

EARLY MEDIEVAL SETTLEMENT IN STYRIA. CONSIDERATIONS ON SETTLEMENT PATTERNS AND LAND USE

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Abstract

In this chapter, the early medieval settlement activity in the south-eastern Alpine region is examined based on archaeological data from the Austrian province of Styria. The analysis focuses on identifying patterns and concentrations of settlements, but also on evaluating the location of individual settlement sites in the landscape. In order to be able to assess the location of a site in its entirety, it seems necessary to take into account a wide variety of parameters from the terrain to the (relative) altitude and proximity to rivers, the settlement history of the area, but also the landscape with its resources and the relationship between settlements.

The analysis succeeded in highlighting areas with increased density of sites, which can be interpreted as settlement chambers and local or regional centres. With regard to the location, it has become apparent that numerous settlement sites use significantly elevated positions on hilltops and crags. The use of hilltops apparently already began around 800 AD, at the latest. Another finding is that prehistoric and Roman sites were often re-occupied by early medieval settlements. The probable reasons for this include unchanged favourable locations, but also intentional re-occupation. The archaeological data - supplemented by the results of archaeozoological, archaeobotanical and anthropological investigations - shows diversified land use by means of agriculture, animal husbandry, hunting and other uses of natural resources.

Keywords: Early Middle Ages, Styria, settlement patterns, hilltop, land use

1. INTRODUCTION

The state of research on early medieval settlement in the Austrian province of Styria has improved in the last few decades to such an extent that an analysis of the sites with regard to their distribution can now be undertaken. One aim of this study is to work out patterns and to identify the more densely populated areas. The following interpretation is conducted against the background of the landscape and the natural conditions of the varying regions. Another key aspect is the location of the individual settlement sites within the landscape, taking into account the relative altitude above the valley floor, possible links to settlement activities

of other periods and chronological development. The embedding of settlement in the historical framework is examined on the basis of a few selected aspects. The overall picture is complemented by an examination of early medieval land use and man-environment relations in the study area, taking into account the available data from natural sciences (archaeobotany, archaeozoology and anthropology).

1.1 GEOGRAPHICAL SETTING

The province of Styria as a study area (*Fig. 1*) hardly corresponds to the early medieval political situation,

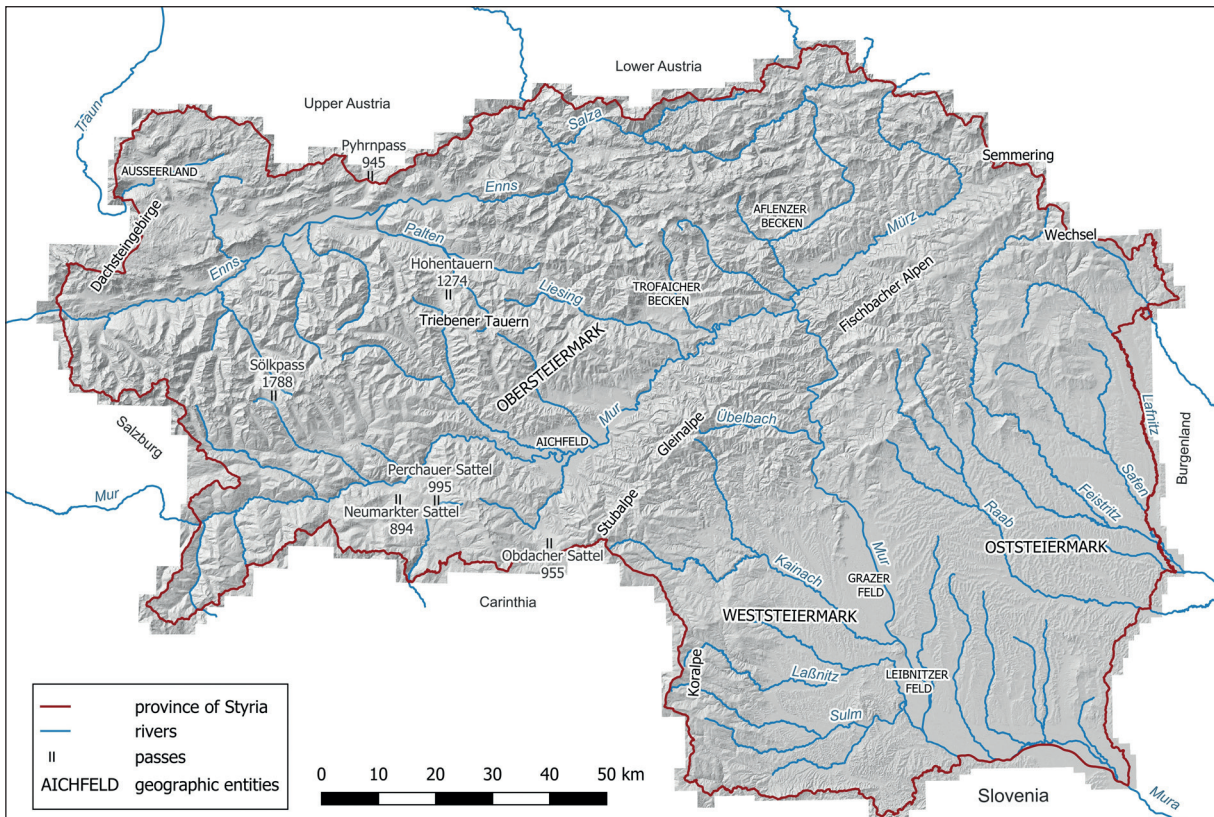


Fig. 1: The Austrian province of Styria. Geographic overview.

Figs 1–4: Koch (using QGIS*); Basis: Digital Terrain Model - Airborne Laserscanning Resolution 5 m (<https://www.data.gv.at/katalog/dataset/9a6653e0-d5d3-11e3-9c1a-0800200c9a66>)

and today's borders are also only partially based on natural (geological or hydrological) features. However, we know too little about the early medieval boundaries in the south-eastern Alps to use them for defining a practicable research area, especially in the case of Styria. Furthermore, there is a certain tradition in Austrian early medieval archaeology to summarise the state of research by province.¹ The early medieval sites in Styria have to be considered on the one hand in the context of the state of research and on the other hand against the background of the landscape and natural conditions, which can only be briefly outlined here.

The province can be roughly divided into Upper Styria, which is characterised by the northern and central Eastern Alps, and Eastern Styria as well as Western Styria south of the Alps, dominated mostly by hills ("Hügelland"; "Riedelland"). The border between these very different areas is represented by the mountain range that runs along the line Koralpe - Stupalpe - Gleinalpe -

Fischbacher Alpen. In Upper Styria, settlement activity is concentrated on relatively narrow bands along the river valleys (especially Enns, Mur, Mürz), which in some sections widen into basins.² The structure given by the river valleys is also important for the rest of the province, with the river Mur (and its tributaries Kainach, Laßnitz and Sulm), and, in the east, the river Raab (and its tributaries Feistritz, Safen and Lafnitz) being of significance. The connection of the Upper Styrian settlement sites to those of the neighbouring provinces (Upper and Lower Austria, Salzburg, Carinthia) depends on natural passages such as river valleys and passes.³ The situation to the southeast and east of the province is largely open, which is why the Styrian sites south of the Alps should be considered in the context of the neighbouring regions of Burgenland, Slovenia and Hungary.

² Aichfeld/Murboden; Aussee, Trofaiach and Aflenzen basins etc. For the characteristics of the Alpine region, among others: Winckler 2012, esp. 22–28. For the study area, see also: Rabensteiner, Berg 2019.

³ Passes are crucial for the travel routes, for example Neumarkter and Obdacher Sattel, Sölkpass, Triebener Tauern, Pyhrnpass, all of them important north-south crossings.

¹ For example, for Styria: Gutjahr 2015a; 2018; 2020; Carinthia: Eichert 2010; 2012; Lower Austria: Wawruschka 2009; Nowotny 2013; Kühtreiber, Obenaus 2017; Upper Austria: Leskovar 2016. – In this chapter, the term "Early Middle Ages" roughly refers to the period from 600 to 1000 AD.

1.2 STATE OF RESEARCH

Early overviews and maps of the early medieval sites of Styria were provided by W. Modrijan⁴ (1963) and D. Kramer⁵ (1992; 1996). More recent summaries of the state of research have been compiled in the last few decades, both for the entire province⁶ and for some geographical areas.⁷ In addition, Styria is included in some databases that follow a transregional or transnational approach.⁸ Today, more than 120 sites from the early medieval period are known in Styria (Fig. 2).⁹ Their compilation, however, poses certain difficulties. For example, a decision must be made whether to include sites mentioned in the older literature, whose finds were never published,¹⁰ or sites that rely on a single radiocarbon date for their dating. When interpreting the overall picture of early medieval settlements in Styria, several factors must be considered. For example, it is difficult to estimate how many sites on the valley floors have fallen victim to the erosion caused by the once strongly meandering rivers or to the massive modern building activities and agriculture.¹¹ On the other hand, some major construction projects (e.g. railways, gas pipeline construction), regionally limited survey activities and initiatives have a beneficial effect on the state of research, leading to a distortion in the number of sites for some regions compared to others. Whereas the large construction sites tend to bring to light archaeological features in the valleys and at their edges, early medieval sites at high altitudes more often show up during research excavations on prehistoric and (late) Roman hilltop settlements and medieval castles, where the Early Middle Ages often appear as “coincidental findings”.

⁴ Modrijan 1963.

⁵ Kramer 1992; 1996.

⁶ Gutjahr 2012, 8–15; 2015a, 97–98; 2020, 55; Koch 2018, 181–210. – Some archaeological sites are also included in historical publications, e.g. in the map published by H. Baltl (2004, Fig. 10).

⁷ For example for the Graz area: Artner 1997; Horváth 2022; for the Enns valley and the Aussee region: Mirsch 2013; Breibert 2022, 163–166; for the Mürz valley: Tiefengraber 2006.

⁸ E.g. Thanados (<https://thanados.net/>; accessed on 12 July 2024); ZBIVA (<http://zbiva.zrc-sazu.si/>; accessed on 12 July 2024). See also Štular 2019; Pleterski 2024 in this volume (Description of the Zbiva database). – Styria is also occasionally included in transnational studies, e.g. Korošec 1979; Giesler 1997; Bekić 2016; Štular et al. 2022.

⁹ A detailed register of all Styrian early medieval sites by Ch. Gutjahr and the author is in preparation.

¹⁰ In some cases, the finds are no longer accessible, which means that a review and verification of the early medieval dating is (currently) not possible.

¹¹ With regard to the construction methods prevailing in the early medieval study area, including little stone, the question of undetected settlements within today's villages arises. Cf. Gleirscher 2000, 70; Lehner 2009, 199–200.

2. EARLY MEDIEVAL SITES IN STYRIA

2.1 CATEGORIES

By now, quite a few early medieval settlement features are known from Styria. Floor plans of ground-level buildings can be recognized at the sites of Wildon/Im Rasental,¹² Enzelsdorf¹³ and, most likely, Kirchberg/Deutschfeistritz.¹⁴ There are also numerous settlement pits¹⁵ of various sizes, such as those from St. Ruprecht an der Raab,¹⁶ Komberg,¹⁷ Enzelsdorf¹⁸ or Weitendorf^{19,20} Of the approximately 120 early medieval sites (Fig. 2), at least 13 can be safely assigned to the category “settlement features”, another eleven are either layers with (partly relocated) early medieval finds documented during excavations, or findings whose dating to the Early Middle Ages is based solely on a radiocarbon date.²¹ Large-scale studies of settlements are lacking so far, thus for a period of more than 400 years, no statements can be made about the external shape and internal structure of a settlement or even just one entire farmstead in the study area. As for ecclesiastical buildings, the excavated predecessors of the existing churches at Mariahof and at Frauenburg Castle are the only reasonably certain early medieval churches in the study area so far. The dating is supported in both cases by early medieval graves.²² Actual fortifications (in the sense of a built defence) are also rare. The hilltop Lethkogel near Stainz can be listed here,²³ as well as some other fortified sites that are dated

¹² Gutjahr 2007b.

¹³ Gutjahr, Mandl 2020; Gutjahr et al. 2024 in this volume (subchapter 4.3).

¹⁴ A stone building or stone foundation as a presumed iron processing facility documented in an excavation in the 1940s. Cf. Gutjahr 2006.

¹⁵ As for the findings published so far, an interpretation as pit houses is unlikely due to the small size, absent interior fittings and subdivision etc. Gutjahr 2018, 44; 2020, 66.

¹⁶ Schipper 1996; Gutjahr 2002, 149–150; 2018, 44–45; 2020, 65–67.

¹⁷ Hebert 1996; Gutjahr 2018, 44; 2020, 64–65.

¹⁸ Gutjahr 2002, 151–152; 2003; 2015b; 2018; 2020; Gutjahr, Trausner 2014.

¹⁹ Gutjahr 2011a.

²⁰ For St. Ruprecht an der Raab, Komberg and Enzelsdorf, see also Gutjahr et al. 2024 in this volume.

²¹ Radiocarbon dates that make a dating to the Early Middle Ages seem just as likely as a dating to the High Middle Ages were not taken into account.

²² Summarising the research results: Steinegger 2020, 96–109. In both cases, A. Steinegger does not completely rule out an older, late antique origin of the churches. – Also some bones which are kept at Mariahof in a (modern) reliquary in today's church probably originate from an early medieval burial, as they have yielded an early medieval radiocarbon date: Hebert 2004.

²³ See subchapter 2.3.1. On early medieval fortifications in Styria, among others: Kramer 1989; Gutjahr 2015a, 94–96.

