



Decentering humans in sustainability: a framework for Earth-centered kinship and practice

Thi Mai Anh Tran¹ · Cassandra Reed-VanDam¹ · Kendall Belopavlovich² · Elizabeth Brown³ · Katherine Higdon¹ ·
Shelby Nicole Lane-Clark¹ · Katherine M. McGowen¹ · Emily Shaw⁴ · Valoree Gagnon¹ 

Received: 14 May 2024 / Revised: 11 October 2024 / Accepted: 15 October 2024

© The Author(s) 2024

Abstract

Contemporary Earth crises are challenging ideologies that enthrone humans at the center of existence and separate from nature, problematizing common notions of sustainability. Further inquiry, particularly sustainability of what and for whom, requires decentering the human experience toward other-than-human beings (e.g., plants and animals). In this article, we, as the Kinship Circle book club, share reflections from our monthly dialogue with the five-part book series *Kinship: Belonging in a World of Relations*, built on a foundation of partnership experiences with the Keweenaw Bay Indian Community Lake Superior Band of Ojibwa. Together, we discuss three major departures from our previous modes of thought at the individual, community, and global levels. First, as students, mentors, and relatives to many, we aim for (research) practices that affirm relationships to place, an approach we understand as remembering what it means to be human. Second, to rebuild shared responsibilities across communities of many kinds, we move beyond an anthropomorphization debate toward “animism,” recognizing the sentience and autonomy of other-than-human beings on Earth. Third, in support of a transformative and collective human ethic, we hope to contribute to restoring relationships with the many that gift us life, using connections between migration, justice, and introduced species. Finally, we present a practical Kinship Circle framework for applying these concepts in educational settings. Our conclusion provides central kinship lessons for decentering humans in the sustainability sciences, rooted in humility, responsibility, and an Earth-centered ethics.

Keywords Sustainability · Decentering humans · Kinship · Anthropomorphization · Earth-centered ethics

1 Rethinking Human–Earth relations

Contemporary Earth crises are challenging ideologies that enthrone humans at the center of existence and separate from nature, problematizing common notions of sustainability. Further inquiry, particularly sustainability of what and for whom, requires decentering the human experience toward

Earth-based kinships. Kinship—the intimate connection between humanity and the world around us—is a framework for seeing ourselves in relationship with, and as part of, the natural world (Van Horn 2021, pp. 1–11). While Indigenous knowledges and philosophies support thriving Indigenous relations (Whyte 2021, pp. 30–38), late 17th century European philosophers proposed an alternative worldview that emphasized rationality, contending that humans are the superior species and therefore have rights to control habitats and dominate other animals’ lives, also noted as “the inferior physical machines devoid of intelligence and emotion” (Harrison 1992, p. 221). Through violence and other forms of erasure, the latter rose as the prevalent worldview, installing the individualistic ethics of Western thinking and doing, focused on advancing agendas to colonize nature and mechanize ecosystems for human society. As a result, the last century has been termed the Anthropocene, the “Era of Humanity”, which is presently being challenged across the globe by ecological crises.

✉ Valoree Gagnon
vsgagnon@mtu.edu

¹ College of Forest Resources and Environmental Science, Michigan Technological University, Room 168, U.J. Noblet Forestry Bldg, Houghton, MI 49931, USA

² Department of Humanities, Michigan Technological University, Houghton, MI 49931, USA

³ Department of Social Sciences, Michigan Technological University, Houghton, MI 49931, USA

⁴ Natural Resources Department, Keweenaw Bay Indian Community, Baraga, MI 49908, USA

In response, many countries and organizations have developed approaches and policies to alleviate human impacts on planet Earth. However, these efforts, rooted in human-centered paradigms, have fallen short in addressing the ongoing complex challenges we face. The concept of sustainable development, first defined in the Brundtland Report (1987, p. 15), as “meeting the needs of today’s generation in a way that will enable future generations to meet their needs” was applied to resource management, social justice, poverty, and equality. Yet, this definition focused solely on human’s needs, overlooking the value and rights of nature.

Building on this, the United Nations (UN) (2015, pp. 1–35) proposed seventeen goals for Transforming Our World: The 2030 Agenda for Sustainable Development (SDGs) as a framework to guide social, economic, and environmental development globally. While ambitious, these “sustainability by humans and for humans” goals have significantly limited practical and ethical progress: First, the SDGs predominantly focus on economic growth and resource utilization, often framing environmental goals in terms of human benefits (i.e., Goal 8, 14, and 15). Second, while human rights are prominently described, there is a notable lack of recognition for the rights or intrinsic value of ecosystems or nonhuman species. The language consistently centers human interests, with limited consideration for other-than-human beings such as plants, animals, fish, and other living bodies. Third, although the 2030 Agenda aims to “reach all nations and peoples and all segments of society,” (p. 3) it falls short in meaningfully incorporating Indigenous knowledge systems. Despite mentioning Indigenous peoples several times throughout the document, these references primarily cast them as a vulnerable group requiring support or inclusion (p. 7), rather than recognizing them as holders of knowledge, philosophy, and wisdom that could significantly contribute to achieving the Sustainable Development Goals. Finally, implementation and review processes are centered on human institutions, with little provision for representing nonhuman interests (pp. 10–11).

Consequently, current sustainability ethics protect nature primarily for human benefits rather than for its own well-being. This approach has failed to effectively address accelerating climate change, rapid biodiversity loss, and growing global inequalities.

To overcome these shortcomings and prevent further damage to ecological and social relationships, an inclusive understanding and equitable practice of sustainability must be prioritized. Sustainability for all—including those with fins and scales, the winged ones, the two-, four-, many-, and no-legged, the beings with roots, and the ecosystems they rely on—prioritizes good relations with and between many others. To actualize equity, might climate change propel humans to seriously reconsider nature valuations, and in the process, articulate concern associated with repercussions of

human-centered ethics? We echo previous calls to include Indigenous perspectives in sustainability and environmental sciences, specifically to decenter humans and re-embrace Earthly kinships. Adept research scholars Max Liboiron (Red River Métis/Michif) (2021, pp. 81–111), Robin Wall Kimmerer (Citizen Potawatomi) (2013, pp. 175–201), Kyle Powys Whyte (Citizen Potawatomi) (2017, pp. 153–162), and Deborah McGregor (Anishinaabe) (2021, pp. 1–10) have long encouraged learning from Indigenous peoples and prioritizing relations directly tied to Land and Waters. They assert, as do many others, that Indigenous knowledge systems and Indigenous-led collaborations can enhance policy initiatives and prioritize reconnecting with other-than-human beings, initiatives that are presently more necessary than ever before. Decentering the human experience is necessary for transforming sustainability toward an Earth-centered and interspecies ethics.

