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Savannah River Archaeology Research

Halfway to Mörön: Shedding New Light on Paleolithic Landscapes of Northern Mongolia

By J. Christopher Gillam[1], Sergei A. Gladyshev[2], Andrei V. Tabarev[2], B. Gunchinsuren[3], and John W. Olsen[4]

Between Mongolia's capital, UlaanBaatar, and the provincial city of Mörön, lay the ancient Khangai Mountains of north-central Mongolia. In the past decade, the Joint Mongolian-Russian-American Archaeological Expedition (JMRAAE) has discovered numerous archaeological sites (n=36) dating to the Pleistocene and early Holocene along the Ikh-Tulberiin (hereafter, Tolbor), Kharganyn, and Altatyn rivers of the greater Selenge River Basin (Gladyshev et al. 2011, 2012; Olsen 2002, 2004). The region is best described as high, cold, and dry with little arable land, a mountainous forest-steppe, known as the Selenge-Orkhon forest-steppe. Much of the rural populous today remain semi-nomadic herders of a variety of livestock including sheep, goats, cattle (cow and yak), horse, and camel (Fig. 1); a way of life that began here some 6,000 years ago during the Early Bronze Age (Okladnikov 1990). Primary transport for herders is the Mongol horse and occasionally the Bactrian camel. Most nomads still live in the traditional Mongolian Ger, a robust and portable dwelling that can be (de)constructed in a few hours (Fig. 2).

Fig. 2: Erecting a Mongolian Ger for a field lab, others served as housing and a mess hall. (Photo courtesy of J. Christopher Gillam)

The landscape is dominated by mountain forest-steppe grasslands with less than 20-percent forest cover (Fig. 3). Forest stands primarily occur along river banks and north-facing Mountain slopes, these are the only places that retain enough moisture to support them in the cold, dry, continental climate. Forest patches on mountain slopes are dominated (80-percent) by the Siberian Larch (*Larix sibirica*), as well as, varying densities of White Birch (*Betula platyphylla*) and Siberian pines (*Pinus sibirica* and *Pinus silvestris*). These are sporadically intermixed with riverbank stands of Mongolian Willow (*Salix monglica*) and open stands of Siberian Elm (*Ulmus pumila*), Aspen (*Populus tremula*), and Alder (*Alnus incana*) on adjacent plains and the terraced transitions to rocky mountain slopes (see also, Tarasov et al. 2007).

Fig. 1: Herd of Bactrian Camels at the Tolbor base camp. (Photo courtesy of J. Christopher Gillam)

These woody resources are used by local nomads today as they were in the distant past. Larch is a semi-deciduous conifer providing timber that is very resistant to rot, making it an excellent and expedient construction material. Willow is used extensively in Ger construction, forming the walls' flexible lattice structure that is wrapped in heavy wool felt and an outer layer of canvas (Fig. 2), as well as for spindles in the wheel-like roof cap and for baskets, and so on. Pines provide nuts and timber. Birch bark has many traditional and continued uses, such as

Fig. 3: A westward view of the Tolbor Valley is a typical landscape of the Selenge-Orkhon forest-steppe. (Photo courtesy of J. Christopher Gillam)

cladding, basketry, and tender. Fallen branches of short-lived Aspen and Alder trees and dried dung are used as an expedient heating and cooking fuel. The life of a nomad is difficult, but rewarding in its traditions, continuity, and prided simplicity, as compared to urban life in Mongolia's capital, where there are few opportunities and nearly half of the country's three million people.

The archaeological deposits indicate an initial occupation of the region during the early Upper Paleolithic (ca. 40,000 years before present; hereafter, cal. B.P.; Gladyshev et al. 2010). Typical early Upper Paleolithic (40,000-25,000 cal. B.P.) stone artifacts include flake and blade cores, large flakes, large blades, scrapers, points, denticulates, and burins (Fig. 4; Derevianko et al. 2007). The Middle Paleolithic (25,000-16,000 cal. B.P.) is dominated by large flake cores and a flake tool industry. Late Upper Paleolithic (16,000-12,000 cal. B.P.) and early Holocene (12,000-9,000 cal. B.P.) forms are dominated by micro-blades, wedge-shaped and prismatic micro-blade cores, small flake tools, endscrapers, sidescrapers, points, and burins. Stone raw materials are locally abundant on hillside outcrops and in streambed gravels. Each produce conchoidal fractures and are similar in texture and color, making field identification cumbersome, consisting of very fine-grained and dark gray: metamorphic sedimentary rocks (orthoquartzite/sandstone and, rarely, flint/chert and (red) jasper), foliated metamorphic sedimentary rocks (aleurolite/siltstone), and aphanitic igneous rocks (basalt and rhyolite).

