

Shared Conservation Goals But Differing Views on How to Most Effectively Achieve Results: A Response from Kareiva and Marvier

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“managed ecosystems increasingly dominate the planet” (p. 964) because of ever-expanding human economies. Their article raises a key question: Does true conservation require humanity to set limits to our domination of nature?

Kareiva and Marvier answer this question in the negative. None of their “normative postulates” involves limiting human demands on the biosphere, either as a matter of justice toward other species or as prudent self-interest. Conservation centered on keeping lands wild is “socially unjust” (p. 965), they assert, since it may move people off the land or reduce their economic opportunities. At no point do the authors acknowledge that people ever act unjustly by displacing other species or degrading their habitats, through road building, urban sprawl, farming new lands, and so on. Their ideology appears to reflect anthropocentric bias grounded in human exceptionalism.

Similarly, Kareiva and Marvier admonish conservationists to compromise on conservation objectives in the interest of economic development and not to oppose corporate expansion generally; we should do our part, they imply, to expand humanity’s already immense wealth and consumption. They fail to recognize that economic growth itself is the primary force driving global environmental crises such as biodiversity loss and the destabilization of the Earth’s climate.

We propose that a mature conservation ethic would recognize and accept limits to growth and would ratchet back human domination of the biosphere, rather than embracing it. Such an approach involves gradually and noncoercively reducing human numbers and deemphasizing economic growth as a goal, especially within countries that are already sufficiently wealthy. It means a more equitable distribution of wealth, setting aside more parks and protected areas for nature, and redoubling existing efforts to limit human damage to all lands and waters. We believe that this approach is more just and more prudent than humanity’s current self-centered rush

to overpower and control nature. It stands a better chance of allowing people and the rest of the living world to flourish over the long term.

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Shared Conservation Goals but Differing Views on How to Most Effectively Achieve Results: A Response from Kareiva and Marvier

It is important to isolate the genuine disagreements laid out by Greenwald, Noss, and their respective colleagues. Greenwald and colleagues misinterpreted our overview of conservation science (Kareiva and Marvier 2012) as prescriptive, when in fact it was primarily descriptive of how the field has developed over the last 30 years. We asked, “What is conservation science?” and not, “What should conservation science become?” We agree with Greenwald and colleagues that conservationists are increasingly examining the costs and benefits to society, incorporating perspectives from the social sciences and humanities, and focusing on lands subject to resource extraction. Moreover, when we emphasized the need for evidence-based conservation,

it was precisely because we do value “solid evidence from experimentation and observation.” The point of evidence-based conservation is to use a weight-of-evidence approach to understand which practices are most successful under what conditions and to then use the findings to guide conservation practice.

Another false disagreement arises when Noss and colleagues chastise us for saying that humans need not set limits to our domination of nature. In fact, we stated the opposite: “The ability of nature to recover... does not provide humans license to inflict unfettered environmental damage.” Noss and colleagues miscast our discussion of how to motivate good stewardship of nature and the suggestion that working with corporations might better manage the ill effects of economic activity as an ethical debate. We were not attempting to develop a “mature conservation ethic”—a task that we would leave to environmental philosophers. Instead, we were advancing the testable hypothesis that major conservation benefits will accrue from working with, rather than against, corporations. Similarly, when we point out that moving people off their land can backfire, this is not a call to abandon the protected-area strategy. It is an observation and a prompt both to improve protected-area strategies and to supplement them with interventions focused on the spaces between protected areas, as many conservation groups are doing.

However, not all of the disagreement is contrived. Noss and colleagues besmirch compromise and see a dichotomous choice in which society will either protect nature or advance human well-being. We reject the inevitability of this choice. Increasingly, conservationists are finding synergies where once we saw only trade-offs. Just as one example, the Gates Foundation’s Reinvent the Toilet Challenge seeks sustainable sanitation solutions that could not only reduce disease but, if they are deployed in coastal communities of the Caribbean, could also reduce pollution that kills coral reefs, thereby benefiting both

nature and people. Strategies that serve both people and nature can broaden the political and financial support for conservation (Marvier and Wong 2012). Although we agree that economic activities are the source of many conservation problems, we do not conclude that economic growth per se is the foe of conservation.

Like our critics, we want a world with large, relatively untrammelled open spaces and a world that does not suffer the loss of species both great and small. We want a world in which people have the opportunity to enjoy the surprises and inspiration of nature. The question is how we most effectively achieve this future in which both nature and people thrive. We would place more bets than would Noss and his coauthors on working with corporations, on pursuing rights-based management (community or private) of resources rather than exclusion or no-take zones, and on making a promise that conservation do no harm to people. We are all passionate about conservation—and just as conservationists prize the diversity of plants and animals and the evolutionary processes that shape them (Soulé 1985), the field might do well to similarly advance a diversity of approaches and then let science—both natural and social science—be the arbiter of which strategies are most effective.

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The Overlooked Benefits of Wildfire

Stephens and colleagues (2012) examined the efficacy of fuel treatments in reducing susceptibility to uncharacteristically severe fires in seasonally dry US forests. They were overly optimistic in stating that the effects of thinning on wildlife have “few unintended consequences” with “very subtle effects or no measurable effects at all” and failed to recognize the ecological benefits of high-severity fires that are actually below historic levels.

Stephens and colleagues did not include studies documenting adverse effects of thinning on small mammal prey species for northern spotted owls (*Strix occidentalis caurina*; e.g., Meyer et al. 2005) or on rare species, such as black-backed woodpeckers (*Picoides arcticus*; Hutto 2008). Nor did they address “ecological trap” phenomena created by silvicultural activities without evolutionary precedent—a factor that can draw declining postfire specialists like olive-sided flycatchers (*Contopus cooperi*) into managed environments wherein they suffer poor nest success (Robertson and Hutto 2007).

Moreover, Stephens and colleagues did not fully represent the benefits of high-severity fire by limiting analysis to the earliest postfire period (0–4 years postfire), thus excluding the portions of the data sets that they used that show that more bird species increase than decrease in high-severity fire areas after several years. In addition, the impetus for thinning is overstated. Only one study from one region is cited to suggest that fire severity is increasing and that it should be mitigated via thinning, but the authors did not mention that current data show no increase in fire severity in many western US regions. Nor did Stephens and colleagues account for thinning's impacts on imperiled species dependent on high-severity fire that have already experienced a severe loss of suitable habitat from fire suppression, such as the buff-breasted flycatcher (*Empidonax fulvifrons*) in southwestern US forests (Conway and Kirkpatrick 2007).

There is an urgent need for scientists to report on the myriad ecosystem benefits of wildfires, including high-severity fires, and to effectively document the impacts of fuel treatments on wildlife, especially rare species, so that managers are fully aware of the trade-offs involved.

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A Reply from Stephens and Colleagues

In response to our paper (Stephens et al. 2012), Hanson and colleagues state, “There is an urgent need for scientists to report on the myriad ecosystem benefits of wildfires, including high-severity fires.” Although we agree, the synthesis of information related to high-severity wildfire was not our objective. Despite this, we do recognize and highlight the ecological benefits of high-severity wildfire, at appropriate spatial and temporal scales.