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The Importance of Belief Systems in Traditional Ecological Knowledge Initiatives

Abstract

Resource managers are increasingly engaging with tribes and first nations and looking for methods to incorporate their perspectives, priorities and traditional ecological knowledge (TEK) into public land and resource management. Many initiatives that engage tribes and their TEK holders only seek tribal input, such as biological data, that is most easily integrated into existing management structures. Increasing attention on tribal belief systems would provide a more holistic understanding that could benefit TEK-related initiatives. Such a shift could reduce misunderstandings about tribal natural resource perspectives and lead to insights valuable for society at large.

Keywords

traditional ecological knowledge; resource management; beliefs; values; ethics

Acknowledgments

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Increasingly, federal, state, provincial and territorial natural resource management agencies are working with indigenous peoples to incorporate their priorities, perspectives and traditional ecological knowledge (TEK) into the management of public lands. A wide-ranging and informative literature exists describing how TEK is embodied in tribal resource management systems and how it can help inform non-tribal resource management. Despite this body of literature, many resource managers remain unclear about how to factor TEK into their work. This essay provides a contextualized discussion about the nature of TEK and how it manifests in tribal communities to help illuminate opportunities for utilizing TEK in resource management applications.

Several authors have appropriately described TEK as part knowledge system, part system of practice and part belief system (e.g., Berkes, 1999; Gadgil, Berkes, & Folke, 1993). Dividing the knowledge system into these three general components helps conceptually; however, as others have noted, these elements are in reality interconnected and inseparable (Berkes, 1999; Menzies & Butler, 2006; Nadasdy, 2006).

Visualizing the interconnectedness and inseparability of the knowledge, practice and belief elements of TEK, think of the following question: In tribal contexts, what is needed for sustained success in hunting? To be successful, hunters require knowledge of animals and animal populations, such as their sensory strengths and weaknesses, habitat use patterns and indicators of population decline. Geographic knowledge is also important, such as the location of preferred habitat, migration patterns, daily travel routes, funnels and areas of refuge. This knowledge is learned experientially by participating in hunts and spending time on the land (i.e., practice informs knowledge).

Successful application of this knowledge requires skills, techniques, expertise and mechanisms for interacting with other hunters so they can help each other, not hurt each other, and collectively avoid overharvest. In turn, these practices are adapted in response to newly acquired knowledge about environmental or biological changes, such as novel wildlife diseases (i.e., knowledge informs practice).

Tribal hunters generally believe their success is contingent on the generosity of prey animals that willingly give themselves up to respectful hunters. To sustain their success, tribal hunters show respect to animals variously through their actions and, in this way, their beliefs directly influence their hunting practices (Tanner, 1979). Furthermore, many hunting-related decisions require moral judgments that are based on traditional values (Reo & Whyte, In Review). Traditional morality and values, which are components of a belief system, are learned experientially through hunting and related activities (i.e., practice influences beliefs). These interconnections between beliefs, practice and knowledge are further illustrated in Figure 1.

While hunting can outwardly appear to be a purely practical thing, hunters embody broader systems of traditional knowledge that are quite complex and multifaceted. The same can be said for systems of gathering (e.g., wild rice, maple syrup, medicinals, craft materials), trapping, fishing, whaling and habitat management. These knowledge-practice-belief systems evolved within particular families within particular communities over the course of many generations. Depending on how many different resource activities one participates in, an individual's knowledge may be relatively narrow, but great depth of knowledge accompanies the dozens to hundreds of generations of family practice. Such individuals are a tribal community's most respected content experts.

Non-tribal policy makers and resource managers view scientific content expertise and local field expertise as different types of knowledge with different resource management applications. Religious views are not officially supposed to factor into decision-making and the values and moral judgments that underlie management or policy decisions are usually not discussed. However, in tribal communities, all these forms of knowledge (deep content expertise, local field knowledge, knowledge of spiritual traditions and ethical knowledge) are embodied in TEK holders. Attempts to separate TEK into segments can lead to misinterpretations (Menzies & Butler, 2006; Nadasdy, 1999) or cause partnerships with tribes to fall apart.

A common tendency is to seek data-oriented information from TEK holders, ignoring ethical or spiritual dimensions such as traditional values and the nature of human-animal relations. The traditional belief systems of tribal communities are arguably the least studied and most misunderstood aspect of TEK. However, when viewed broadly to include elements such as traditional morality and values (e.g., as represented in Figure 1), and given tangible examples of how these elements influence tribal resource management systems (e.g., Berkes, 1999; Hager, 2010; Nadasdy, 2005), it becomes clear that belief systems are fundamentally important elements of TEK that deserve more attention.

