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BIOCULTURAL STEWARDSHIP AS AN IDEA IN URBAN CONTEXTS: LANGUAGE, ACADEMIC DISCIPLINARITY, POSITIONALITY, ENVIRONMENTAL/SUSTAINABILITY SCIENCES, AND HEALING

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Abstract

Individual, cultural, and Place-based positionality are important elements when thinking about partnership and the environment, particularly including erasures of Indigenous and other marginalized lenses. Language barriers and exclusion of culture that stem from the Western need for scientific validity, and predominance of this framing within environmental sciences, surface as a main limitation to building relationships, communicating across disciplines, and working beyond institutions. What does the Western scientific imagination lack that might lend a lens on different relationships to Place and on decision-making tools that inform our care of it? Biocultural stewardship of public spaces using an intermingling of ecological and cultural story-telling as a glue could drive a process of Place-making that offers alternative lenses to partnership and the environment. Sustainability, agency, and knowledge production could take on different forms if we leave space for cultural lenses and healing in our partnerships with the environment. Urban areas in particular mark spaces where many cultural traditions are coming together in unique but often underutilized contexts to offer potential knowledge to novel human-environment partnerships. This article draws on framing within the history of science and Indigenous philosophy, to see how broadly but intentionally including different cultural ways of knowing in particularized academic disciplines—especially in environmental sciences—might shed light on relationships of responsibility and stewardship to the land.

Keywords: human and environment partnership; culture; biocultural stewardship; healing; language; Place; urban environments; art and ecology; story; phenology

POSITIONALITY

What does partnership and the environment look like? How do we cross boundaries? This essay seeks to ask questions rather than find definitive solutions. It is meant to question some of our knowledge production frameworks and reflect on our language and how we might move toward a healing place, particularly in urban environments.

How to start?

I would first like to thank my many teachers of all forms. Then I would like to acknowledge that I am on Dakota homeland in Minneapolis, Minnesota, from a Western European settler background and an Indigenous ally network. I grew up in Menominee Nation homeland ([Menominee Indian Tribe of Wisconsin](#)) in what is now called Wisconsin. I did not know this growing up, for many reasons, but partly because I am a white person from a predominantly Polish Catholic community, and my ancestry is "American," of a Euro-American settler descendancy. This Indigenous legacy from the Menominee Nation had been erased from my education or knowledge system, or put into the past, instead of being part of a living past, present, and future. The land is still dotted with many Menominee names (Waupaca, Wausau), as well as those of settlers and colonizers (Stevens Point, Custer, Amherst—the last two of whom you might recognize as famous massacrists of Indigenous people). I have studied sociology and forestry formally, and practiced education in many public and private educational settings, teach all ages from pre-kindergarten to Elders. These educational experiences were prevalently positioned within a Euro-American lens. I also had the great opportunity to work with the [College of Menominee Nation's Sustainable Development Institute](#) (SDI) on a community-designed Place-based science education project ([POSOH](#)) (among other projects) for several years, during which I learned a lot about forestry and education from an Indigenous (and Western lens). I grew up in a small town that did not reflect a very diverse population. I had not traveled, but once I was in university and opportunities presented themselves, I have been to many places throughout the world. Of note, however, is that the first time I felt real, embodied

culture shock was when I went from what I had normalized at SDI to re-entry into a more classic academic system in my PhD studies. Specifically, I found that the way education could work within a culturally relevant and Indigenous-oriented framework in relation to human-environment partnerships and sustainability was fairly absent from my PhD work and the educational culture. Pockets of cultural inclusion and different ways of knowing do exist both internally and externally in my new home in Minneapolis, Minnesota and at the University of Minnesota (UMN) Twin Cities, in which the intersection of cultural frameworks informs our relationship to the environment, but this acknowledgement of historical and cultural shaping is not widely present in the dominant academic culture and higher education training regime, particularly in the natural resources disciplines. I would like to acknowledge the University of Minnesota's Native American Medicine Gardens, a decolonized garden that acknowledges its position on Dakota homeland based on principles of healing, on the colonized space that represents the land grant university system; the Healing Place Collaborative, an Indigenous- and artist-led group that uses collaboration and creativity to deepen ways in which people can help repair a Place in need of healing and honor how the Place can help to heal people; and the Institute on the Environment's Sustainability Education, which creates a vibrant and transformative community of students and faculty from across the University of Minnesota Twin Cities who work together to advance sustainability in society.

These experiences have taught me to think deeply about and practice what partnership and the environment could *be* like from many lenses, as well as how to cross boundaries. I have a lot more to learn. My Indigenous and non-Indigenous friends and colleagues have challenged me to confront my identity, my reconciliation of my identity in our power structures that be, and what this process looks like, both on a personal and an academic level. I do not wish to move towards settler innocence (Tuck & Yang, 2012), but I have also been told to think toward a beyond-settler mentality.

It is a co-creation of identity that checks in with myself and with people who are coming from different backgrounds, to know "Who is Kate? Should I be listening or saying? Do I

have things to say? Have I listened enough? Do people want to hear those things? Have I earned enough respect in the community, instead of through academic credentialing, to hold street cred, as you might call it?" I don't think it's appropriate to do this process of co-creation of identity and asking questions without recognition of Indigenous people whose land I am on. I encourage this collaborative identity pursuit. Where am I positioning myself, and who am I positioning myself as? It is a question I will be continually working through as I think about partnership. These questions should be fundamental to any academic/education journey. In my academic journey through questions that pertain to partnership and the environment, I have found these questions on self and identity strikingly nascent, especially within the environmental sciences.

Next, I would like to tell a story that serves as a metaphor for some of the challenges that may create boundaries in human and environmental partnerships and cultural transformation. Reconciling the expression of my thoughts with an academic format has been a challenge, and I realized that the same challenge was contained in the proposition stated in the call for papers: We need to communicate across disciplines and beyond our institutions to foster cultural transformation toward a sustainable—if not restorative—vision for our environment.

I recently attended and co-presented at a biocultural stewardship salon at Bushwick Inlet Park in New York City, and was reminded of an experience several years ago when I lived in the Bronx. I was at my local grocery store and wanted to pick out a mango. However, having grown up in Wisconsin, I didn't know the proper techniques for choosing a ripe one. I had spent some time in tropical locations but hadn't picked up on the languages of mangoes. Apples, I was good at. I had even expanded my horizons to avocados (which don't grow in Wisconsin). Mangoes, not so much. A man was feeling different fruits and gathering a few into his basket. The normal hustle and bustle was going on around. Subway lines rumbled overhead. People zoomed by. Cars honked. It was easy to get lost in the melee. However, the man looked like he knew what he was doing. *I should probably defer to him*, I thought. I asked him, "Excuse me, how do you find a ripe mango?"

