

‘Creator Gave us Two Ears and One Mouth’: Sound as a Signifier of Environmental Crisis at the Intersections of Indigeneity and Acoustic Ecology

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Abstract

Acoustic ecology has served as a foundational theoretical field for many sound scholars to understand the soundscape as a signifier for environmental crisis. While sound theorists like R. Murray Schafer and those in the World Soundscape Project (WSP) have developed ways in which to critically analyze environmental soundscapes, these methods have often excluded Indigenous narratives which offer complex understandings of sound through embodied experience. In this paper I employ a brief description of acoustic ecology, drawing attention to its benefits as a methodological approach to sonic ordering, while also demonstrating the possibilities for expansion of this field when examined in conversation with Canadian Indigenous perspectives and notable sonic activist movements. I address how Indigenous knowledge systems, futurisms, art, and activism can provide critical perspectives within the field of acoustic ecology, which lends well to understanding soundscapes of crisis. I identify a few examples of sonic forward Indigenous environmental movements which include game design by Elizabeth LaPensée, Rebecca Belmore’s *Wave Sound* sculpture, and the Round Dance Revolution within the Idle No More movement. In sum, this paper works to bridge the work of acoustic ecology and Indigenous sonic movements to encourage a complex and nuanced relationship to sound, and to explore moments for understanding sonic intersections at the forefront of environmental crisis.

Keywords

acoustic ecology, Indigeneity, environmental activism

Canada Day, July 1st, 2017, marked 150 years since federation; a date aptly titled Canada 150. In an interview with Flare magazine approximately two weeks prior to Canada 150, a number of Indigenous Canadians were asked to answer the question, “What would you like Canadians to know as Canada 150 approaches?” (Ratchford, 2017). *Onon:wat* (two-spirited) urban Indigenous person, Rebecca Benson, shared the story of a teaching from Oneida Elder Dan Smoke. Benson recalls a time when Elder Smoke had said, “Creator gave us two ears and one mouth for a reason; you should use them proportionately. You will almost always gain more by listening than you will from talking” (Ratchford, 2017). Elder Smoke’s teaching identifies the importance of listening as a method through which to learn from others and discern knowledge through sonic interventions. Simultaneously, it reminds Canadians of the importance of prioritizing Indigenous voices through moments of reconciliation, sovereignty, cultural longevity, and environmental crisis.

As the Canadian government continues to build pipelines across this land and prioritize industrialism and expansion for the sake of capital growth, Indigenous voices stand at the forefront of environmental activism (Baker, 2020; B. Trumpener, 2021). To define the global current environmental crisis, a critical placement in which I situate this paper, I share a quote from the New York 2019 Climate Summit. The UN secretary general Guterres states,

Nature is angry. And we fool ourselves if we think we can fool nature. Because nature always strikes back. And around the world, nature is striking back with fury...Make no mistake, when we see those images, we are not just seeing damage. We are seeing the future if we do not act now...The climate emergency is a race we are losing, but it is a race we can win. The climate crisis is caused by us – and the solutions must come from us. (Guterres, 2019)

As Elder Smoke suggests, these solutions to our climate emergency may be found through the act of listening. In academia, listening within the field of sound studies has encouraged these moments for reflection to consider sound as an environmental marker in ecological crisis; a method through which to discern environmental changes and to consider sonic solutions. For example, Hildegard Westerkamp suggests that the act of soundwalking, defined as an excursion with the intent of listening to environment, offers a strengthened connection to environment because,

an ongoing and regular practice of soundwalking can be understood as an ecological act. The soundwalk itself is the action, which carries the potential for developing a conscious relationship to the environment...a soundwalk does not only reveal relationships within the

acoustic environment but perhaps more importantly, makes relationships conscious between listeners' experiences and their acoustic - social environment. (Westerkamp, 2006)

The work of Westerkamp and her fellow sound studies researchers, such as R. Murray Schafer and Barry Truax, prompted the field of acoustic ecology. The field's complex history and timeline, as neatly outlined in the book *Sound, Media, Ecology*, (Droumeva & Jordan, 2019), radically shifted academic perspectives on sonic analysis: "The theoretical underpinnings of such an ecological approach were that of systems theory where the acoustic environment could be regarded as a complex system of inter-acting elements, rather than isolated acoustic phenomena" (Truax, 2019, p. 22). This framework for sonic analysis has encouraged scholars to consider the various aspects of a soundscape, learning to listen beyond the notable sonic context to discern knowledge within shifting audible patterns. Simultaneously, acoustic ecology researchers have also suggested new ways to examine environmental crisis, identifying signifiers of decay which remain invisible to a visually centric society but resonate within sonic worlds.

