

Kurgans, Churches and Karvasla: Preliminary results from the first two seasons of the Lagodekhi Archaeological Survey, Georgia

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Abstract

In many parts of the Southern Caucasus, significant changes to the landscape have occurred over the course of the 20th century due to agriculture, development, and other factors. Lagodekhi Municipality, an area of ca 900km² at the eastern limit of Georgia, between the foothills of the Greater Caucasus and the Alazani River, is no exception. Its fertile plains have been impacted by agricultural intensification. In addition, this region is characterised by heavy vegetation in the river valleys, and difficult-to-access upland zones. Together these factors challenge our ability to read the archaeological record, and require carefully devised, and comparable, survey strategies. We have utilised historical (CORONA) and modern high resolution satellite imagery and historical maps to identify potential archaeological sites and features, as well as to explore the impact that changes in land use over the course of the last 70 years have had on our interpretation of the ancient landscape. This information was supplemented by published literature and local knowledge to guide field survey within the study area. This has resulted in the recording of sites dating from the Chalcolithic through the post-Medieval period and is increasing our understanding of long-term settlement patterns within the local region.

Keywords: regional survey; satellite remote sensing; Georgia; Southern Caucasus

Introduction

The Lagodekhi Archaeological Survey was undertaken as part of the Georgian-Italian Lagodekhi Archaeological Project (GILAP)⁴. The survey accompanied a programme of excavation at the site of Tsiteli Gorebi 5 (see Rova et al. this volume; Rova et al. in press) and was focused on gaining a better understanding of the long-term settlement and land use patterns of the region.

Lagodekhi Municipality is located in the Alazani Valley in the Kakheti region of eastern Georgia (Fig 1). The plain is traversed by the Alazani River, which arises in the Greater Caucasus and is supplemented by several smaller rivers along its length, eventually flowing into the Mingəçevir Reservoir in Azerbaijan. Lagodekhi Municipality is located on the left (eastern) bank of the Alazani river. Within its borders, elevations transition from c. 200 m asl near the river, to over 2000 m asl in the Kakheti Caucasus range. This occurs over only c. 40 km, resulting in several different geographical zones within

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a relatively small area. This includes the steep densely forested slopes at the highest elevations, which quickly transition to foothills, and onto the gently sloping to flat, heavily cultivated alluvial plains of the Alazani Valley. Finally, a strip of dense woodland, c. 2-4 kilometres in width, is found on the low-lying banks of the Alazani River.

To our knowledge, no comprehensive multi-period archaeological survey has ever been published for Lagodekhi. Previous archaeological investigations, undertaken in the 1960s and 70s, were predominantly focused on pre/proto-historic sites located near the Alazani River (e.g. Abramishvili & Abramishvili 2008; Pitskhelauri 1980; Varazashvili 1984). While reports of these discoveries and excavations were published, precise coordinates were often lacking, and only general locations were indicated (e.g., “near the village of Ulianovka”). Much better documented were several kurgans located near the Alazani river, of which several have been recently excavated with spectacular results (Makharadze et al. 2016). Ananauri Kurgan no. 3, for example, was dated to the second half of the 3rd millennium BC, and produced, among other things, impressive organic remains (*ibid.*). Furthermore, a significant number of Medieval churches and fortresses have been documented in the region by local and national cultural heritage managers, and their locations are generally well-known.

Methodology

The landscape survey made use of both satellite remote sensing and field-survey. Prior to fieldwork we analysed freely available high resolution satellite imagery on Google Earth, declassified CORONA imagery from the 1960s, and available soviet period topographic maps to identify possible archaeological features.

We then designed an extensive field survey with several aims:

1. Re-locate all sites mentioned in previous publications and record accurate up-to-date coordinates and descriptions.
2. Ground-truth potential archaeological features identified on satellite imagery.

We also visited all potential archaeological sites and features described by residents of the area that we encountered on the field survey. This provided us with information on several site locations, but also invaluable information on land use changes and the resulting impact on sites. We also undertook intensive pedestrian transect survey in areas of good ground visibility selected from different environmental zones. Overall, our survey methodology involved a combination of extensive and intensive survey methods that took into consideration the varying terrain, ground cover, and personnel available (see Hopper & Titolo 2018; Hopper et al. 2019). This was crucial due to the significant amount of anthropogenic activity that has affected the visibility of archaeological sites in the region. This same problem has been noted by several scholars working across the Southern Caucasus and has driven a need for more complex survey methodologies, such as we have employed here (see discussion in Lindsay et al. 2018).

