

John Coulston

TITLE: ***Complex forest dynamics indicate potential for slowing carbon accumulation in the southeastern United State***

BIO

Dr. Coulston is the national leader of the newly established USDA Forest Service Center for Forest Products Survey and Analytics in Blacksburg, VA. Dr. Coulston also holds adjunct faculty appointments with North Carolina State University, Virginia Tech, and the University of Tennessee. He earned a PhD in Forest Biometrics and Remote Sensing from North Carolina State University.

ABSTRACT

The forests of the United States provide a critical offset to CO₂ emissions from other sectors. However, sequestration rates are influenced by human activity such as forest management and land use choices as well as natural processes such as forest aging and disturbances. Here we examine the impacts of land use change and disturbances (both natural and anthropogenic) on carbon sequestration and net carbon stock change in the southeastern United States. We found that carbon sequestration was substantially greater than carbon removed from forest cutting. Carbon flows arising from land use change are important drivers of net carbon stock change. Further, forest aging is expected to reduce carbon sequestration rates in the coming decade. Quantifying these dynamics provides critical information for CO₂ reduction initiatives.