









Project Gallery

The archaeological record of the Qaraçay River Basin along the northern piedmont of the Lesser Caucasus

Andrea Ricci^{1,2,*} , Stefania Fiori^{1,2} , Muzzafer Huseynov³ ,
Bakhtiyar Jalilov³ , Jutta Kneisel^{1,2}  & Hendrik Raese^{1,2} 

¹ Institute of Pre- and Protohistoric Archaeology, Kiel University, Germany

² Cluster of Excellence ROOTS, Kiel University, Germany

³ Institute of Archaeology and Anthropology, Azerbaijan National Academy of Science, Baku, Azerbaijan

* Author for correspondence ✉ aricci@roots.uni-kiel.de

This project documents the current archaeological record of the Qaraçay River Basin in western Azerbaijan. Integrating intensive pedestrian survey, satellite imagery analysis and topographic mapping, the study identified 85 kurgans, six necropolises and nine sites from the Chalcolithic or medieval periods. The authors believe this demonstrates the potential for further archaeological studies in the region.

Keywords: Western Azerbaijan, southern Caucasus, Chalcolithic, Bronze Age, Iron Age, remote sensing, kurgans, necropolis

Introduction

This project documents the archaeological record along the Qaraçay River Basin, in the Goranboy Rayon in western Azerbaijan (Figure 1). In summer 2023, we assessed the regional geomorphological and taphonomic conditions to reconstruct occupational dynamics and contextualise the kurgan (burial mound) phenomenon along this sector of the southern Caucasian piedmont. The primary objective was to document the number and types of sites to discern major transformations in the occupation of the region during the Holocene. Additionally, we validated the mounded features identified by satellite remote sensing analysis.

Previous research

Despite its potential to illuminate sociocultural trajectories in the southern Caucasus, few archaeological investigations have been conducted in the district of Goranboy and most of those have concentrated on funerary sites (e.g. Jalilov 2018; Huseynov 2020). On the Uzun Rama Plateau, archaeological surveys and excavations documented a high density of kurgans, comprising multiple-burial kurgans dating to the Kura-Araxes phase (c. 3500–3000 BC) and single Late Bronze Age/Early Iron Age kurgans (c. 1500–1000 BC) (e.g. Jalilov 2018; Laneri *et al.* 2019, 2020). An integrated remote-sensing and ground-

