



## **Extensive historical charcoal production in Brandenburg (Germany) – identification of potential areas by GIS analysis**

Alexandra Raab, Anna Schneider, Alexander Bonhage, Thomas Raab, and Florian Hirsch  
Brandenburg University of Technology, Cottbus-Senftenberg (BTU), Cottbus, Germany

We used a GIS analysis of environmental and historical data to identify potential areas of extensive charcoal production in Brandenburg. The analysis was based on three assumptions (i to iii). Large charcoal kiln fields can be found in areas that i) are close to historical industrial sites, ii) are close to bog iron ore deposits, and iii) have been continuously covered by forest during the last centuries.

Information on these parameters was gathered in an archive and literature study and from historical and recent maps. Areas with a high probability of kiln site occurrence were then determined using a simple binary additive model. In the last step, shaded-relief maps (SRMs) were visually checked for clearly visible kiln sites and soil properties were analysed in the determined areas.

In total, eight areas with a high probability of kiln site occurrence are identified for the state of Brandenburg. By visual interpretation of SRMs, high kiln site densities in these areas are confirmed. The analysis of soil maps shows that kiln fields are predominantly located on sandy soils with a low yield potential. Although further parameters and study areas need to be considered in the model in order to explain the spatial distribution patterns of charcoal production, the results indicate correlations between the location of bog iron ore deposits, historic ironworks and charcoal kiln fields.