

ECOGRAPHY

Research

Improving landscape-scale productivity estimates by integrating trait-based models and remotely-sensed foliar-trait and canopy-structural data

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Assessing the impacts of anthropogenic degradation and climate change on global carbon cycling is hindered by a lack of clear, flexible and easy-to-use productivity models along with scarce trait and productivity data for parameterizing and testing those models. We provide a simple solution: a mechanistic framework (RS-CFM) that combines remotely-sensed foliar-trait and canopy-structural data with trait-based metabolic theory to efficiently map productivity at large spatial scales. We test this framework by comparing its estimates to ground-based measurements (NPP) and satellite-based estimates (0.01–100 g C m⁻² yr⁻¹).