HUNGARIAN ARCHAEOLOGY
E-JOURNAL • 2022 WINTER www.hungarianarchaeology.hu

RIVER, LANDSCAPE AND SETTLEMENT IN THE MIDDLE AGES: STUDIES ON LANDSCAPE ARCHAEOLOGY, ENVIRONMENT HISTORY, AND SITE DYNAMICS IN THE KÖRÖS REGION

Csilla Zatykó[1] – Gábor Mesterházy[2] – Ákos Pető[3] – Dénes Saláta[3] – Máté Stibrányi[2]
Hungarian Archaeology Vol. 11. (2022) Issue 4, pp. 57–65. https://doi.org/10.36338/ha.2022.4.5

The development of interdependence between human communities and natural environment is a global strategic issue determining the lives of coming generations. The planned research intends to contribute to a deeper understanding of this dynamic process by reconstructing the environmental image of three study areas along the Körös River prior to river regulations or in the Middle Ages, and by examining the communities' settlements and lifestyles adapting to or exploiting the landscape around them. The planned research answers these questions by interconnecting several disciplines and by renewing twenty- to thirty-year old archaeological datasets with state-of-the-art methods of archaeological prospection and field survey analysis.

Keywords: settlement history, environmental history, non-destructive research, Körös Region, Middle Ages

INTRODUCTION

In addition to modelling initiatives primarily from the natural sciences, social sciences also have an important role to play in interpreting the social effects of natural processes, as well as the diverse anthropogenic responses to environmental changes and their expected impact. Accordingly, we wish to dedicate our project proposed here to study the dynamic relationships of medieval settlements, communities, and the surrounding landscape through the exploration of three selected wetlands along the Körös River, namely Gyepes-ér (Gyepes Creek; vicinity of Kötegyán), Korhány-ér (Korhány Creek; vicinity of Geszt; both in Békés County), and Köröszug (vicinity of Szelevény in Jász-Nagykun-Szolnok County) (*Fig.1*). The programme relies on historical sources, archaeological data collected in the 1980s and 1990s in the framework of the Archaeological Topography of Hungary (*Magyarország Régészeti Topográfiája*, hereinafter: MRT), complemented and interpreted by non-destructive field surveys, remote sensing data, site dynamic modelling, and analyses in the fields of landscape history and hydrology. The other prime objective of the research is related to methodology. We intend to assess the possibilities and limitations of integrating MRT datasets compiled decades ago into modern landscape archaeological research.

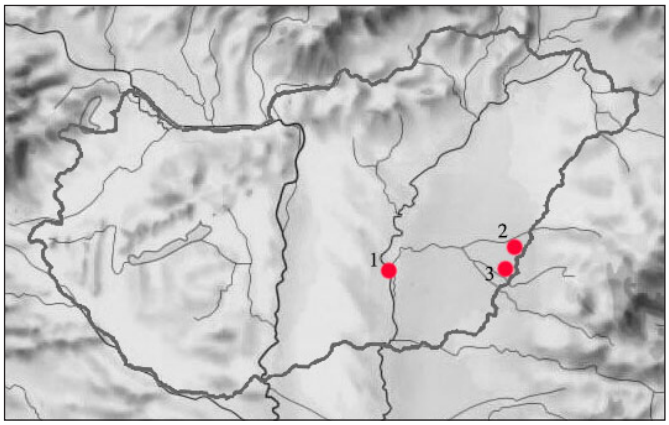

Fig. 1. Study areas of the research: 1. Köröszug, 2. Korhány-ér, 3. Gyepes-ér

RESEARCH QUESTIONS AND METHODS

The programme addresses both thematic and methodological questions related to the investigated test areas, combining surveys with diverse methods. Prior to river regulation works, the wetland areas along rivers

[1] ELKH Research Centre for the Humanities, Archaeological Institute, e-mail: zatyko.csilla@abtk.hu
[2] Hungarian National Museum, National Institute of Archaeology, e-mail: mesterhazy.gabor@mnm.hu, stibranyi.mate@mnm.hu
[3] Hungarian University of Agriculture and Life Sciences, Institute for Wildlife Management and Nature Conservation, Department of Nature Conservation and Environmental Management, e-mail: peto.akos@uni-mate.hu, salata.denes@uni-mate.hu

were extensive, environmentally sensitive territories of social and economic life in Hungary. An important aspect of the selection of these sites is that all the test areas are wetlands of the Körös River, but they can be characterised with different geographical conditions, and thus they allow us to compare the settlement strategies of similar yet different types of landscapes and their transformation.

