



Exploring the Lived Meaning of Ecological Stewardship among Indigenous Communities in a Climate-Affected Region of the Arctic Boreal Forest

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Article Info

Article history:

Received 27-05-2025

Revised 06-07-2025

Accepted 17-07-2025

Keyword:

Indigenous Communities;
Ecological Stewardship; Lived
Experience; Spiritual Ecology;
Environmental Sustainability.

ABSTRACT

Environmental sustainability remains a critical area of research, with Indigenous ecological knowledge increasingly recognized for its unique contributions to long-term ecosystem balance. However, limited attention has been given to the lived, spiritual, and cultural experiences that shape how Indigenous communities practice environmental stewardship. Despite numerous studies documenting Indigenous conservation practices, little is known about how these communities experience and assign meaning to their ecological roles, leading to the central research question: How do Indigenous people perceive and live their responsibility in maintaining ecological balance? This study uses a descriptive phenomenological approach to explore how Indigenous individuals experience their connection to the environment through traditional practices. The analysis reveals that environmental stewardship is experienced as a sacred and ancestral responsibility, characterized by reciprocal relationships with nature and embodied acts of cultural resistance. Data were collected through in-depth, semi-structured interviews with 12 Indigenous participants selected through purposive sampling. Thematic analysis was conducted using eidetic reduction to extract the essential meanings of participants' narratives. Four major themes emerged: ancestral eco-spiritual awareness, embodied ecological resistance, rhythms of reciprocity, and identity negotiation amid environmental change. These themes underscore how ecological care is not merely a set of behaviors but a meaningful life practice grounded in spiritual and cultural continuity. The findings offer deeper insight into Indigenous environmental engagement and call for sustainability policies that are rooted in cultural and spiritual frameworks. Future research may benefit from expanding phenomenological inquiries across diverse Indigenous communities to further explore the intersection of spirituality, identity, and ecological resilience.



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INTRODUCTION

Environmental sustainability has emerged as one of the defining concerns of the 21st century, particularly as global communities face the accelerating impacts of climate change, biodiversity loss, and ecological degradation. Amid these challenges, Indigenous communities have increasingly gained recognition for their unique ecological knowledge systems and practices that maintain harmonious relationships with the environment. These traditional frameworks are deeply rooted in cultural, spiritual, and ancestral values, offering alternative paradigms of sustainability that contrast with extractive and industrial models of development (Berkes, 2018).

In many Indigenous societies, the natural world is not perceived merely as a resource but as a sentient entity with which humans share mutual obligations. Forests, rivers, and mountains are often imbued with spiritual significance, guiding social behavior, rituals, and decision-making. These ontologies shape the community's daily interactions with the land, often resulting in sustainable environmental stewardship practices that have persisted across generations.

While prior research has documented Indigenous environmental practices and highlighted their significance within sustainability discourse, much of this work remains focused on external observations of behavior or policy implications. Despite increasing recognition in international policy discourse, the lived experiences and internal meanings that guide these practices remain underexplored in academic research, particularly in contexts where communities are confronting the dual pressures of environmental degradation and cultural marginalization (Zylstra et al., 2019).

This study seeks to address this gap by applying a phenomenological lens to understand how Indigenous individuals perceive and live their responsibilities toward the environment. By centering the subjective and embodied dimensions of ecological care, this research contributes to expanding the epistemological diversity of sustainability studies. Specifically, it aims to (1) explore the meanings Indigenous people assign to environmental stewardship, (2) identify the underlying spiritual and cultural dimensions of such practices, and (3) illuminate how these meanings are negotiated in response to contemporary ecological and sociocultural change.

In doing so, the study offers new insights into the intersection of identity, spirituality, and ecological resilience, with implications for developing culturally grounded frameworks for environmental policy and education. Understanding these experiences requires more than a technical or policy-driven analysis. It demands attention to how individuals and communities perceive, internalize, and enact their relationships with the environment. The subjective dimensions of environmental engagement such as spiritual connection, ancestral memory, and emotional resonance are central to how ecological balance is understood and practiced. In this regard, phenomenology provides a powerful lens to explore the meanings that emerge from these embodied and situated experiences.

