



## Characterizing the ecology of the Aboriginal soundscape

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### Abstract

The potential for noise to impact humans is an important consideration for impact assessments and planning processes. Human responses to noise in urban and rural settings, and the values that constitute such soundscapes, have been well documented in the literature. Very little, however, is known about the interactions between Aboriginal land uses and sounds and whether, if at all, Aboriginal cultural practices can shape a distinct soundscape that generates different human responses to sound. This paper considers the cultural values of an Aboriginal group with regard to sound. Analysis demonstrates that Aboriginal groups do have distinct soundscapes and values that result in different responses. This paper discusses the approximate criteria that are likely to comprise an Aboriginal soundscape and how such criteria may be characterized.

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## 1. INTRODUCTION

Environmental settings are intrinsic to a sense of place and being for many humans. Many of these areas include “soundscapes”, which is an identifiable area delineated via the sounds that emanate from the environment (1) that retain important natural, social, and cultural characteristics (2). Considering Aboriginal groups are particularly influenced by their surroundings, these features are likely even more important in such cultural settings. Many Aboriginal cultures are predicated on the components and relevant conditions within the environments of each of their respective territories. Whether or not the concept of “soundscape” is applicable to the context of Aboriginal groups, however, is unknown. Very little research, if any, has considered the interactions and relationships between the cultural values of Aboriginal groups and the sounds within their environments.

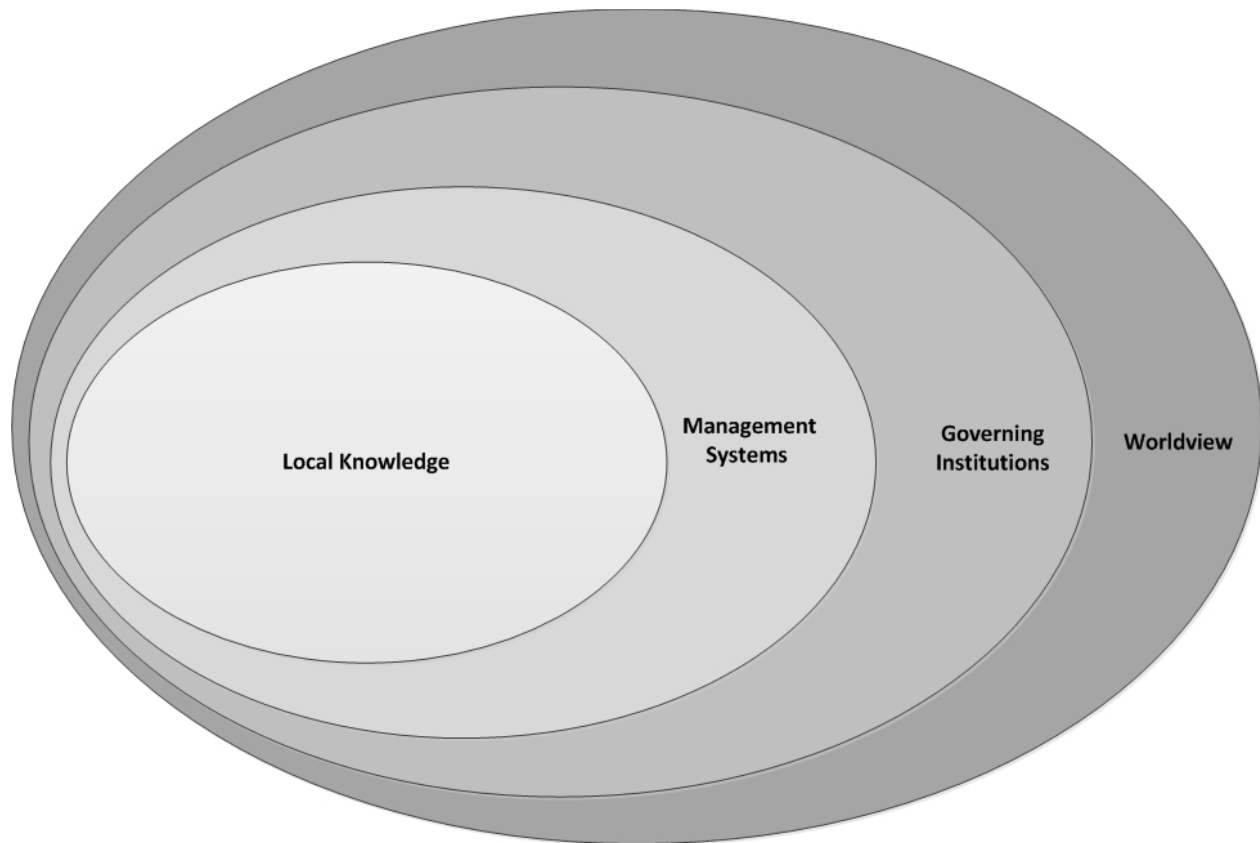
This research project investigated the interactions and relationships between the cultural values of an Aboriginal group and the sounds that emanate from their environments. West Moberly First Nations (“West Moberly”), an Aboriginal group with a territory in northern British Columbia (BC), Canada, initiated the research project. The study found that the concept of soundscape is likely applicable to the context of land uses and values of Aboriginal cultures. Analysis demonstrated that Aboriginal soundscapes contain a number of similar criteria that have been noted in the literature, but modifications are needed when they are applied to a cultural context. Additional criteria and understandings with regard to Aboriginal soundscape were also observed, many of which were interconnected with each other and the anthrophony, biophony, and geophony of their environments.