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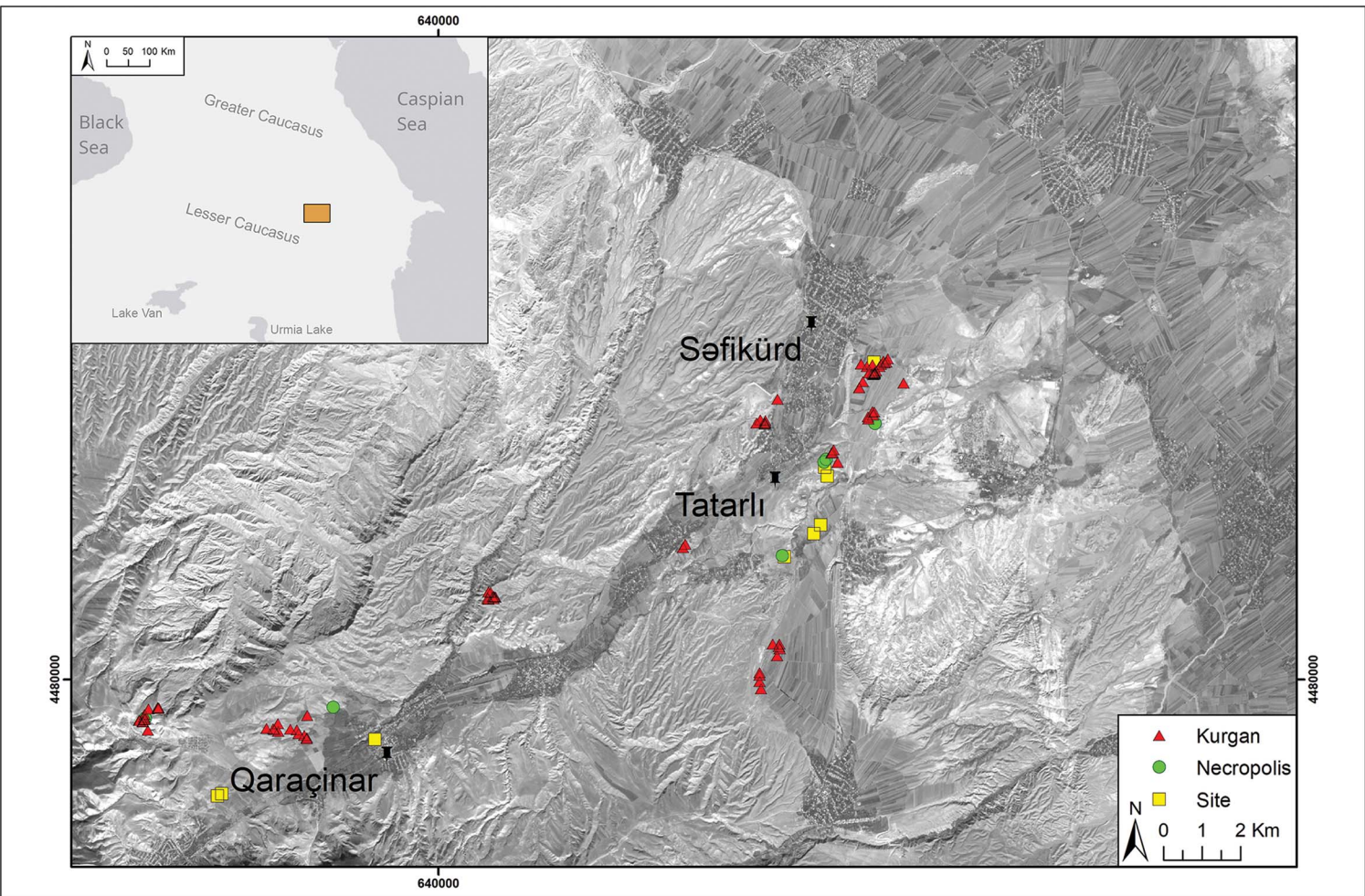


Figure 1. Location of the sites recorded during the 2023 field season. Basemap imagery Landsat 9, 31 October 2022, available from the USGS (map elaborated by S. Fiori).

survey study further revealed the high dimensional and morphological variability of 1280 kurgans along the banks of the Kürekçay, where Uzun Rama is located (Ricci *et al.* 2024). These investigations reveal the intricate nature of the kurgan phenomenon in this region.

In 2018, archaeological investigations began at Qaraçınar, approximately 20km south-west of Goranboy, unveiling a comprehensive stratified sequence dating back to the third and second millennia BC (Palumbi *et al.* 2024). To date, Qaraçınar is the only prehistoric settlement identified in the region.

The 2023 field season of the Western Goranboy Survey (WGS) concentrated on an area south-west of the city of Goranboy, along the Qaraçay River Basin, approximately 20km south-east of the Uzun Rama Plateau. Local archaeologists have reported kurgans along this river valley, but no systematic survey has previously been conducted.

Methods

Our integrated interdisciplinary approach encompasses three key methods:

- 1) **Remote sensing analysis** to assess landscape structures and identify potential archaeological features. Specifically, we combined the analysis of Hexagon satellite imagery from 1976 (Hammer *et al.* 2022) and recent Google Earth Pro imagery to reconstruct landscape changes over time, assess the impact of modern human activities and track archaeological features. This analysis confirmed the presence of a significant number of mounded features, likely kurgans, and informed the design of our fieldwork.
- 2) **Extensive ground reconnaissance** to assess the regional geological and geomorphological setting and detect areas with high archaeological preservation. Archaeological features in selected areas, representing the different landscape units at various elevations, were documented in detail and, when present, surface artefacts were collected to determine a chronological attribution of the identified site.
- 3) **Topographic mapping** of the area east of Səfikürd documented a high density of kurgans of different dimensions and morphologies. A parafoil 1-line system kite equipped with a Sony DSC-QX10 camera (resolution 18.2 megapixels) was deployed over an area of approximately 96 830m² (Figure 2), capturing images at heights between 8m and 50m. From these images (Figure 3), detailed elevation data were extrapolated with the Agisoft Metashape software. This enabled us to document the dimensions and spatial relationships of the kurgans (Figure 4).

