Gathering Giizhik in a changing landscape

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ABSTRACT. Giizhik (gee-zhick; Northern white cedar; Thuja occidentalis) maintains essential roles in Anishinaabe teachings, ceremony, and lifeways. Anishinaabeg at Bahweting and Gnoozhekaaning have adaptively gathered Giizhik through millennia of change. Over the last century, Giizhik have declined in abundance across their range and future declines are projected due to climate-driven change. Anishinaabe gatherers maintain relationships with Giizhik forests across a gradient of Giizhik dominance; with these relationships and knowledges, gatherers offer important alternatives in forest management planning and practice. The Sault Ste. Marie Tribe of Chippewa Indians at Bahweting, Bay Mills Indian Community at Gnoozhekaaning, and Giizhik gatherers from each community are pursuing forest relations based on Anishinaabe lifeways and relationalities. We describe gathering practices and changes through time based on group discussions and semi-structured interviews with 25 Anishinaabe gatherers and tribal natural resource staff. Spiritual and physical relationships among Anishinaabeg and Giizhik were discussed within the contexts of our original instructions (guidance defining respectful kin relations in this moral universe, handed down through the generations since time immemorial), settler colonialism, and forest management. This work builds upon the concepts of relationalities and collective continuance in the context of Anishinaabe forest relationships. We offer suggestions on ways of respecting and protecting forest communities by putting forest management into the context of forest relationalities.

Key Words: Anishinaabe; forest management; Indigenous knowledges; relationality; Thuja occidentalis

INTRODUCTION
Look out into the woods. What do you see? As Anishinaabeg (Anishinaabe people), we see our relatives. Forest communities are our communities. The Anishinaabeg and our forest relatives have parallel and intertwined histories and futures. The genocide of our ancestors by settler-colonial governments was directly experienced by people, trees, and other forest beings. Over the last three centuries, our forest and Anishinaabe ancestors were violently taken from the land. Our ways of life were outlawed and our children stolen (Dunbar-Ortiz 2014). Settler-directed deforestation and commercial timber production decimated and orphaned our tree relatives, who are now growing up to renew and reclaim their ways of life and community. We as Anishinaabeg are doing this same work in unison with the forests. Through this project, we aim to highlight and support Giizhik (gee-zhick; cedar; northern white cedar, Thuja occidentalis L.) and Anishinaabe relationalities at Bahweting (bah-w-ting; place of the rapids near Sault Ste. Marie, MI) and Gnoozhekaaning (gi-new-zhay-kaan-ing; place of abundant pike near Bay Mills, Michigan). We are building a case for forest relations that respect and protect our relatives within forest communities and for expanding on the concepts of relationalities and collective continuance.

Giizhik-centered relationalities
Our work focuses on Giizhik because they are central to the renewal, reclamation, and continuity of Anishinaabe lifeways at Bahweting and Gnoozhekaaning (Figs. 1, 2, and 3), along with other Anishinaabe communities. As self-determining beings, Giizhik maintain spiritual, physical, and intellectual roles and responsibilities in Creation (e.g., Simpson 2008, Kimerer 2013, Watts 2013, Whyte 2018a). They are active participants in ceremonies and providers of medicine, materials, and teachings throughout their lives, which can extend beyond 1000 years (Kelly et al. 1994). With lifespans 10 times that of humans, Giizhik reach from the earth through the sky connecting worlds divided in time and space. Giant, ancient Giizhik grow along the shores of Gichi-mikinaakong-minis (Mackinac Island). These elder trees are vestiges from a past before the tsunami of tourists arrived, ongoing spiritual guardians of the sacred island to this day, and they are beacons of hope for the possibility of radically different Indigenous futures. Kānāka maoli scholar Noeālan Goodyear-Ka‘ōpua describes relations that connect worlds as “radical relationalities” (Goodyear-Ka‘ōpua 2018). Radical relationalities transcend settler notions of time and space (Goodyear-Ka‘ōpua 2018) and remain connected to Indigenous peoples through their various roots (i.e., genealogies) and routes (i.e., migrations, travels, and diasporas; Teia 1997, Diaz 2011). Diné scholar Melanie Yazzie and Hupa, Yurok, and Karuk scholar Cutcha Risling Baldy further describe radical relationality as an “ethos of living well,” seated in interdependence with and accountability to more-than-human beings, and a radical shift to decolonization (2018:2). Relationality is a concept developed within the humanistic social sciences and particularly within critical Indigenous studies and Pacific studies. For a recent synthesis of the work on this concept, see Tynan 2021. Within the context of the collaborative work reported here, we understand relationalities as multi-scalar relationships between fellow humans, Giizhik, and other forest beings. These relationships include particular moral qualities such as trust, consent, reciprocity, and accountability, i.e., qualities typically confined to human-to-human relationships within sustainability or ecology discourses.

Anishinaabeg maintain personal and community health through continued relationships with Giizhik, including gathering the leaves, bark, roots, seeds, and whole trees of all ages and sizes for diverse uses (Danielsen 2002, Clark 2021). These relationships are guided by our original instructions: directional stories, ethical teachings, and agreements made and renewed among nations.
since time immemorial (Johnston 1990, McGregor 2004, Simpson 2008, Stark 2010). These instructions govern our roles and define our responsibilities as relatives, or kin, in this moral universe (Johnston 1990, Deloria 1999, Salmón 2000, McGregor 2004, 2010, TallBear 2014, Courchene 2016). Through these kin relationships, Anishinaabeg, Giizhik, and manidoog (mun-i-doog, spirits) have collaboratively shaped Great Lakes forested landscapes for millennia (Kimmerer 2000, Turner et al. 2000, Kimmerer and Lake 2001). Some of the outcomes of these Anishinaabeg-forest relationalities most recognizable to the readership of this special issue include: habitat and harvest management, monitoring, and enhancement of ecosystem services at fine to coarse spatial and temporal scales (Kimmerer 2000, Turner et al. 2000, Kimmerer and Lake 2001, Hart-Fredeluces et al. 2022). Results also include fulfillment of other spiritual responsibilities codified in Anishinaabe ceremony and our original instructions.

Anishinaabeg acknowledge our original instructions as the source of our relationalities. Ceremonies, social gatherings, and social activities such as customary land-based practices provide key spaces where we learn by engaging in these relationships and responsibilities. Although founded in our original instructions, our relational practices are dynamic, not fixed; they are adaptively developed and renewed through experiential learning, spiritual revelation, and oral traditions within our communities (McGregor 2004, Houde 2007, Reo and Whyte 2012).

Anishinaabe forest relationalities include dynamic spiritual, physical, intellectual, and emotional kinship among humans, plants, animals, and manidoog (Deloria 1999, Cajete 2000). Anishinaabe knowledges and cosmologies recognize these beings as autonomous, composing and actively influencing ecological communities (Johnston 1990, Kimmerer 2000, McGregor 2010, ...
Whyte 2018a) and organized as self-determining nations (Simpson 2008, Stark 2010, Marsden 2013, Watts 2013). As the last beings placed on this earth, humans depend upon plants, animals, and manidoog for the knowledges and gifts required for survival (Benton-Banai 1988, Johnston 1990, McCoy 2006, Kimermer 2013). These elder beings maintain diverse roles and responsibilities in Creation: as grandmothers and grandfathers, parents, youth, teachers, providers, and others beyond complete human comprehension (Benton-Banai 1988, Johnston 1990). Humans are responsible for maintaining respectful and reciprocal relationships with these beings and the sentient landscapes that we co-exist in together (McGregor 2004, Simpson 2008, McGregor 2010, Kimermer 2013). Anishinaabe ways of gathering and using Giizhik’s gifts, as part of a good life, require dynamic, committed relationships with these tree relatives. We ensure our collective continuance through these ethical and relational practices.

