Environmental Data Management Best Practices

Using and Consuming Traditional Ecological Knowledge Data

This subtopic sheet provides a high-level overview of integrating traditional ecological knowledge (TEK) data into environmental operations. It includes special considerations regarding data attribution, data sharing, and determining appropriate use. Finally, it provides examples of how TEK data are shared.



Overview

Traditional ecological knowledge (TEK) data, acquired appropriately (see examples in the Improving Coastal Resilience in Point Hope, Alaska Case Study; Use of TEK to Support Revegetation at a Former Uranium Mill Site, Saskatchewan, Canada Case Study; and Integration of TEK to the Remediation of Abandoned Uranium Sites Case Study), and managed properly (see examples in the Use of TEK to Support Revegetation at a Former Uranium Mill Site, Saskatchewan, Canada Case Study), can be incorporated into the analysis and decision-making processes of an environmental investigation, characterization, remediation, or other related activity. TEK data can inform decision-making at multiple stages of a given project, from preliminary scoping through to final public communication, and can be incorporated in several ways. This fact sheet outlines currently known or proposed methodologies for incorporating and consuming TEK data related to environmental activities and discusses the key concerns for data providers and data consumers.

Attribution

Due to its unique nature, TEK has unique intellectual property (IP) considerations. Communally held knowledge is not protected by conventional IP protection. As such, a mechanism needs to be developed to prevent unauthorized use and active exploitation. The data sharing agreement, which is typically part of data acquisition (see the Acquiring TEK Data and Managing TEK Data Fact Sheets), should include a mechanism to incorporate a TEK label such as that found on http://localcontexts.org. This data tag allows communities to express local and specific conditions for sharing data in accordance with existing community protocols; similar data labels should be included in data sets or data systems that house TEK data.

Reuse of Data/Data Sharing Framework

Much, if not the majority, of TEK is and should be considered “sensitive” or proprietary information or knowledge unless otherwise specified. This means there are certain rules of engagement and state and federal laws (for example, the Privacy Act of 1974, which restricts disclosure of personally identifiable information) that need to be considered when it comes to using and sharing this type of information. Communication with the formal, or official, gatekeepers (for example, an elder, public official, or elected official) or informal leaders (for example, a religious or cultural leader) must occur to discuss how

TEK will be used and what, if anything, can be made available to the public. After these discussions have occurred, then the TEK data can be shared as agreed upon.

The ways that TEK can be useful for a project include understanding environmental conditions and how land is used by the community; becoming aware of cultural uses of an area; and how the land is resourced for food production/recreation/commercial uses. As this information is mostly, if not completely, qualitative in nature and most often captured through interviews, it is important to consider how to quantify or find another format to make the information useful to be incorporated into project activities. As an example, this information would be relevant to understand how contaminated land should be remediated (for example, to what screening level the project area should be remediated) so that when the project area is returned to the community or landowner for use, it actually meets the need(s) of that property owner or custodian.

The biggest challenge in using TEK in the project context can be in how to make it useful or relevant to the project at hand. More and more, indigenous groups have an environmental office staffed by people who are familiar with the kind of information a remediation project might need, so they can typically act as a good resource for guidance on how to incorporate this type of information into a project. An example of how to make TEK useful and relevant for a project is a project that needed to consider a local community's use of the natural resources present in a project area when planning remediation activities. This was a necessary step, because it was made clear to the project team that people were going to access that land regardless of what the project team was doing. So, to reduce the potential impacts to project work, the team identified the seasonal and resource needs by the community and modified their project work activities along with understanding how and when the community would want to access the area with that information in mind.

Other ways to become aware of or incorporate TEK is to use information captured in maps or a GIS database. These types of platforms are typically used for documenting cultural and archaeological resources, and can contain a wealth of information. State/tribal historic preservation offices, universities, and other similar types of information-source organizations have been transferring their information resources to these more interactive and dynamic digital platforms. Here, again, project leaders must be aware of possible widespread information sharing as these types of resources can be considered more "sensitive" or "proprietary" and are therefore subject to the laws, regulations, and guidance associated with those types of information.

To facilitate data sharing, a plan must be developed for how data will be communicated as the project moves forward. This can take the form of a community involvement plan (see the Public Communication and Stakeholder Engagement Fact Sheet) or a publicly accessible data sharing portal such as the Atlas of Community-Based Monitoring & Indigenous Knowledge, or the TEK Prior Art Database (see Resources below).

