

# GIS-analysis in the reconstruction of an early medieval landscape. The Upper Lusatian case-study

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## Abstract

The GIS-software has been used as a main tool in reconstructing the early medieval landscape in the Upper Lusatia (Saxony, Germany) territory. Quality cartographic data (*Landesvermessungsamt Sachsen*) was used to produce GIS-based (ArcView) 2D maps of natural and man-made features tied afterwards to a relational database of non-spatial attributes containing archaeological, historical, and linguistic data. The preliminary work included also the elaboration of a DEM (ArcView, ArcInfo, ArcGIS) used to further the reconstruction and the analysis of landscape themes. GIS was used as a working platform onto which spatial statistical analysis and more common GIS-based spatial analysis (viewshed, line-of-sight, distance, proximity, etc.) were integrated with satellite imagery and other photo documentation. The results, so far are encouraging us to plead for the scientific benefits and potentials of GIS-based analysis and reconstruction of early medieval landscapes.

## Introduction

Bautzen/Budysin is considered the *de facto* cultural capital of the Sorbian minority in the larger region of the Sorbian/German Upper Lusatia, this perception being grounded mostly on decades of intermittent historic and archaeological research that underlined the central importance of this place for the region. The reconstruction of an early medieval landscape for this region focuses therefore, on the reconstitution of the multiple relationships between Bautzen/Budyšin as central place and the peripheral settlements during the early and the High Middle Ages. It takes in consideration the settlements around Bautzen/Budyšin and those on the Upper Spree Valley, those from the entire Upper Lusatia region, and those from the larger area including Northern Bohemia and Lower Silesia. The temporal variation of settlement pattern constitutes an important element in the process of landscape reconstruction, inasmuch as it emphasizes matching of information from various sources: archaeological, historical, and linguistic.

### *Settlement pattern: the Budissin Land*

A considerable effort was spent on collecting, aggregating, and classifying data coming from different sources: field reconnaissance, archived archaeological evidence from the Archaeological Service in Sachsen, historical documents, onomastic research, cartographic

information, etc. After this data was elaborated in the form of a tabular database within ArcView, it was clear that its structure and for that matter, its quality, ranked heavily against a chronological scale. It was possible to see that data about the earliest settlement extent in Upper Lusatia, for example, is best provided by linguistic analysis of place-names, followed by historical information, and only afterwards by actual archaeological evidence. Under these circumstances, the analysis of place-names took precedence over other types of information in showing the earliest settlement phases in the region. These place-names were digitized as points in ArcView, each of them representing either the site of the local church or the core of the village or hamlet (fig. 1). In this manner, each digitized point represents not only the geo-reference of a place-name label but also the presumed location of the earliest settlement within that locality. According to this principle, each point therefore is considered either a settlement or a core-settlement area for those expanded villages of street (Strassen-, Gassendorf), or forest hamlet (Waldhufendorf) type. Slavic place-names seem to cluster in an area along the Lusatian Land (Oberlausitzer Gefilde), the Upper Neisse Valley, and the Upper Elbe Valley. Historically, these clusters are also the earliest that appear in the written documents (fig. 2). In addition, archaeological evidence about medieval settlement traces and the oldest core of existing villages seem also to refer to the same clusters, minus the one on the Upper Elbe Valley.

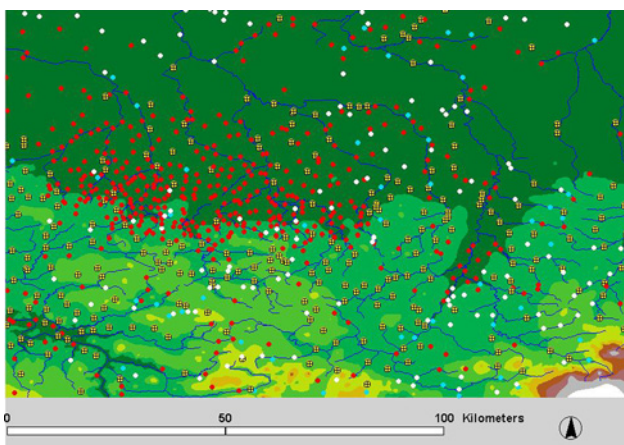


Fig. 1. Slavic (red dots) and German (crossed yellow dots) settlements in Upper Lusatia.

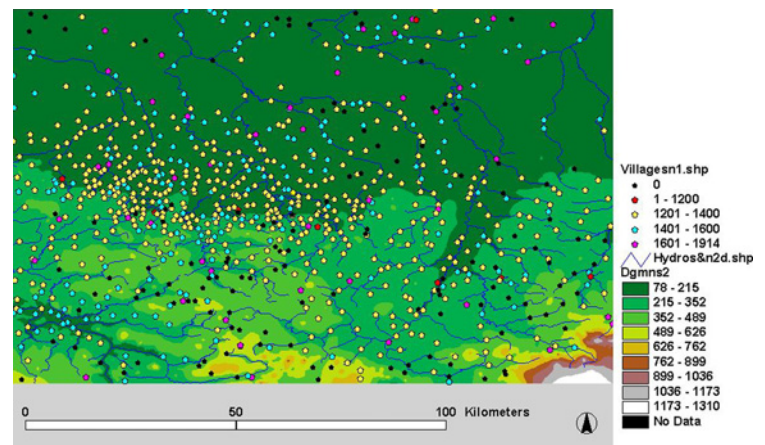


Fig. 2. Settlements classified according to first mentioning in historical sources in Upper Lusatia

An interesting aspect is offered nonetheless by those relationships between these early settlements and particular physical features of the landscape.

