

Human impacts overwhelmed hydroclimate control of soil erosion in China 5000 years ago

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Deforestation and intensive land use have accelerated soil erosion, reshaped topography, and altered carbon reservoirs for thousands of years. The timing, scope, magnitude and drivers of long-term anthropogenic soil erosion across China are especially important to understanding this process globally. Here, sediment accumulation rates (SARs) from 191 sediment archives were temporally correlated with monsoon intensity during 6-40 ka BP, indicative of hydroclimate as the main driver of soil erosion. A rapid increase in SARs after ca. 5 ka BP was decoupled from persistently weakened hydroclimate but followed the trend of increasing population and related agricultural activities in China, implying a change of the main controlling factor. Early human activities in China therefore appear to have had profound implications on Earth's surface and carbon redistribution at a continental-scale.