

Margiana Uplands Project (MUP): Reunifying the Bronze Age Murghab Delta with its Headwaters through Systematic Remote Survey

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Overview:

This research examines some of the premises of the Bactria-Margiana Archaeological Complex (BMAC, ~2200-1750 BCE) through the remote survey of two, under explored river-valley systems along the Hindu-Kush Mountains of NW Afghanistan. Proposed in the 1970's, the BMAC is one of most recently recovered Bronze Age cultures, centered around the Margiana and Bactria Oases, and identified at sites across Turkmenistan, Tajikistan, Southern Uzbekistan and Northeastern Afghanistan. Featuring impressive forms of monumental, fortified architecture and unique artistic traditions, it represents to many a re-fluorescence of urbanism on a size and supposed complexity compared only with that of ancient Mesopotamia or the Harappan culture of the Indus Valley.^[1] In short, the BMAC has the potential to tell a new narrative and test old ones regarding the delicate intersection of geography, environment and society that make possible the rise of urban complexity. Here I argue that the current model of the BMAC's emergence is incomplete and untested due to the limited visibility of Northwestern Afghanistan in the archaeological record. Incorporating archaeological sites remotely surveyed from the adjacent Margiana uplands provides the best way to begin evaluating the predictive assumptions that underlie our current understanding of the BMAC's emergence, and more broadly refine how we understand the rise of urban civilization in South Central Asia.

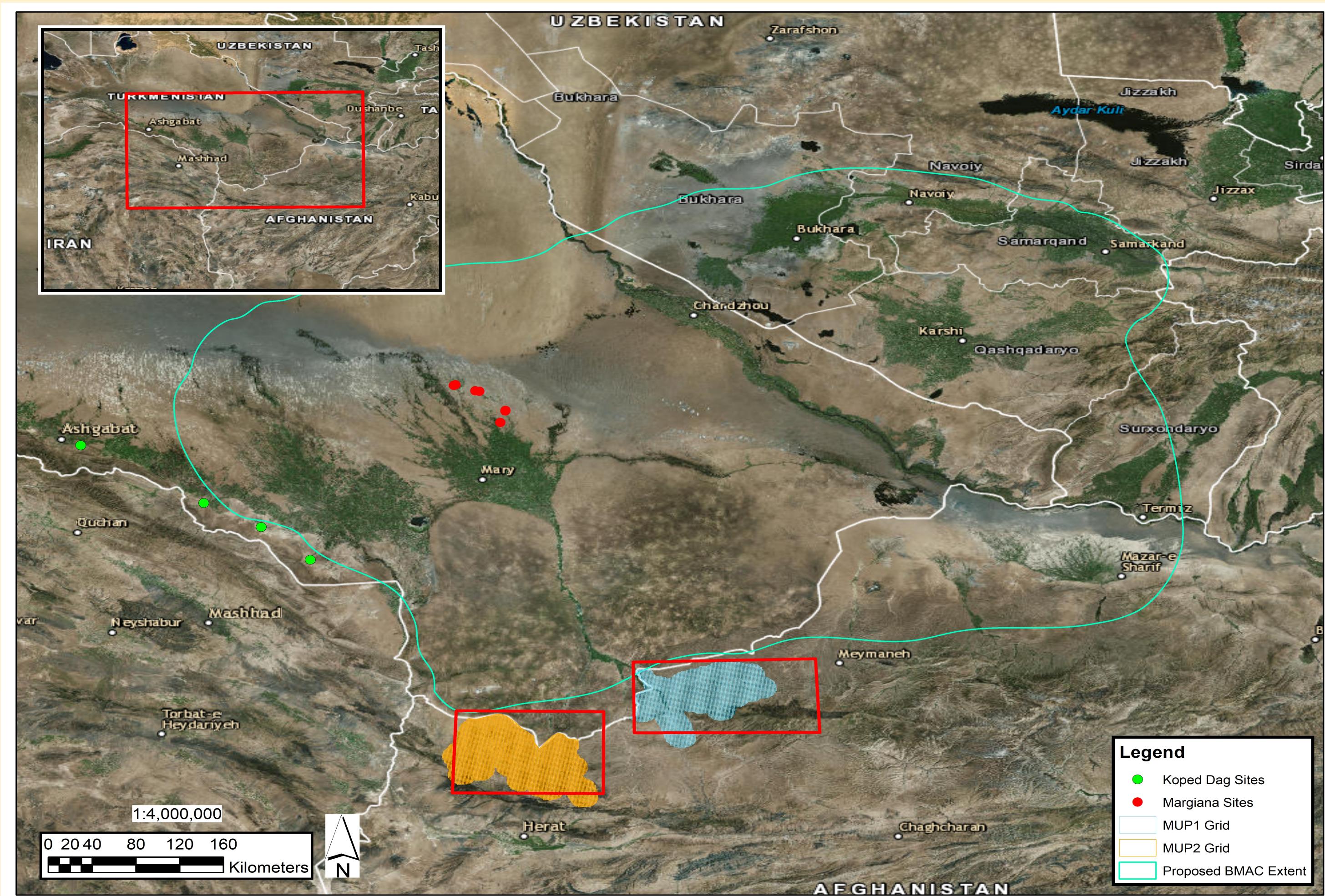
An Incomplete Model: Archaeology and Geopolitics