He looked at me and shook his head like he didn't understand. So I tried Spanish: "*Como se puede escojer un mango que es esta listo a comer*?" Rather than discounting my poor language skills, he engaged. It might not have been the perfect way to say it in Spanish (and here it is not written perfectly), but he broke into a smile and gave me some instructions. It turns out he was from the Dominican Republic and had been living in NYC for a while. However, as we began to speak on language, Othering, perception, and a lack of cultural humility (though we may not have used those words), the man began to tear up. I had been saying that I lived in a place where I did not speak the dominant language of the country or had a very rudimentary grasp of it. We agreed that it was hard when you had thoughts in your head but couldn't necessarily communicate them. People might take you at a face value for what you could say within their constructs, rather than trying to understand you as you, because of a predominant lack of cultural humility existing within the fabric of many of our systems. It becomes a mistranslation of identity and capacity that, for him, marginalized his participation and expression; he encountered this marginalization as a daily, lived experience that brought him to tears. I did not have to deal with that weight on a daily basis.

Some might argue that it was his responsibility to learn the language of the country in which he lived, and perhaps that was true. We should probably all learn other languages, and experience the challenge of not being able to speak them, if we are thinking about working across disciplines. But perhaps, English may not convey some of one's complex ideas, and the lack of empathy for someone coming from another language is particularly problematic. There are many languages out there, in both human and non-human forms. An embodied emotion and Othering was implicit within the settlement and building of Place that withheld space from many potential voices, including his knowledge of mangoes, and many things different than mine, even in such a multicultural place as New York City.

At the biocultural stewardship salon, I was reminded of that story, because of the challenges in building relationships and communicating across disciplines and beyond institutions in our relationships between Place, knowledge, and memory. We came to

the realization that one of the largest challenges in doing cross-disciplinary, community-engaged work is language—particularly the need to speak in a Western, science-validated way.

As we were speaking about reconciling the role of traditional ecological knowledge with Western science in the context of a project called Learning from the Land that represented a collaboration between SDI and the State University of New York Environmental Science and Forestry school, my friend and colleague Laundi Keepseagle explicitly problematized frameworks of language, colonialism, blood trauma, and the exclusion of Indigenous people and Place from Western science frameworks. Many of our relationships in decision-making contexts related to the environment are mediated through these frameworks, especially in urban environments, where it becomes easy to default to a language of objective, universal, apolitical, non-participatory separation of human and Place.

While this problematizing led to a long and fruitful discussion between the different people and lenses represented, I would like to focus on the challenges of language, though I will layer in some of the other challenges. The salon attendees were largely a professional audience. We had diverse backgrounds and identities and represented a multitude of institutions.

Some key questions that surfaced during our conversation include:

- How do we reconcile old and new modes of knowing in a way that is positive and brings us beyond community participation toward community decision-making? Who is deciding and who is participating?
- What does local ecological knowledge look like in a city, and how do we value and legitimize non-traditional knowledge of lived experience?
- Why is Western science the only, or at least the dominant, way to success and "rightness"?

- How do we build a contemporary urban stewardship ethic that honors all ways of knowing and can translate the rhythms of the city?

- How could we overcome language barriers, collection methodologies, and communication forms of academic science to include some of the non-textual components of people and Place?

- How do we unlock the spirit of a Place—whether it is a weed in a crack, a single tree, or an entire forest—to find shared meaning, instead of perpetuating hang-ups that disconnect us from Place or people, within Place or idealized nature-scapes?

- How do we move toward justice for human and non-humans alike in our relationships?

Implicit in these questions are critical reflections on language, Place, justice, and stewardship within our systems of knowing and validating our knowledge. In the spirit of this problematizing and collaborative dialogue, I offer the following reflections.

In my work in the Twin Cities of Minneapolis and St. Paul, Minnesota applying biocultural stewardship models in urban Places, I've learned a few helpful lessons.

First, listening to people is good. People have helpful suggestions. As professionals, we are limited in our worldview. Listening is an underrated leadership skill. Creating forums for listening, instead of telling, serves as a first step in culturally relevant engagement.

Second, acknowledging Indigenous homeland is important. Whose land are you on? What does it mean to acknowledge original people and more recent migrations of Indigenous people into urban environments? In this vein, urban areas also represent a coming together of many voices, and are Places that have undergone many social and environmental changes. Urbanization is often seen as a negative, homogenizing global force that is detrimental to biocultural stewardship frameworks (Rozzi, 2015). However, such diversity could offer potential to adapt to changing realities in Place.

To bring some of this change to the surface, biocultural stewardship implies an idea of story-telling and relationality to Place, in which stories become woven into the very experience of Place.

For example, the Minnesota Parks Foundation is currently working on a park project called WaterWorks near a location which represents one of the most highly visited areas in the Twin Cities. At a recent listening session in conjunction with the Indigenous- and artist-led Healing Place Collaborative, designers who are also members of the collaborative were intentional about raising up geographical, biological, and cultural stories of Place. In particular, they asked explicitly how to curate a coherent experience for multiple stories told through various techniques in order to elicit narratives from diverse audiences and to make the space inclusive for the many cultural traditions present in the Twin Cities. Part of the emerging narrative included an emphasis on those who have been predominantly absent from interpreting and telling stories related to the land. This process and focus led to specific acknowledgment of Dakota homeland; narratives related to African American communities and the role of railroads in northern migration that is an important element of Minneapolis's industrial history; and reports of women's activism in garment mills and of Japanese restaurant owners who drew on positive Japanese relationships to waterfalls to herald return to the waterfront after years of industrial use and identity, among other accounts. These stories, as well as a vision for long-term community engagement with diverse audiences, led to story-telling techniques at the intersection of humanities and sciences—including story-collecting objects, interactive access, multiple languages, etched poetry, gathering places, site-specific installations, abstract and representational sculpture, nature-based features, sounds, events, video/projection mapping, and programs and tours. In essence, the focus on biocultural stewardship of public spaces, using story-telling as a Place-based glue that intermingles ecological and cultural senses of Place, drives a process of Place-making that is inclusive and long-term.

