
Woodland management, biodiversity and tree rings: the view backwards forwards

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Abstract

Looking on biodiversity and how it is affected by land use on a long-term, (pre-)historical scale is done by several proxies in the field of palaeoecology (pollen, plant carpological and animal remains, wood, charcoal etc.). Floral, faunal, community, and landscape diversity is shaped considerably by human action, for good or for bad, enriching or depriving. However, to understand today's and future biodiversity a long-term perspective is needed, which includes changes of diversity caused by land-using humans. One aspect in this discussion is the way woodland management has affected landscapes and species richness, past and present, including onsets, intensities and types of wood sourcing. A standard-with-coppice management was very common in central European landscapes since at least medieval times. Such stands are managed in a ca. 30 year clearing cycle, coppicing the smaller trees, and let grow some, commonly oaks, until 90 or 120 or more years old. The yield is both small diameter material for fire wood or charcoal, and construction wood for houses or ships, on the same sites. Today, rarely existing, its high structural diversity supports endangered species like the butterflies *Euphydryas maturna*, or *Eriogaster catax*, or the bat *Myotis bechsteinii*. Dendrochronology can help find out the onset and intensity of this cyclic woodland usage with these positive effects on biodiversity in European history. For this, we started to build a reference data set of samples from standard-with-coppice trees still managed actively. In a first step, a characteristic growth pattern was identified and compared to archaeological material. The talk will give examples of archaeological sites from different periods (Medieval, Iron Age, Neolithic) where the ring patterns of some woods hint to a comparable woodland management, creating richly structured semi-open woodland which enhanced biodiversity. Data will be discussed in the context of other palaeoecological proxies.

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