While we advocate for Earth-centered ethics and practices, we acknowledge that other factors such as economic systems, political structures, and social practices all play crucial roles in shaping sustainability outcomes. However, we argue that foundational shifts in cognition and ontology, while not sufficient on their own, are necessary for catalyzing and driving necessary changes in other domains.

1.1 Methodological framework

This article is a collaborative work and contribution of our Kinship Circle, formalized through our Michigan Technological University book club. We, the authors, are a diverse group of scientists and philosophers, faculty, and students, located in the ancestral and contemporary homelands of the Anishinaabe Ojibwa within the Treaty of 1842 territory. From different parts of the world, our Kinship Circle began in the summer of 2022 in Professor Gagnon’s backyard (Professor Gagnon is a faculty mentor). Here, we expressed our desires to create a book club focused on the five-part series, *Kinship: Belonging in a World of Relations* (Van Horn et al. 2021), an edited collection of essays stemming from a diverse array of authors. Each volume, Planet, Place, Partners, Persons, and Practice, guided us through an expansion of our obligation and connection circles. Our schedule consisted of reading each volume for 4 weeks followed by a virtual 90-min dialogue led by voluntary, rotating facilitators. With prepared discussion prompts in Google Slides, the facilitators began each meeting by acknowledging our kin—the Lands and Waters, and our cats, dogs, birds, and plant persons who were also present. Book club members shared their thoughts and reflections to the major themes of each volume, concluding with a final insight written within the shared presentation. At summer’s end, we met to debrief and reflect on the ways our Kinship Circle had impacted our professional and personal lives. We talked about new

ways to practice kinship with each other and our more-than-human worlds. This manuscript is the result of these shared dialogues together.

Drawing from reflections of our Kinship dialogues and ongoing insights gained in partnership with the Keweenaw Bay Indian Community (KBIC) Lake Superior Band of Ojibwa, here, we propose approaches to decentering humans in the sustainability sciences. Inclusive of humans, an Earth-centered interspecies ethic includes other-than-human kin: fishes, plants and trees, and animals of many kinds, as well as our rock and water relatives. In what follows, we share elements of our philosophical transformation across three interconnected scales: the individual, community, and global. Beginning with the individual level, we encourage relearning what it means to be human, our place in the constellation of life, and the human responsibility to reaffirm our relations to Earth's Land. For the community, we recognize the vast collection of lived experiences, to rebuild our ability to think, listen, and be in kinship with the world as a relative. From the global scale, we focus on migration, particularly 'invasive' species, to shift reigning perspectives on movement that elucidate the Earth as being alive and comprised of living beings. For each scale, we posit that by practicing relationships with responsibility, reciprocity, and respect toward all kin (relations based on interrelatedness of kinds) and kith (relations based on knowledge of place), humans may embody an ethic of sustainability that the Earth, and all Her inhabitants, require. Finally, we present a practical kinship circle framework for applying these concepts for broader educational applications in sustainability and environmental ethics.

1.2 Positionality

As a kinship group, we use place-based knowledge and practices to understand how to build relationships with land, water, and other-than-humans. Often our knowledge comes from Western teachings, Indigenous knowledges across the world with an emphasis on Anishinaabe knowledges as it relates to our place, and United Nations knowledge. As climate change and crises of sustainability impact communities across the globe, it is imperative that, collectively, we learn from each other and center the relationships and knowledges that come from the places we are residing in. We encourage readers, as they engage with our thoughts, to reflect on their own positionality and the relationships that exist within their home communities.

We wish to briefly provide our own positionalities to this work of decentering humans in sustainability ethics. I am Mai Anh, a Ph.D. candidate in forest science and Vietnamese mom of a 3-year-old boy, living, studying, and building connections with the landscapes and people in Upper Michigan. I am Cassandra, a Master's student in applied ecology,

an avid gardener, and an Auntie who is dedicated to making our world a better place for our future youth through place-based education. I am Kendall, a fourth-generation settler of the Keweenaw—a queer, non-binary humanities Ph.D. candidate who writes about anime and manga, practices shamanism and is dedicated to Earth stewardship. I am Zee, a student of sociology, sustainability, and geology: I care deeply about social and environmental justice; I hope to help promote fulfilling human–nature relationships; and I am grateful for this opportunity to build connections with others! I am Kath, a student and an ecologist, in love with the forests and insects whom I both strongly relate with and feel a responsibility to. I am Shelby, an applied ecologist with a passion for the natural world, sharing with others through education and outreach, and changing the way we speak about our other-than-human kin, especially those introduced to novel ecosystems through human actions. I am Kate, a farmer and ecologist who has been living and learning within Anishinaabe homelands as I explore my role in the relationships between land, food, and people. I am Emily, a settler scholar with German and British ancestry, working within Ojibwa homelands; through partnership and collaboration, I am working to rebuild relationships with and between land and water. I am Val, a Korean adoptee and naturalized U.S. citizen, living and working within Ojibwa homelands to elevate Indigenous knowledges and facilitate equitable research practices in the Great Lakes region. With diverse perspectives and shared commitments, we now turn to our shared reflections on decentering humans in sustainability ethics.

2 Remembering what it means to be human as individuals

As students, mentors, and relatives to many, we approach daily life, including our research and studies, in ways that affirm our relationships to place, a practice of remembering what it means to be human. While the Agenda 2030 (UN 2015) centers human rights, rooted in the tradition of Western individualism and a rights-based ethical approach, we believe that it is essential to first transform at the human level—the microlevel of relating to one another, upholding compassion, and living in sustainable ways.

2.1 Learning to be human

The imagined superiority of humans is being challenged in all directions across the globe, including by the very atmosphere that provides life on Earth. The only clear lesson is hindsight: we as humans have forgotten who we are—the youngest of all beings, dependent on all others, a philosophy upheld within Ojibwa practices and knowledges today evidenced in the English

term "human" (homo and humanus from 12th c. Latin), we once recognized our human selves as originating from the Earth (humus) and as being lowly and humble (humilitas). We must remember who we are, humans cannot remain human otherwise. Creating kinship with other-than-human beings is integral to this transformation.