PLACE: HEALING LANGUAGE AND INTENTION

Back at the biocultural stewardship salon in New York City, what was particularly interesting about the gathering was that it embedded itself within a new language and intentionality, and, in turn, allowed for a different conversation. I began my relationship with this group several years ago when I visited New York City because of the [U.S. Forest Service's New York City Urban Field Station](#) work on restorative commons in urban environments (Campbell & Weisen, 2009). I was beginning to try to understand what healing landscapes could look like, particularly urban landscapes, for my PhD process. Biocultural stewardship holds space for the intention of healing in our relationships to the land. It also emphasizes culture in relationship to the *bio (life)* space, becoming one word to facilitate a non-separation of humans from environment.

For example, Sophie Pitt highlighted her work as Coordinator of the [Greening Greenpoint](#) project, which has an emphasis on Stewardship Trees and Community. From a biocultural stewardship standpoint, she described the Indigenous people who lived in the Place before Euro-American settlement, the strong Polish Catholic community that stamped a biocultural identity on the current landscape, and the more recent gentrification. These lenses connected to the ways that these cultures partner with the broader human and non-human community. All these stories depict a diverse biological and cultural narrative that speak to human and environment partnerships.

As I have attempted to work across disciplines and among community partners within my most recent educational foray, as well as continuing to imagine what human and environment partnerships could look like (rather than what they currently are), I question the language we use both to listen to and to translate our relationship to Place. As ecologist artist Lippard (1995) notes when speaking about Place and homeland, she points out that "[c]ulture is what defines place and its meaning to people. The apolitical and 'culture-less' culture in which most live in the United States inevitably leaves us placeless" (p. 127). Both the WaterWorks project and the biocultural stewardship salon

explicitly placed culture within its concepts of stewardship and relationships to Place and so, in a sense, accomplished some placing of Place.

In doing so, we saw the exclusionary nature of many environmental partnerships. I have experienced a bit of culture shock in re-entering academia. I have been surprised at the narrow lens through which we see, interpret, and, most importantly, imagine things, and how this knowledge system, based on a legacy of what Eisler (1994) refers to as dominant-authoritarian structure, gets mobilized as a tool to set and control the narrative and possibilities of what could be. The culture in general, and especially in the environmental sciences, represents a fairly exclusive venture that does not include many voices. Those excluded voices are marginalized in their ability to be listened to, translated, or heard, or to participate in building relationships to Place. In our current societal constructs, our higher education about how we relate to Place comes from a very narrow-minded system. This narrow context is problematic because this academic world becomes a gateway to practicing decision-making and engagement on human environment partnerships.

In terms of language, for example, I will use a critique of my own culture in natural resource science and management, the discipline in which I am situated, as an example of the limitations to working across disciplines and imagining partnership between humans and the environment from a linguistic and thus necessarily a cultural standpoint. Implicitly, the word *natural* requires a separation of humans and the environment…natural being without humans. *Resource* has a connotation of commodification. *Science* has excluded many ways of knowing in favor of the Westernized need for validity. *Management* implies an element of control. The people who are legitimized within this context are often white, middle- to upper-class people, and functioning within this context means that one must speak that "language," which can be marginalizing in an embodied way to people who might express their experiences with and thoughts about Place through other languages and values. People's relationships to Place and Place itself are predominantly seen and experienced through a lens both historically and currently derived from a patriarchal system that has Othered

many forms of cultural knowledge in favor of a Western narrative. Further, this lens has often derived from efforts to serve a particular economic value system, whether explicitly or implicitly. How does this framework limit the relationship to Place and imagination? Let me look a little deeper into my academic cultural positionality in forestry, in which I have a master's degree.

In *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, Scott (1999) speaks to how the framing and subsequent translations of the concept of forests have come to define what is seen and "known." He describes the process of translation from forest to human intention as a process of abstraction for legibility and simplification that leaves out many human and non-human voices:

> In state fiscal forestry, the actual tree with its vast number of possible uses was replaced by an abstract tree representing a volume of lumber or firewood…to direct the needs of the state…From a naturalist's perspective, nearly everything was missing from the state's frame of reference. Gone was a vast majority of flora: grasses, flowers, lichen, ferns, mosses, shrubs, and vines. Gone too were reptiles, birds, amphibians, and innumerable species of insects. Gone were most species of fauna, except those that interested the crown's gamekeepers. (Scott, p. 12-13).

As we extrapolate this lens to academia and how we refer to relationships to Place, we lose sight of many cultural lenses and ways of care and potential partnerships with the environments, in favor of a modernist state's worldview, of standardization and conformity in our relationships to knowledge production and land relationships.

In a critique of silviculture, the science and practice of forestry management, Puettmann, Coates, and Messier (2012) detail management of forested landscapes through a European and American historical lens. They explicitly link major social and cultural philosophical shifts to the treatment of the landscape as well as to the decision-making tools, practices, and relationships to landscape management practices—the

most prominent of which was tied to major economic shifts in the late 17th through the early 19th century, associated with industrialism and economic liberalism. These philosophies assumed private self-interest, free trade, and capitalism as goals, and removed the oral and Place-based traditions from the landscape in favor of a standardized school of thought. Specifically, Puettmann et al. (2012) remark:

> Forestry was rather slow to adopt economic liberalism compared to other industries. But when it did, the view of the role of economics in the ownership of forests changed dramatically. The forest had previously been viewed primarily as a stable component of a regional economy and employment base. Management decisions were applied in this context. With the adoption of economic liberalism in the 19th century, came the notion that the purpose of forests was to maximize profits for landowners. This was a substantial shift in thinking and its influence on forestry research and management activities cannot be underestimated. To apply the notion of profit maximization in forestry requires new concepts and decision-making tools. (Puettmann et al., p. 5-6).

These authors go on to link knowledge production to land relationship. Schools were built (the first of which was the University of Freiburg in Germany in 1792) to institute and standardize these values, which were exported without any Place-based context to the United States and other settings. Concepts like the Normalwald, or normal forest, which sought the goal of even-aged, fully stocked stands, with balanced age class distribution, became an ideal. This meant standardizing species mix, site qualities, tree densities, and qualities. Tools that emerged and which still influence most forestry today are inventory and planning, species mixtures and monocultures, stand and rotation, regeneration, thinning, as expressed through equations. This legacy mixes expertism and simplification for legibility, towards implicitly assumed goals. It also embodies the educational cultural frameworks through which we still navigate many of our relationships to the environment (Puettmann et al., 2012).