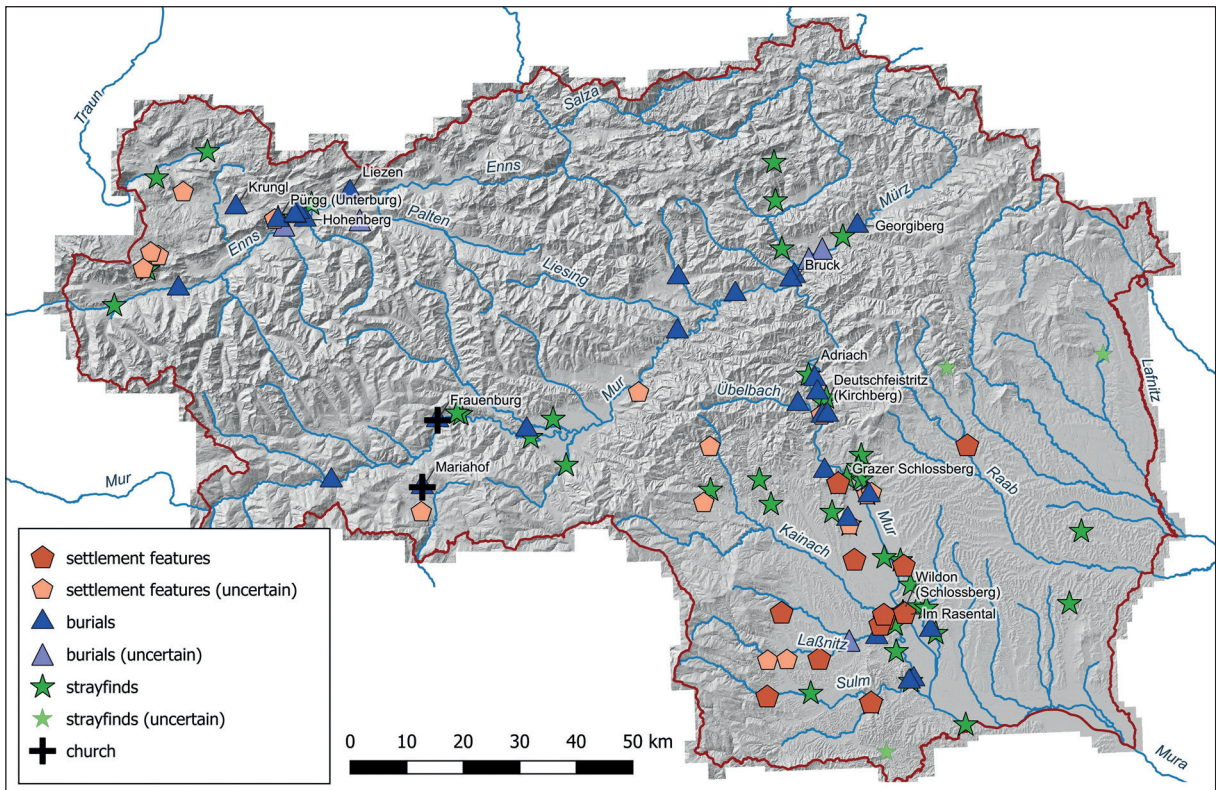


Fig. 2: Early medieval sites in Styria.

to around 1000 AD and are thus at the chronological edge of the Early Middle Ages.²⁴

Early medieval burials are known from at least 34 sites. Some stray finds point to further, destroyed graves. Most of the early medieval burial sites in Styria have been only partially excavated. Only in the case of Grötsch²⁵ the entire site seems to have been captured (approx. 70 burials, 54 of which have been examined archaeologically). The burial site that yielded the most early medieval burials is Krungl²⁶ (at least 283), followed by Grötsch, Hohenberg,²⁷ Waltersdorf/Bleikolmhügel,²⁸

Peggau,²⁹ Graz/Alte Universität³⁰ and possibly Leibnitz/Altenmarkt.³¹ In the whole of Styria there is only one presumed early medieval cremation burial,³² all the rest are inhumation burials. Burial sites are indeed indicators of nearby settlement sites, but in Styria it has not yet been possible to identify the settlements belonging to the numerous known graves.³³

Stray finds make up the largest group among the early medieval sites. These are often pottery fragments, individual finds of jewellery and accessories or, more rarely, weapons (arrowheads; spearheads). Finds whose original location can no longer be determined are counted among the stray finds in the map (Fig. 2).

– P. Gleirscher considers an early medieval origin or phase for some additional hilltop settlements: Gleirscher 2010.

²⁴ E.g. the fortifications on Mitterberg next to St. Marein and Schlossberg next to St. Lorenzen/Knittelfeld: Tiefengraber 2014; Tiefengraber, Tiefengraber 2014. – Also, the excavation of a cistern at Eppenstein Castle revealed that it was built at an early date, probably around 1000 AD or in the first half of the 11th century: Steinegger, Kraschitzer 2020.

²⁵ Published by Kramer (1981, 206–207) in a preliminary report; cf. Gutjahr 2015a, 88–89. – A comprehensive publication is being prepared by Ch. Gutjahr.

²⁶ Including a summary of the older literature: Breibert 2008; 2011; 2015; 2022.

²⁷ Including a summary of the older literature: Nowotny 2005; 2008.

²⁸ Tiefengraber, Tiefengraber 2013.

²⁹ Gutjahr 2012, 87–170.

³⁰ Fürnholzer 2003; Fürnholzer, Gutjahr 2005; Gutjahr 2012, 16–62.

³¹ In this case, the number of early medieval burials is unclear due to the initially tumultuous recovery of burials and the long duration of the site, as a cemetery belonging to a derelict church of St. Martin. The cemetery is only published in preliminary reports: Christian 1982; Fuchs 1987; Kramer 1988. – A comprehensive publication by Ch. Gutjahr and the author is in preparation.

³² A cremation burial from Wohlsdorf. It has not been published and is now lost. See Lehner 2009, 201; Gutjahr 2015a, 79; 2020, 62–63.

³³ Possible exception: Kirchberg/Deutschfeistritz with a burial at the foot of the hilltop (formerly E-Werk-Straße). Gutjahr 2006, 309–310, 322–323; 2012, 92.

2.2 DISTRIBUTION OF SITES AND SETTLEMENT PATTERNS

It becomes apparent that the sites are mainly situated along the large river valleys of Mur, Mürz and Enns.³⁴ In Western Styria, some sites are located on the edges of the Koralpe mountain range.³⁵ Eastern Styria has only a small number of sites, and burials are so far completely absent.³⁶ The before-mentioned varying natural conditions within the province are also reflected in the distribution of the site categories, to the extent that in Upper Styria there is almost no evidence of settlements in the narrower sense, whereas burial sites (as indicators for settlements) are numerous. In general, Styria shows an advanced spatial coverage in the Early Middle Ages – settlement took place along pre-medieval travel routes, but also reached remote areas.³⁷

Some regions of Styria show an increased number of sites, so that a relatively dense population can be assumed.³⁸

- The section of the Enns valley between Liezen and Pürgg.³⁹ Here, settlement activities can be identified mainly based on the burial sites (Liezen, Stainach, Hohenberg, Pürgg/Untenburg). Associated settlement features are missing so far. In terms of traffic and path networks, the passage from the Enns valley through the narrows near Pürgg via Krungl to the Ausseerland is of relevance, probably also the Pyhrnpass.⁴⁰
- Burial sites in the Mürz valley between Bruck and the Georgiberg hilltop⁴¹ also suggest several settlements along the river. It is questionable whether a travel route via Semmering to south-eastern Lower Austria already existed in the Early Middle Ages. A pathway towards the area of Neunkirchen with the burial sites of Köttlach and Pitten seems at least possible⁴² On the other hand, also for Roman times, finds that would indicate a traffic route east of Mürzzuschlag are absent so far.⁴³

³⁴ Especially in Upper Styria, the river valleys largely determine the traffic routes. For the continuity of travel routes, see: Lehner 2009, 147.

³⁵ Franziskanerkogel/Primaesburg, Lethkogel, Deutschlandsberg (castle), Ulrichsberg and Schwanberg. – For Deutschlandsberg (castle), see: Schrettle et al. 2021.

³⁶ Ch. Gutjahr explains the lack of burials in Eastern Styria as due to the state of research: Gutjahr 2012, 14; 2015a, 98.

³⁷ For example the Aflenz basin, the eastern Dachstein plateau etc.

³⁸ Cf. Koch 2022, esp. 184 Fig. 5.

³⁹ Cf. Breibert 2022, 163–165.

⁴⁰ Cf. Winckler 2012, 147.

⁴¹ See the overview provided by: Tiefengraber 2006, 345–346.

⁴² Lehner 2009, 148–149; Gutjahr 2020, 59–60.

⁴³ For the distribution of Roman sites: Koch 2020. On pos-

- In the middle section of the Mur valley, between Deutschfeistritz and Adriach, several burial sites are known, of which rather small sections have been excavated. They are grouped around the Kirchberg, next to Deutschfeistritz, as a settlement site (and probably an early castle).⁴⁴ The river Übelbach flows into the Mur here, and an old pathway leads along the Übelbach valley to the Gleinalpen passages and further into the upper Mur valley.⁴⁵ Furthermore, the north-south connection passing through this section of the Mur valley is of supraregional importance.⁴⁶ The Roman road ran alongside the right bank of the Mur (evidenced by milestones), a side route probably on the left bank of the Mur.⁴⁷
- At the northern and western edge of the Graz plain (“Grazer Feld”), on both sides of the Mur, a relatively large number of sites are situated.⁴⁸ The Schlossberg of Graz appears suitable as a regional centre. Early medieval pottery that originates from this site has only recently been published.⁴⁹ The earliest archaeological features on today’s main square are dated to the late 10th or 11th century.⁵⁰ Supreregional north-south and east-west connections meet in the Grazer Feld.⁵¹
- A significant concentration of sites is grouped around Wildon and the adjacent Schlossberg on the northern edge of the Leibnitz plain (“Leibnitzer Feld”).⁵² There are at least five places with early medieval settlement features within a few kilometres, thus the settlements are in the majority compared to the burial sites. The Wildoner Schlossberg is considered to be the location of the Hengistburg, which was first mentioned in writing in 1053, but probably goes back to an early medieval fortification.⁵³ The

sible alternative routes: Gutjahr 2020, 59–60. – K. Winckler assumes that the route via Semmering was only established at the end of the first millennium AD: Winckler 2012, 160.

⁴⁴ Ch. Gutjahr describes the Kirchberg as a central place of the middle Mur valley (i.e. between Graz and Bruck) in the early medieval period: Gutjahr 2012, 146.

⁴⁵ Among others: Fuchs, Mirsch 2011, 8, 11, 29–30.

⁴⁶ Gutjahr 2012, 146.

⁴⁷ Lehner 2010, 342; Koch 2020, 141. – For routes in the middle Mur valley in general: Fuchs, Mirsch 2011.

⁴⁸ See also: Artner 1997, 32–33, 47–48; Horváth 2022.

⁴⁹ Horváth 2020.

⁵⁰ Recently: Horváth 2022, 142–147.

⁵¹ A crossing situation is assumed at the foot of the Schlossberg.

⁵² Gutjahr 2012, 205, 255, Fig. 1; 2015a, 94, 95, Fig. 13. See also note 53.

⁵³ *Annales Altahenses Maiores* 1053. See: Kramer 1992 (summarising the state of research); Giesler 1997, 482–485. – The Early Middle Ages on Schlossberg are only apparent through stray finds and relocated pottery in younger layers: Gutjahr 2002; Gutjahr, Roscher 2002a; Gutjahr 2011b; Tiefengraber 2018a, 47, 61, 106, 252–254, 268, 274; 2018b, 118–121,

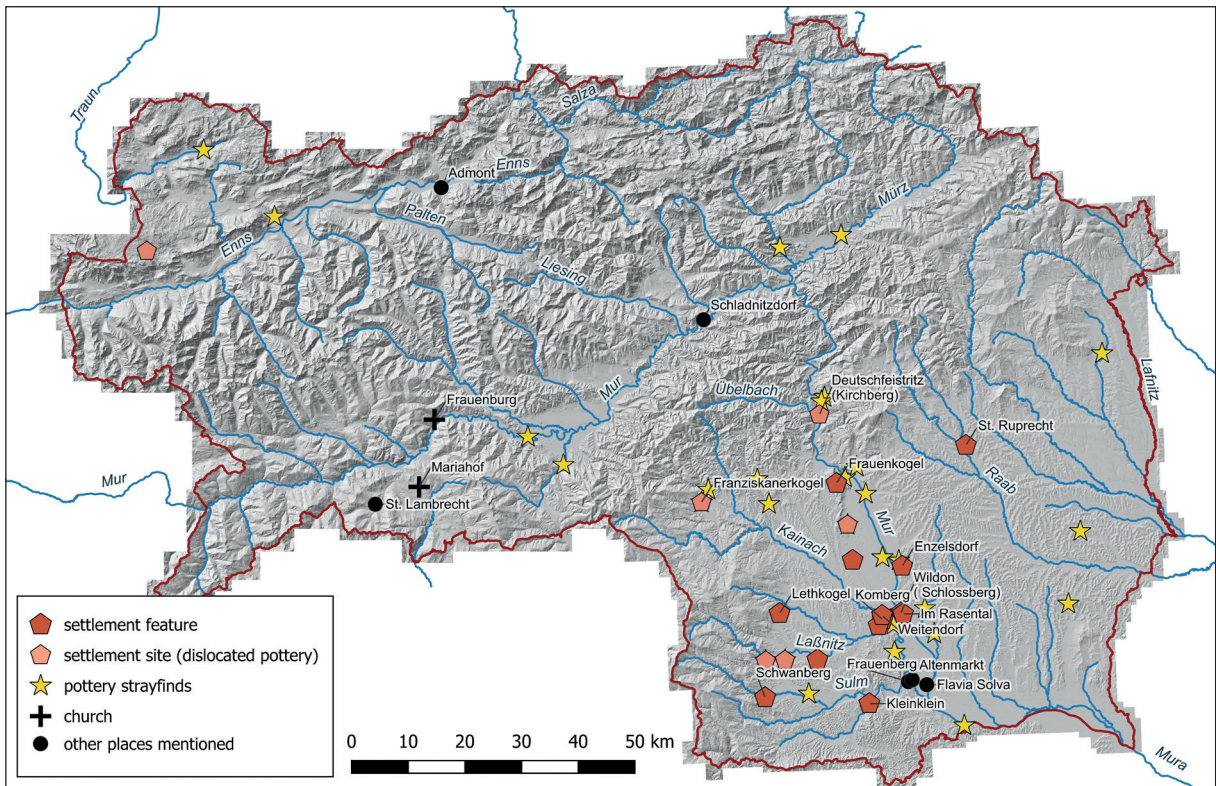


Fig. 3: Early medieval settlement sites in Styria. A selection of settlement features and pottery stray finds.

exceptionally favourable location is characterised by a narrow point in the Mur valley and the confluence of the Kainach and Mur rivers, with an old travel route leading directly past the eastern and northern foot of the Wildoner Schlossberg.⁵⁴

It stands to reason that there was a social hierarchy within the above-mentioned settlement chambers, in which regional power structures are reflected.⁵⁵ The presence of local or regional elites has so far hardly been recognizable in the settlement sites and buildings in the study area,⁵⁶ but can be inferred from the grave

Pl. 193–196; Gutjahr et al. 2018, 25. Additionally, there are some metal finds (all of them stray finds), including a lunula-shaped temple (or: headdress) ring and an enamel disc fibula (both unpublished). Actual settlement features are known from the probably associated site “Im Rasental” on the southern slope of the Schlossberg; Gutjahr 2007b.

⁵⁴ Roman road, with the “Reichsstraße” as its successor. For the former Reichsstraße among others: Gutjahr et al. 2018, 97.

⁵⁵ For a conception of hierarchies in early medieval Slavic communities in the south east Alpine region, among others: Pleterski 2003; 2010; 2013, 9–11, 166; Eichert 2013; 2017; 2020.

⁵⁶ For example, stone construction, above-average size of the buildings or the entire site, a type of fortification etc. could be considered as a hint to an elite.

inventories (e.g. Hohenberg, Krungl) and some stray finds. It can further be assumed that the use of places at high altitudes was reserved for the socially superior, or at least subject to their approval.

2.3 CONSIDERATIONS ON THE LOCATION OF SETTLEMENT SITES

When considering the location of individual settlements, it makes sense to filter out the settlement sites in the narrower sense (Fig. 3). For this purpose, in addition to the actual settlement features,⁵⁷ 24 sites with early medieval pottery stray finds⁵⁸ as settlement indicators can be included. In the case of metal stray finds (mostly accessories), the informative value appears to be lower, for they might have been lost along pathways. They are therefore not considered as settlement indicators here. Although burials do indicate settlements in their vicinity, they are

⁵⁷ See subchapter 2.1. In the following, additionally to the documented settlement (and church) features, layers with relocated early medieval pottery are included (as long as the pottery can be assumed to originate from the immediate vicinity). Features whose dating exclusively relies on radiocarbon dates are omitted, as well as sites whose early medieval phase is dated to the very end of the period (10th/11th century).

⁵⁸ Sites whose exact location is unknown are also omitted.

also not taken into account for the following analysis.⁵⁹ The result is a number of 44 early medieval sites, which quite safely can be addressed as settlements.⁶⁰ In the following discussion, these settlement sites are examined with regard to their location. The focus is on patterns and the question of relevant factors in the “choice of location” for an early medieval settlement in the research area. Among the numerous possible starting points, the relative altitude of the site above the valley floor, preceding and succeeding settlement phases and chronological developments are singled out.⁶¹

2.3.1 (Relative) Altitude and terrain

The relative altitude above the valley floor can be used to assess the location of a site within the landscape formed by a river valley.⁶² It can be defined as the height above the bank of the nearest larger river.⁶³ It is noticeable that only a few⁶⁴ of the early medieval settlement sites in the study area lie in the range of 0–5 m above the valley floor.⁶⁵ For the question of whether a site is at risk of flooding, current data on the flood risk can be used, but it is hardly possible to make a reliable statement about conditions in the Early Middle Ages.⁶⁶

⁵⁹ It has not yet been adequately clarified for the study area at what (maximum) distance settlements and associated burial sites can be located from one another. The burial site could therefore be located in a significantly different location (e.g. on a higher or lower river terrace) than the settlement site.

