Canadian International Development Agency. n.d. General Guidelines.
Type of Publication: Guideline, Protocol
Keywords: traditional knowledge, traditional rights, international development, intellectual property, collaborative project planning, Indigenous language, co-management, participatory action research

Carjuzaa et al. 2010. The Give Away Spirit: Reaching a shared vision of ethical indigenous research relationships.

This document describes the historical and ongoing marginalization of Indigenous people by western research. It does on to explore some solutions being explored in the academic community to create more equitable research practices. From there, the authors present their own ideas, which build upon previous work by Kirkness and Barnhardt's 1991 article "First nations and higher education: The four Rs—respect, relevance, reciprocity, responsibility," by adding a fifth dimension "relationality" to ethical research guidelines. The authors argue that only by meaningfully changing research paradigms to reflect the values of Indigenous communities can more equitable relationships be established.

- Guidelines for tribes and researchers: This document offers a viewpoint which can guide the development of a mutually-beneficial relationship between tribes and researchers. It also provides an overview and critique of several existing ideas around collaboration.

Carjuzaa, Jioanna; Fenimore-Smith, Kay. 2010. The Give Away Spirit: Reaching a shared vision of ethical indigenous research relationships. Journal of Educational Controversy 5(2).
Type of Publication: Protocol
Keywords: Marginalization, Indigenous people, research practices, equitable research, ethics

Cochran, Patricia Longley. n.d. Alaska Native Science Commission Research Ethics Sample MOA.

This sample MOA provides research ethics protocols for scientists are researchers working with Alaska Native communities. Points emphasized by the MOA include practicing informed consent, providing financial support so that local communities can create an oversight committee, use of Native language when English is a second language, involvement of Native people in research as staff/researchers, protection of sacred/private knowledge, acknowledgement and partnership with Native community, providing copies of deliverables to local libraries/archives. The sample MOA also includes a template for communities to borrow from. This template provides structure, as well as principles to guide research, and obligations that researchers and community members should follow. These principles and obligations emphasize the importance of co-equal partnership, benefits to the community and no-harm research practices. This sample MOA provides succinct and dense material with an emphasis on conducting research that benefits Native communities without compromising community self-determination or sacred knowledge. The sample MOA also includes a potential operating procedure for gathering, storing and caring for data, and for making contact with potential research-partner communities.

Cochran, Patricia Longley. n.d. Alaska Native Science Commission Research Ethics Sample MOA.
University of Alaska - Anchorage - Institute of Social and Economic Research (ISER) - Alaska Native Science Commission (ANSC), Anchorage, Alaska.

Type of Publication: Protocol, Sample Memorandum of Agreement
Keywords: informed consent, research, Native language, principles, protocol, MOA

Cochran, Patricia Longley. n.d. Ethical Guidelines for use of Traditional Knowledge in Research & Science.

This document provides guidelines to researchers and reviewers working with Alaska Native communities and research derived from work with these communities. Central themes to the guidelines are cultural competence, informed consent and community involvement. The guidelines also encourage the general public to exercise good judgment in deciding whether a research project is appropriate or culturally sensitive. The document encourages Native communities to establish working groups in order to advocate for themselves, their elders and their knowledge systems by evaluating research projects. Lastly, the document provides guidelines for Native elders who may be involved in research projects.

Cochran, Patricia Longley. n.d. Ethical Guidelines for use of Traditional Knowledge in Research & Science.
University of Alaska - Anchorage - Institute of Social and Economic Research (ISER) - Alaska Native Science Commission (ANSC), Anchorage, Alaska.
Type of Publication: Guidelines
Keywords: research, guidelines, elders, traditional ways, authorization, cultural responsiveness

Colchester et al. 2007. Making FPIC—Free, Prior and Informed Consent—Work: Challenges and Prospects for Indigenous People.

This document offers a summary of work by Indigenous people and supportive organizations to ensure that FPIC is being applied. The report uses case studies and draws from Indigenous peoples' experiences to discuss experiences applying FPIC in Suriname, Guyana, Peninsular Malaysia, Peru, Indonesia, Papua New Guinea and the Philippines. Notably, this document explores the issue of verifying that FPIC has been obtained (14), e.g. by asking what organizations should be empowered to determine if Indigenous people are supplying FPIC. Leaning on insights gained from a 2007 workshop hosted by the Forest Peoples Programme, this report also offers thoughts about how Indigenous people can use the FPIC process to ensure their ability to self-determine. This document also discusses the role that language(s) play in the FPIC process, including the importance of using Indigenous language in discussions, and the potential for abuse of the FPIC process by intentionally not using languages intelligible to local Indigenous people.

- Guidelines for tribes/TK holders/Indigenous peoples: Free means that indigenous methods/institutions for decision-making are respected (5); a central question is: how can indigenous people integrate FPIC into their decision-making processes (6); this report includes a set of recommendations by Indigenous workshop participants to ensure successful outcomes in asserting Indigenous peoples' rights to FPIC (21).
- Guidelines for agencies and managers: Indigenous decision-making processes are often substantially different than colonial governmental structures. Therefore, understanding the appropriate people to contact and process to undertake to gain FPIC must be done with an understanding of Indigenous decision-making process (6-8).

Colchester, Marcus and Maurizio Farhan Ferrari. Forest Peoples Programme. 2007. Making FPIC—Free, Prior and Informed Consent—Work: Challenges and Prospects for Indigenous People.
Type of Publication: Protocol, Case Study

Keywords: Free, Prior and Informed Consent (FPIC), Forest Peoples Programme, language, management, development

Convention on Biological Diversity. 2011. Tkarihwaié:ri: Code of Ethical Conduct to Ensure Respect for Cultural and Intellectual Heritage of Indigenous and Local Communities.

This document details a Code of Ethics that represents a new, collaborative paradigm for researchers and others who are working with Indigenous peoples, or on their land. The guidelines are international in scope, and represent a collaborative effort between members of the Convention on Biological Diversity, a UN program.

- Guidelines for federal and other managers: Some keys included in the Code are: respect for intellectual property rights of Indigenous communities, full disclosure and informed consent (Free, Prior and Informed Consent), respect for Indigenous communities' right and responsibilities to protect collective and individual knowledge, shared benefits from research (9-13). This document also includes methods for researchers and others (14-15).

Convention on Biological Diversity. 2011. Tkarihwaié:ri: Code of Ethical Conduct to Ensure Respect for Cultural and Intellectual Heritage of Indigenous and Local Communities.
Type of Publication: Protocol
Keywords: Research, code of ethics, Indigenous peoples, Convention on Biological Diversity, Free Prior and Informed Consent (FPIC), shared benefits

Dena Kayeh Institute. 2010. Traditional Knowledge Protocol.

This document is a template for First Nations who are entering into agreements to collaborate which may involve disclosing TK. The document has empty spaces for readers to fill in information about their First Nations community. This template also includes advice/suggestions on how to ensure that effective use of the document (i.e. that the First Nations community ensures adequate protection and forms a good working relationship with the outside party). This template suggests a particular model that includes a research review council made up of elders who oversee research, while power to approve or deny research is reserved for First Nation government/leadership (i.e. council or chiefs).

- Guidelines for tribes/TEK holders: One important protection highlighted by this template is that all agreements with outside parties should include very specific parameters about what research is being conducted, why, and what access researchers are being granted. This document provides an entire template that follows a specific model (developed by the authors).

Dena Kayeh Institute. 2010. Traditional Knowledge Protocol.
Type of Publication: Protocol
Keywords: traditional knowledge, research protocol template, protection of TK, research ethics

First Archivist Circle. 2007. Protocols for Native American Archival Materials.

The authors of these protocols are a group of both Native and non-Native archivists, librarians and others who composed these protocols in an effort to provide best practices for non-tribal organizations who are working with Native American archival material. These protocols build upon several other protocols. The emphasis of these protocols is on building reciprocity and respect, and on consulting with

Native communities. The protocols address a diverse range of issues, including issues of repatriation of materials, culturally sensitive materials, accessibility and use, Native American intellectual property rights and awareness of Native issues within archival professions. For each issue highlighted in the protocols, the authors provide guidelines for action. This document provides active assistance to aid archivists who are seeking to create more just relationships with Native communities. It also provides guidelines for tribes, to help ensure that they are taking an active role in advocating for and creating stronger and more productive relationships between Native communities and archives.

- Guidelines for Archivists and Native communities: These protocols present several issues for consideration (e.g. culturally sensitive materials in archives). For each issue, they offer guidelines for both archivists and Native communities, with the aim of creating respect, reciprocal relationships, and culturally appropriate management of archived materials.

First Archivist Circle. 2007. [Protocols for Native American Archival Materials](#).
Type of Publication: Protocol
Keywords: Archive, traditional knowledges (TKs), repatriation, intellectual property, communal property, sovereignty, culturally sensitive materials

First Nations Centre. 2007. Considerations and Templates for Ethical Research Practices.

This document is designed to provide guidance to First Nations communities who decide to allow research in their communities, in order to ensure that this research benefits the community and is conducted ethically. The document lays out guidelines for developing a code of ethics to guide research. One item of note is the distinction the authors make between informed individual and informed community consent. The document provides input about what effective codes of ethics will include, and also information about how to ensure that the process of developing a code of ethics is done in a way that is positive for a community and supports community participation and Indigenous autonomy. The document describes tools such as participatory research, collaborative research agreements and data-sharing protocol and how to utilize these tools to create an ethical research protocol. The majority of the document is made up of templates for 1) a research code of ethics, 2) collaborative research agreement and 3) data-sharing protocol.

- Guidelines and best practices for federal managers and TEK holders/users: This document provides an extensive set of templates which are intended to help Indigenous communities and outside researchers to establish an equitable relationship. Both the explanatory information within the report and the templates themselves describe the advantages of adopting an alternative research framework that emphasizes the rights to respect and self-determination that Indigenous people have.

First Nations Centre. 2007. [Considerations and Templates for Ethical Research Practices](#). Ottawa: National Aboriginal Health Organization.
Type of Publication: Guide
Keywords: research protocols, First Nations, research protocol development, ethics, collaborative research

First Nations Centre. 2005. Ownership, Control, Access, and Possession (OCAP) or Self-Determination Applied to Research.

This document offers a framework for ensuring that First Nations retain their capacity to practice self-determination in research situations. This framework centers of OCAP (as per title), which are four principles/rights that First Nations communities have over their own knowledge and research materials. This document also includes an analysis of how past and present research methods have failed to treat Indigenous people equitably, as well as an analysis of how researchers and have tried to correct past wrongs towards Indigenous communities by adopting a variety of protocols (some deemed more effective than others by this report). The OCAP document identifies these research protocols as a form of self-regulation by researchers, as they are non-binding and do not give regulatory power to Indigenous communities to enforce research protocols. The document goes on to explore other limitations with existing protocols. This document calls for a re-evaluation of who is playing what role in research, and advocates for Indigenous people to establish themselves as gatekeepers and regulators of research pertaining to their communities.

- Guidelines and best practices for tribes/TEK holders: OCAP process provides specific guidelines, as well as an alternative framework for approaching research. This framework centers on ensuring that meaningful power and ability to control research processes is vested in the community.

First Nations Centre. 2005. Ownership, Control, Access, and Possession (OCAP) or Self-Determination Applied to Research.
Type of Publication: Guideline, Protocol
Keywords: Research, self-determination, regulation, indigenous research

Fish and Wildlife Service. 2013. Traditional Ecological Knowledge - Basic FWS Information.

This website includes reference information for Fish and Wildlife Service (FWS) agency staff and scientists working with TK. The reference materials on the website include information that introduces TK, a comparison of western science and TK, information about how to integrate TK into the FWS as well as an introductory reference sheet designed to introduce FWS scientists to TK and common issues surrounding TK. One major focus of the webpage is on providing guidelines to agency staff as they work with and gather TK in collaboration with tribes.

Fact Sheet—Traditional Ecological Knowledge for Application by Service Scientists:

- Guidelines for agencies gathering and using TK:
    - Includes guidelines on how to ethnographically gather TK information.
    - The description provides no explanation of how to guarantee that tribal interests are protected beyond cautioning that use of TK can have unintended consequences.
    - Guidelines do recommend consulting with FWS tribal liaison to ensure that TK is properly gathered.

- Use of TK:
    - Explains how TK is useful in identifying climate impacts because of capacity to note subtle changes.

Powerpoint—Traditional Ecological Knowledge: An Introduction

- Guidelines and best practices for agencies:
    - Use of Memorandums of Understanding
    - Contact with tribal council
    - Following tribal research protocols
    - Advocates for ethnographic collection of information
    - This presentation argues that gathering ethnographic information does not constitute an act of government-to-government consultation.

Fish and Wildlife Service. 2013. "Traditional Ecological Knowledge - Basic FWS Information." Last modified August 6.
Type of Publication: Protocol
Keywords: traditional knowledge, western science, management, Forest Service

Gwich'in Social & Cultural Institute. 2004. Traditional Knowledge Policy.

This document details the policy adopted by the Gwich'in Tribal Council regarding traditional knowledge (TK). The document sets parameters for the Gwich'in Tribal Council and other official/tribal organizations to follow regarding TK. This document also includes principles that guide said traditional knowledge policy. These principles include ensuring benefits to Gwich'in people and progeny, and ensuring that TK is shared in manner that allows for control and influence over TK to remain in Gwich'in peoples' hands. This document lays out explicit and clear guidelines for Gwich'in organizations who are collaborating on and reviewing research involving Gwich'in peoples. Also included in the document is a form for researchers who are requesting for permission to work on Gwich'in land, or with Gwich'in TK. Finally, the document includes an appendix on what constitutes ethical research, and another appendix regarding research guidelines for Gwich'in TK. One important point discussed in the document is the importance of considering Gwich'in language in conducting research.

- Guidelines and best practices for tribes/TK holders*:* Document provides a template for tribes and others who are seeking to formalize a process for ensuring that TK is used and protected in an effective manner. Document also provides a "cheat sheet" for what constitutes informed consent.
- Guidelines for researchers and others*:* Guidelines for what constitutes informed consent have the potential to aid researchers and other non-tribal parties as they seek to collaborate with tribes. Clear requirements for conducting research with Gwich'in people provide a template for any researchers working in Indigenous communities.