Although the field of acoustic ecology has proved unique and informative in that it prompts new ways of organizing and categorizing sonic relationships, various scholars across disciplines have argued that the structural processes and methods tied to this framework are limited and often exclude Indigenous narratives which have long identified embodied relationships within sonic reflection (Gross, 2014; LaDuke, 2016; Robinson, 2020; Westerkamp, 2019). To broaden the field of acoustic ecology, I suggest that a collaborative approach to sonic investigation in environmental crisis between academic fields and Indigenous led sonic movements may prompt new areas for reflection. These collaborative discussions may offer a variety of ways in which to understand sonic importance and environmental soundscapes as audible markers.

In this paper, I review the history of acoustic ecology in conversation with Indigenous sonic perspectives to explore the strengths of these fields and the possibilities of engaging in sonic research within and between these approaches to sound. Following a brief literature review of these perspectives, I consider a sample of Indigenous led movements and activists who are engaging with environmental issues through sonic means and digital futurisms. The decision to engage with sound art and environmental activists was a methodological choice made in an effort to bridge the ontological gap of academic sound studies and Indigenous forms of intervention. As Adamson and Monani describe in the consideration of Maori art in conversation with fields of cosmology, Indigenous art and design can function as a form of eco-political practice, "a creative, negotiable space where worlds can meet" (Monani &

Adamson, 2016, p. 11). By exploring the function of sound through Indigenous art and activism, this paper works to broaden the field of acoustic ecology by considering the sound art, sonic works, and the respective scholars and designers who exist outside of academic borders.

Methodologically, this paper will consider the perspectives through a brief literature review to comparatively address these fields and approaches to sonic analysis. To conclude, the paper will suggest 3 examples for consideration of Indigenous activism and futurisms. These examples include game design by Elizabeth LaPensée, Rebecca Belmore's *Wave Sound* sculptures, and the Round Dance Revolution within the Idle No More movement. Each example will consider the audience, call to action, means of production, and sonic markers by which participants are encouraged to engage. This paper works to consider the foundational aspects of acoustic ecology in conversation with Indigenous perspectives on listening and sound analysis, political and environmental activism, sonic art, Indigenous futurisms, and cultural knowledge systems. These comparisons can offer new modes of understanding and addressing environmental crisis through decolonial knowledge systems.

A brief overview of acoustic ecology

Considering the origins of the field of acoustic ecology, it is most widely accepted that soundscape studies and acoustic ecology were founded by SFU researcher, R. Murray Schafer (Droumeva & Jordan, 2019, p. v). Schafer's work aimed to capture evolving soundscapes through experimental forms of collaboration between music and nature (Schafer, 1993, p. 302). His compositions have acted as a call to action, encouraging those to listen to the environment and to develop sonic solutions to what he describes as an increasing urbanization problem. Most notably, Schafer (1993) articulates his overt frustration with noise and a reduction of the natural sonic world frequently throughout his work.

In the 1960s, he founded the World Soundscape Project (WSP), a group which attempted to identify issues of noise pollution from a positive listener-centric approach (Truax, 2019, p. 21). Across international borders, the team was able to amass a collection of soundscape recordings, exploring various evolving sonic markers through methods such as soundwalking, a process which encourages individuals to analyze qualitative aspects of a sonic environment and embodied listening techniques (Westerkamp, 2006), to other technologically focused methods such as bioacoustics and spectral analysis, which graphically analyze sounds and species by frequency range (Truax, 2019, p. 25). The team consisted of a collection of students and sound scholars including Barry Truax (2019) and Hildegard Westerkamp

(2006), who worked alongside R. Murray Schafer. Their work strengthened the field of acoustic ecology, exploring sound through environmental impact in academia and beyond; World Soundscape researcher Barry Truax notes that one of the goals of the project was to encourage the government of British Columbia to include soundscape ecology within the environmentalist agenda (Truax, 2019, p. 22). The work of R. Murray Schafer the World Soundscape Project was innovative in that it prompted various fields to consider sound within seemingly untraditional platforms of study. Simultaneously, they highlighted the importance of listening in a world that has become extremely ocular focused.

