

- Multiscale Forest Remote Sensing

Accurate information about forest trees, stands, and landscape is critically important for forest management but is difficult to obtain with conventional forest-inventory methods. Remote sensing technology is useful for measuring forest trees, stands, and landscapes but its applications in mixed-species hardwood forests have not achieved a satisfactory standard. Previously we have made progress in using moderate-resolution satellite image data and low-density Lidar data for forest mapping and characterization in Indiana. The current project tends to incorporate the recent advances in remote sensing into forest measurements at tree, stand, and landscape levels for hardwood forests in the US. We will develop protocols for handling satellite imagery, aerial photography (including unmanned aircraft systems), Lidar data, and ground-based imaging for the purposes of improving forest management planning at a landscape scale, silviculture and monitoring at a stand scale, and forest timber inventory at a tree scale. This remote sensing project initiated in Indiana will have broader implications to forest mapping and information extraction in the Central Hardwood Forest Region.