Another important aspect was that as part of the preparatory work on the MRT volumes, systematic archaeological topographic surveys were carried out there. Consequently, a large amount of data on sites belonging to various periods and settlement types are available to us. These data were gathered with uniform methodology representing the highest scientific standards of the time, which nevertheless need revision today.

The core question of our project is how medieval communities adapted their settlement patterns and subsistence strategies to the specific waterlogged landscape and its changes. As it is a matter of key importance to understand the landscape of the period as well as possible, we need to produce a medieval environmental and dynamic hydrographic reconstruction in the area of the investigated wetlands not only on the basis of archaeological evidence but also with landscape historical geomorphological analyses. The main aim of the landscape historical analysis (e.g., trajectory analysis, land use intensity tracking) is to reconstruct the natural and human-induced changes that occurred in the environment through time, using data from sedimentological analyses, early historical maps, written sources, and remote sensing techniques (aerial photos, satellite and LiDAR surveys) (Kiss et al. 2017; Niebieszczański et al. 2019; Pető et al. 2015; 2019; Saláta 2011; Saláta et al. 2013; 2014, Uj et al. 2015). Based on the terrain and geomorphological environment reconstructed from the system of past riverbeds and natural hydrographic conditions, dynamic rainfall and flood hydrological models could be prepared in the studied areas.

When studying the relationship between man and landscape in the medieval period, another pillar of research is to understand the communities and their settlements. How did the land use strategies of medieval communities of wetland areas change, how could people utilize their specific natural environment? The identification, measurement, and instrumental tests of landscape archaeological features related to water management – such as mills, dams, lakes, channels, and bridges – also offer valuable data.

Our key question is how these communities living in the investigated areas reacted to environmental and landscape changes during the medieval period, such as changes in the climate, hydrography, or vegetation. Based on the data of archaeological field surveys of MRT in other parts of the Great Hungarian Plain, in recent years researchers have suggested that the settlements moved from the waterlogged floodplains to elevated habitation areas with the coming of a wetter period during the Little Ice Age, around the fourteenth century (Pinke et al. 2017). Nevertheless, research on the Drava floodplain did not clearly reveal the same tendency. They rather reflected the adaptation of communities by employing new settlement and subsistence strategies adapted to the changed environment (Kovács & Zatykó 2016; Zatykó 2017). In our research area, we wish to put a great emphasis on the complex process of settlement transition from the Árpádian Age to the Late Medieval period, as well as its climatic, environmental, farming, and (estate and political) historical implications. To trace the changes in the settlement network over the centuries, site dynamics modelling will be carried out (Mesterházy 2021). In addition to observing changes in the settlement network and settlement pattern during the Middle Ages, we also seek to observe the phenomena of settlement structure and to conduct a precise survey of the inner structure of individual settlements. By implementing non-destructive research methods (GPS-based field surveys, ground penetrating radar, magnetometer and drone surveys, metal detection) carried out in core settlement areas of known abandoned medieval villages, we are to explore the sites of the churches, street systems, and central and marginal areas of settlements. Adopting a landscape archaeological approach, we consider the landscape itself as a source. Accordingly, our investigations also include traces of the landscape-forming activities of previous centuries, still visible in the Medieval Period. It is an important question how the remains of landscape features of earlier centuries, such as the Csörsz-árok ("Csörsz Ditch") or the Ördög-árok ("Devil's Dyke") and kurgans with modified function influence the landscape perception of medieval people.