From a physical point of view, the region is composed of an east-west oriented strip of land, known in German as the 'Lusatian Gefilde' (Lusatian Land), bordered towards the south by the heights of the Lusatian Highlands and in the North by a wide stretch of inhospitable flatland covered by marshy areas and forest. These two periphery zones acted as natural barriers for the Lusatian Land. Access to the Lusatian Land therefore, could have been made either from

the west over the Pulsnitz Heights or from the east crossing the Kwisa River, and these constituted actually the 'corridors of communication' between Upper Lusatia and the adjacent regions.

There are two major physical elements of the landscape, the mountain range and the river & creek network, which run basically on two opposite axes: the rivers are oriented mostly on a south-north axis, while the mountain heights are stretched on a west-east axis. This unique situation makes that the two elements create invariably a natural network where each intersection between the two elements forms a kind of landscaping 'node'. These nodes qualify as points of habitation for the earliest Slavic settlements.

The landscape can be categorized further according to the terrain aspect (fig. 3). The aspect map shows that the central and western part of Upper Lusatia is divided along a horizontal axis between a southern half with hill faces oriented alternately to south and north and a northern half with flatlands oriented mostly northward. Onto this northern half are most of the earliest settlements located. In contrast with this, the eastern part of the region shows terrain more randomly patterned around the Upper Neisse Valley, which acts as a north-south divider. The central part of the Upper Neisse Valley was occupied by earliest settlements in the area, and this cluster is separated from the main one by an uninhabited ridge between the Black and the White Schöps Creeks (this idea was expressed earlier by Knebel 1965:21).

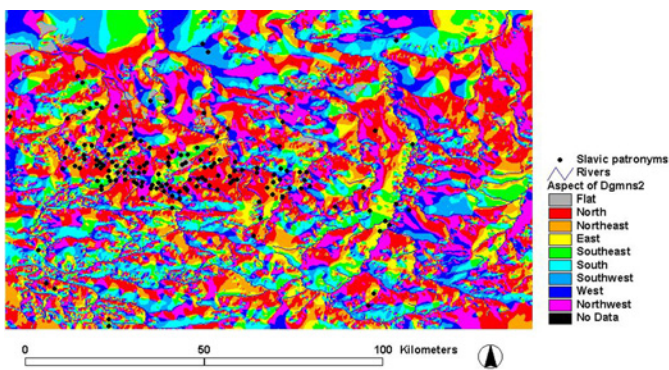


Fig. 3. Aspect mapping of terrain overlaid by earliest Slavic settlements (black dots) in Upper Lusatia.

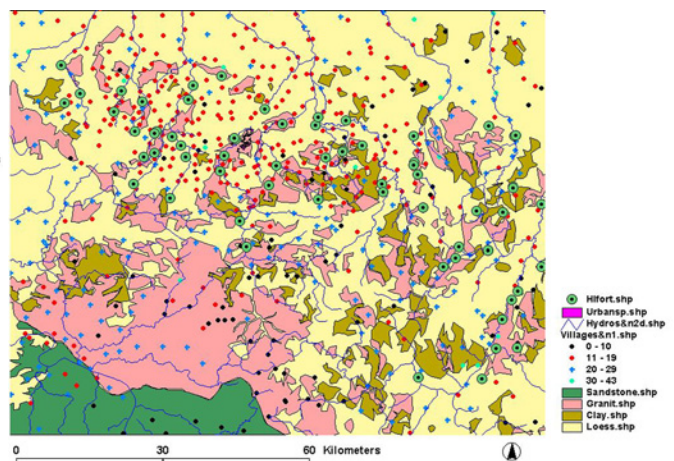


Fig. 4. Etymologically classified settlement overlaid on soil map in Upper Lusatia.

Another defining relationship can be established between these early settlements or the Slavic place-names in general, and the soil types in the area. The overlay shows clearly that the Slavic settlers preferred the loess and clayey types of soil, and this selective choice seems founded on practical reasons related to subsistence and limitations of existing farming techniques (fig. 4) (Knebel 1965:17, n.52).



The Slavic settlements seem also to have a definite predilection to certain elevations (fig. 5). The overall settlement theme laid onto a DEM-model shows a general presence over all elevations, with Slavic settlements concentrating at elevations lower than 300 m. German place-names surround this concentration, being in general located at higher elevations and in between clusters of Slavic place-names. The core-area settlements of the latter group are aligned along the divide between the hill country and the lowlands. One could conclude at this stage that Slavic settlers have avoided the Highlands at all times and that the German colonists did not have other choice but to settle on what was still a free land zone in the 12<sup>th</sup>-century. However, a deeper analysis shows almost the opposite. After place-names are categorized into four distinct classes - patronymic, possessive, descriptive and others - they are then summarized and plotted in relation to the mean elevation of the elaborated DEM. The resulting graph indicates that both Slavic and German place-names from the patronymic category tend toward the 200 m elevation level, while settlements from the possessive category differ: the Slavic ones reach the 220 m elevation, while the German ones go up to 280 m elevation. This 60-meter difference seems to hold also when comparison is made for the descriptive and the other categories. In the other category of place-names, both groups reach their highest elevations: under 250 m for the Slavic, and 300 m for the German place-names. Assuming that place-names from the patronymic category are seen as the earliest settlements in the region, then, it seems that both Slavs and Germans regardless of their arrival date in Upper Lusatia, chose to settle at lower elevations and afterwards expanded further up in the highlands.

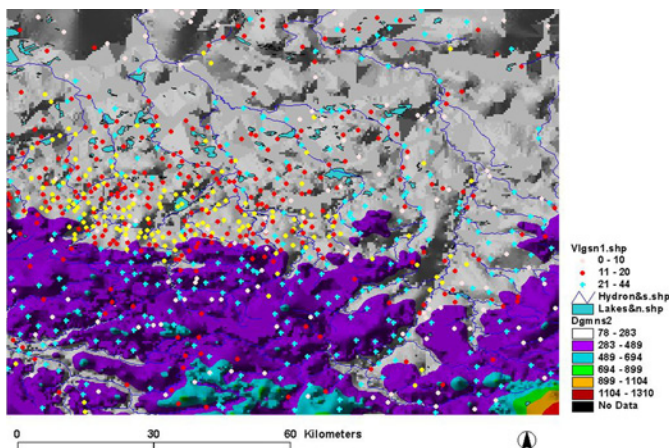


Fig. 5. Slavic (red dots), German (blue dots) and core-area Slavic settlements (yellow dots) overlaid on elevation surface of Upper Lusatia.

