

## Past environments in the transition to agriculture: preliminary investigations in the Taş Tepeler landscape

Gianna Ayala | University of Sheffield

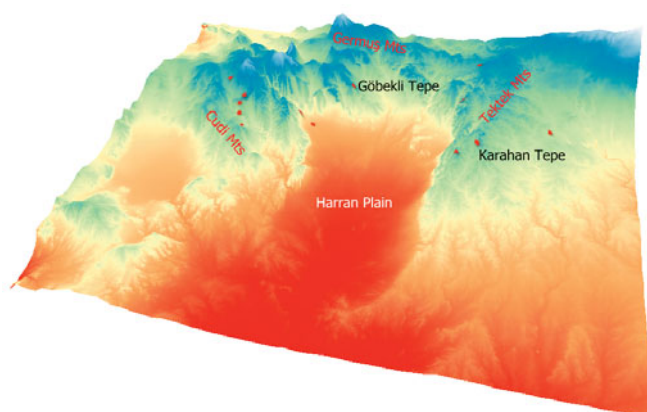
John Wainwright | Durham University

Shahina Farid | Historic England

Ceren Kabukcu | University of Algarve & University of Liverpool

Necmi Karul | Istanbul University

The region of the upper catchment (northernmost extent) of the Euphrates River is key to unlocking the narrative of one of the most important episodes of human development. Whilst the earliest examples of subsistent settlements, incipient domestication, and the development of agropastoral lifeways coincide with the changing climate of the early Holocene, further research is needed to disentangle a complicated set of interrelated causes and effects. Southeast Anatolia has one of the richest archaeological records for the Pre-Pottery Neolithic (PPN) period and is renowned for its large settlements with monumental stone architecture. Some research has detailed patterns of erosion and deposition through time around Gobekli Tepe (Nykamp et al. 2020a; 2020b), suggesting there is a strong potential for looking for patterns around other parts of this landscape to obtain a more holistic understanding of people and their environment in the area. Our aim is to document the relationship between past landscape and land-use change from the PPN to the modern day in this key region using a combination of field, laboratory and remote sensing approaches to understand social and landscape interconnections and their evolution. In doing so, the project will contextualise the Taş Tepeler excavation sites in their contemporary landscape with multi-disciplinary teams and methods working in collaboration. The outputs will be multi-authored, including visual reconstructions of the landscape and ecosystems to better understand the sites and their development in the contemporary landscape.



Topographic map of the study region. Red marks are the location of the Taş Tepeler sites.

Since 2019, new excavations have started at a group of PPN sites in the Urfa region, including Karahantepe, Sefertepe, Çakmaktepe and Sayburç, under the umbrella of the Taş Tepeler Project, supported by the Turkish Ministry of Culture and Tourism under the scientific and research leadership of Necmi Karul (Istanbul University). The project aims to establish and implement shared standards in archaeological excavation and sampling at each site. We have established the beginnings of an exciting collaborative research project studying the landscape, palaeoclimatic and palaeoecological context of PPN occupations in the Urfa region with N. Karul (director of excavations at Karahantepe), E. Özdoğan (director of excavations at Sayburç), F. Şahin (director of excavations at Çakmaktepe) and E. Güldoğan (director of excavations at Sefertepe). As the project develops, we hope to expand collaboration to more of the Taş Tepeler sites.

In July 2023 a field trip to the region was undertaken by Ayala, Kabukcu and Wainwright to assess the landscape and sediment archives in the vicinity of the Taş Tepeler sites, as well as to investigate sites on the Harran Plain surveyed by Yardımcı (2004). In order to understand the state of the landscape and resources available to the PPN occupants we will need unravel the effect of modern land-use practices on the uplands. Visits to the site locations were fundamental to understand the inherited geological history of the area and contextualise the contemporary land use practices which have seen intensive irrigation of the Harran Plain. The area is complex due to the intermittent and often interrupted hydrology, which has seen the creation of a dissected landscape. The trip allowed us to identify pockets of potentially intact sediments in the vicinity of archaeological sites and others within the larger landscape that we propose to revisit to sample. We also spent significant time locating the tell sites that had been surveyed on the Harran plain. The plain will be key to reconstructing past hillslope disturbance on the surrounding hills, where the Taş Tepeler sites are located. It was fascinating to see how the tells have changed in the years subsequent to the archaeological survey, and we attempted to identify key tells which potentially have the longest chronology to target for subsequent investigations.

In early September, Farid visited the sites during the excavation season. Grateful for the hospitality of the Karahantepe team, she used their dig house as her base,



A dry valley looking to the south from Göbekli Tepe, with the Harran Plain in the far distance.

base from where she divided her time between the excavation sites of Karahantepe, Sayburç and Çakmaktepe. Other sites further afield could not be visited in the timeframe this year. Farid was on site with directors and team members to discuss excavation strategy, methodology and recording required to understand site formation. Stratigraphy and deposition processes are key to identifying deposit types to be targeted for geoarchaeological sampling, including potential for scientific dating techniques, that will integrate with the landscape sampling regime. Discussions were also had about context type; that is, which would generate an assemblage that best informs the environmental conditions required for animal and plant habitation. True to being a collaborative project, site-specific questions and wishes were elicited from the site directors so they could be incorporated into the landscape project. Also considered was which methods and analysis types could be implemented to better interpret and contextualise each site's questions. The results will be multi-authored and in multi-media format so that the development of this regional PPN phenomenon might be better understood. Overall, there is much support and enthusiasm for the collaboration, with the expectation that other excavation directors will also join in.

The field trips undertaken this summer were fruitful for guiding the potential of future sampling from both onsite excavated contexts and off-site locations in this highly denuded landscape. It is hoped that future work on the Harran plain will be able to uncover a stratigraphic sequence that will stretch back into prehistory (Miller Rosen 1997). This will allow us to better understand how the upland and plain landscapes co-evolved as an integrated system that could reflect both past climatic fluctuations and periods of past land use change. The larger landscape project will be to chart this shifting use of the landscape through time to

assess human impact as we go towards increasing climatic and societal pressure on water and environmental resources which have been fundamental in the story of survival and flourishing in this landscape.

#### References

- Miller Rosen, A. 1997. 'The geoarchaeology of Holocene environments and land use at Kazane Höyük, S.E. Turkey' *Geoarchaeology* 12.4: 395–416
- Nykamp, M., Knitter, D., Schütt, B. 2020a. 'Late Holocene geomorphodynamics in the vicinity of Göbekli Tepe, SE Turkey' *Catena* 195: 1–14, 104759
- 2020b. 'Sediment descriptions and geochemical analyses of radiocarbon-dated deposits from the vicinity of Göbekli Tepe: a dataset' *Data in Brief* 31: 1–17, 106012
- Yardımcı, N. 2004. *Archaeological Survey in the Harran Plain*. Istanbul, Grafik ve Matbaacılık



Sediments identified for future investigations.