After the data sharing plan has been developed and accepted by stakeholders/rightsholders, specifics of communicating infrastructure must be developed. Given that most data sharing is facilitated digitally, having a robust digital sharing platform is important. Some examples of best practices when sharing TEK data digitally to both stakeholders/rightsholders and the public include, but are not limited to:

- Nunaliit Atlas Framework (Nunalitt.org)
- Arctic Eider Society (Arcticeider.com)
- The Indigenous Knowledge Social Network (siku.org/about)
- Atlas of Community-Based Monitoring (http://arcticcbm.org)

Integration Guidance

Many states have developed a tribal consultation policy to formally recognize the unique political relations of Indian Nations and note that relations are conducted on a government-to-government basis. These policies also identify protocols for department staff to work with Indian Nations and endorse developing cooperative agreements to address environmental and cultural resources of mutual concern.

Other mechanisms for integrating TEK can come from an action plan. For example, the New York State Forest Action Plan calls on forest owners to improve dialogue with Indigenous people and understanding how their traditions, rights, and cultures are impacted by the state's land management policies.

Intended/Appropriate Use

TEK gathered may be appropriate for developing an approach to site remediation/long-term stewardship. As stated above, this is an area where clear, frequent, and proactive communication with the TEK information keepers or managers will be important as an expression of respect. By showing this respect, the possibility of information misuse or misrepresentation is lessened and the relationship between a project or program and the intended community(ies) is maintained, if not enhanced by building trust between the entities. Further, a project's outcome can be enhanced by including TEK throughout a project's progress. By doing so, the outcome may better meet a community's expectation and increase the likelihood of the community accepting the outcome.

Appropriate use and incorporation of TEK into environmental operations may require an extra step for data management as compared to other project-generated data, due to the potentially sensitive nature of the data. This is the case if it is culturally sensitive data such as culturally sensitive areas, their use, or practices, or if the data includes personal information of local community participants. An example of this is a federal project addressing lead-contaminated soil that had a record of decision (ROD) where there was to be a mound of soil managed at the site upon project completion (USACE 2015). As contractors changed and remediation work continued, engineering and restrictions on future land use were raised. Additionally, the surrounding community provided input as to their preferred possible future land use options. While some members of the public may have been comfortable with their private information in the public domain in conjunction with their opinion or preference, not everyone was necessarily comfortable with that arrangement. This information compelled project management to revisit the ROD, resulting in an amendment that stipulated for no contaminated soil to remain at the site, thereby opening future land use possibilities for the community.

Incorporation into Environmental Operations

Incorporating TEK into environmental operations can yield positive outcomes on many fronts. Overall project progress can be better supported by using TEK, because a project can benefit from local information that has been gathered over many generations, something project personnel do not have access to otherwise. Further, TEK is one source among others that can contribute to a project and help guide some decisions; however, that does not mean that it is the sole driving force behind a particular decision. Again, this is where frequent and proactive communication needs to include the keepers of TEK.

An example of this type of approach was the inclusion of local community knowledge regarding seasonal crabbing and fishing around a barrier island where a Military Munitions Response Project was being conducted to address unexploded ordnance in the waters around this island. The project, through consultation and incorporation of local and commercial fishermen's knowledge, took this information into account when planning clearance activities to provide as much access as possible for fishing, crabbing, and other resource use activities.

For an example of where community knowledge could have avoided an embarrassing and illegal situation, see the Rest in Peace? A Cautionary Tale of Failure to Consult with an Indigenous Community Case Study.

Resources

- Traditional Knowledge Labels, https://localcontexts.org/licenses/traditional-knowledge-labels/
- Atlas of Community-Based Monitoring & Indigenous Knowledge, https://arcticcbm.org/index.html
- Traditional Ecological Knowledge Prior Art Database (TEK PAD), https://www.eldis.org/organisation/A6035
- New York State Forest Action Plan, https://www.dec.ny.gov/docs/lands_forests_pdf/nysfap.pdf
- United States Department of Justice, Privacy Act of 1974, https://www.justice.gov/opcl/privacy-act-1974
- World Intellectual Property Organization, https://www.wipo.int/tk/en/tk/