It is a case of a hierarchical dominance relationship that has led in a broad-brush way to what academic civic activist Boyte (1999) calls the "cult of the expert:"

> A corrosive knowledge war that presents a fierce obstacle to civic politics… detached and technocratic champions of the singular authority of scientific and disciplinary knowledge—what might be called the 'cult of the expert.' Those of us in research universities are all too familiar with the posture of 'the best and the brightest,' bringing solutions to those viewed as ignorant, passive, needy, and pitiable. As we have come to better understand the inner workings of higher education, we have found that the expert cult is often a cover for deep insecurities—research faculty members are generally better understood as isolated and trapped scholars than as arrogant know-it-all experts. But the consequences of detachment are nonetheless dramatic. (Boyte, p. 1-2).

This critical lens that Boyte 1999 lays forth about higher education also has implications for how we can imagine our relationships to civic engagement, society, and Place.

In fact, Indigenous studies and methodologies have been problematizing these areas within higher education frameworks, and our human experience in relation to the land, community, and Place, for many years, so I draw heavily on these methodologies, epistemologies, and critiques. They are generally under the rubric of decolonizing methodologies or Indigenous studies, which focus a critical lens on imperial thinking and knowing systems (e.g. the Western epistemology in which our knowledge production systems in the United States are predominantly placed). There are other ways of knowing that conduct this critique as well, but I am most familiar with Indigenous studies. They critique the positional superiority and cultural formations of Western knowledge that have been implicit in many of our ways of knowing and the institutions that set the rules for procedure, framing, and practice—both explicit and masked. The Western-dominant knowledge system itself is positioned as a colonial and imperial force.

As Smith (2013) notes:

> Research 'through imperial eyes' describes an approach which assumes that Western ideas about the most fundamental things are the only ideas possible to hold, certainly the only rational ideas, and the only ideas which can make sense of the world, of reality, of social life, and of human beings...It is a research which is imbued with an 'attitude' and a 'spirit' which assumes a certain ownership of the entire world, and which has established systems and forms of governance which embed that attitude in institutional practices. These practices determine what counts as legitimate research and who count as legitimate researchers. (p. 56).

This positional embeddedness has consequences for who is included and what becomes "real" within Euro-Americans' knowledge. It also has consequences for both what we can imagine and who is included in this imagination in dominant Western culture. Scheurich and Young (1997) further articulate this paradigm in outlining epistemological racism that stems from civilization racism: "The name for the Euro-American culture's construction of "the world" or "the Real" is modernism. Modernism is an epistemological, ontological, and axiological network or grid that 'makes' the world as the dominant Western culture knows and sees it." (p. 7). While this modernist period has been present in academia, it seems to remain separate from "traditional" natural and environmental sciences in practice and curriculum, especially at the PhD level. The modern period comes with a host of assumptions that continue to dictate much of the epistemological methods and frameworks, as well as the construction of the individuals, institutions, and knowledge and ontologies which are produced. This excludes many potentials in terms of our relationship to the environment. While much of my practical education in these matters comes from lived experience—particularly working with the College of Menominee Sustainable Development Institute—some of the assumptions (and academic references) that pertain particularly to our partnership paradigms within culture and pedagogy, environmental sciences, justice, and knowledge production, include:

- Superiority of the white civilization (Schuerich & Young, 1997; Smith, 1999).

- Particularized modes of control—prisons, ghettos, minoritizing schools and policing to ensure continued white control (Tuck & Yang, 2012).

- Dehumanization of non-white people (Smith, 1999).

- Lessering of non-human forms of existence (Bang et al., 2014; Smith, 1999; Watts, 2014; Kimmerer, 2013).

- Fixed ontological assumptions that are rife with binary ways of viewing the world, which include human/nature, mind/body, time/space (Bang et al., 2014; Smith, 1999; Tuck, McKenzie, & McCoy, 2014; Kimmerer, 2013).

- Shift towards privatization of "problems" and illusions of choice into realms of personal responsibility and tactics of erasure/invisibilization of specific identities and histories from the public sphere (Quinn & Meiners, 2009; Tuck & Yang, 2012; Smith, 1999).

- Transfer of control and power of economy, education, history, and political voice to an increasingly smaller group of people and institutions couched in maximizing economic profit (Giroux, 2009).

- Ownership of the entire world (imperialism) built on continued chattel slavery (Smith, 1999; Tuck & Yang, 2012).

- Truth methodologies for what is real based predominantly in objectivity, measurability, and rationalism, with a distance from community and subjective biases (Smith, 1999; Schuerich & Young, 1997; Tuck & Yang, 2012; Quinn & Meiners 2009).

- "Nations" built on a system of rights versus responsibility, socially constructed geopolitical boundaries, and de-animation of life (Whyte, 2013; Kimmerer, 2013).

Summarizing and applying this concept of intersectionality, ways of knowing, and construction of knowledge production embedded in unequal power structures to our relationships to the land and how we think about relationships with land leads me to critique Western dominant frameworks and methodologies in the natural or ecological sciences of higher education (i.e. to turn the lens on ourselves). What is wrong with our frameworks and methodologies in which there are such problems with retaining community and individual diversity? This critique is especially true in a multicultural urban context in which scientists, researchers, policy makers, and teachers often reflect a Western dominant culture either because they are forced to use that language to validate their views (which requires being in an often uncomfortable environment) or because they have not experienced anything outside that context.

Whose ideas are being left out? And more important, Why? Answering these questions requires critical self-examination and application of healing metaphor in research frameworks that questions knowledge production paradigms. Whose ontological views on reality guide the process? What epistemological views on how we think about this reality are employed? Whose axiological views on values birth and direct the process? And what are the methodological processes with which we gain more knowledge?

TOWARD HEALING AND JUSTICE IN KNOWLEDGE PRODUCTION ABOUT PLACE

Let's experiment with a shift from the science of management and abstraction to what Bruno Latour articulates in *Art in the Anthropocene: Encounters Among Aesthetics, Politics, Environment, and Epistemologies* (2015) as the science of care that intermingles politics, science, and narrative. He points to the scientific revolution, when data production and story-telling were put into distinct categories, with several consequences, including a depoliticization of knowledge production, public disengagement, a de-animation of life and processes into facts and objects, an uncriticalness toward language, and a decrease in potential imaginations. Specifically, he turns towards an idea based in the science of care, and asks, "So when it doesn't look like big science, and it doesn't look like basic science, and it doesn't look like

fundamental science, what then? It's the science of care" (Davis and Latour, 2015, p. 45).