Gwich'in Social & Cultural Institute. 2004. "Traditional Knowledge Policy."
http://www.gwichin.ca/TheGwichin/GTCTKPolicy.pdf#10.pdf. (November 15, 2013).
Type of Publication: Protocols, Policy and Law
Keywords: Gwich'in, Indigenous policy, traditional knowledge, research protocol, Native language

Holcombe, Sarah et al. 2009. Indigenous Ecological Knowledge and Natural Resources in the Northern Territory: Guidelines for Indigenous Ecological Knowledge Management (including archiving and repatriation).

This report is part of a broader series of reports intended to inform natural resource managers in Northern Australia of their responsibilities towards Indigenous intellectual property rights, and to develop guiding principles and practices to promote respect of these rights. These guidelines are designed to protect Indigenous peoples' rights to protect and manage their own TK, and to ensure that outside managers, researchers and government agencies actively recognize and support the rights of Indigenous people. Some information within the report is highly specific to Indigenous peoples in Australia, e.g. specific cultural practices for establishing who has responsibility to manage certain land. This report advocates for the development of research and archiving procedures that are embodied in local communities, as to support intergenerational knowledge transmission (4, 9). This report advocates for free, prior and informed consent (FPIC) and benefit-sharing as foundations for interactions with Indigenous Ecological Knowledge (IEK) (5, 11-13). This report bases its approach in the acknowledgement that Indigenous communities already have established protocols for handling and interacting with IEK, and that all research should understand, respect and follow these protocols (7, 11). In addition to discussing archiving, the report offers guidance for repatriation of materials/knowledge (18-19). The report also discusses issues of IEK protection and access when housed in databases, registers and archives (9-10, 14-15), advocating for the creation of institutions that are modeled after Indigenous conceptions of IEK protection and knowledge transfer. The report also addresses copyright, authorship and intellectual property law (16-17). Finally, the report includes case studies of successful archives, registers and databases (20-28).

Holcombe, Sarah et al. 2009. Guidelines for Indigenous Ecological Knowledge Management (including archiving and repatriation). Report commissioned by Northern Territories Natural Resources Management Board.
Type of Publication: Technical Report, Guideline Document
Keywords: Traditional knowledges (TKs), Indigenous Ecological Knowledge (IEK), Indigenous Knowledge (IK), land management, natural resource management, Indigenous Cultural and Intellectual Property (ICIP), archiving, repatriation, intergenerational knowledge transfer, research protocol, research ethic, Free Prior and Informed Consent (FPIC)

Houde, Nicholas. 2007. The six faces of traditional ecological knowledge: Challenges and opportunities for Canadian co-management arrangements.

This article explores opportunities for greater involvement of Indigenous people in management and stewardship by examining TEK, First Nations and Canadian law and natural resource policy. By explaining TEK using a six part model which discusses both the management practices and spiritual beliefs held within TEK systems, Houde gives a detailed summary of opportunities and challenges for collaboration. At the same time, he provides a nuanced definition of TEK. Houde advocates for co-management in order to facilitate equitable solutions which more effectively protect and enhance ecosystems while achieving more just results for Indigenous peoples.

- Guidelines for federal managers and others: Houde's treatment of TEK expands on many existing policies and ideas of TEK, which emphasize only how TEK can benefit land management.

Houde brings to light some of the conflicts that exist for Indigenous people in deciding what, how and whether to share TEK.

Houde, Nicholas. 2007. "[The six faces of traditional ecological knowledge: Challenges and opportunities for Canadian co-management arrangements.](#)" Ecology and Society 12(2). doi:34.
Type of Publication: Academic Journal
Keywords: traditional knowledge, Canadian law, First Nations, management practices

Inuit Tapiriit Kanatami and Nunavut Research Institute. 2007. Negotiating Research Relationships with Inuit Communities: A Guide for Researchers.

This report offers a guide to researchers who are working with Inuit people. It addresses common concerns that Inuit community members have about research, and offers guidelines for researchers to ensure that research is conducted in a mutually beneficial, respectful and productive manner. The guide provides information about major concerns within Inuit communities surrounding research, lists advantages of participatory research, and gives a step-by-step template for researchers as they work with Inuit communities. The report also includes appendices with extensive information about appropriate agencies and organizations to contact regarding research protocols and permitting.

- Risks for indigenous peoples associated with research: Information may be used without TK-holders being properly consulted first. TK-holders may lose control of knowledge they have shared when researchers leave (i.e. TK-holders have no way to ensure what researchers do with the knowledge they have gathered). Knowledge can be appropriated and/or researchers can take credit for Inuit knowledge. Local expertise may be marginalized or overlooked in favor or peer-reviewed literature.

- Guidelines for researchers: The report recommends that researchers are forthright with Inuit communities. This includes collaborating to agree on a clear set of expectations about how data will be controlled, what research will be used for, how the community will be involved and how participants will be compensated. The report also offers a start-to-finish template for researchers to consider as they propose and carry out research in collaboration with Inuit communities.

Inuit Tapiriit Kanatami and Nunavut Research Institute. 2007. "[Negotiating Research Relationships with Inuit Communities: A Guide for Researchers.](#)" Eds. Scot Nickels, Jamal Shirley, and Gita Laidler. Inuit Tapiriit Kanatami and Nunavut Research Institute: Ottawa and Iqaluit.
Type of Publication: Protocol
Keywords: Inuit, research protocol, participatory research

IPBES Proposed Procedures for Working with ILK.

This document lays out objectives for conducting assessments for working with indigenous and local knowledge (ILK), with the intent of increasing collaboration between science and ILK and for creating greater integrating of ILK into IPBES' work. The document emphasizes that during assessments, free prior and informed consent (FPIC), as well as other protocols must be followed to ensure ethical and mutually beneficial research/assessments are conducted. This document details procedures and guidelines that each assessment will follow, including co-production of knowledge and the cultivation of respectful relationships between outside researchers and ILK holders.

IPBES. Proposed Procedures for Working with ILK.
Type of Publication: Procedures/Protocols, Policy
Keywords: indigenous and local knowledge (ILK), traditional knowledges (TKs), assessment, Free Prior and Informed Consent (FPIC), ethical research

Mason et al. 2012. Listening and learning from traditional knowledge and Western science: a dialogue on contemporary challenges of forest health and wildfire.

This article is the result of a workshop conducted on the Flathead Indian Reservation of the Confederated Salish Kootenai Tribes; workshop participants collaborated to author this article. The workshop brought together tribal elders, native and nonnative scientists, forest managers and academics to explore how to integrate TK and Native stewardship practices into existing western land management in order to better care for forest health, and in order to address wildfires. This article offers recommendations for increasing collaboration between western science and TK. The authors argue that effective collaboration will require "enduring commitments to knowledge sharing that extend beyond the usual boundaries of professional training and cultural orientation..." so that lasting, respectful and mutually beneficial partnerships between native and nonnative land managers can exist. The article includes a list of recommendations for increasing collaboration between TK and SEK. Some of these recommendations are: collaborative development of conduct of relationship between tribes and agencies at a local level, creation of a national program for SEK/TK integration, workshops and other opportunities to increase face time between scientists, tribal leaders, agency staff, etc.

- Guidelines and best practices for tribes: Elders spoke about historical marginalization and appropriation of TK and how this has informed a cautious approach to collaboration for TK holders. They also discussed how because of the sacred nature of knowledge being shared, it is vital that respectful exchanges occur. Elders also related the difficulties in translating knowledge/putting into terms that are easily understood by a western scientific viewpoint (18). Native students and tribal foresters spoke about the importance of receiving support as they attempt to bring TK in tribal management practices, and how much they appreciated the support of elders in the community (189).
- Guidelines and best practices for agencies: The ITC spoke about overcoming assumptions that SEK was the "best" knowledge type and how valuing TK through organizations such as LCCs has positive potential for agencies (190-1). Agency personnel advocated that agencies and others reach out to tribal knowledge holders to demonstrate that they working to change institutional arrogance, and to build face-to-face relationships based in mutual respect and a value for both parties' priorities (191).

Mason L, White G, Morishima G, Alvarado E, Andrew L, Clark F, Durglo M, Durglo J, Eneas J, Erickson J. 2012. "Listening and learning from traditional knowledge and Western science: a dialogue on contemporary challenges of forest health and wildfire." Journal of Forestry 110:187–193. http://www.bia.gov/cs/groups/xnifc/documents/text/idc-018689.pdf.
Type of Publication: Academic Journal
Keywords: traditional knowledge, scientific ecological knowledge (SEK), collaboration, land management, stewardship practices

McKenzie Valley Review Board. 2005. Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment.

This document explores how to integrate TK into existing environmental impact assessments (EIAs) in the McKenzie Valley region of Canada. It outlines how TEK is to be integrated into existing EIA structures to ensure that Indigenous people are being represented, and to improve the EIA process. The document argues that integrating TK when developing EIAs will result in more representative and just EIAs, and also increase the effectiveness and scope of the EIAs. The document also provides information about how to collaborate with TK-holders, as well as when and how to approach communities about sharing information.

- Benefits and risks of sharing/TEK*:* Benefits of sharing TK center on having a voice in developing EIAs. By collaborating with U.S. policymakers and land managers, TEK-holders have an opportunity to ensure that their voices and concerns are heard.
- Guidelines and best practices for federal managers: Co-equal collaboration between communities and researchers.

McKenzie Valley Review Board. 2005.Guidelines for Incorporating Traditional Knowledge in Environmental Impact Assessment.
Type of Publication: Protocol
Keywords: traditional knowledge, environmental impact assessments (EIAs), collaboration

Management of Social transformations Programme (MOST) and Centre for International Research and Advisory Networks (CIRAN). 2002. Best Practices on Indigenous Knowledge.

This list of case studies highlights the use of indigenous knowledge (IK) in development projects developed with the intent of applying IK to efforts to reduce global poverty and promote development. The document offers a definition for IK, as well as a justification for the merits of including IK in development projects. The website offers useful examples of collaboration between western science and IK. At the same time, the database includes some problematic language and assumptions regarding IK and indigenous peoples.

Management of Social transformations Programme (MOST) and Centre for International Research and Advisory Networks (CIRAN). 2002. Best Practices on Indigenous Knowledge.
Type of Publication: Database
Keywords: Indigenous peoples, traditional knowledges (TKs)

Mi'kmaw Ethics Watch. 1999. Research Principles and Protocols.

The Mi'kmaw Ethics Watch created research protocols in order to ensure that Mi'kwaw people are guaranteed ownership of all research and materials associated with that research, and to ensure that research in Mi'kmaw country benefits the community, and is conducted in an ethical and appropriate manner. The protocols laid out by the Mi'kmaw Ethics Watch can serve as a template to other Indigenous communities seeking to establish research protocols. One contribution of this document to ongoing issues surrounding protection of TK and community empowerment is the document's discussion of internal community methods for determining ownership of knowledge and for handling disputes about ownership and use of TK. The document discusses how Mi'kmaw people have ownership

to knowledge based on individual, family, clan, societies and associations. Therefore, internal/tribal mechanisms for determining how to regulate and protect TK are necessary—this model for protecting TK keeps power in tribal infrastructure. This document also provides information about how to ensure that research materials are available in the languages of participating communities, and that all research is conducted in a manner that is respectful of Indigenous languages.

- Guidelines and best practices for Tribes/TK holders: These protocols offer a template for other Tribes. These protocols emphasize the rights of Indigenous people to retain control over research materials and to act as partners, not subjects, in research. Given ongoing issues around dissemination and appropriation of TK, this emphasis may be highly applicable for tribal communities.

Mi'kmaw Ethics Watch. 1999. Research Principles and Protocols.
Type of Publication: Protocol
Keywords: Mi'kwaw, research protocol, traditional knowledge, ethics, protection of TK, Native language

Nakata, NM, V Nakata, A Byrne, J McKeough, G Gardiner, and J Gibson. 2008. Australian Indigenous Digital Connections: First Generation Issues.

This report is an attempt to better understand the challenges surrounding digitization of library archives and indigenous peoples'. While digitization of archived material has become increasingly streamlined, issues pertaining to indigenous Australians have received little formal analysis. Issues such as appropriateness of digitizing certain materials, ramifications of making materials more readily available, handling of archived materials, and the protocols around digitization are all examined in this study. The authors interviewed both library and archival staff, and indigenous professionals. The aim of this study was to highlight practical, ethical and legal issues with digitization of indigenous peoples' materials, and draw lessons from the experiences of libraries to guide archives moving forward. The report also includes a discussion of legal issues surrounding the digitization of indigenous materials (this treatment includes a chart and discussion detailing the differences between western and indigenous customary laws, see pp. 8-9).

- Guidelines and best practices for archivists and indigenous people: This study includes extensive information about 1) ongoing issues and problems current practices of archiving indigenous materials in Australian libraries, and 2) larger issues of western and indigenous law that underpin archiving problems (e.g. copyright law, historical marginalization and genocide, loss and recovery of TKs, ownership and custodianship). The authors describe a system for guiding decisions on whether or not to digitize that includes not only considerations of copyright status of materials, but also the status of the material in indigenous customary law—they call this developing a risk management approach.

Nakata, NM, V Nakata, A Byrne, J McKeough, G Gardiner, and J Gibson. 2008. Australian Indigenous Digital Connections: First Generation Issues.
Type of Publication: Technical Report
Keywords: archive, intellectual property rights, customary laws, copyright law, ethics

NCAI Policy Research Center and MSU Center for Native Health Partnerships. 2012. Walk softly and listen carefully: Building research relationships with tribal communities.

In an effort to promote mutually beneficial relationships between Native communities and researchers, the NCAI Policy Research Center and MSU Center for Native Health Partnerships released a guiding document for researchers. This document seeks to strengthen relationships between Native and non-Native researchers and Native communities. This document uses case studies to highlight critical considerations for researchers as they work in Native communities, including issues regarding research in sovereign tribal communities, the necessity of trust-building and honest relationships, the importance of conducting mutually beneficial research, the potential of Community Participatory Research Methods as an effective and just method, and importance of respecting local and traditional knowledges in research. The document also lays out guidelines which ask researchers to challenge personal assumptions as well as biases that may be inherent within certain research frameworks in order to create research that benefits Native communities, promotes insightful research, and supports equitable relationships with Native communities. These guidelines offer strategies to ensure that researchers are both cultural competent and well informed. The case studies in this document provide concrete examples of successful research partnerships in Native communities, and draw larger lessons from these case studies to help identify how to make research with Native communities successful and responsible.