More holistic approaches that engage tribal belief systems could drastically improve TEK-related initiatives. This shift toward understanding tribal beliefs, values and spirituality is especially critical in places where tribes have lost most of their land and, subsequently, lost knowledge of traditional land management systems. In such cases, a tribe's traditional system of values and morality may be one of their most important contributions to regional natural resource management initiatives.

Tribal traditional values and morality form the foundation of a community's perspectives about culturally significant plants, animals or geographic locations. These perspectives, which can be seen as an emergent property resulting from the community's age-old TEK, could provide policy- and management-relevant information to society at large. For example, tribal relationships with top predators, such as the gray wolf (*Canis lupus*) or grizzly bear (*Ursus arctos horribilis*), are hundreds to thousands of years in the making and, if consulted, could inform strategies for reducing human-wildlife conflicts. This sort of information will become increasingly valuable as climate change forces wildlife populations into new locations creating novel human-wildlife interactions.

Furthermore, without a basic understanding of a tribe's belief system, their natural resource perspectives and priorities are very likely to be misinterpreted (Menzies & Butler, 2006; Nadasdy, 2005). A large proportion of the natural resource collaboration and negotiation failures involving tribes likely breakdown because of a mutual lack of understanding about fundamental values or beliefs that drive perspectives about natural resources. Resource collaborations could endure longer and produce better outcomes, if they included explorations into the ways that worldviews inform natural resource values, which in turn inform moral judgments important to decision-making and resource prioritization.

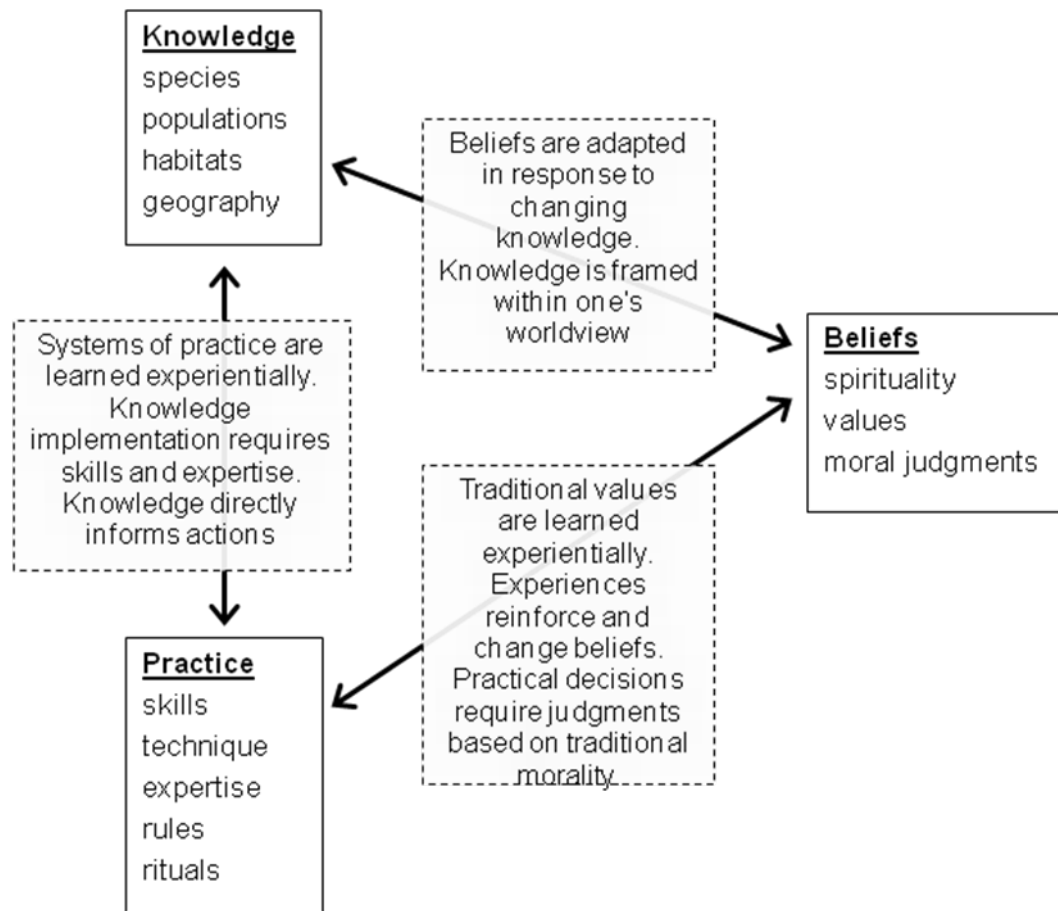


Figure 1. Conceptual diagram showing interrelationships between knowledge, practice and belief components of systems of traditional ecological knowledge.

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