A principal methodological objective of the project is to integrate the grey (still unpublished) data and the findings of the three test areas gathered in the '90s into the Hungarian settlement and environmental

archaeological research. At the same time, it also aims to update their methodologies, and complement them with data focusing on specific research questions. It is also important for us to know how and with what relevance and restrictions the earlier MRT data can be used today, either from the aspect of scientific research, or during regional planning and heritage protection work.

PRELIMINARY RESULTS

The first research phase was initiated in Geszt (Békés County) in the Korhány-ér sample area. Based on data of available LiDAR images, documentary sources, and early historical maps, we carried out a field survey and a geophysical (magnetometer and GPR) survey at three sites previously identified as medieval villages during the MRT works in the Sarkad district: the former villages of Gyarak (Geszt-village of Mezőgyarak, id.: 867), Vátyon (Geszt-village of Vátyon, id.: 837) and Begécs (Geszt-Begécs-dűlő III, id.: 772) (*Fig. 2*). Being part of the medieval Bihar County, the settlement history of this region is characterised by the frequent presence of settlements of the lower nobility (Jakó 1940). Geszt, along with the villages selected for closer investigation, was also owned by members of the lower nobility, and it had inhabitants both of noble and peasant status. The origins of Geszt, Begécs, and Gyarak are not exactly known, but they were already part of the 13th-century settlement network with inhabitants from the lower nobility. Vátyon can most probably be considered one of the lower noble villages settled around the 13th–14th centuries (Jakó 1940). The history of the noble settlements is closely interwowen with the period in focus of the project: the settlement, social, and economic transformations of the 13th and 14th centuries. As a consequence of the disintegration of the royal and castle estates, the services of servicing people and *castrenses* usually

