



GARRISON INSTITUTE

## Pathways to Planetary Health

### Earth Awareness: Mapping an emergent relational field

\*DRAFT MANUSCRIPT IN REVIEW\*

#### Abstract

Amidst deepening ecological disruption and widespread disconnection from nature, this study explores the emerging field of Earth Awareness (EA) as a relational and experiential approach to fostering interconnectedness with Earth. Drawing from Buddhist, Indigenous, and mindfulness traditions, as well as nature-based and contemplative practices, the inquiry investigates how EA rituals, ceremonies, and practices can cultivate ecological consciousness and support systemic transformation. Through 45 reflective dialogues with teachers, community leaders, and practitioners across traditions, this participatory research identifies common inspirations, intentions, and challenges that shape the field. Key findings highlight that EA is rooted in practices that span inner reflection and outer action, emphasizing healing and interconnectedness as foundational intentions. Despite challenges—such as access, overwhelm, cultural appropriation, and systemic separation—opportunities abound to build community, support teachers, and foster coherence in this diverse and multilayered field. The study underscores the importance of justice, equity, and spiritual dimensions, including Earth as teacher and sacred source. It concludes with recommendations for future research and field development, including fostering eldership, supporting intercultural exchange, and addressing anthropocentric tendencies. By illuminating how awareness practices grounded in relationship with Earth can contribute to healing, this research offers a systems-oriented understanding of EA's transformative potential and charts a path toward collective ecological flourishing.

#### Keywords

Earth Awareness

Ecological Consciousness

Mindfulness Practice

Relational Systems Thinking

Ecology and Spirituality

# 1. Introduction and Background

Humans are living during a time of human-induced ecological change and disruption (Richardson et al., 2023; Fletcher et al., 2024). Relationship – with oneself, others, and the Earth – is at the heart of current social-ecological predicaments (Bristow, et al., 2022). Earth awareness (EA) offers promise for helping people deepen their sense of a relational world as a foundation for responsibility and meaningful action.

EA practices are a broad set of actions and philosophies aimed at fostering deeper relationships with Earth. Rooted in diverse cultural, ecological, spiritual, and philosophical traditions (Badiner, 1990; Goodchild, 2021; Tucker & Williams, 1997), EA practices emphasize ways of living in alignment with ecological integrity (Bartlett et al., 2012; Six Nations, 1978), ecological mindfulness (Kaza, 2008; Thomashow, 1996; Uhl, 2003), and the holistic integration of human activities and experiences within Earth's living ecosystems (Cajete, 2000). The primary aim of this inquiry is to understand EA practices and explore their potential to drive transformative systemic change in human relationships with the planet. This engaged research highlights a role for awareness in systems change and is rooted in mindfulness, Indigenous knowledge systems, education, and individual and collective responses to ecological challenges.

Indigenous ways of knowing and being are central in this work (Fletcher et al., 2023; Yunkaporta, 2020). Traditional ecological knowledge refers to the cumulative body of knowledge, practices, and beliefs passed down through generations by Indigenous and local communities. These knowledge systems often embody EA and respect for Earth and the processes for life to create life (Cook, 2024), including local ecosystems and human communities, sustainable resource use, biodiversity conservation, and ecological balance (Goodchild, 2021). Berkes (2018) highlights the role of these knowledge systems in guiding sustainable ways of living, emphasizing the integration of EA into contemporary ecologically-aligned actions and communities. Similarly, Whyte (2017) explains how traditional knowledge systems based in EA provide critical insights into adaptation to environmental change, particularly for vulnerable communities. These works underscore the importance of preserving and promoting Indigenous knowledge systems as a cornerstone of EA.

Mindfulness practices, such as meditation with nature, are increasingly recognized for their potential to enhance EA (Wamsler, et al., 2018). Hölzel et al. (2011) suggest that mindfulness cultivates a heightened sense of interconnectedness, which may inspire pro-environmental behaviors. Research by Wamsler et al. (2018) links mindfulness-based interventions to reduced ecological footprints, as participants become more attuned to the environmental consequences of their choices and actions. Mindfulness can serve as a bridge between internal reflection and external, ecologically-minded action, encouraging individuals to adopt awareness-based ways of life.

Environmental education plays a crucial role in fostering EA as well. Teaching and learning are continuous processes in life that closely relate to awareness. Sterling (2011) discusses the transformative potential of education for sustainability, advocating for pedagogies that prioritize experiential learning, systems thinking, and community engagement. Similarly, Orr (2004) and Uhl (2003) critique traditional education systems for their detachment from ecological realities

and call for paradigm shifts toward ecological consciousness and literacy. Educational initiatives such as outdoor learning programs and citizen science projects have demonstrated success in cultivating a sense of stewardship for the environment based in awareness (Ballantyne and Packer, 2009).

The institutionalization of EA through national or global policies and frameworks can further amplify the effects of awareness. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) recognizes that reorganization of technological, economic, and social systems – including inner systems such as paradigms and values – is necessary for well-being and human development on Earth. IPBES looks inward to identify “disconnection of people from nature and domination over nature and other people” as one of three underlying major causes for global biodiversity loss (IPBES, 2024).

The United Nations’ Sustainable Development Goals (SDGs) underscore the importance of fostering sustainable lifestyles and protecting natural ecosystems (UN, 2015), but such intergovernmental frameworks are insufficient on their own for addressing the deeper, inner factors related to EA. Leach et al. (2012) argue that top-down approaches often lack the localized specificity and cultural sensitivity necessary for meaningful engagement. Recognition of the inner dimension of outer change making has arisen as a response to large-scale efforts that push for outer change but neglect tending to inner worlds (Bristow et al., 2024; Posner and Nolan, 2024). The distinction between inner and outer is useful for highlighting how inner worldviews, mindsets, and hearts interrelate with outer conditions. Ankrah et al. (2023) describes how progress toward sustainability requires external “solutions” *and* foundational internal shifts in values, awareness, and capacities such as leadership.

The term Earth Awareness has an inner and outer meaning - human awareness of Earth, and Earth’s awareness (or Earth’s consciousness of which humans are an expression). As we are aware of the world, so too is the world aware of us. Both perspectives are relevant, and for the purpose of this inquiry we mostly focus on EA practices aimed at helping humans be aware of Earth and experience themselves as part of Earth.

## 2. Methods and Approach

A primary question guided this participatory research. How do relationships among people, intentions, sources of inspiration, perceived opportunities and obstacles, and centers of practice across traditions define an emergent EA field?

Context is important for understanding and interpreting this study. Earth-centered mindfulness and meditation practices have been growing, however, as is often the case with emergent fields, many organizations, practitioners, and leaders involved with these kinds of practices are developing approaches in somewhat disconnected ways, which can lead to piecemeal and uncoordinated movement in the field. This study of the EA field was co-created from within the field using a relational systems thinking perspective. We sought to explore the promise of various approaches to cultivating EA, contribute to the field knowing itself (Scharmer and Pomeroy, 2024), and build understanding of systems relationships that could affect future development of an accessible, balanced, and coherent field. This study aimed to provide conditions for learning, growth, and

deepening relationships throughout the EA field by engaging with teachers and practitioners in reflective dialogue about EA across traditions.

This inquiry built from an exploration of Ecodharma practices and two Eco Advisory Groups convened by the BESS Family Foundation (BESS, 2024). We conducted applied research with tools from relational network mapping, interdisciplinary social science, and Indigenous research methods. Appendix 4 includes a positionality statement describing social position, power, privilege, perspective, and lived experience of the primary researcher.

A steering committee assembled to advise this project, including teachers, community leaders, practitioners, and funders of EA. We met in April 2024 to discuss general framework and methodological approaches, and in December 2024 to present preliminary results. Individual steering committee members engaged via email, voice messages, and one-on-one conversations throughout data collection and analysis for iterative feedback.

We created an initial list of prospective interviewees (hereafter, participants) from members of the two Eco Advisory Groups, representing perspectives across mindfulness, meditation, and Indigenous communities. Steering committee members advised an initial set of 15 potential participants to begin with, and with each interview we asked for recommendations of others who would be good to consider speaking with.

We made efforts to interview participants across several dimensions of diversity, including gender, race, career stage, sector (i.e. academic vs. NGO), tradition, and geography within the continental U.S. (Proulx et al. 2018). We did not collect or have access to detailed demographic data for interviewees. Our sample resulted in 30% of interviewees presenting as BIPOC, which overrepresents white perspectives and is consistent with white overrepresentation in a study of prevalence of mindfulness practice in the U.S. workforce (Kachan et al., 2017) and use of a free meditation app (Jiwani et al., 2023).

We conducted 45 one-on-one, semi-structured interviews on Zoom, phone, and in person. Each interview lasted about 1 hour. Appendix 1 includes interview questions. Interviews were included open-ended questions that invited sharing and mutually co-created, reflective dialogue (Lavallee, 2009; Wright et al., 2019). Research design was influenced by methodologies that emphasize context, mutual accountability, and co-creative processes, such as perspectives and protocols rooted in Indigenous (Cajete, 2000; Indigenous Knowledge Systems Collective, 2024; Wilson, 2020), decolonial (De Oliveira, 2021; Stein et al., 2022; Yellow Bird, 2016), and boundary spanning (Bednarek et al., 2018; Posner and Cvitanovic, 2019) approaches.

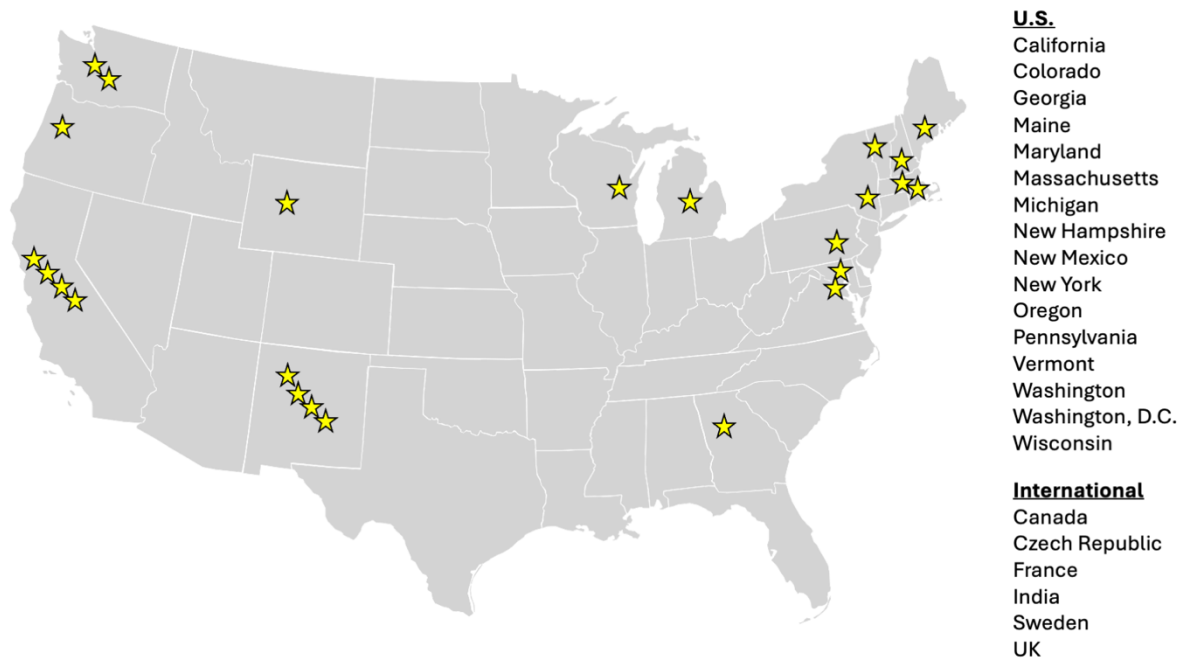


Figure 1: Locations of participants who participated in dialogues for this study. The author engaged in dialogue from Hinesburg, Vermont, Ellicott City, Maryland, and Baltimore, Maryland in the U.S. between May-October 2024.

Due to data quality and completeness, we analyzed 38 dialogues. We transcribed and coded written interview notes using Otter.ai with random spot-checks for accuracy and created a database in Excel. We carefully protected interview data to maintain privacy and anonymity and provided prior informed consent (Battiste and Henderson, 2021; Smith, 1999). Based on initial data analysis, we identified specific themes and codes in the dialogues (Creswell and Creswell, 2017). These codes were revised based on feedback from a steering committee member. We coded all dialogues and took care to maintain contextual meaning of data and visualize the field as a whole while examining particular relationships among data (Bateson, 2017; Wilson 2020). The following section on Results and Findings includes tables with definitions for all codes. We complemented the interview data by triangulating across multiple data sources, including desk research and online searches related to people, organizations, and events that participants referenced, such as retreats, programs, and presentations (Yin, 2009). We analyzed the database in Kumu and Excel and used Python scripts to generate descriptive statistics and plots (Dytham 2011; Gotelli and Ellison, 2004).

### 3. Results and Findings

#### 3.1. Defining Earth Awareness Practices, Rituals, and Ceremonies

We define Earth Awareness as: **a relational, emergent field that cultivates interconnectedness of all beings and deeper relationships with Earth.** This working definition was proposed and iteratively revised to reflect the common sense of the EA field.