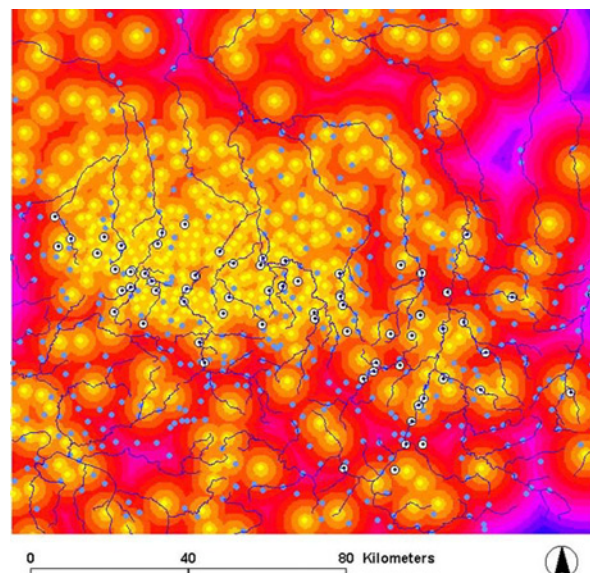


Fig. 6. Distance mapping for Slavic settlements (yellow dots) in the Upper Lusatia. Black on white dots represent early medieval forts.

Another relationship of interest is that between the structure of these settlements and their ethnic affiliation. This can be easily envisioned by overlaying settlement data onto a map showing the spatial distribution of different types of village structures in Upper Lusatia.<sup>1</sup> As can be seen, there is a spatial convergence between Slavic place-names and the so-called *Bauernweiler/Rundweiler* (peasant/round hamlets).<sup>2</sup> This comes to confirm Blaschke's research statement about the ethnic affiliation of this kind of structures (Blaschke 2000:10-11). Having looked at some of the relationships between settlements and different physical and structural attributes, we need to turn now the attention to the spatial arrangement of these settlements in order to detect spatial patterns. Distance mapping of Slavic place-names shows settlements clustered in the Lusatian Valley in reach of each other within a distance ranging from 2 to 4 km (fig. 6). This seems to come close to Timoščuk's results from Ukraine where intra-cluster distances between Slavic settlements were calculated at less than 2 km (Kobyliński 1997:108). The settlements aggregate in what can be called a settlement unit or cell (Kobyliński 1997:109). The location of these settlements can be further assessed through density mapping, where one can clearly see that settlements from the Lusatian Valley agglomerate themselves in three distinctive and different types of clusters: the westernmost one appears as an agglomeration around Coblenz, Dahren, and Passditz, the middle one is in fact an encircling band around Bautzen/Budyšin, while the easternmost cluster is linear on a east-west axis (fig. 7). The same clustering is obtained also with only patronymic settlements mapped for density, and also when all settlements regardless of their ethnic affiliation are mapped. Less dense agglomerations are spotted on the Upper Neisse Valley between Jauernick, Tylice, Ręczyn, and Tauchritz, between Kamenz and Wittichenau, around Litschen, and on the Upper Elbe Valley between Krippen and Dorf Wehlen. These clusters could correspond with a higher hierarchical territorial unit, the so-called *opole*, *pogost*, *župa* (Kobyliński 1997:109).

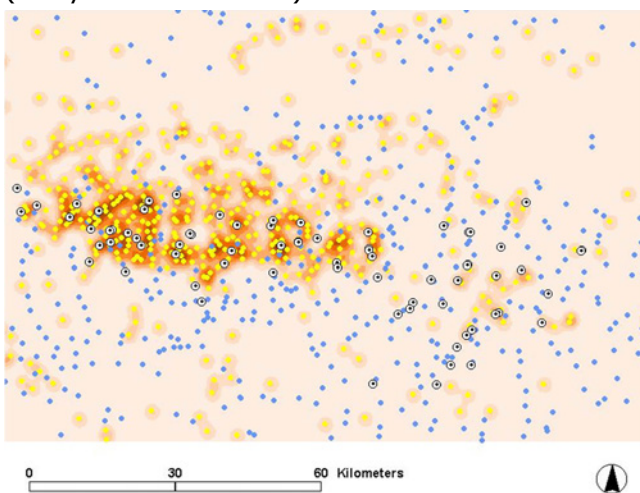


Fig. 7. Density mapping for Slavic settlements (yellow dots) in the Upper Lusatia. Black on white dots represent early medieval forts.

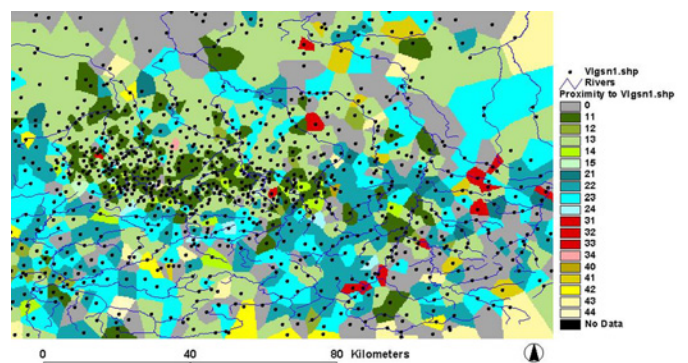


Fig. 8. Proximity mapping for Slavic (green spectrum), German (blue spectrum), mixed (red spectrum) and other (yellow spectrum) settlements in Upper Lusatia.