⁶⁰ “Settlement” is understood here and in a broad sense, as a place where people live and/or work.

⁶¹ Further possible factors to be included would be, for example, the availability of raw materials, the orientation of the slope (if applicable) or travel routes.

⁶² Recently, focusing on the topic of early medieval settlement location and hilltop sites in Styria: Koch 2022.

⁶³ The current course of the rivers is used here, in the absence of data on their early medieval course. Older river courses can be seen in the Franciscan cadastre (around 1820), and oxbow lakes can often be seen on orthophotos (usually not datable). However, this hardly helps with the specific question of whether today’s river bank edge is higher or lower than in the Early Middle Ages. The course of rivers, which usually had several branches, probably changed with every major flood. See: Gutjahr 2012, 146.

⁶⁴ Six out of 44.

⁶⁵ It must be taken into account that in some cases, pottery stray finds may not indicate the correct location of the settlement, but could have been washed down from a higher terrace.

⁶⁶ Corresponding data layers in the digital map of GIS Steiermark clearly relate to today’s conditions, i.e. to today’s terrain and the rivers in their current, often regulated course: (<https://gis.stmk.gv.at/wgportal/atlasmobile/map/H%C3%B6hendarstellung%20-%20Gel%C3%A4ndeinformation/H%C3%B6hen-%20Gel%C3%A4ndedarstellung>; accessed on 11 July 2024). Archaeologically proven alluvial layers would be more relevant.

According to the present state of research, significantly higher locations are far more common: More than half of the settlement sites are located 35 m or more above the bottom of the valley.

In addition to the relative altitude, the location can also be classified according to the type of terrain used by the settlement site.⁶⁷ Settlements such as Weitendorf, Kleinklein or St. Ruprecht an der Raab⁶⁸ are located on higher or at the transition from lower to higher terraces.⁶⁹ The findings from the sites “Im Rasental” near Wildon (in a kind of saddle location) and Enzelsdorf (with the characteristic field name “Hochfeld”) are located even higher. These and similar sites are located on slopes, elevated terraces and plateaus, often at some distance from the (main) river. Hilltops and crags⁷⁰, which offer a certain natural protection, are particularly common, e.g. the Wildoner Schlossberg⁷¹ and Grazer Schlossberg. Less steep hilltops like the Kirchberg/Deutschfeistritz or the Ulrichsberg⁷² render the group somewhat inhomogenous. Many sites of this location category can be found lined up along the river Mur, often situated on elevations that protrude into the Mur valley. In addition to the natural protection, these places usually also offer far-reaching visibility.⁷³ A different intention was apparently pursued in the case of the site on the Frauenkogel hilltop near Gösting, which is almost hidden in the valley of the Thalerbach. Here, an irregular polygonal rampart covers a relatively large area⁷⁴ and spreads out on the “back” of the Frauenkogel facing away from the Thalerbach and the Graz basin. Until recently, only a few unpublished stray finds were known from this site.⁷⁵ During an archaeological investigation in the spring of 2021,⁷⁶ it was ascertained that the rampart is a wood-earth construction fronted by a dry stone wall. The small amount of pottery from the excavation can be

⁶⁷ Naturally, there is always a certain randomness in such a division, and in some cases the transitions are fluent.

⁶⁸ The settlement sites listed here are all mentioned in other sections of the chapter, the basic literature is cited there.

⁶⁹ The term “terrace” is used here not strictly according to its geological definition. For the terraces of the Mur valley from a geological point of view, see: Fabiani 1978, Fig. 4.

⁷⁰ Cf. the categorisation of hilltop sites with military finds in the Eastern Alps in: Štular, Eichert 2020.

⁷¹ See note 53.

⁷² Lehner M. 2004.

⁷³ Cf. “landscape presence” in: Štular, Eichert 2020, 222–223.

⁷⁴ A total of approx. 4.1 hectares, of which 3.2 hectares are taken up by the core of the fortification. In contrast to the larger core area, the outer bailey facing north is secured with a ditch in addition to the rampart. The laser scan (ALS) also shows a pincer gate. – The first description of the site, including a schematic drawing, is provided by: Flucher 1966.

⁷⁵ Kramer 1992, 62; Artner 1997, XLVII; Gutjahr 2015a, 94–95. – These stray finds include pottery (allegedly 10th century) and a fire steel.

⁷⁶ The excavation was conducted by the author: Cf. Koch 2022, 180–181. – The processing and analysis are still ongoing.

dated to the 9th–10th centuries. Radiocarbon data from charred wood that belongs to structural parts in the core of the rampart however suggests that it was not built before the High Middle Ages.⁷⁷ Therefore, without further investigation, it currently seems most likely that the site was used in the Early Middle Ages⁷⁸ and (re)fortified in the High Middle Ages.⁷⁹

Caves and Alpine pastures can be regarded as “special cases” within the group of sites at high altitudes. The early medieval use of caves is documented several times for Styria.⁸⁰ The type of use - for example for storage, for cultic purposes or as a temporary shelter - currently remains unknown. Another special case are Alpine pastures, whose early medieval use is documented for the eastern Dachstein plateau mainly through stray finds and radiocarbon data.⁸¹

The extent to which the different types of location are related to different functions and requirements of the individual settlement sites still needs to be examined in detail. Assuming that the majority of the early medieval settlements in the valleys were oriented towards agriculture, the soil types in the vicinity of the settlements and the hydrological conditions should also be included in the analysis of the situation.⁸² E. Lozić recently presented a new methodological approach for this purpose.⁸³

⁷⁷ The results include one early medieval (88,3% 770–894 cal AD) and one high medieval date (93,2% 1032–1177 cal AD). Unfortunately, a dendrochronological examination did not yield any results. It was at least possible to determine that all six wood samples were oak.

⁷⁸ The evidence of the pottery is supported by another radiocarbon date from inside the rampart (82,7% 770–900 cal AD). The exact type of use and the question of whether the site was fortified at this time must remain open for now. – For refuges (“Fluchtburgen”), see (among others): Štular, Eichert 2020, 224. Here, a combination of the features “hidden”, “remote” und “basic defensibility” is introduced as characteristic for refuges, the availability of suitable farmland is of low importance considering the sporadic usage of the site.

⁷⁹ Prehistoric and possibly Roman use of the site is also speculated, but there is little archaeological evidence for this so far.

⁸⁰ Mostly on the basis of pottery fragments. Some are published, e.g. the material from the Repolust cave and the “Halbhöhle” in the middle Mur valley: Modl, Kraschitzer 2013/14, 215, 219–220, 227. Others are only mentioned in older literature and therefore difficult to verify. The use of caves in Upper and Western Styria and the middle Mur Valley, especially around the Kugelstein hilltop, has been proven in many cases for prehistoric and Roman times, so it is not a specifically early medieval phenomenon.

⁸¹ Mandl 1996, 63–67; 2003, 199–200.

⁸² Useful information is provided by the eBod digital soil map: (<https://bodenkarte.at/>; accessed on 11 July 2024).

⁸³ Lozić 2021. – For a corresponding analysis of the early medieval sites in the Leibnitzer Feld, see: Lozić, Koch 2024 in this volume.

2.3.2 Preceding and succeeding settlement phases

At 28 out of 44⁸⁴ early medieval settlement sites, there are indications for prehistoric use of the location.⁸⁵ In some additional cases, prehistoric finds are known from the surrounding area. It is likely that in some cases prehistoric sites were specifically sought out because of their existing fortifications (ramparts), but so far this can only be assumed with good reason in the case of the site on Lethkogel near Stainz in Western Styria.⁸⁶ It is a plateau-like, flattened hilltop which slopes steeply towards the east, with a surface of around 1.2 hectares at its top. Archaeological excavations provided evidence of a hilltop settlement that had already existed in the Copper Age and had been fortified in the late La Tène period. In the Early Middle Ages, a ditch was apparently dug into the La Tène rampart, and a dry stone wall was built. This adaptation and “reconditioning” of the fortification seems to have been carried out in the 8th/9th century judging by the pottery finds.⁸⁷ Another example of a tie to prehistoric structures in early medieval times is the positioning of the Waltersdorf/Bleikolmhügel burial site⁸⁸ in the Aichfeld/Murboden basin at the edge of a burial mound from the Hallstatt period.⁸⁹ At almost two thirds (26 of 44) of the early medieval sites, there is evidence of (late) Roman pre-use of the area. In some additional cases, Roman finds are known from the vicinity.⁹⁰ Among the Roman sites frequented in the Early Middle Ages are *vici*, *villae*, farmsteads and hilltop settlements.⁹¹ In the case of early medieval sites at the location of a Roman settlement, continuity cannot necessarily be assumed,⁹² since the period 450–600 AD in Styria is hardly tangible from an archaeological point of view,⁹³ and a significant decline in settlements

⁸⁴ At the current state of research.

⁸⁵ Often Bronze Age/Urnfield Culture, but also Copper Age, Neolithic, Hallstatt and La Tène periods.

⁸⁶ Artner 2008; Baur 2009.

⁸⁷ Artner 2008, 31. – For examples of early medieval re-use of Roman and prehistoric hilltops in Bavaria: Later 2020.

⁸⁸ Tiefengraber, Tiefengraber 2013.

⁸⁹ The situation reminds of the early medieval burials of Grabelsdorf (also at the site of Hallstatt burial mounds; among others: Szameit, Stadler 1993; Eichert 2010, 146–147).

⁹⁰ (Most of) Styria belonged to the province of Noricum (mediterraneum) in Roman times.

⁹¹ E.g. at Kleinklein: Mele, Kiszter 2017. – There are no confirmed early medieval finds from the immediate area of the *municipium* Flavia Solva, only a few disputable finds of coins without precise location, cf. Hahn 1987, 460.

⁹² At most, settlement in Roman ruins (“Ruinenkontinuität”), or else a mere re-occupation of a place (“Platzkontinuität”). On the topic of continuity: Lehner 2009. Especially for Leibnitz and Frauenberg: Lehner 2011; 2016.

⁹³ Now summarising the entire evidence: Gutjahr et al. 2024 in this volume. – There are almost exclusively stray finds: Gutjahr 2018, 42–43; 2020, 55–60. On late Roman hilltop settlements: Steinklauber 2006. Providing an overview of

must be assumed.⁹⁴ The close relations between the early medieval sites and those of preceding periods can be explained in part by the very dense distribution especially of Roman sites, in part by the use of travel routes that remained the same, and by similar demands towards the settlement locations.⁹⁵ It should be borne in mind that Roman ruins and other structures must have been visible almost everywhere in the research area in the Early Middle Ages.⁹⁶ The number of early medieval settlement sites that show both prehistoric *and* Roman settlements as “predecessors” is relatively large (22 sites, i.e. 50%).

More than two thirds of the early medieval sites on hilltops or crags share their location with a high and/or late medieval castle.⁹⁷ In some of these cases, continuity from the early to the High Middle Ages can be considered likely from an archaeological point of view. However, at Schwanberg, which is a comparatively well researched site, there is a hiatus that shows in the dating of the finds and can be linked to a burnt layer.⁹⁸ Also, the early medieval use of an elevated location does not necessarily imply a fortification. We can hardly ever make any statement about the shape of the settlement, and this is often because in the course of the construction of high medieval castles earlier phases were removed down to the bedrock.⁹⁹

(late) Late Antiquity in Styria, including historical facts and archaeological references to early Christianity: Gutjahr 2012, 385–388, 393; 2015a, 75–78.

⁹⁴ Nevertheless, it cannot be assumed that the area was deserted: Gutjahr 2015a, 77–78; 2018, 43–44. Ch. Gutjahr assumes a remaining Roman or autochthonous/Romanic element, referring to the continuity of pre-Roman place names. The end of the late Roman/late antique hilltop sites in Styria is difficult to determine, partly due to the difficult chronology of the finds.

⁹⁵ Gutjahr 2018, 46; 2020, 61, 71. – M. Lehner assumes a causality that stems from both settlement history and topography and lists several possible reasons for this: Lehner 2009, 51. Regarding Roman settlement sites as a source of raw material: Lehner 2009, 129; Gleirscher 2020, 84; Eichert 2020, 122. Summarising the use of Roman roads and routes in the (early) medieval eastern Alpine region: Giesler 1997, 320; Lehner 2009, 147–150; Winckler 2012, 116–118; Gutjahr 2020, 61. A definitive continuity of Roman roads into the Middle Ages cannot be proven for now, but a continuity of the travel routes can be assumed.

⁹⁶ Gutjahr 2020, 71, note 93. – For the late Roman devil’s ditch in the Leibnitz plain that became a boundary mark in early medieval times: Gutjahr 2013.

⁹⁷ Cf. Koch 2022, 182 Fig. 4.

⁹⁸ Kiszter, Schrettle 2016; Kiszter, Schrettle 2020, 35–36. – According to the excavators, the hiatus follows the early medieval phase, which extends into the 10th century.

⁹⁹ For example, the early medieval phase on Franziskanerkogel/Primaresburg near Maria Lankowitz in Western Styria can for now only be grasped in the form of stray finds, in spite of the excavations in 1984, 1986, and 2020–2022: Gutjahr, Roscher 2002b; Trummer 2003, 10, 24–25, 27; Horváth, Koch 2021, 97–98, 120. – For the more favourable situation in Schwanberg: Kiszter, Schrettle 2020, 34.

2.3.3 Chronological development

At this point, the question arises whether the location of the sites is in any way related to their dating. For this purpose, only sites that can be dated more precisely than just generally “into the Early Middle Ages” are considered. Based on the remaining, rather modest data basis, only preliminary statements can be made. Nevertheless, it can be stated that the earliest sites (second half of 7th century, first half of 8th century) can be found in all categories of altitude, not just on low terraces near the rivers.¹⁰⁰ Accordingly, higher altitudes were not beginning to be used at some later date within the Early Middle Ages, but as early as the 7th century. Here a link to the climatic conditions seems plausible, as the earliest known settlements in Styria still fall within the later stages of the Late Antique climatic pessimism, when bad weather and flooding were quite frequent.¹⁰¹ Hilltops and crags were used from around 800 AD on, at the latest.¹⁰² In most cases, based on the archaeological data, it cannot be decided whether these early settlement phases included defensive structures, but there are some indications that these places, due to their naturally protected location and/or existing fortifications (e.g. in the form of a prehistoric rampart) were specifically sought out. Sites that persisted for several centuries up to the 10th century are often in an elevated position, but not necessarily naturally protected by steep cliffs.

2.4 THE ARCHAEOLOGICAL EVIDENCE IN ITS HISTORICAL CONTEXT

It is also to be discussed to what extent settlement activity is influenced by the historical and political circumstances and events.¹⁰³ Since this is a very broad topic, only a few aspects are to be singled out here.

¹⁰⁰ Special attention should be paid to Enzelsdorf and Komberg. In Lower Austria, early Slavic settlements tend to prefer locations with a lower altitude: Wawruschka 2009, 129; Nowotny 2013, 237. In the area of Bled (Slovenia), the majority of settlements are located “where the plains meets the hillslopes”: Pleterski 2013, 155, 161; Lozić 2021. See also: Pleterski 2024 in this volume.