EA is an emergent social field that exists within the quality, depth, and extent of relationships among living Earth (Goodchild, 2021; West, et al., 2024). EA can grow from the application of mindfulness to relationships with oneself, others, and Earth. In simple terms, EA means being in touch with Earth. Awareness of Earth can be cultivated through, for example: noticing one's breath; feeling the ground; sensing an unfolding flow of the present moment through observing nature outdoors; experiencing oneself as an embodied, living being of Earth; relating with more-than-human beings as kin; and engaging with ancestral relations.

Awareness applies across scales. In some cases, EA feels very intimate, as in the Earth below one's feet right now. In other cases, EA is collective, as in shared awareness of a larger community or bioregion, or even whole, planetary awareness across geological timescales. This inquiry considers the importance of EA across these spatial and temporal scales. For example, the intimate can provide pathways to embodied experience of interconnectedness, and the collective provides opportunities for coordinated actions and patterns. Meanwhile, the planetary transcends exclusive identities and embraces holistic, integrated awareness.

Participants described how EA can be foreign to mainstream Western culture. In heavily industrialized cultures, humans have become hypnotized by the human-made world that mirrors ourselves to ourselves and conditioned to orient toward individualism and separation from Earth in many facets of our lives (Cajete, 2000). Participants expressed urgency about addressing this separation and a recognition that the current world evolved over a long timeframe.

Activities for fostering EA further define the field. The word "practice" is common in some traditions to refer to a variety of activities and principles aimed at cultivating awareness, presence, and a deeper connection with oneself and the world. This word alone is insufficient for reflecting the spiritual nature of many rituals, ceremonies, prayers, and blessings that are part of EA and that cultivate ways of living in alignment with EA across traditions. Some participants distinguished between rituals that are regular (i.e. daily or weekly) and ceremonies that are less frequent, multi-day, community-based gatherings. In this inquiry, we mainly use the term practice, which includes secular activities and deeper rituals and ceremonies that acknowledge spirit as real.

The interviews revealed diverse perspectives, practices, and ways of living individually and in community that are focused on EA, mindfulness, meditation, and spirituality. Participants described many notable types of practices, presented in detail in Appendix 3. These practices include Ecodharma retreats and leadership retreats that feature mindfulness in nature, mindfulness-based sustainability transformations, rites of passage, and sensory immersion in natural settings. Participants also described specific activities related to EA practices, for example:

- Gratitude for the gifts of life we receive from Earth, reflection on our roles in caring for these gifts for future generations, and mindfulness for living in harmony with the Universe. For example, the Mohawk Nation's *Ohenten Kariwatekwen* "words that are spoken before all others" is a traditional opening of ceremonies and many meetings for greeting and acknowledging all elements of creation. Lakota Nation's *Mitákuye Oyás'iy* "all my relations" or "we are all related" acknowledges relatedness among all beings and shifts away from anthropocentric views to embrace a broader interconnected perspective. EA practices may ask permission of, acknowledge, or engage in deep relationship with land and water spirits.

- Activities such as vision quests, wilderness ceremonies, rites of passage, and elemental grief practices explore personal transformation and underscore relationship with Earth as teacher, guide, and healer. Many EA practices such as kinship-based mindfulness outdoors invite communing with nature.
- Journaling to document sensory experiences in natural surroundings is often used as an introductory practice to draw people into deeper EA. Engaging in reflective dialogue with a partner during retreats supports interpretation of EA experiences.
- Mindful walking, for example the Plum Village practice of kissing the ground with one's foot on each step to cultivate love for Earth, and mindful eating practices, such as Contemplations before eating, invite silence and slowness as important aspects of developing deeper EA.
- Plant-based practices, such as planting, gardening, farming, and creating pollinator-friendly landscapes are forms of mindful activities that can be intended for EA when introduced and held in particular ways, for example with singing to seeds.
- Observance and celebration of Earth-related rhythms with the cosmos, such as lunar phases, equinoxes, or patterns in the movement of stars, can create shared experiences of awe in nature. Star gazing can remind people of forces at play larger than us, and invoke mindfulness of ancestors.
- Approaches based in decolonization and rematriation can address cultural wounds, promote healing, and repair relationships with land. Land-based healing programs such as Healing Wounds of Turtle Island involve decades-long healing ceremony among communities with shared respect for life.
- Programs like Contemplative Sustainable Futures and Mindfulness Labs aim to foster ecological consciousness among students and professionals and integrate EA into university curricula, to merge outer sustainability efforts with inner transformation.

### 3.2. Traditions that EA Draws From

This inquiry focused mainly on Buddhist, Indigenous, and mindfulness traditions. Participants mentioned two additional primary traditions – Judeo-Christian and Nature Awareness – and referred to traditions based in land-based healing practices, BIPOC-centered land-based communities, and land back and land rematriation efforts (see Appendix 2 for centers of these practices).

*Table 1: Traditions in order of frequency of mention in the dialogues.*

<b>Tradition</b>	<b>Lineage for teaching and practicing EA</b>
Buddhism	Includes traditions rooted in Theravada (such as Vipassana, Insight, and Thai Forest), Vajrayana (such as Tibetan), and Mahayana (such as Zen).
Mindfulness	Mindfulness approaches to consciously being in present moment experience that's not associated with a particular religion or spiritual tradition, such as Mindfulness Based Stress Reduction (MBSR).
Indigenous	Traditions related to First Nations and Tribal Nations of Turtle Island (North America).

Nature Awareness	Familiarity with nature through natural history observation, species identification, and naturalist skills such as reading the landscape and listening to bird songs.
Judeo-Christian	Religious traditions that center responsible relationship with Earth, such as integral ecology and creation care.

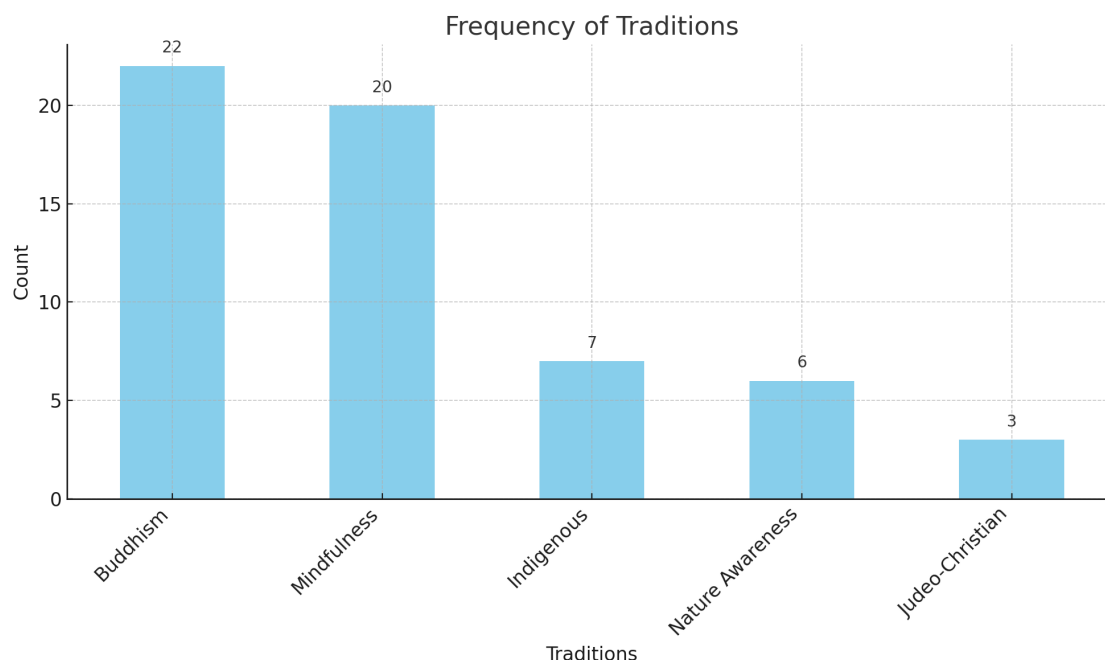


Figure 2: Number of mentions of traditions in the dialogues. Each tradition mentioned is counted separately, even if it appeared in combination with others in a single dialogue.

Visualizing relationships enables us to see interconnections among traditions within the EA field. These results reflect how participants in this study expressed interconnections among traditions. They do not reflect actual interconnections among traditions. For example, Figure 3 shows how Judeo-Christian traditions arose as an adjacent but distinct part of the EA field. These traditions have a rich, long-standing, and growing interest in EA practices, rituals, and ceremonies. Relationships among a growing EA field and Judeo-Christian traditions would be a valuable area of future study (Tucker and Grim, 2016).



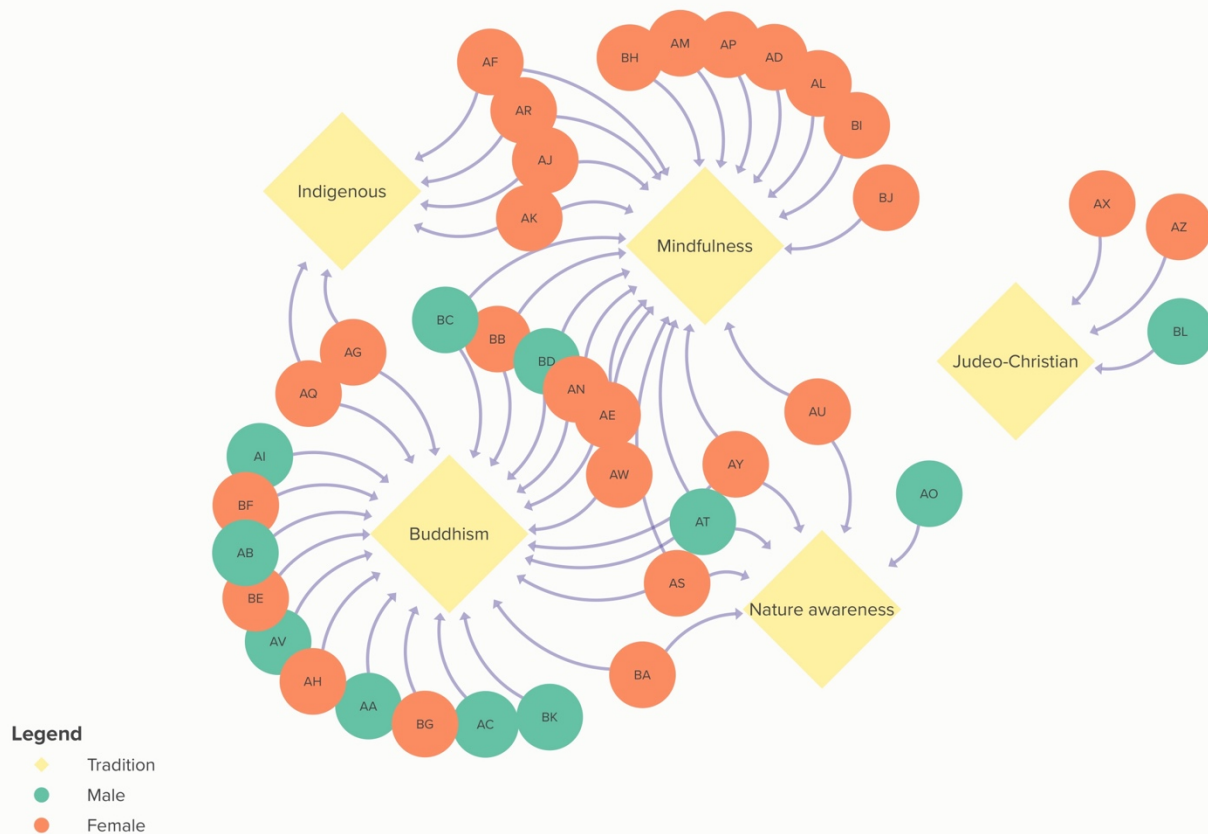


Figure 3: Kumu map showing interconnections among traditions as represented in the dialogues. Letters are random and do not correspond to people's initials to protect privacy. Gender of participants shows distribution across traditions and does not include non-binary gender categories that could be part of a future study.

### 3.3.Sources of Inspiration for EA

Participants described several sources of inspiration for their work engaging with EA practices, rituals, and ceremonies. Table 2 shows specific sources that participants mentioned during dialogues. Participants expressed feeling these inspirations were significant centers of EA practice and motivating forces for themselves and others.

Table 2: Sources of inspiration in order of frequency of mention in the dialogues.

Inspiration	Sources of inspiration for EA
The Land	Mother Earth and relationships with the more than human world.
Work That Reconnects	An approach to bringing people into relationship, and a community of practitioners developed by Joanna Macy, including related frameworks such as Active Hope.
Justice	The impacts of injustice experienced by groups, as well as the role of justice in inspiring mindfulness practices, connections to the land, and efforts to raise awareness that informs collective actions.

Psychology	Ecopsychology, the application of mindfulness to psychological health, and the scientific research evidence base for mindfulness practice.
One Earth Sangha	A community that provides support for action and response to ecological crises based on the insights and practices of Buddhist traditions.
Plum Village	A global community of mindfulness centers and Zen Buddhism monasteries founded by Thich Nhat Hanh.
IDGs	Inner Development Goals, which applies mindfulness and inner development to global challenges faced by humanity, such as fulfilling the Sustainable Development Goals.
Centering Prayer	A modern Christian contemplative prayer.