## 2. METHODS

The study was initiated in the fall of 2013 and used a community-based research design. Methods, procedures, and questions were developed with the Aboriginal group so that they remained culturally respectful and appropriate from a social science perspective. Prospective participants were identified to represent the appropriate values based on their traditional knowledge, experience, and cultural standing. Those identified were asked to voluntarily participate in the project. Interviews occurred in the summer of 2014 and included approximately 19 participants from the Aboriginal group. Research questions were semi-structured, open-ended, and designed with enough focus to maintain the effectiveness of the interview structure. The interviews were digitally recorded and transcribed with the permission of the participant. Participants were assigned a unique identification number that was randomly chosen (e.g., P300) as part of the research protocol to maintain anonymity and confidentiality. Personal identifiers, recognizable observations, comments, knowledge, and otherwise identifiable information were removed or modified when possible to further ensure that data remained anonymous.

## 3. FRAMING THE ABORIGINAL SOUNDSCAPE: A CONCEPTUAL APPROACH

Essential to working with Aboriginal groups is recognizing the importance of traditional ecological knowledge (TEK), both culturally and for its utility to environmental planning and management. Perhaps most importantly, however, is understanding that TEK is an immutable characteristic of the people that identify with a particular culture. TEK is generally understood to be the “cumulative body of knowledge, practice, and belief, evolving by adaptive practice and handed down through generations by cultural transmissions”, as it pertains to the relationships between and among people and their respective environments (4). TEK “shapes environmental perception and gives meaning to observations” made by each group (5) that, in part, contributes to the *sui generis* (unique unto their own) nature of their cultures.