The current model finds the BMAC's most related and immediate predecessors in a series of sites along the piedmont strip of the Koped Dag Mountains in Southeastern Turkmenistan. It is there where some of the first, urban sites in the region emerge, such as Namazga Depe and Altyn Depe.^[2] In line with the rise of greater urbanization, the occupation of the Oasis from the Koped Dag also represented a shift from rain-fed agricultural subsistence to a more extensive investment in irrigation agriculture. Even before this connection was firmly established by ceramic and carbon dating evidence, the relationship between the piedmont strip and the Margiana Oasis below was seen as a reflection of emergence models already well applied in Mesopotamia and the Indus Valley. Here, the Koped Dag constituted Braidwood's ideal "hilly flanks," whose rain-fed environment fostered the development of early agriculture before the innovation of irrigation in the Oasis's fertile plain.^[3] However, the same rain-fed environment continues southeast along the northwestern frontier of Afghanistan. Unlike a traditional oasis formed from artesian wells, Margiana is truly the delta of the Murgab river valley that begins in the mountains of Northwest Afghanistan and terminates in the Karakum Desert of Turkmenistan. For a model based off of major river valleys in the Near East, archaeological consideration of the Murghab valley and headwaters (Margiana Uplands) is conspicuously absent.

This omission is largely to do with the intertwining history of geopolitics and archaeology. Exploration of historical and archeological sites for the sake of research followed the conquest of the region by Imperial Russia and the establishment of Russian Turkestan in the early 1880's. Challenges from the British Empire and Persia essentially halted their expansion and resulted in the formation of today's national borders. Above, one can see that the northeastern Iranian border runs along the Koped Dag range, while the Afghan border splits the Murghab's headwaters from its valley and delta.^[4] This left the Koped Dag and Margiana sites almost principally under the purview of Soviet scholarship for the next century. Northern Afghanistan was minimally surveyed under the joint Soviet-Afghan Archaeological Expedition in the 1960/70's. Though, work was abruptly stopped with the invasion of Afghanistan by Soviet troops in December, 1979 and the conflict that persists into the present (Civil War, Taliban Insurgency, US War in Afghanistan) has kept most scholars from returning to work on any large scale. Therefore, arbitrarily cut off from archaeological view, the Margiana Uplands represent a laboratory in which to test the upland model. The coincidence of new sites within this similarly rain-fed agricultural zone would support, but also complicate the upland/directional model for the BMAC.

