Conservation needs diverse values, approaches, and practitioners

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Why and how to conserve?

Nearly 70 years after North American conservationist Aldo Leopold reflected on his own struggle with the relationship between humans and wildlife in 'A Sand County Almanac', conservation scientists are still wrestling with the extent to which their research aims to protect and restore ecosystems for 'nature's sake' (i.e. intrinsic value), or for 'humanity's sake' (i.e. extrinsic value). Recently, the tone of voices in this important and long-standing discussion has changed, swelling to a crescendo of cacophonous debate about what constitutes the "right" set of motivations for and visions of conservation success, fueling disagreement over the effectiveness of approaches that are not designed to achieve the same goals[1]. Here, we aim to subvert this debate and use the attention it has garnered to highlight what we see as a key challenge facing the future of conservation: creating a community that is strengthened, rather than factionalized, by pluralistic viewpoints.

The benefits of pluralism to conservation

A growing body of ecological research shows that diverse assemblages of species can result in ecosystems that function more efficiently, produce more resources, and exhibit more stable dynamics over time. Similarly, financial analysts have long realized that a diverse investment portfolio reduces risks and increases monetary yields over time. The coupled human-natural ecosystems where conservation scientists seek to effect change are similarly heterogeneous, dynamic, and complex. It follows that positive change (i.e. conservation success) is defined by individuals and groups from diverse belief systems, social structures and backgrounds who hold equally diverse values for biodiversity. Yet by valuing only a subset of alternative perspectives, voices engaged in narrowly defining the 'correct' motives, and therefore approaches, to conserve are arguing for a more homogenous conservation community itself. Similar to a financial portfolio comprised of only a few stocks or a biological community lacking functional diversity, it is unlikely that conservation scientists and practitioners working to protect a subset of values would generate solutions that are relevant across the social and ecological

[1] Kareiva, P. (2012) *Conservation in the Anthropocene;* The Breakthrough, Winter 2012; Soulé, M. (2013) *The New Conservation,* Conservation Biology; 27(5) 895-897; Doak, DF et al. (2014) *What is the future of conservation?* TREE 1771; 1-5; Kirby, K. *"New Conservation" as a Moral Imperative,* Conservation Biology 28(3): 639-640; Soulé, M. (2014) *Also Seeking Common Ground in Conservation*, Conservation Biology, 28(3): 637-638;

contexts in which they must be implemented. Our thesis is that relaxing the boundaries of our discipline to engage the viewpoints of all who have a stake in the ways in which biodiversity persists and functions on our planet will generate more robust conservation solutions. Our message is not scale-less; we expect that individuals and organizations will likely continue to aggregate around common values, visions and techniques. However, we see a need to increase the opportunities for engagement with, and inclusion of, individuals with perspectives and skills considered non-conventional in the traditional conservation landscape.

Our motivation for relaxing the bounds of our discipline

The David H. Smith Conservation Research Fellowship, housed at the Society for Conservation Biology, supports early-career scientists who are committed to tackling conservation problems. Even within our small group—which is based in the US and represents a tiny subset of ethnic, cultural, and socioeconomic experiences of the world—research topics range from protecting species in remote wilderness to achieving sustainability and restoration in urban landscapes. Moreover, each of our approaches are shaped by values that range along a spectrum from purely intrinsic to extrinsic, and often reflect complex interactions between these two domains (Box 1). So while we all share the same overarching goal of restoring and sustaining ecosystems, we cannot agree upon a narrow set of motivations for and approaches to conservation, because our own work addresses issues that occur in different physical landscapes and cultural contexts, and draws on a range of techniques, partners, and perspectives (Box 1). However, we have benefited from the pluralism of our perspectives and our interactions inspire us to think more broadly about potential partners and solutions to the conservation issues we work on individually and collectively. For example, working together, Smith Fellows have influenced state, national and international policy on issues like microplastic pollution and hydraulic fracturing by briefing decision makers on science-based policy options, created opportunities for conservation scientists to share their work with public audiences through social media and storytelling, and developed web-based tools to provide options for responsible consumerism for industries like the pet trade. Forming relationships with public groups, government, media and for-profit industry has required skill sets (storytelling, media relations, business planning, facilitation, and policy briefing, to name a few) that were beyond the

scope of our individual experience, but made possible through our collective networks as a group. If this is the case within our small, relatively homogenous group of scientists, we can only imagine the benefits that may come from encouraging interaction among an increasingly diverse, pluralistic conservation community at large.

Towards a more diverse conservation community

We see attempts to narrow the definition of our discipline as diverting valuable time and energy away from making progress towards conserving species, including our own. Moreover, it serves to exclude individuals and organizations who could make valuable contributions to conservation. Now more than ever, we need to re-focus our energy on welcoming those who may not currently envision themselves as part of the conservation community, but who can contribute to it. We therefore challenge all conservation scientists to shift the debate away from defining our identity, and towards the question: *How can we build a more inclusive, diverse conservation community?* We offer the following suggestions, based on our own experiences in conservation science and the Smith Fellowship Program, in hopes of stimulating conversation and action:

- Form relationships with collaborators from a variety of disciplines (including basic and applied sciences), traditions, backgrounds, and geographies, and with different motivations and values from our own.
- Engage in non-traditional training; e.g., facilitation, business planning, leadership, psychology, communication, social sciences, and arts, to increase effectiveness at working with others to find and implement solutions.
- Seek out counsel from, and provide mentorship to, individuals from different fields of study, geographies, and cultures.
- Engage all affected stakeholders in identifying the scope of conservation problems and visions of success, including those we perceive to be adversaries.
- Adapt research and management approaches to the cultural and geographical landscapes in which the conservation issue occurs; use multiple approaches where possible.
- Explicitly acknowledge how values and vision of success motivate research questions and approaches

- Be mindful that our individual views on the success of a conservation action may differ from those who come for different backgrounds, geographies, and cultures.
- Work with affected communities and governing bodies to identify how economic, political, cultural, and religious realities affect the interpretation and utility of research.

As conservation scientists, each of our individual voices is unique, as are the voices of the myriad sectors of society with which we must work to define and solve conservation challenges. By taking these actions, we seek to embrace this diversity so that our individual voices complement one another and increase our collective impact.

Box 1: Conservation is in the eye of the beholder. Many conservation projects, such as these five examples from our own research, are associated with values and motivations that range along a spectrum from extrinsic to intrinsic. Tackling conservation problems across myriad physical landscapes and cultural environments can only be achieved by including diverse values, practitioners, approaches, and visions of success.