Our understanding of what it means to be human is contextual, dependent upon place, and informed by oft-invisible cultural norms that are systematically enforced by educational systems (Gatto 2000). Throughout our Kinship Circle conversations, we reflected on how our childhood educational experiences in school rooms, churches, and at family dinner tables condition us to value human life above all else, insights shared by the authors we read (Zaragoza and Morales 2021, pp. 104–114). Within our courses, even at the university level, we are taught to find solutions to pressing concerns of climate change or sustainability for *human* communities, even with wildlife conservation courses focused on the ecosystem services that threatened or endangered species provide humans. While these arguments offer an introduction into valuing the life of other-than-human relatives, this philosophical underpinning of our conservation and sustainability approaches can inadvertently erase the deep-seated relationships humans have with our other-than-human relatives.

During the kinship book club, our human-centered philosophy was challenged and we were no longer comfortable with the ways this oft-invisible bias showed up in our work and in ourselves through the language, we used to describe other-than-human beings, to the sampling procedures, we would follow to collect environmental data. As students and researchers already engaged in conservation and restoration work, we centralized the question of what it means to be human, transforming our understanding to seeing ourselves as deeply connected to our other-than-human relatives in practical, philosophical, and spiritual ways. Moving away from the biological and moral superiority of humans, which dominates Western thinking, we recognized the humility and interconnectedness that grows from the relational experiences with other beings in the constellation of life which is the Great Lakes ecosystem. This relearning fostered an alternative approach to sustainability and renewed our understanding of our obligations to creation. Rather than coming to a dogmatic conclusion about who, or what being human is, we focused on how human beings may be in relation with others. Specifically, we considered the question, what are the roles and obligations that we, as the humble lowly human species, must recognize as being and making kin? In remembering our human identity, we are better positioned to remember our obligations to others.

2.2 Human obligations in making and being kin

Being in and making kinship with others necessitates an individual human's obligation to ensure the well-being

of all life. Ojibwemowin (Ojibwa language) specialist Michael Waasegiizhig Price (Wikwemikong First Nation) suggests that humans consider the *4 R's Indigenous Knowledge Framework*: (1) *relationship*, (2) *reciprocity*, (3) *responsibility*, and (4) *respect* (MTU 2023), in order to remember and strengthen bonds with all beings. Whyte describes these characteristics as *Kinship qualities*, which is "crucial for different entities being able to band together across diverse animacies, whether in families or in society" (2021, p. 35). Kinship then becomes not just a bond between individuals, but a way of orienting the self as interdependent, relational beings committed to upholding responsibilities to relations and relatives.

The *4 R's Indigenous Knowledge Framework*, including *relationship*, *reciprocity*, *responsibility*, and *respect*, proposed by Price (2023) require further explanation, as they became integral to our Kinship Circle's understanding of being in obligation to all of creation. First, relationship (*Inawendiiwin*) or "relationship with each other" in Ojibwemowin emphasizes the importance of maintaining connections between humans of many kinds and also with other-than-human beings. Actively seeking kinship reminds us of our interdependence—humans cannot survive without the support and gifts of many earthly relatives. Without relationships, humans are even more vulnerable in times and events of crises. Being in reciprocity (*Miigiwe'idiwin*), or "gifting each other" in Ojibwemowin, reflects relationship qualities—relations sustained in mutual care, investing in others' well-being that will be reciprocated in kind. Practicing kinship in good ways builds reciprocal bonds, faithful knowing that our actions have meaning and will be returned.

For Indigenous peoples, reciprocal relationships are relied upon during times of hardship and abundance (Whyte 2021, pp. 30–38). Responsibility (*Ganawenjigwein*), or "watching over or protecting each other" in Ojibwemowin, embodies responsibility beyond biological ties, which "need not be contracts or legal documents to define those responsibilities" as it "arises from the emotional realm of mutual care" and is significant to our inner self (Whyte 2021, p. 31). Finally, respect (*Manaaji'idiwin*), or "going easy on each other" in Ojibwemowin, is a consensual, mindful exercise. In contrast to an authoritative stance, we go easy on others and others go easy on us. Respecting others means acknowledging the autonomy, well-being, and self-determined choices of humans and others (Whyte 2021, p. 35). We must first consult with others by asking permission and await their consent (Whyte 2021, p. 37); sustainability requires thoughtful intentionality and deliberate practices of gratitude.

As everyday practices for sustaining relationships within our Great Lakes home, our Kinship Circle resonates with *relationship*, *reciprocity*, *responsibility*, and *respect* (Price 2023) as essential to our studies and everyday living. The

anxiety and hope that we face as researchers, all at different career stages, have been well articulated by religious studies scholar Graham Harvey (unmarked) in the *Kinship* series: “The delusion that scholarship can be a detached activity suggests the triviality of ‘knowledge’ that need not obligate us to act” (2021, p. 140). In reality, academic scholarship is a knowledge-practice-belief system where knowing and practicing are inextricably linked (Berkes 1999, pp. 71–96). Our desire for our work to matter beyond academia in ways that fulfill us personally as well as our responsibilities to our human and other-than-human communities materialized in the practices we engaged in as articulated below. Moreover, Harvey asserts that “scholars are kin, and there are urgent demands on us that require animated engagement” (Harvey 2021, p. 140). Applied animated engagement requires seeing, listening, and interacting with our world as a complex constellation of relationships with other persons—some humans, most otherwise—and importantly, practicing kinship necessitates being rooted to *place*.

Finding a home requires finding our kin. Gavin Van Horn (unmarked), executive editor for the Center for Humans and Nature, stresses in the introduction of each book within the five-part series, “Becoming kin...consists of repeated intimacies, familiar encounters, and daily undoings and transformations that are dependent on visitations and conversations within a smaller circle of place” (2021, p. 9). As students and researchers, we seek to discover our obligations within the homelands of the Anishinaabe Ojibwa as complex, interdependent, and inter-relational beings within this shared home. With intersectional identities, we strive to be in service of and stewardship for the Keweenaw. We attempt to demonstrate gratitude, rebuilding and strengthening personal relationships with the Land, Waters, and communities through mindful practices such as gardening, berry picking, fishing, hiking, and swimming. We practice reciprocity with humility. We aim to fulfill our responsibilities, albeit with shortcomings, to engage in equitable and ethical research in partnership with the KBIC.