While the science of care provides a useful starting point for and critique of how science itself is used and mobilized in social contexts, the flaw I see in Latour's argument is that he localizes the science of care and its intermingling of science, politics, and narrative into a universalized Gaia and a universalized knowledge system. This assumption diverts us back to a knowledge system of universalist assumptions that tends to "dehumanize" the narrative of the Place and the people, and creates a paradigm too large to feel a sense of agency.

In contrast, I turn to an important facet positioned at the center of the College of Menominee Nation's Sustainable Development Institute's community and academic-derived model for sustainability: a sense of autochthony (Dockry, Hall, Van Lopik, & Caldwell, 2016). Literally, it derives from a Greek concept of springing from the land. Rather than a universal "rightness or correctness," each Place would have a knowledge from which to speak. The Place itself has agency as we first become listeners and then translators of this unique set of memories "springing forth" through various forms of narrative, both human and non-human. Several dimensions of sustainability then circulate around this sense of Place, including: (1) land and sovereignty; (2) natural environment (which includes human beings); (3) institutions; (4) technology; (5) economics; and (6) human perception, activity, and behavior (Dockry et al., 2016). This model offers a more nuanced version of sustainability that is particular to Place rather than the universalized traditional three-legged stool model omnipresent in sustainability that includes social, environmental, and economic factors. When applied to humans, the model would include not just political and narrative connection to Place but an embodied personal, spiritual, and more-than-political relationship to Place, because a responsibility to Place includes and develops all these lenses (Oliviera & Wright, 2016). Place becomes a character unto itself, often translated through many forms of human and non-human memories and modes of expression. This sense of Place is unique in all contexts so cannot be universalized, and Place itself is animate.

As Watts (2013) encourages with her concept of Place-Thought:

> It is necessary to tease out what the land's intentions might be and how she tries to speak through us...To be animate goes beyond being alive or acting, it is to be full of thought, desire, contemplation, and will...The agency that place possesses can be thought of in a similar way that Western thinkers locate agency in human beings. It follows that if, as Indigenous peoples, we are extensions of the very land we walk upon, then we have obligation to maintain communication with it. A familiar warning is echoed through many communities, that if we do not care for the land we run the risk of losing who we are as Indigenous peoples. When this warning is examined in terms of original Place-Thought, it is not only the threat of a lost identity or physical displacement that is risked but our ability to think, act, and govern becomes compromised because this relationship is continuously corrupted with foreign impositions of how agency is organized. Colonization has disrupted our ability to communicate with Place and has endangered agency among Indigenous peoples. (Watts, p. 22-23).

Watts (2013) questions our communication with the land in a way that natural resource science and management or silviculture or even concepts of Gaia and their standardizing and move towards universal practices do not. As humans we have a certain agency, but so too does Place. This confronts Western notions of individuality as the giver of agency over land, and lived experience and cultural traditions in our knowledge production systems that stem from a legacy of Othering. As we think about sense of Place, Place having "sense" and animacy, and our relationship to it, agency requires a non-separation between humans and the world. Specifically, agency is defined by the ability to connect with, interpret, and act on the land's intention (Watts, 2013). Agency must also be situated not within the borders of an individual self, but instead within the individual and community land-based responsibility to all the community members (human and non-humans relatives).

For example, Potawatomi ethnobotanist Kimmerer (2013) questions geopolitical boundaries of nation states and our defining of becoming Indigenous to Place towards recognition of the Land boundaries that exist more broadly. She discusses a future in which we hear the Haudenosaunee Thanksgiving Address each day in school, rather than (or in addition to?) The Pledge of Allegiance. In doing so, she outlines a sense of agency that connects to a placement within a broader view of social and relationships.

> I love my country and its hopes for freedom and justice. But the boundaries of what I honor are bigger than the republic. Let us pledge reciprocity to the living world. The Thanksgiving Address describes our mutual allegiance as human delegates to the democracy of species. If what we want for our people is patriotism, then let us inspire true love of country by invoking the land herself. If we want to raise good leaders, let us remind our children of the eagle and the maple. If we want to grow good citizens, then let us teach reciprocity. If what we aspire to is justice for all, then let it be justice for all of Creation. *We have now arrived at the place where we end our words. Of all the things that we have named, it is not our intention to leave anything out. If something was forgotten, we leave it to each individual to send such greetings and thanks in their own way. And now our minds are one.* Every day, with these words, the people give thanks to the land. In the silence that falls at the end of those words I listen, longing for the day when we can hear the land give thanks for the people in return. (Kimmerer, p. 117-118).

Moreover, as we think toward justice, tolerance, and respect for others, these too must be founded in the land itself. The land has spirit (that drives agency), rather than being a material good such as a commodity or resource. Watts (2013) expands on this point:

> What happens when soil is removed from territory? What happens when flesh is taken from the body? More importantly, what happens to the territory after its resources are excavated? Shopping malls and paper mills – a literal excavation of thoughts are forcibly transformed into objects of the colonial imperative. Those

crops became their crops, that tree became their tree and so on and so on. Once the voices and thoughts of these two essential categories of creation (the feminine and land) are silenced and then corrupted, the acquisition and destruction of land becomes all the more realized. (Watts, p. 31).

Justice and possible relationship to the land also take on different meaning within this framework. Whyte (2013) creates a powerful bridge by locating and clarifying justice within a system of responsibilities. He advocates that justice should not be a tool for dealing with formal wrongs, but one which can be forward-looking by placing itself within a system of responsibilities. The goal would be to build a justice system that supports *collective continuation*—meaning a community's capacity to adapt and flourish into the future, contest colonial hardship, and orient itself around the many relationships within and between communities. Relationships are diverse and include social and political relationships, elder-youth relationships, commercial relationships, relationships within species and with features of the land, relationships with important species, customs of child rearing, etc. Further, Whyte clarifies that the relationships come to be through responsibility to others:

> These types of relationships are realized through the responsibilities incumbent on the parties to the relationships. That is, to be in a relationship is to have responsibilities toward the others in the relationship. *Responsibilities* refer to the reciprocal (though not necessarily equal) attitudes and patterns of behavior that are expected by and of various parties by virtue of the different roles that each may be understood to play in a relationship…Systems of responsibilities are the actual schemes of roles and relationships that serve as the background against which particular responsibilities stand out as meaningful and binding. (Whyte, 2013, p. 519).