The 'whiteness' of acoustic ecology: Addressing the inter-sections of Indigenous perspectives on sonic worlds

While sound theorists like Schafer and those in the World Soundscape Project provide a critical analysis of sound media and environmental soundscapes, this field is primarily situated within settler perspectives of sound and sensory engagement. One reason for this lack of diversity in the field stems from the time frame in which this framework began. At the same time of the development of sound studies work at SFU, Indigenous people were facing the dangers of forced removal from their homes as Indigenous children were placed with white families or in residential schools (Hanson, n.d.). Simultaneously, in the context of academia, there has long been a history of barriers to knowledge sharing for Indigenous students and faculty. The institution has historically positioned these issues as individual plights by suggesting it is an issue of low achievement, lack of perseverance, or poor retention (Kirkness & Barnhardt, 2001, p. 1). Although various Canadian Universities continually make statements for recognition that they are moving towards a broader appreciation of various knowledge systems, the systemic and hierarchical perception of diversity amongst scholars and methodological approaches continue to permeate universities internationally. Australian scholar Sue Green remarks,

Academia is a world based on individualism and competitiveness which for Indigenous peoples, and particularly Indigenous women, is culturally unsafe. Furthermore, whilst the academy is rushing forward to be inclusive of Indigenous peoples, cultures and knowledges, it does so whilst still maintaining its structures of white, patriarchal privilege. (Green et al, 2018, p. 256)

In order to move forward, we must ensure that universities demonstrate respect, relevance, reciprocity and responsibility for Indigenous knowledge systems, processes, and practices (Kirkness & Barnhardt, 2001). In this sense, it is clear as to why Indigenous perspectives are not as neatly integrated into the field of acoustic

ecology, as the mere fact of being Indigenous during the time of acoustic ecology's design in Canada, resulted in punishment and alienation.

I also suggest that this division of Indigeneity and settler narratives within soundscape research stems from the fact that many acoustic ecology methods are positioned as systematic and humanistic forms of analysis. Key research methodology employed by the WSP and R Murray Schafer such as soundwalking, sound count sheets, and recording techniques rely on the understanding of sound in relation to human experience. For example, R. Murray Schafer describes the role of classification of sounds "according to their physical characteristics or the way in which they are perceived; according to their function and meaning; or according to their emotional or affective qualities" (Schafer, 1993, p. 133). While these classification tools and methods may lead to improvement in judgement and perception for sound studies scholars, they rely on a centralized human perspective to order sounds according to distinct parameters. Considering Indigenous worldviews and integrating methods of Indigenous knowledge systems within the field of soundscape research could provide new ways of exploring sound and environmental crisis through embodied experience, cultural practices, and considerations of synergy – all of which actively work against humanist perspectives and position energetic and embodied connection as central to understanding sonic worlds.

Indigenous scholars such as Dylan Robinson (2020) and Lawrence Gross (2014) have published Indigenous forward sound centric research to combat these colonial narratives and broaden the field of acoustic ecology, offering discussions on listening positionality and cultural listening practices respectively. Robinson's work in particular has suggested a shift in listening positionality and anticolonial listening practices that resist what he deems a fevered pace of consumption and instead listen "in favor of new temporalities of wonder disoriented from antirelational and nonsituated settler colonial positions of certainty" (Robinson, 2020, p. 53). Robinson's work is one of many which offers a unique view on positionality and listening techniques to consider Indigenous ways of being at the forefront of sound studies work. Therefore, my aim is not to dismiss the work performed by R. Murray Schafer and the World Soundscape Project, but to expand on their analysis and theoretical underpinnings. I aim to consider their work in conversation with Indigenous sonic researchers to address Indigenous activism as a platform for understanding sonic creation and analysis as both a communication technique and as a form of environmentalism.

Various Indigenous perspectives on listening suggest a complex and layered relationship between sound and land, positioning listening as a multi-sensory em-

bodied experience built upon relational understandings of titles between speaker and listener (Gross, 2014; Robinson, 2020; Simpson, 2011). In essence, “the land is more than a backdrop, space, or a location; it is a sustainer, speaker, and archive for Indigenous stories” (Sium & Ritskes, 2013, p. vii). This differs from a colonial relationship with land and soundscape, one which relies on the concepts of territory and land through the lens of ownership (England, 2019, p. 8), and listening as a form of data extraction or rapid consumption (Robinson, 2020). In that sense, an embodied relationship with listening to soundscape means that every sound source carries a sonic identity and a profound meaning within the space (Hopkins, 2019). While an analysis of the sound outside of this context offers intricate ways of knowing, a consideration of the sound within embodied listening practice may unlock new ways in which to engage with environmental crisis through sonic means and understanding. Indigenous sound scholar Candice Hopkins describes in a presentation for SFU Graduate & Postdoctoral studies (2019), that environmental sounds are not always received as surface level, but often carry a profound meaning. She states that Indigenous systems of sound analysis hear the “harmonics of stones, who are believed to be grandmothers and grandfathers, the harmonics of the trees, that aim to teach individuals how to bend and not break, and the harmonics of water, continually flowing with new progress” (Hopkins, 2019). Hopkins suggests that de-colonial listening aspires to find meaning within and between the sources, deepening listening practices beyond sound source or tonal analysis.