Directed by community priorities that address KBIC needs, the work that members of our Kinship Circle conduct aims to promote Ojibwa autonomy and sovereignty in our University-Community research partnerships (see Shaw et al. 2023, pp. 32–45). Our partnership research considers parts of the whole, such as: the importance of the tribal fish harvest (Gagnon 2016), evaluating qualitative and quantitative impacts of chemical contamination to facilitate better relations with our aquatic kin (Shaw 2022); exploring manoomin (wild rice) restoration activities to restore human-wetland relations (Reed-VanDam 2024); and examining forest ecosystem relationships, including highlighting Ojibwa forest dependencies, promoting sociocultural livelihoods, and supporting shifts in discourse on the unique earthworm (Lane-Clark 2023) and beetle responsibilities

within Northern forest ecosystems (Schneider et al. 2023). As lifetime learners, our shared research engagements reflect a shared responsibility to the Land and all our relatives (Gagnon 2023, pp. 247–287). We are indebted to many teachers and scholars who have contributed to our sense of belonging in the Keweenaw as home, and especially, in ways that simultaneously support Indigenous life and livelihoods, and Ojibwa ways of knowing, doing, and being.

Supporting sustainability for future generations requires decentering the human experience and being inclusive of all kin’s experiences. Practicing good human relationships—reciprocity, responsibility, and respect—is the crucial beginning. We invite others to first consider in what ways might one live in kinship to/with other beings, and what obligations inspire you to be a good relative to others? In the next section, we delve into practical skills needed to rebuild shared responsibilities and cultivate a sense of belonging for diverse communities as a whole.

3 Rebuilding shared responsibilities within and between communities (beyond anthropomorphism toward animism)

Anthropomorphism, the attribution of human-like traits to other-than-human species, has been a topic of debate within the Western sciences. To achieve (limited) certainty and eliminate bias, Western science has traditionally emphasized approaches from controlled experiments on (what were deemed to be) passive objects. Feminist scholar Donna Haraway (unmarked) describes this as the “god trick”, where scientists attempt to position themselves as detached “subjects”, disregarding personal and professional influences while examining “objects”, that is, observing the nonhuman through a purely objective lens (1988, pp. 577–579). The “subject-object” divide has shaped the development of scientific methodology, separating humans from their ecosystems by (historically) granting autonomy only to humans. While the intelligence, autonomy, and sentience of other-than-human beings, including plant relatives such as trees (Simard 2022) and others (Paulson 2021, pp. 79–90; Hoffman 2021, pp. 52–61), are recently being discovered through Western science, the desire to anthropomorphize nonhuman beings must be carefully kept in check. While it is tempting to understand others by assigning human interpretations to their behavior, this inadvertently recenters human nature as the only way of being.

Rather than anthropomorphizing nature, Indigenous worldviews recognize the intrinsic personhood of other beings, including their autonomy, intelligence, and social relations (Whyte 2021, pp. 30–38). For example, in the *Kinship* series, Diane Wilson (Rosebud Sioux Tribe) describes Dakota’s relationship with other beings as relatives, kin

within a common living community (2021, p. 55). Moreover, “nonliving” relatives are known to retain knowledge to share with others. Nicole Bell (Kitigan Zibi First Nation) explains that, for Indigenous people, *mino-bimaadiziwin* (living a good life) is the fullest sense of connection with others, considered the highest ideal to strive for. According to Bell (2016, pp. 7–20), living in good relations embodies respectful, compassionate, and sustainable ways to live as individuals and within living communities. Co-author Reed-VanDam’s research with the Keweenaw Bay Indian Community on manoomin restoration, while being led by KBIC priorities, centralized the wisdom that manoomin has to teach humans and that for successful restoration of this plant relative, humans must live in *mino-bimaadiziwin* through honoring manoomin’s personhood.

Here, we argue that sustainability requires bridging the ontological divide of Western thought and Indigenous knowledges to rebuild our sense of kinship. To facilitate this shift, we propose three necessary skills and practices: listening, practicing the grammar of animacy, and embracing animism—a worldview that recognizes the spiritual essence and agency of other-than-human communities. By relearning how to relate to our kin, we can fulfill a vision of sustainability that centers on relationships between many.

3.1 Learning to listen as a process

Since the Enlightenment, the foundations of Western knowledge systems were created on the basis that the ability to think is Truth of knowing (i.e., “I think therefore I am” (Descartes 2006, p. 73)). Yet to support each other in relations with the larger living world, humans must embrace diverse ways of knowing (Kimmerer 2021, pp. 111–124). Indigenous traditions have long-excelled in bringing multiple ways of knowing, including carefully listening to the more-than-human world (Kimmerer 2013, pp. 156–166).

Developing one’s skills for being a good listener is a lifelong journey. Our Ojibwa teachers have guided us to recognize the intelligence, agency, and autonomy inherent to our other-than-human kin. Humans are but one species among many in a complex kinship system. The more-than-human world has so much wisdom to share if we are willing to listen. Many nonhuman species are actively providing strategies for adaptation to and protection from the concurrent crises that constitute the Anthropocene (Abram 2021, p.50–61). Importantly, these are not anthropomorphizing practices, but rather, recognizing that humans need to learn from others how to be in relationships with the more-than-human world.

Learning to listen is about getting to know others so that others may also know you. It begins with recognizing that, “Listening is a doing, a verb, not a noun” (Hoffman 2021, p. 59). As a scholar of natural history, Thomas Lowe Fleischner

(unmarked) describes listening as a “practice of intentional, focused attentiveness and receptivity to the more-than-human world guided by honesty and accuracy” (2021, p. 18). Active listening requires attention to detail from the listeners, and the process becomes an extended intimacy (Letcher 2021, p. 75). For example, botanist and author Matthew Hall (unmarked), in his listening ritual, wrote “By listening, I am not trying to discern audible sounds from the plants... As I listen, I am trying to step back, to stop my own verbal commentary, to put aside my own human wants and desires, and to allow the plants to take their turn at describing, shaping, and living in the world” (2021, p. 46).

A listening practice is a process that is unique to each individual and community. In our research partnership with the Keweenaw Bay Indian Community, we spent our first year building relationships with the land, water, forests, and community (see Shaw et al. 2023, pp.32–45). Our learning to listen experiences began by sitting with plants, witnessing their autonomy as they reacted to the environment around them; learning species names in Ojibwemowin so that these relatives hear their names in the tongue native to this land, studying the landscape’s history, and listening to community members, including elders. Elder Michael Waasegiizhig Price shared that “people have a tendency to want to fix everything immediately, but our elders always remind us to wait and listen.” Good listening takes time and patience, and through lifelong engagement, we are reminded that perfection is not the goal of practice.