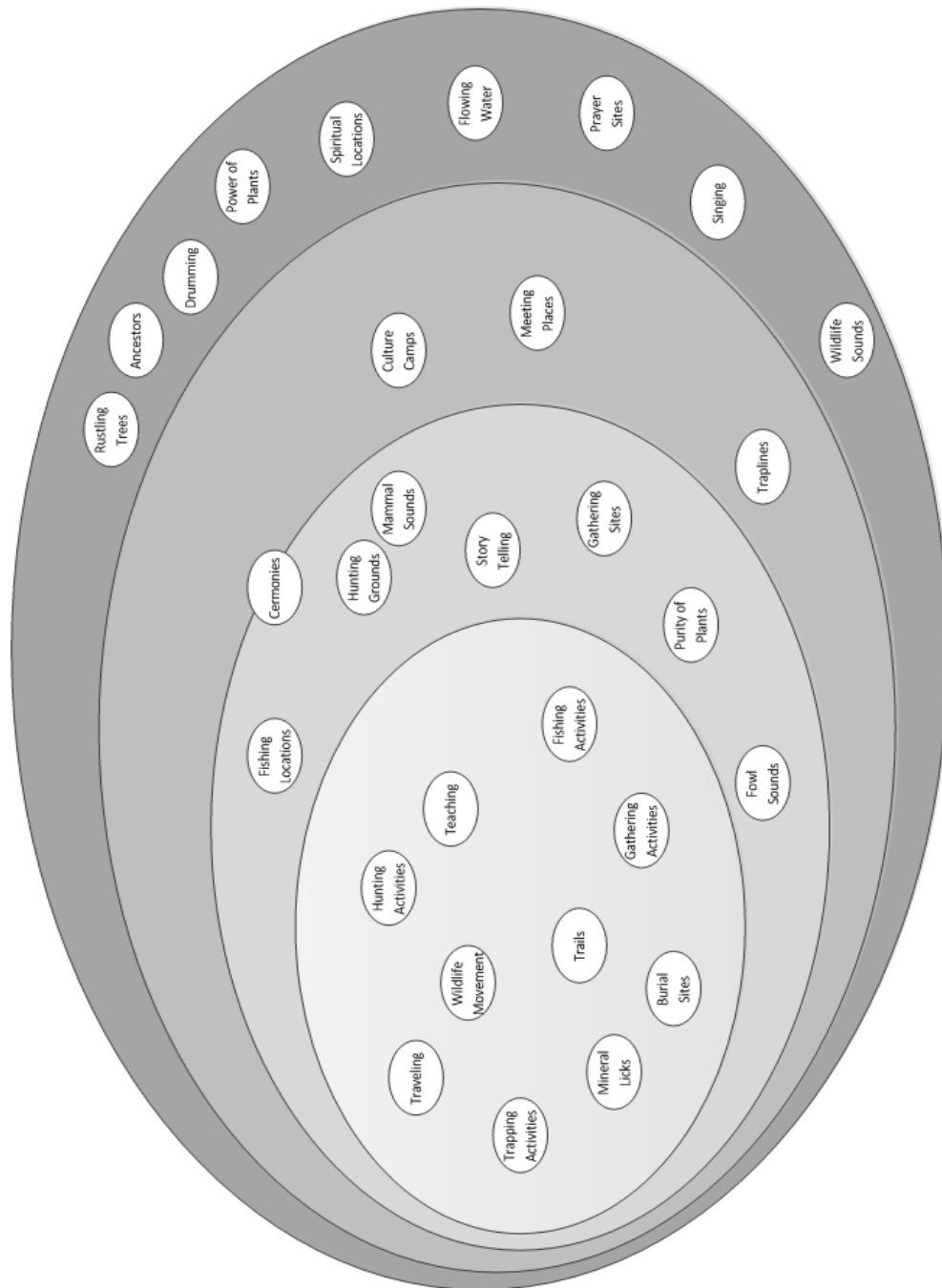


**Figure 1 – Levels of Traditional Ecological Knowledge (5)**

TEK consists of four interconnected levels (Figure 1) that vary to some degree among Aboriginal cultures (5). The first level includes specific knowledge of the environment’s flora and fauna, including the identification and ecology of species and their habitats as well as the spatial and temporal conditions of population levels and distributions of species (5). The second level is a management system containing various practices and methods that are based on the functions and processes of ecosystems (5). The third is the institutional structure that governs the interactions among the people of the Aboriginal group. Such institutions include a set of administrative and operational directions, for example: guidelines for how, when, and where land and natural resources are used; why use of resources is needed to fulfil a cultural purpose; and, the extent to which use ought to take place, including to whom the obligation(s) will be delegated (5). Level four is the worldview, which includes, for example, perceptions and meanings in the context of spirituality, ethos, cosmology, and the general cultural epistemology that underpins an Aboriginal culture (5).