The impact of 20th/21st century land use on the survival of archaeological sites in Lagodekhi

The impact of the recent anthropogenic activity on the identification of archaeological sites and the recovery of surface dating material varied across the survey area. Like many fertile low-lying plains across much of the Southern Caucasus, the Alazani River Valley has been significantly impacted by agricultural activity in the 20th and 21st centuries (Hopper et al. 2018; Hopper et al. 2020; Lindsay et al. 2018). Over the course of the 20th century, there were several significant reorganisations of the landscape in Lagodekhi. Through the early and mid-20th century collective farms predominated,

practicing deep ploughing, and intensive production. After the break-up of the Soviet Union and Georgian independence beginning in the early 90s, the landscape was again transformed with new land divisions associated with private ownership. This is very clearly demonstrated by comparing CORONA and Landsat 8 images of an area of the plain from 1968 and 2018 respectively (Fig. 2).

A specific example of the impact of recent agricultural practices can be found at the site of LS30, known as the Tseligorebi or Ulianovka kurgans. This kurgan group was said to have numbered at least 20, two of which were excavated in the 1970s (Abramishvili & Abramishvili 2008). On a modern high resolution satellite image taken in 2009, quite a few of these kurgans are visible as soil colour differences (Fig. 3). However, when we visited in the site in 2018, it was difficult to identify areas of relief which would signal the location of the mounds. A digital elevation model produced via drone⁵ illustrates this well, with only a handful of the mounds rising to any height above the surface of the plain (Fig. 3). Plough lines are clearly visible on both sources.

In the southwest, immediately next to the Alazani River, is an area of dense forest. It is unique within the Alazani River valley within Georgia. While cultivation comes up to the banks of the Alazani further upstream, here there is a forested area varying in width between c. 2-4 km between the river and agricultural fields. However, this was not always the case. Comparing a CORONA satellite image to a Landsat 8 satellite image, taken in 1968 and 2018 respectively, the area under forest cover has increased between the dates of these two images (Fig. 4). This includes several areas that were clearly under cultivation in the 1960s. This is significant as, in contrast to the majority of the plain, here the forest has acted to protect archaeological sites from ploughing over at least the last 60 years.

In the upper reaches of the plain, where it meets the Kakheti Caucasus foothills, sit the largest modern settlements in the region (e.g., Lagodekhi, Kabali). Extending north into the foothills from here, are several villages and traces of several terrace field systems, now out of use; their date is unknown (Fig. 5). Here, the impact of ploughing is lessened, but modern settlement has served to make earlier period activities though difficult to ascertain, though some obscure traces are evident.

The amount and condition of surface artefacts recovered during the survey was closely tied to the processes that have impacted these different landscapes zones. Artefact recovery was best in the upland zones. The heavily ploughed plain, even where surface visibility was high, produced sites with far fewer artefacts than would be expected for similar sites in other parts of the greater Near East. Processes such as deep ploughing must have had an impact, along with soil deposition causes by flooding and shifts in the river's course. Artefact recovery on the forested banks of the Alazani was poor due to vegetation cover, though where animal burrows existed in the surface of sites pottery was often present in small quantities. Coupled with the lack of a comprehensive local ceramic sequence, dating of these sites proved challenging.

Site Types and Distribution

The overview presented above serves to contextualise the preliminary settlement and land use patterns we recovered in the survey. Fig. 6 illustrates the sites recovered by the survey (over 80), supplemented by information from the Georgian national cultural heritage database (<https://memkvidreoba.gov.ge/>), by site-morphology. Notable, is the concentration of kurgans and small mounded sites in the lowest parts of the plain, with churches and fortified settlements predominating in the upper portion.

⁵ The drone survey, and data processing was undertaken by Giorgi Kirkitadze.