3.2 Practicing the grammar of animacy

In learning to listen, practicing the grammar of animacy becomes possible (Kimmerer 2013, pp.48–59). In every language lies a grammar associated with life—it assigns value, frames hierarchy, and in doing so, can reveal unimportance, irrelevance, and “other.” In some languages, other-than-human animacy is inherent to its structure (i.e., Ojibwemowin); in others (i.e., English and Vietnamese) non-human species (e.g., trees, animals, and birds) are addressed with inanimacy—“it” which is also used for nonliving things like a chair or book (Kimmerer 2013, p.55). Living in kinship cannot perceive “it” for relatives. “[L]anguage is the foundation of civilization...It can be a bonding agent, strengthening the ties between seemingly disparate things, and it can be a weapon, dividing things that are more alike than not” (Ghosthorse 2021, p.88).

Through language, other beings are made to be less than human, and therefore, more easily framed as resources to be dominated and extracted for human use (Belcourt 2014, pp.1–11). Harm is permitted by language, and thus, language can also be a vessel for repairing relations with kin. Practicing the grammar of animacy is possible across languages: We can speak of the living world as alive, as having

personhood, and as our community members (Kimmerer 2013, pp.48–59). By conveying the reality of an animated world through language, humans can practice the relationships that maintain interconnectedness, reminding us that humans are never alone in this world.

Adopting a grammar of animacy shifts how we perceive the natural world, from one of lifeless resources to one rooted in gratitude and reciprocity. Practicing animacy calls for engagement beyond human relatives and kin. As offered in the *Kinship* series, this can look like “casually touch[ing] a tree in passing; nod[ding] greetings to a bird; offer[ing] gifts of tobacco, sage, or kinnikinnick to venerable rock; or paus[ing] our conversation to silently or gesturally acknowledge our presence in the home of other species” (Harvey 2021, pp. 137). No matter our ethnicity, we can honor place-based teachings by knowing the Land and being in kinship with other-than-human communities. Doing so ensures that the Land also knows us as their kin.

In our work within Ojibwa homelands, we are beginners in the grammar of animacy, listening to and learning from knowledge holders’ deliberate use of grammar as acknowledgment of kinship. As *Kinship* series author Tiokasin Ghosthorse (Cheyenne River Lakota) reminds us, “The Earth is listening. It is time for us to learn to speak what she is hearing” (2021, p. 89). In the engagement with other-than-human beings in our research, we have much more to learn about ethical practice. Working with life-beings not well protected within the legal/ethical codes of Western science, we often struggle to articulate and enact good relations with beetles, earthworms, fish, and manoomin (wild rice) as research partners. Yet, our shared responsibilities remain. By living and working in ways that are rooted in a grammar of animacy, too often, kinship obligations can be incommensurable with science.

3.3 Shifting anthropomorphism to animism

The concept of anthropomorphism, rooted in Enlightenment-era anthropocentrism, presents a significant challenge to our understanding of human–nature relationship. Defined as the imposition of human thoughts, intentions, emotions, and behavior onto/with other beings, anthropomorphism stems from the belief that, “... modern humans are the most important element of existence, above all other life...” (Williams 2021, p. 64). This perspective assumes that nonhuman beings do not have feelings and/or emotions that humans may connect with, and therefore, humans map them onto our own way of being. However, this anthropocentric view raises a critical question: How can we interact respectfully with other entities within their uniquely experienced lifeworld?

Animism offers a compelling alternative to this anthropocentric paradigm. By recognizing the personhood and

agency of other-than-human beings, animism conceptualizes the world as “a community of related persons” (Harvey 2005, p.211), which transforms our relationship with the natural world in profound ways. Animism fosters respect and responsibility toward all beings, positioning humans not as superior beings but as a relative in a larger living community. Within this worldview, actions toward other-than-human relatives are understood to have consequences, emphasizing the importance of reciprocal care and sustainable practices (Whyte 2021, pp. 30–38). Furthermore, by acknowledging the relational and experiential variations that exist within and between beings, animism accepts the unique ways each entity experiences the world and views all entities as potential social partners (Veltmans 2014, pp. 363–372). This perspective opens up new possibilities for communication and engagement with other-than-human beings through ritual, offerings, or simply mindful interaction, fostering a sense of interconnectedness and shared existence. Importantly, animism aligns closely with many Indigenous knowledges, providing rich frameworks for honoring the sovereignty of other-than-human nations (see Gagnon et al. 2020, pp. 4–5). In these frameworks, long-standing reciprocal agreements with other nations—fish nations, maple nations, and monarch nations, for example—requiring good relations between humans and nations of many kinds (Simpson 2017, pp. 55–70). At the heart of these agreements lies diplomacy, which “...motivates humans to act reciprocally, responsibly, and respectfully toward animals” (Whyte 2024, pp. 72–73).

The shift from anthropocentrism to animism, therefore, naturally decenters humans and promote ethical place-based relations with the more-than-human world. By embracing animism, humans can develop a more horizontal and relational understanding of the world around us. A kinship worldview rooted in animism can catalyze transformation in sustainability sciences, fostering respect, interconnectedness, and reciprocity in environmental stewardship.

4 Restoring migration as the inherent global cycle of healing

In remembering what it means to be human and learning from other-than-human kin and community, we are left with a deep sense of obligation to support a transformation of our collective ethic. Specifically, we seek to repair the consequences of ideological and physical human disconnections from that which gifts us life—the waters, lands, plants, animals, and other beings that sustain us. We desire to be engaged in an actionable ethic of relations, to live in reciprocal service to and with others. The lessons we draw from being human—having responsibilities to and with others, the limitations of anthropomorphization, and the vast potential applications of an animism framework—call us to

extend our thinking to a global scale. In what follows, we elaborate on our interconnectedness with and as nature and share our thoughts on what it means to be engaged in worldwide kinning.

4.1 We are nature and interconnectedness

Although contemporary humans have sought to sever our identity from nature, our dependence reveals an interconnectedness with and *as* nature. Cultural ecologist and philosopher (and *Kinship* series author) David Abram (2021, pp. 50–62) proposes a shift in our current human reality: We live on a planet shaped by migration, and as such, it is the lifeblood of our planet demonstrating that Earth is alive. While addressing the annual collective migrations of various creatures as active expressions of the Earth, Abram writes (2021, p. 61), “For truly, are not these cyclical pilgrimages—each a huge, creaturely hajj—also pulsations within the broad body of Earth? Are they not ways that divergent places or ecosystems communicate with one another, trading vital qualities essential to their continued flourishing?” By referring to these migrations as a “creaturely hajj” (an annual Islamic pilgrimage), Abram evokes them as sacred journeys integral to the living Earth. This metaphorical framing invites us to reconsider migration not as anomalous but as a recurrent rhythm fundamental to our planet’s dynamism, where change is the welcome constant rather than feared, controlled, and villainized.

