Position: Post-doctoral research appointment developing modeling approaches to estimate forest and landscape characteristics from LiDAR data in Missouri priority landscapes. School of Natural Resources, University of Missouri in collaboration with the Missouri Department of Conservation

Description: Missouri Department of Conservation's (MDC) Comprehensive Conservation Strategy is a landscape approach to targeting statewide habitat management priorities. Assessing habitat condition over time across these priority landscapes is imperative. However, with landscapes ranging > 100,000 acres of public and private land, it remains difficult to track the current status and changes in vegetation communities and topography using standard on-the-ground monitoring protocols. Technological innovations, such as LiDAR, could greatly enhance our ability to assess and monitor habitat and landforms over time at the appropriate larger scale.

We are seeking a post-doctoral associate that will use quantitative approaches to model forest landscapes characteristics from LiDAR. The general approach will be to combine LiDAR and existing field-plot data to develop and validate the ability of LiDAR to estimate various forest, carbon, and soil characteristics. The approach will involve three main components: 1) acquisition of LiDAR and forest stand data, 2) multi-stage analysis that uses spatial processing of LiDAR data to derive primary surface and vegetation structural metrics, and then develop predictive models to link primary metrics to secondary forest stand and carbon attributes, and 3) evaluate LiDAR effectiveness and efficiency as a landscape conservation tool.

The postdoc will be responsible for coordinating and supervising field data collection (in the spring of first year only) in pine woodlands and bottomland hardwood forests in 2 regions of the state, engaging with MDC to identify desired products, processing lidar structure metrics through open source software, and then statistical modeling of higher level forest metrics. Housing, transportation, and technician support will be provided for field work. Field training will be available if needed. A high performance computing workstation and devoted office space within the School of Natural Resources will be provided. Multiple peer-reviewed manuscripts are possible with this project.

Qualifications: PhD in geography, ecology or related natural resource discipline with experience in GIS and quantitative methods (e.g., statistical modeling and machine learning). Preference for candidates that have experience processing lidar and other remote sensing imagery and incorporating these spatial data into ecological modeling applications. Preference will also be given to candidates that possess a demonstrated record of publishing.

Salary: $50,000 per year plus full benefits. Appointment is for 2 years.

Application reviews will begin September 1st and remain open until the position is filled. The anticipated start date is January 2021.

To apply, email letter of interest, CV, and contact information for three references (preferably as one pdf) to Dr. Thomas Bonnot, School of Natural Resources, University of Missouri, Columbia, MO 65211.

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