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Forestry and charcoal burning in the vicinity of the ironwork Peitz (South Brandenburg, Germany) - What do we know from historical and archaeological data?

Melanie Takla (1), Müller Frank (2), Rösler Horst (3), Alexandra Raab (1), and Thomas Raab (4)

(1) Brandenburg University of Technology, Research Centre Landscape Development and Mining Landscapes (FZLB), Cottbus, Germany (melanie.takla@tu-cottbus.de), (2) Brandenburg University of Technology, Lehrstuhl Technikgeschichte, Cottbus, Germany, (3) Brandenburgisches Landesamt für Denkmalpflege und Archäologisches Landemuseum (BLDAM), Zossen, Germany, (4) Brandenburg University of Technology, Lehrstuhl für Geopedologie und Landschaftsentwicklung, Cottbus, Germany

The former royal forest districts around Peitz (South Brandenburg, Germany) were used to produce charcoal for the ironwork Peitz (1554 to 1856). More than 800 archaeologically excavated ground plans of charcoal kilns give evidence of the burning activity in the study area “Jänschwalde Heide” which is only a small part of the whole forest district.

The study area in the apron of the active lignite mine Jänschwalde comprises the royal forest “Jänschwalder Heide” and the surrounding community forests. Our study approach combines archaeological research, a GIS-based approach (historical maps, airborne laser scanning (ALS) data, etc.) and archival studies.

The charcoal kilns have been registered since 1990 and since 2005 they are systematically excavated and documented. First dendrochronological data reach from the 17th to the 19th century confirming charcoal burning during the operation period of the iron work. Moreover 5000 additional kilns were identified and digitized from Shaded Relief Maps (SRM) created from ALS data (resolution 1p m-2; height accuracy +- 15 cm). A kiln field of such a dimension has not been documented and investigated for the North German Lowlands so far. It raises the question about the effects of charcoal burning on the forests and the landscape during the last three hundred years.

Here we present the evaluation of the kiln data with regard to their size, frequency and spatial distribution. Besides the large number, the kilns have also large diameters (modal value 17 m, mean 12,5 m). Outside the boundaries of the royal forest the kilns are smaller and they were probably used to produce charcoal for local handcraft. These findings are compared to historical records from the first forest inventories (18th/19th century) like forest age and area, with historical forest laws and wood consumption data of the iron work. There is growing evidence that despite of the large extent of the kiln field the wood reserves in the forest districts about 1800 were still vast and deforestation was only a local phenomenon caused e.g. by insect calamities.

In a next step the wood consumption will be calculated based on the kiln diameters and the calculation will be set into relation with consumption data of the former ironwork. A further aspect is the comparison of the kilns field with selected digitized landscape elements like forest boundaries, forest structures and transportation network from georectified historical maps (Urmeßtischblatt 1845, Schmettausche Karte 1767-1787) and the evaluation of the kiln distribution in relation to physio-geographic and socio-economic parameters.