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Accounting for leakage of carbon benefits from Amazonian forest reserves

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Abstract Amazonian forest reserves have significant carbon benefits, but the methodology used for accounting for these benefits will be critical in determining whether the powerful economic force represented by mitigation efforts to slow global warming will be applied to creating these reserves. Opportunities for reserve creation are quickly being lost as new areas are opened to deforestation though highway construction and other developments. Leakage, or the effects that a reserve or other mitigation project provokes outside of the project boundaries, is critical to a proper accounting of net carbon benefits. The effect of the value attributed to time greatly influences the impact of leakage on benefits credited to reserves. Simple assumptions regarding leakage scenarios in Brazilian Amazonia illustrate the benefits of reserves and the critical areas where agreement is necessary to make this option a practical component of mitigation efforts. The analysis indicates that, even in the face of leakage, reserves have significant mitigation benefits if value is given to time,. The stakes are too high to allow further delays in reaching agreement on these issues.

Keywords Global warming, Greenhouse effect, Mitigation, Avoided deforestation, REDD, Kyoto Protocol, Reduced emissions, Deforestation, Brazil