Given the increasing ecological disruptions affecting Indigenous territories and the urgency to preserve cultural wisdom that sustains environmental integrity, there is a critical need to explore how these communities make sense of their ecological roles. A phenomenological inquiry into their lived experiences offers an avenue to uncover the meanings, values, and worldviews that remain obscured in dominant environmental narratives, and can enrich both academic understanding and policy development.

Within the broader discourse of environmental sustainability, research exploring the lived experiences of individuals in their ecological contexts has become increasingly significant. This line of inquiry offers crucial insights into how environmental values, practices, and identities are constructed, negotiated, and transmitted through subjective engagement rather than through externally imposed frameworks. In particular, Indigenous communities represent a compelling context for such exploration due to the depth and complexity of their spiritual and cultural connections to the environment (Martinez, 2021).

Despite this growing recognition, many existing studies have relied on quantitative or policy-oriented approaches that often overlook the intricate, personal, and emotional dimensions of ecological stewardship. Surveys and structured models may quantify behaviors or measure attitudes, but they fall short in capturing the spiritual meanings, ancestral memories, and embodied practices that define how Indigenous individuals experience and maintain ecological balance. Consequently, much of the richness inherent in these experiences remains unarticulated or misrepresented in academic and institutional narratives (Zylstra et al., 2019).

This methodological limitation underscores the inadequacy of conventional research designs in fully grasping the essence of environmental experiences in Indigenous contexts. Approaches that reduce complex cultural and spiritual practices to measurable variables risk erasing the very elements that sustain ecological wisdom. As a result, a substantial gap persists in understanding the depth of Indigenous ecological consciousness, especially as it is lived and narrated by those within the community.

To address this gap, there is a pressing need for a methodological framework that centers the voices and meanings of those directly experiencing environmental realities. Phenomenology,

particularly its descriptive form, is uniquely suited to fulfill this need by illuminating the internal logic, felt meanings, and existential significance embedded in human-environment relationships.

Conventional responses to ecological degradation in Indigenous territories have predominantly relied on technical interventions, policy adjustments, or the integration of Indigenous knowledge into pre-existing environmental management frameworks. While these approaches offer pragmatic solutions, they often reduce Indigenous ecological practices to utilitarian data points or procedural knowledge, thereby marginalizing the deeper cultural and spiritual dimensions that underpin environmental stewardship (Berkes, 2018).

These prevailing methods typically fail to account for the rich, subjective experiences that shape how Indigenous communities understand and respond to environmental change. Quantitative studies and externally driven ethnographic accounts may document behaviors or cultural practices, but they frequently overlook the meanings attached to those practices meanings that are embedded in ritual, memory, and ancestral cosmology. As a result, existing literature provides only a partial picture of how ecological balance is enacted and experienced within Indigenous contexts (Zylstra et al., 2019; Muir, 2020).

The limitations of such approaches highlight a critical need for methodologies that do not merely extract information but instead engage with the essence of experience. Descriptive phenomenology offers a compelling alternative, as it emphasizes the lived, first-person perspectives of individuals and seeks to reveal the structures of consciousness through which meaning is constructed. This method allows researchers to move beyond surface-level observations and enter into the existential realities of participants, uncovering the affective, spiritual, and symbolic layers of their environmental practices (Martinez, 2021).

Despite the potential of this approach, there remains a scarcity of phenomenological studies that center the voices of Indigenous communities in relation to their ecological worldviews. Very few investigations have attempted to capture the subjective essence of what it means to care for the environment as an act of cultural and spiritual continuity. Addressing this gap is essential not only for academic enrichment but also for informing more culturally respectful and contextually grounded environmental policies.