Although the focus of the project is on the Paleolithic, significant archaeological remains exist from many time periods, as is made readily apparent by perhaps hundreds of more recent stone circular and rectangular Khirigsuurs, or "deer mounds," as they are called (Fig. 5; Okladnikov 1990; Wright 2007). These are ritual places and often contain burials of significant figures from the more recent millennia of the Bronze and Early Iron ages. Like the Paleolithic sites of the region, the mounds tend to be located on prominent locations, particularly western slopes visible from the valley floor. These burial mound placements are symbolically on the side of the setting sun and visible from the valley below as a territorial marker, of sorts. The Paleolithic sites are similarly placed, but for more utilitarian purposes such as maximum sun exposure for warmth, being free of forest cover, with good views of passing animal herds for hunting, and in relatively high locations that were safe from the stampede of large herbivores.

Beginning in 2011, a Geographic Information System (GIS) has been developed to explore the nature of the region's Paleolithic landscapes. There were multiple objectives to developing the geographic database. The first was to accurately record the location of each site found in prior field seasons (Fig. 6). We relocated each site, made surface collections of artifacts, recorded the perimeter of the site, and the approximate site center. Artifacts collected enabled us to confirm and refine the chronology of site occupation and also provided an expedient sample of stone raw materials used by prehistoric populations. The second objective was to explore the eastern banks of the Tolbor River as prior surveys had focused on the western half of the basin adjacent to the access road that

Fig. 4: Some common Paleolithic artifacts of northern Mongolia include the wedge-shaped blade core, pointed flake tool, and large blade. (Photo courtesy of J. Christopher Gillam)

Fig. 5: Khirigsuurs, or "Deer Mounds," are common ceremonial features of the Bronze Age landscape; Siberian Larch (*Larix sibirica*) trees at flanks. (Photo courtesy of J. Christopher Gillam)

parallels the river. The third objective was to develop topographic maps using data from the 90-meter resolution Shuttle Radar Topography Mission (SRTM) Digital Elevation Model (DEM) to enable a better understanding of site location and identify new locations for archaeological survey. The latter proved particularly fruitful as described below.

Initial results from GIS analyses confirm a settlement preference for south- and east-facing slopes with good viewsheds of surrounding terrain. Analysis of local topography identified the location of a significant saddle in the mountainous terrain separating the Tolbor (Ikh-Tulberiin) from the Kharganyn and Altatyn rivers. The saddle, still in use by local herders, has archaeological evidence of continued use from at least the early Upper Paleolithic (ca. 40,000 cal. B.P.) to modern times. The Saddle site also lies nearly due east and within the viewshed of a previously recorded middle Upper Paleolithic large flake cache (n=57 artifacts; ca. 25,000-16,000 cal. B.P.) that is unique to the region, bringing into focus the locational meaning of this significant cultural feature (Fig. 7). That is, it was a ceremonial and symbolic placement on the landscape. A stone tool cache, likely an offering for continued prosperity, facing the promise of the rising sun and the corridor to an adjacent valley where game and humanity alike make pass.

Future research will include more geographic modeling of the cultural and natural landscapes of the region. Initial results enabled us to identify a primary migration and trade route between valleys, and yielded numerous new sites in upland locations and adjacent valleys that were previously unknown and unexplored. In 2013, primary fieldwork will continue at newly found Paleolithic sites of the Kharganyn and Altatyn rivers across the saddle from the Tolbor Valley.

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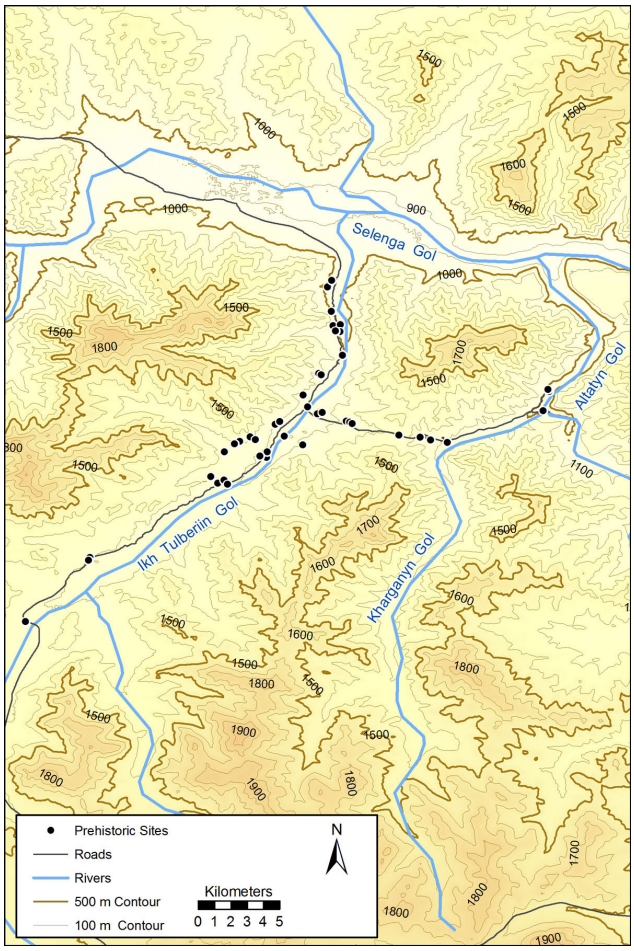