Proximity mapping with ethnic affiliation as identity field for cells shows the degree of nearness between Slavic place-names and also the direction of penetration of German place-names, which is from the southwest for both Slavic clusters (fig. 8).

Another tool used here for assessing settlement distribution is a statistic test, called *Quadrat Analysis*, is applied to the settlements theme to detect how its density changes over space. In order to discern this, the test compares the given point distribution with a theoretical random pattern (fig. 9). The results are then

*Quadrat analysis* results with qsize =  $\frac{1}{2}$  n: 458  
 Lambda – 1.94805, Variance – 1.94805  
 K-S Dstat – 0.370782  
 Alpha level at 0.05 – QA critical value is 0.04533

This value is significantly different than the calculated K-S absolute difference of 0.370782 between the dispersed and clustered patterns, and we may therefore conclude that settlements in the larger region of Upper Lusatia do not distribute in a dispersed manner. However, in order to check this result we need to apply another test, which functions on an opposite concept to the first one, namely it counts the areas for each digitized point, instead of counting how many points are for each area unit. The analysis is called the *Nearest Neighbour Analysis (NNA)*, and the results are

*Nearest neighbour analysis:*  
 Obs. Neighbour dist: 2.06481  
 Expected n dist: 2.09557  
 N. neighb. R Statistic: 0.985324  
 Std. Zr Score: 0.842362

The scale of measurement for this test is R = 0 if there is no distance between settlements and R = 2 if settlements are dispersed. Since our result falls short of the median, it reinforces the earlier result, by indicating that the settlement pattern has a tendency to cluster and is farther from dispersing. These statistical results show not only how settlements are distributed per area unit, but indicates also which spatial pattern dominates today in the larger region of Upper Lusatia.

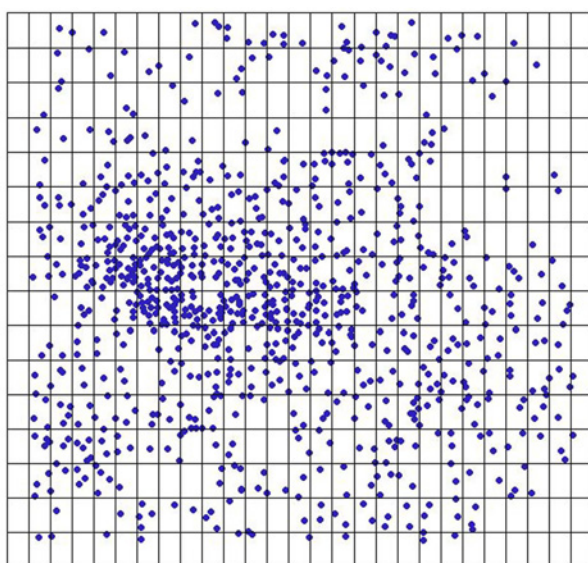


Fig. 9. Quadrat Analysis for settlements in Upper Lusatia.

This short discussion on settlement pattern in the region cannot end without mentioning the preliminary results in the elaboration of a Predictive Model for Slavic Settlements in Upper Lusatia. The variables onto which a logical assumption of location selection for settlements would be based such as

1. terrain gradient or slope
2. closeness to watercourse
3. soil with good farming properties

are providing only a partial satisfactory answer as to which reason(s) caused the selection of a particular place for settlement. The slope degree is indifferent to settlement location especially to the large cluster of Slavic toponyms. Settlements are located both on flat and steep areas within the elevation limits aforementioned. Watercourse closeness is a factor that did not influence settlement selection. There are many settlements located along a watercourse, but as many are spread at random in between two riparian zones. Finally, the soil type variable, discussed earlier, seems to be the most related attribute to settlement location. Most of the Slavic toponyms are located on loess and clayey soils, and this variable seems to point to the economic character of the Slavic society as a whole.

#### *Bautzen/Budyšin – Zentralort?*

Historical information, coupled since the beginning of the 20<sup>th</sup> century with archaeological evidence, affirmed the role of Bautzen as the most important political, cultural, and economic town in Upper Lusatia. This characteristic can be easily visualized today with the help of geo-referenced satellite imagery. For both Germans and Sorbs Bautzen/Budyšin was and still is the capital of the region. During the course of history, the town knew several phases of urban development, expanding eastward from a core settlement area located somewhere between the St. Peter and Paul Cathedral and the Ortenburg Castle.

In the High Middle Ages the town was part of the most powerful regional coalition known as the Six-Town Federation of Upper Lusatia (1346). Cardinal geographic point in the Lusatian Land, the town is situated at a natural crossing/ford over the Spree River, commanding the old trade route that connected Western Germany with Silesia and Eastern Europe. It was first mentioned by Thietmar of Merseburg in 1002 as 'civitas Budusin' when the place was overran by the Polish contingents of Boleslaw the Brave. The German reaction was nonetheless swift and in 1004, Heinrich 2<sup>nd</sup> in person conquered the 'urbs Budusin'. The place was therefore of crucial interest for each warring party and its strategic location was confirmed numerous times in the course of High Middle Ages. These premises created the idea of Bautzen/Budyšin as *Zentralort*, a place destined to be the seat of the feudal power and the converging point of the entire region.

In his presentation of Bautzen/Budyšin as the political and cultural centre of the Sorbs, D. Scholze stated that hundreds of years before its first mention in the written sources, a stronghold was erected on the high ground surrounded by the meander of the Spree (Scholze 2002:30). This stronghold would have been, according to K. Blaschke, the tribal seat of power

of the *Milzeni*, transformed subsequently to a ducal stronghold of the entire Lusatian land (Oberlausitzer Gefilde) (Blaschke 2002:46).