In general, sites and activities attributed to the Chalcolithic period were predominately found in the lowest parts of the plain near the Alazani River. Characteristic ceramics include heavily mineral-tempered fabrics, hole-mouth pots, jars with slightly outturned rims, so-called *mangals* and relief decorations (see Tonetto in Rova et al. in press) as well as obsidian artefacts. This distribution could reflect a preference for settling near the river but may also be in part due to the lack of later period occupation in this area. Along with relocating several know sites, our intensive survey found several previously unrecorded artefact scatters with Chalcolithic material; overall, however, these have been attenuated by ploughing and modern construction.

We recorded a significant number of kurgans representing most of the evidence for Bronze Age activity so far documented. The densest cluster is in the western part of the survey area bordering on, and within, the dense forest on the east bank of the Alazani River. Several of these (Ananauri 1-3) have been investigated in the last 20 years, and excavations at Ananauri 3 produced dates in the 2nd half of the 3rd millennium BC (Makharadze et al. 2008). More kurgans were known to exist in the vicinity but had not been systematically mapped. Due to the dense forest cover, however, we faced difficulties in locating kurgans within the forest via traditional pedestrian survey. We thus used a combination of old Soviet maps and analysis of medium and high-resolution multispectral imagery to target possible mounded features (Titolo, Hopper and Hewitt forthcoming), eventually recording 17 definite kurgans within the forest. While no dating evidence was located on the surface of the mounds, it is possible that some of this cluster may date to the same period as Ananauri 3. All the kurgans we located as part of the survey were within c. 6 kilometres of the Alazani river, bar one definite, and two possible examples⁶. LS042 appears to be the only confirmed example on the alluvial fan. It is located south of the modern town of Kabali, within an agricultural field (Fig. 7).

We have limited evidence for activity in the subsequent periods (Late Bronze – Hellenistic). We did locate one previously unrecorded artefact scatter with Late Bronze, Early Iron Age and Hellenistic material during our intensive transect survey, and this may have originally been a *gora* (mounded site), which was subsequently ploughed out. The best evidence for Late Bronze Age activity are the well-known Tseligorebi/Ulianovka kurgans, which we relocated. Iron age pit graves were also mentioned by the excavators in the vicinity, but we were unable to relocate these. Examples of ceramics dating to the latter part of the 1st millennium BC, referred to as Hellenistic, were also recovered in several artefact scatters. Previous investigations also indicate at least two cemeteries dated to this period. However, we can say little about settlement patterns beyond this.

The majority of known sites in the region are medieval (or post-Medieval). Many are the remains of churches and shrines, and these are concentrated in the foothills, on the alluvial fans and in the mid-portion of the plain. Intensive survey in the foothills has provided some interesting information on sites and features beyond churches and fortresses of the Medieval period, including remains that may be related to an earlier Medieval village (Fig. 8). Interestingly, we found no pre-Medieval material in our survey in the upland zones.

Likely dating to the late Medieval period (16th/17th century), we also surveyed a *karvasla* (caravanserai) located near the village of Kabali (Fig. 9). The site is well-known locally, and one of two in the region; the second, located near the border with Azerbaijan was not visited by the project (see <https://memkvidreoba.gov.ge/>). Previously unrecorded, however, was a potential wall-like feature encircling the *karvasla* on its north side (Fig. 10). This was identified from the CORONA satellite image

⁶ See Fiori 2019 unpublished MA thesis for a discussion of certainties in the identification of kurgans via remote sensing and field survey, and kurgan distribution across the Alazani valley.

taken in the 1960s. Very little of this feature remains visible on the ground as the modern village has expanded to cover much of the area of the possible wall.

Conclusion and future directions

In two seasons of survey, we have confirmed a number of Chalcolithic sites in the southeastern portion of the survey area. With the exception of Tsiteligorebi 5 and one other site where topographic features were still present, these consisted of artefact scatters. Those sites, which were initially investigated 1960s and 1970s – Tsiteligorebi 1-4, Damstavri Gora etc. (Varazashvili 1992) –, were difficult to locate and it seems likely that anthropogenic activity has significantly affected them over the intervening years.