Survey Areas

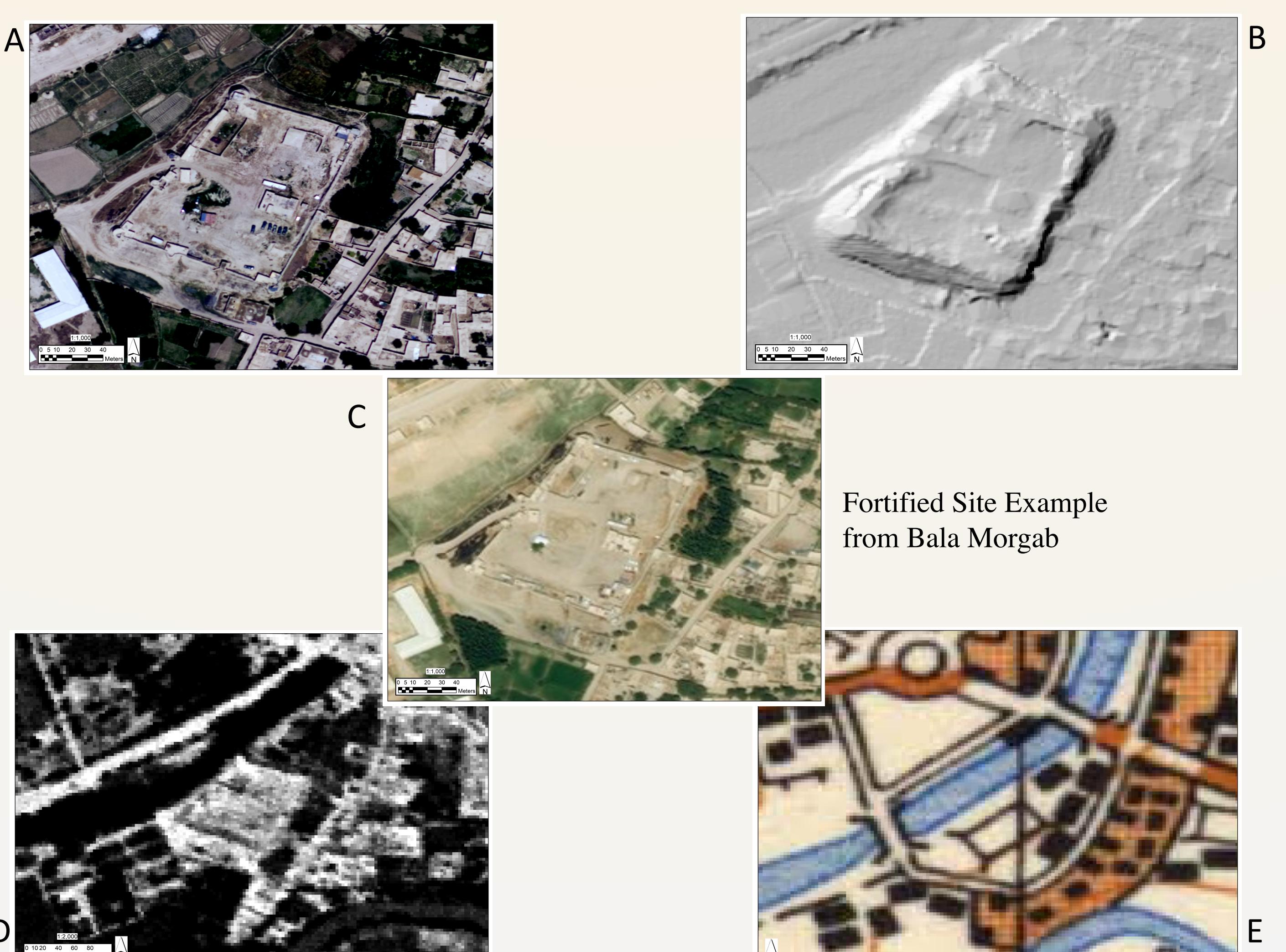
The headwaters of the Margiana delta are formed by the Murghab and Kushk riverine systems. Each were traced from their confluence near Panjheb and then clipped within the modern border of Afghanistan. A buffer of 10 km. was created from the line in order to encompass the entirety of each system, providing the best opportunity to observe associated sites. Within each of the study areas was laid a 1km by 1km grid. Together the areas, MUP 1 and MUP2, covered over 11,000 sq. km.