**Relating through change and our collective continuance**

The concept of relationality helps us understand the ethics and mechanics of Anishinaabe and Giizhik adaptive capacity to the social-environmental change processes associated with settler colonialism. Anishinaabe philosopher Kyle Whyte introduced a concept he calls “collective continuance” that is useful for sorting out our complex relationalities in the context of all this drastic change. According to Whyte, collective continuance is “a society’s overall adaptive capacity to maintain its members’ cultural integrity, health, economic vitality, and political order into the future and avoid having its members experience preventable harms” (Whyte 2018b:355). Collective continuance is an intellectual offspring of Gerald Vizenor’s survivance concept, a deliberately imprecise term that recognizes the centrality of Indigenous stories and renounces narratives of dominance, vulnerability, and victimhood (Vizenor 1999). Collective continuance as a concept brings notions of survivance into sharper relief in the context of Indigenous environmental issues such as Anishinaabe and Giizhik’s entangled navigation of settler colonialism. The notion of collective continuance also reminds us to center our own stories and reject common narratives of vulnerability as we seek to explain and understand these changes associated with settler colonialism.

Anishinaabe at Bahweting, Gnoozhekaaning, and other communities have maintained adaptive, spirit-centered, and experiential relationships with Giizhik through tremendous change: from the first meetings in time immemorial, through changes in climate, migrations of people, plants, and animals, through today (Benton-Banai 1988, Stark 2012, Whyte 2018a). Mary Sissip Geniusz shared one story from time immemorial, “when humankind was in trouble, Bear and Otter asked for and were given the cedar tree, to open up the line of communication between man and the rest of creation” (2015:37). This creation story instructs us to respect, engage, and care for Giizhik’s gifts of facilitating communication among beings in Creation (Geniusz 2015).

Over the past few centuries, Giizhik, Anishinaabeg, and other Indigenous beings have survived attempted genocide and erasure of families, languages, and ecologies at the hand of settler governments and society (Alfred and Corntassel 2005, Troser 2007, Dunbar-Ortiz 2014, Long and Lake 2018, Whyte 2018a). Great Lakes forest communities have been dramatically altered. Between the retreat of the last ice age and the eighteenth century, these forests had been predominantly shaped by fire and wind (Frelich 2002), beaver and other beings, including Indigenous tending regimes (e.g., Kimermer 2000, Long and Lake 2018). In the nineteenth and early twentieth centuries, settler-colonial society introduced unrestrained logging and draining of wetlands, followed by catastrophic wildfire (Frelich 2002). Great Lakes forests are now dominated by younger, fragmented and orphaned second-growth forests subject to settler-colonial land use, fire exclusion, and non-local species introductions (Mladenoff et al. 1993, Foster et al. 1998, Lorimer 2001, Friedman and Reich 2005). These experiences are punctuated and perpetuated by dramatic losses in Anishinaabe access to forest relatives, decision-making authority (ability to enact responsibility) for the land (McGregor 2004) and other legacies of settler-colonial domination (Alfred and Corntassel 2005, Todd 2016, Long and Lake 2018, Whyte 2018a). Forest communities are now managed in fragmented matrices by tribal, federal, state, private, and nonprofit entities for diverse values, including timber, deer wintering complexes, and wetland preservation (Trosper 2007, Dockry 2012, Reo and Whyte 2012, Waller and Reo 2018). These experiences contextualize Anishinaabe and Giizhik communities and their relationships at Bahweting and Gnoozhekaaining today.

Over the last century, Giizhik have declined in abundance across their range (Cornett et al. 2000). These declines are attributed to land-use change, timber harvesting practices, and herbivory, among other factors (Heitzman et al. 1997, Rooney et al. 2002, Hofmeyer et al. 2009, Danneyrolles et al. 2017). Declines in Giizhik have prompted virtual moratoriums on Giizhik timber harvest on public lands; yet, Giizhik timber continues to be harvested on state and private lands. Further, Giizhik are projected to lose future habitat due to climate-driven change (Prasad et al. 2007, Handler et al. 2014, Iverson et al. 2017). Though these projections address landscape-scale processes with high uncertainty at the local scale, they have prompted some forest managers to label Giizhik a “climate loser” and prioritize other more climate-adapted tree species in management (e.g., U.S. Forest Service n.d.). Rather than viewing Giizhik as a low priority, an Anishinaabe perspective would regard potential vulnerability to climate change as warranting focused attention and adaptation in relations.

Anishinaabeg that harvest and use Giizhik (gatherers) maintain adaptive relationships with diverse forests across the landscape.
Anishinaabe gatherers maintain intimate and intergenerational knowledge and communications with Giizhik, especially at the local scale. These relationalities may guide and inform forest management (Kimmerer 2000, Emery et al. 2014), particularly in understanding Giizhik at local to landscape scales, across land-tenure types and through time. Through good harvesting practices and collaboration among tribal, federal, and state forest managers, Anishinaabe gatherers at Bahweting and Gnoozhekaaning seek to support Giizhik populations and Anishinaabe-Giizhik relationships in future generations.

This project aims to generate community-based consensus among Anishinaabe gatherers at Bahweting and Gnoozhekaaning to address the following questions: What are good Anishinaabe-Giizhik relationships and how do they inform harvesting practices? What social-ecological conditions are necessary for good relationships? How have these relationships changed over time and what does our shared future look like? The objectives of this study are to: (1) highlight good Giizhik-Anishinaabe relationships at Bahweting and Gnoozhekaaning and (2) understand and articulate common practices, needs, and recommendations of gatherers for good forest relations. Additionally, this work contributes to the conceptual areas outlined and attempts to reinforce the concepts of collective continuance and relationality for readers of this special issue. Readers will not find translations among Anishinaabe relationalities and Western forest management strategies within this manuscript; this space is reserved for the work that comes before (as well as during and after) such translation. The results of this work are, however, informing Anishinaabe-led forest assessments and development of standards for forest care, which respect and protect forest communities consistent with our original instructions.

METHODS

This research originated in-community at Bahweting and Gnoozhekaaning. Regional declines in Giizhik have prompted Anishinaabeg to alter the ways that they gather and use Giizhik at Bahweting and Gnoozhekaaning. The lead author, an Anishinaabe from Bahweting, sought to better understand Giizhik and asked for help from a team of co-researchers: the Sault Ste. Marie Tribe of Chippewa Indians Natural Resource Department Wildlife Program at Bahweting and Bay Mills Indian Community Biological Services Department at Gnoozhekaaning, other Anishinaabe community members that gather and use Giizhik (gatherers), and local forest communities. Engaging Anishinaabe teachings and published literature on Indigenous research methodologies and forest kinship, the lead author led iterative processes of visiting, formal interviews, and group meetings. Co-researchers contributed to consensus-based development of project aims and methods and a self-selected group of gatherers developed this manuscript. “We” is used to include the contributions of these Anishinaabeg from Bahweting and Gnoozhekaaning.

We center the research in Anishinaabe kinship, which Whyte defined as “relationships grounded in responsibility” with “bonds of mutual caretaking and mutual guardianship” among human, plant, and other beings (2020a:119). This work engages existing, long-term relationships among co-researchers, with attention to qualities of relational accountability (Louis 2007, Wilson 2008, Kovach, 2010, TallBear 2014, Whyte 2018a, Reo 2019) and academia’s long history and ongoing abuses of Indigenous peoples’ knowledges and ways (Tuhiiwai Smith 1999, TallBear 2014, Todd 2016). In this research, we respect the relationality of Anishinaabe gikendaasowin (knowledges and syntheses), which can be accessed, stewarded, and shared only in relationship (Steinhauer 2002, Wilson 2008). Giizhik and Anishinaabe gatherers are acknowledged for their roles in the research as teachers and “dynamic Philosophers and Intellectuals” (Todd 2016:7, Reo 2019). Through experiential inquiry into their stories, processes, and recommendations, we are actively revitalizing our teachings (Tuhiiwai Smith 1999, Geniusz and Geniusz 2009) and remembering our original instructions, which guide Anishinaabe-Giizhik relationalities. This is one small effort in a larger movement of radical relationality (Goodyear-Ka’ūpua 2018, Yazzie and Baldy 2018).

We are engaging Anishinaabe and Western ethnographic methods of inquiry, analysis, synthesis, and sharing. Knowledge of Giizhik-Anishinaabe relationalities was and is collaboratively accessed through harvesting, cleaning, and using Giizhik’s gifts, visiting, semi-structured interviews, meetings, and other ceremonies. These actions are initiated and guided by asemaa and kinnikinnick, two traditional medicines exchanged in Anishinaabe protocols, which evoke responsibilities among all beings involved (Debassige 2010). It is important to note that Giizhik provides an essential component of kinnikinnick and is an active participant in these processes of communication, obligation, and accountability.

