

Letter

How to Avoid Underselling Biodiversity with Ecosystem Services: A Response to Silvertown

Kerrie A. Wilson^{1,*} and Elizabeth A. Law¹

Silvertown [1] questions whether ecosystem services (ES) have been oversold. Here we highlight the value of the broader ES framework beyond markets and provide guidelines on how we can avoid underselling biodiversity in a world increasingly interested in sustaining the services provided by nature.

Silvertown portrays ES as slippery slope from conceptualization, to valuation, to monetization and cumulating towards an endpoint of commodification. We disagree with this simplistic summary of the ES literature. The ES framework has stimulated diverse deliberation on why and how we value nature [2], the equity implications of how non-market and market values are distributed and managed [3], and how best we can communicate often overlooked non-monetary values (and why indeed they are overlooked) [4]. None of these necessarily implies nor demands the ultimate commodification of ES [2].

Silvertown also critiques the lack of evidence that markets improve either biodiversity or ES outcomes. This is not a problem unique to payments for ES; rather it is pervasive in natural resource management in both historical and contemporary settings, with a complex genesis [5]. The context-specific evaluation of ES compared with alternative frameworks is needed before arguments surrounding relative performance can be made.

We do agree that pragmatism is, however, warranted: there is potential for risks and unintended consequences from the commodification of nature and issues specific to biodiversity conservation have been raised previously [6–10]. Unfortunately, researchers and practitioners have been obsessed with analyzing the spatial congruence between measures of the importance of areas for biodiversity conservation and the provision of ES with the aim of identifying potential locations for ‘win-win’ outcomes. Most analyses to date indicate that there will be trade-offs, which is far from surprising as trade-offs are inevitable whenever multiple objectives are sought [11]. Correlation also does not imply causation and perverse outcomes are possible even if the causal relationships between biodiversity and ES become better understood.

With ES becoming an increasingly popular and utilized framework, the biodiversity conservation community needs to strategically engage in the identification, implementation, governance, and evaluation of projects aimed to sustain ES. We suggest that the following steps are essential to minimize perverse outcomes from a focus on ES, particularly for biodiversity conservation.

(i) Know what you want. A clearly identified objective (for which performance measures can be assigned) should be known *a priori*. With this objective in mind, the conservation community can seek to engage ES projects that have the greatest potential to contribute to achieving this objective.

(ii) Look at the bigger picture by targeting geographic locations for project engagement in the context of a broader conservation plan for the region.

(iii) Seek leverage opportunities by supporting the implementation of actions to mitigate threats to the ongoing provision of ES and also the persistence of biodiversity. Example ES projects of potentially

high value for biodiversity might include removing invasive alien plants to increase water flows or projects that re-vegetate catchments with diverse native plantings to regulate floods and stabilize soils.

(iv) Ensure biodiversity conservation outcomes are additional and go beyond business as usual or a standard duty of environmental care as attributed in local, national, and international policy and regulations.

(v) Take a stand if the project fails to deliver the desired biodiversity outcomes and ensure that the broader governance regime for the project provides mechanisms for recourse, including for compensation of co-invested funds.

(vi) Document and learn by compiling lessons from projects that have delivered conservation outcomes (or failed to deliver) and the underlying reasons: what were the context and the drivers of success (or failure) so that similar opportunities in the future can be identified (or avoided)?

The further development of ES markets and the pursuant flow of new funding sources will see more conservation organizations aligning their goals and missions with the ES framework [12]. Seeking to influence ES projects at all stages of project delivery from identification to evaluation will help to ensure that biodiversity conservation is not undersold in a world tipped to become increasingly obsessed by ES.

¹The University of Queensland, Brisbane, Australia

*Correspondence: k.wilson2@uq.edu.au (K.A. Wilson).

DOI of original article: <http://dx.doi.org/10.1016/j.tree.2015.08.007>
<http://dx.doi.org/10.1016/j.tree.2016.03.002>

References

1. Silvertown, J. (2015) Have ecosystem services been oversold? *Trends Ecol. Evol.* 30, 641–648
2. Schröter, M. et al. (2014) Ecosystem services as a contested concept: a synthesis of critique and counter-arguments. *Conserv. Lett.* 7, 514–523
3. Jax, K. et al. (2013) Ecosystem services and ethics. *Ecol. Econ.* 93, 260–268

4. Guerry, A.D. *et al.* (2015) Natural capital and ecosystem services informing decisions: from promise to practice. *Proc. Natl. Acad. Sci. U.S.A.* 112, 7348–7355
5. Baylis, K. *et al.* (2015) Mainstreaming impact evaluation in nature conservation. *Conserv. Lett.* 9, 58–64
6. Redford, K.H. and Adams, W.M. (2009) Payment for ecosystem services and the challenge of saving nature. *Conserv. Biol.* 23, 785–787
7. McCauley, D.J. (2006) Selling out on nature. *Nature* 443, 27–28
8. Adams, W.M. (2014) The value of valuing nature. *Science* 346, 549–551
9. Lindenmayer, D.B. *et al.* (2012) Avoiding bio-perversity from carbon sequestration solutions. *Conserv. Lett.* 5, 28–36
10. Goldman, R.L. and Tallis, H. (2009) A critical analysis of ecosystem services as a tool in conservation projects: the possible perils, the promises, and the partnerships. *Ann. N. Y. Acad. Sci.* 1162, 63–78
11. McShane, T.O. *et al.* (2011) Hard choices: making trade-offs between biodiversity conservation and human well-being. *Biol. Conserv.* 144, 966–972
12. Liu, J. *et al.* (2008) Ecological and socioeconomic effects of China's policies for ecosystem services. *Proc. Natl. Acad. Sci. U.S.A.* 105, 9477–9482