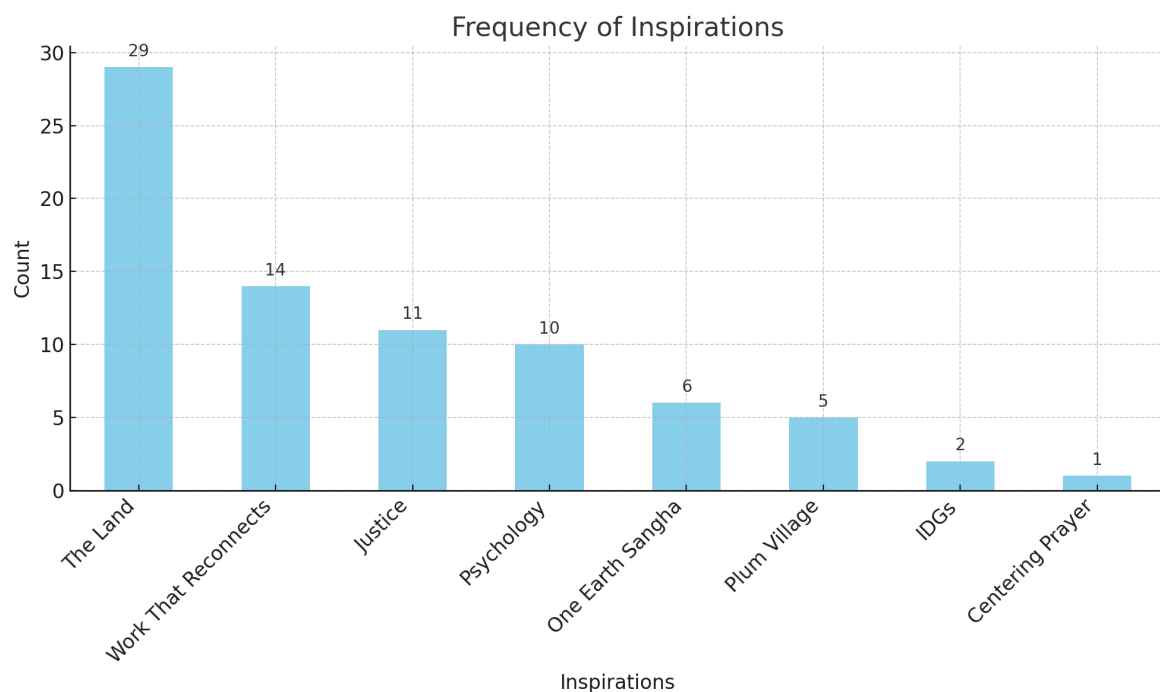


Figure 4: Number of mentions of inspirations in the dialogues. Each inspiration mentioned is counted separately, even if it appeared in combination with others in a single dialogue.

Figure 5 presents a visualization of relationships among sources of inspiration. This visual shows far-reaching relationality and interconnection among inspirations, with strong clustering around The Land in particular (29 mentions, or 37% of all mentions of sources of inspiration).



Justice	To acknowledge systemic injustice and create awareness that builds movement toward equity and justice.
Impermanence	To acknowledge and accept change and the transient nature of lived experience.
Perception	To consciously reflect on perspective in sensory experience as a way to shift perception.
Rewild	To restore land to a natural, uncultivated state, or to reconnect with one's nature by embracing how we are part of a larger whole and letting go of ideas of separate self.

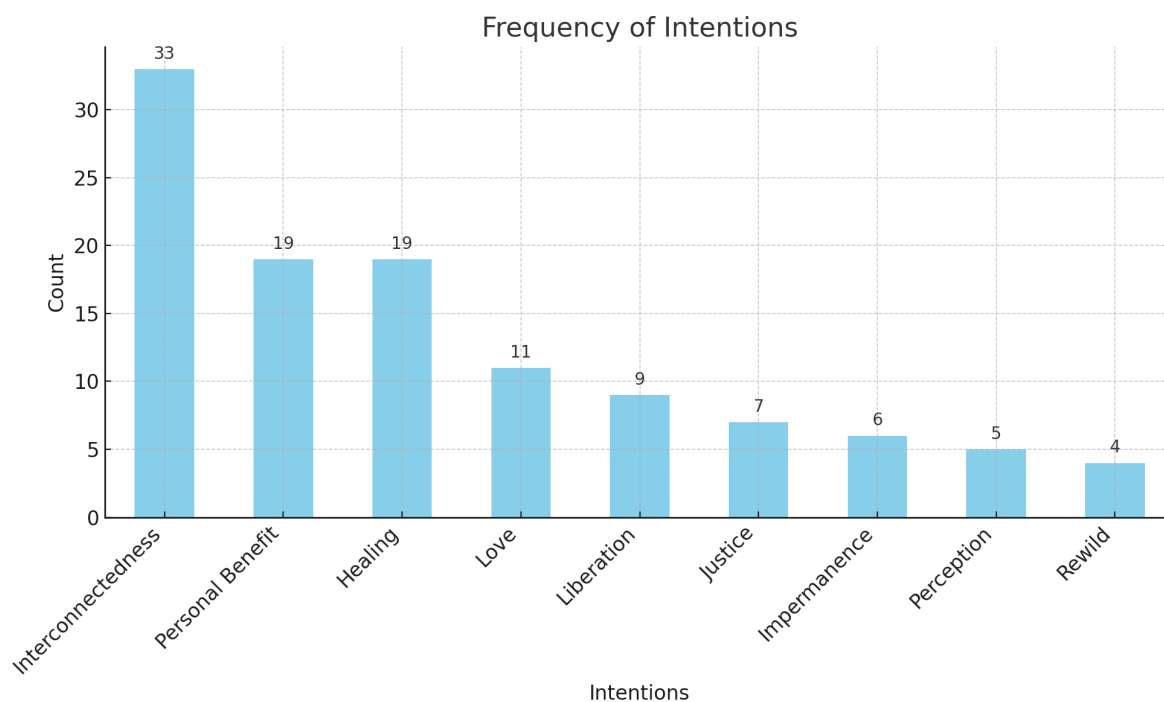


Figure 6: Number of mentions of intentions in the dialogues. Each intention mentioned is counted separately, even if it appeared in combination with others in a single dialogue.

The top three intentions – Interconnectedness, Personal Benefit, and Healing – account for 63% of all mentions of a specific intention or purpose for EA practices (71 out of 113). There is overlap among some intentions, for example Personal Benefit and Healing, both of which signify how EA practices can alleviate suffering. Personal Benefit refers more to ease for an individual, whereas Healing refers more to relationships among parts and collective wholeness.

The least-mentioned intentions – such as Rewild, Perception, and Impermanence – indicate edges of the EA field as characterized in this study. For example, while some participants described Rewilding as a key outcome of practices to reconnect with Earth, this intention was not widely shared across dialogues. It could represent an area of potential future growth – one that could bring wild nature closer to home, encourage people to engage in rewilding activities, and remind us how nature regenerates and heals over time no matter how damaged.

Figure 7 shows the visualization of relationships for intentions in the EA field. Intentions included a higher number of specific codes. This diagram for intentions shows a high amount of relationality among intentions, with every dialogue except for two mentioning multiple intentions. When viewed through different lenses, the same group of people can appear separated with limited interconnections (Figure 3 viewed through traditions), or highly interconnected (Figure 7 viewed through intentions).

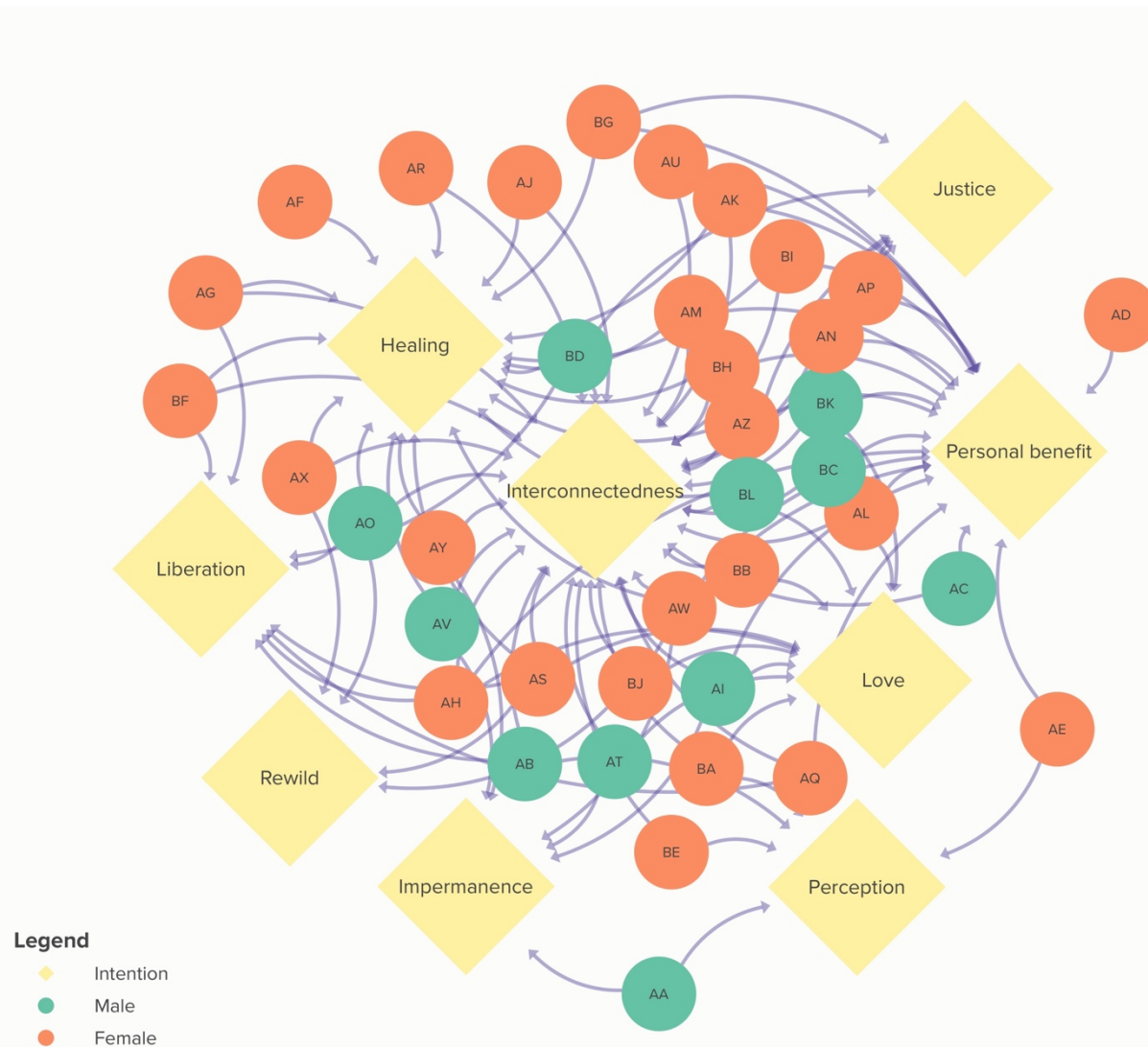
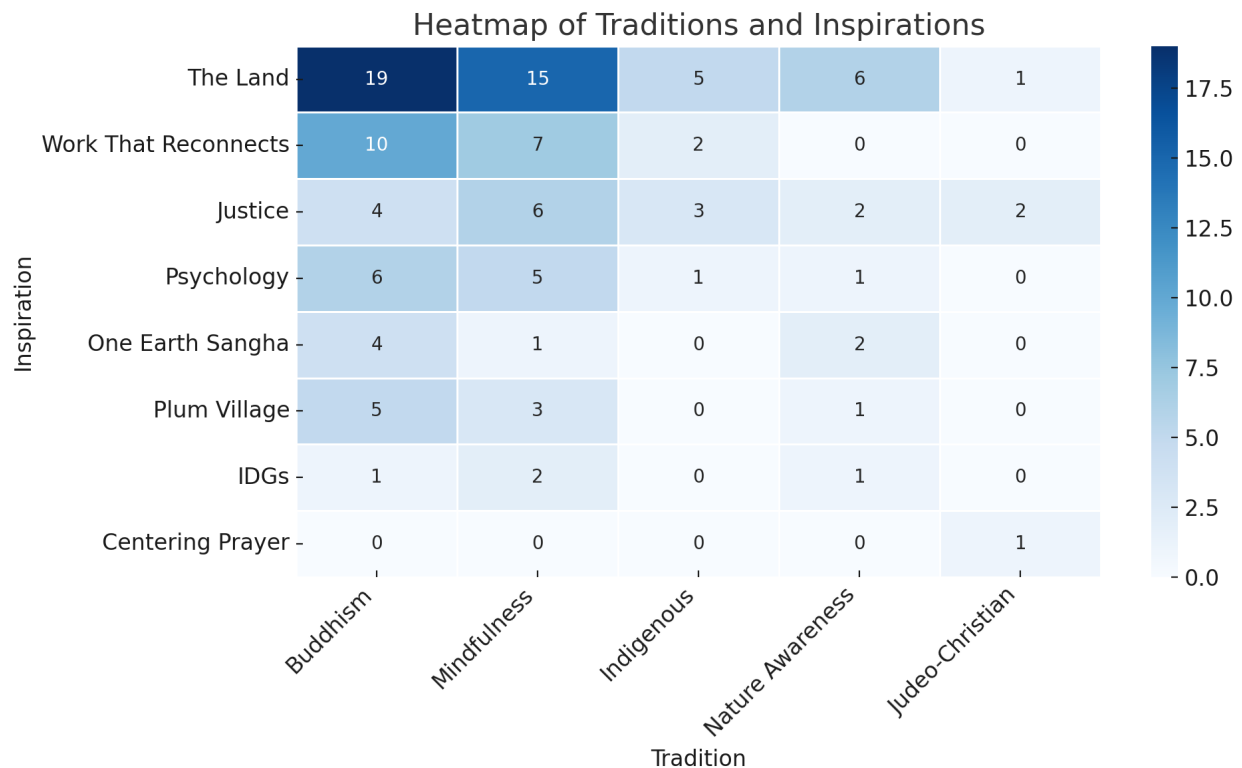


Figure 7: Kumu map showing interconnections among intentions as represented in the dialogues. Letters are random and do not correspond to initials to protect privacy.