The research protocol was reviewed by tribal staff and Tribal Boards of Directors at Bahweting and Gnoozhekaaning, who passed resolutions of support for the research in 2017. The protocol was also approved by Michigan Technological University’s Institutional Review Board. Between 2017 and 2019, the lead author interviewed 25 Anishinaabeg at Bahweting and Gnoozhekaaning in a mix of purposeful, respondent-driven, and intensity sampling. These Anishinaabeg encompass a range of ages (twenties to nineties), genders, and responsibilities in community, with Giizhik and with the land. The semi-structured interviews addressed epistemological and ontological ideas (Wilson 2008, Saldaña 2013) in honorific and conversational formats, focusing on personal and community relationships with Giizhik. With gatherer permission, the interviews were recorded, transcribed, and returned to each gatherer for review and revision. The lead author developed an initial set of findings in 2019 and convened meetings among co-researchers for collective review and revision. With the guidance provided during these meetings, the lead author analyzed the interview transcripts and meeting notes using selective- and open-coding processes (Charmaz 2006) with NVivo 12.0 (QSR International 2015). Relationship themes and diagrams were drafted and shared among co-researchers in 2020 and 2021. Co-researchers discussed, developed consensus on, and revised the research findings in small and large group meetings at Bahweting, Gnoozhekaaning, and online, as well as through printed and electronic document sharing. This manuscript was developed, reviewed, and revised by the lead author and self-selected Anishinaabe gatherers. All gatherers were provided manuscript drafts and 20 gatherers provided revisions; all gatherers, or their living relatives, consented to publication. The knowledges shared through this process are not wholly
presented in this manuscript (Simpson 2007), including stories and teachings kept in-community at Bahweting and Gnoozhekaaning.

RESULTS AND DISCUSSION

Anishinaabe gatherers generously shared interwoven narratives on Anishinaabe and Giizhik histories, present, and futures in Bahweting, Gnoozhekaaning, and across the Great Lakes Region. These Anishinaabe brought diverse understandings and experiences to the work, which tested and improved our process of building consensus. Through data analysis and group discussions, we identified three overarching and interrelated influences in Giizhik and Anishinaabe relationalities: (1) spiritual relationships and ethical harvesting practices, (2) physical relationships and access, and (3) ongoing processes of settler colonialism and forest community resilience (inclusive of human beings). The following discussions analyze each of these separately, however, these influences are interwoven and contextualized by our original instructions from Creator and from plant, animal, and other teachers. Gatherers referenced these instructions, which guide Anishinaabe roles in Creation as a collective (Whyte 2018a), balance between the physical and spiritual (Courchene 2016), and our shared purpose of promoting life (McGregor 2010). Respectful spiritual relationships guide and are embodied across generations through physical practices such as gathering Giizhik. Spiritual and physical relationships are both fueled and thwarted by dual processes of settler colonialism (Tuck and Yang 2012) and collective continuance (Whyte 2018a, b).

Spiritual relationships: respect in a spirit-filled world

Gatherers talked about the spiritual basis of reality and spiritual relationships among beings. At Bahweting, Debra-Ann Pine, Zhashagi, shared:

we are all spiritual beings having a physical existence on earth. It doesn’t matter if you are human, animal or plant, we are all here connected to one another for a short period of time and will return to the earth as part of our natural cycle of life.

Giizhik and other forest beings experience this physical life in coordinated networks of families, communities, and societies. Vanessa Watts wrote:

if we accept the idea that all living things contain spirit, then this extends beyond complex structures within an ecosystem. It means that non-human beings choose how they reside, interact and develop relationships with other non-humans (2013:23).

It also means that non-human beings choose how they relate to humans: Giizhik are conscious spiritual beings, with agency in Anishinaabe life and harvesting relationships.

Anishinaabe harvesting practices are physical manifestations of spiritual relationships. Gatherers discussed their harvesting practices in terms of our original instructions, emphasizing our responsibility to maintain intergenerational relationships with, and long-term accountability to, Giizhik. Although harvesting practices are specific to the gatherer, place, season, and medicines and materials harvested, gatherers shared common practices and ethics (Simpson 2008), or relational practices of care (Tynan 2021). These practices reflect the relationship qualities that motivate responsibility (e.g., consent, trust, reciprocity, and transparency) and facilitate collective continuance through dynamic interdependence (Whyte 2021). We identified seven common relational practices of care for harvesting: prerequisite of need; preparation; communication and consent; mutual benefit; sharing; minimizing harm; and honoring all of Creation as kin (Table 1). These practices are not prescriptive; rather, they are enacted uniquely by each gatherer, within each forest, and with each tree.

Table 1. Relational practices of care for harvesting that exist within the context of our original instructions and connect all our relatives across generations and physical and metaphysical space.

| Relational practice of care | Brief description |
|-----------------------------|-------------------|
| Need                        | Prerequisite of need for Giizhik’s gifts, identified by people, plants, or other beings |
| Preparation                 | Harvesting with a good mind and heart, committing to take care of the harvest |
| Communication and consent   | Communicating the purpose/future of the harvest, offering asemaa, and abiding by the permissions of the tree and/or forest |
| Mutual benefit              | Ensuring that Giizhik and the forest benefit from harvest |
| Sharing                     | Sharing harvests and harvesting opportunities in larger systems of responsibility and reciprocity |
| Minimizing harm             | Adapting harvest to tree, forest, and landscape, minimizing harm to individual Giizhik, forest communities, and future generations |
| Honoring Creation           | Observing, learning from, and following the paths of other beings in Creation |

All gatherers discussed the prerequisite of need for Giizhik prior to harvesting. This need can be identified by people or identified and communicated by Giizhik and other forest beings. Gatherers emphasized the importance of reciprocal trust, in which both relatives take the other’s “best interest to heart” (Whyte 2018a:132). Anishinaabeg trust the intelligence and power of Giizhik’s offering, while Giizhik trusts Anishinaabeg to make the best use of their offering. Gatherers described harvesting with a clear purpose and only taking what is necessary, considering what is offered, and current and potential future needs of Giizhik and all our relatives. Bahweting Elder Jennifer McLeod shared:

when we have to take something for our need, it’s done in a humble, apologetic way, acknowledging the sacrifice that ... some other sentient being has to give up so we can be more comfortable, have medicine, or whatever it is we’re thinking that we need.

Harvesting Giizhik’s gifts involves commitment to complete use of the harvest without waste (e.g., Kimerer 2013). At Bahweting, Jackie Minton shared:

I’ll just plan: how much do I want to get and how much can I get so that I can take care of it the way it needs to be taken care of.

Harvesting more than is needed means going against our original instructions, breaking Giizhik’s trust, and interfering with their ability to fulfill their responsibilities in Creation (McGregor 2004, 2010).
Fourteen gatherers discussed the importance of respect in the form of preparation and gathering with a good mind and a good heart (Gehl 2012). Bahweting Elder Les Ailing shared:

I was told that the more effort you put into gathering your medicine, the better it’s going to be. That’s why I like to go and get it farther out in the woods, as pure as I can find it and with as much effort as I can afford.

Having a good mind and heart means being prepared to see, hear, and trust the gifts provided by Giizhik and the forest community; it also means being prepared to control one’s spiritual, emotional, intellectual, and physical impact on the forest community. Bahweting Elder Edye Nichols-ba shared:

I generally just wander along and get rid of the thoughts in my mind... before I pick any kind of medicine. I don’t want to bring all that confusion there.

Preparing for harvest is respecting Giizhik, forests, and their medicines, and fulfilling our original instructions as kin in Creation.

Twenty-one gatherers emphasized the necessity of reciprocal communication and consent, honoring Giizhik’s self-determination (Kimmerer 2013, Whyte 2020a). As Anishinaabeg, we recognize that humans have the spiritual and intuitive capacity to communicate with animal and plant relatives, and they, us. Prior to harvest, gatherers ask for help, communicate the purpose of the harvest, commit to fulfilling that purpose, and make spiritual and physical offerings in reciprocity (Kimmerer 2013, Whyte 2020b). Gatherers often begin these communications with the grandmothers and grandfathers of forest communities: trees of the longest lived experience or largest diameter, who provide guidance and protection to the community around them.