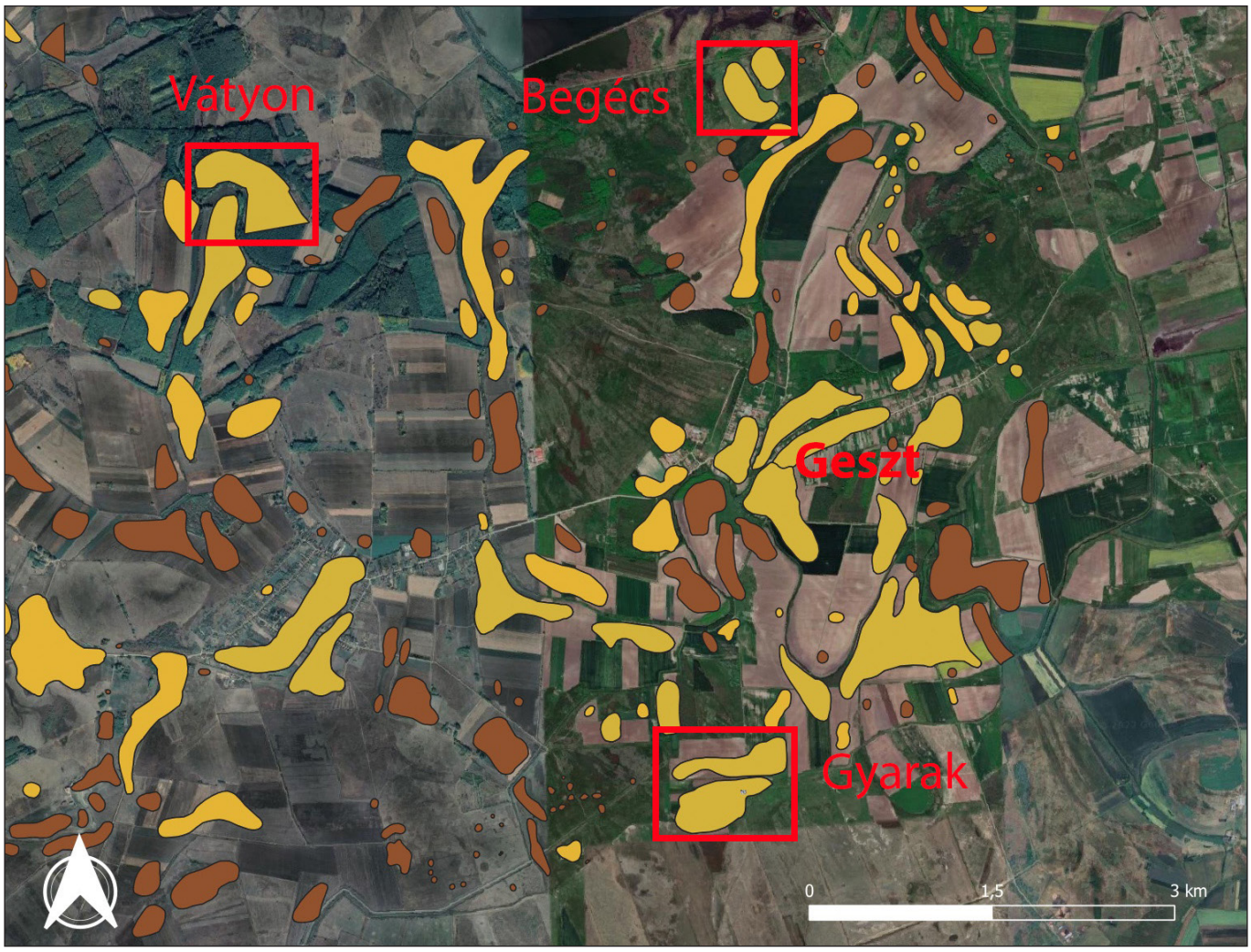

Fig. 2. Vátyon, Begécs and Gyarak on the site map of Korhány-ér study area

turned into agricultural service and, from a legal aspect, they got dissolved into the layer of serfs. However, some of their groups aspired to gain the privileges of the nobility and received smaller estates as it may have happened to the lower noble inhabitants of the now-deserted villages around Geszt. During the fall of 2022, field-walking and a geophysical (magnetometer and GPR) survey, as well as drone surveys were carried out in the villages of Begécs, Vátyon, and Gyarak. To assess the surface scatter of finds, the field survey was performed in 25-m transects, and the coordinates of the artefacts were recorded with a GPS device and collected in 25×25 m units. Magnetometer surveys conducted at the sites were primarily aimed at non-destructive examination of the settlement structure, while the GPR surveys helped to gain a more detailed understanding of the built heritage, such as churches and house groups (Stibrányi & Klembala 2021).

Vátyon

The site of the village of Vátyon, first appearing in documents in the 14th century and becoming abandoned during the Ottoman period, is located directly on the eastern bank of the Holt-Korhány-ér, along the curve