¹⁰¹ See subchapter 3.1 (climate).

¹⁰² Lethkogel, Schwanberg, Kirchberg/Deutschfeistritz, Wildoner Schlossberg. Possibly also Grazer Schlossberg and Primaresburg/Franziskanerkogel. Cf. Gutjahr 2015a, 97.

¹⁰³ A summary of the historical events in the early medieval south-eastern alpine region would go beyond the scope of this chapter; it would also counteract its archaeological focus.

2.4.1 Slavic, but not Carantanian?

The earliest early medieval settlement features in Styria¹⁰⁴ can be found south of the Alps on the edges of the large river valleys (Mur, Raab).¹⁰⁵ These features are likely to be associated with Slavic immigration,¹⁰⁶ even if genuinely “Slavic” finds, apart from pottery of the Prague type, are hardly distinguishable,¹⁰⁷ and Slavic cremation burials are missing in the investigation area so far, probably due to the state of research.¹⁰⁸ From a political point of view, it is rather unclear where (or to whom) the territory of today’s Styria belonged in the 7th and 8th century AD. When the Slavic political entity of Carantania was consolidated in today’s Carinthia, the territory of modern Styria was probably only partially included. Research opinions differ when it comes to Carantania’s boundaries.¹⁰⁹ The Upper Styrian area of Neumarkt probably belonged to this principality, which can be argued on the basis of a marble relief featuring interlaced ornaments (“Flechtwerkstein”) known from Mariahof.¹¹⁰ Reliefs like this are being interpreted as

¹⁰⁴ First half of the 7th century, second half of the 8th century.

¹⁰⁵ Enzelsdorf, St. Ruprecht, Komberg (all around the second half of the 7th century, maybe slightly earlier or later) and also Straßgang (radiocarbon date of the second half of the 6th/first half of the 7th century). They are only between 1 and 4 km away from the main rivers Mur and Raab (in their current course). Gutjahr (2018, 44–46) provides an overview of these sites. See also: Gutjahr 2020, 64–70; Gutjahr et al. 2024 in this volume. Some other sites (mainly pottery stray finds) could also date to the 7th century: Gutjahr 2018, 46; 2020, 70–71.

¹⁰⁶ Among others: Gutjahr 2015a, 80; 2018, 44; 2020, 62–64, 72. Slavic-speaking immigrants can be assumed due to the strikingly widespread Slavic toponyms in Styria: Mader 1986; Lochner-Hüttenbach 2008, 30–43. The formation of Slavic toponyms probably continued into the High Middle Ages. Ch. Gutjahr assumes that the immigration came from the south, possibly also (additionally) from the east and spread from the large river valleys into the side valleys: Gutjahr 2015b, 83; 2018, 46; 2020, 72. On this topic, recently: Štular et al. 2022. See also: Pleterski 2024 in this volume.

¹⁰⁷ Szameit 2000; Nowotny 2013, 232; Gutjahr 2015a, 80. – A pottery fragment of a probably “Prague type” pot has been found at Kleinklein: Gutjahr 2018, 44. Critical towards the question of the ethnic interpretation of finds, among others: Kramer 1996, 58–61; Szameit 2000, 525; Nowotny 2005, 233–234; Lehner 2009, 127; Eichert 2020, 110.

¹⁰⁸ Apart from the possible exception of an unpublished burial from Wohlsdorf: See Note 32.

¹⁰⁹ For a summary of the discussion: Lehner 2009, 108–112; Gutjahr 2012, 151–153. – In general, early medieval borders should not be thought of as linear. Cf. Winckler 2012, 79, 83. To mention all relevant literature on Carantania would go beyond the scope of the discussion. From an archaeological point of view, among others: Eichert 2012, 219–225, 307–310, 341–343; 2014.

¹¹⁰ For the temporary custom of marble furnishings (“Flechtwerksteine”) in churches in Carantania: Karpf 2001,

part of the furnishings of early churches. Burials of the Grabelsdorf type,¹¹¹ as those known from Krungl and Hohenberg, can also be assessed as indicators of a region’s affiliation to Carantania, or at least its cultural dependency.¹¹² For Styria south of the Alps, a (mostly) Slavic border area between Carantania and the Avar sphere of control can be assumed, perhaps in the shape of a more or less independent regional sphere of power.¹¹³ An immediate presence of Avars has in any case not been proven, although there are a few Avar accessories found in burials.¹¹⁴

2.4.2 Bavaria, Francia, “western” influence

From the written sources, an increasing influence of the Bavarians and Franks on the south-east Alpine region since the middle of the 8th century can be deduced. The Avar wars mark a turning point in the balance of political power. The incorporation of the region into the Carolingian Empire followed; it was concluded with the introduction of Bavarian counts (Carolingian “Grafchaftsverfassung”, no later than 828 AD) and the removal of the local rulers.¹¹⁵ In the archaeological sources, these processes are currently barely visible. At least the changes in burial rites, turning away from grave goods, can be seen as a sign of advancing Christianisation and thus as an indirect consequence of changing political circumstances.¹¹⁶ However, this is to be seen as

66–67, 78; 2003, 886–888, 895–896. Marble furnishings have been mentioned as indications for the affiliation of the Neumarkt area to Carantania: Lehner 2009, 216, 220; Gutjahr 2012, 156; Gleirscher 2018, 272. – On the marble relief, the church and the early medieval graves of Mariahof: Lehner S. 2004; Steinegger 2020. – A marble relief at St. Lambrecht, showing interlaced ornaments on a second-use Roman stone, has also been dated to the Early Middle Ages: Johannson-Meery 1993, 91–92 (citing older literature). Yet a later dating approach has repeatedly been proposed: Karpf 2003, 894, note 96; Gleirscher 2020, 85.

¹¹¹ Szameit, Stadler 1993, 228–229; Eichert 2010, 160–164; Gutjahr 2015a, 87; Eichert 2020, 118–119, 123.

¹¹² Among others: Gleirscher 2018, 191–195; Gutjahr 2020, 136. – Expressing doubts, though based on toponyms: Winckler 2012, 99–100.

¹¹³ For the conception of a Slavic domain (“župa”) in the (middle) Mur valley: Pleterski 2003, 28–30; 2010, 145, 146, Fig. 2. – A. Pleterski considers a possible association of this domain with the (ethnic ?) group “Dudleben”.

¹¹⁴ Lehner 2009, 110; Gutjahr 2020, 60, 75.

¹¹⁵ Wolfram 1987, 275, 281; 1995, 220, 222. – For the Carolingian *marca orientalis* (“Ostmark”), see also: Giesler 1997, 27, note 143.

¹¹⁶ For grave goods in Styria: Gutjahr 2015a, 89–90. See also: Nowotny 2005, 194–195; Breibert 2011, 564–566. – For Styria, it can be assumed that Christianisation had to be restarted from zero, because so far there is no clear evidence of churches in this area that survived from Late Antiquity, and

a long-lasting process in which the upper class took a pioneering role, the rest of the population following with some delay, and which could only be completed with the expansion of the church infrastructure.¹¹⁷ Apart from Mariahof with its probably early medieval church, there are some hints in the form of early medieval burials next to existing ecclesiastical buildings.¹¹⁸ For a few more churches (or their predecessors), an early medieval date (around 1000 AD) has been considered based on either radiocarbon dates¹¹⁹ or the way of construction.¹²⁰ The churches that are mentioned in written sources possibly concerning Styria (e.g. “ad Undrimas” in the *Conversio Bagoariorum*,¹²¹ ecclesia “ad Sabnizam” in 860 AD,¹²² two churches in “Liupinatal” in 925 AD¹²³) cannot be safely located at the time being.

The increasing use of locations at high altitude, usually providing natural protection, in the advancing Early Middle Ages is probably related to the exercise of rule and representation, and the taking over and defence of the territory.¹²⁴ Stray finds of winged spearheads and

spurs also point in the direction of elites.¹²⁵ However, it is difficult to make any statement on the local and regional rulers and their political affiliation based on archaeological finds. In any case, some contemporary written sources give evidence of the economic and political penetration of the country by Carolingians and Ottonians. The sources name early medieval places that can be localised in Styria and differentiate between different categories (including *curtis*, *locus*, *civitas*).¹²⁶ Some of these mentions can be conclusively associated with modern place names (e.g. ad Pruccam = Bruck an der Mur), but only in the rarest of cases the respective locality can be identified with an archaeological feature. One charter deserves special mention, as it gives detailed information about the location of a *curtis* in the south-eastern Alps: The *curtis Zlatina*¹²⁷ mentioned in 904 AD is described so precisely that it can be located on a terrace in Schladnitzdorf near Leoben, where the stream Schladnitzbach flows into the Mur. It is a tongue of land approx. 220 m long and up to 120 m wide, which only rises between 15 and 20 m above its surroundings.¹²⁸

no clear evidence of early Christian predecessors under today's churches: Lehner 2016, 150–151. At Frauenburg Castle, there are hints to late Roman times/Late Antiquity, but the excavated burials start only in the Early Middle Ages (7th/8th century): Steinegger 2020, 100. – For the possible continuity of Christianity in the south-eastern Alpine region (especially, in its western part), among others: Gleirscher 2020. For the Christianisation of the Carantanians, recently: Štih 2020. For food as a grave good, see also subchapter 3.3.

¹¹⁷ The cross and pigeon fibulae (in secondary use) from Hohenberg and Krungl can be seen as a possible indicator of Christianisation; a stronger hint comes from enamel disc fibulae with Christian motifs (from the end of the 9th century on): Gutjahr 2015a, 80–83, 91; 2020, 57.

¹¹⁸ E.g. at the Frauenburg hilltop: Steinegger 2020, 96–101; at Hohenberg; within a chapel (“Pöglhofkapelle”) next to Bruck; at the Georgiberg hilltop next to Kindberg: See note 41. For the Altenmarkt burial ground, see above (subchapter 2.1) and below (subchapter 2.4.3). – Some of the known metal stray finds (accessories) probably also originate from destroyed burials in church cemeteries.

¹¹⁹ E.g. the predecessor of the Leechkirche in Graz: Lehner 1996.

¹²⁰ E.g. the use of spolia in the crypt of the monastery church in Göss (Upper Styria): Lehner 2005, 164, note 6.

¹²¹ Summarising: Lehner 2019. Recently: Gleirscher 2020, 92–93. – For an approach that identifies the church “Undrimas” with the church “Liburnia” resulting in none of them to be located in Styria, but in Carinthia: Pleterski 2000.

¹²² MGH DD LD no. 102. Cf. Note 134. – “Sabniza” is probably the river Safen, “ad Sabnizam” therefore could be located in the vicinity of Hartberg.

¹²³ “ad Sanctum Petrum sanctumque Rodbertvm” (Steirisches Urkundenbuch 1, no. 14); the valley “Liupinatal” is probably in the vicinity of Leoben: Lehner 2005, 165.

¹²⁴ Gutjahr 2015a, 97. – Ch. Gutjahr draws a connection with the development and organisation of the newly won lands after the Frankish-Carolingian takeover.

2.4.3 Hungarian crisis

Historical and archaeological research has repeatedly raised the question of how the “Hungarian threat” on the eastern border of the Frankish Empire from approx. 900 AD onwards and the temporary loss of territory associated with the Hungarian wars affected Styria.¹²⁹ Unfortunately, the archaeological data is poor.

¹²⁵ Spearheads from Stornalm (Mandl 1996, 67), Franziskanerkogel (Trummer 2003, Pl. 10, 1; 2019). For the spurs, see subchapter 3.6. – Another probable, albeit not winged spearhead has been found in an early medieval grave of a young man under the existing church at Frauenburg Castle: Steinegger 2020, 100.

¹²⁶ For example, “civitas Zuib” and “locus Lipnizza” in a donation from Emperor Otto I to the church of Salzburg under archbishop Friedrich I in 970 (MGH DD OI no. 389). Both are assumed to be located in the Leibnitz/Frauenberg/Seggau area, in both cases the (more precise) localisation is controversial: Karl 2013, 203–205; Lehner 2016, 154–155; Gutjahr 2020, 77. For the term “civitas”, see also: Pleterski 2000, 447–449; Winckler 2012, 236–238.

¹²⁷ MGH DD LK no. 31. Ludwig the child donates a *curtis* (mansion) in Schladnitz(dorf), protected by a wall, and 20 dependent farmsteads in the Leoben valley to Arpo, son of Count Otakar: “in loco Zlatina dicto ubi riuus eiusdem nominis Zlatina in flumen Muora dictum intrat, illam curtem muro circumdatam [...]”

¹²⁸ Murgg 2010, 161. – No (documented) excavations have been conducted so far.

¹²⁹ After the battle of Pressburg in 907, a large part of the march is temporarily lost. – Wolfram 1995, 222; Giesler 1997, 297. From an archaeological point of view, among others: Kramer 1996; Lehner 2009, 211, 246. For bibliographical references that question the traditional conception of the

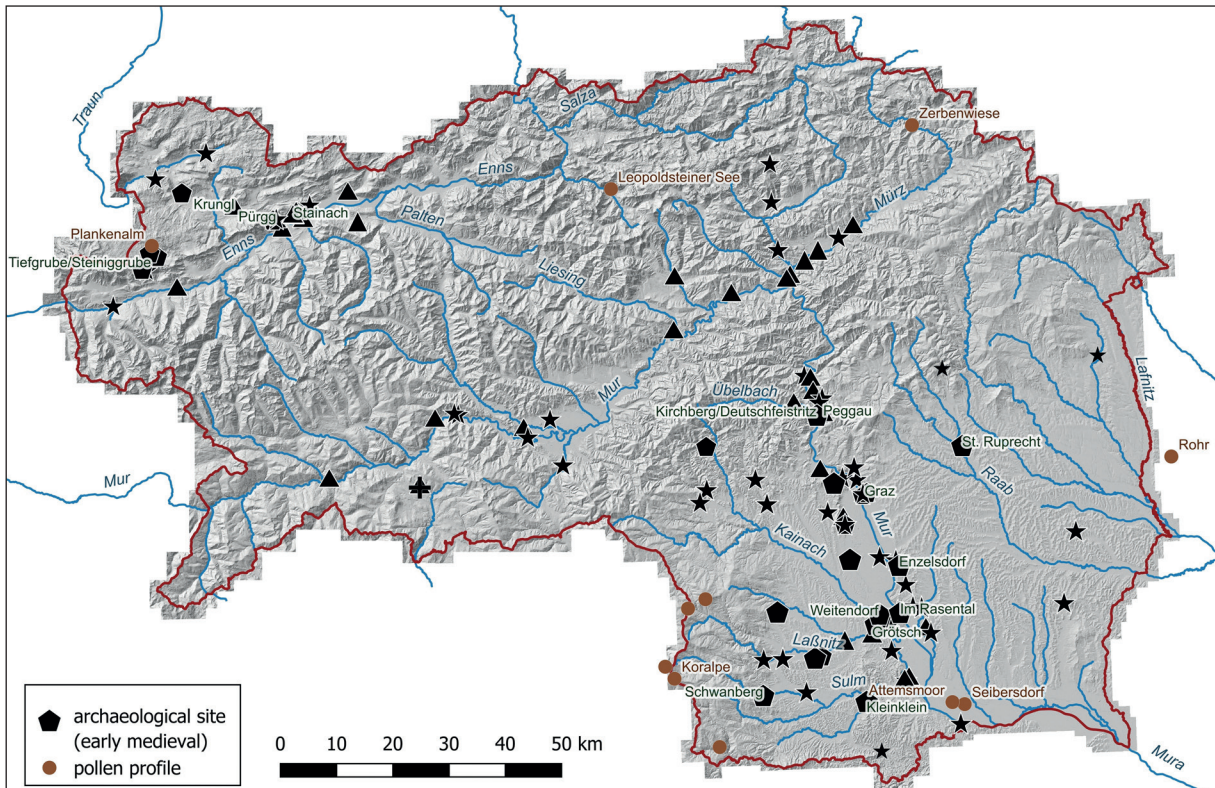


Fig. 4: Early medieval settlement in Styria. Sites mentioned in chapter 3 (Paleoenvironment) are indicated.

