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All Round: Workflow for the Identification of Neolithic Enclosure Sites of the Sopot Culture in Eastern Slavonia (Croatia)

Rajna Šošić-Klindžić [a], Cornelius Meyer [b], Peter Milo [c], Tomas Tencer [c], Hrvoje Kalafatić [d] and Bartul Šiljeg [d]

Highlights:

- *Several Sopot culture enclosure sites were identified.*
- *Conclusions regarding spatial and temporal settlement dynamics were made based on the data.*

Keywords: aerial archaeology, Croatia, enclosures, magnetic prospection, Neolithic.

Many sites of the Neolithic Sopot culture (about 5,000 BC) have been identified in Slavonia (eastern Croatia) over the last 30 years. A high density of these sites is found in the northern part of the Đakovo plain, north of the town of Đakovo in the Osijek-Baranja county (Fig. 1). The sites are in various stages of investigation. At the sites of Gorjani–Topole and Gorjani–Kremenjača, Preslatinci–Ugljara, and Tomašanci–Dubrava i Gradina, aerial imagery was studied to observe structures (Šiljeg & Kalafatić, 2016; Kalafatić & Šiljeg, 2018); a circular enclosure was identified at Gorjani–Topole (Fig. 2). Ground surveys were carried out in order to establish chronology and a large-scale magnetic prospection was conducted with a multi-probe fluxgate gradiometer. The results of earlier research, as well as the newly observed features at selected sites were reevaluated, and new patterns were identified using an integrative approach.

Regular research on the Sopot culture sites started in the 1970s. It was postulated at the time that the oval-shaped settlements enclosed by palisades and ditches, located in the lowlands of the rivers Bosut (such as the eponym site of Sopot), Vuka, and Drava, were typical of the third stage of Sopot culture in eastern Croatia (Dimitrijević, 1979). In more recent research, the ditches surrounding the settlements were found to be present also in a very early settlement stage dated to the earlier phases of the Sopot culture (Krznarić Škrivanko, 2003). New insights into Neolithic settlement patterns in eastern Croatia confirm the presence of ditches in emerging settlements at Sopot-Culture sites.

The workflow currently applied in research on the sites of Gorjani–Kremenjača and Gorjani–Topole, Preslatinci–Ugljara and Tomašanci–Dubrava i Gradina is presented in this paper. It comprises an analysis of available aerial images and information from ground-based surveys coupled with new high-resolution aerial photography from drones and the results of large-scale magnetic surveys. The high efficiency of magnetic surveys using ATV and hand-driven

[a] *Corresponding author, Odsjek za arheologiju, Filozofski fakultet Sveučilišta u Zagrebu, Ivana Lučića 3, 10000 Zagreb, Croatia*
[b] *cmprospection, Prenzlauer Allee 181, 10405 Berlin, Germany*
[c] *Department of Archaeology and Museology, Masaryk University, Arna Nováka 1, 60200 Brno, Czech Republic*
[d] *Institut za arheologiju, Ulica Ljudevita Gaja 32, 10000 Zagreb, Croatia*