NCAI Policy Research Center and MSU Center for Native Health Partnerships. 2012. "'[Walk softly and listen carefully': Building research relationships with tribal communities.](#)" Washington, DC, and Bozeman, MT: Authors.
Type of Publication: Protocol
Keywords: research, ethics, protocols, mutually beneficial research, partnership

Nuu-chah-nulth Tribal Council Research Ethics Committee. 2008. Protocols & Principles for Conducting Research in a Nuu-Chah-Nulth Context.

This document establishes protocol for government agencies and other researchers who are seeking to work with the Nuu-chah-nutlh Nation. These protocols were designed to ensure that research done in Nuu-chah-nutlh land is done so ethically, and with respect for Nuu-chah-nutlh protocol. The document outlines research protocol and provides principles and ethics that must guide research conducted under the Nuu-chah-nutlh Nation's supervision.

- Best practices for tribes/TEK holders: This set of protocols offers a template for First Nations and tribes who are seeking to create research protocols of their own. While the document does not explicitly address FPIC or TK protection, the principles and ethics in the document relate directly to these issues.

Nuu-chah-nulth Tribal Council Research Ethics Committee. 2008. [Protocols & Principles for Conducting Research in a Nuu-Chah-Nulth Context.](#)
Type of Publication: Protocol
Keywords: research, ethics, Nuu-Chah-Nutlh

O'Neal, Jennifer. n.d. Respect, Recognition and Reciprocity: The Protocols for Native American Archival Materials.

This article contextualizes the development of the First Archivist Circle's *Protocols for Native American Archival Materials*, explores the theoretical basis of the protocols, and responds to criticism that the protocols undermine modern archival theory and practice. O'Neal argues that the protocols strengthen archival work by promoting community involvement, an awareness of historical and social context, and actualization of social justice for Native communities. O'Neal's article also provides insight into the contention that the protocols have brought within the archival community.

O'Neal, Jennifer. n.d. Respect, Recognition and Reciprocity: The Protocols for Native American Archival Materials.
Type of Publication: Academic paper, Protocol Review
Keywords: Protocols for Native American Archival Materials, postmodern archival theory, social justice

[Secretariat of the Convention on Biological Diversity. 2004. Akwé: Kon Voluntary Guidelines for the Conduct of Cultural, Environmental and Social Impact Assessment regarding Developments Proposed to Take Place on, or which are Likely to Impact on, Sacred Sites and on Lands and Waters Traditionally Occupied or Used by Indigenous and Local Communities.]
These guidelines were developed by CBD staff and indigenous partners to inform development projects that will impact indigenous peoples and their traditional lands and waters. These guidelines emphasize partnership between indigenous peoples and government agencies in scoping, planning and conducting projects, the protection of indigenous interests, lands and waters, and traditional knowledges. These guidelines focus on sharing information about proposed projects with affected indigenous communities, creating opportunities for indigenous people to approve/oppose projects, creating mechanisms for indigenous people to participate in project planning, supporting indigenous efforts to participate in planning, and measures for post-project relationships between project planners and indigenous people (e.g. an action plan moving forward, identification of a responsible party in the event of grievances, etc.). The guidelines also recommend that environmental impact assessments, cultural impact assessments and social impact assessments be carried out before projects are undertaken, in order to inform project planners about possible impacts facing the local peoples and environment as a result of the project. For each of these topics, the guidelines offer point-by-point guidance. This document also discusses prior and informed consent, ownership and protection of traditional knowledge, and the need for dispute resolution measures.

Secretariat of the Convention on Biological Diversity. 2004. [Akwé: Kon Voluntary Guidelines for the Conduct of Cultural, Environmental and Social Impact Assessment regarding Developments Proposed to Take Place on, or which are Likely to Impact on, Sacred Sites and on Lands and Waters Traditionally Occupied or Used by Indigenous and Local Communities]. Montreal, 25p. (CBD Guidelines Series).
Type of Publication: Technical Report, Protocol, Guidelines
Keywords: traditional knowledges, protocol, impact assessment, cultural impact assessment, sacred sites, indigenous peoples, informed consent

[Substance Abuse and Mental Health Services Administration (SAMHSA). 2009. Culture Card: A Guide To Build Cultural Awareness—American Indians and Alaska Natives.]
The Substance Abuse and Mental Health Services Administration developed a set of guidelines to assist federal disaster responders and others working in American Indian and Alaska Native (AI/AN) communities. These guidelines focus on ensuring that federal staff develop a rudimentary level of

cultural competency for first responders to improve sensitivity and awareness before interacting with AI/AN communities. These guidelines provide information about common cultural norms and introductory information about how historical relationships can affect reaction within tribal communities, an encapsulated, fundamental description of tribal sovereignty and rights, and a brief overview of how knowledge and beliefs found in AI/AN communities are a source of strength and adaptability for Native people. The Culture Card provides a helpful list of "do's" and "don'ts" regarding etiquette in social interactions.

Substance Abuse and Mental Health Services Administration (SAMHSA). 2009. Culture Card: A Guide To Build Cultural Awareness—American Indians and Alaska Natives.
Type of Publication: Protocol
Keywords: cultural norms, cultural competency, guidelines, tribal sovereignty, social etiquette

Thaman, R., Lyver, P., Mpande, R., Perez, E., Carino, J. and Takeuchi, K. (eds.) 2013. The Contribution of Indigenous and Local Knowledge Systems to IPBES: Building Synergies with Science.
This report is broken into two parts. Part one draws from case studies and notes from the proceedings of an IPBES expert meeting to detail how Indigenous peoples' knowledge systems are contributing to biodiversity and habitat management, while also exploring opportunities for traditional knowledges (TKs) and science to collaborate. Part two presents principles to guide IPBES' approach for working with Indigenous peoples and knowledges. This annotation will treat part one and part two as separate.

Part one provides short summaries of case studies from around the world highlighting successful collaboration between TKs and science on ecosystem management. It also provides a detailed report of the IPBES Expert Meeting, during which panels discussed opportunities and challenges for increasing participation of Indigenous peoples and knowledge into IPBES initiatives. Outputs from the meeting include procedures working with different knowledge systems within IPBES which emphasize meaningful involvement of multiple perspectives and worldviews and respect for the unique rights of TK holders (28-32), and recommendations for creating a conceptual framework to guide IPBES work with Indigenous peoples (32). Key concepts discussed include co-production of knowledge, Free Prior and Informed Consent, intellectual property rights and respectful collaboration between TKs and science.

Part two provides information about how to work with ILK/TKs in IPBES initiatives. It offers specific guidance for IPBES programs, including requirements for successfully working with indigenous peoples (72), and guidance for collaborating with ILK holders during IPBES sub-global and global assessments. While the scope of the document is limited to IPBES assessments, several of the guidelines included are application to other efforts. One useful thing found within this document are a list of potential benefits resulting from collaboration between ILK holders and western scientists and decision-makers (68-70). Also included is a list of obstacles which prevent collaboration (71-3).

Thaman, R., Lyver, P., Mpande, R., Perez, E., Carino, J. and Takeuchi, K. (eds.) 2013. The Contribution of Indigenous and Local Knowledge Systems to IPBES: Building Synergies with Science. IPBES Expert Meeting Report, UNESCO/UNU. Paris, UNESCO.
Type of Publication: Technical Report, Protocol
Keywords: Intergovernmental Platform on Biodiversity & Ecosystem Services (IPBES), Free Prior and Informed Consent (FPIC), intellectual property rights, traditional knowledges (TKs), informed consent

Traditional Knowledge Governance Project. 2013. Preliminary Interim Guidelines on Traditional Knowledge.

This document provides a set of definitions and guidelines to guide tribes and others in making agreements and choosing how or whether to share TKs. The report includes a set of foundations regarding TKs, which help to explain how TK may be viewed in Native communities, and the importance this has for working with TKs. The guidelines emphasize the importance of Free, Prior and Informed Consent (FPIC) in creating partnerships that do not place undue burdens on tribes, informing tribes of risks regarding disclosure of TK and in fostering partnerships not based in exploitation.

- Guidelines for TK holders, researchers and others: These guidelines give perspective into tribal priorities around the nature of TKs, especially with regards to the Puget Sound, and around the importance of having procedures such as FPIC when creating agreements in order to ensure non-exploitative and just partnerships.

Traditional Knowledge Governance Project. 2013. Preliminary Interim Guidelines on Traditional Knowledge.
Type of Publication: Protocol
Keywords: Free Prior and Informed Consent (FPIC), traditional knowledges (TKs)

United Nations. 2013. Best practices and available tools for the use of indigenous and traditional knowledge and practices for adaptation, and the application of gender-sensitive approaches and tools for understanding and assessing impacts, vulnerability and adaptation to climate change.

This report reviews existing best practices and tools for using traditional knowledges (TKs) in climate adaptation and explores existing issues of gender sensitivity in integrating TKs into climate adaptation planning. The report emphasizes that in order to integrate TKs into regional and national adaptation planning, researchers and adaptation planners must move beyond the use of TKs primarily as a means of indigenous participation in local adaptation efforts, and towards meaningful involvement of both western science and TKs as partner knowledge systems. The report discusses needs for improvement surrounding gender-sensitivity, including the disproportionate impacts that women face, the often diminished role that women play in climate planning, and the importance of developing gender-sensitive planning processes that engage all people meaningfully. The report is international in scope, drawing from a wide variety of adaptation planning examples. This report also includes information about several databases highlighting ongoing, local efforts to adapt to climate impacts (12). An existing risk facing indigenous people in adaptation planning that is emphasized throughout the report is the potential for adaptation planning that doesn't take TKs into account to lower the resiliency of indigenous people by severely altering the environment, and undermining existing indigenous strategies and tools to adapt. The authors caution that this is particularly likely to occur in instances where adaptation planners view TKs as static, and unable to contribute to a modern or contemporary context. The report discusses adaptation plans and vulnerability assessments, highlighting opportunities for greater integration of TKs in these plans (across multiple scales), and include a variety of examples of current plans and assessments (16-21). This extremely dense report also covers issues of indigenous

ownership/stewardship of TKs (22-24), methods for enabling indigenous participation in planning (24), analysis of gaps in current trends of TKs use in adaptation planning (26), an analysis of gender-sensitive adaptation strategies and practices (30-34), lessons learned about gender-sensitivity adaptation planning (40), practices to foster gender-sensitivity (44-49), and a summary of the report's findings of gaps and opportunities for growth in adaptation planning (51-2).

- Guidelines for policymakers and planners: This report contains a dense synthesis of information, making it a valuable resource. It contains numerous examples and lessons learned regarding TKs in adaptation planning, and tools and methods for increasing gender-sensitivity in adaptation planning. Both of these issues are only beginning to emerge in international and national treatment of TKs, making this report valuable as a guide for those working with TKs on a national scale.

United Nations. 2013. Best practices and available tools for the use of indigenous and traditional knowledge and practices for adaptation, and the application of gender-sensitive approaches and tools for understanding and assessing impacts, vulnerability and adaptation to climate change.
Type of Publication: Technical Paper
Keywords: Traditional knowledges (TKs), gender-sensitivity, adaptation planning, vulnerability, resiliency

UN Framework Convention on Climate Change (FCCC). 2014. Report on the meeting on available tools for the use of indigenous and traditional knowledge and practices for adaptation, needs of local and indigenous communities and the application of gender-sensitive approaches and tools for adaptation.
Proceedings from a meeting dedicated to addressing available tools for use of traditional knowledges, the needs of indigenous peoples in adaptation, and the potential application of gender-sensitive approaches in adaptation. The meeting brought together indigenous and non-indigenous experts and scholars in order to establish best practices for working with indigenous peoples and TKs, and to better understand challenges facing indigenous people during climate adaptation efforts. The meeting focused on finding ways to effectively use TKs in adaptation efforts at a variety of scales. Another point of emphasis was effectively engaging holders of TKs. These notes include a figure of best practices (6) which offers good practices for engaging with TKs. The notes also offer an extensive list of challenges facing indigenous people and TKs in adaptation planning and project implementation (7-8); these challenges draw from the experiences and research of participants and others. The best practices offered by the expert panel emphasize relationship-building, communication, empowerment of indigenous communities. Some specific recommendations include legislative reform in order to better protect TKs from appropriation (9), and the use of methods which emphasize participatory research and project planning (9). This document includes recommendations for UN actors and others (10-13) which are based on the above good practices, experiences and challenges. In addition to issues of TKs, the proceedings also dedicate a section to creating gender-sensitive approaches and tools. Information which applies to TKs and climate change include recognitions of the importance of women in adaptation efforts, and the different roles that men and women play in many knowledge systems, as well as figure illustrating good practices and an informed process (15).

UN Framework Convention on Climate Change (FCCC). 2014. Report on the meeting on available tools for the use of indigenous and traditional knowledge and practices for adaptation, needs of local and indigenous communities and the application of gender-sensitive approaches and tools for adaptation.

Type of Publication: Technical report, proceedings, best practices
Keywords: indigenous peoples, traditional knowledge, indigenous knowledge, gender-sensitive approaches, participatory approaches

Wild, Robert and Christopher McLeod (eds). 2008. Sacred Natural Sites: Guidelines for Protected Area Managers.

This paper is part of a series dedicated to describing best practices in protected areas, and deals with the protection of sacred sites, and the need for reform in international and national policies regarding the protection and recognition of sacred sites, especially with regards to indigenous peoples. The report extensively details existing protection of sacred sites by conservation designations (e.g. national parks), and explores these issues from national and international perspective. The authors advocate for the use of sacred sites as a method for protecting biodiversity. Recognizing this potential offers room for indigenous stewards of sacred sites to increase the perceived legitimacy of their management practices.

- Guidelines for government agencies and managers: Report argues that indigenous management practices enhance biodiversity, and provides evidence that sacred sites are often high in biodiversity, and managed by indigenous stewards. Management practices should respect sacred places, and make room for indigenous management practices and priorities.