“Invasive” species offer an illustrative example to reflect on the act of kinning (see Lane-Clark et al. 2024, pp. 207–218). Consider our tireless commitment to controlling migrating species, often articulated as preventing and/or limiting other-than-human beings from wreaking ‘devastating’ impacts within spaces they are not endemic to. However, a closer examination reveals that global systems and human power structures are responsible for introduced beings. As we are reminded by Whyte (2024, p.79), “Calling a plant ‘invasive’ attributes its migration to the plant itself. In reality, it is the growth of the US as a colonial, capitalist, and industrial nation that is invasive and is the cause of the plant’s migration.”

Lessons on human accountability extend not only to nonhumans but also to human societies. We are witnessing a mass migration of people, primarily due to climate related changes, resulting in humanitarian crises at (human constructed) borders around the world. Consequently, the discourse of invasive species is presently being applied to climate migrants who are faced with xenophobic treatment, alienating language, and a manufactured concept of borders and boundaries. For example, *Kinship* series author Gary Paul Nabhan (unmarked), an agricultural ecologist, illuminates the profound disruption caused by “60-foot-tall shutters made from millions of tons of solid cement, sturdy

steel, and a sniveling disease called xenophobia” at the US–Mexico border to our human and other-than-human relatives (2021, p. 75). Nabhan writes, “...by the sight of sacred saguaro cacti being toppled and piled up...one O’odham woman stood over the mangled carcasses of three giant saguaros and moaned: ‘They are killing our ancestors... for what? To put up metal where these lives once stood?’” (p. 79). Ancient migration and dispersal corridors of many endangered relatives were cut off. But far worse, the border wall is “breaking the ties of relations with [O’odham people] kith and kin, with the living and the deceased, with the human and other-than-human worlds” (p. 80).

Who decides who belongs and when, where, and why they do not belong? *Kinship* series author and naturalist Lyanda Fern Lynn Haupt reminds us in her essay (2021, pp. 12–21) that starlings were intentionally brought to North America by admirers of Shakespeare. Today, we are annoyed by yesterday’s Shakespeare admirers, villainizing starlings by using militaristic terms of “eradication.” Humans purposefully kill numerous starlings each year so they may not disrupt crops and livestock, or leave their droppings upon the landscape. Importantly, the very systems responsible for the introduction of starlings and other beings as so-called “invasive species,” are presently responsible for mass human migrations. As asylum seekers from lands deemed unlivable, primarily caused by the spread of colonialism’s extractive and violent capitalism, do they still not belong on planet Earth? Migration of plants, animals, rocks, and waters is an inherent and necessary activity of the well-being of this planet. What does it mean to be a society that blocks this flow? How might human approaches to climate change mitigation be different if we viewed the movement of humans as natural, similar to the movement of salmon? As interconnected beings, we must practice kinship within our communities and between our neighbors while also kinning at the global scale.

4.2 Kinning at the global scale

As an Earth community, all beings share a kinship with the same moon, the same sun, and the same planet. The sustainability of our planet requires recognition of these shared kinships and practices of kinning at the global scale. The interrelated responsibilities encompassed within kinship strengthen collective action that builds community resilience in the face of unprecedented change. When we decenter humans from sustainability discourse, we take seriously the human duties of responsibility, reciprocity, and respect toward others. We invest time learning each other’s vulnerabilities, becoming aware of the issues impacting our communities, and gaining a more holistic understanding of how to provide mutual protection (Whyte 2021, pp. 30–38).

Expanding our conceptions of kinship beyond the human experience enriches our relations with the many diverse beings with whom we share this Earth, and who make our

lives possible. Recognizing our interconnectedness with the more-than-human world fosters a society built on compassion and solidarity with all life. Incorporating principles of interspecies kinship into governance structures and stewardship systems enables collective ethics of care. This requires recognizing the rights and responsibilities within ecosystems and accepting the personhood of other-than-human beings. The bonds of kinship strengthen social and ecological resilience on a global scale. By moving beyond anthropocentrism and questioning the sustainability of what and for whom, we can shift our perspective to honor human kinship across forms of life, rediscover human foundations for justice and ethics, and promote the reality of a shared future.

5 Applying the kinship circle framework

Our experience as a kinship group was both unique and replicable. We share the following framework for those interested in applying this approach in their own contexts, emphasizing facilitated reading discussion, individual and group reflections, and bridging localized knowledge to the center.

First, as a kinship group, we met monthly to discuss one of the five books in the Kinship series. For each meeting, two group members volunteer to lead the discussion, collaborating beforehand to prepare. The facilitators can create a slideshow presentation to guide the flow of each meeting, which would last for approximately 2 h. The presentations typically include thought-provoking questions, key topics from the readings, and relevant quotes to stimulate discussion. During our meetings, we engaged in various activities guided by the facilitators, such as land acknowledgment to honor the land, water, and Indigenous people who have stewarded the land. We encourage open dialogue, allowing space for diverse perspectives and personal reflections. Next, each member actively contributes to group reflection through facilitated discussion, as well as by contributing relevant quotes or insights from the book to each slideshow presentation. This collaborative reflection work allowed us to integrate the stories we read with our own perspectives as individuals and as a kinship circle. This latter aspect is important: Without a space of trust, openness, and mutual respect, we would not be able to share these insights. Finally, we brought place-based knowledge to our individual and shared reflections. This included perspectives from all over the world, and especially from our relationship-based knowledge with the Keweenaw Bay Indian Community and Ojibwa knowledge.

After completing the book series, we held an additional meeting to reflect on the entire experience. During this session, each member shared how they had applied what they learned or how the ideas from the books had changed their perspectives or practices. This final reflection allowed

us to synthesize our collective learning and discuss its practical implications in our lives and work.

The application of this framework extended beyond our group setting. Several members of our book club have successfully shared the kinship circle framework in their classrooms and personal networks, receiving positive feedback from students, colleagues, and friends. This demonstrates the adaptability of the framework to different educational contexts to engage diverse audiences. To facilitate replication, we created a bookmark summarizing key techniques for facilitating a reading group, which can be used to pass around in other Kinship Circles (Fig. 1).