#### **4. RESULTS**

Aboriginal traditions, customs, and practices within the cultural environment interact with and rely on sounds from a variety of sources for a number of purposes and applications. Figure 2 illustrates the cultural values that may be spatially expressed within “Moose Call”, an identified Aboriginal soundscape of West Moberly. While these values have been separated into the specific organizational levels of TEK for the purpose of this paper, there is a mutual interdependence among many of them. Placement of such values into different and/or multiple categories may also be appropriate based on the circumstances.



**Figure 2 – Examples of the Cultural Values of West Moberly First Nations' TEK**

Underpinning the sense of place and being for the participants was the very nature of the land, that is, an environmental setting with the capacity to provide an experience analogous to that of their ancestors. Participants often described this as “bush life”:

“Its kind of bushy, but we can make a trail. I am planning on teaching my grandson how to snare rabbits in the summer. Take them over there. I just love camping. It's all I love doing – out in the bush. Picking berries, hunting...” (6).

“It's the excitement of getting out on the land, excitement about being with your family, and excitement about knowing that you're going to have good food... That's... [why] we're out there. We're having fun. We know that there's a purpose for that, too. It's work, but the payoff is that we're going to have that food to take care of us in the winter. And so it's just always fun because we used to go out there with our cousins, our aunts and uncles and our grandmas and grandpas. It's just a really social time, nothing like sitting around the campfire, you know, drinking tea and eating hot bannock and moose ribs on the fire. ...all the money in the world doesn't never buy that experience. It's just so peaceful being out in the bush, you know? You're not listening to any vehicles or phones ringing. It's just you're out there, and you're just enjoying nature and enjoying your family and knowing that you're also out there for a purpose, to take care of yourself, take care of your family...” (7).

Participants noted the importance of becoming a part of the natural surroundings, a long-standing objective while on the land. Doing so supports bush life. Practices include, among other things, the management of anthrophony during cultural activities, as described by a participant:

“...whenever we went out on a hunting trip for the sole purpose of preparing for the coming winter, we all had to be quiet as children. I mean, we were allowed to play and run about, but we weren't allowed to leave the camping area that... we weren't allowed to get out of the sites that the camps were on, our camping area. And we had to be quiet the whole time; in other words, no yelling, screaming, loud talking, or loud laughing. We had to simply be really quiet. But it was the quietness, being out there on the land, is what made it memorable and enjoyable... sometimes a moose would come into camp, you know, sometimes 100 metres away. And everybody was so quiet; they wouldn't even know that we were there...” (8).

Cultural activities on the land have always been regarded as sensitive to sounds. Particular types of geophony and biophony, for example, are incorporated into and assist concurrently with connection and practices.

“For me, hunting is almost a spiritual thing. I teach that with my son. I take my son out hunting quite often, and I try and convey that, the spiritualness of going out there and harvesting an animal and doing things and being a part of... you become part of the area that surrounds us. You know, you're walking in the trees. You're listening to the squirrels, stuff like that...” (9).

Many types of anthrophony, on the other hand, are likely to degrade traditional processes that, to a large extent, require natural sounds. The research project showed that having a natural landscape was considered necessary for land use activities to provide cultural sustenance for participants.

“...one day we drove up like three different roads and there was so many people that we just ended up coming home...” (10).

“...I don't like hunting when there are people around. ...you know, because I don't like people stopping and watching me or asking me questions. "How did you get that animal? Do you have your hunting license?" (11).

“I would say for me privacy is really important. Like, the best way to ruin a camping trip... even when we're out just camping in the bush and somebody comes along...” (11).

“...when we're camping, people stop driving and sometimes ask us questions, like, why we're here, what are we doing way out here. And, to me, I think that's like a census. You know, are they doing a report? They need to know why we're there? We're there for a reason...” (12).

Reasons for pursuing “the bush”, and thus purposefully leaving the modern amenities of urban residences, were multifaceted. Not only was leaving for the purpose of exercising cultural activities, but it was also to connect with the land as a basis for spiritual replenishment.

“You could just hear nothing but the wind in the trees. That, I guess, is like... people go to church to pray and be at peace of mind. To me, I can go out there and have peace of mind. And that's just a part of, I think, growing up and being on the land so much. Sometimes, too, the week when you're so busy and you're just tired of people and the busy lifestyle, just go over there and just sit there for a while, and it just brings you back to, I guess, your roots...” (12).