All collected data were consolidated within a Geographic Information System constructed using ArcMap (v.10.5.1).



Figure 2. Work in the field on the Sefikürd kurgan complex. The red kite for aerial photography is visible over one of the kurgans on the right (photograph by A. Ricci).



Figure 3. The Sefikürd kurgan complex viewed on the Kite Aerial Picture orthophoto mosaic (map by H. Raese).

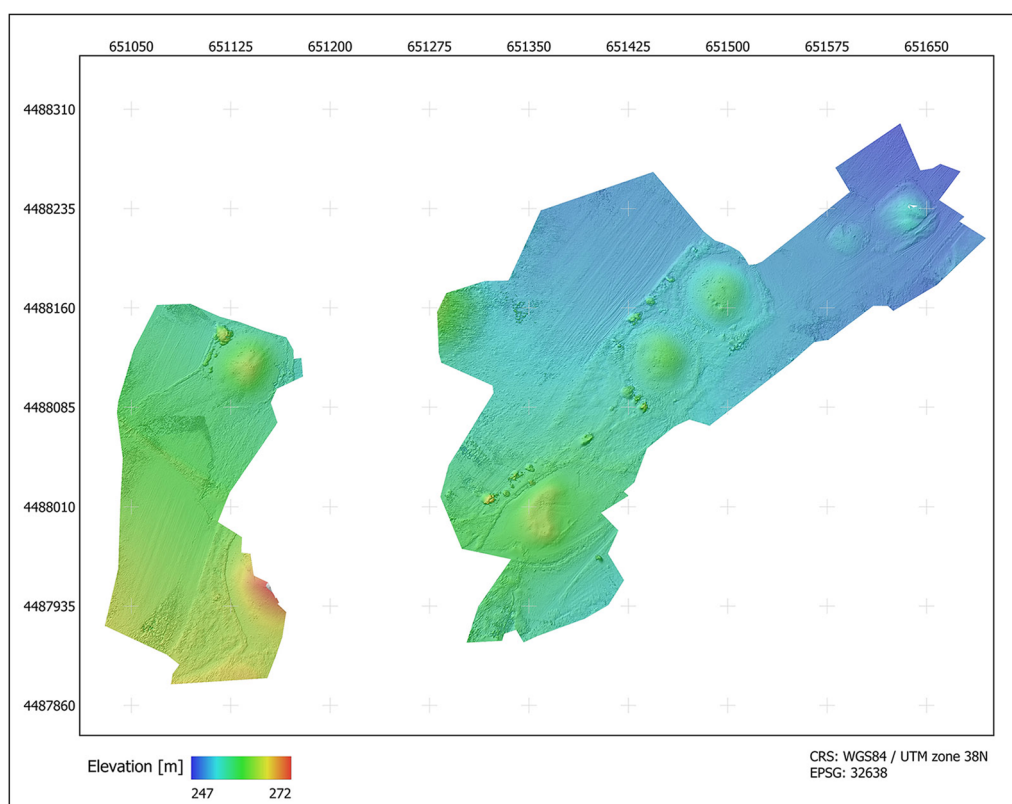


Figure 4. Digital Terrain Model of the Safikükd kurgan complex extrapolated from the Kite Aerial Picture (map by H. Raese).

Results

Our integrated dataset mapped 100 archaeological sites: 85 kurgans, six necropolises or single tombs dated to the Late Bronze Age/Early Iron Age and nine Chalcolithic (fifth–fourth millennium BC) or medieval (tenth–fifteenth century AD) sites.

