Carbon sequestration in reservoirs: fate of eroded soil organic carbon during transport and burial. (S03-huntington112439-Oral)

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Abstract:

Sedimentation of soil organic carbon (SOC) eroded from uplands and deposited in reservoirs could be an important mechanism for carbon sequestration provided that SOC is conserved during transport and burial and that uplands are not experiencing net loss. Upland soils, sediments suspended in stream water, and sediments deposited in reservoirs in the Yazoo River basin in Mississippi were collected and analyzed to assess the fate of eroded SOC during transport and burial. Preliminary evidence from Mississippi and reservoirs in many other states indicates that a substantial fraction of carbon may be oxidized during transport and burial. Autochthonous production of SOC within reservoirs could replace labile SOC oxidized during transport and burial thereby mitigating losses due to oxidation. Carbon sequestration resulting from erosion, transport, and burial in reservoirs is an important component in the carbon budget and efforts to quantify it will be improved by incorporating losses associated with transport and burial.

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