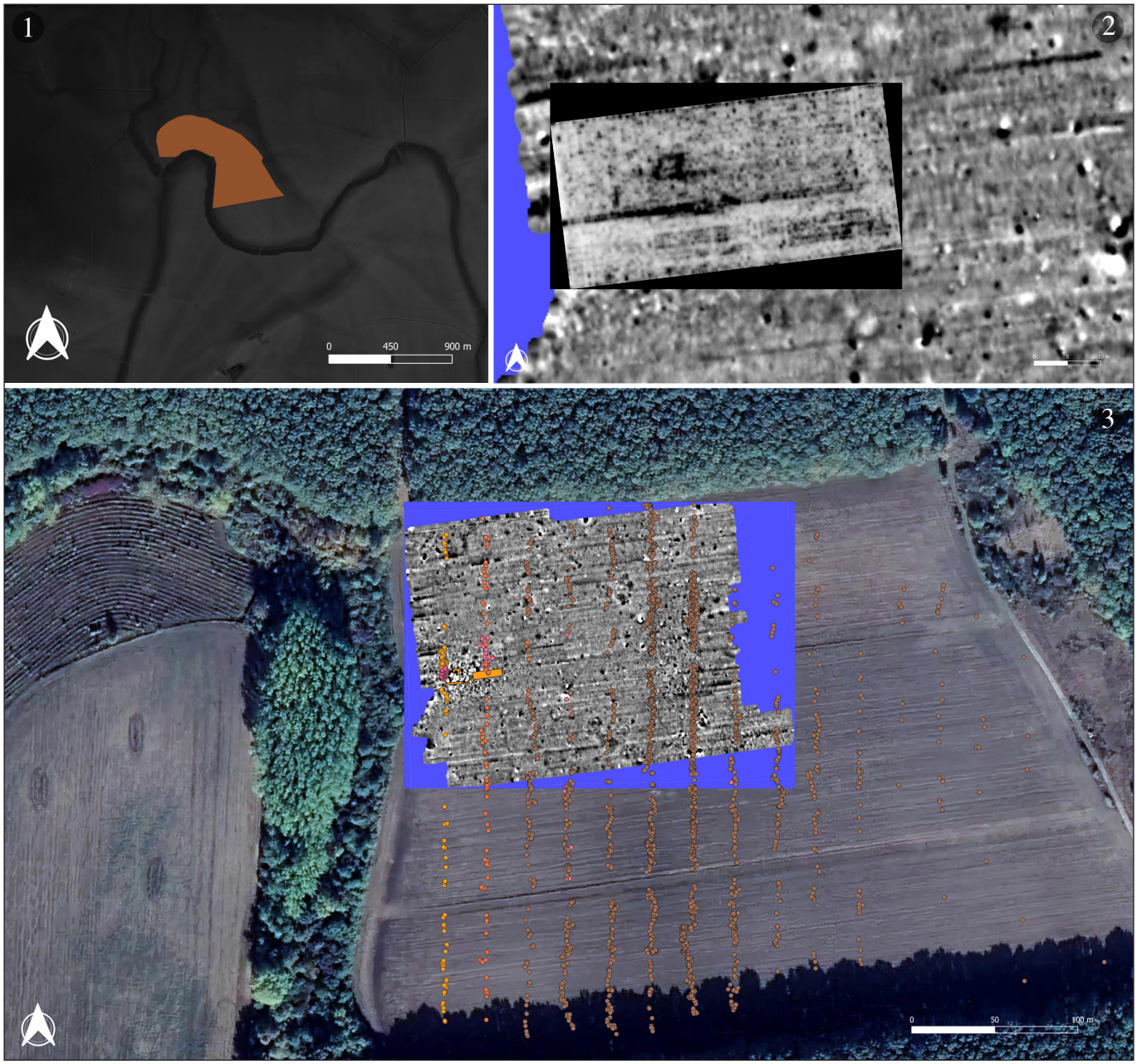

Fig. 3. Vátyon: 1. the site on the LiDAR image, 2. GPR survey of the church site, 3. the scatter of finds and features yielded by magnetometer survey

of the watercourse. A significant part of the site is covered by an oak forest, while at the cultivated central part of the one-time settlement, medieval pottery sherds, traces of a church site and a house group were recorded in the '90s (Szatmári 2005, 152). The field survey performed in October 2022 showed dense scat-