### 3.5.Relationships among Tradition, Inspiration, and Intentions

Co-occurrence tables offer another way to show relationships among coded variables. The following tables present visual summaries of how inspirations and intentions related to traditions

in this dataset. Gaps indicated by zeroes or low numbers could be due to the small sample size in this study rather than a lack of an actual relationship.



*Figure 8: Co-occurrence table of traditions and inspirations shown as a heatmap. Each cell represents the frequency of a specific pairing.*

Figure 8 shows darker colors for stronger associations or more frequent co-occurrences. For example, participants frequently mentioned The Land as an inspiration when drawing from Buddhism and Mindfulness traditions. This table also shows sources of inspiration that have broad reach across traditions, such as The Land and Justice.

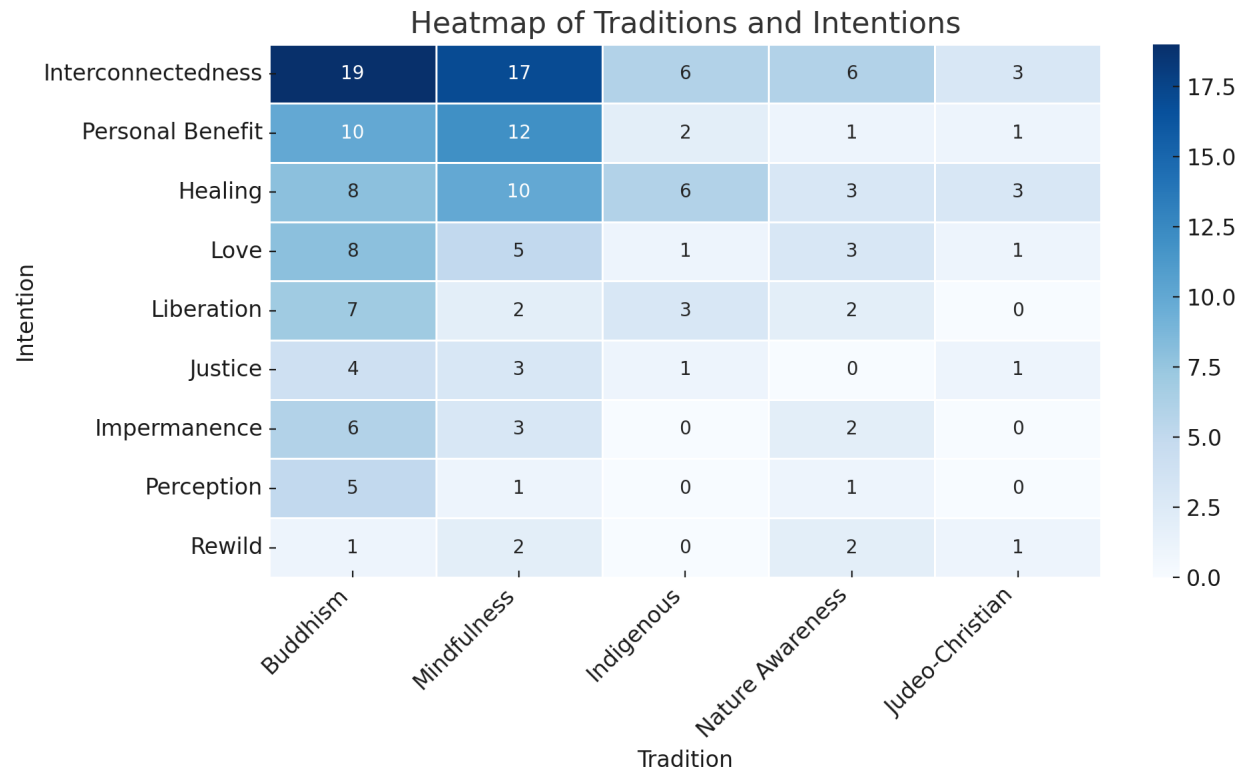


Figure 9: Co-occurrence table of traditions and intentions shown as a heatmap. Each cell represents the frequency of a specific pairing.

Figure 9 shows how Buddhism and Mindfulness, which were focus areas in this study, are foundational traditions for fostering Interconnectedness and Healing. Interconnectedness, Healing, and Personal Benefit have broad appeal across traditions, suggesting they are central themes for EA practices cross-traditions.

### 3.6. Obstacles and Opportunities

Participants reflected obstacles that inhibit fostering deeper connections to the land, as well as opportunities to bridge generational and cultural divides and support teachers and communities that are guiding EA. The following elements were described and heard as important to consider for the development of a balanced, coherent, accessible field.

Table 5: Alphabetized list of obstacles and opportunities as expressed and heard in dialogues, including elements described as both an obstacle and an opportunity across dialogues.

Element	Type	Illustrative Quotes
Access to practices	Obstacle	<p>“Costs of retreats can be a barrier.”</p> <p>“Teachers may not have land themselves.”</p> <p>“Class is an obstacle. The way meditation retreats are offered, even if they’re free – people having a week off</p>

		<i>work to go on retreat already valences it in terms of class.”</i>
Action	Obstacle	<i>“How can we bring activism to practitioners? This needs to come from teachers.”</i> <i>“Many Dharma spaces are hierarchical... Conservative because they’re based on ancient tradition. Change is difficult, especially from people new to the space.”</i> <i>“Environmental activism has been seen as a political point of view... so Dharma centers may be reluctant to engage because they’re just trying to reach everyone.”</i> <i>“Targeting activists with their own language and theory of change is strategic... there is a real opportunity to combine nonviolent direct action with earth-based practice.”</i>
Community	Opportunity	<i>“Communities of teachers sharing experiences with others is important.”</i> <i>“Need to bring together researchers and practitioners more so they understand each other better and can learn from each other.”</i>
Credibility	Obstacle	<i>“It can be tough to evaluate what has scientific evidence with it. What is the level of scientific proof that [a practice] works. This can be challenging and can be hard to find. [Scientifically credible evidence] is most available for mindfulness practice.”</i> <i>“There is fear of the woo-woo.”</i>
Cross-sector issues	Opportunity	<i>“Could the same approaches be useful for activists involved with a range of issues, for example immigration, animal rights, LGBTQ, race-based issues?”</i>
Defining Earth awareness practice	Both	<i>“Be mindful of romanticizing and qualifying what counts as nature or not.”</i> <i>“Create a new genre. A new hybrid quality of practice, which needs its own economy. Create a different genre of political, awake, decolonial, spiritual Earth practice.”</i> <i>“Reframe what we mean by Earth-based practices: to develop intimacy with the presentation of the Earth in all forms, including unexpected forms.”</i>
Diversity	Both	<i>“Affinity retreats (e.g. BIPOC, LGTBQIA) are an opportunity to broaden the conversation, expand views of definitions, and bring in different ways of articulating practices.”</i> <i>“Creating space to gather Indigenous people in particular could be an opportunity.”</i> <i>“Low BIPOC participation and the whiteness of mindfulness presents an obstacle.”</i>
Earth-centeredness	Opportunity	<i>“There must be some attention back to the physical land. Not as an inanimate object, but a living, functioning,</i>



*dynamic being that we have to learn how to be back in collaboration with. We have to work with the land in order for the land to work with us."*

*"There is an opportunity to acknowledge that we are expressions of the land. The land is expressions of us and our bodies."*

*"What happens if I bring myself to consider the Earth sitting in one of the chairs during my teaching?"*

*"We need some Earth church or Earth temple, where Earth is the teacher."*

Emergent new areas	Opportunity	<i>"This can be a way to re-light a fire in our teaching... If it's new enough, one can re-find joy in their teaching and life."</i>
Healing and protection	Both	<i>"Sanctuary building. The crisis has arrived. How can we decide how we are going to be in a time of collapse?" "There are big questions, like what are we building [sanctuary] for?" "Being part of a network of sanctuary builders... changes how we show up." "We need a sanctuary where people can think with the planet, get inspired, and get reassured that this is not a crazy thing to do. It can be a relief and make it easier for people to give themselves permission to become Earth. People are worried about being seen as crazy."</i>
Inter-cultural respect	Both	<i>"People need to understand and respect protocols for rituals that communities hold as sacred." "I see a lot of jumping around among traditions. There's a need to go deep with a practice." "There is a fear of appropriating Indigenous culture."</i>
Inter-generational relationships	Opportunity	<i>"There are opportunities related to deep time and ancestors and future generations, especially with artistic ways to depict this." "Elders in my community understood Earth awareness a little more than people my age... there is an opportunity for social culture recentering of Eldership... to recognize the value of Eldership and bring the language of Eldership back into the collective." "There needs to be support and training for young people to be in relationship with Elders. And on the other end supporting Elders to be in relationship with young people."</i>
Overwhelm	Obstacle	<i>"The amount of stuff happening today can be an obstacle. It can be too much." "I think people can feel overwhelmed. Returning to the land can feel like another thing on top of what people are trying to do in their lives."</i>

		<p><i>“Think of everything that capitalism pushes us to do to survive. So, we feel like we can’t think about the land. How do we create space in our daily lives?”</i></p>
Place and geography	Both	<p><i>“This field lacks suitable places for holding retreats. Parks can involve permits. Private landowners can be expensive.”</i></p> <p><i>“New places have recently set up support for retreats in nature. Off the Grid Retreats lists potential places and assists teachers to get it going.”</i></p> <p><i>“The need to travel between places has limited my ability to engage [broadly].”</i></p>
Separateness	Obstacle	<p><i>“How do we translate practices across communities that are experiencing and have experienced severe disconnection from the land?”</i></p> <p><i>“Isolation [of teachers and students]. There’s little exchange and connective tissues, so learning is hampered.”</i></p> <p><i>“In many ways, I was taught to be afraid of the land. Climate change is intensifying people’s distrust and fear of the natural world.”</i></p>
Systemic forces	Obstacle	<p><i>“Systemic racism.”</i></p> <p><i>“Dominant systems have limited and conditioned me into not perceiving relationship and connection.”</i></p> <p><i>“The nature of the culture that we’re enmeshed in is an obstacle. The institutional architecture. This creates contexts in which people are overcommitted, overwhelmed, and distracted, by things that may be much more exciting to human biology and physiology than Earth awareness [like screens]. So, we need to create a slower space in which transformative processes can take place.”</i></p>
Teacher support	Opportunity	<p><i>“Teachers benefit from support with infrastructure, registration, insurance, logistical support.”</i></p> <p><i>“People must feel resourced amidst the difficulty and challenges like fatigue from social media or emails... I’m not situated in a big training institution. Though we’ll offer the program out through some places I’m connected with. They have trained a lot of teachers, and they can provide a good way to market.”</i></p> <p><i>“Many teachers don’t feel they have expertise in the area of environment.”</i></p>

Perception of obstacles and opportunities is based on many interacting factors, including race, gender, age, geography, lived experience, personality, mood on the day of the dialogue, and other contextual factors. Many elements could fit in either category and are interrelated in complex ways. For example, “place and geography” has to do with “access to practices” in terms of relative locations for where people live, teach, and go on retreat to deepen practice. “Systemic forces” are

a major cause of “separateness,” and also contribute to “overwhelm” because bearing witness to the inertia of the larger system can make any individual effort feel futile. These elements are interdependent – for example, overwhelmed people and worldviews of separateness also give rise to larger systemic forces. It’s important to consider these complexities and maintain a view of the whole system when reviewing this list of discrete obstacles and opportunities.



Figure 10: Participants identified numerous systems drivers affecting the development of the EA field in the form of obstacles and opportunities.