A significant cluster of kurgans has now been mapped, particularly in the western part of the survey area in and around the forested east bank of the Alazani River. The concentration of kurgans in this area may be partly influenced by recent anthropogenic activity. Modern agriculture has negatively affected the preservation of many kurgans on the cultivated plain; on the other hand, the forest in the vicinity of the Alazani River has served to protect kurgans. Taking this into consideration, the sheer number of kurgans located within a small area (i.e. near Ananauri 3), however, suggests this was likely a focal point for burial at some point in the Bronze Age.

Surprisingly, we have not recovered any examples of Kura Araxes ware within the survey area, and therefore cannot say much about Early Bronze Age settlement patterns. Beyond burial mounds there is also little that can be inferred about settlement and land use in the subsequent period.

The clearest landscape signature is that of the “Medieval” period, which has, for various reasons including the abundance of standing architecture, received more attention in previous documentation. Further research is required to understand the evolution of settlement and land use within this relatively long period.

While untangling the complex pattern of settlement and land use in the region over the long term has been challenging, adapting our survey strategy to the local landscape, and using a range of techniques and methods, has produced promising results. Remote sensing has proved invaluable for the identification of certain site types (kurgans and mounded features) in difficult to survey zones; however, due to the intensity of anthropogenic activity on the plain over the last century, intensive pedestrian survey remains crucial and will be the focus of future seasons.

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Figure 1: Map of Lagodekhi region. Base map SRTM 30m DEM (available from the USGS), country boundaries (GDAM).

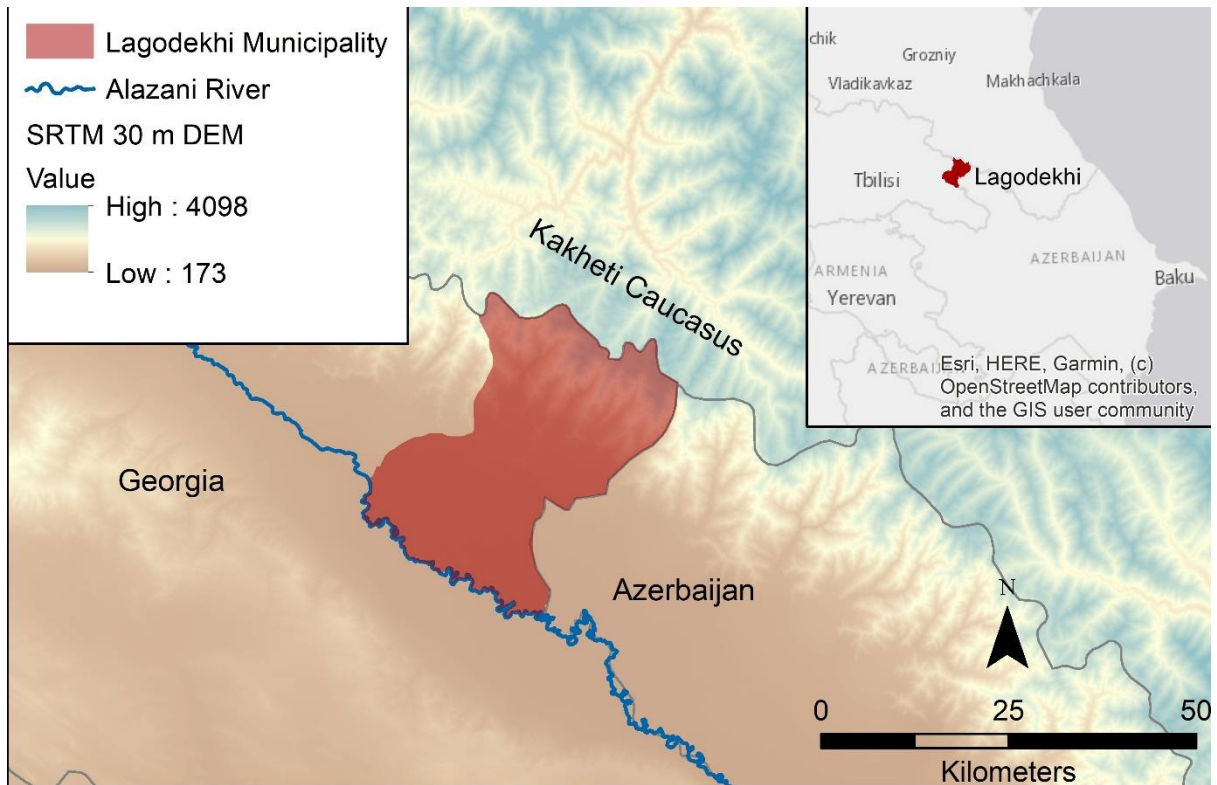


Figure 2: Field systems in Lagodekhi in 1968 on a CORONA imager (Left) and in 2018 on a Landsat 8 image (Right). Images courtesy of the USGS.