Previous studies have examined Indigenous communities' environmental roles from policy, ethnographic, and ecological perspectives. While valuable, these studies often focus on practices and outcomes rather than the lived meanings attached to those actions. Some have recognized the spiritual or cultural relevance of environmental care but lack depth in exploring how individuals experience these values internally. Research using interpretative or thematic approaches provides insights into collective narratives, yet it frequently fails to access the essence of personal meaning. Therefore, there remains a need for inquiry that centers the subjective experience itself.

This study applies a descriptive phenomenological method to explore how Indigenous individuals perceive and live their ecological responsibilities. This approach was chosen to address the knowledge gap identified earlier, particularly the absence of firsthand accounts that reveal the spiritual and cultural meanings behind ecological balance. By focusing on lived experience, the method allows a deeper understanding of environmental care as a meaningful act rooted in ancestral identity. This study answers the question: How do Indigenous people experience environmental stewardship as part of their spiritual and cultural life? It highlights the necessity of engaging with the inner world of participants to truly understand the phenomenon.

The article begins with an introduction to the broader issue of sustainability and the role of Indigenous knowledge. It then narrows the focus to the lived experience of ecological balance and explains the phenomenological methodology employed. Subsequent sections describe participant selection, data collection, and the thematic analysis process used to extract essential meanings. The findings are discussed across four major themes, supported by direct participant quotes. The paper concludes with a summary of insights and their implications for environmental research and policy.

RESEARCH METHODS

Study Design

This study employed a descriptive phenomenological design grounded in the philosophical tradition of Edmund Husserl. The approach was selected to uncover and articulate the essence of Indigenous community members' lived experiences in maintaining ecological balance amidst contemporary environmental pressures. Phenomenology is particularly suitable for research that seeks to understand subjective meaning from the perspective of those who have directly experienced a phenomenon. The descriptive variant of this method emphasizes the suspension of researcher biases (epoché) and aims to extract the pure essence of participants' experiences through systematic analysis of their narratives.

Participants

Participants consisted of Indigenous individuals residing in forest-based communities within regions affected by climate-related ecological changes. Inclusion criteria required that participants had at least ten years of involvement in customary ecological practices, a demonstrated commitment to land stewardship, and the ability to articulate their lived experiences in either the local language or Bahasa Indonesia. Exclusion criteria included individuals who were transient residents or lacked direct engagement in traditional environmental rituals. A total of 12 participants (6 men and 6 women) were involved in the study, ranging in age from 35 to 72 years, with an average age of 51.8 years. All participants held key cultural roles in their communities such as ritual leaders, forest guardians, or oral historians, providing rich perspectives relevant to the phenomenon under investigation.

Data Collection

Data were collected through in-depth, semi-structured interviews guided by an interview protocol designed to explore themes of ecospirituality, ancestral knowledge, and environmental engagement. Interviews were conducted face-to-face in community spaces deemed sacred or symbolically important by participants, allowing a culturally sensitive environment conducive to openness. Each interview lasted between 60 to 90 minutes and was audio-recorded with informed consent. A quiet and private setting was maintained to ensure participant comfort and confidentiality. Field notes and memos were also documented to support contextual interpretation. No standardized instruments were used beyond the semi-structured guide, although prompts were adapted iteratively to capture emerging themes.

Data Analysis

The data were analyzed using thematic analysis consistent with the principles of descriptive phenomenology. Transcripts were first reviewed repeatedly to gain familiarity with the content. Meaning units were then identified, segmented, and coded using open coding strategies. Themes were inductively developed through a process of clustering similar codes, followed by eidetic reduction to capture essential structures of the experience. The software ATLAS.ti was employed to assist with data organization and theme development but was not central to the analytical framework. The outcome of the analysis was a set of core themes that represented the fundamental meanings of participants' lived experiences with ecological balance and spiritual environmentalism.

Ethical Considerations

Ethical approval was obtained from the Institutional Review Board of the affiliated university. Written informed consent was secured from all participants after a thorough explanation of the study's objectives, procedures, and ethical safeguards. Anonymity was preserved by assigning pseudonyms and removing any identifying information from transcripts and reports. The research adhered to the ethical guidelines of the Declaration of Helsinki and local regulations governing research with Indigenous populations, including respect for cultural sovereignty and collective consent where applicable.