An interpretation of the sites at high altitude along the middle Mur valley as early castles and defence against the Hungarians has been considered (Kirchberg/Deutschfeistritz, Straßengel, Grazer Schlossberg, Wildoner Schlossberg, Frauenberg/Seggauberg).¹³⁰ Two individual finds of rhombic arrowheads were addressed as “Hungarian” by D. Kramer,¹³¹ but such arrowheads may also originate from a later period.¹³² Graves with a specific composition of inventory featuring an early Hungarian element (“gemischtes Inventar”) in Straßengel and probably also in Leibnitz/Altenmarkt are perhaps to be seen as evidence of a temporarily extended Hungarian sphere of influence.¹³³ The presumably continuous occupancy of the Leibnitz/Altenmarkt burial ground from the 9th century (at the latest) to the 16th century seems to argue against an interruption of settlement in the Mur valley.¹³⁴ In Eastern Styria there is currently

Hungarian crisis: Later 2020, esp. 137, Note 7.

¹³⁰ Gutjahr 2015a, 96.

¹³¹ Kramer 1992, 67. They originate from the hilltops Franziskanerkogel and Wildon/Schlossberg.

¹³² Apparently, in some places they are in use until the 13th or even 14th century: Kühtreiber, Obenaus 2017, 48.

¹³³ Cf. Obenaus 2008, 210–211. – For Straßengel: Mirsch 1999.

¹³⁴ Gutjahr 2015a, 92; Lehner 2016, 154, Fig. 2. – According to Ch. Gutjahr, the (now abandoned) church of St. Martin near the Altenmarkt burial site is probably the pro-

neither any settlement feature nor a burial that can be clearly dated to the 10th century, but this hardly serves as evidence of a hiatus, as it possibly derives from the poor state of research concerning the Early Middle Ages in this area.¹³⁵

3. PALEOENVIRONMENT AND ASPECTS OF LAND USE

The following section aims at providing an overview of the currently available data on the topic of relations between early medieval settlers and the environment in the study area (Fig. 4).¹³⁶

proprietary church (“Eigenkirche”) of the *curtis* “ad Sulpam” mentioned in 860 (MGH DD LD no. 102): Gutjahr 2015a, 92. E. Staudinger established a connection between Altenmarkt and *ad Sulpam* just before the archaeological investigation of the burial ground: Staudinger 1978. For the charter, among others: Jeitler 2012.

¹³⁵ The same problem of scarce data comes into play in view of the question if an eastern border along the watershed between Mur and Raab, which is known in writing as “mons Predel”, played a role for early medieval settlement in Styria (or only later on). – For *mons Predel*, among others: Purkardhofer 1979; Posch 1978, 32–34; Wolfram 1985, 139; Lehner 2009, 108–110, 115. See also: Tiefengraber 2007, 191–193.

¹³⁶ For the theory of man-environment relations in the

3.1 CLIMATE

For the study area, significant climatic differences between the alpine area and its southeastern foreland can be observed, the mountainous area and its valleys being significantly colder and wetter. But also small-scale climatic differences should be taken into account when assessing the location of a site. For example, the elevated plateau (“Hochfeld”) on which the Enzelsdorf settlement site is located has a particularly favourable climate with slightly milder temperatures than the adjacent Grazer Feld in winter.¹³⁷ In addition, we have to consider historical climatology, which can only be briefly mentioned here. Between approx. 300 BC and 350 AD there was a warm period in Europe that also affected the study area. It was followed by a cold period lasting until approx. 660 AD, with lower average annual temperatures and changed weather conditions. Around 450 AD, there was a high glacier level in the Alps.¹³⁸ The “Late Antique Little Ice Age”¹³⁹ included an increase in precipitation, stronger river activities and flooding.¹⁴⁰ Especially in the 6th century AD an “atmospheric dust veil” led to unfavourable climatic conditions, which are being associated with famine and epidemic outbreaks.¹⁴¹ The abandonment of settlements, fields and pastures is evident in pollen profiles in many places in the shape of a decrease in grain and increase in tree pollen.¹⁴² Between approx. 850 and 1250 AD there was another warm period with temperatures that roughly correspond to today’s.¹⁴³ This “medieval climate anomaly” was accompanied by a strong population increase and extensive deforestation.¹⁴⁴ Whereas at the beginning of

Middle Ages (focussing on western Central Europe), see: Schreg 2011.

¹³⁷ Thanheiser, Walter 2003, 185.

¹³⁸ Büntgen et al. 2016; Bork 2020, 21. For the study area: Drescher-Schneider, Wick, 2001, 21. – A summary on the climate in Europe in Late Antiquity and the Middle Ages, including the historical implications, is provided by: Preiser-Kapeller 2021.

¹³⁹ Büntgen et al. 2016.

¹⁴⁰ Bork 2020, 21. – For the study area: Drescher-Schneider, Wick 2001, 21.

¹⁴¹ Among others: Toohey et al. 2016; Bork 2020, 21; Montanari 2000a, 20.

¹⁴² E. g. Behre 1988, 647. – However, this does not seem to apply equally to the entire Alpine region. A pollen profile from the area of Bischofshofen, for example, does not show any interruption in settlement from the middle of the 1st millennium AD; the cerealia curve apparently begins (once again) around 500 AD and does not break off until modern times: Wahlmüller 1988.

¹⁴³ Bork 2020, 21–22. – K. Winckler summarises both historical and scientific data on the early medieval climate in the Alps and states that little can be said with confidence: Winckler 2012, 37–61.

¹⁴⁴ G. Comet questions if all of these are effects of the favourable climate, and suggests that a change in the social

the Middle Ages large parts of the country were covered with forest (approx. 85%), it is assumed that the proportion of woodland in Central Europe fell steadily to approximately 15% by the 13th century.¹⁴⁵ Bork et al.¹⁴⁶ assume based on a broad range of data, including pollen profiles, that the proportion of forest in Germany (excluding the Alpine region) was still 87% around the year 750 and 65% around the year 1000 AD. Kaplan et al., on the other hand, calculate the share of forest in “usable” land at approx. 29% for Germany and 20% for Austria in 1000 AD.¹⁴⁷ Possibly, the Alpine region and thus a significant part of Styria was less affected by deforestation than other regions, because large parts of the forests are located in steep terrain and are therefore difficult to access. In any case, the wide distribution of Slavic place names, some of them specifically indicating clearing of woodland (“Rodungsnamen”), show that in the study area deforestation was already progressing at a time when the Slavic population was still dominant in language.¹⁴⁸

3.2 ARCHAEOBOTANY

3.2.1 Pollen profiles

Relatively few analyses of pollen profiles are available for the study area, and the existing ones often do not cover the Early Middle Ages or cannot clearly distinguish them from other periods.¹⁴⁹ For a profile from Seibersdorf on the southern edge of the Leibnitzer Feld¹⁵⁰ for example, a section “PZ Sei-9” has been defined with a date of approx. 800–1500 AD. It contains

order (towards the feudal system) might also have played a decisive role: Comet 2000, 167.

¹⁴⁵ Bork 2020, 22. – See also, among others: Behre 1988, 647–648.

¹⁴⁶ Bork et al. 1998, 161 Tab. 4.1.

¹⁴⁷ Kaplan et al. 2009, 3023 Tab. 3. “Usable land” is defined by the authors as “land available for clearing for agriculture”, ruling out e.g. steep terrain.

¹⁴⁸ Lochner Hüttenbach 2008, 31. – The complete assimilation of the Slavic-speaking population in Styria is said to have been completed only in the 14th century. The majority of Styrian place names that indicate clearing, however, are interpreted as being of Bavarian origin: Lochner Hüttenbach 2008, 43, 52–53.

¹⁴⁹ For basic information on the method of pollen analysis and the difficulties associated with it: Jacomet, Kreuz 1999; Draxler, Lippert 1999, 396. The distance radius of the represented flora largely depends on the species in question. For grain, it is usually only a few kilometres, while various tree pollen can spread much further.

¹⁵⁰ Wick, Drescher-Schneider 1999; Drescher-Schneider, Wick 2001. – In the 2001 publication, the original dating approach for the youngest section of the profile (Roman period) was revoked.

grain (*Cerealia*¹⁵¹), including rye, as well as buckwheat (*Fagopyrum/Fagopyrum esculentum*), the latter towards the end of the section. Buckwheat is usually assumed to be available in Austria only from the 12th century, at the earliest.¹⁵² The cultivation of grain (rye) in the area of Seibersdorf in the Early Middle Ages is therefore likely, but not certain, due to the large time span indicated for the relevant section. It was not until the Late Middle Ages and the early modern period that the plants that indicate human activities (synanthropic species; “Kulturanzeiger”) increased significantly in Seibersdorf. The situation is similar with a profile from Rohr (Burgenland). Here, the section “PZ R-7” covers a large timespan from the Roman era to the early modern times.¹⁵³ Draxler and Lippert¹⁵⁴ summarise that at the south-eastern foothills of the Alps there was a sharp rise in pine (*Pinus sylvestris*), but also grasslands in the Early Middle Ages, which may indicate increased pasture activities. The cultivation of grain declines sharply compared to the Roman era. Another pollen profile was taken at the Attemsmoor, not far from Seibersdorf.¹⁵⁵ A radiocarbon date of approx. 960–1080 AD¹⁵⁶ was obtained from the middle of the profile, the Early Middle Ages should thus be at least partially covered. In the profile there is a clear indication of forest clearance both before and after the area from which the radiocarbon date originates. F. Kral¹⁵⁷ considers the older of the two events to be an effect of Carolingian settlement activities (9th century), but he also points out that further scientific dating is required for a more precise classification. In any case, a decrease in tree pollen and a simultaneous increase in the number of synanthropic species before the turn of the millennium could be ascertained; little grain and some hops or hemp¹⁵⁸ could be verified, as well as species that usually accompany pasture farming and therefore suggest animal husbandry. A pollen profile from the Alpine region, from the Zerbenwiese raised bog (Nassköhr, Neuberg an der Mürz) at approx. 1300 m a.s.l. provided evidence of rye in late antique/early medieval times.¹⁵⁹ In a pollen profile from the Leopold-

steinersee in the Eisenerz area (628 m a.s.l.), according to Drescher¹⁶⁰ the first onset of rye at the beginning of the Early Middle Ages can just be recognized. F. Kral and F. Schreiner¹⁶¹ found on the basis of pollen profiles from the Koralm mountains¹⁶² at the border between the provinces of Styria and Carinthia that here the forest density was very high in the 8th to 11th centuries (especially fir, beech, spruce), whereas the anthropogenic influence is described as very low. A pollen profile from the Plankenalm in the Dachstein area also indicates human presence in the (late) Early Middle Ages.¹⁶³

3.2.2 Macroscopic plant remains from archaeological contexts

By now, a number of archaeobotanical analyses on plant remains from early medieval archaeological contexts are available for Styria.¹⁶⁴ The sample quantities are often small. In two settlement pits in Enzelsdorf (Obj. 1, Obj. 2), which can be dated to the 7th/8th century,¹⁶⁵ charred grains of naked wheat or wheat,¹⁶⁶ (other) grasses¹⁶⁷ and legumes¹⁶⁸ could be detected. Another layer documented at this site (Obj. 3, SE 20) contained little archaeobotanical remains, among which several types of grain could be identified (rye, naked wheat, cultivated barley, emmer and spelt), as well as cultivated millet, legumes and a fragment of a grapeseed.¹⁶⁹ In a

– Apart from rye, sweet chestnut, walnut, olive tree and hemp/hops were documented. Especially the pollen of chestnut and olive tree can be carried over large distances and do not prove the distribution of these plants in the vicinity.

¹⁶⁰ Drescher-Schneider 2003, 189–190.

¹⁶¹ Kral, Schreiner 1985, 318.

¹⁶² The data basis consisted of five profiles extracted from moors in various areas of the Koralm mountain range, between the “Freiländer Moos” in the north and Laaken in the south.

¹⁶³ 10/11th century: Kral 1994.

¹⁶⁴ Basic information on the method and the conservation conditions in dry soil, among others: Thanheiser, Walter 2003. – In addition to those listed here, the analyses of the botanical and zoological remains from the oldest backfill layer of the Eppenstein cistern are of interest (around 1000 AD/1st half of the 11th century): Steinegger, Kraschitzer 2020, 121–122.

¹⁶⁵ Parcel No. 226. See: Gutjahr 2015b, 75, 80. – The pottery can be dated to the second half of the 7th or first half of the 8th century; this dating is supported by a radiocarbon date. The filling probably took place shortly after the pit had been abandoned. See also Gutjahr et al. 2024 in this volume.

¹⁶⁶ Naked wheat (*Triticum durum/aestivum*); wheat (*Triticum sp.*): Gutjahr 2015b, 75.

¹⁶⁷ *Poaceae*. This family of plants also includes cereals.

¹⁶⁸ In this case *Fabaceae cultae*, i.e. cultivated legumes: Gutjahr 2015b, 75.

¹⁶⁹ Heiss et al. (in print). – It is often difficult to distinguish between cultivated grape (*Vitis vinifera* subsp. *Vinifera*) and wild grape, but in this case the cultivated type has been identified. Ch. Gutjahr dates the associated pottery finds into

¹⁵¹ In the following, the scientific name of plants/species is only mentioned when confusion seems likely.

¹⁵² For the example of Lanzenkirchen Castle, see: Kührtreiber 2000, 49. As for Styria, an occurrence of buckwheat in a pollen profile from Attemsmoor (see below) has been dated to the 15th century by Kral (1984). – Prior to the High Middle Ages, the plant is found in eastern and, very sporadically, in northern central Europe: Drescher-Schneider, Wick 2001; Bakels et al. 2015.

¹⁵³ Drescher-Schneider, Wick 2001.

¹⁵⁴ Draxler, Lippert 2001, 396.

¹⁵⁵ Kral 1984. – The profile was obtained in 1982.

¹⁵⁶ Felber 1985, 619.

¹⁵⁷ Kral 1984, 199–200.

¹⁵⁸ *Cannabiaceae/Humulus*. This could also be pollen from wild hops.

¹⁵⁹ Drescher-Schneider, Draxler 2016, 119, 121, 127–128.

waste pit at the same settlement site¹⁷⁰ which can be dated to the 10th or early 11th century, the remains of several types of grain, including naked wheat,¹⁷¹ rye, barley and millet (*Panicum miliaceum*) were found. In addition, peas, horse beans (*Vicia faba*), peaches, hazelnuts, blackberries/raspberries and (probably) walnuts could be detected.¹⁷² Ch. Gutjahr¹⁷³ assumes that the pit was abandoned and subsequently used as a waste pit. Because the grain was already prepared ready for use¹⁷⁴ and the pit also contained charred pottery, the contents could represent burnt storage supplies. From the early medieval settlement in Kleinklein,¹⁷⁵ plant remains from a waste pit¹⁷⁶ could be examined. The filling of the pit comprised relatively few remains of cultivated plants, including barley, (broomcorn) millet, and some specific wild plants that indicate human influence on the ecosystem.¹⁷⁷ The pottery from the waste pit of Kleinklein can be dated to the 9th/10th centuries, a barley seed fragment yielded a radiocarbon date of the 8th–10th centuries.¹⁷⁸ Archaeobotanical analyses have also been carried out on samples from the Schwanberg site,¹⁷⁹ including a burnt layer and two pit fillings.¹⁸⁰ The features linked to early medieval settlement activities contained little barley, millet, oats, einkorn wheat (*triticum monococcum*), peas and possibly rye, as well as walnut and grapevine (*vitis vinifera*), and one of the layers yielded a lot of tree pollen

the second half of the 7th, or possibly the first half of the 8th century: Gutjahr 2018, 45; 2020, 69–7. A charred cereal grain from this context yielded a radiocarbon date of the late 7th–9th centuries.