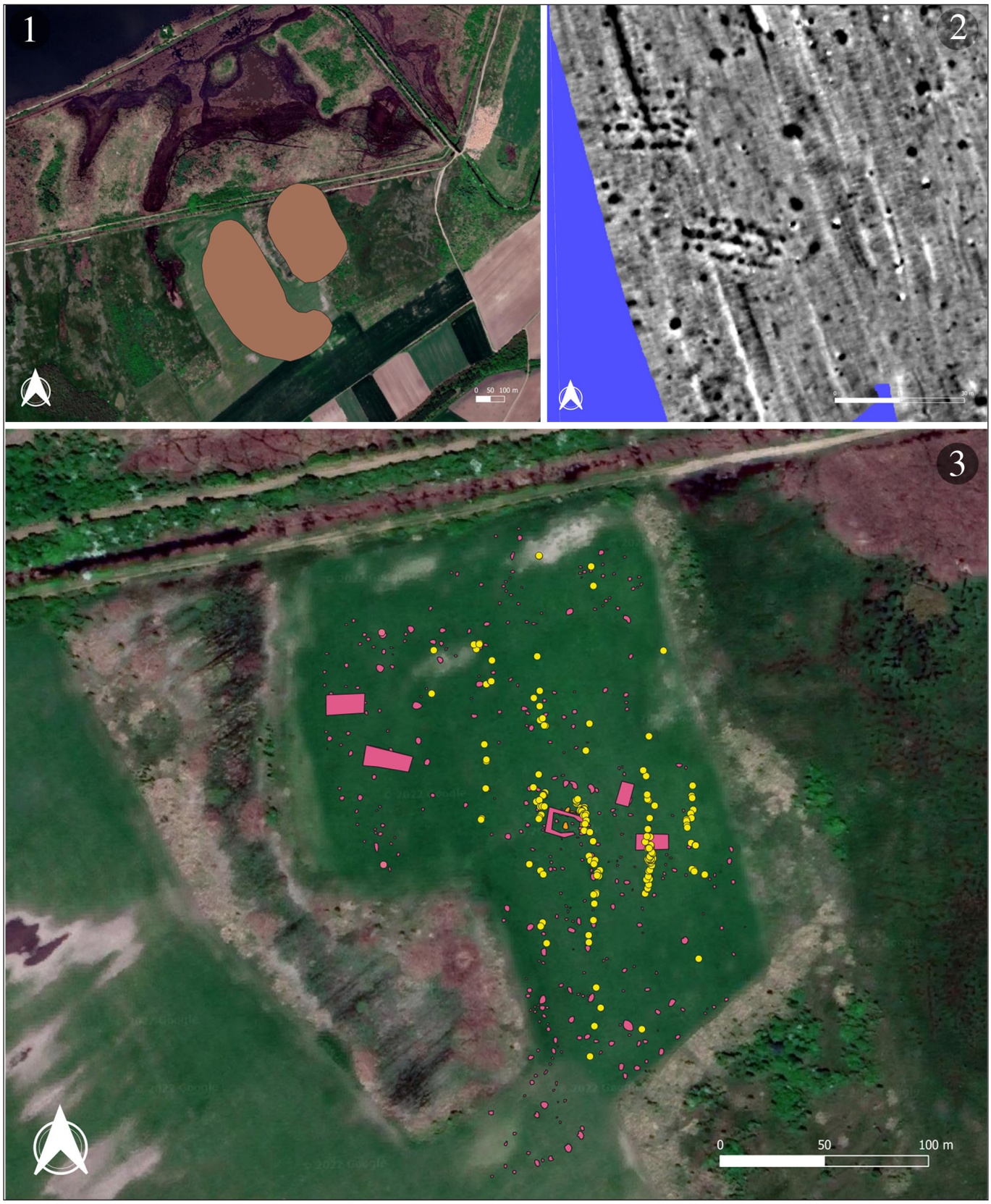

Fig. 4. Begécs: 1. location of the site, 2. the scatter of finds and features yielded by magnetometer survey, 3. post-framed buildings on the magnetometer survey

ter of artefacts along the bank of the Holt-Korhány-ér and to the east of it in a north-south oriented strip. An area of 30,780 m² was surveyed with magnetometer, which indicated built objects on the presumed church site and along the strip of dense scatter of artefacts. The GPR measurement of the church site identified the south wall, the southern section of the east wall of the sanctuary, and the walls of the sacristy on the north side, as well as a currently unknown small wall section in the central part of the nave. According

Fig. 5. Gyarak: 1. location of the site, 2. find distribution map, 3. GPR measurement of the church site

to the available data, a church with an area of approximately 5×15–16 m can be reconstructed there, most probably a multi-period building (*Fig. 3*). The remaining wall sections confirm the extensive destruction of the church. After the abandonment of the settlement, a significant part of the earlier church walls were destroyed, and the bricks were perhaps used for the construction of other buildings.

