

Research Directions in Neotropical Forest Restoration



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The current awareness of society's dependence on forests underpins recent international initiatives to halt deforestation and increase restoration of the more than two billion hectares of degraded forests globally. Most notable of these are the 2011 Bonn Challenge and the 2014 New York Declaration on Forests, which aim to restore 150 million hectares of forest worldwide by 2020 and 350 million hectares by 2030, respectively. To achieve these goals, restoration decision makers need guiding principles regarding how to invest limited resources for large scale forest restoration. In this talk, I will review what we have learned over the past few decades about the rate and direction of tropical forest succession in highly degraded lands and the efficacy of different active restoration strategies to facilitate tropical forest recovery. I will then discuss four general directions for future research to inform the large-scale forest restoration efforts that are proposed, citing a range of examples to illustrate each point. Specifically, research studies and monitoring protocols are needed that synthesize results across larger spatial scales and evaluate restoration over longer time periods. In evaluating the efficacy of forest restoration strategies, it is critical to consider not only ecological outcomes, but also relative costs and societal benefits of different approaches. Finally, efforts to coordinate research and improve knowledge sharing among scientists, land owners and managers, governmental and non-governmental organizations, and policy makers are essential to implementing successful tropical forest restoration projects at the scale that is being proposed.