RESULTS

Ecospiritual Consciousness Rooted in Ancestral Legacy

Participants consistently described their environmental stewardship as a sacred duty inherited from their ancestors. This sense of responsibility was embedded not in formal ecological education but in intergenerational transmission of values, rituals, and beliefs that portray nature as sentient and spiritually bound to their identity.

“When I step into the forest, I don’t see trees I feel the presence of our ancestors. Every tree holds a spirit. Cutting one down without ceremony feels like cutting our own lineage.” (Participant 4)

This consciousness was not merely symbolic; it shaped concrete actions such as reforestation rituals, conservation taboos, and seasonal harvesting practices. The forest was not an object of exploitation, but a living relative whose well-being was intertwined with that of the community.

Embodied Resistance to Environmental Degradation

Participants revealed how preserving ecological balance amidst external threats such as land grabbing, mining, and monoculture farming was not only a political act but a deeply embodied experience of resistance. Their narratives showed fatigue, trauma, but also spiritual resilience.

“I once confronted a man who burned part of the sacred land. I didn’t shout. I sat and sang the old protection chant. It’s our way to tell the earth we’re still here, defending her.” (Participant 2)

This form of resistance was carried through rituals, collective memory, and ecological mourning. Many participants described moments of ecological grief, which they processed through community storytelling, ancestral offerings, and meditative forest walks.

The Sacred Rhythm of Reciprocity

The relationship between the community and the environment was not defined by extraction but by reciprocity. Participants expressed a deep sense of ethical obligation to ‘give back’ to nature a recurring theme that underpinned farming practices, hunting methods, and land care.

“Before planting anything, we ask the land if she’s ready. We don’t just take. That’s why we dance. That’s why we wait. That’s why we give back with songs and seeds.” (Participant 7)

Such gestures were not performative but constituted a lived rhythm of coexistence. The concept of time itself was framed around ecological signs and ancestral messages, diverging sharply from modern, production-driven metrics.

Negotiating Identity in a Changing Climate

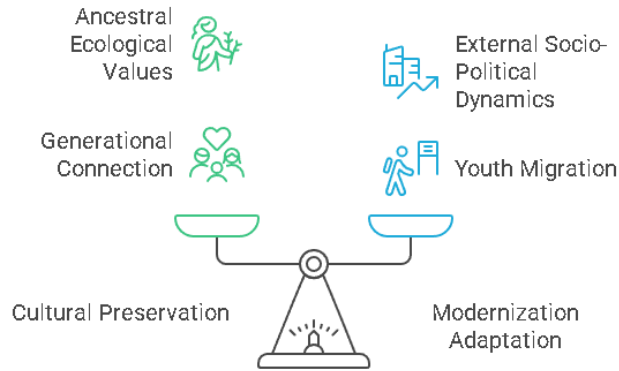
Participants shared internal struggles in maintaining cultural practices amidst the pressures of modernization, climate variability, and youth migration. There was an ongoing negotiation between preserving ancestral ecological values and adapting to external socio-political dynamics.

“My son now works in the city and laughs at our forest rituals. I fear the day our children forget the language of the land. But I keep teaching the chants maybe one day, they’ll come back to them.” (Participant 5)

Despite these tensions, many participants held hope that cultural revival through education and digital storytelling could bridge the gap between generations and climate realities.

The lived experiences of Indigenous community members reflect an ecospiritual worldview that frames environmental care as a sacred, reciprocal, and embodied practice. Their actions, grounded in ancestral knowledge and communal rituals, offer a profound counter-narrative to dominant paradigms of environmental management. The essence of their experience is one of resilient sacred stewardship in the face of ecological and cultural disruption.

Balancing Tradition and Modernity in Indigenous Communities



DISCUSSION

The findings of this study reveal that Indigenous environmental stewardship is experienced as a sacred, reciprocal, and embodied practice rooted in ancestral legacy and spiritual consciousness. This lived understanding responds directly to the central research question by highlighting how ecological care is deeply intertwined with cultural identity and existential belonging.

