



Why conservation scientists should re-embrace their ecocentric roots

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We address the explicit ecocentric roots of conservation science and the support of a growing number of conservationists for ecocentric natural value. Although ecosystem-services arguments may play an important role in stemming the biodiversity crisis, a true transformation of humanity's relationship with nature ought to be based in part on ecocentric valuation. Conservation scientists have played a leading role in initiating this transformation, and they ought to continue to do so.

Since its inception in 1985, the Society for Conservation Biology (SCB) has grown from a few hundred mainly North American members to over 5000 members in sections and chapters around the globe. The success of SCB is a truly positive development for biodiversity conservation; but as with any rapid expansion there can be growing pains. One recent example is the revival of the long-standing debate over whether nature ought to be protected for its instrumental (anthropocentric) versus its intrinsic (nonanthropocentric or ecocentric) value (e.g., Soulé 2013; Kareiva 2014). The debate has intensified over the past few years, resulting in calls for inclusive conservation (Tallis et al. 2014) and new forms of valuation such as relational values (Chan et al. 2016). Many authors contend, however, that recognition of intrinsic natural value is a cornerstone of conservation (Vucetich et al. 2015; Batavia & Nelson 2017; Piccolo 2017) and the broader concept of sustainability (Washington et al. 2017a). Some of the leading founders of SCB, including

Soulé (1985), Ehrenfeld (1978), and Noss (1996), explicitly expressed notions of intrinsic natural value, and today SCB (2017) still maintains, as its first organizational value, "[t]here is intrinsic value in the natural diversity of organisms, the complexity of ecological systems, and the resilience created by evolutionary processes." Thus, the debate over the role of intrinsic value is more than an academic exercise. Given the seriousness of the biodiversity crisis (Steffen et al. 2015; Ceballos et al. 2017) and the key role SCB could play in helping create public awareness of this crisis, the direction we take now will likely have far-reaching implications for the future of the biosphere.

The debate about why we ought to protect nature is much older than the field of conservation science. The oft-cited rift between utilitarian Gifford Pinchot and preservationist John Muir in the early 20th century is perhaps the most well-known example. They began in agreement over the establishment of large forest reserves in the United States but developed irreconcilable differences over whether the forests were mainly for timber harvest or wilderness preservation. Leopold (1949) recognized this distinction in "The Land Ethic," wherein he perceived an "A-B cleavage" within the disciplines of forestry, wildlife management, and agriculture. He noted that within each discipline some focused on utilitarian values (A), whereas others took a more nonutilitarian viewpoint (B), or in contemporary terms an ecocentric

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viewpoint (Callicott 2013). Leopold conceived his land ethic from this ecocentric perspective, and it is the basis for the modern eco-evolutionary conservation ethic that recognizes intrinsic natural value (Rolston 2012; Callicott 2013). Although by 1985 environmental philosophers had developed formal arguments both for and against (Norton 2005) intrinsic natural value, SCB's founders explicitly included intrinsic value within the normative postulates of the organization (Soulé 1985). A shift toward a focus on anthropocentric valuation, therefore, would require a major reevaluation of conservation science's organizational values—is the field prepared for such a shift?

Perhaps proposing such a shift is not unexpected, given the popularization of the concept of ecosystem services. We are now said to live in our own self-styled geologic epoch, the Anthropocene (but see Callicott 2015; Rolston 2017). As often formulated, ecosystem services are based explicitly on anthropocentric valuation (i.e., services delivered to humans) (MEA 2005). Ecosystem services are appealing because they can be perceived as putting nature on an equal footing with business. For example, the monetary value of forests for carbon sequestration can be estimated or offsets can be proposed for biodiversity losses due to habitat destruction (but see, e.g., Spash 2015). Although there has been much discussion about how to put tangible values on ecosystem services, there are a growing number of conservationists who fear such anthropocentric valuation undermines the long-term success of conservation (Washington et al. 2017a, 2017b). Conservation science has been a leading voice for the scientific rationale for preserving Earth's biodiversity, and many important international agreements have been reached on the establishment of protected areas (CBD 2017). Shall conservation scientists now wager that we stand a better chance of success if we shift our core values from protecting biodiversity in part for its own sake toward protecting it for the services it provides to humans? Worth noting is Ehrlich and Mooney's (1983) early formulation of ecosystem services:

“... we agree with Ehrenfeld (1978) that there are compelling reasons for preserving the biotic diversity of Earth *regardless* of any present or future discoveries made about the benefits people may receive from other organisms.”

Recent arguments that conservation ethics can be context dependent (Tallis et al. 2014) or are relational (Chan et al. 2016) have practical value. In the short term, all effective means must be employed to conserve biodiversity and prevent the collapse of ecosystem function. But the notion that anthropocentric valuation serves as a foundation for nature conservation or that ecocentric valuation is part of a dichotomy that may be included (or not), falls short of providing a lasting rationale for con-

serving Earth's biodiversity. Where would we be today if similar arguments had won out in 1948 when the UN was framing the Universal Declaration of Human Rights? Have ethical humans ever truly considered that other humans be protected for the services they provide while awaiting recognition of their universal rights? Can an honest rationale for equality be built on such inclusive or relational valuation theory? In the 30 years since SCB was founded, a generation of philosophers has developed a sound eco-evolutionary rationale for ecocentric valuation (Rolston 1975, 2012; Callicott 2013), one that formally recognizes that “... a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it” (Leopold 1949). Such ecocentric valuation places humans within the sphere of values shared by all life, intrinsic, relational, and instrumental (Piccolo 2017). Importantly, such values can be assigned to collectives (Callicott 2016) as well as to individual beings, providing a sound rationale for species and ecosystem protection (Rolston 1985, 2012). Ecocentrism recognizes that although humans may be the only species capable of deep moral reflection, we are not the sole focus of moral worth (Curry 2011; Vetlesen 2015). A truly inclusive and lasting rationale for biodiversity conservation ought to maintain the recognition of the intrinsic value of human and nonhuman beings, species, and ecosystems. This entails on us the duty to protect biodiversity for its own sake as well as for ours—we ought to conserve biodiversity not only because it is right for us, but simply because it is right.

As with the Universal Declaration of Human Rights, humanity may be transforming its worldview toward recognition of ecocentric value and the rights of nature. Bolivia's Universal Declaration of the Rights of Mother Earth is a well-known example (<http://therightsofnature.org>). The UN has been slow to formally recognize ecocentric value (Washington et al. 2017a), but this may be changing; the UN Harmony with Nature Initiative explicitly expresses ecocentric values (Maloney 2017). Although we are a long way from universal acceptance of ecocentric valuation, we believe now is the time for conservation scientists to reaffirm their commitment to intrinsic natural value.

Transformation requires leadership. By unequivocally reaffirming its first organizational value, the SCB can help lead the transition to true sustainability, wherein the well-being of all inhabitants of the biosphere, human and non-human alike, is considered. That which constitutes a good life for those of one species ought not to compromise the good lives of those of other species with which we share the planet. Over 600 scientists, scholars, conservationists, and citizens, among them some of the founders of the field of conservation, have recently added their signatures to a Statement of Commitment to Ecocentrism (Washington et al. 2017b). This is a hopeful sign that conservation scientists will continue to play a leading

role in efforts to sustain Earth's wondrous biodiversity. We urge conservation professionals worldwide and SCB members in particular to think deeply about why we ought to conserve it.

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