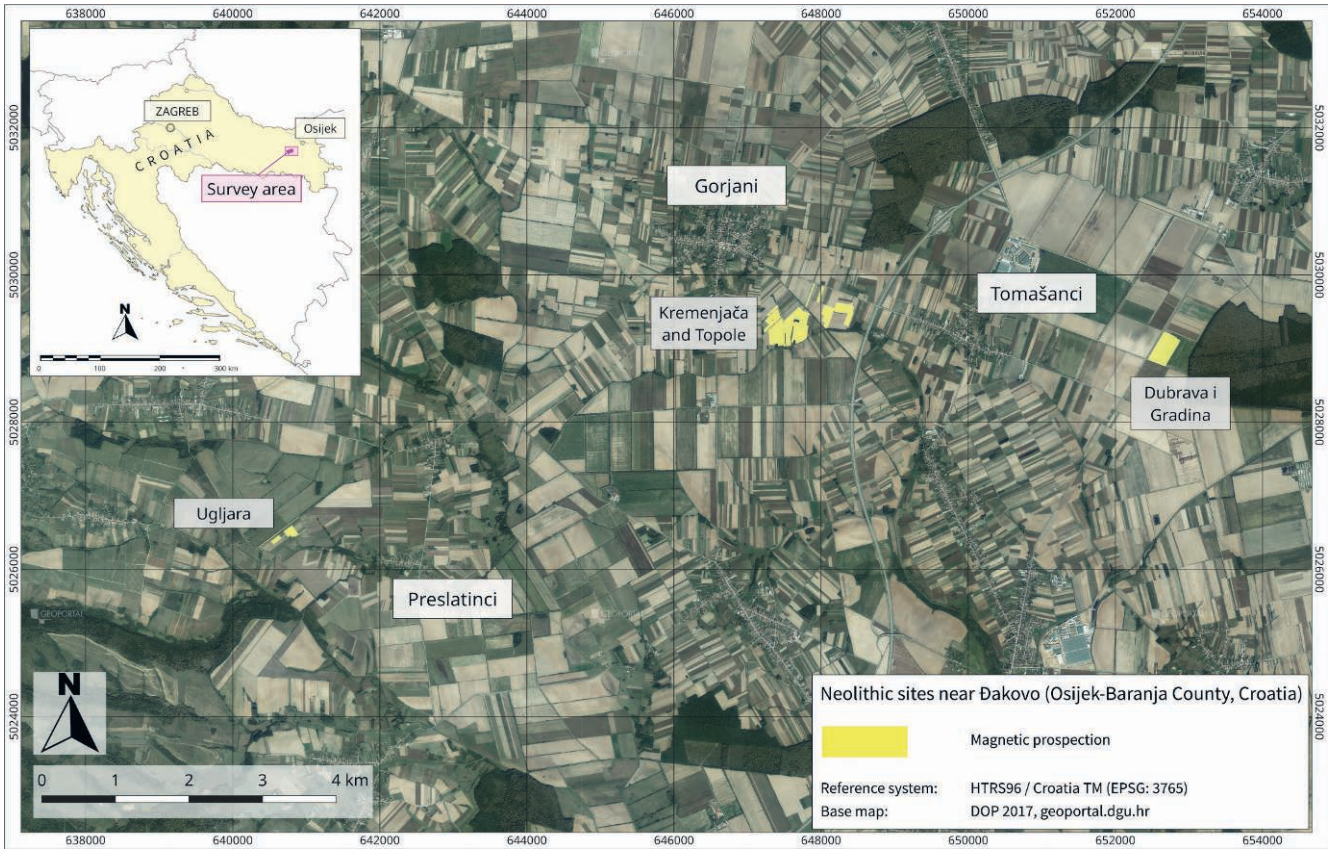

Figure 1. Overview map of the investigated Neolithic sites.

Figure 2. Oblique aerial image of the site of Gorjani–Topole with enclosure feature (photo H. Kalafatić, 10 June, 2015).

arrays turned out to be necessary because the identified sites of Sopot culture are of a much larger size and of a much more complex structure than previously thought. Earlier interpretations, which can now be reevaluated, held that a complex of multi-phased settlements consisting of various circular enclosures was located at the sites of Kremenjača and Topole near Gorjani. The inner Topole enclosure was recognised in the aerial imagery, but the structures of Kremenjača could be detected only by means of magnetic prospection and surface surveys, since aerial images of different origin and date did not even hint at the presence of these features (Fig. 3). The Kremenjača site is surrounded by an irregularly shaped triple ditch with a maximum external diameter of 500 m; taking this into consideration, the extent of the Kremenjača –Topole complex is now estimated at about 1,000 m by 500 m. Magnetic mapping of the site of Tomašanci–Dubrava i Gradina revealed at least two circular structures with diameters of about 200 m, as well as densely occupied areas, associated with settlements. The magnetic data for the site of Prelatinci–Ugljara is incomplete due to rough surface conditions at the time of the survey; however, interpreted in combination with aerial imagery, it reveals the existence of two circular enclosure sites with diameters between 150 m and 200 m. Moreover, settlement structures could be identified, based on the data, both inside and outside of the enclosure.

Settlement characteristics observed in the archaeological study appear to be present throughout the area of present-day Slavonia no later than 5,000 cal. BC. Pottery shapes and decoration are also very similar, with variants, throughout the region, while the size, organization and material culture of the settlements indicate longevity and social complexity. Moreover, it is very likely that the Sopot Culture emerged more or less at the same time all over the area of its known distribution. Settlement longevity is not an uncommon occurrence. Most settlements in present-day Slavonia have existed in the same or similar location for the past 500 years (e.g. Preslatinci, Satnica, Tomašanci, Gorjani (Marković,

Figure 3. Magnetic data from the sites of Gorjani–Kremenjača and Gorjani–Topole.

1976)). Ceramics from a time a hundred years ago, found during the ground surveys, occur together with modern porcelain, glass or plastic. Assuming that this situation could be extrapolated to Sopot culture, meaning that finds in the archaeological record could be assigned to a longer period than their actual use, then material from the last phase in the long life of a Neolithic settlement could have easily included artifacts from earlier occupation phases (Šošić Klindžić *et al.*, 201; Kalafatić *et al.*, 2020).

References

Kalafatić, H., Šiljeg, B., 2018. Twin Circles: new insights in the Neolithic settlement pattern. *Prilozi Instituta za arheologiju u Zagrebu*, 35: 71-111.

Kalafatić, H., Šošić Klindžić, R., Šiljeg, B., 2020. Being Enclosed as a Lifestyle: Complex Neolithic Settlements of Eastern Croatia Re-Evaluated through Aerial and Magnetic Survey. *Geosciences*. DOI: https://doi.org/10.3390/geosciences10100384.

Krznarić Škrivanko, M., 2003. Neki naseobinski pokazatelji na eponimnom lokalitetu sopotske culture. *Opvscula Archaeologica*, 27: 63-9.

Marković, M., 1976. Đakovo i Đakovština. *Zbornik Đakovštine*, 1: 147-347.

Šiljeg, B., Kalafatić, H., 2016. Zračno rekognosciranje, osječko baranjska županija 2015. godine. *Annales Instituti Archaeologici*, 12: 1-2.

Šošić Klindžić, R., Kalafatić, H., Šiljeg, B., Hršak, T., 2019. Circles and ceramics through the centuries: Characteristics of Neolithic Sopot culture settlements. *Prilozi Instituta za arheologiju u Zagrebu*: 41-48. DOI: https://doi.org/10.33254/piaz.36.2.