These Indigenous scholars and models challenge relationships to Place and offer knowledge opportunity to form relationships to Place, but such notions have been predominantly left out of knowledge production systems that have to do with Place

outside of Indigenous, cultural, or humanities studies. It is this denying of knowledge about forming relationships to Place that needs healing in environmental and sustainability sciences. Instead, our knowledge structures seem to derive from a limited worldview that continues to replicate the imperialistic research structure without acknowledging the healing process needing by participants.

In explicitly applying a healing metaphor to both higher education models and our relationships to land-people geographies which face crisis or challenge (many of which are vestiges of colonization), Cowell, Collinge, and Limerick (2009) assert that "...the word *healing* can force us to confront fully the reality that is we who identify the patient—that the patient is not given to us automatically." While discussing education, sustainability, and climate change at a leadership meeting for a collaborative science education project called Place-Based Opportunities for Sustainable Outcomes and High Hopes running from 2011-2014, Dr. Jerilyn Grignon (one of my elder mentors and the first Menominee to receive a PhD) consistently emphasized that communities must come together to change the way we produce knowledge. She was pointing to the intersection between justice, knowledge production, our relationship to our world, and the ensuing landscapes in the face of climate change. I believe Dr. Grignon also thought that Place, and cultural relationships to it, needed examination—particularly those relationships that abstract trauma of colonial and other legacies.

Place itself has agency memory. It becomes a grounding force. If we open the door to cross-cultural contexts and diverse contributions to knowledge production, we may unearth alternative ways of asking questions about, understanding, and relating to our world (Hassel, 2014) that will provide tools to create communities with capacity and a goal of collective continuation—i.e. resilient, adaptive, and transformative within novel ecosystems (Whyte, 2013).

What are healing landscapes? Landscapes require us to think about a Place-based time and space between and within eco-social systems and scales. This means landscapes represent large time and space scales, and include a composite of many things. We are

reflections of the landscape, and the landscape is a reflection of us. The landscape includes and is impacted by many social and ecological components. Using a landscape lens, we must recognize the past, look critically at the present, and think about the future. Healing landscapes are NOT prescriptive and must be responsive to each social-biophysical context. However, healing involves listening to the biocultural memory of Place.

As we move towards engagement with Place, justice and collective continuation within knowledge production, "natural resource management," environmental studies, and relationship to Place, we must think critically about the paradigm from which it comes and in which it is centered. *Why not intentional healing landscapes as the goal*?

In this vein, as we think on Place and sustainability, what partnerships might look like, and working across disciplines and communities, we must think on why Western science is the predominant way to validate success and validity in academia, or "rightness" in healing efforts, when Western science it has been so challenged historically in applying the values of care? Stewardship is a much broader concept that implies the care of a Place. Can we come to a shared meaning that values knowledge of lived experience and that of Western science (often not lived but researched as a transitory Other)? Can we accept and acknowledge traditional ecological knowledge as a form of knowing in cities that have a highly changed geography? What is their relevance? How about the other cultures that have migrated to a specific Place and bring their own forms of knowledge? Is it hierarchical?

In *Research is Ceremony: Indigenous Research Methods* (2008), Indigenous studies scholar Shawn Wilson succinctly describes this intersection of knowledge production, positionality, and assumptions (e.g. the fabric from which knowledge grows) as a research paradigm with implicit "ologies" stemming from cultural positionalities (most of the ologies, at least in a "published" sense, having come from a Western-dominant lens):

A paradigm is a set of underlying beliefs that guide our actions. So a research paradigm is the beliefs that guide our actions as researchers. These beliefs include the way that we view reality (ontology), how we think about or know this reality (epistemology), our ethics and morals (axiology) and how we go about gaining more knowledge about reality (methodology). (Wilson, p. 13)

While Wilson goes on to [beautifully] apply these definitions to Indigenous research paradigms and their connection to our thinking and doing systems in current educational formats, they are also a good place to begin in understanding the positionality of our work and cultural transformation as researchers. In our own terrain of higher education's knowledge production systems—particularly those concerned with restoring the land (and people) to health in some form or another—we need to engage in more diverse processes and ultimately begin to heal from our own symptoms of exclusion in higher education research, over-specialization, disciplinarity, lack of civic engagement, etc. that limit our response to change. In times of novel change, we may be limiting the number of memories a Place can draw upon as we interact with it/her because we do not see outside our own limitations on what healing could look like. As researchers, we should probably see the many layered dimensions within our frameworks and methods from multiple lenses to envision partnership across disciplines and communities. This process requires critical examination of the facts and assumptions behind the issues in order to clarify goals, and recognition that the real problem often lies in unequal power relationships between groups (Cowell, Collinge, & Limerick, 2009).

Particularly, while diversity has been recognized as being a tool for resilience in many fields—social, ecological, political, etc.—in practice, the "natural resource" and sustainability knowledge systems remain relatively exclusive, expert-driven, highly-disciplined, and lacking in diversity. As such, I problematize the assumptions of research paradigms from higher education and knowledge production models, particularly those related to the health of Place, or of Land (and people), in an effort to heal and allow for a more civic-based approach to cultural and community knowledge creation that is

diverse and responsive to unexpected and unknown change. The current lens is fundamentally limited.

BIOCULTURAL STEWARDSHIP AS A FRAMEWORK

Biocultural stewardship models provide a framework for asking about our "management" paradigm from a cultural fabric and individual and community relationship to the Land. This framework stands in contrast to the more objective, universal relationship to "resources" from which our more "expertized and universalized" visions of land-human relations typically come.

Biocultural stewardship frameworks seek to recognize other ways of valuing and relating to relationships to Place, especially concerning health. They explicitly put into language and value cultural manifestations of our relationship to Place. They also require different methodologies for knowing about Place and Land. They are about personal and spiritual connection to the Land for survival, resilience, responsibility, and healing. These frameworks can come from many traditions, but are specific cultural conceptions of relational understanding rather than universal knowledge. More than that, they are about acknowledging kinship relationships to the Land as an Elder and teacher, to which we need to listen rather than control. They embrace the conversation between the spirit of the Land and the individual learner and her or his ancestry, as well as methods and ways of knowing which allow for this conversation in multimodal forms. They also value diversity, culture, community, and personal connection rather than monoculturalism, expertism, universalism, and objectivity.

