

Deepening the Anthropocene: Connecting Archaeology, Global Environmental Change, and Biodiversity Conservation

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Earth's ecology for thousands of years, starting long before the emergence of agriculture and urbanization. Landscape archaeological research has long been critical to advancing scientific understanding of early changes in land use and their ecological consequences, including changes in biodiversity, over the past 12,000 years. More recently, international interdisciplinary scientific collaborations and procedures initially developed by the Earth system science community are facilitating improved global historical land use reconstructions that integrate archaeological, palaeoecological, and historical data in ways that are transforming global environmental change and biodiversity conservation. Results from ArchaeoGLOBE, LandCover6K (and other PAGES projects), together with historical reconstructions by Earth scientists and geographers, have already deepened global understanding of human transformation of Earth's ecology, challenging dominant narratives of wilderness conservation and the emergence of the Anthropocene Epoch in the 1950s. With this deeper understanding of long-term social ecological change, including past and current evidence that human societies can shape and sustain biodiverse ecosystems for centuries to millennia, some key questions arise. Can human capacities to transform ecology be redirected toward shaping a better future for people together with the rest of nature at planetary scales? Could some of the same social-ecological processes that have transformed this planet for the worse also transform it for the better? These questions will be explored from a global landscape change perspective.