¹⁷⁰ Parcel No. 393. See: Gutjahr 2003; Thanheiser, Walter 2003.

¹⁷¹ A distinction between durum wheat (*Triticum durum*) and common wheat (also: bread wheat; *Triticum aestivum*) was not possible.

¹⁷² Thanheiser, Walter 2003, 189; Tables of archaeobotanical results in: Črešnar et al. 2019, 265–266.

¹⁷³ Gutjahr 2020, 68.

¹⁷⁴ Thanheiser, Walter 2003, 185. – The sample material contained only grains, other parts of cereal plants were completely absent, and the proportion of so-called “Erntebegleiter”, i.e. wild plants associated with agriculture, was very low.

¹⁷⁵ Mele, Kiszter 2017; Kiszter et al. 2019. – It is the area of a Roman settlement, probably a *villa*.

¹⁷⁶ It is the largest of four waste pits that were documented in the course of the excavations in 2017 and 2018.

¹⁷⁷ Kiszter et al. 2019; Heiss, Wiesinger 2019; Tables of archaeobotanical results in: Črešnar et al. 2019, 267. – Another (albeit uncertain) find of rye might be counted among the cultivated plants.

¹⁷⁸ Kiszter et al. 2019.

¹⁷⁹ For Schwanberg/Tanzboden, see the excavation reports (a selection): Schrettle 2011; Kiszter, Schrettle 2016. – It could be an early fortification, although S. Kiszter and B. Schrettle remain cautious regarding the interpretation: Kiszter, Schrettle 2020.

¹⁸⁰ From the excavations in 2012, 2015 and 2016: Tables of archaeobotanical results in: Črešnar et al. 2019, 269–272; Heiss, Wiesinger 2019, 352–356.

(most notably *Abies alba*, i.e. silver fir). S. Kiszter and B. Schrettle conclude that the settlement was probably abandoned at the end of the Early Middle Ages and nature reclaimed the plateau, at least for a short time.¹⁸¹

3.3 ARCHAEOZOOLOGY

The waste pit in Enzelsdorf, already mentioned in the section on archaeobotany, yielded only a few highly fragmented and therefore hardly identifiable faunal remains.¹⁸² The settlement pits Obj. 1 and Obj. 2 contained a few bones from domestic pigs and cattle.¹⁸³ Obj. 3 mainly contained the bones of small ruminants (*Caprinae*, i.e. sheep/goat).¹⁸⁴ The largest of four early medieval waste pits at Kleinklein contained plenty of identifiable material for archaeozoological analysis. The species include domestic cattle, domestic pigs, chickens, small ruminants, roe deer, and wild boar.¹⁸⁵ The bones show signs of cuts, chewing and fire. At least a part of the assemblage is most likely kitchen waste.¹⁸⁶ Based on the size of some of the bones, it can be concluded that the livestock were smaller than in Roman times.¹⁸⁷ This reduction in size is not evident in wild animal bones. The smaller size of farm animals compared to other periods is not exclusively to be seen as negative but had certain advantages, including less required space and food consumption; the milk yield is difficult to estimate.¹⁸⁸ The analysis of animal bones from Schwanberg¹⁸⁹ showed remains of (domestic) cattle, small ruminants, wild boar and red deer.¹⁹⁰ The number of (determinable)

¹⁸¹ Kiszter, Schrettle 2020, 35–36.

¹⁸² Gutjahr 2003, 168.

¹⁸³ Contribution by G. Christandl in: Gutjahr 2015b. See also: Gutjahr 2015b, 75; 2020, 68. – Among the pig bones, at least one younger and one older specimen could be identified.

¹⁸⁴ Gutjahr 2018, 45; 2020, 69. – The number of bones is small. The distinction between the bones of sheep and goats is considered a “classic problem” in archaeozoology.

¹⁸⁵ Kiszter et al. 2019; Toškan 2019, 372–375.

¹⁸⁶ This is indicated by the traces of fire. The cuts that were found on almost all bones indicate “secondary butchery”, i.e. the (further) dissecting of animals. According to B. Toškan, the chewing marks can be traced back to the fact that waste was lying around on the surface for a while and was not covered straight away, so that dogs could chew on it: Toškan 2019, 374. See also: Kiszter et al. 2019.

¹⁸⁷ Toškan 2019, 374. This phenomenon is already widely known for the Early Middle Ages.

¹⁸⁸ It has been stated that smaller cows can in some cases even produce larger amounts of milk: Frostdick 2010, 20–21. – Cf. the considerations of A. Pleterski, who assumes a poor milk yield in early medieval Slovenia: Pleterski 2008, 149.

¹⁸⁹ Excavations in 2015 and 2016: Toškan 2019. – For the present compilation, only the part relating to the Early Middle Ages is taken into account.

¹⁹⁰ There are also numerous indeterminate animal bones (“*indeterminatus*”).

bones from the early medieval contexts is small, but cattle and sheep/goats clearly predominate; game is only documented by a single find. Here, too, the smaller size of the farm animals (specifically the small ruminants) compared to Roman times was evident.¹⁹¹ On the hilltop Kirchberg/Deutschfeistritz¹⁹² an iron-processing plant, which can probably be associated with an early castle, was uncovered in 1949.¹⁹³ In addition to early medieval pottery, iron slag, metal objects and animal bones were found. Unfortunately, most of the finds can no longer be linked to specific features, which is why it cannot be ruled out that some of them belong to the high medieval phase of the site.¹⁹⁴ According to the excavator M. Mottl,¹⁹⁵ the animal bones included domestic dogs, domestic pigs, shorthorn cattle, goats, horses, deer, beavers and brown bears. In the course of a revision of the finds, which are only partially preserved,¹⁹⁶ cattle, pigs, small ruminants, some wild boar bones and the canine of a bear could be identified.¹⁹⁷ The material also contains tools made from animal bones, including a bone needle from the fibula of a domestic pig and a bone awl from the tibia of a domestic sheep/goat, as well as a spindle whorl made of bone and the antler shoot of a red deer with cut marks.¹⁹⁸ The identifiable game species suggest extensive forests in the area around Deutschfeistritz in the (Early) Middle Ages.¹⁹⁹ Excavations at the early medieval settlement “Im Rasental” between the hilltops Wildoner Schlossberg and Buchkogel have yielded numerous animal bones, mainly cattle, but also a significant amount of horses, complemented by pigs and a small amount of game.²⁰⁰ Only a few animal remains of domestic cattle and sheep/goats were found in two settlement pits at St. Ruprecht an der Raab, which have been dated to the second half or the last third of the 7th century.²⁰¹ In the excavated features of the early medieval settlement of Weitendorf, animal remains were rare, and they could not be identified with certainty.²⁰²

¹⁹¹ Toškan 2019, 380.

¹⁹² Gutjahr 2006.

¹⁹³ It is located on the western slope of the hilltop. According to the pottery, the early medieval use of the site began as early as the 8th/9th centuries: Gutjahr 2006, 308.

¹⁹⁴ In addition, some of the finds origin from a small cave called “Kingshöhle”, which is also located on the western slope, in the vicinity of the other features. See: Gutjahr 2006, 283.

¹⁹⁵ Cited in: Modrijan 1963, 48–50.

¹⁹⁶ Gutjahr 2006, 283–284.

¹⁹⁷ See: Christandl 2006. – Some other bones could not be determined.

¹⁹⁸ Gutjahr 2006, 302–303.

¹⁹⁹ Gutjahr 2006, 284.

²⁰⁰ Gutjahr 2007b; 2018, 42; Ch. Gutjahr, private communication. – A comprehensive publication of the excavation is being prepared by the excavator Ch. Gutjahr.

²⁰¹ Gutjahr 2020, 66. On St. Ruprecht also: Schipper 1996; Gutjahr 2002, 149–150; 2018, 44–45.

²⁰² Only in object 128, a settlement pit: Gutjahr 2011a, 145, 151. – The animal bones were identified as the tooth of

The section of the settlement covered by the excavation is likely to have been a craft/workshop area; the pit in question contained a significant amount of pottery.²⁰³ Animal bones from other sites are sometimes mentioned in preliminary reports,²⁰⁴ in some cases the analysis is still pending.²⁰⁵ At the Alpine site of Tiefgrube/Steingrube at approx. 1640 m a.s.l. on the eastern Dachstein plateau, the investigation of a fireplace within the stone foundation of a small wooden cabin revealed, among other finds, various animal bones, including sheep/goats, chamois, deer, brown hare, the cut off part of a stag antler and two small fragments of horn cores, possibly from domestic cattle. A radiocarbon date from the fireplace indicates its use in the Early Middle Ages (7th/8th centuries).²⁰⁶ Sheep, goat and cattle would go well with the early medieval alpine farming assumed for the eastern Dachstein plateau; additionally, the wild animal bones suggest hunting. However, the site was also used in other periods – Roman Age finds were made in the immediate vicinity – so the question arises whether all the bones that originate from the foundations of the cabin can be assigned to the Early Middle Ages.

In Styria, early medieval faunal remains were not only found at settlement sites, but also in graves. In these cases, food offerings can be assumed. This can be regarded as an expression of non-Christian ideas about the hereafter or incomplete Christianisation; in this matter, fluent transitions are likely.²⁰⁷ The custom of food as a grave good is common in the early medieval eastern Alpine region, especially in the 8th century. Poultry bones (especially chicken bones), eggshells, but also pig bones occur. The food was usually placed at the feet of the buried individual.²⁰⁸ Pottery vessels in graves also indicate food and drink as grave goods.²⁰⁹ From the

a horse or cattle and possibly the calcined metatarsal bone of a pig. In addition, there are a few small indeterminable calcined fragments.

²⁰³ For the interpretation of the Weitendorf site, see: Gutjahr 2011a, 150–151, 163.

²⁰⁴ E.g. in Unterbergla in the Laßnitz valley, pits with early medieval pottery and animal bones were examined: Fuchs, Grzywacz 2011. – Based on the pottery, the pits can be preliminarily dated to around 800 AD.

²⁰⁵ For example, a very small amount of burnt bones was found together with early medieval pottery during the 2021 excavation at the rampart on Frauenkogel near Götting (see also: subchapter 2.3).

²⁰⁶ Two additional radiocarbon dates from the entrance area revealed a younger age (9th–13th and 10th/11th centuries): Mandl 1996, 64–65; 2003, 200. – A similar site, also with an early medieval radiocarbon date, is located at Stornalm/Kehr (also on the eastern Dachstein plateau): Mandl 1996, 65.

²⁰⁷ Summarising the problem: Breibert 2015, 152–153; 2022, 131. Breibert (2011, 565) states that “food and beverage gifts indicated by animal bones or remains of wooden buckets or vessels rather contradict Christian ideas”.

²⁰⁸ Breibert 2015, 152–153; Breibert 2022, 129–131.

²⁰⁹ For the southeast Alpine region: Nowotny 2008, 29;

burial site at Krungl,²¹⁰ at least two burials with animal bones are known: Grave 258 (child) contained, among other things, bird bones, grave 269 (adult), among other things, a boar's tusk, and in both graves other (undetermined) animal bones were found.²¹¹ It is likely that there were more burials with animal bones, but that these were neither documented nor preserved in the course of the early excavations at this site.²¹² For Hohenberg, a horse skeleton is mentioned in a newspaper article of the late 19th century, but the context remains unclear.²¹³ In the course of the investigation of the early medieval burial ground in Graz/Alte Universität, 18 graves with 19 burials that date back to around 800 AD were examined.²¹⁴ Grave 2 contained the bones of a chicken and probably a young duck and a goose, which can be interpreted as food offerings.²¹⁵ In addition to pottery vessels, animal bones were also found when three graves were unearthed in 1937 in Stainach²¹⁶ (Enns valley), however, the early medieval dating of the bones does not appear to be entirely certain.²¹⁷ In Grötsch (Laßnitz valley) 54 burials of an early medieval burial site were scientifically examined, some of which contained bird bones.²¹⁸ In Pürgg/Untenburg two of the three excavated early medieval graves contained a "bird skeleton".²¹⁹ The graves of Grötsch, like those of Stainach/Schwimmbad and Pürgg/Untenburg, can be dated to around 800 AD.

Eichert 2010, 130, 134–135; Gutjahr 2015a, 89; Breibert 2022, 129–131.

²¹⁰ Most recently: Breibert 2008; 2011; 2015; 2022. – The burial site was in use in the 8th–10th century (approx. 740–1000 AD).

²¹¹ Breibert 2022, 131. – W. Breibert assumes that the bird bones must have been chicken bones; in early medieval Lower Austria, they are the most common type of food offering in graves. In Steyr-Gleink (Upper Austria), pig bones are relatively common.

²¹² Breibert 2022, 131.

²¹³ E. Nowotny outlines that the contemporary statements on these early excavations are contradictory: Nowotny 2005, 182.

²¹⁴ Fűrnholzer 2003; Fűrnholzer, Gutjahr 2005; Gutjahr 2007a; 2012, 16–62.

²¹⁵ Gutjahr 2007a, 353.

²¹⁶ It is the burial site "Schwimmbad". Not far from these, burials at the "Gasthaus Zur Post" were discovered: Kloiber 1953; Modrijan 1963, 79–80.

²¹⁷ These could have been relocated bones in the grave filling, but the pottery provides an additional hint to food as grave goods. Ä. Kloiber undertook a (new) assignment of the finds to the individual graves on the basis of Schmid's excavation notes: Kloiber 1953. Mention is made of splinters from a boar's tusk and remains of the lower jaw, as well as teeth "from herbivores" and an animal tubular bone. See also: Gutjahr 2015a, note 74.

²¹⁸ Kramer 1981, 206–207; 1995, 89. – A comprehensive publication of the burial site by Ch. Gutjahr is in preparation. The bird bones are probably chicken bones (private communication Ch. Gutjahr).

²¹⁹ Kramer 1980, 7.

3.4 ANTHROPOLOGY

Anthropological analyses make a vital contribution to our understanding of the relations and links between the settlers and their environment. By now, anthropological examinations of skeletons from the (incompletely excavated) burial sites of Peggau, Graz/Alte Universität, Frauenburg, Mariahof and from a single burial in Deutschfeistritz have been made.²²⁰ In the following section, only a few aspects that appear relevant to the above-mentioned topic are singled out. Among the 21 individuals of the early medieval burial site of Peggau in the middle Mur valley (approx. second half of the 8th century), six skeletons show changes in the thigh bone which have been identified as "Poirier's facets" and are considered as an indication of frequent riding.²²¹ Ch. Gutjahr points out that in the Early Middle Ages, riding was reserved for an upper class, and that the group of people buried in Peggau probably represent the entourage of a local ruler, maybe the owner of the fortification on Kirchberg/Deutschfeistritz, just across from Peggau on the right bank of the river Mur.²²² Two thirds of the examined skeletons show signs of deficiency diseases, which according to S. Renhart²²³ indicate an at least temporarily strained nutritional situation and a diet low in vitamins. In the examination of the 19 skeletons from Graz/Alte Uni-

²²⁰ For Peggau: Contribution by S. Renhart in: Gutjahr 2012, 172–189. For Graz: Contribution by S. Renhart in: Gutjahr 2007a, 360–266. For Deutschfeistritz (burial, formerly E-Werk-Straße): Appendix by S. Renhart in: Gutjahr 2006, 330–331. For Frauenburg and Mariahof: Steinegger 2020, 98–108. There are anthropological analyses of one skull from an early medieval burial at Diemlach, and of three skeletons from Stainach, but the results do not seem relevant in this context. For Stainach: Kloiber 1953. For Diemlach: Kloiber 1963. As for the skeletons of Leibnitz/Altenmarkt (see note 31), which have only recently been examined, it is so far unclear which could be early medieval.