Archaeological investigations started in Bautzen/Budyšin inner-city as early as 1906 when W. Frenzel found on the Castle perimeter (Ortenburg) Bronze Age, Slavic, and German ceramic material. Thereafter, archaeological investigations were carried out in conjunction with most but not all urban construction and renovation works (CAQ 1985:123, Sczech 1999:98). The results of these investigations showed that under the present Baroque Castle the ruins of 12<sup>th</sup> century medieval fortifications overlaid directly a Bronze Age earthen rampart (Sczech 1999:98). Archaeological investigations carried out further east, in the middle of the medieval town, produced also negative results in respect to the existence of Slavic fortification works, but it did confirm the existence of a 10<sup>th</sup> century AD Slavic settlement extending south and east of the Ortenburg. The archaeology, therefore, failed until now to provide evidence of a fortified central place of power of the *Milzeni*, later the Sorbs, but it did attest to the existence of a fortified compound related to the German colonization and to the Czech period of control over the Upper Lusatia.

Another interesting aspect is revealed by the linguistic resonance of the place-name *Ortenburg*, mentioned for the first time in 1400 as 'Orthenbergk'. As H. Schuster-Šewc correctly observed, this appellative entails in fact the existence of a stronghold, a *Burg*, as belonging to an *Ort*, a place, or a locality in this case (Schuster-Šewc 2002:27-28). This linguistic interpretation, however, runs counter to the historic perception, which considers the existence of a Slavic stronghold prior to any open settlement in the area.

The dilemma arising from this situation is not only practical but also theoretical. Was the landscape of the *Milzeni* really structured around a central place of power, such as Bautzen/Budyšin, or is it only a wishful theoretical construct propagated by modern research based heavily on historical tradition?

One way to find an answer to this question is to compare existing maps with the old cartographic works in order to assess the existence of a regional entity and its relationship with the adjacent territorial entities. GIS-generated maps show the presence of certain features that can be traced back to the first maps of the region:

- the existence of a forested, unsettled area dividing the Lusatian Valley proper from the Upper Neisse Valley, and the existence of a large forested area east of the Neisse between Przewóz, Pieńsk, Czerwona Woda, and Iłowa. This last one seems to have played a boundary role between the territory of the *Milzeni* and that of the *Treboviani*, *Dadosani*, and *Bobrani*.

These features can be observed on the 16<sup>th</sup>-century Scultetus Map and the larger forested area also on the Map of Saxony from 1752. These features, recorded by earlier cartographic work,



supply further information about the natural boundaries of the region mentioned at the beginning of this presentation.

### *Communication corridors*

This map shows also the main roads through the region:

1. the main road, called on the 1752-map the Army Road (Heer Strasse) following more or less the routing of the early medieval *Via Regia*, coming from Leipzig, through Oschatz, Hayn, Kamenz, Bautzen/Budyšin, Görlitz, Lubań, Naumburg and going to Wrocław. Note that the road passes through Schoeps before reaching Reichenbach.
2. the second road coming from Elbe Valley and going through Bischofswerda and Göda to Bautzen/Budyšin.

In addition to land transport, which was carried out on a east-west axis, the inhabitants of the region used waterways mostly for transport and communication on a north-south axis. Several logboats were found in Upper Lusatia, many of them located on the shores of the Neisse River. Unfortunately, none of these craft is dated, but some of them can date back in the medieval times.

Once the region's natural boundaries have been defined, the other way to answer to the question of territorial centrality and the functional role of Bautzen/Budyšin in the medieval landscape is to assess the spatial role of strongholds. These fortifications are the only visible remains of the early medieval past and as such they represent the most important standing evidence for the reconstruction of the past landscape.

### *Strongholds: the visible landscape of the past*

A total of 74 strongholds were plotted on the GIS map, 68 being mapped with the help of a GPS receiver during the 2001/2002 field work. With very few exceptions most of them belong to the category of earthen ramparts with one or two fortified precincts and one entrance usually on the right side of the compound. The shape of the rampart ranges from that of a curved segment, through sickle-shape, semicircular, horseshoe to that of a full circle, depending on the presence or absence of natural defensive features such as steep slopes, river meander, marshy area, etc.

Although archaeological investigations have been carried out since the end of the 19<sup>th</sup> century they can be characterized as unsystematic and in some cases opportunistic. Nevertheless, the archaeological assemblage, ceramic material in particular, preserved from those investigations can serve to a relative dating of the Upper Lusatian strongholds (fig. 10). From the ensuing mapping it can be clearly observed that strongholds appeared sometime during the 8<sup>th</sup> century AD in several places between Kamenz and the Spree, north from the area between Bautzen and Löbau, and east of Neisse Valley between Görlitz/Zgorzelec and Lubań. Strongholds

erected in the 9<sup>th</sup> c. AD transformed the initial random distribution into two major clusters: one located in the Lusatian Land and the other in the Neisse Valley. The 11<sup>th</sup> and 12<sup>th</sup> c. AD fortifications densified the existing pattern, and one can note here the tendency to fortify toward southwest in both clusters. The location of these latter forts in the Lusatian cluster between Bischofswerda and Göda correspond also with the axis of what later became one of the main trading and communication routes through the region. When data related to later, medieval fortifications is laid over the existing forts there is clear a change not only in the type of fortifications (Wasserburg = rectangular forts surrounded by an artificial ditch filled with water, and towers) but also a change of direction (fig. 11). At this time, when the region was under the Czech suzerainty, forts were not built to defend the southwest corner but reinforced the eastern and the northern flank of the Lusatian Land.

