

*Journal of Environmental Indicators*, 9:2, 2015  
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## Soil Carbon Pool as an Environmental Indicator

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Soil (pedosphere) is an important component of the environment, and it interacts closely with atmosphere, hydrosphere and the biosphere. As the largest reservoir of carbon (C) in the terrestrial ecosystems, it is a major determinant of atmospheric chemistry, climate change, and an important component of the global C cycle. In turn, climate is an active factor of soil formation. Similarly, soil properties and processes also impact the hydrological cycle. Soil and its effective rooting depth is the source of “green water” or the plant available water (PAW) reserve. There exists a close relationship between soil organic C (SOC) content and PAW capacity. Water quality is also affected by SOC concentration through its impact on soil erodibility, sediment transport, and non-point source pollution. Concentration, quality, and dynamics of SOC are strong controls of the activity and species diversity of soil biota, especially that of the microbial biomass C. Macrofauna (e.g., earthworms, termites) are also affected by the amount of SOC pool, its size fractions, and the mean residence time (MRT). Soil quality, ecosystem goods and services provisioned under a specific land-use, is also affected by SOC concentration, its depth distribution, and physical/chemical properties. The threshold or critical level of SOC concentration in the root zone is 15 to 20 g/kg, and soil quality declines rapidly with a strong decline in SOC concentration. The aboveground biomass and rate of plant growth (the net primary productivity or NPP) are also affected by SOC concentration. Agronomic productivity and the efficiency of inputs depend on SOC concentration and the attendant impact on soil quality. There exists a strong link between soil health, plant health, animal health, and human health. Indeed, the soil-plant-animal-environment is a continuum, and indivisible. The SOC pool is an elixir of life, and is one of the most precious resources. Severe decline in SOC pool adversely impacts the environment, nature conservancy and human wellbeing.