Begécs

The village of Begécs has been mentioned in written sources as early as 1271 (ÁÚO VIII. 374) and became abandoned during the Ottoman period. The archaeological site identified as the settlement is located on the southern shore of Begécsi-tavak (Begécsi Lakes), established in the early 20th century, between the Pánt-ér (Pánt Creek) and the Korhány-csatorna (Korhány Channel). In its area, researchers of the MRT project observed Árpádian Age and Late Medieval pottery sherds as well as traces of houses on a slightly elevated ridge in the '90s. A field survey conducted in 2022 indicated higher density of finds in the eastern part of the site, while the magnetometer survey revealed intensive settlement features on two parallel ridges in the area. Anomalies interpreted as three buildings appeared at the central, highest point of the eastern ridge, while two post buildings, marked by three foundation trenches with postholes and measuring approximately 20×9 m, were clearly recognized on the western ridge. At this stage of our research, given the features of the settlement structure and the characteristics of the buildings, it can be presumed that in the case of Begécs, our investigations were carried out in the outskirts of the former village, while the centre of the settlement is located in the area of the present-day Begécsi-tavak (*Fig. 4*).

Gyarak

The village of Gyarak or Mezőgyarak, first mentioned in the Váradi regestrum (1214, 1219, 1220) (Karácsonyi & Borovszky 1903, 184, 221, 243) and then continuously appearing in written sources until the 16th century, was not repopulated after the devastation in the Ottoman period. The site of the settlement can be found about 2.8 km south of Geszt, on the southern side of the Szépvíz-vízér-dűlő (Szépvíz-Creek-field), directly along the Hungarian-Romanian border. During the field surveys of the MRT, a church site with brick fragments and a human bone alongside a nearby kurgan was observed, and a large number of Late Medieval pottery sherds were found in the area in addition to a small number of Árpádian Age artefacts (Szatmári 2005, 118, 193). Although due to vegetation we had limited possibilities for field-walking, the scatter of finds still characterizes the extent and the intensive parts of the former settlement. The medieval village is divided in two by a longitudinal depression, probably a former watercourse; the chronological and structural relationship between the two settlement parts will be explored in the next years of the project. The magnetometer survey revealed the site of the church as well as the traces of the now ploughed-out kurgan some 75 m away. The GPR measurement of the church yielded sections of walls at a depth of 40–50 cm below surface, with significantly damaged remains. On the north side of the church, remnants of the sacristy with an area of approximately 2.5×2.5 m were observed, while a wall section 9–10 m to the south indicates the width of the one-time church building. The nave must have been at least 12 m long (*Fig. 5*). The results obtained so far at the village site of Gyarak confirm that further investigations can contribute to a better understanding of the settlement structure and chronology as well as to the problem of centre and periphery.

By the end of the project, we plan to prepare a volume discussing the dynamic landscape and settlement history of the three study areas representing wetlands of the Great Hungarian Plain, which will be easy to integrate into the broader settlement and environmental historical model of the medieval Carpathian Basin. Notable results are expected from the complex landscape archaeological approach not only in the subject of water management and settlement strategies before river regulations but of climate history, historical ecology, and traditional land management, too. The testing and supplementing of MRT data collection and its results with modern, non-destructive site diagnostic methods will allow us to model the possibilities of interpreting and using earlier topographic data sets, which will be applicable in the future for planning procedures, heritage conservation tasks, and scientific research.

ACKNOWLEDGEMENTS

The research project (NKFIH-OTKA K138353) is funded by the National Research, Development and Innovation Office. We express our thanks to Adrián Berta, *Ákos* Ekrik, Gusztáv Jakab, Zsombor Klembala, Bianka Gina Kovács, László Nagy, Mihály Pethe, and Gábor Serlegi.

References

ÁÚO = Wenzel, G. (1870). *Árpádkori új okmánytár.* Codex diplomaticus Arpadianus continuatus. VIII. 1261–1272. Pest.

Jakó Zs. (1940). *Bihar megye a török pusztítás előtt.* Budapest, 1940.

Karácsonyi J. & Borovszky S. (1903). *Az időrendbe szedett Váradi tüzesvaspróba-lajstrom*. Budapest.