Bahweting Elder Cathy Devoy, Aashkii waabaganiikwe, shared:

you make sure you have your asemaa, your tobacco, to make an offering, to speak to that tree... Because you’re asking that tree to give you a gift from part of itself.

At Bahweting, Waabshkaa Asinekwe shared:

if a medicine doesn’t know what you want it for, it might not understand the purpose and intent. So you really need to make sure and let the Cedar know what it’s being taken for.

The process of gaining consent from Giizhik involves asking Giizhik for permission to harvest from their bodies and listening to the answers provided. Bahweting Elder Ogimachicuk, Bud Biron, shared:

I don’t just go in and say that’s the one I’m going to pick... the plants call to you - the spirit of the plant is talking to me.

At Bahweting, Waawaashkeshikwe shared:

there’s always a sign to stop. They say every plant has a guardian. And so, I don’t know what every plant’s guardian is, but I’ll be respectful for whatever happens, a bird yelling at me or anything, I take it as a sign I’m done and I stop.

These processes of communication and consent honor the spirit and self-determination of Giizhik and other forest beings; they are vital in maintaining reciprocal relationships rooted in trust.

Gatherers talked about mutual benefit through harvesting in personal relationships with Giizhik and in larger community relationships, all of which bridge generational, geographic, and metaphysical space.

At Gnoozhekaaning, Niigaanwewidiman described mutual benefit in personal relationships:

I offer my semaa as a reciprocal offering... because in our lives we need to feel like we have purpose, to be used, but not used up. To have our medicine used in a good way.

Bahweting Elder Cecil Pavlat, Sr. described harvesting to promote Giizhik’s physical health and future growth by gentle thinning:

you see some, where they’re so thick, they just grow tall and skinny because they’re fighting for light... and it’s like, ok, I can take some from here.

In actively considering mutual benefit through harvest, gatherers practice mutual caretaking (Whyte 2021), promoting current and future spiritual and physical health of trees and people (Kimmerer 2000, Long and Lake 2018).

Gatherers also discussed health promotion via sharing in broader community relationships. Twenty-four gatherers described the practice of sharing harvests and harvesting opportunities with elders, family, human and non-human communities, and future generations in support of wider community well-being, consistent with our original instructions (McGregor 2010) and Anishinaabe ethics (Simpson 2008). Six gatherers talked about sharing with other Tribes and First Nations, many of whom travel to Bahweting and Gnoozhekaaning to harvest Giizhik. Bahweting Elder Cathy Devoy, Aashkii waabaganiikwe, shared:

we gathered some last year when Standing Rock was going on because we knew out on the plains they wouldn’t have Cedar.

Gatherers described sharing within the framework of relatedness and our original instructions, refusing settler-colonial frameworks of land and tree objectification and ownership. Because they involve self-determined sacrifices by an elder being, gatherers acknowledge harvesting, using, and sharing Giizhik’s gifts as opportunities to maintain good health and relationships in larger systems of responsibility and reciprocity (Whyte 2018a). Within this system of responsibility and reciprocity, several gatherers shared concerns about long-term potential for overharvest if regional Giizhik forests continue declining and harvesting pressure increases at Bahweting and Gnoozhekaaning.

These active forms of connection between Anishinaabeg and Giizhik link directly to the concept of relationalities, i.e., relationships with fellow humans, with the land, and with more-than-human beings including manidoog that are fluid across space and time and involve culturally specific moral qualities (Graham 1999, Diaz 2011, Tynan 2021) such as (for Anishinaabeg) trust, consent, reciprocity, and accountability. Similar to Simpson (2008), McGregor (2010), and others, our
work demonstrates a practice-oriented understanding of relationalities in which acts of reciprocity that fulfill kinship responsibilities are central.

Twenty-three gatherers discussed the responsibility of minimizing harm to individual Giizhik, forest communities, and future generations. Gatherers adaptively adjust harvesting techniques to individual trees, forests, and the landscape. Gatherers avoid harvesting the first or only individuals they encounter and spread harvest across trees and sites. Gnoozhekaaning Elder Wanda Perron shared:

*I might harvest some Cedar from one area and then move on to another, so you wouldn’t even know that I was there.*

Over half of the gatherers discussed seeking sites away from busy roads and built infrastructure to avoid contamination and harming already stressed trees. Peggy Holappa (Little Traverse Bay Bands of Odawa Indians) shared:

*I try to pick away from the road because I believe the plants, even though they’re tough, all the pollution from the traffic and cars and the salt, that affects them.*

The late Bahweting Elder Basel Willis-ba described assessing and ensuring individual tree health:

*looking at somebody, you can tell if they’re sick or healthy ... The tree’s the same thing. And how much you decide to gather - you can take too much away from that tree.*

At Bahweting, Lori Gambardella, Waasinodewke, shared:

*because it takes so long to grow, you don’t want to just strip one tree to get everything you need. You gather from their community.*

Through conscious consideration and adaptive harvesting practices, gatherers honor their responsibility to minimize the harm they cause to Giizhik and forest communities.

Old-aged grandmother and grandfather trees and younger saplings and seedlings are important indicators of Giizhik, forest, and landscape health. For this reason, 22 gatherers stressed the importance of visiting and observing Giizhik within diverse forests across the landscape, monitoring Giizhik abundance and health, and adapting their harvesting in this landscape-scale relationship. Gnoozhekaaning Elder Justin Carrick described monitoring trees for potential harvest:

*whenever I’m out and about, I am aware of, I’m always taking inventory - there’s a nice cedar here - and I do the same thing with birch.*

This redundancy and accountability across the landscape facilitates collective continuance in Anishinaabe-Giizhik relationalities (Whyte 2018a, b).

Gatherers described the influence and active participation of plants, animals, water, fire, and manidoog as teachers, mediators, and guides in Giizhik-Anishinaabe relationalities. These elder beings follow their original instructions and remind Anishinaabeg to do the same. Nine gatherers shared stories about hunting rabbits and deer, as well as recent changes in their populations. Gnoozhekaaning Elder Paula Carrick described hunting with her grandmother:

*we always used [thickets of Giizhik] for where the rabbits would be.*

A few gatherers discussed decreases in rabbit populations over the last three decades, due to housing and other development. Gatherers described long-term increases in deer populations and their seasonal relationships with Giizhik. Bahweting Elder John Causley, Sr. described relationships among Giizhik, water, and deer in swamps:

*that’s where the deer migrate to in the wintertime. They go in there and protect their little ones. They’ve got plenty of water and plenty of Cedar.*

Gatherers also talked about bears, wolves, cougars, and beavers. At Gnoozhekaaning, Jesse Bowen described how beavers “set the tone for the swamps ... they have an effect on Giizhik growth in the swamp.” Gatherers acknowledged how wildlife and other relatives maintain dynamic relationships with Giizhik, which have guided Anishinaabe-Giizhik relationalities since time immemorial.

Gatherers described ways in which they are accountable for the impact of their harvest and lifestyles within this coordinated web of relationalities, spanning metaphysical, physical, and generational space. Interdependence within this web offers an adaptive source of identity for Anishinaabeg and a means to ensure collective continuance (Whyte 2018a). Citing regional declines in Giizhik as evidence, gatherers discussed the risk of losing Giizhik if we don’t respect and protect them as elder relatives and use their spiritual and physical gifts in a good way (Simpson 2008, Borrows in McGregor 2010:30, Kimmerer 2013).

At Bahweting, Keith D. Smith (Red Lake Band of Chippewa) shared:

*just keeping it safe and respected, I guess really is what it comes down to. Once we stop doing that, then I guess it allows for those powers that be within nature to take it from us. That’s why we’ve got to take care of things. They’re the ones in charge.*

Expressions like this synthesize Anishinaabeg practice-based relationalities into basic tenets. Here, Smith shares the teaching that humans are not in charge, but yet we have important responsibilities to care for the rest of Creation.