Wild, Robert and Christopher McLeod, Eds. 2008. Sacred Natural Sites: Guidelines for Protected Area Managers. IUCN, Gland & UNESCO: Paris.
Type of Publication: Technical Report
Keywords: Protected area, indigenous peoples, conservation, sacred sites, international law, traditional knowledges (TKs)

CASE STUDIES

Anaya, S James, Report by the UN Special Rapporteur on the situation of human rights and fundamental freedoms of Indigenous People: Addendum, The Situation of Indigenous Peoples in Australia.

This report provides context about historical human rights abuses against indigenous Australians, and evaluates the current state of aboriginal human rights in Australia. Some of the information in the report applies to indigenous peoples in other areas of the world (e.g. North America). Specifically, information about failures of Australian law and policy to account for UNDRIP and other international standards of human rights are in many cases comparable to US and Canadian laws. One example is the rights of Indigenous peoples to redress for lands taken without free, prior and informed consent. Another concern which parallels those in North America is the effect that legislation can unintentionally have on indigenous rights (e.g. restrictions on water rights due to drought and impacts to indigenous gathering rights and/or land rights). Also relevant is the author's emphasis on self-determination and land rights.

Anaya, S James. Report by the UN Special Rapporteur on the situation of human rights and fundamental freedoms of Indigenous People: Addendum, The Situation of Indigenous Peoples in Australia. 15th sess, UN Doc A/HRC/15/.
Type of Publication: Technical Report

Keywords: Australia, aborigines, Torres Strait Islanders, indigenous rights, human rights, human rights abuses, land rights, policy reform, indigenous methods

Drought in the Four Corners Region.

Tribes in the Four Corners Region—located at the convergence of New Mexico, Colorado, Utah and Arizona's state borders—currently face a significant and extended drought. In addition to a diminishing water supply, these tribes also struggle with subpar water quality as well as aging and/or inadequate water supply infrastructure. Another consequence of drought is that sand dunes throughout the region are currently growing in size; dune movement and growth is encroaching on many rural, Native communities. A lack of effective coordination between federal, state and tribal agencies has made drought adaptation for tribes in the region even more difficult. Additionally, inadequate federal support has been allocated to these tribes to assist in drought adaptation measures. Despite these obstacles, tribes and others in this region are undertaking projects that demonstrate the potential for collaboration between federal and tribal governments in climate adaptation.

In response to drought concerns, the National Integrated Drought Information Services (NIDIS), tribal environmental staff and non-tribal agency staff have come together for a series of workshops. One such workshop, "Drought Preparedness for Tribes in the Four Corners Region," held in April of 2010 in Flagstaff, Arizona, highlighted several opportunities to increase effectiveness of drought preparedness programs by increasing tribal involvement in climate adaptation. Participants identified a greater level of support from the federal government, increased opportunities for collaboration both between tribes and between tribal and non-tribal governments, and a greater place for TK in drought planning as keys for effective drought adaptation. One avenue to increase representation of TK in drought adaptation is to involve elders and others with TK in drought monitoring and assessment efforts. Workshop participants noted that focusing on collaboration between scientific monitoring (by both tribal and non-tribal departments) and local/tribal communities can benefit tribes in adaptation by providing more integrated drought planning. Drawing on both TK adaptation measures—which have a long history of effective adaptation in the region—and on scientific data, tribes hope to create adaptation measures that are well funded, well supported and effective in aiding tribes in the region.

Margaret Hiza Redsteer, Margaret; Bogle, Rian C.; Vogel John M. 2011. [Monitoring and Analysis of Sand Dune Movement and Growth on the Navajo Nation, Southwestern United States](). United States Geological Survey.

Ferguson, Daniel et al. 2010. [Drought Preparedness for Tribes in the Four Corners Region](). Climate Assessment for the Southwest (CLIMAS): University of Arizona.
Type of Publication: Case Study, Scientific Study
Keywords: Four Corners, Drought, Climate Adaptation, traditional knowledge, National Integrated Drought Information Services (NIDIS), Navajo

Emery, Marla R.; Wrobel, Alexandra; Hansen, Mark H.; Dockry, Michael; Moser, W. Keith; Stark, Kekek Jason; Gilbert, Jonathan H. 2014. Using traditional ecological knowledge as a

basis for targeted forest inventory: paper birch (Betula papyrifera) in the US Great Lakes Region.

This article describes a collaborative effort between the Great Lakes Indian Fish and Wildlife Commission (GLIFWC) and the Forest Service to inventory paper birch, using both western science and TK. The project team relied on information provided by traditional craftspeople from the member tribes of the GLIFWC to inventory paper birch tree characteristics within the Great Lakes region. TK provided by these experts guided fieldwork carried out by the Forest Service's Forest Inventory and Analysis (FIA) Program. This collaborative work offers several lessons about working with science and TK. For example, FS field workers described difficulty interpreting some of the TK-based measurement criteria. This study proved many traditional gatherers' observation that paper birch supplies are decreasing in the region. The highly specific knowledge of these gatherers facilitated this finding, and opened the door to revising management strategies to include birch restoration. The findings are also notable because they featured large-scale collaboration between regional organizations. TK information was effectively transmitted from Anishnaabe TK holders to FS workers using guides and trainings in a way that benefitted gatherers and remained culturally appropriate.

- Guidelines for managers and tribal organizations: The case study presented in this study offers an example of effective collaboration between a US government agency and an inter-tribal organization. The emphasis on equal partnership, and respect for Anishnaabe values and TK provided the groundwork for inventorying paper birch in a way that was useful to both the Forest Service and to GLIFWC.

Emery, Marla R.; Wrobel, Alexandra; Hansen, Mark H.; Dockry, Michael; Moser, W. Keith; Stark, Kekek Jason; Gilbert, Jonathan H. 2014. "Using traditional ecological knowledge as a basis for targeted forest inventory: paper birch (Betula papyrifera) in the US Great Lakes Region." Journal of Forestry 112(2): 207-214.
Type of Publication: Academic Journal
Keywords: Traditional knowledges (TKs), Anishnaabe, Great Lakes Indian Fish and Wildlife Commission, Forest Service, paper birch, inventory, resource management, western science

Gautam, Mahesh, Karletta Chief, and William Smith. 2013. Climate Change in Arid Lands and Native American Socioeconomic Vulnerability: the Case of the Pyramid Lake Paiute Tribe.

This study focuses on the role that social vulnerabilities play in determining the climate vulnerability of the Pyramid Lake Paiute Tribe. There is extensive research on impacts to water resources in the Western US, including in the region of Nevada where Pyramid Lake is found. The dependence of tribal members on the lake and its ecosystem creates unique vulnerabilities for tribal members. This study uses interviews, surveys and socio-economic data to assess the vulnerability of tribal members to ongoing climate impacts. The authors also point out limitations to adaptive capacity that the Tribe faces due to underfunded federal support.

- Guidelines for managers (federal and tribal): This study demonstrates a variety of social and economic factors that influence vulnerability for the Tribe. Considering a wide variety of social factors in vulnerability assessments and in adaptation planning has the potential to strengthen adaptive capacity, as this study demonstrates.

Gautam, Mahesh, Karletta Chief, and William Smith. 2013. "[Climate Change in Arid Lands and Native American Socioeconomic Vulnerability: the Case of the Pyramid Lake Paiute Tribe.](#)" Climatic Change. 120: 585-599.
Type of Publication: Academic Journal
Keywords: vulnerability, resiliency, social vulnerability, Pyramid Lake

Indigenous Observations of Climate Change in the Lower Yukon River Basin, Alaska.

The potential for TKs to contribute to broader understandings of regional climate impacts can be found in a recent study from Herman-Mercer, Schuster, and Maracle (2011). By interviewing elders in the St. Mary's and Pitka's Peak communities, these researchers were able to record local observation of changes to weather patterns, as well as changes to flora and fauna. The authors stress that the observations collected in the interviews should be accepted as valid on their own, and are not in need of scientific validation. They go on to describe their research as an attempt to deconstruct the imaginary divide between western science and TKs. These methods move research away from a paradigm that views TKs as only another set of data to reinforce studies, and towards a system of co-production of knowledge.

Herman-Mercer, Nicole, Paul F. Schuster and Karonhiakt'tie Bryan Maracle. 2011. "[Indigenous Observations of Climate Change in the Lower Yukon River Basin, Alaska](#)." Human Organization 70(3).
Type of Publication: Academic Journal, Case Study
Keywords: traditional knowledge, climate impacts, western science, co-production of knowledge

Spoon, Jeremy; Arnold, Richard. 2012. Collaborative research and co-learning: Integrating Nuwuvi (Southern Paiute) ecological knowledge and spirituality to revitalize a fragmented land.

This article provides history about impacts of colonization to Nuwuvi (Southern Paiute) peoples, and showcases collaborative land management projects undertaken between Nuwuvi peoples and various government agencies. These projects highlight the potential for collaborative research projects to promote co-learning amongst Nuwuvi peoples and agency staff. The authors argue that these types of projects are effective at both revitalizing ecosystems and strengthening cultural revitalization efforts of Nuwuvi (e.g. by conducting research that involves multiple generations of Nuwuvi people as both participants and researchers). This article outlines elements of successful collaborative research—many of the key points articulated by the authors may be applicable for research protocols and guidelines (481-2). This research paper also includes ethnographic information from extensive interviews with Nuwuvi elders; it is a potential resource for others hoping to work with their elders. As part of these interviews, elders describe the importance of places in maintaining spirituality, and the importance of spirituality in maintaining places. Also of note, this paper includes land management principles from tribal research participants to FWS staff (494). These research projects have also led to the creation of the Nuwuvi Knowledge-to-Action Project, which aims revitalize cultural and ecology the region further by advocating for increased collaboration between Nuwuvi peoples and agencies through a government-to-government framework.

Spoon, Jeremy; Arnold, Richard. 2012. "Collaborative research and co-learning: Integrating Nuwuvi (Southern Paiute) ecological knowledge and spirituality to revitalize a fragmented land." Journal for the Study of Religion, Nature and Culture 6(4): 477-500.
Type of Publication: Academic Journal
Keywords: Great Basin, space-based spirituality, ecological knowledge, traditional knowledges (TKs), collaborative research, Nuwuvi (Southern Paiute)

Tooker, Lisa; Ka'ai'ai, Charles; Spalding, Sylvia and Simonds, Kitty. 2008. HOʻOHANOHANO / ÑAKUPUNAPUWALU.

This quarterly journal includes articles which address issues of teaching traditional knowledges (TKs) and fishing practices in Hawai'i. One of these articles discusses teaching traditional knowledges in schools, and developing appropriate curriculum. Specifically, the authors detailed the proceedings of the Puwalu conference series that was dedicated to ensuring that Native Hawai'ian youth continue to receive instruction in their traditional ways, with an emphasis on traditional fishing and farming methods, and on addressing barriers of current education systems (e.g. requirements for teacher certification, curriculum that emphasizes Western cultural values).

Tooker, Lisa; Ka'ai'ai, Charles; Spalding, Sylvia and Simonds, Kitty (eds.). 2008. HOʻOHANOHANO / ÑAKUPUNAPUWALU. Current: The Journal of Marine Education 24(2).
Type of Publication: Academic Journal, Quarterly
Keywords: traditional knowledges (TKs), Native Hawai'ian, education, traditional fishing, traditional farming, natural resource management

INTELLECTUAL PROPERTY

Alexander, Merle, K Chamundeeswari, Alphonse Kambu, Manuel Ruiz, Brendan Tobin. 2004. The Role of Registers and Databases in the Protection of Traditional Knowledge: a Comparative Analysis.

This report analyzes existing registers and databases to explore their potential for protecting TK. The report provides background and definitions relating to TK, including an exploration existing definitions of TK (10-11), protection of TK (11), and the distinction between a registry and a database (11-12). The report also includes several case studies which highlight existing issues in TK databases and registries. One key issue highlighted in the discussion of databases is that many databases choose to remain private because national laws do not adequately protect the intellectual property rights of Indigenous communities to TK. One potential solution being explored in Canada is the implementation of "customary" First Nations law to protect TK, as current intellectual property rights in Canada were not created with TK in mind. Databases also raise questions of Prior and Informed Consent (PIC), as some databases may not be administered or controlled by the communities from whom TK was gathered— leaving ground for abuse and appropriation of TK by government or corporate interests (such as with the BioZulua Database in Venezuela). The document discusses at length the opportunities and challenges for protecting TK that databases and registers offer (29-33).

- Guidelines and best practices for federal managers: This document provides a summary of ongoing international issues surrounding TK. Additionally, it includes introductory information about what TK is, what protection of TK means, and what ongoing legal and policy issues surround protection of TK.

- Guidelines and best practices for tribes/TEK holders: This document offers case studies that highlight potential pitfalls associated with sharing of TK, including inadequate protection under current intellectual property laws, and the possibility that databases and registries may not be legally in the control of Indigenous peoples.

Alexander, Merle, K Chamundeeswari, Alphonse Kambu, Manuel Ruiz, Brendan Tobin. 2004. [The Role of Registers and Databases in the Protection of Traditional Knowledge: a Comparative Analysis](). United Nations University Institute of Advanced Studies (UNU-IAS) Report.
http://www.ias.unu.edu/binaries/UNUIAS_TKRegistersReport.pdf. (November 14, 2013).
Type of Publication: Technical Report
Keywords: Intellectual property rights, databases, registers, traditional knowledges (TK), customary laws

Bannister and Hardison. 2006. Mobilizing Traditional Knowledge and Expertise for Decision-Making on Biodiversity.

This paper discusses how TK can be appropriately implemented in ecological management practices. The authors emphasize the legal and ethical pitfalls facing TK-holders as they attempt to include TK in management decisions. The article argues that in order to use TK in a manner that benefits Indigenous communities and supports the relationship between Indigenous and ecological/biodiversity health, management strategies must move beyond viewing the integration of TK into existing management strategies as a viable or ideal strategy. Instead, the authors offer that both TK and western scientific worldviews must be respected and valued as parallel and co-equal in order for effective and non-exploitative collaboration to occur. This paper is a preliminary investigation of existing tools being used by Indigenous organizations and others supporting Indigenous communities to simultaneously implement and protect TK within the field of biodiversity conservation.

