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**Zachary J. Robbins\*** (zachar4@pdx.edu), **Robert M. Scheller**, **Bradley S. Case** and **Nikolay Strigul**. *The Parameterization of PPA Formulas Using a SORTIE-ND Model For Harvard Forest.*

Spatially-implicit forest growth models, such as the perfect plasticity approximation (PPA), allow for the computationally efficient scaling of forest dynamics to the landscape scale, by using simplified mechanisms of individual tree competition. The parameterization and calibration of PPA using empirical data is challenging, limiting its applications in biogeochemistry and forest modeling. In contrast, the statistical methodology for parameterization of spatially explicit individual-based forest models, such as SORTIE, is well developed. In this work we parameterize the spatially-implicit PPA model by calibrating the spatially-explicit SORTIE-ND model using Harvard forest as a test site. Despite the two models using different tree competition mechanisms, both predicted similar biomass dynamics. Community composition diverged in the two models: between an Eastern hemlock dominated system in SORTIE-ND and a red maple dominated in PPA. This illustrates that the different competition mechanisms employed in spatially-explicit and -implicit models can lead to different predictions of forest successions, and provides a method for an initial parametrization of PPA using SORTIE-ND which is sufficient for scaling of biomass dynamics, but requires further calibration for species dynamics. (Received February 04, 2018)