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Perspective

Making conservation more inclusive is a realization of our land ethic

Miguel F. Jimenez [a,b,*], Sara P. Bombaci [a,b], Gemara Gifford [c], Christopher J. Schell [d], Joanna X. Wu [e], Liba Pejchar [a,b]

[a] Department of Fish, Wildlife, and Conservation Biology, Colorado State University, United States
[b] Graduate Degree Program in Ecology, Colorado State University, United States
[c] Human Dimensions of Natural Resources Department, Colorado State University, United States
[d] Environmental Science, Policy, and Management, University of California Berkeley, United States
[e] Ecology & Evolutionary Biology, University of California, Los Angeles, United States

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ABSTRACT

Aldo Leopold's essay *The Land Ethic* is a cornerstone of North American conservation science. It is celebrated for its emphasis on the interconnectedness of ecosystems and the moral imperative to respect this interdependence. Yet, at its core, Leopold's essay is a call for change, asserting that societal values - on which our relationship with land is predicated - evolve over time. Here, we revisit Leopold's call in light of contemporary conservation challenges and the growing recognition of the importance of equity and social justice in environmental stewardship. We highlight the limitations of a static interpretation of Leopold's *Land Ethic*, noting its minimal acknowledgment of Indigenous stewardship and its historical context within hegemonic cultural values. We examine how modern environmental issues, such as globalization, urbanization, and climate change, demand an evolving ethical framework. Ultimately, we argue that Leopold's plea to expand our ethical community is consistent with ongoing efforts to incorporate diverse perspectives and rectify historical injustices in conservation. Further, we pose a series of questions with the goal of stimulating conversations on what reimagined land ethics centered on equity, justice, and inclusivity could offer. Together, these questions provide a framework for critical self-reflection and group discussion on how we can continue to answer Leopold's call in the face of modern conservation challenges.

Conservation biology is a mission-oriented science with a strong foundation in environmental ethics (Soulé, 1985). Increasingly, this discipline recognizes that equity and social justice must be centered in conservation science and practice. We propose that Aldo Leopold's essay *The Land Ethic* (Leopold, 1949)[1], the reading of which is often treated as a rite of passage for North American scientists (Piccolo, 2020), remains a useful vehicle through which to reflect on how well conservation and the ethical frameworks that support it are embracing the challenges that face today's nature and society (Millstein, 2024).

Leopold's *Land Ethic* is often the first assignment in conservation biology, environmental ethics, and environmental literature courses. Quotes from Leopold's essay bookend ecology seminars and plenary talks. It is regarded as a foundational text for modern conservation science, a form of ecological scripture. In this seminal essay, Leopold stresses the interconnectedness of the different components of ecosystems. In doing so, he lays the moral principle that our treatment of land must respect this interdependence rather than exploiting it, stating "A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise" (Leopold, 1949)[2]. Many of the ideas and lessons in *The Land Ethic* remain central tenets of conservation ethics today across the world.

And yet, in contrast to the seemingly ageless pedestal on which we've placed it, the core theme of Leopold's essay is change; that our relationship to land is a "product of social evolution" (Leopold, 1949). As a

* Corresponding author at: 1474 Campus Delivery, Department of Fish, Wildlife and Conservation Biology, Colorado State University, Fort Collins, CO 80523, United States.
E-mail address: Migfjimenez@gmail.com (M.F. Jimenez).

[1] Throughout this essay, we italicize The Land Ethic when referring to Leopold's essay specifically to distinguish this work from his broader conservation philosophy, and general "land ethics."

[2] While this two-sentence statement is often referred to as Leopold's 'moral maxim' or 'golden rule' (e.g. Callicott, 2013; Piccolo, 2020, etc.), we have chosen to refrain from referring to it as such in response to recent critique put forth by Millstein (2024).

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primer for his foundational essay, Leopold likened land ethics to chattel slavery in ancient Greece, highlighting that although this was common practice at the time, it is now widely considered inhumane and unacceptable. Leopold used this example to make the case that value systems are not static. Rather, our values can and should shift with time and, as they do, our ethical considerations should change accordingly. The crux of his essay is a plea for an expansion of our goals as conservationists; an invitation to enlarge our definition of our community to include the land itself.