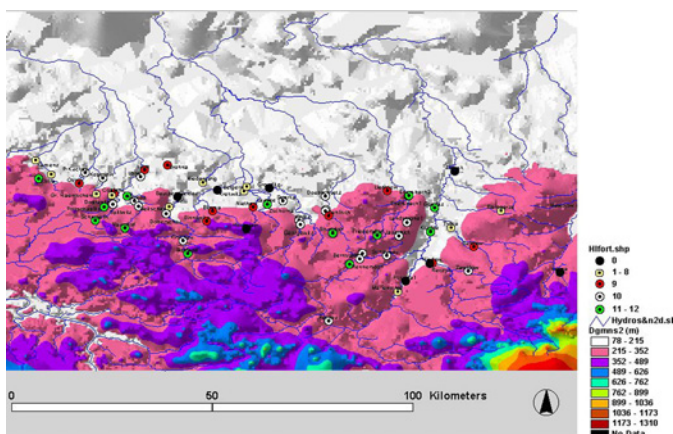


Fig. 10. Chronological classification of early medieval forts overlaid on a DEM of Upper Lusatia.

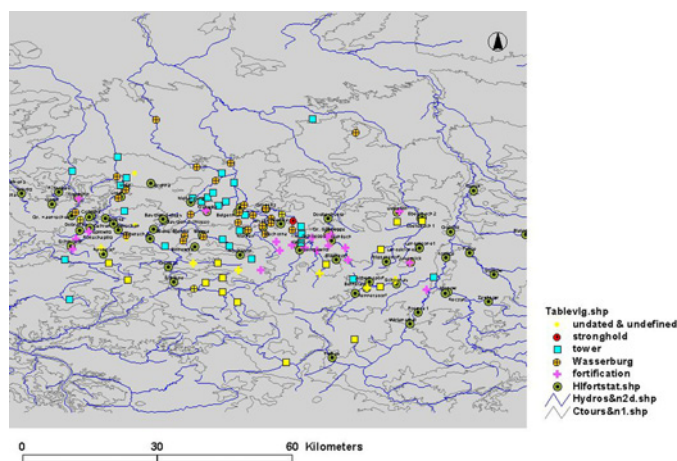


Fig. 11. Typological classification and distribution of early and high medieval strongholds in Upper Lusatia.

What is of more interest is the spatial arrangement of the existing strongholds in the shape of an ellipse situated with its longitudinal axis in an east-west direction. Simple statistical measures of centrality such as spatial means and the corresponding standard deviations were calculated for the fort group as a whole, and for each of the fort clusters mentioned previously. Both the spatial mean and the spatial median for the entire group are located at Belgern, which seems to be the central point for the entire region. This characteristic can be related to the political conditions in the High Middle Ages, when the Czechs controlled the entire region. If however, the whole region is split into the Lusatian and the Neisse Valleys, then it emerges that the spatial mean for the Neisse cluster falls between Jauernick and Landskrone, while the mean for the Lusatian cluster falls a little further west from Bautzen/Budyšin. A spatial ellipse for this cluster also fits its centre at Bautzen/Budyšin.

A *Quadrat Analysis* carried out on fort distribution shows a linear agglomeration for the Lusatian Valley with a tendency to cluster in the Bautzen/Budyšin quadrat (11-16 forts) (fig. 12), while dispersion is to be seen on both sides of the Neisse Valley.

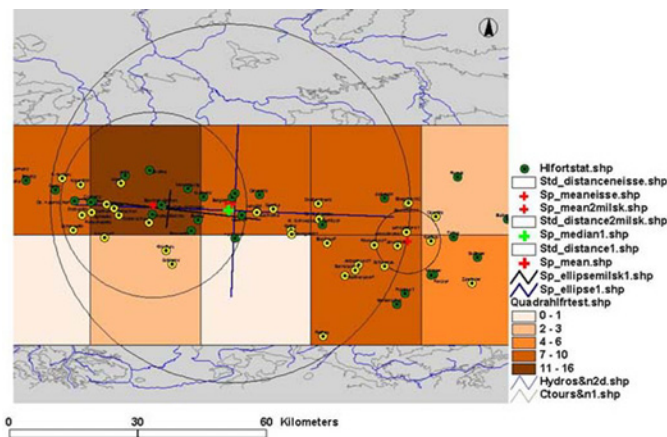


Fig. 12. Quadrat Analysis on forts divided into earlier (dark green dots) and later (yellow dots) than 10<sup>th</sup> c. AD.

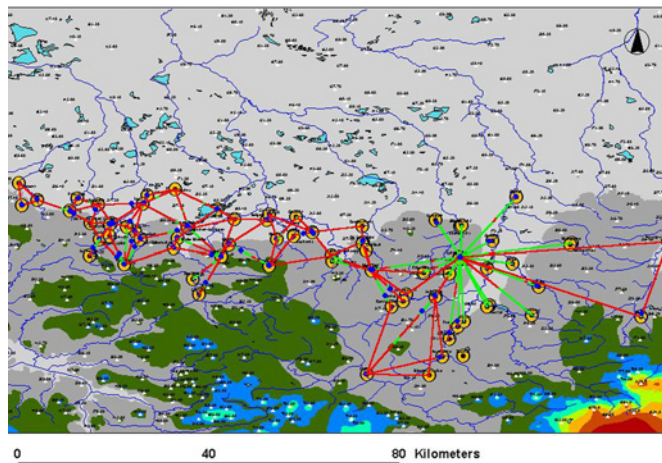


Fig. 13. Line of sight analysis between all early medieval forts in Upper Lusatia.

Line-of-sight calculations were performed in order to assess the inter-relation between the forts (fig. 13). As can be seen, observers based at almost all of the forts from Lusatian cluster would have no visual contact with each other. The opposite is seen in the Neisse Valley where observers at the forts from Landskrone can contact visually with most of the forts that surround it.

If patronymic settlements are plotted, then the image for the Lusatian Land is that of a cluster of earliest Slavic settlements surrounded by strongholds, whereas that for the Neisse Valley is that of a radially-dispersed strongholds intermingled with settlements that cluster towards Landskrone (fig. 14).

