

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: October 1, 2023 – January 31, 2023

Progress:

We have developed viable spatial-temporal models to satisfy the project objectives. The models have been tested and validated over the Blue Ridge mountains in the Appalachian Range, where they exhibited satisfactory performance.

Graduate student Victoria Karnes joined May's research team this semester. Karnes will help explore remote sensing data sources that can be used to support biomass modeling over large time spans.

We are working with Sean Healey and Zhiqiang Yang (USFS) to acquire and utilize Landsat Time Series data to support our modeling efforts:

<https://iopscience.iop.org/article/10.1088/1748-9326/ace2da/meta>

Next Period Plans:

We will utilize the developed models to infer temporal trends in forest biomass across the state of California. California presents an interesting test case, due to its large-scale forest carbon credit program. A manuscript detailing the results is intended for *Nature Communications/Sustainability*.

Following successful execution and validation within California, we begin upscaling to the contiguous United States and planning the logistics of product delivery.

Problems or delays: None.