Hopkins also suggests it is important to view sound as a relationship of exchange and the land as a listener that is attuned to our frequencies (Hopkins, 2019). Understanding the environment as both speaker and listener can evoke new comprehension of human and environmental relationships, exploring how our soundscape receives and responds through sonic cues. To understand this nuanced relationship means examining sounds of the past and exploring the sounds of the future (Hopkins, 2019), reaching beyond the sound source to hear what is inaudible. For example, pre-colonial architecture and acoustic compositions carry sonic cues that are tied to mimetic replications of their environment. In particular, the Maya Kukulcan pyramids were designed so that a clap at the base of the pyramid would stimulate an audio response that mimicked the Kukul bird (Lubman, 2002, p. 2285). Whether this sonic intention was designed to honour the animal or to create a new sonically relevant sound source, this historical design within architecture demonstrates a conscious knowledge of sound and land as malleable, informative, and embodied.

To better understand moments of environmental crisis and activism, it is important to shift colonial understandings from solely ocular information to the acous-

tic world, as scientists are noticing animals that rely on frequencies and sonic forms of communication are quickly anticipating environmental changes prior to our understandings (Hopkins, 2019; Leroy et al., 2018). To cite an example, a 2018 study performed in the Southern Indian Ocean noticed that blue whales were adapting their calls each year, adjusting the pitch gradually over time, potentially due to environmental changes and global warming affecting the acoustic properties of the ocean (Leroy et al., 2018, p. 8572). This example demonstrates how a shift from a visually centric society to a sonically informed community would prompt new ways of recognizing environmental crisis in its evolution. While the whale calls are one audible marker of this form of crisis, there are many more audible changes demonstrating various damaging effects.

Acoustic ecology & Indigenous sonic worlds: The frontlines of environmental activism

Understanding acoustic ecology alongside Indigenous movements and sonic knowledge, it is possible to further divulge an analysis of environmental activists as contributors to this field, broadening understandings of soundscape within the context of environmental crisis. According to Am Kanngieser, sound is inherently a political medium and can be anchored as such (2015, p. 1). Examining sound as a presence of inequality and future predictions can encourage, “political relations... to build new and creative terrains for human and more-than-human negotiations” (Kanngieser, 2015, p. 5). Similarly, the inequalities of sonic relations also mirror inequalities among populations and communities. Learning to listen for inequalities within communities can encourage discussions of colonial knowledge systems and state organizations.

Kanngieser’s (2015) five propositions of sound identify ways in which to address and consider sound art and environmental activism in conversation with acoustic ecology in academia. Each of the case studies offered in this paper identify a moment to consider inequalities and political terrain through sonic means. Through the work of sound design in video games, sound installations, and static art pieces, to larger activist led movements rooted in sonic understandings of synergy, each example offers insight into sound as a signifier of environmental crisis and sonic worlds as a tool to converse within eco-politics. These examples may contribute to the work of Schafer by broadening perspectives of ‘classification’ – situating Indigenous knowledge systems, artistic ventures, and futurisms as widely scattered maps to sonic environments that provide contextual understanding outside of formalized methods of analysis and rigid classification structures tied to academia. Simultaneously, they may offer additional comparisons and considerations with the work of

Dylan Robinson by shifting listener positionality through artistic ventures which encourage participants to embody anticolonial listening practices. In sum, these examples contextualize the creative, negotiable space (Monani & Adamson, 2016, p. 11) of sound and environmental analysis – a space which accounts for multiple worldviews in conversation with academia.

