Better than pollen? An experiment to use structural information from archaeological excavations to reconstruct medieval deforestation and inspire future reforestation

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Plans for the expansion of the present woodland cover exist all over the world, with climate ambitions (carbon capture, climate adaptation), sustainability, the preservation of biodiversity, and the reduction of recreational pressure among the arguments being cited. As a contribution to the current debate on large-scale reforestation in the Netherlands we have tried to spatially reconstruct the presence and dynamics of woodland in the Dutch landscape during the Middle Ages (AD 500-1500). Traditionally pollen data er used for such purposes. However, due to unfavourable preservation conditions and a lack of research, palynological data post-dating c. AD 1000 are scarce and only allow very general reconstructions. The combination of other potential sources of information (place names, historical references, historical maps, 'ancient woodland' etc.) is likely to produce better results (Groenewoudt et al., submitted). Broadening our search for historical woodland proxies we have now investigated the potential of archaeological data, specifically a) charcoal production sites (charcoal kilns), and b) tree-trunk wells: water wells made of hollowed out tree-trunks. Our analyses of medieval charcoal production sites build on a recent work (Deforce et al., 2020; Groenewoudt et al., in press). A nation-wide inventory of medieval tree-trunk wells was carried out, resulting in (up to now) 540 specimens from 120 medieval settlement sites. Usually large (oak) trees were used. Our expectation that such trees point to the local presence of (old) woodland was confirmed by the strong correlation with spatial reconstructions based on other woodland proxies. Quickly creating large-scale spatiotemporal reconstructions based on substantial quantities of excavation data has been greatly facilitated by the digital availability of a greatly increasing quantity of excavation reports. This is also a favourable precondition (or even a prerequisite?) for landscape archaeological contributions to current debates concerning environmental change.