²²¹ For the burial site: Gutjahr 2012, 87–170. For Poirier's facets: Gutjahr 2012, 147; Contribution by S. Renhart in: Gutjahr 2012, 182; cf. Steinklauber 2020, 371. – Of the six skeletons with the mentioned characteristic deformation of the thigh bone (in five cases on both sides), five have been anthropologically identified as male (one of them uncertain), one as female. Various skeletal changes are associated with horse riding. Among them, Poirier's facets are considered particularly significant; in Avar and early Hungarian equestrian graves, for example, they occur frequently (Berthon 2019; Bühler, Kirchengast 2022). However, in the past there was often confusion in the terminology of changes in the neck of the femur, as Radi et al. (2013, 261–263), Berthon (2019, 77, 143–144) and Göhring (2021, 513–516), among others, emphasise; furthermore, it cannot be completely ruled out that Poirier's facet is occasionally caused by other activities than riding.

²²² Gutjahr 2012, 147.

²²³ Contribution by S. Renhart in: Gutjahr 2012, 181–182.



Fig. 5: The Sausal area in winter with the Koralm mountain range in the background. View to the west. (Photograph: I. Koch.)

versität, six individuals showed changes in the bones caused by deficiency diseases.²²⁴

3.5 SELECTED WRITTEN SOURCES

Some written sources provide additional information on economic practices and the exploitation of natural resources in early medieval times in the research area.²²⁵ As an example, the above-mentioned²²⁶ charter from 970²²⁷ can be cited, a donation from emperor Otto I to the archdiocese of Salzburg. Among the donated properties are the “curtis Vduleniduor”²²⁸ with 50 dependent farmsteads, the “civitas Zuib” (or at least

²²⁴ Contribution by S. Renhart in: Gutjahr 2012, 75–76. – The skeletons in question include two individuals that have been anthropologically identified as women, one man and three subadults.

²²⁵ For example, by mentioning manorial centres (*curtis* or similar). Alongside manorial structures, a certain number of “free” settlers can be expected. They are probably inadequately represented in the written sources: Giesler 1997, 277.

²²⁶ See note 126.

²²⁷ MGH DD OI no. 389. Transcription and translation: Karl 2013, 198–199.

²²⁸ This Slavic toponym can be roughly translated as “farmstead/manor in the valley”. Its German name “Nidrinhof” is also mentioned in the charter. For an interpretation of the Slavic term “dvor”: Pleterski 2013, 166–167.

the emperor’s share of it), the “locus Lipnizza” and the “nemus Svsil”. The location of these properties remains controversial.²²⁹ While the *curtis* might be identified as the site on Ulrichsberg near Deutschlandsberg,²³⁰ and “Zuib” and “Lipnizza” most probably can be found in the area of Leibnitz, Frauenberg and Leibnitzer Burgberg,²³¹ the forest *Susil* can be associated with the hilly and partly steep terrain west of the Leibnitzer Feld, which today still bears the name “Sausal” (Fig. 5). In a charter from 982²³² Otto II confirms the donation, defining the limits of the *civitas Zuib* and mentioning appendant fields and oak forests. *Susil* (“Susel”) is also mentioned, this time as “forestis cum banno” and with the addition that here in “dulcibus vallibus” bears and wild boars could be hunted exclusively during a precisely defined period from three weeks before the autumn equinox

²²⁹ Summarised by: Karl 2013, 156–157, 198–205, note 530. See also: Giesler 1997, 338–339. With particular attention to the archaeological evidence: Lehner 2016, 154–159; Gutjahr 2020, 77.

²³⁰ A rampart on Ulrichsberg near Deutschlandsberg (Western Styria) is visible in the digital terrain model; an early castle (11th century) at the location of today’s church (St. Ulrich) was documented during excavations: Lehner M. 2004. – Some pottery fragments and radiocarbon dates give evidence of an early medieval phase.

²³¹ Karl 2013, 205.

²³² MGH DD O II no. 275. Transcription and translation: Karl 2013, 199–200. See also: Giesler 1997, 328–331.

until St. Martin's Day.²³³ Accordingly, hunting in this area had been a royal/imperial privilege that now passed to Salzburg. The fact that big game (bears) was hunted here is noteworthy, as this area was hardly remote in the Early Middle Ages, but was surrounded on all sides by settlement sites.²³⁴

The extraction of salt as an important natural resource in early medieval Styria²³⁵ is so far only attested by a charter: In 931 a farmstead in the Lavant valley (Carinthia) with an (iron) smelting furnace was exchanged for a salt pan and properties in Admont (Upper Styria).²³⁶ The exchange took place between Count Alberich and the archbishop of Salzburg. To date, no early medieval finds originate from the Admont area. W. Breibert²³⁷ considers the salt trade to be an economic basis of the settlement to which the Krungl cemetery belongs. Both salt production using salt pans and iron smelting are accompanied by a high demand for firewood.

3.6 DISCUSSION

As stated above, due to the mostly small excavated sections of settlements, no statements can be made on the size of the early medieval villages or farms or on the internal disposition of settlements. Several settlement pits, often of unknown function, have been documented at various sites. There are no buildings or outlines that could be clearly identified as farm buildings, storage buildings or stables.²³⁸ In the case of Enzelsdorf, there are at least indications of the chronological dimension of an early medieval settlement. Here, a continuous existence from the 7th to the 10th/11th century is at least likely, based on the individual features that have been excavated so far. They are located at some distance from one another, so small-scale relocations cannot be ruled out at the moment.²³⁹ Also at Wildon/Im Rasental and Kleinklein, a continuity of settlement over several centuries seems likely.²⁴⁰ At the current state of research,

²³³ Cf. Fichtenau 1981; Jeitler 2008, esp. 14–15, 20–21. – The establishment of a *forestis* was a way of excluding the public from the use of the forest. Initially, apparently only the king was authorised to do this.

²³⁴ Corresponding considerations on Gars-Thunau: Czeika 1999, 178.

²³⁵ Summarising: Winckler 2012, 161–163; Breibert 2022, 158–161.

²³⁶ Steirisches Urkundenbuch 1, No. 20. – Admont is already mentioned in 859 as “Ademundi vallis” on the occasion of a donation: Steirisches Urkundenbuch 1, No. 6.

²³⁷ Breibert 2022, 158–163, 165.

²³⁸ Gutjahr 2012, 204; 2015b, 82; 2018, 45.

²³⁹ Gutjahr 2015b, 82, 86. – The high medieval village of Enzelsdorf developed on a considerably lower altitude, at the edge of the Mur valley.

²⁴⁰ This militates against the idea of continuous settlement

conclusions about the population count of communities may at best be drawn from the burial sites, but these, too, have in most cases not been fully excavated. One possible exception is Grötsch. Ch. Gutjahr²⁴¹ assumes that the site was in use during two or three generations (approx. from the last third of the 8th to the first third of the 9th century). Based on a number of 70 burials (54 of which were archaeologically documented),²⁴² it might have been the inhabitants of a single farmstead who buried their dead here.²⁴³ In cases where the excavated part of a settlement is small, the location of the site can still give a hint to its economic focus. An essential question is that of the availability of suitable arable land.²⁴⁴ In addition to soil types, the shape of the terrain and hydrological conditions can be included.²⁴⁵ If there is little or no suitable arable land in the vicinity of a settlement, a different economic focus (e.g. animal husbandry, metal production, etc.) might be considered. In the study area, there are indications for early medieval extraction and processing of bog iron ore.²⁴⁶ At the moment we can only make assumptions about the role of other raw materials; the extraction of salt in Upper Styria at least appears in the written sources.²⁴⁷

relocation due to depleted soils, as stated by: Winckler 2012, 258, 296. – For the concept of shifting settlement locations see also, among others: Schreg 2011, especially 313–314.

²⁴¹ Gutjahr 2012, 11. He speaks of a “Hofgrablege”.

²⁴² Kramer 1981, 206–207; Gutjahr 2012, 10–11. – Approx. 15 graves are likely to have been destroyed before the excavation.

²⁴³ Estimating the number of families/individuals belonging to a farming unit in the Bled region: Pleterski 2013, 159, 164.

²⁴⁴ Not forgetting that a clearing of woodland was usually necessary. Within the research area, there is no good case to believe that arable land survived from Late Antiquity on a large scale. Clearing also has an influence on the soil: Pleterski 2013, 156.

²⁴⁵ Lozić 2021. See also: Lozić, Koch 2024 in this volume.

²⁴⁶ Here, above all Weitendorf (finds of stones with traces of strong heat as possible remains of (smelting) furnaces and limonite concretions; Gutjahr 2011a, 150–151) and the Kirchberg /Deutschfeistritz (see note 14 and subchapter 3.3) should be mentioned. Also at Enzelsdorf, there are indications of iron processing (Gutjahr 2015b, 74; 2020, 69–70; contribution by D. Modl in Gutjahr 2015b, 84), but these appear to be relocated Roman finds. In this context, the indication of early medieval settlement activity in the Eisenerz area, where iron is still mined today, in the pollen profile of Leopoldsteinersee is of interest (see subchapter 3.2.1). Stamped pottery found during an 1931 excavation at Vordernberg near Eisenerz (Schmid 1932, 56–59) has been dated to the 6th/7th centuries by C. Eibner (1992, 26), though a dating to the Late Middle Ages appears to be more likely (private communication Ch. Gutjahr and J. Kraschitzer, see also Gutjahr et al. 2024 in this volume, subchapter 3). On the question of iron production in the Leibnitzer Feld: Lozić, Koch 2024 in this volume.

²⁴⁷ See above, subchapter 3.5.

The pollen profiles available for Styria only permit limited statements for the Early Middle Ages, as a more precise chronological breakdown is often not possible. A general decline in the cultivation of grain compared to Roman times can be seen, but also the cultivation of rye stands out. Archaeobotanical analyses of samples from archaeological excavations have so far been rare in Styria,²⁴⁸ however, the state of research has recently improved.²⁴⁹ Particularly noteworthy is the Enzelsdorf site, where features of the 7th/8th centuries have yielded a wide range of grains, supplemented by legumes. A similar diversity can be found in a rubbish pit from the 10th century at the same site. The cultivation of several different types of grain contributes to food security, as crop failures of a single type can be compensated for, the cultivation of summer and winter grain allows for a better distribution of the work, and the possibility of crop rotation prevents soil fatigue.²⁵⁰ The various species also make different demands on the soil and have different advantages and disadvantages.²⁵¹ Also at Schwanberg, several types of grain could be identified, including oats. The plant remains from Kleinklein include barley and millet and also show the influence of humans on the

²⁴⁸ It is necessary for appropriate sediment samples to be taken during the excavation. An overview of archaeobotanical research on medieval complexes in Austria up to 2013 is given by: Kunst, Popovtschak 2013.

²⁴⁹ Above all, within the scope of the “PaleoDiversity Styria” project and the resulting publication (Črešnar et al. 2019). The earliest analysis presented for an early medieval site in Styria is that of Enzelsdorf: Thanheiser, Walter 2003.

²⁵⁰ Thanheiser, Walter 2003, 185. – It is difficult to say at which time the use of the two- and three-field-system (i. e. crop rotation) began in the south-eastern Alpine region; Slavic populations are sometimes associated with slash-and-burn methods in agriculture, but obviously this does not apply always and everywhere: Pleterski 2008, 119; 2013, 160, 179. With regard to the western Slavs, Brather (2008, 171) speaks of an alternation of cultivation and fallow land, each lasting several years (“Feld-Gras-Wirtschaft”), from the 9th century onwards. He continues that the fallow periods were then shortened in late Slavic times, and that the classical three-field system was not introduced until the Late Middle Ages. In contrast to this, for the area of Bled (Slovenia), the three-field system is assumed as early as the 8th century and may have been deployed alongside occasional slash-and-burn practices: Pleterski 2008, 119. Schreg (2011, 314) emphasises that there are also some serious risks inherent in the three-field system, especially when combined with larger fields, shorter periods of fallow and an increased need of manure, resulting in a decline in biodiversity, soil exhaustion and increasing erosion.

²⁵¹ For example, spelt is considered to be particularly robust; husked grain is easier to store; bread wheat has higher demands on warmth, moisture and soil quality than rye; barley prefers a mild, not too humid climate; millet has little water requirement, but is sensitive to frosts: Colardelle, Verdell 2000; Thanheiser, Walter 2003, 184–185. In general, low grain yields are assumed for the Early Middle Ages.

ecosystem in the form of synanthropic species. Although there are only a few extant analyses, based on rather small amounts of botanical remains, it can be established that for now, barley is a grain that is always present, usually also rye, often millet.²⁵² Most of the identified plant species are to be seen in the context of arable farming and cultivation. Especially with fruit and nuts, an acquisition by collecting wild fruit is also possible, in addition to horticulture.²⁵³ Finds of early medieval agricultural tools are not yet known in Styria.²⁵⁴

Animal remains as evidence of animal husbandry are known from various early medieval sites within the research area, including settlement sites and burials. However, the level of research into this group of materials is very inhomogeneous. Sometimes animal bones are only briefly mentioned, and there are indications that they were in some cases not picked up during excavations in the late 19th and early 20th century or were left in place afterwards.²⁵⁵ An expert archaeozoological analysis has only been undertaken for the finds of a few sites. Here, too, the state of research has recently improved significantly.²⁵⁶ Still, most of the assemblages consist of small amounts. It follows that a list of the identifiable species can be made, but further analyses are hardly possible.²⁵⁷ This applies, for example, to the ratio of the individual species to the total number, from which conclusions could be drawn about the importance of a species for human nutrition.²⁵⁸ Still it can be assumed

²⁵² Rye and millet are also abundant e.g. in archaeobotanical assemblages from the early medieval settlements of Sand and Gars-Thunau (Lower Austria): Kunst, Popovtschak 2013, 118. Further examples of the predominance of rye and millet (alongside wheat) can be found in the early and high medieval Thaya (Dyje) and Notte valleys: Biermann, Macháček 2015, 192–294. See also: Štular, Lozić 2024 in this volume.

²⁵³ Thanheiser, Walter 2003, 186–187. – The sensitive peach tree, for example, needs sufficient care in order to thrive (cf. Kührtreiber 2006, 149). Black mustard (*Brassica nigra*), which was found in the 10th century waste pit at Enzelsdorf, is an important spice plant, of which there were still abundant wild occurrences up to modern times: Thanheiser, Walter 2003, 168. Mushrooms, honey etc. could also be obtained from the forests (cf. Brather 2008, 175–176).

²⁵⁴ In this context, however, a whetstone and a possible millstone fragment from St. Ruprecht an der Raab are worth mentioning: Gutjahr 2018, 44.

²⁵⁵ In addition, some finds are (currently) missing.

²⁵⁶ Črešnar et al. 2019.

²⁵⁷ For the possibilities that arise from abundant data, see among others: Hüster-Plogmann et al. 1999; Saliari, Pucher 2019, 270–271. For uncertainty factors and distorting effects that should be taken into account when interpreting animal bones, see also: Kührtreiber 2006, 146.

²⁵⁸ For a possible composition of a family's/farmstead's livestock, with regard to the early medieval settlement of Pristava: Pleterski 2008, 149. – A. Pleterski also emphasizes the minor importance of meat for the nutrition of ordinary people: Pleterski 2008, 120, 149–150.

that pigs made a significant contribution to the consumption of meat.²⁵⁹ Statements on the distribution of bones within a settlement area that could indicate areas of activity (slaughter, dismembering, cooking, crafts, waste disposal) are currently very limited. There is also a lack of data on the age and sex of animals at slaughter, which could provide information on primary use, breeding and possibly meat deliveries “from outside”.