“When you're out on the land and you're spending time on it... it's a calming, it's a peaceful thing. ...you get to hear the birds and you get to hear what's going on – the wind... It's a spiritual... Being on the land is just being connected to nature. We know that there's a connection there and everything has got a spirit... And Western civilization doesn't see it [that] way...” (13).

“It kind of grounds you when you're out there. Sometimes if we're camped by the water and you're listening to the water run, it's just soothing. It's good for you not only physically but spiritually, mentally, socially, all of those things. It covers everything.” (7).

Another source of sound is associated with the cultural spirituality and connectivity of an Aboriginal group. In this sense, as described by a participant, anthrophony from anthropogenic activities may cause such sounds.

“...the big thing is a sweat is directly connected to Mother Earth because we see a sweat as being Mother Earth's womb. And if they're tearing into Mother Earth... [near the ceremony] that is not good. Just because they don't hear her scream in pain doesn't mean she's not in pain. And that may affect the sweat because it's so close.

Mother Earth is a living spirit, and we are directly connected to her. The water that flows on Mother Earth in streams and tributaries and rivers and pools in lakes are her blood veins, just like the blood veins that run through our bodies. She's alive. And I believe she is a Being, and sometimes in our ceremonies and in our dreams she talks to us. And I don't expect you to believe that, or anybody else, for that matter, that don't know or understand our ways...” (8).

Aboriginal spiritual ceremonies were noted as being particularly sensitive to the level of anthrophony in close proximity. Equally important was the type of anthrophony that might be generated.

“First of all, it would interfere with the ceremony because the best way to ensure that your prayers are going to be heard is it has to be relatively quiet. I mean, there can be some noise, but not loud noise, disturbing noise.

...it's no problem with people sitting around a campfire 100 metres away and laughing and talking, but it's inappropriate for them to be screaming and hollering and banging pots and pans and stuff like that...” (8).

## 5. DISCUSSION

Even though previous scientific investigations into the human soundscape have been exclusive of Aboriginal cultural values, the analytical discourse within the extant literature is likely applicable in many respects. The initial criteria that have been developed with regard to what may contribute to the occurrence of a soundscape (2) appear to reflect a number of cultural values. These are, for example: physical sites, locations, and areas that may have differing geographic dimensions based on the cultural value and purpose of an individual, family, or group; a place that, via histories, stories, and songs, is interconnected with the surroundings; a place where TEK spatially and temporally requires the biophony and geophony; a place where an individual, family, or group may interact and/or connect with each other, the land and its inhabitants, their ancestors, or Mother Earth/Creator; and a place where an individual, family, or group interacts with the land for the purpose of cultural activities (2).

Perhaps the most notable difference in how soundscape boundaries are established rests with the understanding that soundscapes are an exclusively human construct. Such an approach does not account for the worldviews of Aboriginal groups. Factors that significantly influence how Aboriginal people interact with and relate to the land include, among other things, spiritual traditions, customs, and practices. Locations and areas of spiritual and/or sacred importance are presented to Aboriginal people in some cases through dreams, prayers, and ceremonies – the majority of which are, indeed, culturally distinct. These experiences may also include spatial boundaries upon which a soundscape would likely emerge.

Within the Aboriginal soundscape of Moose Call there were anthrophony, biophony, and/or geophony sounds that contributed to the occurrence and sustainability of cultural values. Various sounds that derived from these sources overlap with one or more levels of TEK in many cases. Anthrophony derived from cultural values include, for example, singing, drumming, prayers, ceremonies, and teachings. Traditions and customs may occur in concert with one another and, depending on the situation, involve the participation of one or more individuals. Another example includes communications with wildlife. The process of harvesting wildlife in accordance with the seasonal round often involves hunters impersonating various sounds to influence the behaviour of a particular species. Individuals may also use similar wildlife sounds to communicate with one another while on the land in order to remain inconspicuous to wildlife species that are sensitive to anthrophony.