**Physical relationalities: access and continuity**

Practical physical relationships with Giizhik in diverse forest communities are quintessential threads in the fabric of Anishinaabeg lifeways (McGregor 2004, 2010). Gatherers described the ways in which past, present, and future generations of both people and plants have maintained continuous physical practices of relationality at Bahweting and Gnoozhekaaning. They also shared what Tynan described as “new relationalities also borne of practice, a practice of colonial-mismanagement ... that treats the land as a resource for extraction, Indigenous knowledges as ‘Other ...’” (2021:6). Our discussions focused on changes in Anishinaabeg access to Giizhik through generations due to settler-colonial disruptions (Tuck and Yang 2012, Watts 2013, Whyte 2018a) and the creative adaptations of Giizhik and Anishinaabeg. Access is defined here to include health and abundance of Giizhik, gathering regulations, adjudicated and inherent rights and responsibilities, spatial distance and resource
requirements (e.g., time, transportation, physical ability), and potential for interference (by landowners, law enforcement, and the public).

Gatherers emphasized intergenerational decreases in access due to settler-colonial processes, which seek to replace Anishinaabe ecologies, governance, and economies with settler-colonial systems (Whyte 2018a:134). Anishinaabe forest ecologies include large expanses of forests, dynamic beaver-water relationships, and fire on the landscape. These ecologies follow tree lifecycles that span hundreds of years, from seedlings to old-aged trees. Within settler-colonial ecologies, forests are fragmented and water, fire, plant, animal, and Anishinaabe lifeways are restrained by structures of land ownership and authoritative management.

Bahweting Elder Basel Willis-ba described the changes since his youth:

> it’s hard to tell somebody the story because they’re used to now. Because like, woods was thick and you never moved away. The woods was really thick and you could go and gather. And the woods was alive. Now woods is dead ... In them days, you could go in the woods. Now every tree you see has got a no trespassing sign on it.

Settler-colonial forest commodification, land-use change, and pollution were commonly discussed threats to Giizhik and Giizhik-Anishinaabe relationships. Through commodification, Giizhik is objectified as a non-sentient resource subject to forest product management, pollution, and removal for anthropogenic infrastructure development (Watts 2013). For the past few centuries, Giizhik has actively experienced commodification, extraction, and degradation. These processes drive past, present, and potential for interference (by landowners, law enforcement, and the public).

Fourteen gatherers described decreases in Giizhik health and habitat due to settler-colonial land-use change and forest management. Peggy Holappa (Little Traverse Bay Bands of Odawa Indians) shared:

> the only thing that changes is development - people cutting down where Cedar’s growing.

Twelve gatherers critiqued settler-colonial forest management practices, which impose short-term management standards and timelines at the expense of forest community lifeways, lifecycles, and well-being. Bahweting Elder Clyde Bonno described forest managers who “don’t take care of Cedar as much as they do other timber.” Most gatherers described having to travel further across the landscape and in the woods to harvest Giizhik due to declines in Giizhik habitat and populations across all life stages.

Bahweting Elder Basel Willis-ba described the loss of Elder, large diameter Giizhik and the changes in Anishinaabe harvesting relationships since his youth:

> they used to get them Cedar were so big you couldn’t put your arms around them, but that’s - them gone now. As soon as they get big, they’re cut down. They have no regard for the bush.

Settler-colonial economies and ecologies have dramatically altered the lived experiences of Giizhik and Anishinaabe on the landscape.

Sixteen gatherers discussed land tenure and harvesting regulations as important mechanisms in changing access to Giizhik. Land tenure includes tribal, federal, state, and private land ownership under federal law. It is a legacy and constant reminder of settler-colonial efforts to dominate and erase our ancestors, ourselves, and our futures. Land-tenure boundaries are superimposed upon forest communities, creating a patchwork of physical and legal constraints on Giizhik-Anishinaabe relationships. It is important to note that our ancestors retained our inherent harvesting rights and responsibilities across the Treaty of 1836 Ceded Territory (Fig. 3). However, these treaty rights have been violated (Whyte 2020b) and public comprehension of such rights remains limited (Stark and Stark 2018). Gatherers described uncertainties in harvesting regulations and the continuous potential for interference by misinformed law enforcement or public. Abundant Giizhik grow on federal and state lands, while tribal forestlands are limited in size, especially at Bahweting. Despite legal, social, and physical barriers, Anishinaabeg at Bahweting and Gnoozhekaaning have maintained strong relationships with these forests on federal and state lands. Citing rights and responsibilities through the lens of our original instructions, not federal government interpretations, gatherers described spiritual relationships with Giizhik, tree and forest qualities, and resource requirements (e.g., transportation, physical ability) as more important considerations than land ownership when selecting harvesting sites. However, the legality of harvest does influence Anishinaabe relationships with Giizhik.

Our discussions about land tenure and harvesting regulations were often filled with laughter about common experiences of hurrying to harvest in areas of uncertain ownership or to avoid harassment. Gatherers described strong relationships with Giizhik in which challenges in access are adaptively met with humor, creativity, and tenacity.

Kyle Whyte wrote that "relationships that are constantly shifting do not sacrifice the possibility of continuity" (2018a:129). Gatherers described the shifts that their ancestors, themselves, and Giizhik have made, and continue to make, in ensuring continuity in Giizhik-Anishinaabe relationalities. Where destructive settler-colonial systems have inhibited or prevented access among Anishinaabeg and Giizhik on the landscape, both people and plants have adaptively asserted their responsibilities to, and interdependence with, one-another. Yazzie and Baldy described this means of continuity: “It is in our interdependencies and reciprocities that we derive our greatest power and secure a future for all” (2018:9).

In our discussions, all gatherers acknowledged the physical and spiritual resilience of Giizhik. Gnoozhekaaning Elder Jim LeBlanc shared:

> there was a Cedar that was knocked down, probably by the ice or something. It looked like it was doomed but it turned into five trees and that’s amazing to me. That’s a perfect example of what humans are capable of from our adversity.

The abundance of Giizhik around Bahweting and Gnoozhekaaning was highlighted by 18 gatherers, and 13 gatherers projected an abundant future here, despite regional declines.
Twenty-three gatherers described the ways in which Giizhik protects Anishinaabeg, emphasizing humanity’s responsibility to protect Giizhik as elder relatives and care for mashkiigoon (wetlands/places of the strength of the Earth) in relationships of mutual guardianship (Whyte 2021).

Bahweting Elder Ningaa'bi'ang Wiidawa, Michael McCoy, shared:

> we’re protected here by that medicine in so many different ways. But, if they come in and they keep dumping chemicals, everything else - that’s going to be the end of everything. This medicine may be one of the last holdouts.

Federal wetland protection policies were acknowledged by gatherers as historically vital in protecting Giizhik. Bahweting Elder Edye Nichols-ba said:

> in the explosion of population and building... I think so far, one of the good things that have saved it are wetland protections. I think that’s what’s helped save a lot of our natural plants.

Gatherers described our obligations to protect Giizhik through continuous spiritual, physical, and emotional relationships. By attending ceremonies, hearing and sharing Anishinaabe teachings, picking up the Anishinaabe language, and visiting, harvesting, and using Giizhik in a good way, we learn and live the relational aspects of our original instructions (Johnston 1990).

At Bahweting, Amy McCoy shared:

> there’s a deeper level comprehension of the teachings that is ever-expanding. We catch glimpses of what the Ancestors left on the trail. It’s like connecting intergenerational dots in a grand constellation to reawaken Anishinaabeg. As we return to original instruction, living with natural law, we reawaken our families.

As humans, we have an inherent responsibility to pass on Anishinaabe lifeways to the next generations, just as Giizhik grows and passes their lifeways to the next generations (McGregor 2010).

Bahweting Elder John Causley, Sr. talked about his experiences teaching Anishinaabe youth:

> you always wonder what’s going to carry on... Do they practice anything that you teach them to do? And I think that’s the most important thing right there.

Through adaptive physical and spiritual relationalities, we honor past generations and empower current and future generations to maintain collective continuance.