- Risks of sharing/TK: Placing TKs in the public domain can lead to TKs being decontextualized (6). Current western legal framework (e.g. intellectual property rights, copyright laws) offer no protection for privacy/sacred TK (6).
- Guidelines for tribes/TK holders: Indigenous Information Networks offer a place for indigenous people to concentrate their knowledge, still have issues of public domain (8-9). Communities benefit from developing community research policy and protocols (10-11), including forming legal agreements between researchers and tribes (13-4). In order ensure TK within community is managed and watched after, create community traditional knowledge databases to (16-7). Relying on Indigenous community controlled/participatory research address issues of misuse and appropriation of TK (18).
- Guidelines for agencies and other non-Indigenous managers: Create and promote supportive structures for community-based management and co-management (20-1)

Bannister, Kelly, and Preston Hardison. 2006. "[Mobilizing Traditional Knowledge and Expertise for Decision-Making on Biodiversity.]()" International Mechanism of Scientific Expertise on Biodiversity (IMoSEB).
Type of Publication: Technical Report
Keywords: traditional knowledge, natural resource management, biodiversity conservation, ethics, western science

Hansen and Van Fleet. 2003. Traditional Knowledge and Intellectual Property.

Drawing from an international context, this report explores risks facing Indigenous communities surrounding TK. This report goes on to describe different methods that Indigenous people can use to protect their TK, and the risks and benefits associated with these methods. Included in this discussion is the economic risks and benefits facing Indigenous communities (e.g. corporate "biopiracy").

- Benefits and risks of sharing/TK: Risks to TK center around intellectual property rights, and the difficulties of retaining control of TK in Indigenous communities once that knowledge has been shared with people outside the community (3-5).
- Guidelines and best practices for tribes/TK holders: Document provides guiding information about how to protect TK within the existing intellectual property rights legal system. Advantages and drawbacks of several strategies are discussed. These include: patenting information/knowledge (several types of patents are explored), creating traditional knowledge registries, forming trade secrets, prior art and defensive disclosure (proof that knowledge under review for patent was already held by others), mutual benefits from sales/research of TK (9-30). Document also includes a step-by-step flow chart to aid Indigenous people in identifying where TK is held within their community, and how available/protected that knowledge is.

Hansen, Stephen A. and Van Fleet, Justin W. 2003. Traditional Knowledge and Intellectual Property: A Handbook on Issues and Options for Traditional Knowledge Holders in Protecting their Intellectual Property and Maintaining Biological Diversity.
Type of Publication: Policy and Law
Keywords: traditional knowledge, intellectual property rights, property law, protection of TK, biopiracy

Hardison and Bannister. 2011. Ethics in Ethnobiology.

This article offers a historical summary of the development of ethics surrounding TK and Indigenous rights in order to provide the reader with a foundation to understand ongoing issues of TK, ethnobiology and issues surrounding western legal concepts of intellectual property rights, the rights of Indigenous people to manage and protect their knowledge systems, and ongoing attempts to advocate for Indigenous people through international law. This article is framed to offer background information about the creation of codes of ethics by international, national and regional organizations research involving Indigenous people and ethnobiology. Additionally, this paper provides guidance for ethnobiologists who work with Indigenous people. By offering historical perspective, and information of a broad scope, this article offers insight about where current international laws and policies regarding TK and Indigenous people stand.

- Benefits and risks of sharing/TEK: Intellectual property rights in a western legal system offer poor protection for communal, sacred or familial knowledge. Copyright laws prevent reverse engineering of an invention as a method to copy and re-patent; applying this line of thinking to protection of Indigenous knowledge and practice, why is it acceptable for outside parties to modify or study landscapes and technology that has been developed and utilized by Indigenous groups for thousands of years/since time immemorial?
- Guidelines for federal managers and scientists: The article offers several ethics documents which may serve as guides. Additionally, it includes a summary of current issues for ethnobiologists to consider as they work with Indigenous people (43-6); this list of current issues

includes intellectual property rights, access and benefits of sharing, and collections/dissemination of TK (e.g. public domain in western society).

Hardison, Preston, and Kelly Bannister. 2011. "[Ethics in Ethnobiology: History, International Law and Policy, and Contemporary Issues.](#)" In Ethnobiology, edited by E.N. Anderson, Deborah Pearsall, Eugene Hunn, and Nancy Turner. Hoboken, N.J.: Wiley-Blackwell.
Type of Publication: Policy and Law, Academic Article
Keywords: ethnobiology, ethics, traditional knowledge, Indigenous rights, intellectual property rights, international law

Hill et al. 2010. Guide to Free Prior and Informed Consent.

This document is a resource for Indigenous communities, and details how to successfully employ FPIC to ensure positive outcomes. Included in the report is a definition of FPIC (8). The report gives a broad, internationally applicable, step-by-step guide for Indigenous communities as they exercise their right to FPIC. Their seven step plan is: 1) find out who is planning/developing a project, 2) request information from the developers, 3) hold discussions within your community, 4) community negotiations with developers, 5) seek independent advice, 6) make decisions as a community, 7) ongoing communications with project developers.

- Best practices for Indigenous people/TK holders: Includes step-by-step guide for ensuring that a community exercises their right to FPIC.

Hill, Christina, Serena Lilywhite, Michael Simon. 2010. [Guide to Free Prior and Informed Consent](#). Oxfam.
Type of Publication: Protocol
Keywords: Indigenous communities, Free Prior and Informed Consent (FPIC)

Janke, Terri. 2009. Writing up Indigenous Research: Authorship, Copyright and Indigenous Knowledge Systems.

This paper addresses issues of copyright and ownership of indigenous knowledge, in hopes of establishing research practices that empower indigenous people and respect indigenous rights to TKs and research products. Janke also advocates for the decolonization of research about indigenous people through increasing the number of indigenous researchers and indigenous-led research. While much of the report is applicable to a broader audience, the report is written within the context of Australian aboriginal rights. This report clearly explains current international laws regarding the rights of indigenous people to ownership over their own knowledges, and describes the inadequacy of copyright laws to protect indigenous rights to knowledges. One major consideration with research materials is authorship, as these have serious implications for copyright and ownership. Specific legal issues with copyright discussed in the report pertain to Australian law, but have many similarities to US law. This report also offers a sheet of guidelines/points of consideration for research involving indigenous peoples (21), which includes a discussion of free, prior and informed consent, indigenous rights and other key concepts.

Janke, Terri. 2009. [Writing up Indigenous Research: Authorship, Copyright and Indigenous Knowledge](#)

Systems. Terri Janke & Company.
Type of Publication: White paper
Keywords: Australia, copyright law, traditional knowledges (TKs), intellectual property, research ethics, benefit sharing, appropriation, Aboriginal rights, collective ownership

Laughlin, Jennifer. UN REDD Programme. 2013. Guidelines on Free, Prior and Informed Consent.

This document offers 1) a summary of existing UN documents that define and discuss FPIC from both an international and regional context, 2) a definition of FPIC (18-20), and 3) a set of requirements for all REDD+ participant countries, as well as guidelines for others, to ensure that they respecting Indigenous rights to FPIC in management decisions (specifically those regarding forest conservation and management). These guidelines were created as part of the UN REDD+ Program, which aims to conserve forests and forest resources in order to mitigate climate change and promote ecosystem health. This document also includes a discussion of what governmental level is appropriate to seek consent from. Finally, the document includes several appendices which are designed to assist non-Indigenous agencies identify and appropriately work with Indigenous people. This document also includes information about the importance of Indigenous language in ensuring that a FPIC process occurs.

- Best practices for federal/governmental managers: The document offers very specific, step-by-step guidelines for REDD+ participant countries (22-4). It also includes information on when FPIC is required (taking cultural/intellectual/physical property, requesting that Indigenous people relocate, causing damages, any development, legislative measures). Also includes a table to help determine if action requires FPIC (27).

Laughlin, Jennifer. UN REDD Programme. 2013. Guidelines on Free, Prior and Informed Consent.
Type of Publication: Protocol
Keywords: United Nations, Free Prior and Informed Consent (FPIC), management, conservation, Indigenous peoples, guidelines

Talakai, Malia. 2007. Intellectual Property and Safeguarding Cultural Heritage: A Survey of Practices and Protocols in the South Pacific.

This survey investigates practices and protocols designed to protect cultural/intellectual property of Indigenous people in the South Pacific, and was commissioned by WIPO in response to concerns by Indigenous people that facilities such as museums, libraries and archives abuse and mishandle Indigenous cultural/intellectual property. The survey relied on published materials (e.g. existing protocols), and on interviews with facilities staff (e.g. museum curators) about their relationships with Indigenous intellectual/cultural property. This document includes two parts: a survey of existing ethics guidelines and practices at museums, libraries, archives, etc. across several South Pacific countries, and analysis of needs and opportunities for improvement in protocols (e.g. to protect Indigenous rights and property). Each country's survey results are given their own section in the paper. Additionally, each major institution type is given its own subsection. As a result, the paper gives detailed information that allows comparison of protocols and standards across several countries in a region that features a sizable Indigenous population. This provides opportunities for comparison with Untied States policy and protocol, in addition to giving an overview of protocols in several countries.

- Guidelines and best practices for federal managers: This document offers case studies that allow comparison between different research protocols. The analysis in the report uses case studies to demonstrate the needs of cultural institutions with respect to technology, developing new and more just protocols, etc. For federal managers, this report offers a broad array of existing cases in which cultural institutions are undergoing changes in order to form more positive relationships with Indigenous people. These cases have value in informing management of cultural resources within the US.

Talakai, Malia. 2007. "[Intellectual Property and Safeguarding Cultural Heritage: A Survey of Practices and Protocols in the South Pacific.](#)" World Intellectual Property Organization (WIPO).
Type of Publication: Survey
Keywords: Traditional knowledges (TKs), intellectual and cultural property, ethics guidelines, archives

Tamang, Parshuram. 2005. An Overview of the Principle of Free, Prior and Informed Consent and Indigenous Peoples in International and Domestic Law and Practices.

This report gives extensive detail on existing international and national laws enforcing FPIC. A summary of international laws and declarations expressing the right of Indigenous people to FPIC can be found on pages 5-8. Page 9 features examples of some existing national laws requiring FPIC, including the Philippines. The report also includes a list of challenges and ongoing issues regarding the implementation of FPIC laws in national and international context (13-15). Amongst these challenges are: defining FPIC formally, legal recognition of FPIC and development of practical tools to aid agencies in implementing FPIC.

- Guidelines and best practices for tribes, federal managers, researchers: The report offers a summary of existing international laws regarding FPIC which are useful as a reference material both for tribes and agencies seeking to educate themselves on the development and current state of FPIC laws and practices.

Tamang, Parshuram. 2005. "An Overview of the Principle of Free, Prior and Informed Consent and Indigenous Peoples in International and Domestic Law and Practices," from UNIES Workshop on Free, Prior and Informed Consent, New York, January 17-19, 2005.
Type of Publication: Policy and Law
Keywords: Free Prior and Informed Consent (FPIC), International law, Indigenous peoples

Taniguchi et al. 2012. A comparative analysis of indigenous research guidelines to inform genomic research in indigenous communities.

This article addresses genetic research of Indigenous communities. The authors 1) review existing research guidelines for ensuring ethical research, and 2) offer policy recommendations for Indigenous leadership to ensure that their communities are protected. The articles finds that in the Canada, Australia, New Zealand and the US, existing ethical research guidelines are not adequate, and that the implementation of additional ethics protocols would benefit Indigenous peoples, researchers, policymakers and others in ensuring that research is conducted in a proper, ethical and good manner. The authors provide a set of recommendations that include 1) developing Indigenous research guidelines in the US, Australia, Canada and New Zealand, 2) recognizing the importance of trust in

research and 3) creating policy that holds violators of ethics protocols accountable. The comparison of research practices across four countries gives this article a broad scope that helps to explain international trends in research practices. This article also offers insight by virtue of its critique of existing ethical research protocols.

- Guidelines and best practices for tribes, federal managers, researchers: Establishing protocols before conducting research is a vital aspect of forming an equitable and mutually beneficial relationship in research. Accounting for historical legacies and trauma, while also acknowledging that unethical research continues to be perpetrated against Indigenous people, is another vital point of consideration for both Indigenous peoples and their would-be collaborators.

Taniguchi, Nicole K.; Taualii, Maile; Maddock, Jay. 2012. A comparative analysis of indigenous research guidelines to inform genomic research in indigenous communities. The International Indigenous Policy Journal 3(1): Article 6.
Type of Publication: Academic Journal
Keywords: ethics, research, genetic research, research guidelines, Indigenous peoples

Williams and Hardison. 2013. Culture, Law, Risk and Governance: Contexts of Traditional Knowledge in Climate Change Adaptation.

Williams and Hardison note that there is a shortage of literature discusses legal risks that tribes face when choosing whether or not to share TK. Their article describes how existing western legal concepts of intellectual property rights, public domain and copyright make it difficult for tribes to retain control over TK. Williams and Hardison also discuss how existing laws such as the Freedom of Information Act (FOIA) present substantial obstacles to tribes as they decide if, when or how to share TK. Finally, this article offers up guidelines for tribes and TK-holders as they make decisions about if/how to share TK.

- Risks of sharing TK for tribes: Once TK is shared, it enters alien legal context. This means TK may not be adequately protected in US/non-tribal context, even if SEK and TK holders operated in a co-production/respectful cooperation (534). Copyright laws make it difficult to protect TK in globalized world (535-6). FOIA dictates that tribes cannot share information with US government on a private basis because these communications must be available for public review (536).
- Guidelines and best practices for tribes: Free, Prior and Informed Consent (537-8), Risk-Spirituality matrix (538-9).

Williams, Terry, and Preston Hardison. 2013. "Culture, Law, Risk and Governance: Contexts of Traditional Knowledge in Climate Change Adaptation." Climatic Change (special issue).
http://link.springer.com/article/10.1007/s10584-013-0850-0.
Type of Publication: Academic Journal
Keywords: traditional knowledge, intellectual property rights, copyright, public domain, Freedom of Information Act (FOIA), risks of sharing TK

TRADITIONAL KNOWLEDGES AND CLIMATE CHANGE

Baldy, Cutcha Risling. 2013. Why we gather: traditional gathering in native Northwest California and the future of bio-cultural sovereignty.