6 An ongoing journey in kinship

The central kinship lessons for decentering humans in the sustainability sciences, and more widely, are rooted in humility, responsibility, and an Earth-centered multi-species ethics. Through dialogue and reflection guided by *Kinship: Belonging in a World of Relation* (2021),



Fig. 1 Bookmark including step-by-step guidelines for building a Kinship Circle book club

our journey through Planet, Place, Persons, Persons, and Practice, we recognized a need to reorient the common framework of sustainability from human-centered to Earth-centered kinships. In this synthesis, we illustrated shared insights on decentering human relations at three interconnected scales: the individual, the community, and the global. Shifts in our Kinship Circle consciousness altered the way we speak, think, and act, broadening our capacity to relate with human and other-than-human kin at each of these scales. Practicing kinship enables us to embrace a more comprehensive understanding of a world in reciprocity, and also, experience Land relations with heightened vibrancy.

Yet, our collective ethics in transformation remains unfinished work. First, remembering what it means to be human is a vast reorganization of thought and action. As the only Earth being dependent on all others, and obligated to live in responsibility to all kin, we must continue to relearn daily practices of humility and gratitude. Second, recentering a place-based living community, in recognition of all Earthly beings' lived experiences and connections, is largely unfamiliar terrain for researchers and scholars, and especially dominant society. Being better listeners and developing human senses toward a grammar of animacy are a commitment extending across generations. Third, reexamining cycles of time and migration as the lifeblood of our planet Earth is both a personal and political agenda. Borders and boundaries, reinforced by concepts of property and ownership, are deeply ingrained in contemporary systems across the globe. As ideological (and real policy) structures, these often inhibit the (natural) movement of many beings, proliferating to widespread injustices. While we recognize the importance of human needs in a changing climate, kinship lessons emphasize the necessity of bridging the needs of all beings for a shared collective future that prioritizes the sustainability of relations for all life.

Author contributions Thi Mai Anh Tran, Cassandra Reed-VanDam, and Kendall Belopavlovich wrote the original manuscript and the review responses, and edited all article versions. Elizabeth Brown, Katherine Higdon, Shelby Nicole Lane-Clark, Katherine M. McGowen, and Emily Shaw provided feedback and contributed to reviewing revised versions of the manuscript. The corresponding author, Valeree Gagnon, was responsible for the development of the methodology, working together with the co-authors in writing, and for reviewing and editing the article. All authors read and approved the final manuscript.

Funding This work was supported, in part, by the Cohodas Fellowship, the Philanthropic Educational Organization Scholar Award, the College of Forest Resources and Environmental Science at Michigan Tech, and the National Science Foundation [# 2009258].

Data availability Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

Declarations

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest. The authors have no relevant financial or non-financial interests to disclose. The authors have no competing interests to declare that are relevant to the content of this article.

Open Access This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

References

Abram D (2021) Wild ethics and participatory science: thinking between the body and the breathing earth. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 1. Center for Humans and Nature Press, pp 50–62

Belcourt B-R (2014) Animal bodies, colonial subjects: (re)locating animality in decolonial thought. *Societies* 5(1):1–11. <https://doi.org/10.3390/soc5010001>

Bell N (2016) Mino-bimaadiziwin: education for the good life. In: Indigenous perspectives on education for well-being in Canada. University of Manitoba: Education for Sustainable Well-being Press, pp 7–20

Berkes F (1999) Sacred ecology: traditional ecological knowledge and resource management. Philpapers.org. <https://philpapers.org/rec/BERSET>

Brundtland GH (1987) Report of the World Commission on Environment and Development: Our Common Future. [online] United Nations. Available at: <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>

Fleischner TL (2021) Natural history as a practice of kinship. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 5. Center for Humans and Nature Press, pp 13–21

Gagnon VS (2016) Ojibwe Gichigami (“Ojibwa’s Great Sea”): an intersecting history of treaty rights, tribal fish harvesting, and toxic risk in Keweenaw Bay. *Water Hist* 8(4):365–384. <https://doi.org/10.1007/s12685-016-0185-7>

Gagnon VS (2023) “Water and all my relations”: reimagining Indigenous water justice for seven generations. *Hum Organ* 82(3):274–287. <https://doi.org/10.17730/1938-3525-82.3.274>

Gagnon VS, Jennings BD, Price MW, Ravindran EH (2020) Since Time Immemorial. International Association for Great Lakes Research (IAGLR) Lakes Letter, Fall Issue

Gatto JT (2000) *The underground history of American education*. Oxford Village Press, New York

Ghoshorse T (2021) Nurturing thoughts. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 5. Center for Humans and Nature Press, pp 82–89

Hall M (2021) Kinship with plants. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 5. Center for Humans and Nature Press, pp 39–47

Haraway D (1988) Situated knowledges: the science question in feminism and the privilege of partial perspective. *Fem Stud* 14(3):575–599

Harrison P (1992) Descartes on animals. *Philos Q* 42(167):219. <https://doi.org/10.2307/2220217>

Harvey G (2021) Academics are kin, too: transformative conversations in the animate world. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 4. Center for Humans and Nature Press, pp 133–141

Harvey G (2005) Animism : respecting the living world. Hurst & Co.

Haupt LFL (2021) Starlings, infinity, and the kith of kinship. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 4. Center for Humans and Nature Press, pp 12–21

Hoffman J (2021) A language of listening. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 3. Center for Humans and Nature Press, pp 52–61

Kimmerer RW (2013) *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*. Minneapolis, Minnesota: Milkweed Editions

Kimmerer RW (2021) A family reunion near the end of the world. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 1. Center for Humans and Nature Press, pp 111–124

Lane-Clark SN (2023) Impacts of introduced earthworms on sugar maple sap chemistry and the discourse of invasion ecology. Digital Commons @ Michigan Tech. <https://digitalcommons.mtu.edu/etdr/1609/>

Lane-Clark S, Gagnon VS, Bal T (2024) Shifting the language of 'invasion' ecology: two-eyed seeing as a framework for discourse regarding introduced species. *Socio Ecol Pract Res*. <https://doi.org/10.1007/s42532-024-00179-9>

Liboiron M (2021) *Pollution is colonialism*. Duke University Press, Durham

McGregor D (2021) Indigenous knowledge systems in environmental governance in Canada. *KULA Knowl Creat Dissem Preserv Stud*. <https://doi.org/10.18350/kula.148>

MTU (2023) Gathering & Presentation Honoring Indigenous Peoples' Day. [online] College of Computing Advising. Available at: <https://blogs.mtu.edu/computing-advisor/2023/09/28/gathering-presentation-honoring-indigenous-peoples-day/>. Accessed 31 Jan 2024

Nabhan GP (2021) Walking the line: the cost of lost kinship when we militarize borders. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 2. Center for Humans and Nature Press, pp 74–80