Kurgans

Kurgans are the predominant archaeological feature of the area (Figure 5A). The 85 kurgans that we documented are distributed along the entire valley (Figure 1), though they are more concentrated along the northern, lower sector, primarily on the limestone slopes encircling the valley. Thirty-four kurgans are in the alluvial plains. Sixty per cent of the documented kurgans exhibit signs of looting or, at lower elevations, damage resulting from modern human activities.

Necropolises

Late Bronze Age/Early Iron Age necropolises (cemeteries) are known in the Tatarli area (Huseynov 2009). Stones of different sizes were observed in association with Late Bronze



Figure 5. Examples of: A) a kurgan (WPSF061); B) a necropolis (WPSF072); and C) a Chalcolithic site (site WGS039) (photographs by A. Ricci).

Age/Early Iron Age pottery (e.g. [Figure 6E](#)) in six locations (e.g. [Figure 5B](#)). These are interpreted as necropolises, as similar use of stones is recorded in necropolis contexts from the region.

Chalcolithic and medieval sites

The presence of six medieval sites is recorded in both the higher (southern) and lower (northern) sections of the Qaraçay River Valley. Concentrations of pottery over limited areas (50 × 50m) suggest that these sites might represent individual dwellings. A single Early Bronze Age ceramic fragment ([Figure 6D](#)) was found among medieval material at site WGP036, approximately 5km south-west of Qaraçınar on the opposite bank of the Qaraçay valley. Chalcolithic pottery (e.g. [Figure 6A-C](#)) was also recorded at three sites, one near the village of Tatarlı, which was excavated previously (Huseynov 2015), and two others further south. These are small, mounded sites, less than 100m in diameter and 1–1.5m higher than the surrounding fields. One of them (WGP040; [Figure 5C](#)) also had surface scatter of medieval pottery.

