

# The MUP Zagros Project: tracking the Middle–Upper Palaeolithic transition in the Kermanshah region, west-central Zagros, Iran

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## Introduction

In recent decades, the Eurasian Middle–Upper Palaeolithic (M–UP) transition has been a topic of major interest among palaeoanthropologists. Great progress has been made in several domains, particularly palaeogenetics, which have revealed the complex ancestry of early Eurasians. This progress—including the identification of a ghost lineage of Eurasians in the Middle East—is providing important new biogeographical hypotheses. A key region for such topics is the Iranian Plateau—an area that has so far not been subject to intensive research. The Kermanshah region, located between the Mesopotamian lowlands to the west and the high plateau to the east, provides relatively easy passage onto the Iranian Plateau (Heydari-Guran 2015) (Figure 1). The long history of Palaeolithic research in the west-central Zagros Mountains has revealed a number of sites associated with M–UP assemblages (Smith 1986 and references therein). In addition, occasional reports of new discoveries or re-analysis of old collections (Shidrang *et al.* 2016) illustrate the richness and potential for hominin occupation during the Upper Pleistocene and, more specifically, the M–UP transition. Among these, Warwasi (Figure 1) is an exceptional case, as it has yielded a long Middle–Epipalaeolithic sequence (e.g. Olszewski & Dibble 1994). While some researchers have proposed a model of gradual change from the Middle–Upper Palaeolithic, re-analysis of the Warwasi collection suggests that the Upper Palaeolithic industry at this site is intrusive to the region rather than a local evolution from the Middle Palaeolithic (Tsanova 2013).

Despite such evidence, our knowledge of Palaeolithic occupation in this region (indeed, in the entire Iranian Plateau) still suffers from a lack of systematic, up-to-date and scientific work (Heydari-Guran 2014). Smith (1986: 41–42) has correctly pointed to issues such as the lack of reliable stratigraphy and site-formation analyses, accurate absolute dating and detailed studies of lithic artefacts, raw materials, faunal remains and settlement. Further,

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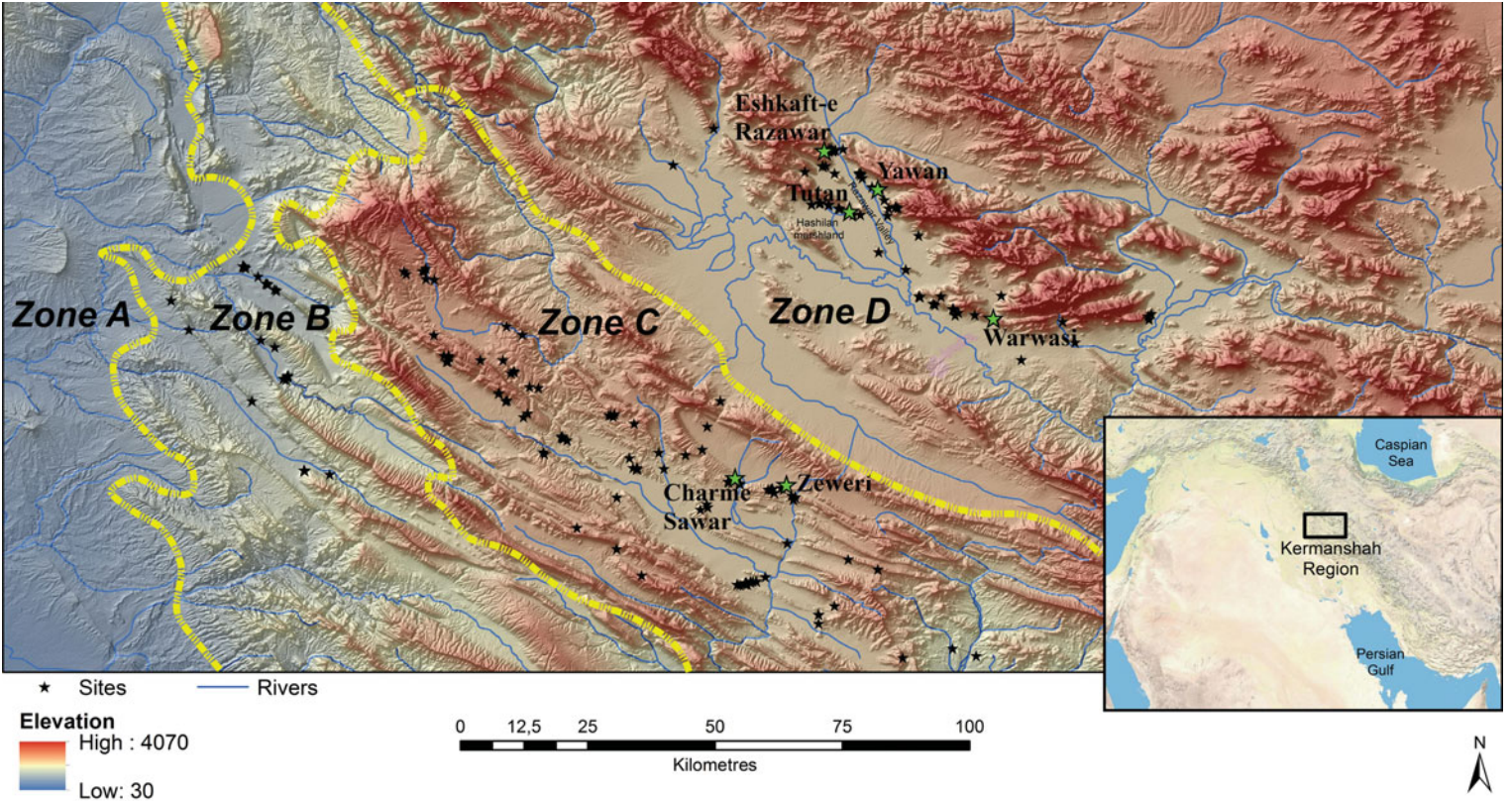