Kiss Á., Bóka G., Saláta D. & Pető Á. (2017). Sarkad település és környezetének földhasználat-történeti vizsgálata. *Tájökológiai Lapok* 15:1, 9–19.

Kovács Gy. & Zatykó Cs. (eds.) (2016). "*per sylvam et per lacus nimios*" *The Medieval and Ottoman Period in Southern Transdanubia, Southwest Hungary: the Contribution of the Natural Sciences*. Budapest.

Mesterházy G. (2021). *Régészeti célú térbeli elemzések és térinformatikai modellezések Polgár térségében az őskortól a középkorig*. Doktori disszertáció kézirata, Budapest: ELTE.

Niebieszczański, J., Jaeger M., Pető, Á., Hildebrandt–Radke, I., Kulcsár G., Staniuk, R., Taylor, N. & Czebreszuk, J. (2019). Revealing the internal organization of a Middle Bronze Age fortified settlement in Kakucs-Turján through geoarchaeological means: magnetometric survey and sedimentological verification of a housing structure. *Journal of Archaeological Science: Reports* 25, 409–419. https://doi.org/10.1016/j.jasrep.2019.04.014.

Pető Á., Serlegi G., Krausz E., Jaeger, M. & Kulcsár G. (2015). Régészeti talajtani megfigyelések „Kakucs–Turján mögött" bronzkori lelőhelyen I. *Agrokémia és Talajtan* 64:1, 219–237. https://doi.org/10.1556/0088.2015.64.1.16.

Pető Á., Niebieszczański, J., Serlegi G., Jaeger, M. & Kulcsár G. (2019). The site mapping of Kakucs-Turján by the means of horizontal and vertical proxies: combining field and basic laboratory methods of geoarchaeology and archaeological prospection. *Journal of Archaeological Science: Reports* 27: 101999. https://doi.org/10.1016/j.jasrep.2019.101999.

Pinke Zs., Ferenczi L., F. Romhányi B., Gyulai F., Laszlovszky J., Mravcsik Z., Pósa P. & Gábris Gy. (2017). Zonal assessment of environmental driven settlement abandonment in the medieval Trans-Tisza region, Central Europe. *Quaternary Science Review* 157, 98–113.

Saláta D. (2011). Tájváltozás vizsgálata a Körös-Maros Nemzeti Park három kis-sárréti területrészén: Kisgyanté, Kisvátyon és Sző-rét. *Crisicum* 7, 129–151.

Saláta D., Pető Á., Kenéz Á., Geiger B., Horváth S. & Malatinszky Á. (2013). Természettudományos módszerek alkalmazása tájtörténeti kutatásokban – Kisgombosi esettanulmány. *Tájökológiai Lapok* 11:1, 67–88.

Saláta D., Krausz E., Reményi L., Kenéz Á. & Pető Á. (2014). Combining historical land-use and geoarchaeological evidence to support archaeological site detection. *Agrokémia és Talajtan* 63:1, 99–108.

Stibrányi M. & Klembala, Zs. (in press). „… és sötétség borítja még a nevét is" Elpusztult középkori templomok régészeti geofizikai kutatása Fejér megyében. *Alba Regia* 49 (2021), 23–39.

Szatmári I. (2005). *Békés megye középkori templomai*. Békéscsaba.

Uj B., Nagy A., Saláta D., Laborczi A., Malatinszky Á., Bakó G., Danyik T., Tóth A., S. Falusi E., Gyuricza Cs., Póti P. & Penksza K. (2015). Wetland habitats of the Kis-Sárrét 1860–2008 (Körös-Maros National Park, Hungary). *Journal of Maps* 10, 211–221.

Zatykó Cs. (2017). Középkori településszerkezet és tájhasználat a Berzence környéki terepbejárások tükrében. In: Benkő E., Bondár M. & Kolláth Á. (szerk.). *Magyarország Régészeti Topográfiája: Múlt – Jelen – Jövő.* Budapest: MTA BTK Régészeti Intézet, 563–571.