# Holocene Dust Aggradation as a C Sequestration Process in Great Plains Mollisols. (S05-jacobs095336-Poster)

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## Abstract:

The amount and vertical distribution of SOC storage is primarily a function of vegetation type and climate, with influence from soil and landscape properties and human activities. The influence of dust aggradation on landscapes during the Holocene has largely been ignored as a factor in long term SOC storage. Dust aggradation is important to C sequestration since the dust deposit buries the landscape and increases solum thickness. Mollisols on loess-covered upland tables in central Nebraska have aggraded throughout the Holocene as Bignell Loess accumulated above the late Pleistocene Brady Soil. In the loess tablelands, the thickness of dark colors, A horizon properties, and SOC storage decreases with distance from the source of Bignell Loess. Examples: Along a transect of decreasing loess thickness and increasing rainfall, total thickness of A horizons decrease 70 cm and the thickness of chroma 1 colors decrease 54 cm. Total C storage decreases from 17.5 kg/m^2 to 8.6 kg/m^2. Dust aggradation in a steppe environment has impacted horizonation, pigmentation, and SOC storage in central Great Plains Mollisols. SOC storage is probably not in equilibrium with modern climatic conditions.

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