## Obstacles

Participants highlighted several obstacles to EA, including accessibility issues like the high cost of retreats, the cultural relevance of practices, and structural class barriers that limit participation. Both teachers and students expressed feeling overwhelmed by the demands of modern life. Overwhelm can make it challenging to prioritize land-based practices amidst daily pressures and

distractions like technology. Participants noted a pervasive sense of separateness, including historical and systemic disconnection from the land, compounded by systemic racism and institutional barriers that hinder relationships with self, others, and the rest of Earth. Additionally, participants described challenges in integrating activism with EA practices, as Western Buddhist spaces can be hierarchical and resistant to change, while environmental activism can be seen as politically charged. Concerns about credibility also arose, for example due to a perceived lack of scientific evidence about the effectiveness of practices, and a fear of appearing overly spiritual or esoteric. Lastly, participants emphasized the importance of inter-cultural respect and appropriateness in engaging with Indigenous and traditional practices. Participants expressed concern about cultural appropriation and called for depth, respect, and authenticity when exploring EA practices, rituals, and ceremonies.

## **Opportunities**

Participants revealed several opportunities for advancing EA practices. They emphasized building community among teachers, researchers, and practitioners. Retreats featuring interdisciplinary teachers and subject matter experts could enhance the EA field. Symposia are another way to bring the EA field together and foster trusted “champions” to guide and inspire collective efforts. Maintaining earth-centeredness – especially amidst strong anthropocentric tendencies – presents another key opportunity to return to the land as a dynamic, living entity and integrate Earth as participant and teacher in practice settings. Strengthening inter-generational relationships is also key (see Section 5.4 on Eldership). Supporting teachers with logistical, financial, and administrative resources can reduce burdens and rekindle passion for their work, especially for those outside traditional institutions or without environmental expertise. Cross-sector collaborations could adapt these practices to a wide range of social-ecological issues, demonstrating their versatility. Finally, exploring emergent areas of practice offers opportunities for teachers to rediscover joy and creativity in EA practices.

## **Elements described as both an obstacle and an opportunity**

Participants highlighted several elements as both opportunity *and* obstacle across different dialogues, or sometimes within a single dialogue. Defining EA is an opportunity to broaden its scope and create new integrative hybrid practices, but also an obstacle in how definitions can reinforce logics of separateness, objectification, materialization, and romanticized notions of nature or awareness. Participants favored community-based definitions. Diversity is a critical area of development for the EA field, with affinity retreats (e.g., BIPOC, LGBTQIA) providing opportunities to expand perspectives and increase inclusion, countering systemic barriers to participation. Participants described sanctuaries for healing and protection as vital during times of crisis, and proposed fostering networks of sanctuary builders to help normalize EA approaches. However, sanctuary can be a short-term “solution” that undermines long-term sustainability if it enables people to take shelter temporarily and then re-engage in patterns of separateness. Regarding geography and place, the cost and accessibility of suitable retreat venues pose challenges, though emerging resources like Off the Grid Retreats and the Retreat Center Collaboration provide information that can connect teachers with retreat venues. Accessible, private, and inspiring spaces remain critical for developing the field.

## 4. Discussion through Key Themes

### 4.1. EA as Modern Expression of Ancient Wisdom

EA could be considered ancient and mainstream Buddhism, not a new development or fringe interest at the periphery. Many participants felt that EA is what the Buddha experienced while sitting beneath a bodhi tree. Participants referenced traditional texts while pointing out how upon experiencing enlightenment, the Buddha touched the Earth and stayed in the forest for some time before endeavoring to teach. Some participants highlighted the roots of Buddhism and called for a return to original teachings. This means there could be promise in cultivating the field by acknowledging the roots of EA as a modern expression of ancient wisdom. Participants described many centers of practice where ancient approaches to EA are alive today (see Appendix 2).

*“Imagine the Buddha living right now. They’d offer something about relationship to the Earth...”*

*“[EA] is actually going back to what the Buddha did. [They] went outside. Taught outside. Lived outside. This is what the instructions said. Go out and sit at the base of a tree. Turn back to the original tradition.”*

### 4.2. Coherence Amidst Multilayered Complexity and Diversity in EA

The EA field is becoming coherent as diverse approaches emerge. For example, teachers can create the conditions for mindfully experiencing nature by directly exploring ecodharma or using a lighter approach with meditation outdoors. The cultural expression and language used to describe and conceive of EA is also quite diverse. This sort of “multilayered diversity within coherence” emerges when deeply exploring complex systems at multiple scales and underscores the importance of EA teachers holding space for exchange between diverse people and cultures – ethical space between that is based on gratitude, mutual respect, inclusion and belonging, and responsible co-creation and development of the EA field.

*“There are as many practices as there are people. There is no one practice. Practices are just pointers toward experience and discovery that people can engage with.”*

### 4.3. Navigating Suffering with Compassion in EA

Participants acknowledged how much social-ecological suffering there is in the world today (Huu and Confino, 2024). EA arises within the context of this suffering. For this reason, participants expressed the importance of compassionate approaches that are sensitive to how much people are holding when they engage with EA practices. Some participants described a need for sanctuary to alleviate acute suffering and enable authentic experiences of interconnectedness. Others voiced a direct need for teacher and practitioner support to help reduce feelings of isolation and overwhelm common in industrialized societies today.

*“The house is on fire.”*

*“ ‘Not enough’ is the nature of the culture we’re enmeshed in. The institutional architecture. This creates contexts in which people are overcommitted, distracted, and overwhelmed... participants and teachers.”*

Some retreats intentionally include direct experience of Earth in all forms, including unpleasant, uncomfortable, or toxic manifestations. Bearing witness to suffering in the form of damaged parts of Earth was described as a way to “sit with the trouble.” Exploring ecodharma in this way is similar to bearing witness retreats in the Zen Peacemaker tradition, which have been applied in settings of ecological disasters (e.g. wildfires or floods like Hurricane Helene’s destruction in North Carolina in 2024) and social disasters (e.g. sites of war, oppression, or violence).

#### 4.4. From Awareness to Action: Cultivating Responsibility

Inquiry has implications for action. Awareness alone is insufficient for motivating ways of being that are in ongoing relationship with Earth. A primary challenge for the EA field is to support integrating insights into action. People engaging in practices benefit from scaffolding that helps them create meaning from their experiences and identify where they have agency for systems change. EA with support for integration and interpretation can be a force for channeling care and concern into responsible action. Participants felt that increased awareness was often tied to an increased sense of responsibility to care for, protect, and restore land, air, waters, and communities.

*“Our overarching goal is to provide space for [participants] to connect purpose to action and change. This involves inner work, collaboration, and systems thinking.”*

Interest in awareness-based action grew from an understanding that health, well-being, and peace among people is connected with the health of Earth. Participants linked healing of people to healing of Earth. Some participants associated healing with remembering. Participants described EA as part of a process of repair and reformation of a whole in response to perceiving separateness from Earth. For many participants, promoting healing involved a tangible, embodied quality to wholeness and interconnectedness.

*“All of this takes place more easily in the natural world. We take a breath and the tree right next to us is breathing. We can feel the food we eat goes through our body system. We step on the Earth and we feel the rigid structure of our skeletons... Sometimes, we think of our skin as a boundary and separation. It’s the largest organ we have, and it completely connects us. Skin is sensitive to heat, cold, wind, pressure, prickly things, soft things. It’s not a divider, it’s a connector.”*

*“One of the key ways into [EA] is through the body. Separation of body from mind, from external world... this is key to realizing this body is nature, and this mind connected with it is nature.”*

#### 4.5. Centering Justice: Exploring Inclusion, Equity, and Historical Context in EA Practices

Justice arose throughout this inquiry as a source of inspiration, an intended outcome of EA practice, an opportunity, and an obstacle. Participants expressed justice as especially relevant to EA in the context of people's relationships with land and food. Some felt that the roots of Buddhism grew from equitable access to land and related resources for healing, community, and sovereignty, and that these connections were lost when Buddhism was translated across places and introduced in the West. Racial equity and inclusion are central concerns in many mindfulness communities in the U.S. Numerous participants across races described a desire for more Buddhist spaces in which BIPOC people felt like they belonged. Raising up voices from the Global South was described as important for shifting where power is concentrated in society. This study is limited by not having enough information about social distinctions among participants to deeply explore social determinants for the findings. For example, with more demographic data about participants, we could more effectively explore the role of race, class, and power in the views that were expressed.

*"Buddha Dharma speaks about greed, hatred, and discrimination as sources of suffering. I see so clearly how these play out in larger structural systems of inequality. I don't think we can separate ecological and social harms we're seeing."*

*"I wish more practices had a historical framework. A justice component. Acknowledgement of these lands and people who have lived here before settler colonialist groups arrived. There has been and is a lot of appropriation."*

Some participants expressed feeling protective of rituals and worried about appropriation of sacred EA practices in a way that could promote amateurs misusing rituals or ceremonies. Worry of unethical treatment arose most strongly when discussing Indigenous traditions. It's important in this context to acknowledge how science – as well as many societal institutions such as education, government, and religion – have been used as tools of separation, oppression, marginalization, and erasure of whole peoples, communities, languages, and traditions.

#### 4.6. Sacred and Secular Dimensions of EA

EA was secular for some participants, and deeply spiritual for others. In many Indigenous traditions, spirit is real (Cajete, 2000). Acknowledging the spiritual dimensions of EA can enable pathways for collaborative relationships with Earth and holding ethical space (Elk, 2016). Many participants described a role for EA in acknowledging Earth as ancestor and Earth as source and destination for living beings. Others shared EA practices based on communing with elements (e.g. air or water), landscapes (e.g. mountains or rivers), and celestial bodies (e.g. moon, sun, or other stars) as alive, intelligent, sentient beings with agency. Participants described how secularization of mindfulness may make it easier to introduce practices within certain settings such as a school or workplace, but this approach can also materialize spiritual experience in a way that diminishes people's deep, meaningful experiences of interconnectedness.

*"We start with ceremony, we end with ceremony, the whole thing is an acknowledgement of relationship and sacred"*



*“EA can help us see sacredness, living qualities, and aliveness of a place.”*

*“Rituals can be specifically about land spirits. Earth spirits. Water spirits. Being in dialogue with them. Being in relationship with these spirits. Acknowledge their sovereignty, and how ecosystems and wildlife have the right to exist on their own without caring about their utility to people. Before getting to healing, a lot is just being in communication, being able to listen and hear the language of Earth.”*

## 5. Reflections and Future Steps

Dialogue and inquiry helped to explore the contours of the EA field. This study has nurtured seeds of potential and complemented broader efforts and movements within the field, for example a growing number of retreats and ongoing EA practices. While the study is limited to a small sample of people from a vast and diverse field, the process of co-defining and deeply exploring EA was a step toward coherence. Several potential future steps emerged.

### 5.1. Further Research

Future research could focus on unrepresented traditions (e.g. Islam) and bridging gaps between traditions. In particular, participants expressed interest in more research and engagement with the intersections of Indigenous traditions and Buddhism. Participatory research can be a vehicle for fostering collaborations between communities. Further research could include more dialogues or explore perspectives through intentional oversampling from particular communities, such as Tribal or First Nations. With more quantitative data, perhaps through a broad survey approach, statistical analysis such as Chi-Square Test or Fisher’s Exact Test on contingency tables could further examine relationships between categorical variables, such as traditions and intentions. Considering more variables—including demographic information—would enable a follow-on study to deeply explore specific relationships of interest. Integrating practices in professional settings could further advance EA as a vital component of local and global sustainability efforts.

### 5.2. Exploring EA Community Values

The dialogues revealed interest in convening EA teachers and participants from across Buddhist, mainstream mindfulness, and Indigenous traditions to build common ground. Articulating shared values for EA provides a North Star for further development. Participants also called for:

- Pedagogical frameworks for teaching and learning EA practices;
- Principles and protocols for ethical engagement with rituals and ceremonies;
- The creative development of new practices to meet current ecological reality;
- A focus on nurturing the field to develop in equitable and accessible ways;
- Studying which practices are effective at raising awareness and motivating action, under which conditions, and why.



### 5.3. Discernment Among Practices

Future research could discern which approaches are most suitable for beginner, acquainted, and experienced participants. For example, a pathway for beginners to initially become more familiar with Earth could involve natural history and direct observational experience of one's immediate environment (e.g. bird identification at home). A continuation of study and practice could include deeper communion with Earth, such as longer-term engagement with living systems to understand interactions and patterns, how life self-organizes, and the processes and conditions that generate life. Practices related to deep time, elements, spirits, or ancestors may be suitable for participants with more experience and familiarity. Discerning among approaches in this way could enable progressive access to deeper experiential knowledge through preliminary practices, dedication over time, and deep respect as evidenced through sustained acts of care. This could also support people to engage with EA practices in culturally respectful and appropriate ways as opposed to appropriating ways.

### 5.4. Fostering Eldership

Centering Elders is an important pathway for further development of the EA field. Elders can provide guidance through transmitting story, tradition, and lived experience. This is especially true for Elders from tribal communities, where the title often refers to a respected member of a community who is recognized as a knowledge keeper and spiritual teacher. Being an Elder is not only based on age, and includes a demonstrated commitment to living in responsible relationship in community in a good way. Some EA practices extend Eldership beyond humans, for example by regarding a 300-year-old tree as Grandmother Maple or an ancient mountain as a being who conveys wisdom of deep time and connection with spirit.