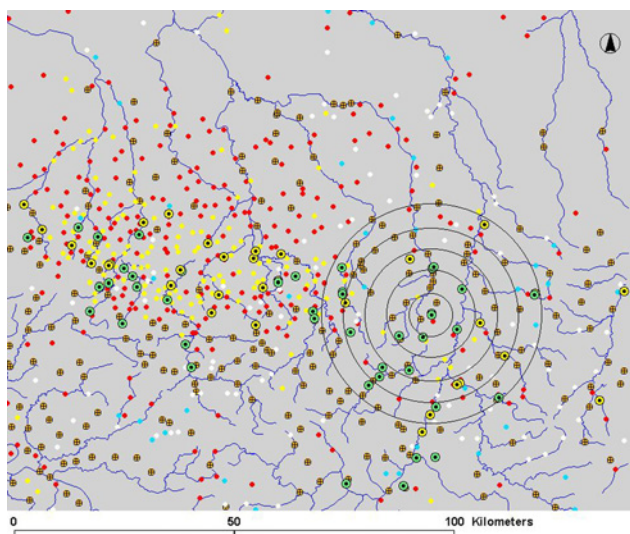


Fig. 14. Spatial structure of earliest settlements and forts in the Upper Lusatia.

The 1-km buffering of the core-area settlements coupled with the 3-km buffering of the earliest strongholds shows in effect how the settlement area in the Milsca Valley could have looked like in its earliest phase. Settlements aggregate in smaller units that in turn aggregate around a stronghold to form a stronghold territorial unit with a radius of ca. 5 km (*Burgwallbereich, okręg grodowy, pole, laukas, campus*). At their



turn, these units aggregate further into stronghold clusters (*opole, pogost, żupa*), which can cover a territory of up to 20 km radius. Worth to mention that the distance between strongholds units in the Milsca Valley is well under the average estimate of 10 km (Kobyliński 1997:109).

The analysis can be carried further through the elaboration of a DEM for the entire region (fig. 15). On the 3D model one can readily visualize which forts are commanding the view, and which can be visually connected from a specific location (fig. 16).

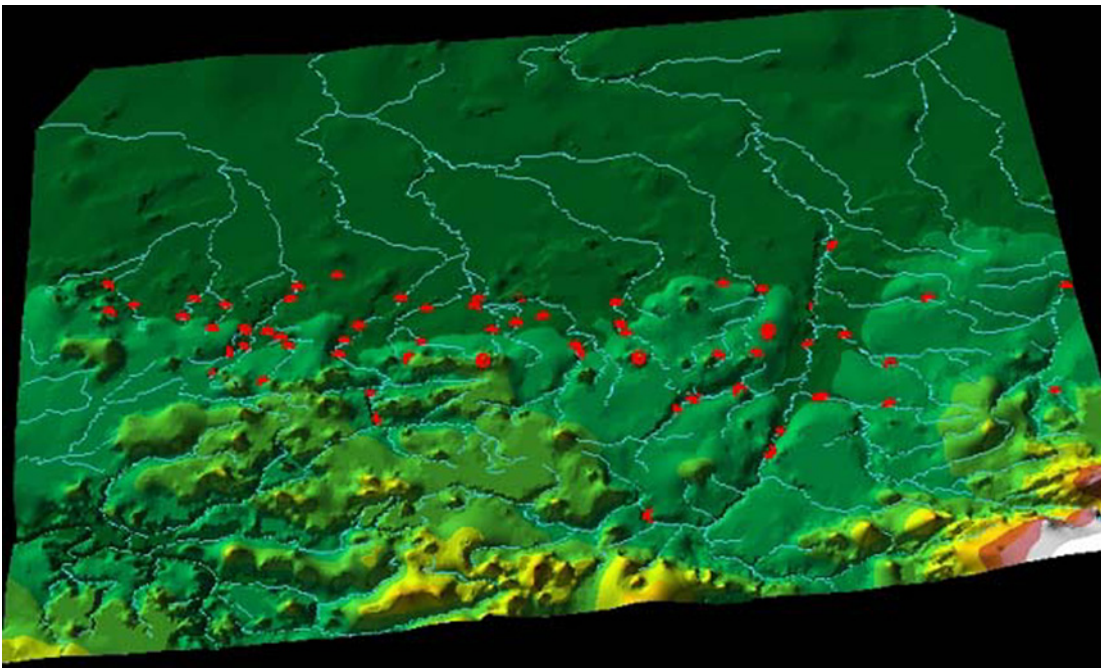


Fig. 15. 3D DEM of Upper Lusatia (red dots represent locations of early medieval forts).

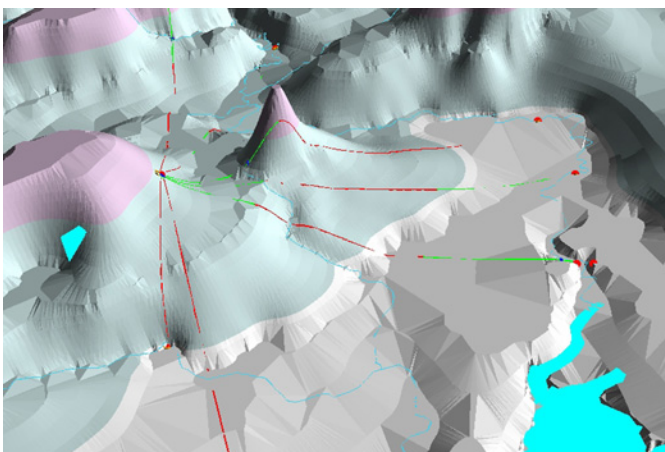


Fig. 16. Line of sights originating from the Binnewitz hillfort rendered on the 3D DEM.