The farm animal species identified for the study area in the Early Middle Ages include cattle, (domestic) pigs, small ruminants (sheep/goats), chickens and horses. Various types of poultry and pigs have so far been identified in burial contexts. Although nutrition can be assumed to be the primary motivation for most animal husbandry,²⁶⁰ the actual type of use (meat, milk, draught animal, riding, wool, bones, hides and horn as raw material for crafts etc.²⁶¹) can rarely be determined. Finds of spurs and the anthropological observation of Poirier’s facets on skeletons hint at the use of horses as riding animals. Spurs are currently known from at least four early medieval burial sites in Styria.²⁶² Usually it is only a single burial within the site that reveals a member of the local elite in this way.²⁶³ Apart from the burials, there is also a spur from Kirchberg/Deutschfeistritz.²⁶⁴

For the high proportion of pig bones, which is often found in early medieval contexts,²⁶⁵ there is a variety of

²⁵⁹ This is indicated e.g. by the larger pit at the site of Kleinklein. See above (subchapter 3.3).

²⁶⁰ Except possibly in the case of sheep (wool production) and probably in the case of horses. See: Gutjahr 2006, 283–284. – Eating horses is largely tabooed in the Middle Ages, especially in the christianised areas, but – as archaeozoological results show – it seems to have happened now and then. Examples can be found in: Pucher, Schmitzberger 1999, 117; Kühtreiber 2006, 147; 2010, 69; Frosdick 2017, 129–130. S. Brather states that horses were used as riding and draught animals: Brather 2008, 180. M. Schmaedecke (2000, 109–110) on the other hand believes that in the Early Middle Ages, the use of horses was constricted to riding, and that cows or oxen were the only draught animals.

²⁶¹ Further examples: Brather 2008, 182; Winiwarter 2010, 11. – V. Winiwarter speaks of “multifunctional animals”. Some types of use are though difficult to prove archaeologically, e.g. the deliberate spreading of manure as fertiliser on the fields, which became common practice only in the 11th century according to: Colardelle, Verdel 2000.

²⁶² Pürgg Unterburg (1 fragment); Waltersdorf Bleikolmhügel (1); Grötsch (1); Hohenberg (3 fragments).

²⁶³ From this representation as a mounted warrior – or at least a person who rides – the presence of horses can be deduced, assuming that spurs don’t have only symbolic meaning. Cf. Saliari, Pucher 2019, 270 (“Die Anwesenheit von Pferden ist oft mit einer Elite verbunden, die sich diese Tiere und ihre Kosten leisten konnte.”). This is also evident from early medieval written sources.

²⁶⁴ Gutjahr 2006, 26.

²⁶⁵ Benecke 1994, 196; Brather 2008, 176. – But this is not always the case; in Sand (10th century), for example, game predominates, and cattle come first among the domestic ani-

possible explanations. On the one hand, pig farming is linked to a suitable environment (“open” forests as wood pastures).²⁶⁶ R. Frosdick²⁶⁷ emphasises the advantages of the omnivorous pigs, which are easier to feed, for new settlement sites that are only just being established. As an alternate explanation, a high proportion of pigs at some early medieval sites in southern and eastern (central) Europe has been interpreted as an expression of a preference of the Slavic population.²⁶⁸ Indeed, in the Early Middle Ages the proportion of pigs in animal husbandry increased in most regions of Central Europe compared to Roman times, but this is also true, for example, for non-Slavic parts of today’s Germany.²⁶⁹ N. Benecke²⁷⁰ links this phenomenon to a change in agricultural methods, which resulted in less fallow land in agriculture and therefore less pasture for sheep and cattle. For the advancing Middle Ages, pork – especially the consumption of younger animals – is considered typical of an aristocratic diet, along with poultry and fish.²⁷¹

Alpine farming on the eastern Dachstein plateau is proven by early medieval radiocarbon dates from hut locations and various early medieval stray finds. For these sites, seasonal use can be assumed, and they must have had associated farmsteads in the valley, for which archaeological evidence is largely lacking so far. If the animal bones from the site Tiefgrube/Steiniggrube are actually to be dated to the same (early medieval) period, this would prove that cattle and sheep/goats were taken to the mountain pastures.²⁷² This data is relevant for understanding the early medieval settlement development,

mals: Pucher, Schmitzberger 1999, 199; Saliari, Pucher 2019, 266–267.

²⁶⁶ Among others: Rehazek, Marti-Grädel 2010, 63; Kühtreiber 2010, 67–68.

²⁶⁷ Frosdick 2010, 20–21.

²⁶⁸ Toškan 2019. – L. Bartosiewicz notes a sharp drop in the proportion of pigs in early medieval Hungary after the Hungarian conquest: Bartosiewicz 1999, 146.

²⁶⁹ Benecke 1994, 125, 128; Brather 2008, 176. – Conversely, the early medieval settlement of Pristava (Slovenia), which is referred to as Slavic, shows a prevalence of cattle, followed by *caprinae*, and only a small amount of pig bones; the analysis is however based on a rather small assemblage: Toškan, Dirjec 2008.

²⁷⁰ Benecke 1994, 201.

²⁷¹ Among others: Hüster-Plogmann et al. 1999, 230; Kühtreiber 2010, 68–69; Rehazek, Marti-Grädel 2010. – This tendency can already be observed for the zones of higher status at the early medieval centres of Pohansko and Mikulčice (Biermann, Macháček 2015, 294), but most of the data originate from high to late medieval castle sites. But even at sites with a high social status, the pattern cannot be observed equally everywhere. Both the social stratification among the elites and a chronological development within the Middle Ages have to be taken into account. Cf. Pasda 2003, 131–135, 149–150.

²⁷² For a compilation of (albeit undated) animal bones: Mandl 1999.

which apparently not only spread in the river valleys and at their edges, but also (occasionally) used regions at very high altitudes.²⁷³ A few fragments of early medieval pottery cauldrons are also known from the research area,²⁷⁴ a connection with milk processing (specifically cheese production) has been suggested.²⁷⁵ The manufacture of yarn and textiles is documented by spindle whorls and loom weights; sheep farming can be assumed for this purpose. The use of flax in early medieval Styria has not yet been proven. Spindle whorls are extant from several known settlement sites,²⁷⁶ also from the burial site of Pürgg, and there are loom weight fragments from Enzelsdorf and from Kirchberg/Deutschfeistritz.²⁷⁷

Bones of wild animals (as evidence of hunting) are known from several sites and include roe deer, wild boar, red deer and bear, possibly also chamois, brown hare and beaver. Among these sites, Schwanberg and Deutschfeistritz represent potential early castles,²⁷⁸ but wild animals were also identified at Kleinklein, a settlement that can be preliminarily referred to as “rural” based on the small section excavated so far. The proportions of game in the animal bones varied widely in early medieval Europe, but were mostly low.²⁷⁹ Hunting and the consumption of game are often associated with a social elite.²⁸⁰ A central question is whether – or rather,

²⁷³ The fact that there is not more evidence of early medieval activity on alpine pastures in Styria is most likely due to the state of research. J. Horvat gives numerous examples of early medieval sites between 1200 and 1700 m a.s.l. in the Julian and Kamnik-Savinja Alps and the Karawanks. Some of these sites are apparently not (only) related to pasture farming, but (also) to ore mining: Horvat 2019.

²⁷⁴ Gutjahr 2011b; Gutjahr et al. 2018, 25; Tiefengraber 2018a, 254, Fig. 274; 2018b, 118, Pl. 194,3.

²⁷⁵ Pleterski 2008, 54, 115, 141, 149. – For comparative examples, see: Pleterski 2008, 16, Fig. 1.4, 76, Fig. 4.92.

²⁷⁶ Komberg; Weitendorf; St. Ruprecht; Enzelsdorf (2014, pit 1 and 2); Kirchberg/Deutschfeistritz. There are also two spindle whorls from a cave near Gradenberg (near Köflach), which were found together with presumably early medieval pottery, but these are stray finds. For Gradenberg: Modrijan 1963, 56.

²⁷⁷ Gutjahr 2020, 70.

²⁷⁸ In any case, these are sites that are at least partially naturally protected.

²⁷⁹ E.g. in (early) medieval settlements in Moravia (6th to 12th century), only 1–2% game content: Nekuda 1999, 49–50. – Exceptional: An assemblage from the 10th century from the site Sand, in which game accounts for more than 40% according to the number of finds, 54.6% according to the minimum number of individuals: Pucher, Schmitzberger 1999, 111, 120; Felgenhauer-Schmiedt 2008, 332. In addition, a wide range of wild animal species is present at the site. A similarly high proportion of wild animals was found in Gars-Thunau. For general information on hunting, among others: Czeika 1999, 184.

²⁸⁰ For the Early Middle Ages, among others: Montanari 2000b. For the Middle Ages in general: Kühtreiber 2010, 66; Pasda 2003, 24–30, 149–150. – It should be noted that even

from which time on – the right to hunt was limited.²⁸¹ For the Sausal forest, there are regulations regarding bear and wild boar for the late 10th century. Otherwise, it is likely that in areas that were largely covered by forest in the Early Middle Ages, the population’s diet was supplemented by game.²⁸² An arrowhead from the Feistringstein cave north of Aflenz can be considered as possible evidence of hunting.²⁸³ Numerous bear bones were found in the cave. However, the arrowhead is a stray find, and even if it really is late early Medieval, the wounding or killing of one of the bears at this time is not proven.²⁸⁴ Fishing and other ways of exploiting the river landscapes can be assumed but have not yet been verified for early medieval Styria.²⁸⁵

The picture drawn by archaeozoology, archaeobotany and anthropology is complemented by archaeological results, (non-organic) finds and the sparse written sources. Overall, we can state a very extensive use of natural resources, in the form of diversified agriculture,²⁸⁶ intense animal husbandry and hunting, supplemented by crafts (especially textile processing), in some places with a specialised focus on iron or salt production. Forests were not just areas that still had to be cleared, but were also valuable suppliers of food and raw materials as well as, in some cases, protected noble

at castle sites, the proportion of wild bones is rarely more than 5%, and game thus made little contribution to everyday nutrition: Kühtreiber 2010, 69; Rehazek, Marti-Grädel 2010. Evaluation of examples from Central Europe and southern Scandinavia: Benecke 1994, 191.

²⁸¹ On principle, in early medieval times anyone was allowed to hunt: Fichtenau 1981, 18; Bökönyi 1995, 57. Cf. Pasda, 2003, 24. M. Montanari (2000a, 18–19) states (in view of central Europe) that woodland and pastures were abundant and that their use did not lead to any conflicts at least until the 9th century. According to E. Pucher and M. Schmitzberger, hunting for big game was a privilege of the nobility from the High Middle Ages on at the latest: Pucher, Schmitzberger 1999. For Gars-Thunau (finds from the 8th–10th centuries), the relatively frequent occurrence of rare wild animal species (elk, bear, wolf, bison) led to the conclusion that hunting privileges were granted: Czeika 1999, 178.

²⁸² Especially in areas for which no special rules had been determined, and with regard to less prestigious species. See: Saliari, Pucher 2019; Brather 2008, 183.

²⁸³ Friedl 2000.

²⁸⁴ A radiocarbon date from one of the bear bones from the cave points to prehistory, but there are bones from other specimen that have not (yet) been dated: Döppes, Pacher 2005, 31–32.

²⁸⁵ Possibly for taphonomic reasons. See: Saliari, Pucher 2019, 269. – In the settlement of Burgwiese near Ansfelden, for example, there is evidence of a significant amount of fishing for the Early Middle Ages: Trebsche 2008, 217.

²⁸⁶ This kind of mixed economy (“Mischwirtschaft”) is apparently typical of the Early Middle Ages, whereas from the High Middle Ages on, the focus on agriculture/grain dominates: Montanari 2000a, 18; 2000b, 139–140; Comet 2000.

hunting grounds. It can be deduced from the anthropological analyses that despite broad-based agriculture and the additional exploitation of “wild” nature, the danger of malnutrition was immanent at least for parts of the population.²⁸⁷

4. CONCLUSION

The distribution of sites in Styria shows that early medieval settlement attained an advanced spatial coverage. An increased density of sites, especially in the Enns and Mur valleys, reveals settlement chambers and local or regional centres. A wide variety of locations were used for settlement, whereas sites on the edges of low terraces that rise only a few metres above the valley floor are rare. Settlement sites are likely to be found on higher terraces, plateaus and slopes. There are particularly numerous sites in a significantly elevated position, on hilltops and crags. This prevalence can be explained by a preference for naturally protected locations, but also by the effort to occupy strategic positions, often at the junctions of traffic routes. In several cases, the use of such places started as early as around 800 AD. However, actual features belonging to early medieval fortifications have so far rarely been

documented. This is partly due to the building of high/late medieval castles, which often appear as successors to the early medieval sites at high altitude. It also must be taken into account that settlement sites at low altitudes are often affected by destruction (building, agriculture, roads). In some cases, the associated burial sites are known, which indicate that the settlements in the plains and at the edge of valleys had a larger share in the overall picture than could be proven archaeologically. The fact that prehistoric and Roman sites were often re-occupied by early medieval settlements can partly be explained by the unchanged “favourable locations” and by an orientation towards the traffic routes, which remained similar over time, especially in Upper Styria, where they are mainly determined by the Alps and large river valleys. Furthermore, in some cases an intentional re-occupation of sites can be assumed. Statements about the internal structure of early medieval farmsteads and settlements are currently hardly possible due to the small size of the excavated sections. The archaeological data – supplemented by the results of archaeozoological, archaeobotanical and anthropological investigations – in any case shows diversified land use by means of agriculture, animal husbandry, hunting and other uses of natural resources. In order to be able to assess the location of a site in its entirety, it seems necessary to take into account a wide variety of parameters from the terrain to the (relative) altitude and proximity to rivers, the settlement history of the area, but also the landscape with its resources and the relations between settlements.

²⁸⁷ Burial sites Graz/Alte Universität and Peggau. See subchapter 3.4. For the precarious nutritional conditions in the Early Middle Ages, among others: Montanari 2000a.

Abbreviations:

ANNALES ALTAHENSIS MAIORES = VON OEFELE, E. 1891, *Annales Althenses Maiores*, Monumenta Germaniae Historica. – Scriptores Rerum Germanicarum in usum scholarum 4, Hannover.

MGH DD LD = KEHR, P. 1934, *Die Urkunden Ludwigs des Deutschen, Karlmanns und Ludwigs des Jüngeren*. – Die Urkunden der Deutschen Karolinger 1, Berlin.

MGH DD LK = SCHIEFFER, Th. 1960, *Die Urkunden Zwentibolds und Ludwigs des Kindes*. – Die Urkunden der deutschen Karolinger 4, Berlin.

MGH DD OI = GESELLSCHAFT FÜR ÄLTERE DEUTSCHE GESCHICHTSKUNDE (ed.) 1879–1884, *Die Urkunden Konrad I. Heinrich I. und Otto I.* – Die Urkunden der deutschen Könige und Kaiser 1, Hannover.

MGH DD OII = GESELLSCHAFT FÜR ÄLTERE DEUTSCHE GESCHICHTSKUNDE (ed.) 1888, *Die Urkunden Otto II.* – Die Urkunden der deutschen Könige und Kaiser 2/1, Hannover.

Steirisches Urkundenbuch 1 = ZAHN, J. (ed.) 1875, *Urkundenbuch des Herzogthums Steiermark 1*. 798–1192, Graz.

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