LETTER

Global priorities for conservation of threatened species, carbon storage, and freshwater services: scope for synergy?

1. Frank W. Larsen[1,2],
2. Maria C. Londoño-Murcia[1,3],
3. Will R. Turner[1]

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Author Information

1 Science & Knowledge Division, Conservation International, 2011 Crystal Drive Suite 500, Arlington, VA 22202, USA

2 Center for Macroecology, Evolution and Climate, Department of Biology, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen O, Denmark

3 Laboratorio de Sistemas de Información Geográfica, Departamento de Zoología, Instituto de Biología, Universidad Nacional Autónoma de México, Apartado Postal 70-153, México

*Frank Wugt Larsen, Science & Knowledge Division, Conservation International, 2011 Crystal Drive, Suite 500, Arlington, VA 22202, USA. Tel: +1 (703) 341-2754; fax: +1 (703) 979-1208. E-mail: frankwugtlarsen@gmail.com (mailto:frankwugtlarsen@gmail.com)

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Abstract

The potential of global biodiversity conservation efforts to also deliver critical benefits, such as carbon storage and freshwater services, is still unclear. Using spatially explicit data on 3,500 range-restricted threatened species, carbon storage, and freshwater provision to people, we conducted tradeoff analyses, explicitly addressing both biodiversity and ecosystem services in selection of priority areas, to explore the potential for aligning these objectives. These analyses revealed a promising scope for aligning objectives, in particular for biodiversity and freshwater, which is not evident from previous studies that merely analyzed overlap of biodiversity and ecosystem services derived for each objective independently. However, this alignment is not complete. By revealing important synergies and tradeoffs among services, these analyzes suggest particular regions and service combinations for which spatial planning and appropriate conservation mechanisms (e.g., payments for ecosystem services) can be used to realize synergies and mitigate tradeoffs.

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