

## **Keeping Carbon in Forest Soils: The Necessary Snowpack**

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<http://naturechange.org/2017/03/10/keeping-carbon-in-forest-soils-the-necessary-snowpack/>

Randy Schaetzl studies the processes of soil formation and the interactions of soils with regional hydrology, biology and climate. A Professor of Geography and Geology at Michigan State University, Dr. Schaetzl recently completed a study on the movement of carbon in forest soils across northern Michigan. His findings have big implications for climate change researchers.

In this video, Dr. Schaetzl and District Forester, Kama Ross talk about forest soils, their formation and variability across northern Michigan. Then, they talk about Dr. Schaetzl's recent research showing how important our region's annual snowpack is in keeping carbon in the soils – and out of the atmosphere.

### **Topics Covered**

Geology; Soils; Climate; Climate Change; Forests

### **Next Generation Science Standards**

- 5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
- 5-ESS2-1. Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.
- MS-ESS2-1. Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.
- MS-ESS3-5. Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.
- HS-ESS2-2. Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.
- HS-ESS2-6. Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.
- HS-ESS3-6. Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.
- HS-ESS2-4. Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.
- HS-ESS3-5. Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.