Using Site-specific Measurements for Estimating Regional Forest Floor Carbon Pools. (S05-heath163910-Poster)

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Abstract:

Current interest in forest carbon inventories is based on the link between terrestrial carbon pools and potential climate change. Little regional information is available to assess carbon mass of forest floor, which includes decomposing organic matter above the mineral soil, freshly fallen litter, and small woody debris. We compiled published values and developed a basic model of accumulation and decay based on forest type, stand age, and region. Forest type greatly influences the amount of forest floor carbon in mature forests, ranging from 62 Mg/ha in Sequoia forests of Western U.S. to 6 Mg/ha in mixed hardwood forests of the South. Mean residence times ranged from 4 years in the South to over 20 years in the West. For model validation, we obtained independently sampled values from four States in the North. Sampled and simulated values were similar. We estimate that forestlands in the 48 conterminous United States contain 4.3 Pg of organic carbon in this pool. This represents 21 percent of total aboveground forest carbon. These forest floor estimates are part of a larger project to improve total forest carbon estimates by FORCARB2, a carbon budget model for U.S. forests.

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