These insights offer a nuanced understanding of environmental stewardship that moves beyond functional or behavioral explanations. By uncovering the inner meanings attached to ecological rituals, resistance practices, and intergenerational transmission of values, this study contributes a unique voice to the discourse on sustainability one that centers relationality and spirituality. Rather than presenting Indigenous communities as passive knowledge holders, the findings affirm their role as active meaning-makers, whose environmental actions are guided by a sense of ancestral continuity and moral obligation toward the land. This reinforces the value of phenomenology in revealing how ecological balance is not only maintained in action, but lived in experience.

The thematic interpretations align with existing literature on Indigenous knowledge systems, particularly Berkes' (2018) concept of "sacred ecology," which emphasizes the integration of belief, ritual, and ecological ethics. Furthermore, the experiential lens offered by this study resonates with Zylstra et al. (2019), who argued that human-nature connectedness is both affective and spiritual in nature. However, unlike studies that focus on collective identity or symbolic ecology alone, this research emphasizes the personal, felt dimensions of environmental responsibility deepening previous findings with lived experiential texture. It also complements Martinez's (2021) work on ancestral ecologies by illustrating how spiritual resistance and grief are not abstract concepts but are actively embodied and performed in everyday ecological rituals.

The implications of these findings extend beyond the immediate cultural context of the participants, offering valuable insights for environmental educators, policymakers, and sustainability advocates. The lived experiences described in this study highlight the importance of integrating spiritual and relational dimensions into environmental discourse and practice. Understanding ecological care as an act of ancestral responsibility and sacred connection challenges dominant paradigms that frame nature as a resource rather than a relational partner. This perspective has the potential to reshape community-based conservation models, particularly by prioritizing Indigenous voices in environmental governance and emphasizing the co-existence of cultural heritage and ecological resilience.

Despite its contributions, this study is not without limitations. The data were drawn from a single Indigenous community within a specific geographic and cultural context, which may not fully reflect the diversity of experiences across different Indigenous populations. The use of a descriptive phenomenological approach, while allowing for rich exploration of subjective meaning, may limit the study's capacity to interpret broader sociopolitical influences or historical trauma. Furthermore,

although the thematic findings offer deep insights, they are not intended to be generalized, but rather to illuminate particular lived experiences within their unique context.

Future research could expand on these findings by conducting comparative phenomenological studies across multiple Indigenous communities facing varied environmental pressures. Such inquiries might explore how different spiritual frameworks inform ecological action, or how youth within these communities negotiate ancestral environmental values in rapidly modernizing settings. Additionally, interdisciplinary collaborations that integrate phenomenology with environmental ethics, education, or climate justice could further enrich understandings of how meaning and stewardship converge in diverse ecological contexts.

CONCLUSION

This study explored the lived experiences of Indigenous community members in sustaining ecological balance as a spiritual and cultural responsibility. Using a descriptive phenomenological approach, the research uncovered how environmental stewardship is deeply embedded in ancestral legacy, sacred rituals, and embodied resistance. The findings revealed that ecological care is not merely a practice but a meaningful way of life, shaped by reciprocal relationships with nature and intergenerational wisdom. These insights address a critical gap in the literature, where previous research often failed to capture the subjective and spiritual dimensions of Indigenous environmental engagement.

Revisiting the central research question—How do Indigenous people perceive and live their responsibility in maintaining ecological balance?—this study demonstrates that such responsibilities are experienced not only as ethical obligations but as spiritual imperatives rooted in identity and place. The study provides a nuanced perspective that can inform culturally grounded environmental policy and education initiatives. Policymakers are urged to incorporate Indigenous epistemologies into sustainability frameworks, ensuring that environmental programs respect and reflect the values of the communities they aim to serve. Additionally, researchers are encouraged to pursue further phenomenological and participatory inquiries across diverse Indigenous settings to deepen our understanding of the interplay between ecology, spirituality, and cultural resilience.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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