Growing relationality

Gatherers acknowledged and critiqued the sometimes parallel, oftentimes conflicting, duality of Anishinaabe and Western ways. They stressed the importance of acknowledging and resolving certain conflicts among these ways of being, centering the responsibilities of all beings in Creation, and the fallacy in commodifying our relatives as resources (Kimmerer 2013, Wildcat in Berry 2018). The resolution of this conflict is a necessary path into the future for the survival of humankind and all of Creation. Bay Mills Elder Kathy Leblanc told a story that was shared with her by late Gnoozhekaaning pipe carrier and traditional healer Andrew LeBlanc:

> Andrew-ba said he had to gather Cedar boughs for a ceremony. He went to an area where he knew there were many Cedar trees and offered tobacco to a tree before picking. He said that, in his prayer, he requested that the tree accept his tobacco, he asked permission to cut enough boughs for the ceremony, and he gave thanks for this gift. While he was placing his offering next to the Grandfather Cedar, he heard the tree say ‘No.’ Andrew-ba said he was surprised to hear this tree tell him no, that he couldn’t have any Cedar. And he asked, ‘How come?’ The tree told him, ‘Look at what your kind has been doing to us.’ Andrew-ba looked up the road and, as far as he could see, the Cedars were all cut down, wasted, and left to die underneath the telephone lines. Andrew-ba told the Cedar, ‘but, I’m Anishinaabe. We offer our tobacco and only take what we need. We aren’t the ones that have done this.’ The Cedar told him, ‘your kind...two-legged. At that point, Andrew-ba said it dawned on him that the Cedar was talking about human beings when he said two-legged. He had never really thought about it that way. With this new understanding, Andrew-ba apologized with his tobacco on behalf of all humans... two-leggeds. Then the Grandfather Giizhik granted him permission to go ahead, ‘Take what you need.’ So Andrew-ba went and collected boughs from the trees that were already cut down.

This story allows us to better understand our responsibilities and ourselves by understanding how Giizhik views us: as two-leggeds, inevitably connected to one-another in Creation.

We discussed the urgent need for Anishinaabeg and Anishinaabe knowledges to inform forest management at Bahweting, Gnoozhekaaning, and across the region. The Sault Ste. Marie Tribe of Chippewa Indians Wildlife Program and Bay Mills Indian Community Biological Services Department have been active collaborators in this research and in other restorative work on tribal and public forests with Bahweting and Gnoozhekaaning Anishinaabeg (ITCMI 2018, 2019, STWP-HNF 2021). Gatherers described the importance of sharing some Anishinaabe knowledges with the public, with the careful intention of raising awareness and fulfilling our responsibility to care for all our relatives in Creation (McGregor 2004). Several gatherers described recent convergences among Anishinaabe and Western sciences and stressed the need for more connections.

Bahweting Elder Jennifer McLeod shared:

> now scientists have discovered that trees sense fear - and it’s like, another ta-da moment that Anishinaabe people have known for an eternity. Do I think that those trees fear when those big machines are coming in and stripping down all their relatives? Absolutely... and if you get to a point in your life when you’re connected to Creation, you cannot be ambivalent about that.

With this work, we have carefully articulated some of the connections among Anishinaabeg, Giizhik, and other relatives in Creation. Our focus on relational harvesting practices lays a foundation for growing relationality, recognizing spirit, and
renewing collective continuance in forest relations at Bahweting and Gnoozhekaaning, with direct connections to the practices of forest management. Although these understandings do not resolve the resistance to spirit within Western science, they offer footing for “vibrant futures” in forest relationalities at Bahweting and Gnoozhekaaning (Yazzie and Baldy 2018).

CONCLUSION
Giizhik maintains essential roles in Anishinaabe teachings, ceremony, and lifeways. Anishinaabeg at Bahweting and Gnoozhekaaning have adaptively gathered Giizhik through millennia of change, maintaining deep relationships with Giizhik and the forest communities in which they grow. Recent and projected declines in Giizhik habitat and populations warrant closer attention to, and engagement of, these deep relationships and associated metaphysical realities (Tuhiwai Smith 1999, Cajete 2000, Watts 2013). They require understanding of Anishinaabe forest relationalities: dynamic webs of kin relationships among spiritual beings, each with unique roles, connected by responsibilities in Creation.

Through our discussions and experiences among Anishinaabe gatherers and Giizhik, we have defined seven relational practices of care (Tynan 2021) based on Anishinaabe responsibilities to Giizhik and to the rest of Creation. These practices serve to protect and encourage the coupled processes of forest and Anishinaabe community well-being by allowing each entity to follow their original instructions. They embody Anishinaabe forest relationalities, in which: (1) Giizhik and other forest beings are sentient, spiritual beings; (2) forest community resilience depends upon the abilities of Giizhik, Anishinaabeg, and other forest beings to fulfill their unique responsibilities in Creation; and (3) intergenerational spiritual, physical, emotional, and intellectual relationships among healthy and diverse Giizhik, Anishinaabeg, and relatives across the landscape, are vital sources of collective continuance. Facilitating long-term Giizhik-Anishinaabe relationships requires Anishinaabe leadership in understanding and supporting the related processes of Giizhik and forest growth, Anishinaabe tending regimes, and forest community well-being across forest communities, land tenures and management frameworks, and time (Kimmerer 2000, Emery et al. 2014, Long and Lake 2018).

The seven relational practices of care, underlying responsibilities of Anishinaabe forest relationalities, and knowledge-sharing processes identified through this work can inform efforts beyond Giizhik and Anishinaabeg, Bahweting and Gnoozhekaaning. We hope that these ideas and processes can help forest managers view management in the context of forest relationalities and understand management practices as relational practices (Tynan 2021). This work is undertaken with the guidance, and for the benefit, of past, present, and future generations of Giizhik, Anishinaabeg, and “all our relations.”

Bahweting Elder Les Ailing advised: 

so for the future of Cedars and all of our plants, it’s going to take prayer and it’s going to take conscious thought and effort to continue to keep those trees available for everybody; you know, even those ones that think we’re crazy. [laughs]

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Data Availability:
The transcripts and meeting notes that support the findings of this study may be available on request from the corresponding author, R. T. C., subject to approval by each individual speaker/participant and Tribal Institutional Review Board and/or Board of Directors. None of the code are publicly available because they are protected by data sharing agreements and require individual and tribal approvals prior to sharing. Ethical approval for this research study was granted by the Bay Mills Indian Community Board of Directors (Resolution 17-6-20), Sault Ste. Marie Tribe of Chipewa Indians Board of Directors (Resolution 2017-156), and Michigan Technological University’s Institutional Review Board (1073281-4).

LITERATURE CITED
Alfred, T., and J. Corntassel. 2005. Being Indigenous: resurgences against contemporary colonialism. Government and Opposition 40(4):597-614. https://doi.org/10.1111/j.1477-7053.2005.00166.x
Benton-Banai, E. 1988. The Mishomis book: the voice of the Ojibway. Red School House, Saint Paul, Minnesota, USA.
Berry, C. 2018. Scholar Daniel Wildcat in discussing the environment: it’s relatives, not ‘resources.’ 13 September, Indian Country Today. IndiJ Public Media, Phoenix, Arizona, USA. https://indiancountrytoday.com/archive/scholar-daniel-wildcat-in-discussing-the-environment-its-relatives-not-resources.
Cajete, G. 2000. Native science: natural laws of interdependence. Clear Light, Santa Fe, New Mexico, USA.
Charmaz, K. 2006. Constructing grounded theory: a practical guide through qualitative analysis. Sage, London, UK.
Clark, R. M. 2021. Understanding Giizhik communities and Anishinaabe forest relations in the Eastern Upper Peninsula of Michigan. Dissertation. Michigan Technological University, Houghton, Michigan, USA. https://doi.org/10.37099/mtu.dc.etdr/1325
Cornett, M. W., L. E. Frelich, K. J. Puetzmann, and P. B. Reich. 2000. Conservation implications of browsing by *Odocoileus virginianus* in remnant upland *Thuja occidentalis* forests. Biological Conservation 93(3):359-369. https://doi.org/10.1016/S0006-3207(99)00129-9

Courchene, D. 2016. Anishinaabe dibendaagoziwin (ownership) and ganawenindiiwin (protection). Pages 40-56 in C. Callison, L. Roy, and G. A. LeCheminant, editors. Indigenous notions of ownership and libraries, archives, and museums. Volume 166. Walter de Gruyter GmbH, Berlin, Germany.

Danielsen, K. C. 2002. The cultural importance, ecology, and status of Giižik (northern white cedar) in the ceded territories. Great Lakes Indian Fish and Wildlife Commission, Odanah, Wisconsin, USA.