Data Sources and Collection

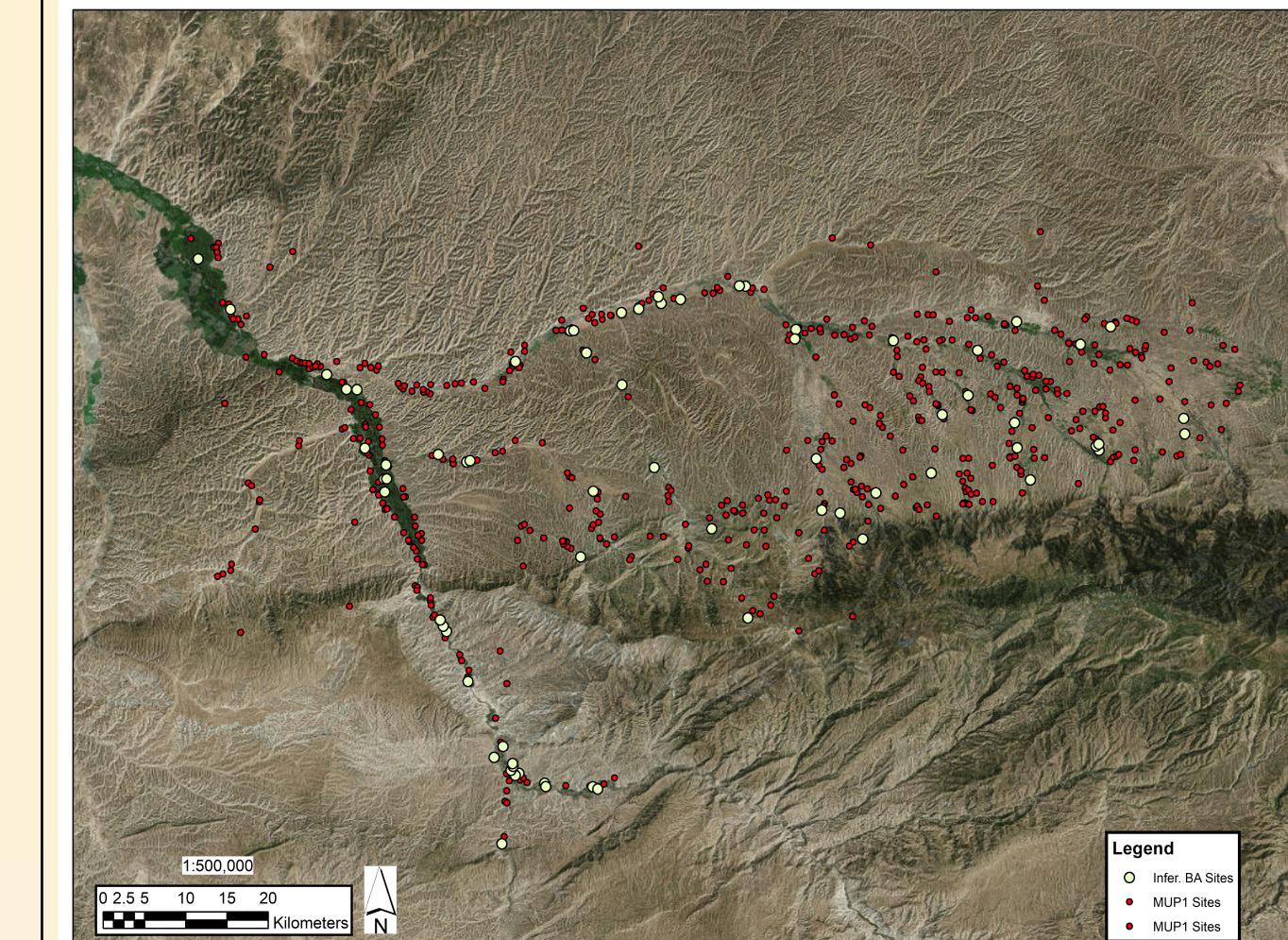
Imagery of varying resolutions and time periods were utilized to make the most educated identifications of sites as archaeological. Digital Elevation Models (DEM) help to confirm sites of interest through raised relief and depressions in the case of looting. Besides imagery, Soviet-era maps are also helpful in validating survey work since their extreme detail extends even into the marking of ruins and artificial mounds.^[5]

