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The Common Ground of Biodiversity and Ecosystem Services Demonstrated: A Response to Faith

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Biodiversity and Ecosystem Services: Similar but Different

In their May Forum piece, Reyers and colleagues (2012) argued that narrow interpretations of *biodiversity* and *ecosystem services* have obscured common ground between the two. I am concerned that their narrow interpretation of *biodiversity values* as largely intrinsic has done the same thing. Although Reyers and colleagues acknowledged that biodiversity conservation occurs for lots of reasons, they claimed that it is often associated with a biocentric, intrinsic-value perspective and that "the concept of *biodiversity* emerges from an intrinsic context" (p. 503). However, the case for biodiversity conservation equally has its roots in anthropogenic values. For example, the *World Conservation Strategy* (IUCN 1980), written back when *biodiversity* was still *diversity*, strongly promoted conservation to ensure benefits for future generations. It called for conservation of diversity for present and future use. Similarly, McNeely (1988) highlighted the need for a "safety net of diversity." McNeely (1988) linked such anthropocentric values to option values, reflecting the value of biodiversity in providing uses, often unanticipated, for future generations (for a review, see Faith 2007).

This broader perspective, based on anthropogenic use values, sheds light on Reyers and colleagues' examples. These examples seem to have focused narrowly on intrinsic, nonanthropogenic, biodiversity values. In their win–neutral example, biodiversity conservation action supposedly has "no apparent human benefit" (p. 506), because no ecosystem services gains are apparent. In their win–lose example, fencing off protected areas, excluding hunting and other current human uses, supposedly makes biodiversity conservation hard to justify because it "will run counter to… human well-being" (p. 506). A narrow intrinsic-values perspective might justify these conclusions, but the broader perspective properly recognizes biodiversity conservation as also offering human-use benefits; it's just that these values may be more about option values and future generations than about the current benefits from those recognized ecosystem services.

Biodiversity and ecosystem services share common ground based on anthropogenic use values but may differ in how well they capture current and future uses. They are similar but different. Sustainability depends on finding synergies or efficient trade-offs among the many different needs of society, and a major challenge will be ensuring human well-being for both current and future generations.

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The Common Ground of Biodiversity and Ecosystem Services Demonstrated: A Response to Faith

There is a curious parallel between our article (Reyers et al. 2012) exploring the alleged differences between *biodiversity conservation* and *ecosystem services* and the alleged differences between Faith's views and our own. In fact, Faith's concern with our paper reiterates and demonstrates one of our main points: Narrow interpretations of values make the common ground between biodiversity and ecosystem services seem smaller than it is.

Faith accuses us of narrowing this common ground by focusing on the "biocentric, intrinsic-value perspective" of biodiversity, when in fact, we do not. Faith quotes us as saying "the concept of *biodiversity* emerges from an intrinsic context" and then argues that "biodiversity conservation equally has its roots in anthropogenic values." We make this very point within the same sentence: "[A]lthough the concept of *biodiversity* emerges from an intrinsic context, the conservation of biodiversity is usually motivated by a wide variety of human values and choices." Similarly, he quotes us as saying that some biodiversity conservation may have "no apparent human benefit," but our next sentence states that "Such cases may prove hard to find in the real world, since there are few places where protected areas provide absolutely no benefits to people."

It would appear that our views and those of Faith are not different on this point: Instrumental values hold much potential for finding common ground. Instrumental values are more than direct current use values (a point we make in the paper) and include current and future use and nonuse values, a sentiment that Faith apparently does not share when he states that biodiversity and ecosystem services "differ in how well they capture current and future uses. They are similar but different." We propose, rather, that improved understanding and quantification of the impacts of environmental change on future provision of services will highlight even more common ground between biodiversity conservation and ecosystem services.

Some scientists focus on differences while others focus on similarity and common ground. We think in this case that differences have been exaggerated and common ground is, in fact, common.

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The Impacts of Selective Logging: Questionable Conclusions

In their article in *BioScience*, Zimmerman and Kormos (2012) analyzed the impacts of industrial selective logging on tropical forests and concluded that it causes degradation—but that many small-scale community and private-landowner forest management systems lead to the protection of reasonably intact tropical forest ecosystems. Both conclusions can be questioned on the basis of recent publications. In particular, a new study published in *Conservation Letters* that reviewed more than 100 scientific papers concluded that 76% of the standing carbon and 85%–100% of the biodiversity was maintained in once-logged forests (Putz et al. 2012). The authors argued that logged forests should not be considered as degraded lands and therefore eligible for conversion into plantations or pasture but, rather, as lands with high conservation value. Moreover, improvement of forest management practices could further increase the conservation value of logged forests while maintaining their economic value (Sist et al. 2008).

Although small-scale forest management operations are generally considered less damaging than industrial logging, these systems are very diverse, and generalizations are dangerous. In many tropical regions, and particularly in the Brazilian Amazon, so-called "small-scale" forestry implemented by rural populations is in constant evolution; in many cases, rural populations implement mechanized industrial logging through partnerships with logging companies (Sist et al. 2011, Humphries et al. 2012). There is no reason why these forest management practices should better preserve the forest ecosystem than does the industrial selective logging that is ongoing in large concessions, especially where implementation of management plans represents a noteworthy step toward sustainability. There is therefore an alternative approach in which conservationists, governments, and local communities can work with logging companies to implement sustainable forest management practices that protect biodiversity and provide local communities with real economic benefits. Given that selectively logged forests retain substantial biodiversity, carbon, and timber stocks, we believe that improvements in forest management practices must be encouraged and are now likely if synergies are enhanced among initiatives to retain forest carbon stocks (e.g., REDD+ [Reducing Emissions from Deforestation and Forest Degradation]), assure the legality of forest products, certify responsible management, and devolve control over forests to empowered local communities.

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Industrial Logging Should Be Discouraged: A Response to Sist and Colleagues

The scientific studies we review in our paper (Zimmerman and Kormos 2012) conclude unanimously that logging in tropical forests under presently mandated protocols leads to depletion of high-value timber stocks, thereby setting logged forests on a globally well documented course to clearing as land value shifts from timber to agriculture. We agree with Sist and colleagues (2011) that near-sustainable logging of natural forests is technically feasible, albeit only with substantial financial subsidy. We also agree that logged forest supports more biodiversity than cattle pasture or oil palm. We diverge, however, in our opinion on what should be done with this information to achieve the objective of conserving the world's highly threatened tropical forests.

Putz and colleagues (2012) maintain that if best practices were implemented

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