In this article, Risling uses examples from Karuk, Yurok and Hupa country (her homeland) to discuss how traditional gathering activities are critical to Native identity and sovereignty. She draws on Stefano Varese's concept of bio-cultural sovereignty to explore how gathering of basketry materials and the land management required to maintain culturally important plants are forms of cultural resistance. Risling also critiques current western intellectual understandings of California Indians struggles to retain their cultural practices against pressures of genocide, cultural genocide, legal oppression and bigotry. Risling also explores how the legal case Lynn v. Northwest Indian Cemetery Protective Association (1988) exemplifies the above issues. Risling's article contributes an understanding of how current US law does not adequately respect indigenous ways of knowing and interacting with the land. Her article also contextualizes these injustices historically.

Baldy, Cutcha Risling. 2013. [Why we gather: traditional gathering in native Northwest California and the future of bio-cultural sovereignty](). Ecological Processes 2: 17.
Type of Publication: Academic Journal
Keywords: bio-cultural sovereignty, Lynn v. Northwest Indian Cemetery Protective Association (1988), cultural resistance, genocide, gathering, traditional knowledge (TK), traditional ecological knowledge (TEK)

[Bohensky, Erin L., and Maru, Yiheyis. 2011. Indigenous knowledge, science, and resilience: what have we learned from a decade of international literature on "integration"?]()
In this article, the authors explore issues with efforts and theories centered on integrating indigenous knowledge into science. Specifically, the authors examine resilience-based theories, which promote collaboration between sciences and IK/TKs in order to create more resilient ecosystems and synthesize new knowledge. The authors offer three points as a way to promote beneficial resilience-based theories for knowledge integration between western science and TKs, while noting the potential drawbacks that resilience-based theories have had in the past. This paper used software to perform content analysis of existing papers in order to identify current themes in literature. In table 2, the authors provide the findings of their content analysis, which provide a succinct summary of key issues to integrating TKs and western science—this table is a strong reference. In their analysis, the authors extensively deal with colonization of TKs, and power imbalances in collaboration. The authors offer four "critical features" to guide a more beneficial view of collaboration between TKs and western science: new frames (i.e. moving away from ideas of integration and towards co-equal conceptions), cognizance of social contexts, expanded modes of evaluation, and intercultural knowledge barriers.

Bohensky, Erin L., and Maru, Yiheyis. 2011. "[Indigenous knowledge, science, and resilience: what have we learned from a decade of international literature on 'integration'?]()" Ecology and Society 16(4): 6.
Type of Publication: Academic Journal
Keywords: Indigenous knowledge (IK), traditional knowledges (TKs), integration, resilience, western science, indigenous people, power, politics

[Cochran, Patricia; Huntington, Orville; Pungowiyi; Caleb, Tom, Stanley; Chapin III, F Stuart; Huntington, Henry; Maynard, Nancy; Trainor, Sarah. 2013. Indigenous frameworks for observing and responding to climate change in Alaska.]()
This article identifies a lack of indigenous participation in climate change research in the Arctic. In response, the authors outline several strategies to increase indigenous participation. The authors provide context for their strategies by discussing the important role that traditional knowledges (TKs) play in indigenous climate observation, adaptation and research. Additionally, the authors describe

ongoing impacts to indigenous Arctic communities. Lastly, they discuss their strategies, which emphasize fostering respect for multiple ways of knowing, and generating meaningful partnerships between indigenous and non-indigenous people at multiple scales (e.g. regional, national).

- Guidelines for researchers: This article provides strategies for both non-indigenous and indigenous peoples engaged in climate research. The 5 strategies described in the article provide a template for respectful and mutually-beneficial research.

Cochran, Patricia; Huntington, Orville; Pungowiyi; Caleb, Tom, Stanley; Chapin III, F Stuart; Huntington, Henry; Maynard, Nancy; Trainor, Sarah. 2013. "[Indigenous frameworks for observing and responding to climate change in Alaska.](#)" Climatic Change 120: 557-567.
Type of Publication: Academic Journal
Keywords: Arctic, traditional knowledges (TKs), adaptation, community engagement

Doyle, John; Redsteer, Margaret; Eggers, Margaret. 2013. Exploring Effects of Climate Change on Northern Plains American Indian Health.

This study uses the observations of tribal elders, including author John Doyle, as well as data from monitoring stations to gather insight about climate impacts (e.g. changes to phenology and seasonal water flows) on the Crow reservation in Montana. TK and western science data complement each other in the study. They also provide evidence that Northern Plains indigenous peoples and lands are already experiencing climate impacts. The study is also an example of one method for collaboration between western scientific and traditional knowledge. Co-authorship, complementary knowledge, and knowledge co-production are integral parts of this research project.

- Guidelines for researchers: This study is one example of how western science and TK can collaborate meaningfully. By emphasizing the importance of TK in making specific, fine-scale and long-term observations, the author team conducts research that is collaborative.

Doyle, John; Redsteer, Margaret; Eggers, Margaret. 2013. "[Exploring Effects of Climate Change on Northern Plains American Indian Health.](#)" Climatic Change. 120: 643-655.
Type of Publication: Academic Journal
Keywords: co-authorship, Crow Tribe, traditional knowledges (TK), knowledge co-production

Lake, Frank. 2007. Traditional ecological knowledge to develop and maintain fire regimes in NW California, Klamath-Siskiyou bioregion: management and restoration of culturally significant habitats.

In this dissertation, Lake explores how tribally-led prescribed burns in the Klamath-Siskiyou bioregion may improve the quality of plants used as basket materials. Lake's research included carrying out prescribed burns and drew on interviews with basket weavers and elders. To contextualize this research, Lake detailed past use of fire as a management tool by Native peoples, and western management strategies that impacted and continue to impact Native opportunities to practice prescribed burning. This dissertation provides an in-depth analysis of TK use and explores the issues associated with TK use, including obstacles to the use of TK, the effectiveness of prescribed burns, the historical and current

impacts of fire suppression, and recommendations from tribal collaborators about incorporating TK into current management practices.

- Risks of sharing TK: It is difficult to transmit knowledge across TK and SEK. Historical appropriation creates potential for future misappropriation. There is a tendency of SEK to claim dominance over TK, which raises issues accountability for TK once gathered/used by SEK-holders (4-6).
- Guidelines and best practices for tribes/TK holders and SEK holders: Find opportunities for incorporation of TK into management (parallel and co-equal knowledge systems work together instead of integration of TK into management (how TK can contribute/support SEK) (48-55). Lake also discusses economic benefits of TK use (i.e. prescribed burns) when compared to fire suppression-based forest management (328-331).

Lake, Frank. 2007. "[Traditional ecological knowledge to develop and maintain fire regimes in Northwestern California, Klamath-Siskiyou bioregion: management and restoration of culturally significant habitats.](.)" Ph.D. dissertation, Oregon State University.
Type of Publication: Dissertation
Keywords: natural resource management, Klamath-Siskyou, Northern California, traditional knowledge, western science, scientific ecological knowledge (SEK), prescribed burns, fire

Lynn, Kathy, John Daigle, Jennie Hoffman, Frank Lake, Natalie Michelle, Darren Ranco, Carson Viles, Garrit Voggesser, and Paul Williams. 2013. The Impacts of Climate Change on Tribal Traditional Foods.
This study examines the importance of traditional foods to tribal culture, wellbeing and ways of life. By examining climate impacts to traditional foods, the authors expose subsequent impacts to tribal communities. This study argues that paying greater attention to traditional foods in adaptation efforts will strengthen the capacity of tribal communities to respond to and be resilient towards climate impacts. The authors of this study include indigenous and non-indigenous scholars and professionals who lend perspective to both the importance of traditional foods to native communities, and the variety of climate impacts facing traditional food species today. The article also discusses how TK has been used in the past and is used today to promote adaptation in native communities.

- Guidelines for natural resource managers: This article can contribute to climate adaptation efforts by highlighting cultural and social vulnerabilities faced by tribes through impacts to traditional foods.

Lynn, Kathy, John Daigle, Jennie Hoffman, Frank Lake, Natalie Michelle, Darren Ranco, Carson Viles, Garrit Voggesser, and Paul Williams. 2013. "[The Impacts of Climate Change on Tribal Traditional Foods.](.)" Climatic Change. 120: 545-556.
Type of Publication: Academic Journal
Keywords: traditional foods, traditional knowledge (TK), adaptation, social and cultural vulnerability

McGregor. 2005. Traditional Ecological Knowledge: An Anishnabe Woman's Perspective.
McGregor discusses the shortcomings of TEK as a concept, and of current academic understandings of TEK. She does so using her perspective as an Anishnabe woman and college professor. Central to her

critique is the point that from her understanding as an Anishnabe woman, the act of living TEK is what makes one knowledgeable about it, while current literature treats TEK as something that can be possessed outside of lived experience.

- Guidelines for Indigenous people: McGregor offers a helpful and grounding perspective for those people currently working with agencies and others. Her perspective is a reminder that TEK is a only a concept to describe the knowledges and lived experiences of Indigenous peoples.

McGregor, D. 2005. "[Traditional Ecological Knowledge: An Anishnabe Woman's Perspective.]" Atlantis: Critical Studies in Gender, Culture & Social Justice, 29(2), 103-109.
Type of Publication: Academic Journal
Keywords: traditional knowledge, Anishnabe

[McLean, Galloway Kirsty; Ramos-Castillo, Ameyali; Rubis, Jennifer (Eds). 2011. Indigenous Peoples, Marginalized Populations and Climate Change: Vulnerability, Adaptation and Traditional Knowledge.]
This report is the product of a workshop brought together indigenous community representatives, international organizations and research scientists in order to gain a better understanding of climate impacts to Indigenous and marginalized people, to compile data on traditional knowledge that may aid in adaptation and mitigation efforts and to provide input to the lead authors of the IPCC Fifth Assessment report regarding climate impacts to Indigenous peoples. This report details the proceedings of each session within the workshop, goes on to discuss the key issues raised in each session, and then provides recommendations for future adaptation efforts and research. A sample of some key issues raised in the report includes: use of traditional knowledge as a foundation for decision-making, challenges integrating Indigenous perspectives into science, cosmology/worldview in understanding climate impacts, social and cultural challenges (e.g. wars, political conflicts) which may exacerbate climate impacts and importance of promoting policies and action on climate impacts. The lessons learned through the workshop highlight a wide variety of issues facing Indigenous people. Because many of the panels address related information, there is some redundancy in the key issues and recommendations—this also makes the workshop proceedings difficult to summarize briefly. However, the report raises valuable and pertinent issues facing Indigenous peoples today. This workshop produced some notable outcomes, including a network of traditional knowledge holders and researchers who are collaborating through email listserv and the creation of a research database by UN University to hold research on TK, climate impacts, adaptation and mitigation.

McLean, Galloway Kirsty; Ramos-Castillo, Ameyali; Rubis, Jennifer (Eds). 2011. [Indigenous Peoples, Marginalized Populations and Climate Change: Vulnerability, Adaptation and Traditional Knowledge.] 19-21 July. Mexico City: Mexico.
Type of Publication: Proceedings, Summary
Keywords: traditional knowledges (TKs), vulnerability, adaptation, mitigation, resilience, marginalized populations

[Mercer et al. 2010. Framework for integrating indigenous and scientific knowledge for disaster risk reduction.]

This paper presents a framework for integrating western science and TEK into community environmental hazard planning; the framework presented by the authors emphasizes a participatory approach. The article focuses on small island developing states, and draws on research from Papua New Guinea. In addition to providing a framework based on their research, the authors also discuss existing challenges to implementing TEK in disaster risk reduction efforts (e.g. marginalization of TEK, economic pressure/inequalities). Also of note in the article is a chart/suggested additional research reference material which lists areas of environmental hazards (e.g. soil, water, etc.), and offers existing literature on how TEK may be applied to community-level solutions in these areas (215). A particularly interesting point noted by the authors is that TEK can be further marginalized by being centralized in archives, museums, etc. as these methods have the potential to disempower local communities, and TEK holders/users (219). Another contribution of the article is that it acknowledges that process-oriented frameworks can pigeonhole or limit Indigenous communities by imposing strict guidelines; the authors attempt to remedy this by offering a framework which is adaptive and focused on identifying community priorities, goals and strategies (220). For an example of outputs this framework produces, see the cause-effect tree produced by the Kumalu community (227). In their research, the authors found that language barriers were a major barrier to collaboration, as connotation and finer points of communication were often lost between languages. They recommend that all parties involved collaborative efforts are very deliberate in ensuring that meanings are translated accurately and with care (229).

- Best practices for TK users and managers: The framework in this article explores one way to create collaborative disaster response plans. This framework emphasizes community participation and community control over research and research products.

Mercer J., I. Kelman, L. Taranis, and S. Suchet-Pearson. 2010. "[Framework for integrating indigenous and scientific knowledge for disaster risk reduction.](#)" Disasters 34(1): 214-239.
Type of Publication: Academic Journal
Keywords: traditional knowledge, disasters, risk reduction, small island developing states, adaptation, Native language

Nakashima et al. 2012. Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation.

Chapters 2 and 3 of this report detail ways in which TK offers unique contributions to understandings of climate impacts. In many instances, western scientific methods are ill-suited to observing and recording fine-scale, multi-variable changes to climate that TK is equipped to observe. In part because of this, TK can contribute unique insight into ongoing climate impacts. The report goes on to critically investigate vulnerability and adaptive capacity of Indigenous people. While Indigenous people are disproportionately impacted by climate change, they also possess tools for adaptation—many Indigenous people have expressed confidence in their ability to adapt, even to severe climate impacts. The report notes that TK is enables many Indigenous people to claim such a high level of resiliency to climate impacts.

- Guidelines for policymakers: Indigenous peoples are being disproportionately impacted by climate change. At the same time, many Indigenous communities are amongst the most resilient

to climate impacts because of TK held within their communities. Social and colonial stresses work in tandem with climate impacts to reduce Indigenous peoples' adaptive capacity.