Anishinaabe Metis creator Elizabeth LaPensée explores these signifiers of inequality to combat colonial narratives in video games while prioritizing environmental awareness through sonic tools and cultural practices. Some specific examples of LaPensée's work in this field are her games *Honour Water* and *When Rivers Were Trails*. Both games situate the player within Indigenous narratives, providing cultural analysis and participation through song use and exploring issues of land allotments (LaPensée, n.d.). Her work actively employs sound as a primary medium in which to engage players with environmental and social crises, situating the player in discussion with the water and embedded histories – casting land as both speaker and listener in the process. The gamification process of LaPensée's work contributes to Schafer's techniques of sonic analysis as it suggests a technologically focused form of classification by developing stories through sonic means and classifying voices through land and speaker. LaPensée's work offers players an opportunity to explore the complex relationships embedded in sound and sonic histories, expanding understandings of sonic ordering and analysis through a gamified experience.

Similarly, Rebecca Belmore is an Anishinaabekwe artist whose sound installations evoke a political and social consciousness. One of Belmore's series of sound sculptures entitled *Wave Sound* is designed to encourage people to listen to “consider the land and our relationship to the land” (Belmore, n.d.). These sculptures, situated in National Parks across Canada, work to amplify the natural soundscape, and encourage deep and present listening within these environments. This piece works in conversation with one of her earlier projects entitled *Speaking to Their Mother*, a similar installment which aimed to amplify the speaker's voice rather than the natural soundscape, to form dialogue with mother nature and gesture towards the power and politics of speaking to the land (Belmore, n.d.). *Wave Sound* is an extension of this prior project, inviting members of the public to actively listen to the land through these intricately crafted objects specially designed by the artist, to shift their listening positionality and embody the temporality of wonder (Robinson, 2020, p. 53) while engaging with the objects. While the *Wave Sound* sculptures vary between each national park, they encourage the listener to consider the positionality of land and our relationship to its survival, to listen to its voice in all its complexities, and to resist speech and instead intend to listen (Belmore, n.d.). Her work offers a unique perspective to explore soundscape and sonic change, and land as speaker

and listener, demonstrating ephemeral and ever-changing sound sources through a fixed piece of art.

Finally, I suggest one last example for consideration is the Round Dance Revolution as a key part of Canada's *Idle No More* movement. This movement brought attention to Indigenous sovereignty across Canada, and sparked the improvisation of various musical protests which came to be known as the Round Dance Revolution (McMahon, 2012). These protests took place in many public spaces across Canada to draw attention to their message of unity and strength in the face of threatened environmental and cultural destruction. Indigenous author Ryan McMahon notes that this movement, and the round dance revolution specifically, mattered because, "As kids, we were told that the drumbeat represents the heartbeat of Mother Earth. We were told our songs come from Mother Earth. We were told that our communities are only as strong as the sound of our drums" (McMahon, 2012). McMahon's sentiment identifies a method in which to understand and engage with the sound of the drums – as vehicles of embodied knowledge and as voices for synergetic relationships. In this movement, the drums act as a call to action for those to listen, a tool to engage in discussion with the environment through sound, and to identify listening and sonic creation as a mode in which to strengthen synergetic relationships.

The examples of LaPensée's game design, Belmore's *Wave Sound*, and the Round Dance Revolution offer a glimpse into sonic interventions and methodological approaches to understanding soundscape and environmental crisis in conversation with acoustic ecology. I reference these examples as a collection of multi-disciplinary work which contribute to a greater understanding of sound through environment. These artists, scholars, and activists prompt many unanswered questions regarding the possibilities of sonic analysis and acoustic ecology: What could a collaborative analysis of sound within these varying perspectives evoke? What kinds of knowledge and environmental understandings may become prominent when artistic and methodological approaches are equally valued and, thus, equally expand the field of acoustic ecology?

Conclusion

To conclude, this paper works to provide an overview of acoustic ecology and to consider the possibilities for this field in conversation with Indigenous perspectives that explore eco-political themes outside of academia. This paper considers the comparison of these experiences with listening and sound analysis, political and environmental activism, sonic art, Indigenous futurisms, and cultural knowledge systems. At the core, practices of de-colonial listening can only further promote collab-

oration and shared knowledge systems, destroying colonial hierarchical relations and encouraging new forms of environmental awareness in crisis alongside ecological movements. As a final plea to you, the reader, I'd like to leave you with a call to action. As we continually battle social, economic, political, and environmental crisis, it is vitally important to listen and uplift the land and the communities who work to protect what remains and unearth knowledge embedded in embodied relationships. Listening has become a vitally important tool to understand and combat moments of crisis. Thus, it is important to remember, "Creator gave us two ears and one mouth for a reason; you should use them proportionately. You will almost always gain more by listening than you will from talking" (Ratchford, 2017).

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