Figure 1. Map showing the location of the Kermanshah region within the west-central Zagros Mountains, with Palaeolithic sites and the places that are mentioned in the text (shown as stars).

the analysis of lithic artefacts that has been undertaken is complicated by the divergent approaches of different schools to techno-typological descriptions.

The MUP Zagros Project aims to track the Upper Pleistocene hominin occupation and M–UP cultural and behavioural transition in the Kermanshah region. The first aim is to collate a dataset, at various spatial scales, that will contribute to broader discussions on the nature and evolution of so-called behavioural modernity and the eastern migration of early humans out of Africa via the Zagros Mountains. These data will allow the authors to analyse the study region in detail and to compare it with the cultural traditions of Southwest Asia more generally.

The second aim is to excavate at key sites to obtain reliable absolute dates and to examine raw material procurement and site-formation processes. A *chaîne opératoire* approach will be employed to analyse lithic artefacts, and the study of raw materials will focus on lithic types, procurement strategies and geographic distributions, seeking changes between the Upper Palaeolithic and Middle Palaeolithic. The transition between these two periods will also be informed by analysis of depositional processes of occupation layers using micromorphology to identify formation sequences and (dis)continuities.

The third aim is the re-analysis of collections from older excavations. We plan to conduct a techno-typological analysis for the lithic assemblages from several excavated sites, including the large collection from the Warwasi rockshelter.

## Archaeological and environmental surveys

The first phase of the project includes archaeological and environmental surveys covering an area of around 150 × 100km (Figure 1). The region is divided into four geo-ecological zones:

- A. The marginal area consisting of alluvial formations between the Zagros Mountains and the low-lying plain of Mesopotamia, less than 300m asl.
- B. The lower Zagros Mountains including small and narrow intermontane valleys, around 300–500m asl, surrounded by mountains up to 1200m asl.
- C. High intermontane plains, 1300–1500m asl, surrounded by hills and high folded mountains up to 2500m asl.
- D. Large intermontane plains around 1300m asl surrounded by karstic and steep high mountains from 2000–3500m asl.

Our survey identified 265 caves, rockshelters and open-air sites associated with archaeological finds (Figure 1), including over 7000 Middle Palaeolithic–Epipalaeolithic artefacts. We also revisited 39 sites that had been previously recorded (Heydari 1999; Biglari & Shidrang 2016: 29 and references therein). Although the sites are distributed across all four zones, several areas have higher concentrations, including those with marshes, high-contrast topography, strategic corridors and raw material outcrops. In addition, the larger caves and rockshelters with greater accumulations of natural and archaeological deposits are found in karstic zone D.