*“There are Elders who have a lot to share. We have to be clear about how we support them and center what they have to share about the land... They're not always accessible. They might not be on social media or online platforms. But they're known in different parts of the community.”*

### 5.5. Tending to Anthropocentrism

The practices, rituals, and ceremonies described in this study are a good way to address humans' anthropocentric perspectives. Engaging with EA practices, rituals, and ceremonies is a powerful way to attend to human-centered tendencies and an inflated sense of self-importance. EA can provide broader perspectives and grounding during turbulent times.

*“Practices are often deployed in mindfulness and Buddhist spaces to alleviate human beings' distress. Consoling our sense of grief and loss. Helping us to feel more connected. People do need to feel more connected. But not with the primary aim of feeling better ourselves. With the aim of moving toward a place of acting from a place of love, respect, reverence, and profound connectedness with all of our more than human kin.”*

## 5.6. Regarding Earth as Teacher and Source

Finally, partnerships across cultures and traditions could involve movement away from secular practices and towards spiritual foundations based on sacred reciprocity and reverence for all beings. This inquiry in EA could contribute to the spiritual development of the environmental sector. Regarding Earth as teacher and source of wisdom supports ongoing learning, ethics, and consciousness.

*“How does nature reveal Dharma, wisdom, truth? I’m less interested in teaching a Dharma retreat in nature. Buddhism is tiny compared to nature. How does nature express the Dharma? This takes things out of a narrow tradition lens... What wisdom is arising from intimacy with nature?”*

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## References

- Ankrah, D., Bristow, J., Hires, D., & Artem Henriksson, J. (2023). Inner Development Goals: from inner growth to outer change. *Field Actions Science Reports. The journal of field actions*, Special Issue 25, 82-87.
- Badiner, A. H. (Ed.). (1990). *Dharma Gaia: A harvest of essays in Buddhism and ecology*. Parallax Press.
- Ballantyne, R., & Packer, J. (2009). Introducing a fifth pedagogy: Experience-based strategies for facilitating learning in natural environments. *Environmental education research*, 15(2), 243-262.
- Bartlett, C., Marshall, M., & Marshall, A. (2012). Two-eyed seeing and other lessons learned within a co-learning journey of bringing together indigenous and mainstream knowledges and ways of knowing. *Journal of Environmental Studies and Sciences*, 2, 331-340.
- Bateson, G. (2000). *Steps to an ecology of mind: Collected essays in anthropology, psychiatry, evolution, and epistemology*. University of Chicago Press.
- Bateson, N. (2017). Warm data: Contextual research and the evolution of science. *Scientific Yearbook of the Kuyavian-Pomeranian University of Applied Sciences in Bydgoszcz, Transdisciplinary Studies on Culture and Education*, 12, 35-40.
- Battiste, M. & Henderson, J.Y. (2021). Indigenous and trans-systemic knowledge systems. *Engaged Scholar Journal: Community-engaged Research, Teaching, and Learning*, 7(1): i-xvi.
- Bednarek, A. T., et al. (2018). Boundary spanning at the science–policy interface: the practitioners’ perspectives. *Sustainability Science*, 13, 1175-1183.
- Berkes, F. (2018). *Sacred ecology*. Routledge.
- BESS Family Foundation. (2024). Earth based mindfulness and meditation: An exploration of ecodharma practices. Retrieved from: <https://bessfoundation.org>
- Bristow, J., Bell, R., & Wamsler, C. (2022). Reconnection: Meeting the climate crisis inside out. The Mindfulness Initiative. Retrieved from: <https://www.themindfulnessinitiative.org/reconnection>
- Bristow, J., et al. (2024). The system within: Addressing the inner dimensions of sustainability and systems transformation. Club of Rome.
- Cajete, G. (2000). *Native science: Natural laws of interdependence*. Clear Light Publishers.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

De Oliveira, V. M. (2021). *Hospicing modernity: Facing humanity's wrongs and the implications for social activism*. North Atlantic Books.

Dytham, C. (2011). *Choosing and using statistics: a biologist's guide*. John Wiley & Sons.

Elk, L. B. (2016). Native science: Understanding and respecting other ways of thinking. *Rangelands*, 38(1), 3-4.

Fletcher, C., Ripple, W. J., Newsome, T., Barnard, P., Beamer, K., Behl, A., ... & Wilson, M. (2024). Earth at risk: An urgent call to end the age of destruction and forge a just and sustainable future. *PNAS nexus*, 3(4), 106.

Fletcher, G., Waters, J., Yunkaporta, T., Marshall, C., Davis, J., & Manning Bancroft, J. (2023). Indigenous systems knowledge applied to protocols for governance and inquiry. *Systems Research and Behavioral Science*, 40(4), 757-760.

Gotelli, N. J., & Ellison, A. M. (2004). *A primer of ecological statistics*, Vol. 1. Sunderland: Sinauer Associates.

Goodchild, M. (2021). Relational systems thinking: That's how change is going to come, from our earth mother. *Journal of Awareness-Based Systems Change*, 1(1), 75-103.

Hölzel, B. K., et al. (2011). How does mindfulness meditation work? Proposing mechanisms of action from a conceptual and neural perspective. *Perspectives on Psychological Science*, 6(6), 537-559.

Huu, P. & Confino, J. (2024). *Being with busyness: Zen ways to transform overwhelm and burnout*. Parallax Press.

Indigenous Knowledge Systems Collective. (2024). *Protocols for Non-Indigenous people working with Indigenous knowledge*. Indigenous Knowledge Systems Labs at Algoma and Deakin Universities, in conjunction with Indigenous thinkers from AIME and the Indigenous Commons.

IPBES. (2024). *Thematic assessment report on the underlying causes of biodiversity loss and the determinants of transformative change and options for achieving the 2050 vision for biodiversity of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. O'Brien, K., Garibaldi, L., Agrawal, A., Bennett, E., Biggs, O., Calderón Contreras, R., Carr, E., Frantzeskaki, N., Gosnell, H., Gurung, J., Lambertucci, S., Leventon, J., Liao, C., Reyes García, V., Shannon, L., Villasante, S., Wickson, F., Zinngrebe, Y., and Perianin, L. (eds.). IPBES Secretariat. <https://doi.org/10.5281/zenodo.11382215>

Jiwani Z, et al. (2023). Examining equity in access and utilization of a freely available meditation app. *Npj Mental Health Research*, 2:5.

Kabat-Zinn, J., & Hanh, T. N. (2009). Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness. Delta.

Kachan D., et al. (2017). Prevalence of mindfulness practices in the US workforce: National health interview survey. *Prev Chronic Dis*, 14:160034.

Kaza, S. (2008). *Mindfully green: A personal and spiritual guide to whole earth thinking*. Shambhala Publications.

Lavallee, L. (2009). Practical application of an Indigenous research framework and two qualitative Indigenous research methods: Sharing circles and Anishinaabe symbol-based reflection. *International Journal of Qualitative Methods*, 8(1), 21-40.

Leach, M., Scoones, I., & Stirling, A. (2011). Dynamic sustainabilities: Technology, environment, social justice. *Journal of Integrative Environmental Sciences*, 8(2), 140-143.

Macy, J., & Brown, M. Y. (1998). *Coming back to life: Practices to reconnect our lives, our world*. New Society Publishers.

Macy, J., & Johnstone, C. (2012). *Active hope: How to face the mess we're in without going crazy*. New World Library.

Neal, J. W., Posner, S., & Brutzman, B. (2023). Understanding brokers, intermediaries, and boundary spanners: a multi-sectoral review of strategies, skills, and outcomes. *Evidence & Policy*, 19(1), 95-115.

Orr, D. W. (1994). *Earth in mind: On education, environment, and the human prospect*. Island Press.

Posner, S. M., & Cvitanovic, C. (2019). Evaluating the impacts of boundary-spanning activities at the interface of environmental science and policy: A review of progress and future research needs. *Environmental science & policy*, 92, 141-151.

Posner, S.M. & Nolan, K. (2023). *Integrating inner and outer systems change*. The Garrison Institute.

Proulx, J., et al. (2018). Considerations for research and development of culturally relevant mindfulness interventions in American minority communities. *Mindfulness*, 9, 361-370.

Redvers, N., Lockhart, F., Zoe, J. B., Nashalik, R., McDonald, D., Norwegian, G., ... & Tonkin-Crine, S. (2024). Indigenous Elders' voices on health-systems change informed by planetary health: a qualitative and relational systems mapping inquiry. *The Lancet Planetary Health*, 8(12), e1106-e1117.

Richardson, K., Steffen, W., Lucht, W., Bendtsen, J., Cornell, S. E., Donges, J. F., ... & Rockström, J. (2023). Earth beyond six of nine planetary boundaries. *Science advances*, 9(37), eadh2458.

Scharmer, O., & Pomeroy, E. (2024). Fourth person: The knowing of the field. *Journal of Awareness-Based Systems Change*, 4(1), 19-48.

Six Nations. (1978). A basic call to consciousness: The Haudenosaunee address to the western world. Akwesasne Notes.

Smith, L. T. (1999). *Decolonizing methodologies: Indigenous peoples and research*. Zed Books.

Stein, S., Andreotti, V., Ahenakew, C., & Hunt, D. (2022). The complexities and paradoxes of decolonization in education. In *Reimagining globalization and education* (pp. 198-213). Routledge.

Sterling, S. (2011). Transformative learning and sustainability: Sketching the conceptual ground. *Learning and Teaching in Higher Education*, 5(11), 17-33.

Thomashow, M. (1996). *Ecological identity: Becoming a reflective environmentalist*. MIT Press.

Tucker, M. E. & Williams, D. R. (Eds.) (1997). *Buddhism and ecology: The interconnection of dharma and deeds*. Harvard University Press.

Tucker, M. E., & Grim, J. (2016). The movement of religion and ecology: Emerging field and dynamic force. *Routledge handbook of religion and ecology*, 3-12.

Uhl, C. (2003). *Developing ecological consciousness: Path to a sustainable world*. Rowman & Littlefield.

United Nations (2015). *Transforming our world: The 2030 agenda for sustainable development*. United Nations.

Wamsler, C., et al. (2018). Mindfulness in sustainability science, practice, and teaching. *Sustainability Science*, 13, 143-162.

West, S., Haider, L. J., Hertz, T., Mancilla Garcia, M., & Moore, M. L. (2024). Relational approaches to sustainability transformations: walking together in a world of many worlds. *Ecosystems and People*, 20(1), 2370539.

Whyte, K. P. (2017). Indigenous climate change studies: Indigenizing futures, decolonizing the Anthropocene. *English Language Notes*, 55(1), 153-162.

Wilson, S. (2020). *Research is ceremony: Indigenous research methods*. Fernwood publishing.

Wright, A. L., Gabel, C., Ballantyne, M., Jack, S. M., & Wahoush, O. (2019). Using two-eyed seeing in research with indigenous people: an integrative review. *International Journal of Qualitative Methods*, 18.

Yellow Bird, M. (2016). Neurodecolonization: Applying mindfulness research to decolonizing social work. In *Decolonizing social work* (pp. 293-310). Routledge.

Yin, R. K. (2009). *Case study research: Design and methods* (Vol. 5). Sage.

Yunkaporta, T. (2020). *Sand talk: How Indigenous thinking can save the world*. Harper One.

## Appendix 1: Semi-Structured Interview Questions

Share introduction and background about the study, including our focus, main questions, purpose, sources of support, and steering committee. Earth awareness refers to meditation and mindfulness practices that center Earth and relationships with Earth (drawing from the Eco Advisory Group 1 Report published in early 2024). Also, practices, activities, or teachings that have been found to be effective in supporting people to process difficult emotions associated with climate change. Our working definition for Earth awareness is a relational, emergent field that cultivates interconnectedness of all beings and deeper relationships with Earth. Place and relationship with place can provide Earth awareness practice, for example through gardening or farming, meditating in nature, or tending or rewilding land.

### **Understanding Practices and Language That Describes Them**

We're interested to learn about practices you teach or guide others in, less interested in practices you engage in personally on your own.

Can you please share about an Earth awareness practice, ritual, or ceremony you engage with?

Can you help me understand what Earth awareness practice looks like for you?

- What do people do? For example, sitting, walking, engaged with the land like farming, singing, dancing.
- Who do you engage with while practicing? For example, one on one, small groups, large groups. Could you share more about participants?
- Where does this practice occur? Outside or inside? What determines the place?
- When does this practice occur? Time of day, time of year, frequency, etc.

What would you call this practice, ritual, or ceremony (if unclear)?

How do you feel about the term "Earth awareness" or "Earth-based practices?"

- How much do people of different backgrounds see themselves in these practices or as part of a field?
- Examples: Earth awareness, Earth-based practices, Ecodharma, meditation and mindfulness practices brought to the ecological crisis, land based healing, or specific practices like Earth-based body scan, elements meditation, Tonglen as Ecodharma, animistic wisdom traditions, tuning in to Mother Earth, etc.

### **Exploring Purpose of Practice**

Why do you and others engage with this practice?

What's the purpose of the practice?

What are motivations and intentions?



Examples of intentions for practice

- Soothing discomfort or sitting with discomfort. Palliative care, especially with emotions that arise when confronting ecological crises.
- Process difficult emotions like climate grief, anger, despair, and growing eco-anxiety.
- Manage oneself or self-regulating in response to climate impacts.
- Empower people to be more constructively engaged. Empower activism to counter injustice.
- Experience or be reminded of interbeing, interdependence, nonseparation.
- Deepen human-Earth connection and relationship. Be like nature, think like nature, and be aligned with nature, which could help people be better healing agents.
- Confront a very unequal world, systemic racism, injustice.
- Reduce consumerism or motivate simpler, less consumptive lifestyles.
- Alter or influence perception.
- Liberate.

