Progress Report

Linking Leaf Area Index and remote sensing across different forest types

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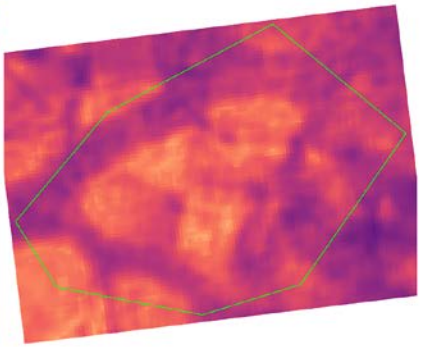
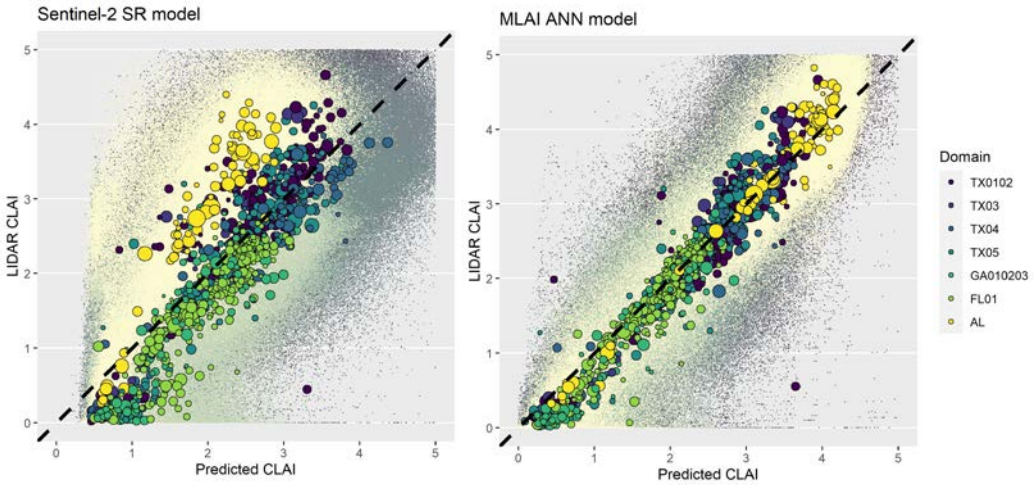
Project Overview

- Forester could benefit from better info on canopy and understory status, but field measurement and aerial LiDAR are costly
- **Goal: Use freely available global satellite record to quickly and routinely assess canopy and understory status in managed timber**
  - Canopy LAI: Future growth potential, fertilizer need
  - Understory LAI: Competition control
- Produce *accessible* tools/databases for canopy+understory mapping across variety of forest types + regions