TEK includes biophony from a multitude of wildlife species. The interpretation of calls and songs from various bird species are relied upon for a number of cultural practices. Songs from one species, for example, indicate when and where to abstain from harvesting ungulates because species is in the process of calving. Thus the sounds of a bird provide a basis from a traditional land management technique is operationalized to protect an ungulate species. Another example includes the sounds generated from a mammal in mountainous habitats, which indicates hunters may potentially harvest the species, or that a predator is in close proximity. Although not always associated with wildlife, the gathering of flora (e.g., edible, medicinal, and spiritual plants) encompasses such TEK as well. Safety implications related to large predators (e.g., grizzly bears) were frequently referenced in this regard. Through such experiences, the youth that accompany the Elders and adults into the bush for the purpose of gathering flora simultaneously learn why it is important to be quiet on the land, how to identify sounds from different species that are around them, and why these sounds are important from a safety perspective when carrying out traditional ways of life in the bush.

In comparison to the other sources, geophony in the context of TEK is much more difficult to articulate as it is largely entrenched in TEK. Winds and watercourses (e.g., rivers and creeks) were noted as being part of TEK, as both have roles in the practice of cultural activities. Wind-generated sounds within forests, for example, were noted as inducing movements in wildlife that, in turn, likely influence practices such as hunting and perhaps trapping. Sounds from wind and water equally provide a sense of well-being and function as pathways to connect participants and the land. The intricacies of wind and water within the spirituality of individuals and the Aboriginal group are, however, complex in many respects. Most notably, sounds generated by “wind in the trees” were regarded as a requisite to sustain a general sense of “bush life”. These sounds may be measured and, if appropriate, applied as a culturally based threshold when considering the magnitude of impacts on the Aboriginal soundscape. Before doing so, however, the applicability of such a threshold to other cultural values, such as spiritual practices, would likely need to be confirmed and adjusted accordingly if necessary.

Interactions between and among cultural values are not uniform, and as such, a number of separate and/or overlapping spatial units within a soundscape are likely. This diversity was reflected in the requisites and parameters for each value in the context of sensitiveness to external influences. Values respond to the type and level of anthrophony differently in many cases. Also considered with regard to anthrophony is the human activity that generated the sound(s), which brings to light a much different perception and one that is grounded in Aboriginal spirituality. In some circumstances, the cause of the anthrophony, irrespective of the type and/or level of sound, may produce sounds that are identified and understood through the worldview of the Aboriginal culture. Although these sounds include various elements of the conventions found in anthrophony, biophony, and geophony, it is likely that such sounds from the anthropogenic source are only identifiable and understood by particular individuals (e.g., culturally trained). Spirituality in this sense not only includes various sites, locations, and areas of land uses (e.g., sacred land, ceremonies, drumming and singing, prayer) and the supportive geophony (e.g., leaves in the trees, running water), but also those sounds that may be recognized via cultural values. In addition, the presence of other individuals during hunting practices was considered unacceptable, as any type of sound during such practices was undesirable regardless of the level; however, in the case of anthrophony that does not directly engage with practices, the equivalent level of noise may be tolerable. For example, as several participants pointed out, the extent to which sounds from motorized vehicles remain tolerable varies with the underlying purpose of exercising a cultural value, as in some cases there is a spiritual focus that would be very sensitive to external influences of this nature.

## 6. CONCLUSIONS

Aboriginal groups in Canada are likely to have distinct soundscapes. These may be formed and maintained through the typical means, but also via cultural traditions, customs, and practices. Cultural values associated with the land uses of Aboriginal groups, as reflected in their TEK, have substantial interactions and relationships with the sounds of their environments. Not all landscapes that support the land use activities of an Aboriginal group, however, are likely to have equivalent soundscapes. Each will also have a multiple spatial scales for the values associated with a particular landscape. The context that a value is being exercised played a role as well. Values also adapted to the seasons, where sounds from the geophony that sustained a sense of place and being are replaced with (or more emphasis placed on) another sounds from the geophony. These provide the general basis for an Aboriginal soundscape and initial criteria to further characterize the relevant ecology for a particular culture.



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