Are particular practices more effective for specific purposes?

### **Exploring Relationships and Networks**

Who else is doing this sort of work?

How do you know them?

Where are places that you consider centers of Earth awareness practice?

### **Nurturing a Field**

What are opportunities and obstacles for people to engage with these practices more broadly?

Strategies for reaching people?

Strategies for facilitating exchange among practitioners?

What would be needed...

- To bring these practices to more people?
- To strengthen practices?
- To support this kind of work?

What are adjacent fields of practice that we could consider focusing on?

What are edges of the field of Earth awareness practices that would be good to consider growing?

### **Wrapping Up**

Thank you for meeting with me today and sharing your perspective.

I'd like to follow up in the months ahead. Would you be interested to stay connected with this project and learn about how it develops?

Is there anyone else you recommend we consider speaking with?

Please reach out if anything else comes to mind.

## Appendix 2: Centers of Practice

List of organizations mentioned by participants during interviews when asked about people and places that are centers of EA practice.

Center	Online	Description
1440 Multiversity	<a href="https://www.1440.org/">https://www.1440.org/</a>	Organization which provides grants and scholarships as well as retreats in Santa Cruz, CA, focused on wellness.
Adaptive Mind project	<a href="http://www.susannemoser.com/documents/AdaptiveMindOverview5-27-19.pdf">http://www.susannemoser.com/documents/AdaptiveMindOverview5-27-19.pdf</a>	A coalition of professionals working on the front lines of climate change who seek to instill personal resilience among climate workers.
AHAM Education	<a href="https://www.ahameducation.org/bnature">https://www.ahameducation.org/bnature</a>	B. Nature is a youth education program from AHAM that empowers teens to cultivate emotional resilience, healthy relationships, and a deeper connection to the natural world through immersive outdoor experiences.
Animus Valley Institute	<a href="https://www.animas.org/">https://www.animas.org/</a>	Institute with many offerings (ranging from wilderness to online courses) in contemporary practices that assist people of Western cultures in their quests for more meaningful, culturally engaged lives aligned with nature, soul, and the Great Turning.
Awake in the Wild	<a href="https://www.awakeinthewild.com/">https://www.awakeinthewild.com/</a>	Online and destination nature retreats around the globe focusing on everything from joy to grief to engaging in environmental activism.
Barre Center for Buddhist Studies	<a href="https://www.buddhistinquiry.org/">https://www.buddhistinquiry.org/</a>	Buddhist center that offers programs that support both beginners and experienced practitioners in cultivating wisdom, deepening practice, and building community. Online and in-person learning about Buddhist traditions in MA.
Big Bear Retreat Center	<a href="https://bigbearretreatcenter.org/">https://bigbearretreatcenter.org/</a>	Inclusive and accessible Southern California retreat center providing meditation retreats as well as programming dedicated to underrepresented demographics.
Boundless Refuge	<a href="https://boundlessness.org/">https://boundlessness.org/</a>	Independent and unaffiliated spiritual organization which offers opportunities for practicing and training in dharma in the context of work.
Brooklyn Zen Center	<a href="https://brooklynzen.org/">https://brooklynzen.org/</a>	An embodied training community in the Soto Zen tradition that offers opportunities to realize personal and collective liberation through the cultivation of intimate, ethical, and just relationships.
Buddhist Peace Fellowship	<a href="https://www.bpf.org/">https://www.bpf.org/</a>	Coalition of practitioners using Buddhism to align and collaborate on social justice issues.

Center for Action and Contemplation	<a href="https://cac.org/">https://cac.org/</a>	Christian contemplative wisdom and practices that support transformation and compassionate action, primarily through online podcasts, courses, and events.
Channel Rock eco-retreat center in Canada	<a href="https://ourcortes.com/our-community/education-retreat-centres/">https://ourcortes.com/our-community/education-retreat-centres/</a>	Hosts intimate retreats and learning community gatherings in an eco-village setting.
Climate Care Collaborative	<a href="https://www.climatecarecollaborative.com/">https://www.climatecarecollaborative.com/</a>	An association of healers, skill builders, researchers and advocates offering their services and skills at the intersection of climate justice and mental health.
Contemplative Sustainable Futures	<a href="https://www.contemplative-sustainable-futures.com/">https://www.contemplative-sustainable-futures.com/</a>	Supports research with real-world impact: science on the role of the mind - awareness, connection, insight, purpose & agency - for social change and transformation. Offers courses, networking, and research on inner and outer topics.
Council on the Uncertain Human Future	<a href="https://councilontheuncertainhumanfuture.org/">https://councilontheuncertainhumanfuture.org/</a>	As a process of reckoning, experiential learning and reflection, the CUHF facilitates understanding both ecological changes + societal conditions as symptoms of & context for the collapse in which we are living.
Dharmadatta	<a href="https://www.dharmadatta.org/en/">https://www.dharmadatta.org/en/</a>	Spanish language community of Buddhist women offering Dharma practice online, and retreats.
Diamond Approach (Diamond Heart Retreats)	<a href="https://www.diamondapproach.org/group-detail/12907">https://www.diamondapproach.org/group-detail/12907</a>	Retreat centering radical personal transformation, bridging traditional divisions between the sacred and the mundane, the spiritual and the worldly, inner realization and our psychology.
Earth Holders Community	<a href="https://earthholder.training/">https://earthholder.training/</a>	Global branch of Plum Village mindfulness practitioners who apply engaged Buddhism, mindful living, social and racial justice, and inter-being with Mother Earth.
Earth Room	<a href="https://alokavihara.org/aloka-earth-room/">https://alokavihara.org/aloka-earth-room/</a>	Contemporary temple-space interweaving dharma, ecology, and art in San Rafael, CA.
Earthlodge Center for Transformation	<a href="https://www.earthlodgecenter.org/">https://www.earthlodgecenter.org/</a>	A spiritual sanctuary for people to transform their trauma into healing and justice.
Ecodharma Center	<a href="https://ecodharma.com/">https://ecodharma.com/</a>	Offer courses, events and retreats which support the realization of our human potential and the development of an ecological consciousness honoring our mutual belonging within the web of life – drawing on the Buddhist Dharma and the emerging ecological paradigms of our time.

Ekvn-Yefolecv (ee-gun yee-full-lee-juh)	<a href="https://www.ekvn-yefolecv.org/">https://www.ekvn-yefolecv.org/</a>	An intentional ecovillage community of Indigenous Maskoke persons who have returned for the purpose of practicing linguistic, cultural and ecological sustainability.
Empty Cloud Monastery	<a href="https://buddhistinsights.org/#eighth">https://buddhistinsights.org/#eighth</a>	A Buddhist monastery & a non-profit organization connecting people with monastics.
Gaia House	<a href="https://gaiahouse.co.uk">https://gaiahouse.co.uk</a>	Gaia House offers Insight Meditation retreats in the Buddhist tradition in Devon, England.
Green Gulch	<a href="https://www.sfzc.org/location/s/green-gulch-farm">https://www.sfzc.org/location/s/green-gulch-farm</a>	Buddhist practice center in the Japanese Soto Zen tradition, offering training in Zen meditation, philosophy, and work online and in person.
Greenfaith	<a href="https://greenfaith.org/">https://greenfaith.org/</a>	Worldwide multi-faith climate and environment movement.
Inner Development Goals	<a href="https://innerdevelopmentgoals.org/">https://innerdevelopmentgoals.org/</a>	Non-profit, open-source initiative committed to fostering inner development towards more sustainable futures. research, collect, and communicate science-based skills and qualities that help us to live purposeful, sustainable, and productive lives.
Inner Green Deal	<a href="https://innergreendeal.com/">https://innergreendeal.com/</a>	Evidence based org supporting people and organizations in integrating inner capacities with environmental change.
Inside Passages	<a href="https://www.insidepassages.com">https://www.insidepassages.com</a>	Inside Passages is a nature-based expedition program founded by Kurt Hoelting that integrates mindfulness practice with wilderness exploration, offering transformative experiences that reconnect participants with the wild and their inner lives.
Insight Meditation Society - Forest Refuge	<a href="https://www.dharma.org/retreats/forest-refuge/">https://www.dharma.org/retreats/forest-refuge/</a>	The Forest Refuge in MA is structured for meditators with an established and long-term commitment to vipassana practice, including longer-term retreat experience.
Interfaith Power and Light	<a href="https://interfaithpowerandlight.org/">https://interfaithpowerandlight.org/</a>	Movement of faith and conscious-based leaders mobilizing for climate causes.
International Network of Engaged Buddhists	<a href="https://inebnetwork.org/">https://inebnetwork.org/</a>	Autonomous organization under the Bangkok-based Sathirakoses-Nagapradipa Foundation organizing social action for a healthy, just, peaceful world. Biannual policy conference on using Dharma to overcome suffering.
Inward Bound	<a href="https://inwardboundmind.org/">https://inwardboundmind.org/</a>	Mindfulness retreats for children and adults, teachers, fostering compassionate inner and outer worlds.
John Milton	<a href="https://www.wayofnature.com/founder">https://www.wayofnature.com/founder</a>	Way of Nature is a nature-based path to connection and liberation; focus on time alone in nature during retreats; also produce documentary films,

		decentralized renewable energy programs, organic gardening, landscaping, and developing ecologically creative models of sustainable communities.
Kataly Foundation	<a href="https://www.katalyfoundation.org/">https://www.katalyfoundation.org/</a>	Foundation working toward a world in which Black and brown people have the resources, power, and agency to execute their own visions for justice, well-being, and shared prosperity within their communities
Lama Foundation	<a href="https://www.lamafoundation.org/">https://www.lamafoundation.org/</a>	Spiritual community, educational facility, and retreat center near Taos, NM offering retreats for all spiritual traditions, including contemplative environmentalism.
Land Peace Foundation	<a href="https://www.landpeacefoundation.org/">https://www.landpeacefoundation.org/</a>	Focus on kinship as an expression of relationality, cultural continuity, and as a means of preserving Indigenous knowledge systems through retained relationship and deep connection to the land. The community is grounded in three core Wabanaki values: N'dilnabamuk - honoring all our relations; Alabezu - ensuring that everyone has enough to live their lives with dignity; Wicuhkemtuline - helping one another.
Maji ya Chai Land Sanctuary	<a href="https://www.majiyachai.org/">https://www.majiyachai.org/</a>	Black-owned, nature-based healing retreat center.
Mind and Life Research Institute (see 2021 climate course)	<a href="https://www.mindandlife.org/">https://www.mindandlife.org/</a>	Bring science and contemplative wisdom together to better understand the mind and create positive change in the world through courses, events, and online learning.
Mountain Stream Meditation Center	<a href="https://www.mtstream.org/">https://www.mtstream.org/</a>	Meditation retreat center offering a wide variety of retreats centered around Buddhist meditation practice.
Natural Dharma Fellowship	<a href="https://naturaldharma.org/">https://naturaldharma.org/</a>	Organization of Buddhist practitioners dedicated to bringing the practices of Tibetan Buddhism into the contemporary world in accessible, relevant, and creative ways.
Nones and Nuns - Land Justice Project	<a href="https://www.nunsandnones.org/land-justice">https://www.nunsandnones.org/land-justice</a>	As religious communities make long-term decisions about the land they have stewarded for generations, the N&N Land Justice Project seeks to expand available options that protect and regenerate land, while also repairing centuries of racial harm.
Off Grid Retreats	<a href="https://offgridretreats.org/">https://offgridretreats.org/</a>	San Francisco based NGO that provides opportunities for communities and individuals to gather & practice in nature retreats, offering nature retreats, gear rentals and support for those seeking a deep connection with nature.

