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Resilience Loss of Tropical Forests in Recent Decades

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In view of ongoing climate and land use change, the resilience of tropical forests is crucial for maintaining ecosystem services and preventing potential forest loss and associated greenhouse gas emissions. Recent studies have attempted to quantify tropical forest resilience changes using different satellite vegetation products. However, it has not been assessed to what extent the data satisfies the theoretical assumptions of the employed resilience metrics. Here, we propose a framework to determine the most reliable combination of vegetation data and metrics to monitor resilience from space. We apply our framework to select the best combinations from 16 vegetation products and nine resilience metrics. Based on these, we consistently find that tropical forests in South America, Africa, and Asia have experienced a decline in resilience over recent decades. Our robust assessment of resilience changes in tropical forests has important implications for targeted actions to prevent further tropical forest loss.