There is no denying that our ethics have shifted since Leopold made his plea. In this essay, following the 75th anniversary of Leopold challenging us to expand our definition of "the land," we ask: have we continued to answer his call? Here, we suggest that ongoing efforts to embrace the central role of social justice and equity in conservation are, in fact, a realization of Leopold's original essay. In doing so, we challenge conservation scientists and practitioners to imagine how evolving land ethics could contribute to advancing biodiversity conservation and societal goals. Specifically, we 1) highlight the limitations of a static reading of Leopold's *Land Ethic* for addressing today's environmental and social challenges, 2) propose that diverse and evolving land ethics are fundamental to advancing equitable conservation, and 3) provide a framework and example sets of questions to guide self-reflection on how we interact with the land and each other, embodying Leopold's call for change.

1. Modern limitations of Leopold's Land Ethic

The fact that one individual's land ethic has resonated across generations of conservation scientists is remarkable. Yet, by that same token, Leopold's pivotal essay is just that: one individual's perspective, shaped by his own experiences, time, and place in society, on an ever-evolving discipline (The Wilderness Society, 2022). As such, Leopold's work is arguably limited in its ability to speak to diverse positionalities and current conservation issues.

As a prominent example, Leopold's land ethic gives little acknowledgement to the influence of Native Americans, who have stewarded and continue to steward the land that Leopold revered (Hoagland and Albert, 2023). *The Land Ethic*'s minimal recognition of this history (with the exception of the Pueblos of the southwestern U.S.) is noteworthy because of the parallels between some of Leopold's core ideas and the Indigenous ethics that came before his (Callicott, 1989; Meine, 2022). For instance, the idea of humans considering themselves "plain citizens" of the biotic community, which Leopold championed, has been compared to the idea of reciprocal moral responsibilities among humans and other living beings, which is embedded in many Indigenous land stewardship values (Callicott, 2010). Even when critiquing the U.S. Forest Service's fire suppression on Paiute lands and making the case for adopting 'Piute Forestry' in a separate essay, Leopold still questions the intentionality behind Indigenous burning practices, stating: "It is, of course, absurd to assume that the Indians fired the forests with any idea of forest conservation in mind" (Leopold, 1920).

Similarly, it is curious that Leopold would reach back to ancient Greece for an example of people being treated as property given the recency of slavery in America. Leopold alluded to the connection between American values and our land ethic, citing our inability to uphold our allegiance to "the land of the free and the home of the brave" in the treatment of soils, water, plants, and animals (Leopold, 1949). Yet, nearly a century earlier, Frederick Douglass famously called out a similar false promise of American values, raising the question, "What, to the American slave, is your 4th of July?" (Douglass, 1852). Lauret Edith Savoy stressed this disconnect in her poignant dissection of *The Land Ethic*, reflecting on Leopold's question of "...what and whom do we love?" (Leopold, 1949) with:

"At fourteen I wondered who, exactly, 'we' are. I wondered, too, what and whom 'we' love. Neither an equality of interdependence nor an evenness of cooperation seemed to underlie this country's human relations. Not in the internment of Japanese Americans just seven years before Leopold's and my father's books appeared. Nor in the de factor de jure segregation that so many Americans took for granted as the second half of the twentieth century began" (Savoy, 2015).

In a period when the civil rights movement was beginning to take shape, Leopold built his essay on the premise that we, as a society, had moved beyond treating people inequitably based on race and ethnicity, revealing a degree of privilege and ignorance in his perspective. Today, we increasingly recognize that racism intersects with many other marginalized identities (e.g., gender, class, sexual orientation) to multiply injustice to these individuals (Crenshaw, 2013).

From an ecological standpoint, many of today's most pressing conservation issues have either been exacerbated to a state of near unrecognition or would be entirely new to Leopold. The spread of non-native invasive species, for which Leopold had notable aesthetic aversion and ecological concerns (Simberloff, 2012), has expanded with the rapid pace of globalization over the last seven decades (Hulme, 2009). Similarly, the nature of how people interact with land has changed, with more than half of the global population now living in cities (United Nations et al., 2018). *The Land Ethic* was also written before we fully recognized climate change as a major threat to biodiversity and human well-being (Warren et al., 2013).