Paulson S (2021) Plants, collective metaphysics, and the birthright of kinship: an interview with Monica Gagliano. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 3. Center for Humans and Nature Press, pp 79–90

Reed-VanDam CM (2024) Restoration Is Repairing Relationships: Bridging Indigenous And Western Sciences To Assess The Socio-Ecological Restoration Of Wild Rice (*Zizania Palustris*) On Keweenaw Bay Indian Community Homelands.. Digital Commons @ Michigan Tech. <https://digitalcommons.mtu.edu/etdr/1720/>

René D (2006) *A discourse on the method*. OUP, Oxford

Schneider KE, Bal TL, Brzeski KE (2023) Novel applications of idna tool for measuring small mammal community biodiversity via silphid beetles. 216–216. <https://doi.org/10.2737/nrs-gtr-p-211-paper44>

Shaw E (2022) Rebuilding fish-human relationships by quantifying combined toxicity and evaluating policy related to legacy contamination. PhD Dissertation, Michigan Technological University. Available at <https://digitalcommons.mtu.edu/cgi/viewcontent.cgi?article=2648&context=etdr>

Shaw EL, Gagnon VS, Ravindran E (2023) Seasons of research with/by/as the Keweenaw Bay Indian Community. *J Great Lakes Res* 49:S32–S45. <https://doi.org/10.1016/j.jglr.2022.04.007>

Simard S (2022) Finding the Mother Tree by Suzanne Simard. Suzanne Simard, Author and Professor of Forest Ecology. <https://suzannesimard.com/finding-the-mother-tree-book/>

Simpson LB (2017) *As they have always done: indigenous Freedom through Radical Resistance*. University of Minnesota Press

United Nations (2015) *Transforming Our World: the 2030 Agenda for Sustainable Development*. United Nations. <https://sdgs.un.org/2030agenda>

Van Horn B, Kimmerer RW, Hausdoerffer J (2021) *Kinship : belonging in a world of relations*. Center For Humans And Nature, Chicago

Van Horn G (2021) *Kinning: introducing the kinship series*. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 1. Center for Humans and Nature Press, pp 1–11

Velmans M (2014) *Sentient matter*. In: Harvey G (ed) *The handbook of contemporary animism*. Routledge

Whyte K (2017) Indigenous climate change studies: indigenizing futures, decolonizing the Anthropocene. *Engl Lang Not* 55(1):153–162

Whyte K (2021) An ethic of kinship. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 5. Center for Humans and Nature Press, pp 30–38

Whyte K (2024) Why does anything need to be called wild? In: Minteer B, Losos J (eds) *Heart of the wild*. Princeton University Press, pp 74–79

Williams B (2021) Four turtles. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 4. Center for Humans and Nature Press, pp 63–69

Wilson D (2021) Making relatives. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 2. Center for Humans and Nature Press, pp 54–64

Zaragoza A, Morales MI (2021) A pedagogy of human dignity and classroom kinship. In: Van Horn G, Kimmerer R, Hausdoerffer J (eds) *Kinship: belonging in a world of relations*, vol 4. Center for Humans and Nature Press, pp 104–114

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Thi Mai Anh Tran (she/her) is a PhD candidate in Forest Science at Michigan Technological University. Her research focuses on livelihood resilience, sustainability, and bridging indigenous knowledges with Western Science in natural resources management. Mai Anh is passionate about interdisciplinary research and actively seeks collaborations with people from diverse backgrounds and scientific disciplines. If you are interested in collaborating, please contact her at ttran1@mtu.edu.



Cassandra Reed-VanDam (she/her) is the Essential Education Experience Manager at Michigan Technological University. She recently finished her Masters in Applied Ecology at Michigan Tech, conducting research in partnership with the Keweenaw Bay Indian Community on culturally relevant wild rice restoration. Cassandra is passionate about place-based education, community engaged research, and food sovereignty.



Shelby Nicole Lane-Clark (she/they) graduated in 2023 with a master's degree in Forest Ecology and Management from the College of Forest Resources and Environmental Science at Michigan Technological University. There, her research focused on the impacts of introduced earthworms on sugar maple forests in the Great Lakes region and the implications this has on sugar maple sap chemistry. She now serves as an Education Specialist in the Education Department at the Detroit Zoological Society



Kendall Belopavlovich (they/them) is a PhD candidate in the Rhetoric, Theory, and Culture program at Michigan Technological University. Their research focuses on the representation of marginalized communities in media such as animation, comics, and video games. Kendall is the Indigenous Studies area chair for the Midwest Popular Culture Association Conference.



where she facilitates environmental-based programming for students of all ages in her community.

Katherine M. McGowen (she/they) has a degree in Applied Ecology & Environmental Science from Michigan Technological University and is currently farming in Southeast Michigan. Her focus is on food sovereignty and regenerative agriculture.



Elizabeth Brown is a recent graduate of Michigan Tech, having earned her bachelor's in Sustainability Science and Society. She is deeply passionate about environmental justice and conservation, looking to help establish sustainable and rewarding relationships between nature and humankind. She is also interested in science communication and community resilience. Currently, Elizabeth is working with Central Michigan University's Museum of Cultural and Natural History, and the Chippewa



Emily Shaw (she/her) is the Great Lakes Resource Specialist for the Keweenaw Bay Indian Community who monitors proposed and ongoing mining activities within KBIC's reservation and ceded lands. After earning her PhD from Michigan Tech doing fish contamination research in partnership with the KBIC Natural Resources Department, she was a 2023 Knauss Fellow, where she worked in the US House of Representatives. One defining characteristic of her work is bridging disciplines and knowledge systems across interconnected relationships to create a more nuanced understanding of complicated issues.

Nature Center.



Katherine Higdon is a recent graduate of Michigan Technological University with a PhD in Forest Science. There, her research focused on exploring beetle-human relationships by looking at the impact of forest harvest treatments on beetle diets, as well as using art and storytelling as a tool to explore beetle-human relationships through the lenses of indigenous knowledge, policy, and beetle ecology.



Valoree Gagnon (she/her/kith/kin) serves as an Assistant Professor in the College of Forest Resources and Environmental Science, Michigan Technological University. Gagnon's interdisciplinary expertise in environmental policy and community-engaged research focuses on human dimensions of natural resources and the socio-cultural impacts of legacy toxic compounds. Her work centers on elevating indigenous peoples and knowledge, facilitating equitable research practice and design, and guiding partnerships that prioritize the protection and restoration of land and life in the Great Lakes region.