Omega	<a href="https://www.eomega.org/">https://www.eomega.org/</a>	Retreat center holding mindfulness and meditation retreats in the Hudson Valley, including numerous programs related to mindfulness, sustainability, and resilience.
One Earth Sangha	<a href="https://oneearthsangha.org/">https://oneearthsangha.org/</a>	Virtual ecodharma center supporting a global community in the Path of Engaged Practice.
Pioneers of Our Time	<a href="http://pioneersofourtime.com">pioneersofourtime.com</a>	Network of changemakers looking to make major changes starting at the local level. Offer retreats in Spain at an experimental regenerative community.
Planetary Guardians	<a href="https://www.planetaryguardians.org/">https://www.planetaryguardians.org/</a>	Independent collective elevating the science to make the Planetary Boundaries a measurement framework for the world.
Presencing Institute	<a href="https://www.presencing.org">https://www.presencing.org</a>	The Presencing Institute is an action research platform founded by Otto Scharmer that helps individuals, organizations, and systems address complex challenges by applying the Theory U process to shift consciousness and co-create deep systemic change.
Ratna Ling Buddhist Retreat Center	<a href="https://ratnaling.org/">https://ratnaling.org/</a>	Tibetan Buddhist retreat center offering online and in-person education, healing, and spirituality to integrate into everyday life.
Rocky Mountain Eco Dharma	<a href="https://rmerc.org/">https://rmerc.org/</a>	A rustic retreat center emphasizing Buddhism and Dharma in nature.
San Francisco Zen Center	<a href="https://www.sfzc.org/">https://www.sfzc.org/</a>	Three Zen Buddhist practice centers offer daily meditation, regular monastic retreats and practice periods, classes, lectures, and workshops. They also participate in work with prisoners, homeless, those in recovery from addiction, and environmental and peace promoting work.
School for the Great Turning	<a href="https://schoolforthegreatturning.com/">https://schoolforthegreatturning.com/</a>	Offers online and in-person education that fosters personal empowerment and planetary care.
School of Lost Borders	<a href="https://schooloflostborders.org/">https://schooloflostborders.org/</a>	Offer courses, vision fasts, guide trainings, and other programs that offer initiatory, transformational experiences to those seeking growth, insight, and restoration.
Sensemaking, Action, and Leadership Training for Climate	<a href="https://instituteofappliedmetatheory.org/donations/salt-for-climate/">https://instituteofappliedmetatheory.org/donations/salt-for-climate/</a>	Addresses a critical blind spot in climate action by focusing on conscious sensemaking as the foundation for effective climate initiatives.
Shelterwood	<a href="https://www.shelterwoodcollective.org/">https://www.shelterwoodcollective.org/</a>	A 900-acre Indigenous, Black, Disabled, and Queer-led community forest and collective of land protectors and cultural changemakers.

Sky Mind Retreats	<a href="https://www.skymindretreats.org/">https://www.skymindretreats.org/</a>	Community dedicated to outdoor Nature Dharma retreats.
Spirit Rock	<a href="https://www.spiritrock.org/">https://www.spiritrock.org/</a>	Spirit Rock is a spiritual training institution in the Insight Meditation tradition grounded in the Buddha's teachings in the Pāli discourses. Offer courses, meditations, retreats, and ecodharma programs.
Tassahara Zen Center	<a href="https://www.sfzc.org/location/s/tassajara">https://www.sfzc.org/location/s/tassajara</a>	Part of the San Francisco Zen Center, this location has a long history as a center for Zen practice in the greater SF area, hosts retreats and visitors for part of the year and cloistered students for the other.
The Wekesa Earth Center at the University of Maryland	<a href="https://wekesaearthcenter.com/about">https://wekesaearthcenter.com/about</a>	A collaborative effort of scholarship and recognition across multiple disciplines to promote, equity, reconciliation, and healing in nature and to build a world where every human being is granted their right to enjoy and experience the privileges of these ancestral lands.
The Work that Reconnects network	<a href="https://workthatreconnects.org/">https://workthatreconnects.org/</a>	Network of facilitators affiliated with the work of Joanna Macy who develop materials and facilitate learning activities on Systems Thinking, Deep Ecology and Deep Time, Spiritual Traditions, and Undoing Oppression.
Vallecitos	<a href="https://www.vallecitos.org/">https://www.vallecitos.org/</a>	Wilderness retreat center offering mindfulness and meditation retreats, centering Indigenous practices.
Waymarkers	<a href="https://www.waymarkers.net/">https://www.waymarkers.net/</a>	The mission of Waymarkers is to expand and deepen our relationship with the sacred found within one another and the more-than-human world.
Whidbey Institute	<a href="https://whidbeyinstitute.org/">https://whidbeyinstitute.org/</a>	Their mission is to nurture the conditions for transformational learning, and our purpose is to be a Place for those called by the responsibility and transformative potential of these times.
Wild Church Network / Church of the Wild	<a href="https://www.wildchurchnetwork.com/">https://www.wildchurchnetwork.com/</a>	A support system for new and growing wild churches and their leaders since 2016. Wild Church gatherings offer opportunities for contemplation, grief and praise, movement and song, solo wandering and wondering, advocacy, ecological restoration and activism on behalf of and in collaboration with the beloved others in our watersheds.
Wilderness Awareness School	<a href="https://wildernessawareness.org">https://wildernessawareness.org</a>	Their mission is to help children and adults cultivate healthy relationships with nature, community, and self through outdoor education programs.
Zen Mountain Monastery in Woodstock, NY	<a href="https://zmm.org/">https://zmm.org/</a>	Western Zen Buddhist org offering programs and retreats. Places of practice and refuge to help you learn how to integrate your spiritual path into your everyday life.



## Appendix 3: Notable Examples of Earth Awareness Practices

Participants described the following examples of Earth Awareness practices that they teach.

**Ecodharma Retreats** are multi-day retreats designed to connect participants with Earth while integrating meditation, mindfulness, and ecological awareness. They often combine meditation, dharma talks, and nature immersion, and may culminate in solo wilderness experiences.

- Structure:
  - Multi-day events, often in remote, natural locations.
  - Days may begin with solo meditation in nature, followed by dharma talks and group sharing.
  - Activities include walking meditation on trails, nature observation, and silent reflection.
  - Some retreats include dharma sharing, grief and rage rituals, 1-3 day solo immersions in wilderness that evoke nature kinning, offerings to the land, and ancestor ceremonies.
- Focus: Cultivating gratitude, processing ecological grief, and fostering a sense of deep lineage and interconnectedness with the natural world.
- Example: At the Rocky Mountain Eco-Dharma Retreat Center, participants meditate outdoors, reflect on grief and anger through deep rituals, and transform relationships with Earth through embodied and experiential healing and learning practices.

**Climate Cafes and Youth Resilience Programs** provide safe, supportive spaces for discussing eco-anxiety, building emotional resilience, and fostering activism.

- Structure:
  - Informal, conversational gatherings for young people.
  - Participants share their emotions about the climate crisis in a nonjudgmental environment.
  - Activities include mindfulness exercises, creative expressions, and storytelling.
- Focus: Addressing the emotional and mental health challenges of climate change, particularly for youth in the Global South and Indigenous communities.
- Example: Zen-inspired Climate Cafes facilitate discussions that help participants alchemize emotional energies to transition from anxiety to empowerment, solidarity, and collective action.

**Mindfulness-Based Sustainability Transformations** integrate mindfulness practices with climate leadership and systemic change.

- Structure:

- Courses and leadership workshop often involve lectures, practice labs, and personal reflection exercises.
- Students engage in home practices like meditation or journaling on sustainability topics.
- Facilitators introduce mindfulness techniques tailored to modern ecological challenges.
- Focus: Inner transformation to complement external sustainability efforts, helping individuals build emotional resilience and systemic awareness.
- Example: In Search Inside Yourself Leadership Institute programs focused on the environment, participants learn how mindfulness reduces stress while enhancing engagement and hope in addressing environmental crises.

**Vision Quests and Rites of Passage** deepen personal transformation and connection with the natural world.

- Structure:
  - Participants spend extended time in nature, often fasting and reflecting in solitude with training provided in advance and support for a safe and healthy return.
  - Guides support preparation and integration of insights gained during the experience to help participants make sense of deep experiences.
  - Practices include sitting with intentions, listening to nature, and journaling.
- Focus: Cultivating self-awareness, spiritual renewal, and a profound sense of belonging to Earth.
- Example: The School of Lost Borders offers wilderness vision quests designed to help participants confront egoic limitations and connect with their larger purpose.

**Leadership Retreats in Nature** engage leaders in exploring their roles in ecological and social change through nature immersion.

- Structure:
  - Multi-day-long programs with individual and group activities.
  - Leaders reflect on questions like "Who am I?" and "What is my role?" and "What is my purpose?"
  - Activities include solo nature experiences, gratitude practices, and leadership coaching.
- Focus: Helping leaders align their purpose with actionable steps for systemic transformation.
- Example: Retreats like Purpose Quest or programs affiliated with Synergos or Channel Rock in British Columbia, Canada pair leadership coaching with nature-guided reflection.

**Nature Awareness Practices** cultivate mindfulness and connection with place through sensory immersion in nature.

- Structure:
  - Participants spend quiet, reflective time sitting or moving slowly and mindfully in an outdoor environment.
  - Activities may involve guided meditations, silent walks, or simply sitting and observing all that arises.
  - Emphasis on engaging all senses, such as listening to birds, feeling the ground, seeing the wind move, smelling and tasting the air, and sensing Earth.
- Focus: Encouraging relaxation, curiosity, and a sense of wonder through simple, direct interactions and observations with nature.
- Example: Sit spots are commonly used in retreats. Forest bathing sessions are offered for students, staff, and faculty at the University of Maryland, College Park to help participants reduce stress and rediscover connection with the immediate environment in which they work, learn, and reside.

**The Work That Reconnects** is a framework developed by Joanna Macy that helps individuals process grief and eco-anxiety while fostering empowerment.

- Structure:
  - Workshops and retreats guide participants through four stages of an ongoing spiral:
    - Gratitude: Recognizing what we cherish about life and the Earth.
    - Honoring Pain and Suffering: Facing emotions like loss, anger, and fear without denial.
    - Seeing with New Eyes: Understanding interdependence and ecological systems.
    - Going Forth: Identifying how to take meaningful action.
  - Activities include interactive exercises like Truth Mandalas, role-playing, and guided meditations.
- Focus: Building emotional resilience and community solidarity to inspire environmental activism.
- Example: Programs often integrate storytelling and rituals to process grief and awaken a sense of collective agency.

**Contemplative Nature-Based Practices** combine meditation, mindfulness, and nature immersion for spiritual and personal growth.

- Structure:
  - Practices include mindful breathing with the elements, walking meditations, and sensory awareness exercises.
  - Retreats often occur in remote or semi-wild settings, but also occur in urbanized or industrial settings such as the parking lot of a petrochemical plant in a large American city.

- Participants are encouraged to view nature in all manifestations as a co-teacher, learning from stillness, impermanence, and interdependence.
- Focus: Deepening awareness of the interconnectedness of all life, fostering reverence for Earth in a variety of forms, and cultivating acceptance.
- Example: Awake in the Wild retreats use practices like "Earth Breathing" and "Reciprocity Meditations" to guide participants in connecting with their surroundings. Contemplative practice can be integrated with accessible activities, such as mindful gardening through tending soil, planting seeds, watering, cultivating, harvesting, and consuming.

## Appendix 4: Author Positionality Statement

May 29, 2025

I come from Baltimore, Maryland, in the mid-Atlantic region on the east coast of the United States. My father grew up in Baltimore City, graduated high school early to attend Caltech, and worked as a digestive health doctor on Navy submarines and at Mercy Hospital in Baltimore. His ancestry traces to Russia, the eastern mountains of modern-day Poland, and Cossack peoples. My mother grew up on a farm in Baltimore County amidst rural poverty. She was the first in her family to attend college, a mother of four who worked part-time as a school nurse. Based on surnames, her ancestry is likely British and German, but we do not have good records. My parents met through their work at urban hospitals.

I grew up the youngest of four children, surrounded by fragmented suburban forests. I graduated from a public high school and attended a Quaker college near Philadelphia, where I studied astronomy and physics and was elected captain of the college lacrosse team. After graduating, I returned to my high school job in tree care before moving to the Bay Area of California for 3 years, where I worked in restaurants, taught math, and studied science education in graduate school at Stanford University. I moved to the Hudson Valley of New York to work in conservation and land use for 2 years before moving to the Green Mountains of Vermont, where I've lived for the past 19 years, studying and working in natural resources, biodiversity assessment, climate, economics and policy, and planetary health. I'm married and have 4 children. They teach me patience, love, and gratitude.

Growing up as a white, physically able, educated male has afforded me many privileges. While these privileges have shielded me and provided unearned advantage, I had tough formative experiences growing up marked by violence and loss. The opioid epidemic claimed the lives of several people who I was close with, including my sister Melissa. I experienced unsafe situations and conflict in my early years. These experiences taught me to bear witness and fostered values of courage, humility, mutual respect, and compassion. Socially significant dimensions of my identity and my lived experiences impact my research questions, epistemologies, ontologies, methods, and communication styles.

Earth awareness has been central for most of my life. I was raised Jewish and had spiritually significant experiences when I was a boy learning outside and attending land camp for several weeks in the summers. One camp included mentorship and programs designed by Native American leaders, including sweat ceremonies and healing rituals. As a result, I was drawn toward spiritual grounding through relationship with Earth from an early age. I studied Native American Music and Belief in college and have met with Indigenous healers across traditions for much of my life. In 2003, I began formal meditation practice and have engaged in practical and intellectual studies of Zen Buddhism.

I sought to embody many of the qualities of EA as a relational field and deepened practice throughout this research process. For example, while conducting research, I engaged in daily Earth-centered mindfulness activities and multi-day retreats such as Becoming Earth at the Garrison Institute in November of 2024 that centered many of the elements of EA described here.

In this inquiry, I used boundary spanning between peoples, cultures, and the land to understand and communicate how people relate on deeper levels. Deep listening was essential to interpreting subtle content of dialogue and to noticing kernels of separateness that arise in research based in Western science worldviews such as subject-object empiricism, reductionism, and positivism.

Being in relationship with Earth and integrating ways of knowing – steady themes through my own continuous learning journey – motivated my inquiry into Earth awareness and guided interactions along the way. My work aims to heal relationships, promote ecological integrity, and generate longer-term prospects for planetary health, peace, and tranquility.