Danneyrolles, V., S. Dupuis, D. Arseneault, R. Terrail, M. Leroyer, A. de Römer, and J.-C. Ruel. 2017. Eastern white cedar long-term dynamics in eastern Canada: implications for restoration in the context of ecosystem-based management. Forest Ecology and Management 400:502-510. https://doi.org/10.1016/j.foreco.2017.06.024

Debassige, B. 2010. Re-conceptualizing Anishinaabe miino -bimaadiziwin (the good life) as research methodology: a spirit-centered way in Anishinaabe research. Canadian Journal of Native Education 33(1):11-28.

Deloria, V. 1999. Spirit and reason: the Vine Deloria, Jr., Reader. Fulcrum, Golden, Colorado, USA.

Diaz, V. M. 2011. Voyaging for anti-colonial recovery: Austronesian seafaring, archipelagic rethinking, and the re-mapping of Indigenicity. Pacific Asia Inquiry 2(1):21-32.

Dockry, M. J. 2012. Indigenous forestry in the Americas: comparative environmental histories in Bolivia and Wisconsin. Dissertation. University of Wisconsin Madison, Madison, Wisconsin, USA.

Dunbar-Ortiz, R. 2014. An indigenous peoples’ history of the United States. Beacon, Boston, Massachusetts, USA.

Emery, M. R., A. Wrobel, M. H. Hansen, M. Dockry, W. K. Moser, K. J. Stark, and J. H. Gilbert. 2014. Using traditional ecological knowledge as a basis for targeted forest inventories: paper birch (*Betula papyrifera*) in the US Great Lakes region. Journal of Forestry 112(2):207-214. https://doi.org/10.5849/jof.13-023

Foster, D. R., G. Motzkin, and B. Slater. 1998. Land-use history as long-term broad-scale disturbance: regional forest dynamics in central New England. Ecosystems 1(1):96-119. https://doi.org/10.1007/s100219900008

Frelich, L. E. 2002. Forest dynamics and disturbance regimes: studies from temperate evergreen-deciduous forests. Cambridge University Press, Cambridge, UK. https://doi.org/10.1017/CBO9780511542046

Friedman, S. K., and P. B. Reich. 2005. Regional legacies of logging: departure from presettlement forest conditions in northern Minnesota. Ecological Applications 15(2):726-744. https://doi.org/10.1890/04-0748

Gehr, L. 2012. Debwewin journey: a methodology and model of knowing. AlterNative: An International Journal of Indigenous Peoples 8(1):53-65. https://doi.org/10.1177/117718011200800105

Geniusz, M. S. 2015. Plants have so much to give us, all we have to do is ask: Anishinaabe botanical teachings. University of Minnesota Press, Minneapolis, Minnesota, USA.

Geniusz, W. D. 2009. Our knowledge is not primitive: decolonizing botanical Anishinaabe teachings. Syracuse University Press, Syracuse, New York, USA.

Goodyear-Ka’qpua, N. 2018. Indigenous oceanic futures: challenging settler colonialisms and militarization. Pages 82-102 in L. Tuhuiwi Smith, E. Tuck, and K. W. Yang. Indigenous and decolonizing studies in education: mapping the long view. Routledge, New York, New York, USA. https://doi.org/10.4324/9780429505010-6

Graham, M. 1999. Some thoughts about the philosophical underpinnings of Aboriginal worldviews. Worldviews: Global Religions, Culture, and Ecology 3(2):105-118. https://doi.org/10.1163/15685399X000090

Handler, S., M. J. Duveneck, L. Iverson, E. Peters, R. M. Scheller, K. R. Wythers, L. Brandt, P. Butler, M. Janowiak, P. D. Shannon, C. Swanston, A. Clark Eagle, J. G. Cohen, R. Corner, P. B. Reich, T. Baker, S. Chin, E. Clark, D. Fehringer, J. Fosgitt, J. Gries, C. Hall, K. R. Hall, R. Heyd, C. L. Hoving, I. Ibáñez, D. Kuhn, S. Matthews, J. Muladore, K. Nadelhoffer, D. Neumann, M. Peters, A. Prasad, M. Sands, R. Swaty, L. Wonch, J. Daley, M. Davenport, M. R. Emery, G. Johnson, L. Johnson, D. Neitzel, A. Rissman, C. Rittenhouse, and R. Ziel. 2014. Michigan forest ecosystem vulnerability assessment and synthesis: a report from the Northwoods Climate Change Response Framework project. General Technical Report NRS-129.US Department of Agriculture, Forest Service, Northern Research Station, Newtown Square, Pennsylvania, USA. https://doi.org/10.2737/NRS-GTR-129

Hart-Fredeluces, G., M. Burnham, M. Vaughan, G. Hart, J. Hart, E. St. Martin, J. Ward, and T. Ticktin. 2022. Indigenous caretaking of beargrass and the social and ecological consequences of adaptations to maintain beargrass weaving practices. Ecology and Society 27(4):22. https://doi.org/10.5751/ES-13588-270422

Heitzman, E., K. S. Pregitzer, and R. O. Miller. 1997. Origin and early development of northern white-cedar stands in northern Michigan. Canadian Journal of Forest Research 27 (12):1953-1961. https://doi.org/10.1139/x97-157

Hofmeyer, P. V., L. S. Kenefic, and R. S. Seymour. 2009. Northern white-cedar ecology and silviculture in the Northeastern United States and Southeastern Canada: a synthesis of knowledge. Northern Journal of Applied Forestry 26(1):21-27. https://doi.org/10.1093/njaf/26.1.21

Houde, N. 2007. The six faces of traditional ecological knowledge: a spirit: departures from presettlement forest conditions in northern Minnesota. Ecological Applications 15(2):726-744. https://doi.org/10.1890/04-0748

https://www.ecologyandsociety.org/vol27/iss4/art29/
Inter-Tribal Council of Michigan (ITCM). 2018. 2017-2018 Forest understory adaptation project report. Sault Ste. Marie, Michigan, USA. https://itcmi.org/wp-content/uploads/2022/03/2018ITCMForUndReport.pdf

Inter-Tribal Council of Michigan (ITCM). 2019. Ishkode project report to the Sault Ste. Marie Tribe of Chippewa Indians Wildlife Program. Sault Ste. Marie, Michigan, USA. https://www.saulttribe.com/membership-services/natural-resources/download-files?folder=Technical%2BReports

Iverson, L. R., F. R. Thompson, III, S. Matthews, M. Peters, A. Prasad, W. D. Dijak, J. Fraser, W. J. Wang, B. Hanberry, H. He, M. Janowiak, P. Butler, L. Brandt, and C. Swanston. 2017. Multi-model comparison on the effects of climate change on tree species in the eastern U.S.: results from an enhanced niche model and process-based ecosystem and landscape models. Landscape Ecology 32:1327-1346. http://dx.doi.org/10.1007/s10980-016-0404-8

Johnston, B. 1990. Ojibway heritage. University of Nebraska Press, Lincoln, Nebraska, USA.

Kelly, P. E., E. R. Cook, and D. W. Larson. 1994. A 1397-year tree-ring chronology of Thuja occidentalis from cliff faces of the Niagara Escarpment, southern Ontario, Canada. Canadian Journal of Forest Research 24(5):1049-1057. https://doi.org/10.1139/x94-137

Kimmerer, R. W. 2000. Native knowledge for native ecosystems. Journal of Forestry 98(8-4)-9.

Kimmerer, R. W. 2013. Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants. Milkweed Editions, Minneapolis, Minnesota, USA.

Kimmerer, R. W., and F. K. Lake. 2001. The role of indigenous burning in land management. Journal of Forestry 99(11):36-41.

Kovach, M. 2010. Indigenous methodologies: characteristics, conversations, and contexts. University of Toronto Press, Toronto, Ontario, Canada.

Long, J. W., and F. K. Lake. 2018. Escaping social-ecological traps through tribal stewardship on national forest lands in the Pacific Northwest, United States of America. Ecology and Society 23(2):10. https://doi.org/10.5751/ES-10041-230210

Lorimer, C. G. 2001. Historical and ecological roles of disturbance in eastern North American forests: 9,000 years of change. Wildlife Society Bulletin 29:425-439.