Nakashima, D.J., Galloway McLean, K., Thulstrup, H.D., Ramos Castillo, A. and Rubis, J.T. 2012. "[Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation.](#)" Paris, UNESCO, and Darwin, UNU.
Type of Publication: Technical Report
Keywords: traditional knowledge, adaptation, resiliency, vulnerability, climate impacts, western science

[Shackeroff, Janna M. and Campbell, Lisa M. 2007. Traditional Ecological Knowledge in Conservation Research: Problems and Prospects for their Constructive Engagement.](#)

In this paper, Shackeroff and Campbell explore challenges associated with the growing interest in using TEK/TK in the field of conservation. They note that conservation goals do not always align with TK holders goals and practices, and that the current enthusiasm for applying knowledge extracted from TK systems to conservation brings with it ethical and human rights considerations that are often overlooked by conservationists and natural resource managers. This article uses themes of power and politicization, ethics and situated knowledge to explain risks facing TKs as a result of conservationists' interest in TKs. The authors also argue that successful research is research that benefits both researchers and TK-holding communities, while being conducted in an ethical manner. The authors also explore ethical obligations for researchers in the U.S., and how this relates specifically to conservation research involving TKs. Finally, this article provides guidelines for conducting ethical and mutually beneficial research with TK holders. These guidelines emphasize the importance of establishing clear protocols early in the research process, adopting collaborative research methods, working across academic disciplines,

Shackeroff, Janna M. and Campbell, Lisa M. 2007. "[Traditional Ecological Knowledge in Conservation Research: Problems and Prospects for their Constructive Engagement.](#)" Conservation and Society 5(3): 343-360.
Type of Publication: Academic Journal
Keywords: traditional knowledges (TKs), conservation, ethics, indigenous peoples, natural resource management, traditional ecological knowledge (TEK)

[Stark, Heidi Kiiwetinepinesiik. 2010. Respect, Responsibility and Renewal: The Foundations of Anishnaabe Treaty Making with the United States and Canada.](#)

This article draws on historical accounts of treaty making between Anishnaabe nations, the United States, and Canada, as well as on existing literature describing Indigenous conceptions of treaties, to explain differences that exist between Indigenous and Euro-American conceptions of treaty-making. Stark then applies three principles from Indigenous treaty-making: respect, responsibility and renewal, in order to demonstrate how current interpretations of treaties between Indigenous people and United States and Canadian governments are limited, as they only consider European definitions and conceptions of treaty-making. Stark presents these three concepts as pillars that can be used to create more equitable and mutually beneficial relationships in the future. Additionally, Stark notes that existing treaties already hold these concepts, although the obligations of the United States and Canadian

governments are not being met with regards to these concepts. Stark's article gives insight into a critical fact: treaties were made between two sovereign nations, yet only one of those nations' definitions and assumptions about treaties are being used to interpret what those treaties mean. Stark's explanation of Indigenous views on treaties that are currently overlooked by US and Canadian law gives a more complete understanding of the obligations found within existing treaties.

Stark, Heidi Kiiwetinepinesiik. 2010. "[Respect, Responsibility and Renewal: The Foundations of Anishnaabe Treaty Making with the United States and Canada.](#)" American Indian Culture and Research Journal 34(2): 145-164.
Type of Publication: Academic Journal
Keywords: Anishnaabe, treaties, Indigenous treaty-making, American Indian, First Nations, Tribes

[Swinomish Indian Tribal Climate Change Initiative.](#)
In response to concerns about climate impacts on their community, the Swinomish Tribe developed their Adaptation Action Plan. This plan utilizes indicators of community and environmental health developed within the Swinomish community to gauge which climate impacts will be most severe to the community, and why. This plan drew on community members and TK from within the community to integrate TK into identifying and prioritizing climate impacts.

- Guidelines for tribes/TK holders: This document provides a template for integrating TK into climate adaptation planning. Both highly technical, and focused on community involvement and applicability to the Swinomish community (as opposed to being generalized), the plan demonstrates one way that tribes can incorporate community members' knowledge and priorities into climate change planning.
- Guidelines for agencies/federal managers: This plan clearly explains how community input and TK formed an integral part of identifying the Swinomish community's vulnerability and adaptive capacity to climate impacts. This plan is an example of how tribes can integrate TK into their planning process effectively; reviewing this plan may offer federal managers insight into what tribally-led integration of TK looks like, and how it is a valuable part of climate adaptation planning.

Swinomish Indian Tribal Community (Swinomish). 2010. [Swinomish Climate Change Initiative Climate Adaptation Action Plan.](#)
Type of Publication: Technical Report
Keywords: Climate impacts, adaptation, Swinomish Tribe, traditional knowledge, western science

[Tengö, M., Malmer, P., Brondizio, E., Elmqvist, T. & Spierenburg, M. 2013. The Multiple Evidence Base as a Framework for Connecting Diverse Knowledge Systems in the IPBESPDF.](#)
This paper, which preceded a more detailed report on the same topic, explores the Multiple Evidence Base (MEB) as a potential framework for creating productive collaboration between western science and TKs. The authors note that TKs can much to contribute to conservation and natural resource management, but that current frameworks are limited in bringing TKs and western science together as equal partners. The authors wrote these reports to be integrated into UN IPBES practices. This paper provides a summary of the MEB framework, as well as visual representations of the model. The authors note that current collaborative projects often require that TKs be validated by scientific methods; the

MEB framework provides a more equitable alternative in which each knowledge system is treated as an equal partner. The paper also includes a list of case studies which have utilized a MEB approach, which provides examples of what this approach looks like in action.

Tengö, M., Malmer, P., Brondizio, E., Elmqvist, T. & Spierenburg, M. (2013). The Multiple Evidence Base as a Framework for Connecting Diverse Knowledge Systems in the IPBESPDF. Stockholm Resilience Center (SwedBio), Stockholm.
Type of Publication: Technical Report
Keywords: TKs, Multiple Evidence Base (MEB) approach, IPBES, knowledge co-production

Tengö, Maria; Brondizio, Eduardo S.; Elmqvist, Thomas; Malmer, Pernilla; Spierenburg, Marja. 2014. Connecting Diverse Knowledge Systems for Enhanced Ecosystem Governance: The Multiple Evidence Base Approach.
This paper explores the potential for indigenous knowledge systems and western science to better collaborate in managing and conserving natural resources. The authors describe an approach—the multiple evidence base (MEB) approach—which attempts to bring indigenous and non-indigenous ways of knowing together as equals to address environmental and social problems and enrich both knowledge systems through cooperation. The MEB approach attempts to address existing power imbalances between indigenous knowledge and western science that exist in intergovernmental and other climate and/or natural resource management programs. By framing power imbalances in terms of validity, this paper demonstrates that indigenous knowledges have their own systems of validating knowledge, and that in order to have mutual respect, knowledge systems must respect multiple avenues for validating knowledge. The authors note that power imbalances must be explicitly dealt with during collaborative processes, to ensure that participants are all given the means to participate in an equitable manner. This paper also provides a guide/template for operating within an MEB approach.

Tengö, Maria; Brondizio, Eduardo S.; Elmqvist, Thomas; Malmer, Pernilla; Spierenburg, Marja. 2014.
Connecting Diverse Knowledge Systems for Enhanced Ecosystem Governance: The Multiple Evidence Base Approach. AMBIO.
Type of Publication: Academic Journal
Keywords: Indigenous knowledge, traditional knowledges (TKs), validation, ecosystem assessments, multiple evidence base (MEB) approach, co-production of knowledge

Turner and Clifton. 2009: "It's so different today": Climate change and indigenous lifeways in British Columbia, Canada.
Ethnobotanist Nancy Turner and Gitga'at elder Helen Clifton co-authored this article, which describes ongoing climate impacts in and around Hartley Bay, B.C. They note that phonological cues that Gitga'at people use to predict and guide gathering are becoming less predictable. More broadly, the article notes that the predictive capacity of TK suffers when climate impacts cause rapid environmental changes. The authors also discuss the resiliency of southeast Alaskan Native peoples to past environmental changes such as drastic changes in sea levels, and floods. The authors advocate that TK be respected and considered in adapting to climate impacts, especially in the following three ways: "[1] providing direct

knowledge and insights relating to weather, environments, species and habitats; [2] contributing to development of models for accommodating and adapting to ongoing and imminent climate change; and [3] presenting alternative pathways and approaches to sustainable living for future generations." They also discuss these three points in greater detail.

- Best practices for managers: This article gives an excellent case study of 1) how Indigenous communities are using their knowledge to note and adapt to climate impacts and 2) what challenges are facing Indigenous communities. The authors' call to respect and follow in the footsteps of the pathways provided by TK provides a viewpoint that may aid collaboration with TK users and holders.

Turner, N.J. and H. Clifton. 2009: "'It's so different today': Climate change and indigenous lifeways in British Columbia, Canada." Global Environmental Change 19, 180-190.
Type of Publication: Academic Journal
Keywords: Gitga'at, traditional knowledge, climate impacts, sea level rise, floods, adaptation

Vinyeta and Lynn. 2013. Exploring the Role of Traditional Ecological Knowledge in Climate Change Initiatives.

This report offers a synthesis of existing literature on TK and climate change. It goes on to explore the potential for TK in assessing and adapting to climate change. Additionally, it identifies problems that exist in merging western science and TK. This report also offers examples of how tribes are currently using TK in climate adaptation planning.

- Guidelines for tribes/TK holders: Guidelines for agencies and others: Report offers a broad synthesis of literature on TK, climate and adaptation planning; it is a strong reference material that provides background information and highlights current challenges facing TK in a climate change context. Additionally, the report explores issues surrounding collaboration between western science and TK.

Vinyeta, Kirsten, and Kathy Lynn. 2013. "Exploring the Role of Traditional Ecological Knowledge in Climate Change Initiatives." USDA Forest Service General Technical Report.
Type of Publication: Technical Report
Keywords: traditional knowledge, climate change initiatives, adaptation, management

Voggesser, Garrit; Kathy Lynn, John Daigle, Frank Lake, and Darren Ranco. 2013. Cultural Impacts to Tribes from Climate Change Influences on Forests.

This article discusses current and projected climate impacts to forests that will in turn affect indigenous peoples in the US. The article then explores opportunities for action, including tribal adaptation and increased collaboration between the federal government and tribal governments. One concern facing tribes discussed in the article is the impacts that climate may have on forest-related TK. Drastic changes to ecosystems may weaken or undermine the maintenance, use and applicability of certain TKs. This article also urges for increased involvement of tribes in federal forest resource management and climate adaptation measures. The article includes suggestions for specific strategies such as species monitoring projects.

- Guidelines for managers: This article gives an overview of issues facing tribes and forests from climate impacts. Specific strategies for facing these challenges included in the article may help

to increase productive and mutually beneficial collaboration between the US and tribal governments.

Voggesser, Garrit; Kathy Lynn, John Daigle, Frank Lake, and Darren Ranco. 2013. "Cultural Impacts to Tribes from Climate Change Influences on Forests." Climatic Change 120: 615-626.
Type of Publication: Academic Journal
Keywords: traditional knowledges (TKs), forest resource management, wildfire, invasive species, adaptation

Whyte, Kyle. 2014. Indigenous Women, Climate Change and Collective Action.

This work stands alongside a growing body of literature that highlights the too often marginalized work of Indigenous women. Whyte uses examples from across the world to demonstrate how Indigenous women are working to maintain the cultural health of their communities by investing in responsibility-based relationships. Whyte posits that both ancient and novel systems of responsibility can guide Indigenous people in forming adaptive and mutually-beneficial relationships. Whyte also analyzes non-Indigenous political institutions' responsibilities towards Indigenous women. This analysis draws on an Indigenous perspective to provide a clearer understanding of what successful and just political relationships between Indigenous women and colonial states may look like.

Whyte, Kyle. 2014. "Indigenous Women, Climate Change and Collective Action." Hypatia 29(3): 599-616
Type of Publication: Academic Journal
Keywords: Women, justice, ethics, responsibility, political change

Wildcat, Daniel. 2013. Introduction: Climate Change and Indigenous Peoples of the USA.

Wildcat's article provides an introduction to a series of academic articles addressing climate impacts to indigenous peoples in the US. Wildcat provides a perspective on tribal climate adaptation which views tribes as leaders in climate adaptation. Despite their position as innovators in climate adaptation and as those on the frontline of struggles against climate impacts, Wildcat notes that tribal efforts are often overlooked and under-supported by policymakers, western scientists and others. Wildcat also briefly describes the contributions of the other articles included in the special issue.

Wildcat, Daniel. 2013. "Introduction: Climate Change and Indigenous Peoples of the USA." Climatic Change 120: 509-515.
Type of Publication: Academic Journal
Keywords: adaptation, traditional knowledge (TK), water, traditional foods, climate impacts

ETHICS AND TRADITIONAL KNOWLEDGE

Battiste, Marie. 2005. Indigenous Knowledge: Foundations for First Nations.

This paper addresses the current gap in popular standing between Eurocentric and Indigenous knowledge in order to promote empowerment of Indigenous knowledge systems. Battiste notes that marginalization of Indigenous knowledge systems has been a hallmark of Eurocentric thought, one that

is largely unfounded. Battiste explores the work of Indigenous scholars to reverse the marginalization of Indigenous knowledge systems, and draws heavily on the history and scholarship of Canadian First Nations peoples. Battiste goes on to explore how Indigenous knowledges are assuming a larger role in the academy, to the benefit of Indigenous peoples. Battiste critiques Eurocentric notions of Indigenous knowledges because Eurocentric thought considers TKs to be static, and applicable only to spirituality. Battiste also discusses how defining TKs is problematic because current definitions rely on a Eurocentric perspective. Finally, Battiste discusses the current extent of protection of TKs under Canadian law, noting the limitations of intellectual property law when applied to Indigenous peoples.

Battiste, Marie. 2005. [Indigenous Knowledge: Foundations for First Nations.](#) WINHEC Journal.
Type of Publication: Academic Journal
Keywords: Traditional knowledges (TKs), Eurocentric knowledge, Indigenous knowledge, intellectual property law

Mayer, R. 2007. What's wrong with exploitation?

This philosophy paper explores exploitation in relation to other forms of wrongful gain to offer an explanation for why exploitation is wrong. Mayer also argues that the lack of mutual benefit is part of what makes exploitation wrong.

Mayer, R. 2007. "[What's wrong with exploitation?](#)" Journal of Applied Philosophy, 24(2), 137–150.
Type of Publication: Academic Journal
Keywords: ethics, exploitation, wrongful gain

Meyers, C. D. 2004. Wrongful beneficence: Exploitation and third world sweatshops.