Our intention in raising this non-exhaustive list of limitations to Leopold's perspective is not simply to criticize a foundational work with a modern lens. There are sentiments from early conservationists that are easy to judge with modern values as either foundational or problematic. Our call here is not so simple. We are familiar with the rich history of discourse on Leopold's writings, and we recognize that we are not the first to revisit them within the context of contemporary conservation issues, even within the specific context of social justice (Meine, 2022; Momaday, 2016; Warren, 1998). Instead, we encourage the conservation community to reflect on how *The Land Ethic* stems from a hegemonic culture that actively excluded who could participate in conservation, but that through it, Leopold also provided a framework and precedent for rethinking how we approach conservation (Meine, 2022). That is, while well-intentioned, Leopold's perspective was inherently limited but, to his credit, he explicitly opens the door for us to continue to evolve our own land ethic in response to social change.

In the course of this reflection, it is important to note that as a result of this exclusion, centuries of work by many non-white, non-male scholars and activists has been ignored in environmental discourse (Taylor, 2016). To that end, we propose that reimagining our land ethics to account for those perspectives, and center equity and justice in conservation and in our communities is a realization of Leopold's original plea. This reimagining is a way of honoring Leopold's legacy, as well as the many other ethical and knowledge systems that are critical for sustaining biodiversity and human well-being.

2. Why reflecting on our land ethic is relevant today

In Leopold's prescient words, "nothing so important as an ethic is ever 'written'" (Leopold, 1949). The Upshot, which includes *The Land Ethic*, was intended to guide the way "dissenters rationalize our dissent" (Leopold, 1949). The core idea driving his essay is that our relationship with land is predicated on our social values and, thus, *must* change accordingly with our ethics. By this logic, an essential prerequisite in this shift is embracing the diversity of perspectives on our relationship with the land and its stewardship, and reckoning with how those in power have stifled that diversity. Indeed, there has been a push to make conservation a more diverse, equitable, inclusive, and justice-oriented field. There is growing recognition and acknowledgment that ecological justice is predicated on social justice (Washington et al., 2024). Amidst broad discussions around the lack of diversity in STEM (Miriti, 2020), there have been widespread calls for addressing racist and discriminatory legacies across the conservation and environmental communities (Chaudhury and Colla, 2021; Cronin et al., 2021; Miriti

et al., 2021; Trisos et al., 2021; Halsey et al., 2020; Schell et al., 2020). Beyond detailing the connections between historical injustices and present-day inequities, much of this work has proposed specific cultural and institutional action. Members of our community have called for us to reassess our values and enlarge the boundaries of our ethics accordingly, but have we heard them?

This question is particularly poignant now, at a moment during the writing of this essay, where both biodiversity conservation and diversity, equity and inclusion initiatives are being systematically dismantled and defunded by the U.S. federal government. Even before this erasure, which is also affecting schools and universities, environmental NGOs were reporting widespread dissatisfaction with diversity, equity and inclusion initiatives and a long history of underrepresented staff feeling unsupported and unwelcomed (Sullivan et al., 2022). For example, few conservation initiatives have adopted standards for equitable and effective Indigenous leadership (Artelle et al., 2019; Dawson et al., 2023), and substantial disparities in funding for environmental organizations that are focused on people of color persist (Taylor and Blondell, 2023). Many of these issues have been documented and voiced explicitly for over three decades (Moore, 1990), highlighting the depth of systemic inequalities, power imbalances, and the active exclusion and marginalization of people with one or more minoritized identities, including those at the intersection of race, gender, class, ability, and sexual orientation. It is critical that the underlying value systems of conservation institutions are aligned with our efforts to make conservation more diverse and equitable since social and environmental progress have and always will be bound together. Have we dug deep enough? Or are we attempting to sow a new conservation community on the soil of outdated collective ethics?