Biocultural stewardship explicitly links cultural values and diversity with earth stewardship while acknowledging and accepting that there are many modes and fabrics in which people have spirituality and culture to relate to land and Place. Place, in this context, means surrounding social-environmental layers as well as relationships to context in physical, spiritual, emotional, and psychological realms. It seeks to give Place itself agency in the vein of Place-Thought (Watts 2013). Importantly, it is a

relational paradigm based on partnership instead of domination and control. Many stewardship practices and models can emerge and be co-present.

Biocultural stewardship strives to put academic and stewardship models into a culturally relational context rather than objective or human outside-of ecological models. Specifically, rather than striving to take culture out of social-ecological interactions, it seeks to examine and ground these models in culture (particularly academic culture). Rozzi et al. (2015) introduce three core biocultural concepts:

1. **biocultural homogenization**, a major, but little perceived, global driver of losses of biological and cultural diversity that frequently entails social and environmental injustices such as linguicide, genocide, biocide, and increasing poverty;
2. **biocultural ethics,** which considers, ontologically and axiologically, the interrelations between the habits and the habitats that shape the identity and well-being of the co-inhabitants; and
3. **biocultural conservation,** which seeks social and ecological well-being through the conservation of biological and cultural diversity and their interrelationships.

Scholars and land practitioners employ these concepts to move from biocultural homogenization (which leads to the disruption of co-evolutionary interrelationships between cultures and land, in favor of a few cosmopolitan species, languages, and cultures, and unequal power relationships between this homogenization and cultural and biological diversity) to biocultural conservation and stewardship models grounded in biocultural ethics.

Biocultural stewardship is a concept as well as a mode of being to help reorient our ways of knowing and doing. It seeks to break down ontological divides built over centuries of dominant Western European colonial ways of knowing and doing that split humans from the natural world and do little to recognize the cultural traditions that see diverse community in favor of universalism. Instead, it embraces complex cultures that recognize a community of relatives (human and non-human). Finally, it focuses on

tying ethics intrinsically to Place (i.e. not just human habits, but human habitats). These ethics go beyond a research position and even a "science as political" assumption. The ethics component attempts to create a greater investigation and valuation of cultural and biological diversity, and of the relational framework in social formational forces in education, policy, and knowledge production. It also serves to offer alternatives to, and modes to counteract, biocultural homogenization (Rozzi et al., 2015).

Many of these concepts are old, and come from many traditions, both written and oral, inside and outside academia. Key references include Oliviera & Wright, 2016; Buizer, Elands, & Vierikko, 2016; Kimmerer, 2013; Rozzi et al., 2015; Whyte, 2013; Million, 2013; and Cajete, 1999.

A blueprint for biocultural stewardship might identify the following:

- Building of the physical, spiritual, emotional, and psychological as one paradigm.
- People as expressions of landscape/Place and landscape/health.
- Long-term commitment to being part of Place.
- Stepping outside our dominant worldviews to see biocultural heterogeneity.
- Integration of art, science, economy, religion, and philosophy into planning.
- Going from human eco-centric to biocultural, which requires a rereading of the landscape.
- Relationships of reciprocity and responsibility grounded in biocultural stewardship.
- Place must be nourished and fed as an active agent who is kept in conversation and requires careful observation to be understand.
- Non-separation of humans/social and natural/ecological.
- Recognition of ethno-stress and felt theory.

While biocultural stewardship has been described in communities of practice who have lived in a Place for hundreds to thousands of years, understanding how this framework could function in urban environments with patterns of new migration are less well understood. Many of these academic studies in biocultural stewardship also do not allow for more recent urban migration and resiliency patterns of Indigenous people, instead focusing on these voices in less colonized places such as on reservations or other Indigenous strongholds. Less emphasis has been put on bringing these voices forward through decolonized practices in highly colonized urban and higher education contexts. In fact, rural-urban migration is seen as a major driving force of biocultural homogenization (Rozzi et al., 2015), rather than as an opportunity for diverse biocultural stewardship models.

Specifically, while biocultural stewardship models have been studied, the practice of implementing them in multicultural urban environments is a novel idea (Buizer, Elands, & Vierikko, 2016). Urban environments represent a coming together of many traditions in old and new ways in patterns of adaption. Indeed, the theory based on biocultural homogenization does not do justice to these resilient and adaptive systems. As such, applying a biocultural stewardship model in multicultural urban environments requires a new set of tools and integrated methodologies to create this knowledge production system that intersects culture and the land. Application must also walk a line between cultural humility and cultural surfacing.

Moreover, while this biocultural stewardship approach has the potential to offer more diverse ways of knowing, as well as the ability to create more inclusive environments in which multiple forms of knowledge are acknowledged, valued, and legitimized, it has encountered troubles in academia and in community relationships. Western science has ontological divides between biological sciences and cultural sciences. Biocultural stewardship also acknowledges a more than objective and reductionist form of knowledge production. Creating trust between academics and communities is challenged by oversimplified human ecology models and narratives prominent in academia (e.g. tragedy of the commons, not seeing legitimacy in community-based

forms of knowing, etc.), as well as top-down, expert-driven models of education (Kingsland, 2015). Moreover, many efforts towards stewardship through sustainability and inter- and transdisciplinary frameworks remain entrenched in disparate content areas, as legacies of disciplinary institutions and interpersonal relationships (Boyte, 2009; Caston, 2013; Kuhawara, 2013). Environmental solution narratives often derive from an "external" expert academic rather than from the community members themselves, who interact with and inhabit a Place. Less attention is paid to nurturing cultural conservation fabrics. Biocultural stewardship approaches move toward putting civic agency in the hands of the people, and encourage self-education through interactions with the environment that link with citizen's values and culture (Kingsland, 2015).

So, in urban environments, particularly ones where everyone is representing many things, requires examining how these limited fabrics may marginalize other forms of knowing coming from different research paradigms. What cultural views are left out of "management" sciences? What could healing from this exclusion look like? What could be the language? I have been thinking about phenology and its observations as a cross-cultural tool. Phenology is the study of cycles and seasons over time, especially related to climate, and plant and animal life. It has been used as a tool to interpret, connect to, and engage in what is happening ecologically—such as mismatches between species and climate change—and how these occurrences might be changing over time.

