



## **Spatially explicit forest characteristics of Europe through integrating Forest Inventory and Remotely sensed data**

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Carbon stock estimates are critical for any carbon trading scheme or climate change mitigation strategy. Understanding the carbon allocation and the structure of its ecosystem further help scientists and policy makers develop realistic plans for utilizing these systems. Forests play an important role in global carbon storage. Therefore it is imperative to include forests in any climate change mitigation and/or carbon trading scheme. Currently there is no estimate of forest carbon stocks and allocation nor forest structure maps throughout Europe. We compiled National Forest Inventory (NFI) data from 12 European countries. We integrated the NFI data with Net Primary Production data (NPP) from Moderate Resolution Imaging Spectroradiometer (MODIS), tree height data from Light Detection and Ranging (LIDAR) data from the Geosciences Laser Altimeter System (GLAS) instrument, and various other spatially explicit data sets. Through this process of integration of terrestrial and space based data we produced wall-to-wall forest characteristics maps of Europe. These maps include forest age, basal area, average diameter at breast height, total carbon, carbon allocation (stem, branches, leaves, roots), and other characteristics derived from forest inventory data. These maps cover Europe – including countries without terrestrial data – and give one coherent harmonized data set of current forest structure and carbon storage on a 16x16km resolution. The methodology presented here has the potential to be used world-wide in regions with data limitations or with limited access to data.