- (A) BuckEye Program, US Army Corp. of Engineers 10 cm. res., 2010-14
- (B) DEM from SRTM, USGS, 1-arc second, 30m. res., Feb. 2000
- (C) Digital Globe Basemap, ESRI, 30-50cm. res., 2011-17
- (D) De-Classified CORONA, 2-7.5m. res., 1962-70
- (E) Soviet Military Topographic Maps, 1:50,000, 1984-5

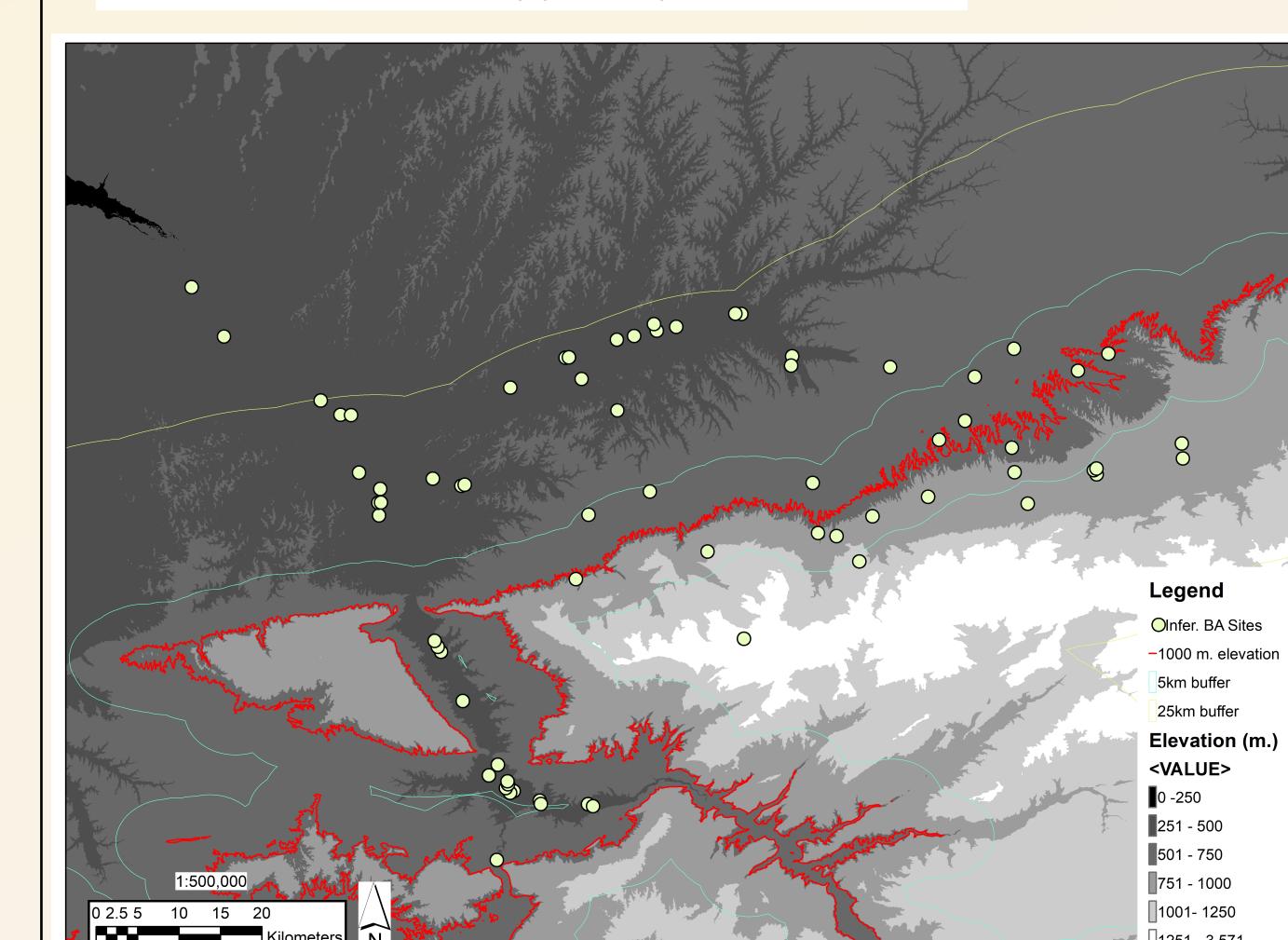
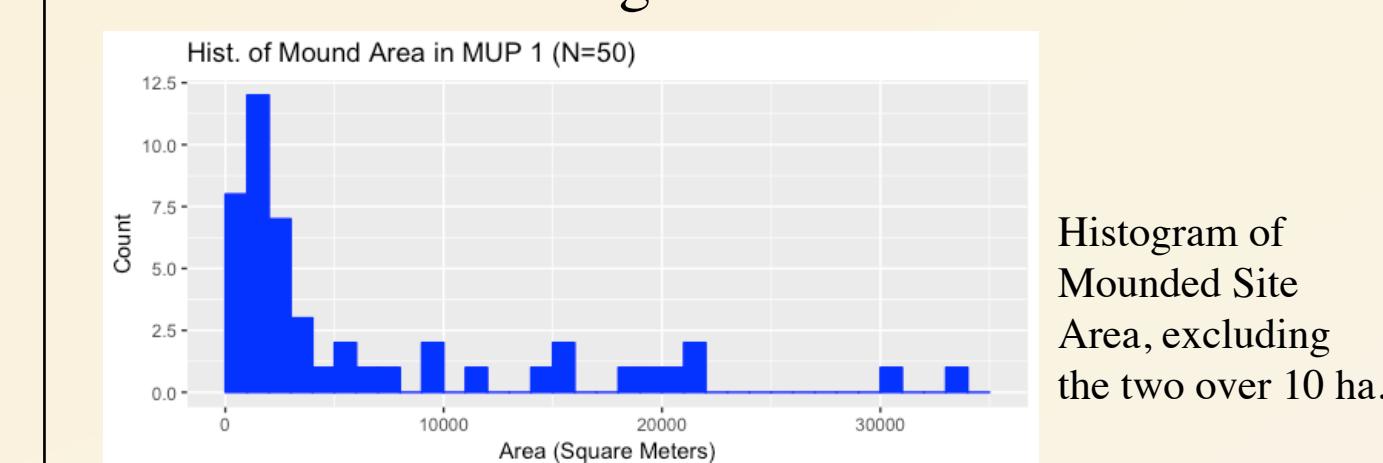