## Conclusions

The results of this spatial analysis, corroborated with other types of information, led to the following landscaping scenario for the Upper Lusatia:

Out of a total of 465 Slavic place-names 152 are patronyms, considered to be the earliest settlements in the area (Eichler 2002). The spatial coverage of these 152 settlements corresponds with that of strongholds erected earlier than the 10<sup>th</sup> c. AD. As can be seen the strongholds are lining the boundaries of the settlement area, and as such they seem to contradict the theory of strongholds as *Zentralorte* for surrounding settlements.

1. The buffering of 3 km radius of hillforts theme shows that forts are networked according to the hydrographic network. Few exceptions reinforce this rule. What is more important is what can be called the 'decisional chain-reaction':

1. the landscape is assessed by the builders for natural defensive features. The abrupt creek shores are relevant to the issue.
2. the stronghold is erected, which confers the watercourse a strategic importance: biological resource, communication, and defensive.
3. the watercourse connects not only people but also is propitious to settlement networking.
4. the landscape in the 'Milsca Valley' is actually shaped by numerous valley settlements (family nests or settlement units/cells) that aggregate around each of the several strongholds located on the valley's watercourse (*pole-laukas-campus*).
5. An extended valley-wide community consisting of stronghold groups (*opole-pogost-żupa*) is established in the Milsca Valley (*Gau Milska*), while the Besunzener Valley (*Zagost*) continues to forge its radial pattern but without Landskrone as the center place (*Zentralort*) at this time.

These two communities have strongholds located at the edge of the settlement area.

Strongholds, erected at this time are (8/9<sup>th</sup> c. AD), define the boundaries of the settlement area. No central place (*Zentralort*) is envisaged for this period. Forts serve, in this initial phase, as places of social prestige and exchange with the outsiders and less as defensive works. It is the time of greater territorial unification of the *opoles* into a hierarchically higher tribal unit.

6. Hilltop strongholds started to be built late, seemingly as an effect of the 10<sup>th</sup> -11<sup>th</sup> centuries German-Polish Wars in the *Gau Milska* (ex. Elstra, Schmölln, Naundorf, Hochstein, Binnewitz (exception), Rothstein, perhaps Löbauerberg, Schönau a. E.) and the *Zagost*. Erection of other strongholds towards southwest is an attempt to stop not the invading armies but the colonization waves that started with the process of land gratification to the Bishopric of Meissen (Knebel 1965:23, Cod. Dipl. Lus. Sup. I, 25).

The bishop owned in the 11<sup>th</sup> - 12<sup>th</sup> centuries tracts of land in southwestern Lusatia (around Stolpe and Bischofswerda) and in Zagost.

7. During the German-Polish Wars (10<sup>th</sup> -11<sup>th</sup> c. AD), Bautzen/Budyšin and Landskrone<sup>3</sup> are emerging as strategic points-of-interest for both warring parties, in their quest to control the earlier landscape. These two important locations give control to both community valleys: the *Milzeni* and the *Besunzani*. Now it became clearly a region with a centre-and-periphery structure, and with this begins the 2<sup>nd</sup> stage of medieval landscaping in the Upper Lusatia. From now on, Bautzen/Budyšin will become the centre of the medieval Upper Lusatia, while Landskrone receded in the face of the newly founded urban centre Goreliz (Görlitz/Zgorzelec).

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<sup>1</sup> K.H. Blaschke undertook the mapping of village structures within the working frame of the Historical Atlas of Sachsen.

<sup>2</sup> Small villages consisting of few households spread around a central point or at random (cf. Blaschke, HAS 2002).

<sup>3</sup> Details about Landskrone and its role in the German-Polish conflict see Von Richthofen 2002:5.

#### References

- BLASCHKE, K.H., 2002. Die Entstehung der Stadt Bautzen. *Von Budissin nach Bautzen*, Bautzen:46-60.
- BLASCHKE, K.H., 2002. Ortsformen. *Der Atlas zur Geschichte und Landeskunde von Sachsen*:Bl. II 2.
- EICHLER, 2002. Official communication, Nov. 2002, Leipzig.
- HERRMANN, J. and DONAT, P. (eds.), 1979. Corpus für Archäologischer Quellen zur Frühgeschichte auf dem Gebiet der Deutschen Demokratischen Republik (7. bis 12. Jahrhundert). CAQ 2, Berlin:182-234.
- KNEBEL, J., 1965. Betrachtungen zum Landschaftsbild und zur Herausbildung frühgeschichtlicher Siedlungskomplexe in der Oberlausitz. *Lětopis Jahresschrift des Instituts für sorbische Volksforschung*, B. 12, Bautzen:5-37.
- KOBYLIŃSKI, Z., 1997. Settlement Structures in Central Europe at the Beginning of the Middle Ages. *Origins of Central Europe*, Warsaw:97-115.
- SCHOLZE, D., 2002. Bautzen als politisches und kulturelles Zentrum der Sorben. *Von Budissin nach Bautzen*, Bautzen:30-46.
- SCHUSTER-ŠEWC, 2002. Bautzen/Budyšin und seine Ortenburg - Eine kurze Namensgeschichte. *Von Budissin nach Bautzen*, Bautzen:26-30.
- SCZECH, K., 1999. Stadtkernarchäologie im Dreiländereck – Bautzen in der Oberlausitz. *Archäologie als Sozialgeschichte – Studien zu Siedlung, Wirtschaft und Gesellschaft im frühgeschichtlichen Mitteleuropa – Festschrift für Heiko Steuer zum 60. Geburtstag*, Rahden/Westf.:97-102.
- THIETMAR VON MERSEBURG, 1955. Thietmari Merseburgensis episcopi Chronicon. MGH IX, Berlin.
- VON RICHTHOFEN, J., 2002, in press. Die Landeskrone bei Görlitz. Eine bedeutende slawische Befestigung in der östlichen Oberlausitz.