International Cartographic Association
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Sacred Forests Around Us – Simulating the Past Forest Landscapes in Virtual Reality

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Keywords: Archaeology, Virtual Reality, Simulation, Forest, Landscape

Abstract:

The Sacred Forests Around Us project explores the evolving relationship between Finns and forests from prehistory to the present through interdisciplinary research and artistic interpretation. By combining archaeology, folklore, geoinformatics, and contemporary art, the project aims to understand the sacred and ritual aspects of forest use over millennia. Our methods include geospatial processing and analysis, virtual reality (VR) simulations of prehistoric landscapes, and analyses of folklore and ethnographic materials, offering insights into both historical and contemporary sacred forest sites. This research seeks to bridge past and present perceptions of forest sacredness, contributing new perspectives on how spirituality and cultural heritage inform today's human-forest interactions. The project examines sacred and ritualistic forest relationships across three time periods: prehistory, historical times, and the present, viewing these periods as interconnected so that studying one enhances understanding of the others. Art serves as a bridge between these time periods, offering a creative way to comprehend the connections between past experiences and the significance of sacredness in forest relationships.

In this study, we examine prehistoric forest sites considered sacred or associated with ritual practices. Using geospatial processing and analysis together with geovisualisation in VR, we simulate past forest landscapes by starting with the current digital elevation model created from laser-scanned data and overlaying a forest model that more closely represents prehistoric vegetation and tree cover. The forest model is an outcome of the prehistoric vegetation model based on historical maps, pollen analyses, environmental vegetation analyses, faunal analyses, and data on animal habitats.

These past forest simulations allow us to study (1) the types of archaeological sites or finds that exist in prehistoric forests, (2) the specific settings of these sites, and (3) which of these sites can be identified as material remnants of ritual activities. Our definitions draw on theories such as Bradley's (2000) on the significance of natural landscapes in ritual activities and Swenson's (2015) on the performative nature of sacrificial and cache finds. Geospatial analyses in this project enable the efficient examination of extensive datasets to reveal potential trends. For example, network analysis allows us to map temporal changes in ritual forest use, examining the dataset as a network and analyzing the landscape and functional connections between nodes (sacred sites). The forest simulations will also be presented to the public, enabling virtual excursions to prehistoric forests.

Additionally, this research enables the study of place and the experience of sacredness within a VR environment. The topic has previously been explored by researchers such as Falconer et al. (2020), whose study indicated that many participants experienced a significant sense of place when virtually visiting a simulated archaeological site. The project also incorporates art, with the simulation allowing for examination from an artistic perspective. Art combines different ways of knowing: conceptual, sensory, and emotional knowledge. The experience of forest sacredness is holistic.

Our findings have the potential to redefine how sacred landscapes are perceived in prehistoric studies. By integrating archaeological data with folklore and ethnographic insights, we not only illuminate the past but also offer a deeper understanding of contemporary relationships with forests. Moreover, the use of VR as a research and public engagement tool underscores the evolving role of technology in heritage studies, creating a bridge between past and present experiences. Ultimately, this research contributes to broader theoretical discourses on sacred landscapes, spatial relationships, and the continuity of cultural practices related to forested environments. The immersive reconstruction of prehistoric forests offers a unique lens through which to appreciate the complexity and enduring importance of sacredness in human-forest interactions across time.

Acknowledgements

The research is funded by the Kone Foundation, grant number: 202311412. The Geovisualisation Lab is a service provided by the Open Geospatial Information Infrastructure for Research (Geoportti, urn:nbn:fi:research-infras-

2016072513) funded by the Research Council of Finland, National Land Survey of Finland, and other Geoportti consortium members.

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