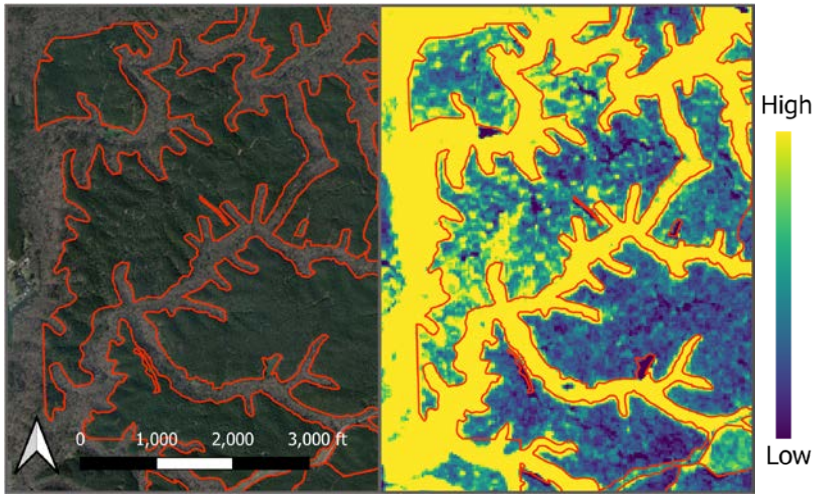


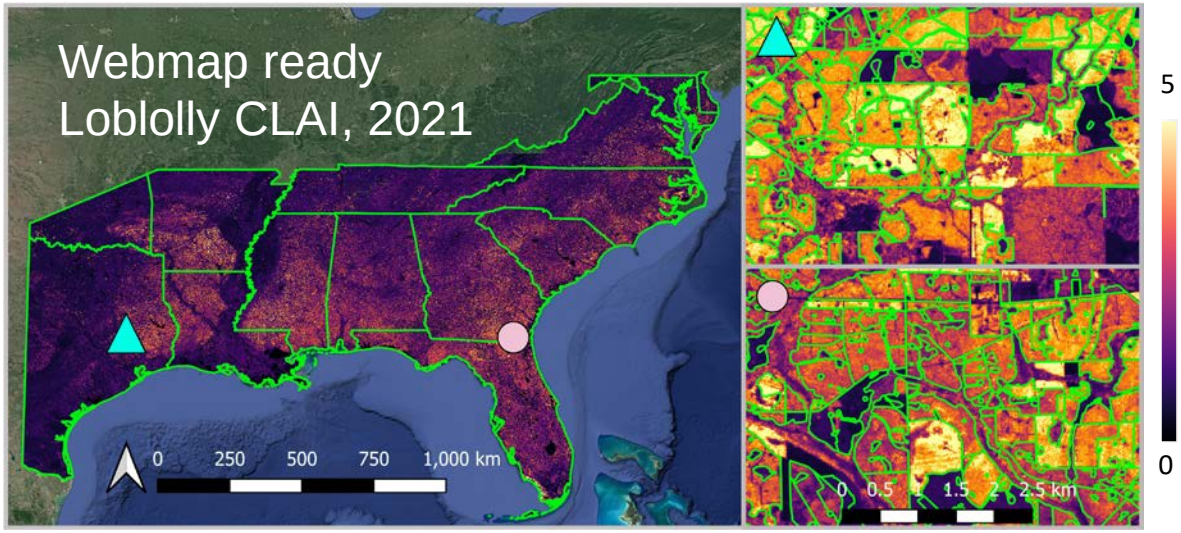
Current Progress

"Global" + ML 10m Canopy LAI model
Calibrated to Loblolly pine



Deciduous understory detection



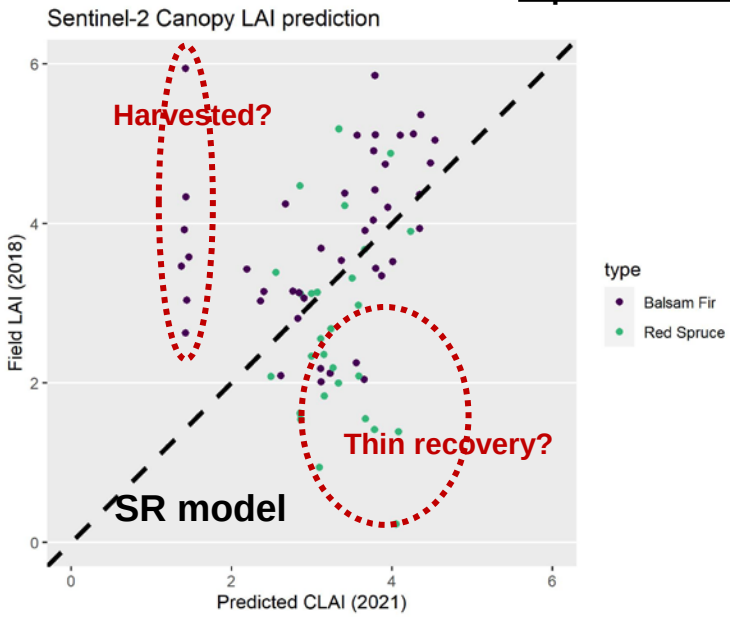


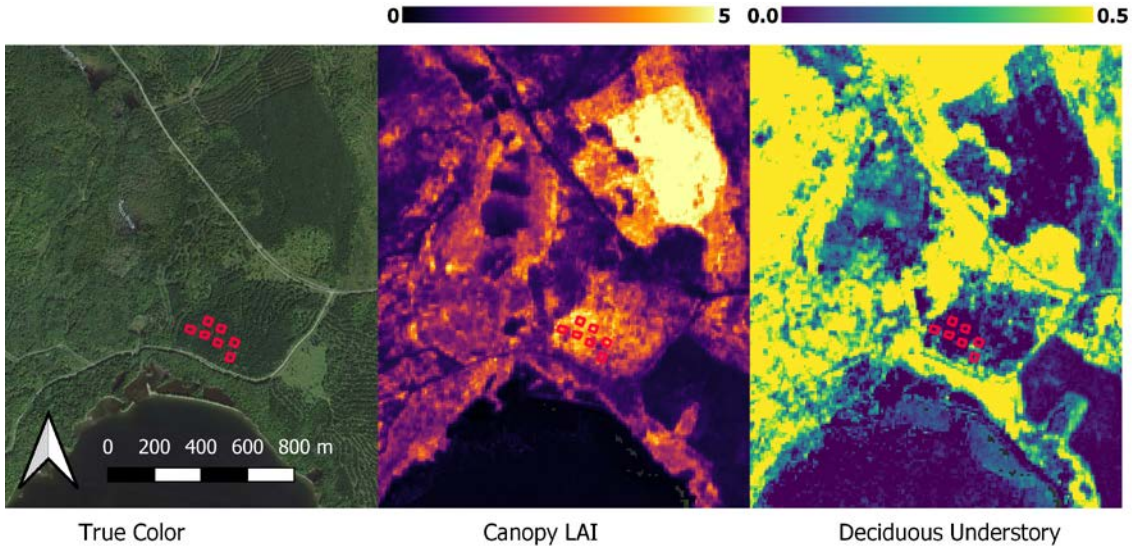
- Works through Google Earth Engine → Data + computing power already exists in the cloud
- Input date+time to produce maps on demand
- Scalable for large areas, time series

Expand CLAI + understory prediction to other regions

Future Plans

Spruce-Fir, Maine





- Simple Ratio model of CLAI comparable between Loblolly and Spruce-Fir
  - *Need ground data for refinement*
- Other regions+forest types pending additional ground data
- Web-based interface forthcoming
- ? Also use Landsat-8 (30m) → greater time range