Phenology has been used formally in ecological research as an indicator for climate change, in citizen science in participatory data collection, and by land-use stewards to know when to perform various management practices (Miller-Rushing et al. 2012). However, it has not been used widely as an inclusive language to garner agency in urban settings. Importantly, the language of phenology is something everyone can understand—from youth to Elder—and represents a tradition shared across cultures and languages to connect to Place. In a sense, phenology becomes a tool to understand adaptation in the past, present, and future through diverse cultural lenses (Ryan, 2013). In this vein, biocultural stewardship becomes the framework, and phenology the

language, particularly in urban environments. That said, there are certainly other language potentials. *What have you been thinking about?*

References:

Bang, M., Curley, L., Kessel, A., Marin, A., Suzukovich III, E. S., & Strack, G. (2014). Muskrat theories, tobacco in the streets, and living Chicago as Indigenous land. *Environmental Education Research*, *20*(1), 37-55.

Boyte, H. C. (2009). *Civic Agency and the Cult of the Expert: A Study for the Kettering Foundation*. Dayton, Ohio: Kettering Foundation.

Buizer, M., Elands, B., & Vierikko, K. (2016). Governing cities reflexively—The biocultural diversity concept as an alternative to ecosystem services. *Environmental Science & Policy*, *62*, 7-13.

Campbell, L., & Wiesen, A. (Eds.). (2011). *Restorative commons: Creating health and well-being through urban landscapes* (Vol. 39). Government Printing Office.

Cajete, G. (Ed.). (1999). *A people's ecology: Explorations in sustainable living*. Santa Fe, NM: Clear Light Publishing.

Caston, D. (2013, June 7). Curriculum designing with sustainability in mind: reflections on a process. Journal of Sustainability *Education*, *Spring*. http://www.jsedimensions.org/wordpress/content/curriculum-designing-with-sustainability-in-mind-reflections-on-a-process_2013_06/

Davis, H., & Latour, B. (2015). Diplomacy in the Face of Gaia. In Eds. H. Davis, & E. Turprin (Eds) *Art in the Anthropocene: Encounters among Aesthetics, Politics, Environments and Epistemologies*, 43-57. London: Open Humanities Press.

Dockry, M. J., Hall, K., Van Lopik, W., & Caldwell, C. M. (2016). Sustainable development education, practice, and research: an Indigenous model of sustainable development at the College of Menominee Nation, Keshena, WI, USA. *Sustainability Science*, *11*(1), 127-138.

Eisler, R. (1994). From domination to partnership: The hidden subtext for sustainable change. *Journal of Organizational Change Management*, *7*(4), 32-46.

Filotas, E., Parrott, L., Burton, P. J., Chazdon, R. L., Coates, K. D., Coll, L., ... & Putz, F. E. (2014).Viewing forests through the lens of complex systems science. *Ecosphere*, *5*(1), 1-23.

Giroux, H. (2009). *Youth in a suspect society: Democracy or disposability?* New York, NY: Palgrave Macmillion.

Hassel, C. A. (2014). Reconsidering nutrition science: critical reflection with a cultural lens. *Nutrition journal*, *13*(1), 42.

Kimmerer, R. W. (2013). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants*. Minneapolis, MN: Milkweed Editions.

Kuwahara, J. L. (2013). Impacts of a place-based science curriculum on student place attachment in Hawaiian and Western cultural institutions at an urban high school in Hawai'i. *International Journal of Science and Mathematics Education*, *11*(1), 191-212.

Miller-Rushing, A., Primack, R., & Bonney, R. (2012). The history of public participation in ecological research. *Frontiers in Ecology and the Environment*, *10*(6), 285-290.

Limerick, P. N., Cowell, A., & Collinge, S. K. (Eds.). (2009). *Remedies for a new West: Healing landscapes, histories, and cultures*. Tuscon, AZ: University of Arizona Press.

Lippard, L. (1995). Looking around: Where we are, where we could be. In Ed. S. Lacy *Mapping the terrain: New genre public art*, 114-130. Seattle, WA: Bay Press.

Million, D. (2013). *Therapeutic nations: Healing in an age of Indigenous human rights*. Tuscon, AZ: University of Arizona Press.

Oliveira, K. A. R. N., & Wright, E. K. (2016). Kanaka Oiwi methodologies: Moolelo and metaphor. Honolulu, HA: University of Hawaii Press.

Quinn, T., & Meiners, E. R. (2009). *Flaunt it!: Queers organizing for public education and justice*. New York, NY: Peter Lang.

Rozzi, R., Chapin III, F. S., Callicott, J. B., Pickett, S. T., Power, M. E., Armesto, J. J., & May Jr, R. H. (Eds.). (2015). *Earth stewardship : Linking ecology and ethics in theory and practice (Ecology and ethics (Springer (Firm)) ; volume 2)*. Cham: Springer.

Ryan, J. C. (2013). Toward a phen (omen) ology of the seasons: The emergence of the Indigenous Weather Knowledge Project (IWKP). *Environment, Space, Place*, *5*(1), 103-131.

Scott, J. C. (1998). *Seeing like a state: How certain schemes to improve the human condition have failed*. New Haven, CT: Yale University Press.

Scheurich, J. J., & Young, M. D. (1997). Coloring epistemologies: Are our research epistemologies racially biased? *Educational researcher*, *26*(4), 4-16.

Smith, L. (2012). *Decolonizing methodologies : Research and Indigenous peoples* (2nd ed.). London ; New York : New York: Zed Books; Distributed in the USA exclusively by Palgrave Macmillan.

Tuck, E., & Yang, K. W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity, education & society*, *1*(1).

Tuck, E., McKenzie, M., & McCoy, K. (2014). Land education: Indigenous, post-colonial, and decolonizing perspectives on place and environmental education research. *Environmental Education Researcher*, 20(1), 1-23.

Watts, V. (2013). Indigenous place-thought and agency amongst humans and non humans (First woman and sky woman go on a European world tour!). *Decolonization: Indigeneity, Education & Society*, *2*(1).

Whyte, K. P. (2013). Justice forward: Tribes, climate adaptation and responsibility. *Climatic Change*, *120*(3), 517-530.

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