Louis, R. P. 2007. Can you hear us now? Voices from the margin: using Indigenous methodologies in geographic research. Geographical Research 45(2):130-139. https://doi.org/10.1111/j.1745-5871.2007.00443.x

Marsden, R. 2013. Anishinaabe research and Bimaadiziwin, or ‘the good life.’ Dissertation. Michigan State University, East Lansing, Michigan, USA.

McCoy, A. C. 2007. Minobimaadiziwin: perceiving the good life through Anishinaabe language. Thesis. Michigan State University, East Lansing, Michigan, USA.

McGregor, D. 2004. Traditional ecological knowledge and sustainable development. Pages 72-91 in M. Blaser, H. A. Feit, and G. McRae, editors. In the way of development: Indigenous peoples, life projects, and globalization. Indigenous Development Research Center, Zed, New York, New York, USA. https://www.idrc.ca/en/book/way-development-indigenous-peoples-life-projects-and-globalization

McGregor, D. 2010. Honouring our relations: an Anishinaabe perspective on environmental justice. Pages 27-41 in J. Agyeman, P. Cole, R. Haluza-Delay, and P. O’Riley, editors. Speaking for ourselves: environmental justice in Canada. University of British Columbia Press, Vancouver, British Columbia, Canada.

Mladenoff, D. J., M. A. White, J. Pastor, and T. R. Crow. 1993. Comparing spatial pattern in unaltered old-growth and disturbed forest landscapes. Ecological Applications 3(2):294-306. https://doi.org/10.1890/1941832

Prasad, A. M., L. R. Iverson, S. Matthews, and M. Peters. 2007-ongoing. A climate change atlas for 134 tree forest species of the Eastern United States [database]. Northern Research Station, USDA Forest Service, Delaware, Ohio, USA. https://www.fs.usda.gov/nrs/atlas/tree/

QSR International. 2015. NVivo. Version 11. QSR International, Burlington, Maine, USA. https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home

Reo, N. J. 2019. Inawendiwin and relational accountability in Anishinaabeg studies: the crux of the biscuit. Journal of Ethnobiology 39(1):65-75. https://doi.org/10.2993/0278-0771-39.1.65

Reo, N. J., and K. P. Whyte. 2012. Hunting and morality as elements of traditional ecological knowledge. Human Ecology 40(1):15-27. https://doi.org/10.1007/s10745-011-9448-1

Rooney, T. P., S. L. Solheim, and D. M. Waller. 2002. Factors affecting the regeneration of northern white cedar in lowland forests of the Upper Great Lakes region, USA. Forest Ecology and Management 163(1-3):119-130. https://doi.org/10.1016/s0378-1127(01)00532-1

Saldaña, J. 2013. The coding manual for qualitative researchers. Sage, London, UK.

Salmón, E. 2000. Kincentric ecology: Indigenous perceptions of the human–nature relationship. Ecological Applications 10(5):1327-1332. https://doi.org/10.1890/1051-0761(2000)010[1327:KEI2.0.CO;2

Sault Ste. Marie Tribe of Chippewa Indians Wildlife Program and Hiawatha National Forest (STWP-HNF). 2021. Joint adaptive fire management plan. Sault Ste. Marie Tribe of Chippewa Indians, Sault Ste. Marie, Michigan, USA.

Simpson, A. 2007. On ethnographic refusal: Indigeneity, ‘voice’ and colonial citizenship. Junctures: The Journal for Thematic Dialogue (9):67-80. https://pages.ucsd.edu/~rfrank/class_web/ES-270/SimpsonJunctures9.pdf

Simpson, L. 2008. Looking after Gdoo-naaganinaa: precolonial Nishnaabeg diplomatic and treaty relationships. Wicazo Sa Review 23(2):29-42. https://doi.org/10.1353/wic.0.0001

Stark, H. 2010. Respect, responsibility, and renewal: the foundations of Anishinaabe treaty making with the United States and Canada. American Indian Culture and Research Journal 34(2):145-164. https://doi.org/10.17953/aicr.34.2.j041450310818771
Stark, H. K. 2012. Marked by fire: Anishinaabe articulations of nationhood in treaty making with the United States and Canada. American Indian Quarterly 36(2):119-149. https://doi.org/10.5250/amerindiquar.36.2.0119

Stark, H. K. and K. J. Stark. 2018. Nenabozho goes fishing: a sovereignty story. Daedalus 147(2):17-26. https://doi.org/10.1162/DAED_a_00486

Steinhauer, E. 2002. Thoughts on an Indigenous research methodology. Canadian Journal of Native Education 26(2):69-81. https://doi.org/10.14288/cjne.v26i2.195922

TallBear, K. 2014. Standing with and speaking as faith: a feminist-Indigenous approach to inquiry. Journal of Research Practice 10(2):N17.

Teaiwa, Teresia K. 1997. Yaqona/Yagona: roots and routes of a displaced Native. Pages 7-13 in S. Mishra and E. Guy, editors. Dreadlocks in Oceania. Department of Literature and Language, University of the South Pacific, Suva, Fiji.

Todd, Z. 2016. An Indigenous feminist’s take on the ontological turn: ‘ontology’ is just another word for colonialism. Journal of Historical Sociology 29(1):4-22. https://doi.org/10.1111/johs.12124

Trosper, R. L. 2007. Indigenous influence on forest management on the Menominee Indian Reservation. Forest Ecology and Management 249(1-2):134-139. https://doi.org/10.1016/j.foreco.2007.04.037

Tuck, E., and K. W. Yang. 2012. Decolonization is not a metaphor. Decolonization: Indigeneity, Education and Society 1(1):1-40.

Tuhiwai Smith, L. 1999. Decolonizing methodologies: research and Indigenous peoples. Zed, London, UK.

Turner, N. J., M. B. Ignace, and R. Ignace. 2000. Traditional ecological knowledge and wisdom of Aboriginal peoples in British Columbia. Ecological Applications 10(5):1275-1287. https://doi.org/10.2307/2641283

Tynan, L. 2021. What is relationality? Indigenous knowledges, practices and responsibilities with kin. Cultural Geographies 28(4):597-610. https://doi.org/10.1177%2F14744740211029287

U.S. Forest Service. [Date unknown]. Future state-wide changes. Combined species outputs - current and potential future habitat, capability, and migration - climate change atlas. Northern Research Station, USDA Forest Service, Madison, Wisconsin, USA. https://www.fs.usda.gov/nrs/atlas/combined/

Vizenor, G. R. 1999. Manifest manners: narratives on postindian survivance. University of Nebraska Press, Lincoln, Nebraska, USA.

Waller, D. M., and N. J. Reo. 2018. First stewards: ecological outcomes of forest and wildlife stewardship by Indigenous peoples of Wisconsin, USA. Ecology and Society 23(1):45. https://doi.org/10.5751/ES-09865-230145

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 and Society 2(1):20-34.

Whyte, K. 2018b. Food sovereignty, justice, and Indigenous peoples. Pages 345-366 in A. Barnhill, T. Doggett, and M. Budolfson, editors. The Oxford handbook of food ethics. Oxford University Press, Oxford, UK.

Whyte, K. 2018a. Settler colonialism, ecology, and environmental injustice. Environment and Society 9(1):125-144. https://doi.org/10.3167/ares.2018.090109

Whyte, K. 2020b. Indigenous environmental justice: anti-colonial action through kinship. Pages 266-278 in B. Coolsaet, editor. Environmental justice: key issues. Routledge, Oxfordshire, England, UK.

Whyte, K. 2020a. Sciences of consent: Indigenous knowledge, governance value, and responsibility. Pages 117-130 in K. Intemann and S. Crasnow, editors. Routledge handbook of feminist philosophy of science. Routledge, Oxfordshire, England, UK.

Whyte, K. P. 2021. Time as kinship. Pages 39-55 in J. Cohen, and S. Foote, editors. The Cambridge companion to environmental humanities. Cambridge University Press, Cambridge, Massachusetts, USA. https://doi.org/10.1017/9781009039369.005

Wilson, S. 2008. Research is ceremony: Indigenous research methods. Fernwood, Black Point, Nova Scotia, Canada.

Yazzie, M. K., and C. R. Baldy. 2018. Introduction: Indigenous peoples and the politics of water. Decolonization: Indigeneity, Education and Society 7(1). https://doi.org/10.7591/978151714290-004