Fig. 6: Map of Paleolithic archaeological sites recorded by the JMRAAE expeditions (2002-2012). (Map courtesy of J. Christopher Gillam)

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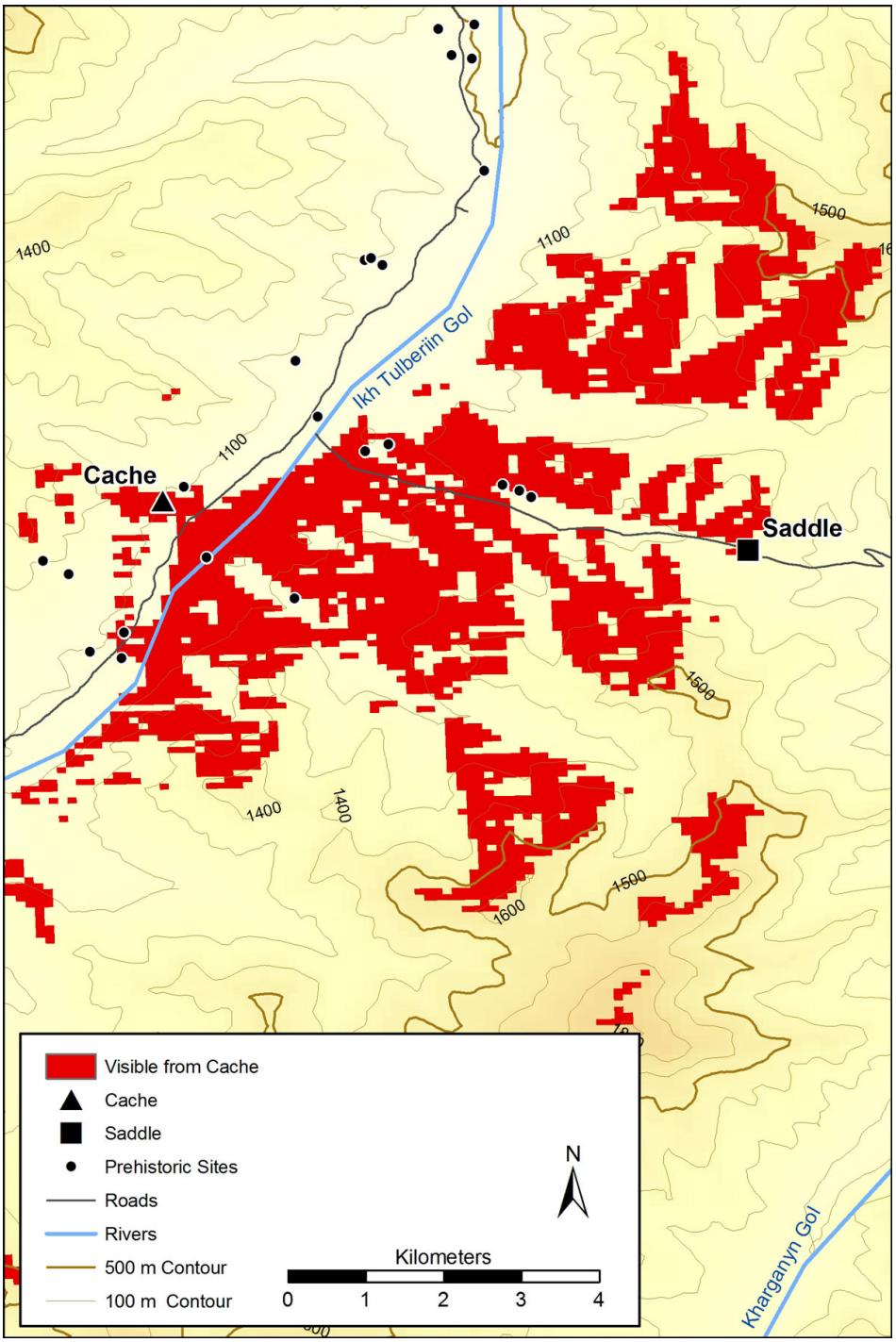

Fig. 7: A GIS viewshed analysis demonstrates the symbolic relationship of a unique Middle Paleolithic flake cache to the primary passageway between the Tolbor and Kharganyn/Altatyn valleys. (Photo courtesy of J. Christopher Gillam)