In this philosphy article, Meyers argues that sweatshops are a form of exploitation not just because of human rights abuses that occur there, but because the wages and hours suffered by workers represent a form of exploitation. He notes that even though workers benefit from being employed, they are still exploited in that their employers are benefitting at their expense.

Meyers, C. D. 2004. "[Wrongful beneficence: Exploitation and third world sweatshops.](#)" Journal of Social Philosophy 35(3): 319–333.
Type of Publication: Academic Journal
Keywords: exploitation, ethics, philosophy

Reo, Nicholas, and Angela Parker. 2013. Re-thinking colonialism to prepare for the impacts of rapid environmental change.

This article argues that by coupling understandings of ecological and social impacts of colonization in New England, a better understanding of how colonization impacted indigenous people can be gained. Furthermore, the authors argue that that this understanding can be applied to ongoing climate impacts now facing the region. Using relevant concepts from ecology to analyze past changes may provide insight about how people are adapting to current environmental changes. The article relies upon concepts taken from the field of ecology in order to analyze historical, colonial environmental changes and offer lessons for current environmental change. By taking this approach, this article is advocating for an understanding of climate change that considers both social and ecological impacts. Unlike some

other advocates who have considered social impacts (e.g. social vulnerability), the authors present a framework which applies ecological concepts to create a new understanding. Their approach demonstrates that there are multiple ways to understand the interplay between ecological and social impacts from drastic environmental change.

- Guidelines for managers: This article demonstrates that historical and social context are very important in understanding contemporary issues in Native communities. The authors also offer a new way to understand social and ecological impacts that can give insight into issues of rapid environmental change that Native communities are facing today.

Reo, Nicholas, and Angela Parker. 2013. "Re-thinking colonialism to prepare for the impacts of rapid environmental change." Climatic Change 120: 671-682.
Type of Publication: Academic Journal
Keywords: Ecology, colonialism, coupled human and natural systems, feedback loops, environmental change

Stories of Conflict: Genetic Science and Traditional Origins.
One example of how western science and TKs can become polarized against one another is found in genetic research of the origins of Indigenous peoples of the Americas. This research has a bitter history with Indigenous communities, including exploitative and illegal research practices (e.g. using blood samples obtained for diabetes research for genetic analysis). On a more fundamental level, this conflict exposes how TK and western science may have core disagreements. For many Native people in the US, efforts to trace their genetic ancestry represent an attempt to de-legitimize their indigeneity; origin and creation stories in Native communities clearly state that Native people emerged from their homelands. It is examples such as genetic research, which feature both a rocky history of abusive genetic research in Indigenous communities and the existing disagreements between Indigenous people and genetic researchers, that highlight the importance of establishing guidelines for mutually beneficial and respectful research relationships.

"Ancient genome won't heal rifts with Native Americans." NewScientist.com. February 12, 2014.
Type of Publication: News Article
Keywords: Genetic research, traditional knowledge, exploitative research

Tropser, Ronald L. and Parrotta, John A. (eds). 2012. Traditional Forest-Related Knowledge: Sustaining Communities, Ecosystems and Biocultural Diversity.
This book is intended to explore 1) the importance of Traditional Forest-Related Knowledge (TFRK) for the maintenance of cultural values and sustainable forest management, 2) conflicts and opportunities for collaboration between fields of western science and TFRK, 3) provide historical context of TFRK use and policies towards TFRK from an international scope and 4) analysis of approaches for included TFRK in management, including best practices and pitfalls. This book offers a detailed definition of TFRK and explores the similarities and differences between TFRK and western science disciplines (6-15). It also includes a detailed overview of intergovernmental and international policies and resolutions regarding the use of TK and TFRK (appendix chapter 1). The book includes a chapter dedicated to exploring research ethics of working with TFRK holders and users. This section offers advice on common research methods. It also includes an extensive list of best practices and ethical considerations for researchers,

including the importance of free, prior and informed consent (FPIC), co-sharing of research benefits, respect for local laws and protocols and supporting the wellbeing of local communities during and after research. The book also cautions that conflicts of interest may lead to unethical research practices, and that appropriation and marginalization of TFRK is a serious concern for researchers.

- Guidelines for researchers and indigenous communities: Chapter 14 of this book offers a broad yet detailed summary of common issues and pitfalls to conducting ethical research, and offers best practices for doing so.

Tropser, Ronald L. and Parrotta, John A. (eds). 2012. "Traditional Forest-Related Knowledge: Sustaining Communities, Ecosystems and Biocultural Diversity." World Forests 12.
Type of Publication: Book
Keywords: Traditional Forest-Related Knowledge (TFRK), traditional knowledges (TKs), research ethics, intergovernmental policy, international policy

Wertheimer, A. 1996. Exploitation.
In this book, philosopher Alan Wertheimer attempts to explain a process for determining when an action is exploitative. Drawing from a wide variety of historical examples, Wertheimer explores the nature of benefiting at another's expense.

Wertheimer, A. 1996. Exploitation. Princeton, N.J.: Princeton University Press.
Type of Publication: Book
Keywords: ethics, exploitation, philosophy

Whyte. 2013. On the role of traditional ecological knowledge as a collaborative concept: a philosophical study.
Working from the field of philosophy, Whyte explores existing definitions of TEK in policy and natural resource science literature, and conflicts between Indigenous and non-Indigenous people surrounding how the term TEK is invoked and used. Whyte attributes this conflict to three factors 1) TEK as a term is often dismissed because of colonial preference for western science, 2) definitions of TEK are often coined by people from outside TEK-holding communities who may "privilege their own agendas for…management" and 3) TEK is seen as a "competing authority" with western science, which predisposes conflict between scientists and TEK users. Because of the multiple, conflicting and possibly irreconcilable definitions of TEK, Whyte argues that we should redefine TEK to be a collaborative concept. Instead of focusing on finding a definition of TEK, Whyte proposes that managers and Indigenous people use to process of working together to understand different ways in which knowledge can be understood, and to achieve mutually beneficial relationships. The focus of this approach would be on bringing different knowledge systems together to create greater understanding of management issues, and more opportunities for productive collaboration.

- Best practices for managers and TEK users: Reimagining TEK as a collaborative concept takes the focus away from defining TEK, and towards finding productive management relationships.

Whyte, K. P. 2013. "On the role of traditional ecological knowledge as a collaborative concept: a philosophical study." Ecological Processes 2(1): 1-12.
Type of Publication: Academic Journal

Keywords: traditional knowledge, natural resource management, collaborative management

Whyte, Kyle Powys. 2013. Justice Forward: Tribes, Climate Adaptation and Responsibility.

This article provides a philosophical framework for tribal and non-tribal professionals working with tribes on adaptation issues. In an attempt to address political and policy obstructions to tribal adaptation, Whyte proposes a forward-thinking justice approach to guide adaptation work with tribes. This approach emphasizes the responsibilities between parties as they develop and maintain relationships. Whyte argues that current political obstructions, when viewed in light of current climate impacts, create an unjust situation for tribal communities, as they severely limit the ability of tribes to adapt to climate change. Forward-thinking justice would remedy this problem by encouraging more responsible relationships between tribes and others. Whyte proposes five keys to achieving this state: conducting work that is "beyond compliance," sheltering "government-to-government relationship[s]," honoring "trust responsibility," "integrating tribal and non-tribal sciences" and increasing "multiparty governance."

- Guidelines for federal managers: This article gives concrete guidance on an approach to build relationships between tribes and others that will strengthen tribal capacity to adapt to climate impacts. The framework that Whyte proposes has value both as a tool to guide individuals working within agencies, and to guide institutional reform on a larger scale.

Whyte, Kyle Powys. 2013. "Justice Forward: Tribes, Climate Adaptation and Responsibility." Climatic Change 120: 517-530.
Type of Publication: Academic Journal
Keywords: justice, government-to-government relationship, trust responsibility, multiparty government, forward-thinking justice framework

CLIMATE SCIENCE AND IMPACTS

Cozzetto et al. 2013. Climate Change Impacts on the Water Resources of American Indians and Alaska Natives in the U.S.

This paper describes impacts to water resources facing AI/AN people in the U.S. While the authors acknowledge that the impacts to any particular community are unique, they note five common categories that climate impacts take across the U.S.: water supply and management, culturally important aquatic species, ranching and agriculture, tribal sovereignty and water rights, soil quality. This article describes these impacts in greater detail by looking at each region of the U.S. and examining how AI/AN communities in each region are being affected; the article lists water resource impacts specific to each region. This article includes demographic information on how many AI/AN people live in rural communities, on-reservation and in urban centers. Additionally, the article includes statistical information about the access that AI/AN communities have to water, as well as comparisons to the U.S. general public. Based on the five impact categories, the authors of the paper also include a table of potential questions for future research (580).

- Best practices for federal managers: The content of this article supplies information about impacts facing tribes by region which provides context about climate impacts on AI/AN

communities. Furthermore, the potential research questions supplies opportunities for collaboration between tribes, or between tribes and non-tribal entities (e.g. agencies).

Cozzetto, K., K. Chief, K. Dittmer, M. Brubaker, R. Gough, K. Souza, F. Ettawageshik, S. Wotkyns, S. Opitz-Stapleton, S. Duren, and P. Chavan. 2013. "[Climate Change Impacts on the Water Resources of American Indians and Alaska Natives in the U.S.](#)" Climatic Change. 120: 569-584.
Type of Publication: Academic Journal
Keywords: water management, climate impacts, American Indian and Alaska Native (AI/AN), tribal sovereignty, water rights

Dittmer, Kyle. 2013. Changing Streamflow on Columbia Basin Tribal Lands-Climate Change and Salmon.

This study looks at climate-induced changes to streamflow in the Columbia Basin. Drawing from existing hydrological data and supplemental modeling, the author finds that salmon (and lamprey) in the Columbia and Snake River basins face additional threats to their health as a result of increasing water temperatures and changes to seasonality and amount of streamflow. This study utilized several ways of measuring streamflow in order to determine possible climate impacts. Additionally, this study considers the large role that dams have played and continue to play in restricting salmon migration (and health). Impacts to streamflow and salmon health. These methods are: Seasonal Flow Fraction (SFF), Center of volume Timing (CT), Spring Flow Onset (SFO) and High Flow (HF). Amongst the findings are that streamflow spring-summer flows are decreasing, and that flood events are increasing in frequency. Impacts to salmon and lamprey depend on many factors, including individual species characteristics, variables in habitat and severity of climate impacts. However, the author concludes that climate impacts to Columbia Basin salmon face serious barriers as a result of increasing temperatures, floods and resulting disturbances to stream and river beds, and changes in seasonality of water flow.

Dittmer, Kyle. 2013. "[Changing Streamflow on Columbia Basin Tribal Lands-Climate Change and Salmon.](#)" Climatic Change. 120: 627-641.
Type of Publication: Scientific Study, Academic Journal
Keywords: salmon, lamprey, streamflow, Columbia Basin, climate impacts

Grah and Beaulieu. 2013. The Effect of Climate Change on Glacier Ablation and Baseflow Support in the Nooksack River Basin and Implications on Pacific Salmonid Species Protection and Recovery.

This study details the effects of climate change on glaciers in the Nooksack watershed. It explores the implications of changes to glacier size and health, and subsequent changes to hydrological systems in the Nooskack watershed on salmon health. The study identifies notable changes to glacial health, and identifies these changes as a potential source of harm for salmon populations. The study recommends in order to mitigate these effects that habitat restoration measures be aggressively and immediately implemented on the Nooksack River.

- Guidelines for tribes/TK holders: This paper is an excellent example of how scientific knowledge can be used to complement and reinforce TK. The data gathered for the study quantifies some

of the challenges faced by salmon populations, and in doing so supports TK observations about climate impacts.

Grah, Oliver, and Jezra Beaulieu. 2013. "*The Effect of Climate Change on Glacier Ablation and Baseflow Support in the Nooksack River Basin and Implications on Pacific Salmonid Species Protection and Recovery.*" *Climatic Change. 120: 657-670.*
Type of Publication: Scientific Study
Keywords: Nooksack Tribe, glaciers, ablation, climate impacts, salmon, habitat restoration

Grossman and Parker. 2012. Asserting Native Resilience: Pacific Rim Indigenous Nations Face the Climate Crisis.

This anthology brings together works from Indigenous scholars across the Pacific Rim to provide Indigenous perspectives on climate change, information about ongoing impacts to Indigenous peoples in the Pacific Rim, cases of ongoing responses to climate impacts, and messages for possible paths forward; the topics covered in the book are diverse both in topic and geography.

Grossman, Zoltan and Alan Parker. 2012. *Asserting Native Resilience: Pacific Rim Indigenous Nations Face the Climate Crisis. Oregon State University Press.*
Type of Publication: Compendium
Keywords: Indigenous perspective, climate impact, Pacific Rim

IPCC. 2012: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change.

This report addresses strategies to manage climate-induced disasters, and is international in scope. Included in the report is an executive summary. The report includes extensive information about how to determine risk and vulnerability to disaster, what ongoing and projected climate impacts ecosystems and human societies can expect to face, as well as a discussion of local, national and international adaptation strategies. Several sections of the report address Indigenous peoples' issues, including the severe impacts of dislocation to indigenous peoples (80-1), indigenous knowledge, risk assessment and community-based adaptation efforts (82, 84, 90), cultural aspects of risk (85), the importance of considering consequences of adaptation strategies on local and indigenous communities (298, 307), and the potential for local and Indigenous knowledge to contribute to climate adaptation (311-12). Also included in the report are case studies of disaster management, including examples featuring Indigenous peoples (503-4).

- Guidelines for federal managers: This report offers extensive information about disaster, vulnerability, risk and exposure. These concepts commonly arise in discussions of Indigenous people and climate impacts. This report introduces several issues currently facing Indigenous people in the field of disaster management. Additionally, the report situates these issues within the broader context of local, national and international management. The document is useful in describing disaster risks facing Indigenous people across the globe, and in outlining some potential strategies to address these risks.

IPCC. 2012: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change [Field, C.B., V. Barros, T.F. Stocker,D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, UK, and New York, NY, USA, 582 pp.

Type of Publication: Technical report
Keywords: disaster, risk assessment, vulnerabillity, indigenous and community-based adaptation