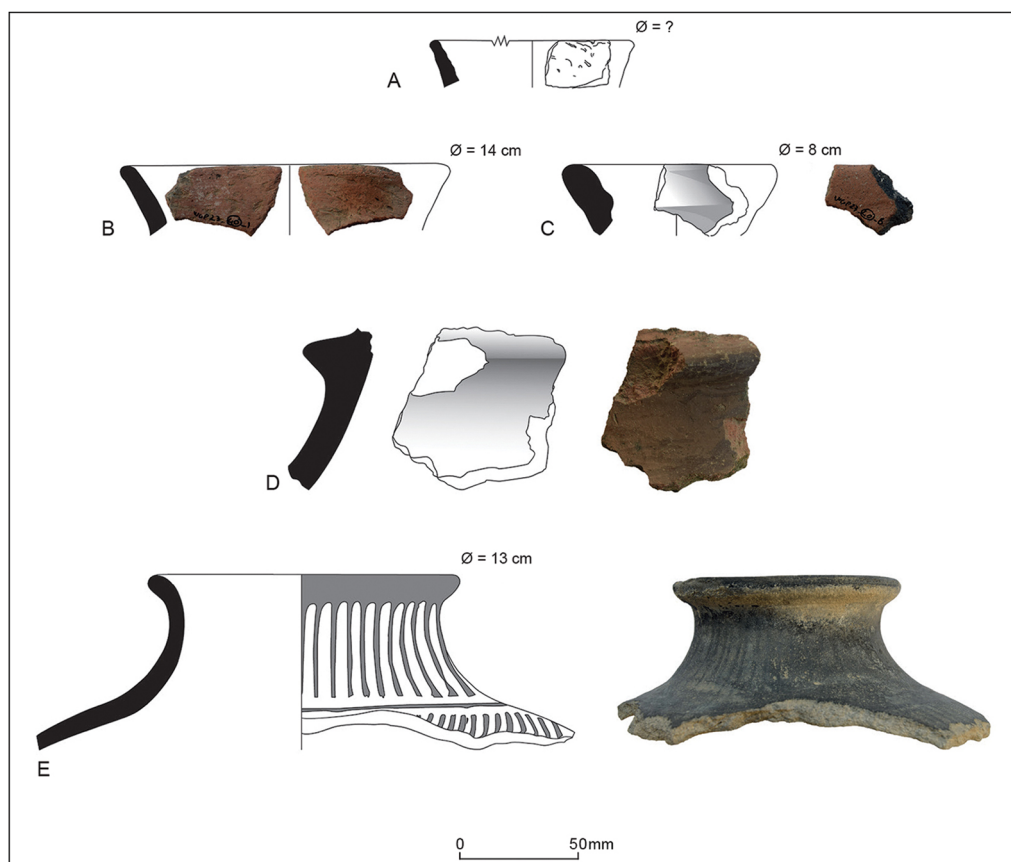


Figure 6. Examples of pottery sherds recovered during surface collection: A–C) Chalcolithic sherds from site WGP040; D) Kura-Arax sherd from site WGP036; E) Late Bronze Age/Early Iron Age sherd from site WGP038 (figure by authors).

Future research perspective

Successful documentation of visible archaeological sites along the Qaraçay River establishes a foundation for forthcoming research initiatives in the region. We plan to expand this study by integrating additional methods of investigation, including geophysical prospections and targeted excavation, within a dedicated research programme. This will include developing strategies to preserve local cultural heritage.

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References

- HAMMER, E., M. FITZ PATRICK & J. UR. 2022. Succeeding CORONA: declassified HEXAGON intelligence imagery for archaeological and historical research. *Antiquity* 96: 679–95. <https://doi.org/10.15184/aqy.2022.22>
- HUSEYNOV, M. 2009. Goranboy Muncuqlutpə nekropolu. *Azərbaycanda arxeoloji tədqiqatlar* 2009. *Baku* 2009: 130–37.
- 2015. Archaeological studies at settlement Gel yeri, in M. Işıklı & B. Can (ed.) *International Symposium on East Anatolia South Caucasus Culture, 10–13 October 2012, Erzurum, Türkiye: proceedings 1*: 47–57. Newcastle upon Tyne: Cambridge Scholars.
- 2020. Tatarlı kurgans, in N. Laneri, G. Palumbi & S. Müller Celka (ed.) *Constructing kurgans: burial mounds and funerary customs in the Caucasus, northwestern Iran and eastern Anatolia during the Bronze and Iron Age* (Studies on the Ancient Near East and the Mediterranean 4): 56–67. Rome: Arbor Sapientiae.
- JALILOV, B. 2018. The collective burial kurgan of Uzun Rama. *TÜBA-AR* 2018: 93–106. <https://doi.org/10.22520/tubaar.2018.os.01.006>
- LANERI, N. *et al.* 2019. GaRKAP 2018: the first season of the Azero-Italian Ganja Region Kurgan Archaeological Project in western Azerbaijan. *Ancient Near Eastern Studies* 56: 135–62. <https://doi.org/10.2143/ANES.56.0.3286814>
- 2020. Reconstructing funerary sequences of kurgans in the Southern Caucasus. *Anatolica* 46: 103–45. <https://doi.org/10.2143/ANA.46.0.3288921>
- PALUMBI, G., B. JALILOV, M. HUSEYNOV, A. DECAIX, M. POULMARC'H & A. RICCI. 2024. Preliminary results of the excavations at Qaraçinar (Azerbaijan) and new data on the “Kura-Araxes – Early Kurgan” transition on the Eastern Piedmont of the Lesser Caucasus, in R. Badalyan & B. Perello (ed.) *The end of the Kura-Araxes phenomenon: the chrono-cultural aspect of the EB/MB transition in the South Caucasus*: 245–72. Turnhout: Brepols.
- RICCI, A. *et al.* 2024. Kurgan phenomenon in the Southern Caucasus: results of the integrated multi-method remote sensing survey along the Kurekçay Valley (Goranboy Province, western Azerbaijan). *Archaeological Prospection* Online Version of Record. <https://doi.org/10.1002/arp.1930>