3. A call for intelligent tinkering

As Leopold once said, "To keep every cog and wheel is the first precaution of intelligent tinkering" (Leopold, 1949). In the face of both unprecedented challenges and an expansion of the voices in the conservation community, we call on the conservation community to engage in such tinkering. In doing so, we must acknowledge that not every cog and wheel was captured in *The Land Ethic*.

We suggest that this tinkering could take the form of questions that we ask ourselves, our students, and our partners in conservation. Fundamentally, ethics are moral principles that help us navigate the world and discern what is just and unjust. For Leopold, ethics allowed one to discern between good and bad uses of the land. He observed that "One of the penalties of an ecological education is that one lives alone in a world of wounds. Much of the damage inflicted on land is quite invisible to laymen" (Leopold, 1949). We propose that reflection on the deep connections between social justice and ecological justice (Washington et al., 2024) is akin to such a perspective shift. That is, the realization that the "damage inflicted on the land" is inherently tied to social injustice marks a profound expansion of how we define and consider "the land."

We provide a framework and set of example questions that may be used to catalyze critical conversations around this point - in the classroom, in the boardroom, and in our communities (Fig. 1). We draw inspiration from Indigenous models for sustainability (Dockry et al., 2016), which tend to be cyclical, emphasizing interdependence rather than hierarchy. We organize these questions as an interlocking spiral, with fundamental value-oriented questions providing the lattice to support and prepare for individual and institutional action.

By framing these questions within a spiral, we suggest reflecting on the interconnectedness of all life systems, rather than focusing on individual species, sectors of society, or sustainability challenges in isolation. We also recommend integrating questions and content into conservation science, practice, and education that value and explore the diverse perspectives, lived experiences and knowledge systems that shape our individual and collective interactions with the land. This is essential for ensuring all students, collaborators and colleagues can bring their full selves to the challenge of sustaining land for nature and

Fig. 1. A set of questions to catalyze discourse around our evolving land ethics and how they are manifested in conservation. These questions are presented as eight arms of a single spiral to encourage reflection on how these considerations intersect.

people. Further, we must understand historical legacies and ongoing policies and practices that result in inequitable access to environmental assets, and the disproportionate burden of environmental injustices, for marginalized communities (Estien et al., 2024; Murray et al., 2022; Cushing et al., 2015). Only through this understanding and reflection can we work collectively towards responsible and equitable stewardship.

We also recognize that we are not alone in calling for this reflection. Indeed, the past decade, in particular, has been marked by work that recognizes and reckons with historical injustices and their profound legacies in conservation science and practice (Martin et al., 2016; Nijhuis, 2021; Dhillon, 2022). More specifically, numerous models exist to guide both the reflection we're advocating for and its practical implementation (David-Chavez et al., 2024; Layden et al., 2025). We certainly do not propose that Leopold's ideas are the sole medium through which 'intelligent tinkering' is possible. Rather, we simply assert that Leopold's original call, which we treat as a cornerstone of conservation ethics, necessitates this kind of reflection. In doing so, we highlight a disconnect between his esteem in our field and how we treat his actual call as it is written.

Leopold was famously able to change his perspective about how we approach conservation in the middle of his career (Leopold, 1949). In fact, that is one aspect of his character that we still applaud today. If we hold Leopold's call for grounding our relationship with the land on shifting societal values in high regard, then we must engage in the self-reflection he championed. We must treat the work of building a more diverse, inclusive, equitable, and just society with urgency, respect, and care. As conservationists, we devote our lives to understanding and protecting soils, waters, plants, and animals. But we will fail to do so if we cannot promise the same devotion to the diverse communities of people around us – the fellow, plain members of the land.

CRediT authorship contribution statement

Miguel F. Jimenez: Writing – review & editing, Writing – original draft, Project administration, Conceptualization. **Sara P. Bombaci:** Writing – review & editing, Writing – original draft, Visualization, Conceptualization. **Gemara Gifford:** Writing – review & editing, Writing – original draft, Conceptualization. **Christopher J. Schell:** Writing – review & editing, Conceptualization. **Joanna X. Wu:** Writing – review & editing, Writing – original draft, Conceptualization. **Liba Pejchar:** Writing – review & editing, Writing – original draft, Project administration, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Data availability

No data was used for the research described in the article.

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