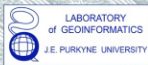


HISTORICAL LANDSCAPE OF ŠUMAVA

IN THE LIGHT OF PALAEOBOTANIC AND ANTIQUE MAPS' EVIDENCE



K. Króváková, V. Brůna

J.E. Purkyně University, Laboratory of Geoinformatics, Dělňnická 21, 434 01 Most, Czech Republic. e-mail: cariad@geolab.cz, http://oldmaps.geolab.cz



Studying landscape is an interdisciplinary task requiring various data sources which are often not easy to integrate. Research concerning the changes of vegetation could serve as a good example. The intention is to integrate outputs of palaeobotany and historical geography, namely the pollen profiles and antique maps, in order to receive a picture of the past vegetation in the studied area (the Šumava Mts. in Southern Bohemia). The first conclusions are given here.

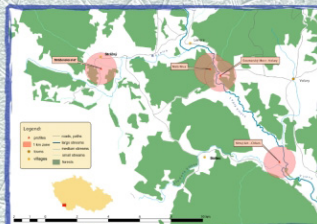


Fig. 1. The studied area with pollen profiles.



For the confrontation the pollen profiles (see Fig. 1) analysed by Svobodová (2004) and the II. Military Survey maps dated to the middle of 19. Century were chosen; on the military map the area within 1 km circle around the profile was vectorised in the GIS environment and converted into land-cover categories (see Fig. 2). From the pollen diagrams the values of arboreal pollen (AP) percentage and number of taxa were drawn and together with land-cover values (area and length of class boundaries) pictured in the graph (see Fig. 3).

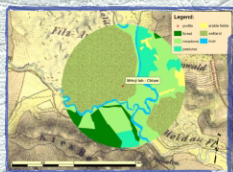
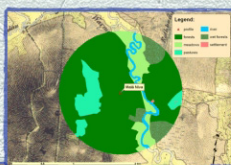
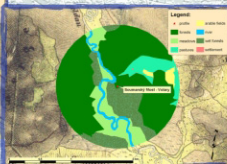


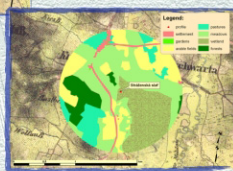
Fig. 2. The II. Military Survey map integration.



Fir pollen (C.M. Deggler)



Birch pollen (C.M. Deggler)



The expected correlations (AP-forest area, number of taxa-length of boundaries) were observed at all sites except Malá niva (the reason is being checked); correlation wood taxa-forest area was not found; we take it that many of the trees may belong to the wetland class (*Betula nana?*, *Pinus rotundata?*..).



The stone wall: a remnant of former agriculture, and its original landscape context (the village of Ondřejov destroyed in 1947 after the expatriation).

Beside this "quantitative" analysis also a rather "qualitative" approach was used as well - the parallels between taxa and antique sources were discussed (e.g. the *Melampyrum* sp. and its relation to the firing management of the area).



The problems were mostly caused by uncertainties when handling the pollen diagram, namely the precise dating and a question of spatial representativeness of the pollen data. We considered that the research would inevitably involve these questions and aim at statistical analyses of parallels between pollen data and historical landscape. The first steps will be based on precision and amplification of both data types; the pollen data will be converted from the point to the polygon through interpolation and modelling and the correlations will be searched for.

The aim is now to enhance the information gained from antique map by the pollen evidence, i.e. plant species found on the site, and the pollen data by a spatial context, whereas the method can be tested on the antique maps.

References:

Svobodová, H. (2004): Migrace klimatických dřevin na Šumavu v holocénu (Migration of climate wood species to Šumava during the Holocene). Bulletin Slovenskej botanické spoločnosti, Bratislava, Suppl. 11, pp. 207-216

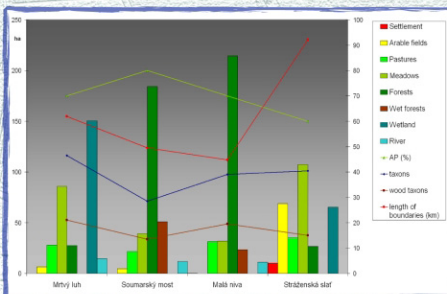


Fig. 3. Confrontation of land-use (left) and pollen diagram's values (boundaries exaggerated).