Establishing a Soil Carbon Baseline for Carbon Accounting in the Forested Soils of the United States. (S05-johnson183812-Oral)

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Abstract:

Soils are an important global reservoir of organic carbon (C). It has been estimated that at 1500 Pg world soils hold approximately three times the amount of C held in vegetation and two times that in the atmosphere. Soils provide a relatively stable reservoir for C. With the intense focus on increasing atmospheric CO2 and the potential for global climate change, there is an urgent need to develop an accurate inventory of C held in soils and to assess the feasibility of managing ecosystems to sequester and store C in soils. We present a method for using current map and lab data to develop an inventory of the organic C held in forested soils, including O horizons, of the U.S. We utilize bulk density and coarse fragment information to refine soil C estimates and we distinguish between the contribution of organic soils and mineral soils. We include an uncertainty analysis to characterize the quality of the results. Creating an inventory of soil C held in U.S. forests provides a baseline from which changes in national forest soil C sequestration may be judged. This inventory may also be used as an aid in identifying those forest types that may be managed for additional C sequestration.

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