Project Title: Spatial-temporal models for FIA data: Combining plots across time and space for time-specific and change estimates of forest biomass stocks

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Period of Report: January 1, 2024 – July 31, 2024

Progress

This has been a productive research period. We have continued to improve and develop our spatial-temporal model for estimating change in forest biomass stocks. This model has been tested and validated across the contiguous United States and appears to be working well. This completes a major milestone in our proposed research.
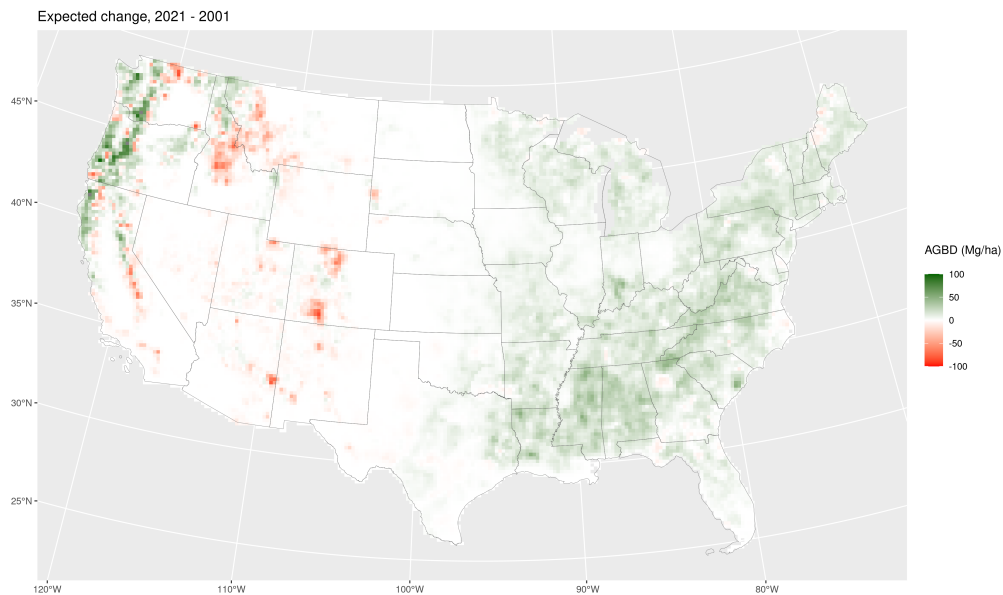
An example output from the developed model, giving estimated change in above ground biomass density (AGBD) from 2001 to 2021 at a 20×20 kilometer resolution.

Next Period Plans

The remaining major milestones in our proposed research are 1) product delivery, in the form of peer-reviewed manuscripts and software, and 2) incorporation of remote sensing data within the spatial-temporal model. Within the next period, our primary focus will be on product delivery. A manuscript is currently being prepared for submission to *Nature Methods* under the special collection *Methods for ecological and evolutionary data analysis*. Graduate student Victoria Karnes, working under PI May and funded by this project, continues to work on the incorporation of remote sensing data.

Problems/Delays

None.