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Editorial: UN International Day of the World's Indigenous Peoples: Indigenous Peoples and climate resilience

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Editorial on the Research Topic

UN International Day of the World's Indigenous Peoples: Indigenous Peoples and climate resilience

Introduction

At a recent climate conference, Indigenous scientist and author, Daniel Wildcat, commented to a roomful of climate scientists that Indigenous Peoples of the world have a science of their homelands built upon generations of wisdom. The long histories of Indigenous Peoples living in, on, and with the land have created ways of knowing, "Indigenuity," that were shared, remembered, and acted upon through oral traditions and tangible, physical practices over the *longue durée* (Gazing Wolf et al., 2024; Kimmerer, 2013; Wildcat, 2023). His statement, weighed by experience, implored us academics and professionals to work hand-in-hand with Indigenous Peoples and communities to seek solutions to immediate and local problems. In this collection of essays, written by and/or in collaboration with Indigenous researchers and communities, we feature examples of how Indigenous Peoples and climate scientists are leading the way in climate adaptation strategies.

The articles in this Research Topic cover various topics, including Indigenous leadership strategies, methods for improving the inclusion of Indigenous Peoples and Indigenous Knowledges in environmental planning and policymaking, and how to work toward environmental justice. These articles provide some clarity and insight into how Indigenous People are approaching, leading, and being included in climate adaptation planning and policymaking. In addition, these papers provide a call to action for policymakers, scientists, land managers, and communities to foster equitable and collaborative frameworks that draw on and include Indigenous perspectives.

Finally, the seven articles in this Research Topic make clear that we need now, more than ever, inclusive, community-based, and culturally grounded approaches to managing and responding to climate crises. There is a greater diversity of nations and communities, and a growing understanding of the value of diverse knowledges and perspectives, reflected in the United Nation's IPCC Sixth Assessment Report (IPCC, 2023). This report finds anthropogenic climate change is creating numerous impacts on food, water, health, and economies for various cultures and societies the world over. We will find solutions to these challenges, not just in more complete scientific assessments, but in the wisdom of our Elders, in the stories of our communities, and through locally grounded actions. These articles posit a fundamentally significant tenet of applied scientific scholarship; that collaboration, cooperation, and working hand-in-hand with communities who live and work in our study areas leads to novel and culturally-relevant outcomes.

Indigenous leadership in climate resilience

Indigenous Peoples adapt in unique ways and have not been given much attention in the climate adaptation literature. In Barger et al., the authors demonstrate how the Kipuka Kuleana land trust fosters cultural practices and resilience in Kaua'i through ancestral land protection and repatriation practices. They demonstrate that community-based land trusts like Kipuka Kuleana are not just tools for land conservation but also vehicles for cultural rejuvenation and climate resilience. Their findings highlight the global applicability of such models, particularly in regions where ancestral land restoration could counteract the dual threats of climate change and cultural erosion. Mahi et al. demonstrate how local 'Āina organizations are building cultural communities and reconnecting relationships to the land. Their emphasis on intergenerational knowledge as a pillar of resilience reflects a broader need to include cultural education in global environmental strategies. They advocate that this is essential for community-led climate adaptation. In Mahi et al., the authors highlight how grassroots organizations in Hawai'i utilize cultural connections to 'āina (land) to create dialogues for culturally specific climate adaptation solutions. Both articles demonstrate how Indigenous Peoples are using land back in different ways including "buying back ancestral lands, accepting land donations, securing rights to access and steward land, enforcing historic treaty agreements through legal action, and co-managing lands with other entities." They lean upon a global "land back" movement that hinges upon Indigenous self-determination as a fundamental pathway to sustainability and climate action. Their findings highlight the global applicability of such models, particularly in regions where ancestral land restoration could counteract the dual threats of climate change and cultural erosion. They also compare and contrast how Indigenous communities leverage ancestral knowledge to steward and care for their homelands—this stands as a message for us all to heed and apply in our work.

Indigenous perspectives in natural resource management

The articles by Kamana and Vaughn, by Zimmerman et al., and by Ciocco et al. describe Indigenous collaboration in the domains of energy development, floodplain management, and climate adaptation planning. Kamana and Vaughn explore ways to align Western and Indigenous perspectives in the development of geothermal energy in Hawai'i. By using student interviews and an engaged learning approach, their work demonstrates the importance of caring for *aina*, the Hawaiian term for "that which feeds," and weaving these ideas into resource management perspectives. Zimmerman et al. evaluate how Tribal needs in Washington State are sometimes, and often not, integrated into state and federal floodplain management strategies. They point to a broader systemic issue: modernist environmental paradigms often exclude Indigenous perspectives, undermining both cultural sovereignty and ecological balance. The work by Zimmerman et al. demonstrates how collaborative governance frameworks like floodplains by design can address systemic inequities and environmental justice in Washington State. Ciocco's article reflects on considerations for integrating Indigenous Knowledges into Ute Mountain climate adaptation planning. In particular, this work addresses ethical and operational challenges for the inclusion of Indigenous Knowledges into long-term scientific planning and resource management. Ciocco's findings reveal the complexities of such cooperative work, including cross-cultural challenges and the need for sustained engagement. These insights are crucial as global climate adaptation efforts increasingly call for the inclusion of Indigenous voices.

Indigenous perspectives in environmental justice

The article by Tamufor et al. evaluates how federal governance policies can include Indigenous Knowledges for topics related to Indigenous recognition, conservation of biodiversity, and distributional justice. They end their work with helpful recommendations for collaborative governance that would include Indigenous Peoples and their knowledges/wisdom at all stages of policy development. In the article by Hausam, the author introduces the novel concept of *Indigenous refugia* to suggest how environmental justice can be used in conservation planning for vulnerable ecosystems. By integrating recognition, procedural, and distributional justice into conservation planning, Hausam's work provides a replicable model for ensuring that conservation efforts align with Indigenous cultural and ecological priorities. The articles by Kamana and Vaughn, Barger et al., and Mahi et al. also mention correcting past environmental injustices such as loss of lands, unjust geothermal adoption, not being included in decision-making, and not recognizing self-determination.

Conclusion

These seven articles collectively demonstrate an emerging paradigm shift in addressing climate resilience, conservation, and

environmental justice by re-centering Indigenous leadership and perspectives. Each study provides critical insights into how these perspectives not only strengthen community wellbeing but also how investments in both process and products can be used to address systemic inequities and gaps in conventional approaches to environmental management. These insights are crucial as global climate adaptation efforts increasingly call for the inclusion of Indigenous voices.

Taken together, these studies advocate for a profound transformation in how Western and Indigenous science, policy, and communities interact to address environmental challenges. Globally, the integration of Indigenous Knowledges and practices into conservation and climate resilience efforts offers an opportunity to not only repair past injustices but also build more equitable, sustainable, and resilient systems. The lessons drawn from these articles extend beyond local contexts, presenting a universal blueprint for inclusive, holistic, and effective action. By prioritizing Indigenous self-determination, cultural connection, and collaborative governance, policymakers, scientists, and communities can address the intertwined challenges of climate change, biodiversity loss, and social inequities. Working together and expanding the use of these practices, learning from these perspectives, and adopting these principles shows all of us a path we can follow to a just and sustainable future for all.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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