Results and Analysis for MUP1

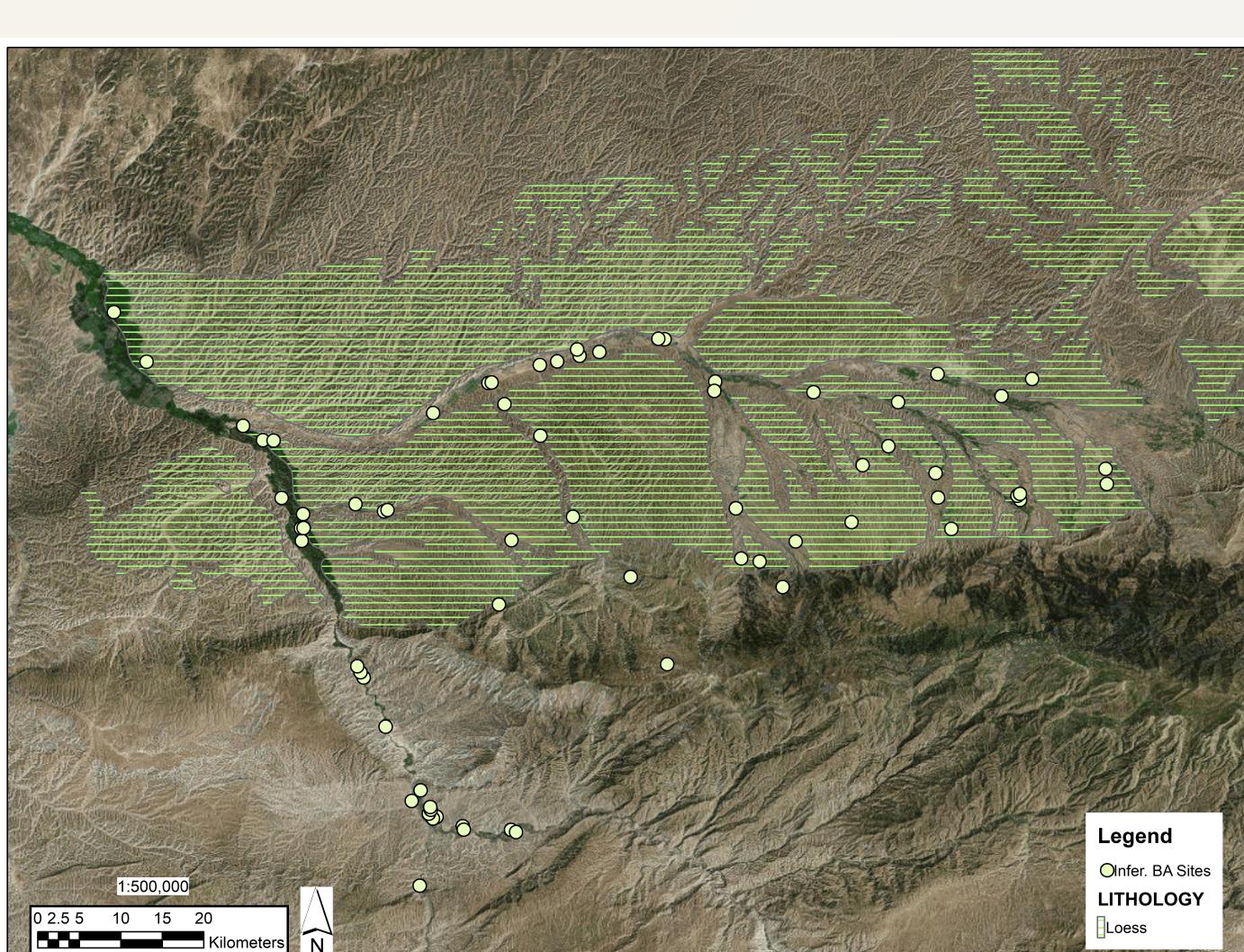
The survey of the MUP1 area resulted in over 500 newly recorded sites of archaeological/heritage interest. In order to address the question of Bronze Age (BA) occupation in the region, the sites were narrowed to 70 by a combination of factors such as taphonomy, type, form, and age.



Mounded types are given special attention since BA sites characteristically exhibit raised relief as a result of long periods of occupation and/or the detritus of mudbrick architecture. Notably, the site-size distribution of mounds in MUP 1 parallels closely to that of confirmed BA sites in the Margiana Delta.^[6]



Previous scholars have highlighted the 1000 m line as marking the elevation at which increased precipitation rates makes rain-fed agriculture viable. This map demonstrates the continuation of that line through the Murghab headwaters, and further, that nearly every considered site falls well within the same 25km buffer zone as the Koped Dag sites.^[7]



As opposed to distance and elevation, a related but more direct measure of environmental fitness for rain-fed agriculture was conducted by comparing site distributions to regional lithology, particularly loess.^[8] Loess-derived soils are highly productive and the presence of deposits across MUP1 and 2 shows that this area well could have sustained early, upland agro-pastoralists.

Summary

While surveys and excavations are required to ground-truth the sites recorded here, the remote survey results presented above demonstrate a productive beginning to research in Afghanistan that attempts to expand the conversation of the BMAC beyond modern borders. The prevalence of archaeological mounds distributed across MUP1 supports the premise of the current emergence model regarding the environmental vitality of a piedmont zone comparable to that of the Koped Dag. This alone adds weight to the consideration that NW Afghanistan had the potential to sustain Bronze Age settlements and therefore may have contributed in some way to the BMAC, if not its development. If so, one could consider to rethink the direction of origin to the south as opposed to or concurrently with the eastern sites of the Koped Dag.