Figure 2. Eshkaft-e Razawar: view from outside, inside and the position of the recent archaeological trench.

## Excavations

Three sites—Tutan, Eshkaft-e Razawar and Yawan, all in the Razawar Valley (Figures 1 & 2)—were selected for excavation. Parts of these sites have been damaged by clandestine activity or development, both of which are issues that have unfortunately and dramatically increased in recent years in Iran, especially affecting caves and rockshelters. Exposed sections were cleaned and trenches were opened near to the exposed deposits.

A test trench was dug in a small cave at Tutan (Figures 1 & 3). The site contains at least three distinct archaeological horizons: I–III. The uppermost, horizon I, appears to be a mixture of Holocene and late Pleistocene deposits, while the two deeper archaeological horizons contain intact Pleistocene deposits with Palaeolithic materials. There are clear changes between the horizons of II (Upper Palaeolithic) and III (Middle Palaeolithic). Although the trench at Tutan is small, horizons II and III have yielded a large number of lithic artefacts including Middle Palaeolithic unifacial points on Levallois flakes (Figure 4). They are long, with thin cross-sections, having been heavily modified, and are reminiscent of Zagros Mousterian points. The Upper Palaeolithic artefacts, recovered largely from horizon II, are mostly laminar and have Baradostian characteristics. A relatively well-preserved faunal assemblage from horizons II and III includes ungulates, including wild forms of cattle (*Bos primigenius*), onager or ass (*Equus hemionus*), goat (*Capra* sp.) and European hare (*Lepus europaeus*).

A second test trench was excavated at the Eshkaft-e Razawar Cave (Figures 1 & 2). A 2.5m-deep test trench exposed three archaeological strata including Holocene and



Figure 3. Hashilan marshland in the Razawar Valley (photograph by Ali Kurd, 2016).

Pleistocene deposits containing several well-preserved hearths associated with bones and lithic artefacts. Several charcoal samples have been dated, with results of 4709 cal BP (laboratory code OxA-X-2660-36; at 95.4% probability) for the Holocene deposits and a range of dates from 30 900–39 800 cal BP (laboratory code OxA-X-33260, OxA-X-2659-43; at 95.4% probability) from the top to the bottom of the Pleistocene layers. The preliminary techno-typological analyses of the lithic artefacts from the Pleistocene horizons show that those from the upper layer are typically Upper Palaeolithic, and that those from the lower are typically Levalloisian Middle Palaeolithic. The dates of the Middle Palaeolithic deposits suggest that the Levallois culture was present until at least 40 kyr BP at this site. The first results of the faunal analysis indicate *Capra/Ovis* and bones from a large bovid or equidae, as well as small ungulates and birds. A first phalanx of *Capra/Ovis* in the Upper Palaeolithic layer has a cut mark.

A third excavation was conducted at the Yawan rockshelter. During a survey in 2009, we noted disturbance caused by road construction, resulting in the unearthing of a large number of lithic artefacts, mostly Upper Palaeolithic. In March 2016, a 2 × 4m trench was opened near the shelter wall. At its deepest point, the trench reached 2.8m with two

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Figure 4. A collection of the lithic artefacts from Tutan Cave.

main archaeological horizons (Upper Palaeolithic and Middle Palaeolithic) recorded. Part of the deposits had been transformed into a semi-travertine formation that has preserved the archaeological remains. These consisted of lithic artefacts of the M–UP, faunal remains and charcoal. The lithics from the Upper Palaeolithic layer include blades and bladelets, while the Middle Palaeolithic section comprises much of the stratigraphy (2.2m) and is mostly Levallois and Zagros Mousterian.

We plan to expand the excavation at Yawan rockshelter, and also to excavate a test trench in the cave-rockshelter of Charmi Sawar (Figure 1), another site that has been damaged by looters. Ongoing work includes the analysis, at the University of Cambridge, of 12 block samples of deposits for micromorphological analysis from the first three sites. We are also currently studying the lithic material from the Warwasi rockshelter.

By combining existing datasets with new fieldwork, the MUP Zagros Project will contribute to some of the major questions about the demographic, behavioural and cultural aspects of the Palaeolithic of Southwest Asia.

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