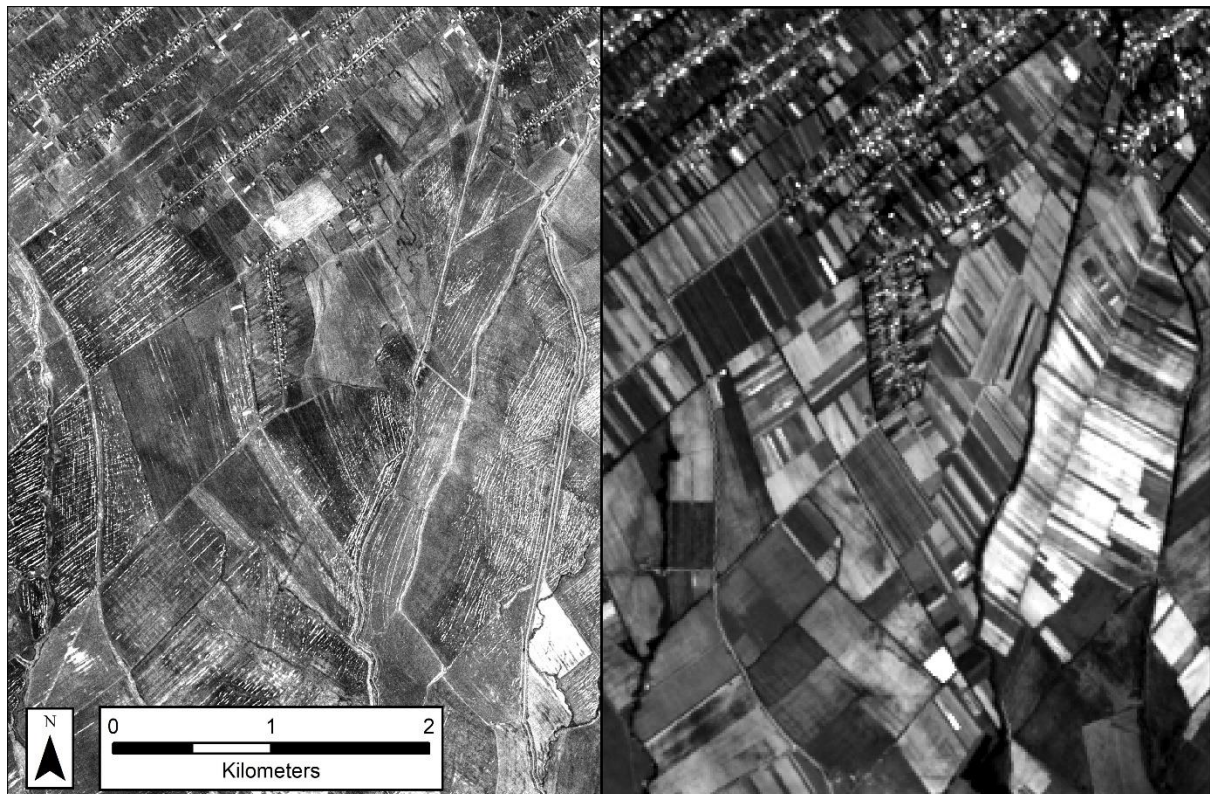


Figure 3: Tseligorebi or Ulianokva Kurgans. The excavators noted twenty kurgans in the area in the 1970s. Today, possible mounds and soil discolourations are visible on a satellite image from 2009 (Image © 2021 Maxar Technologies). In a field visit in 2018, only seven of the mounds had any visible topography (indicated by red dots). Drone photography confirms this and demonstrates the significant impact of ploughing (Drone image and DEM by Giorgi Kirkitadze).

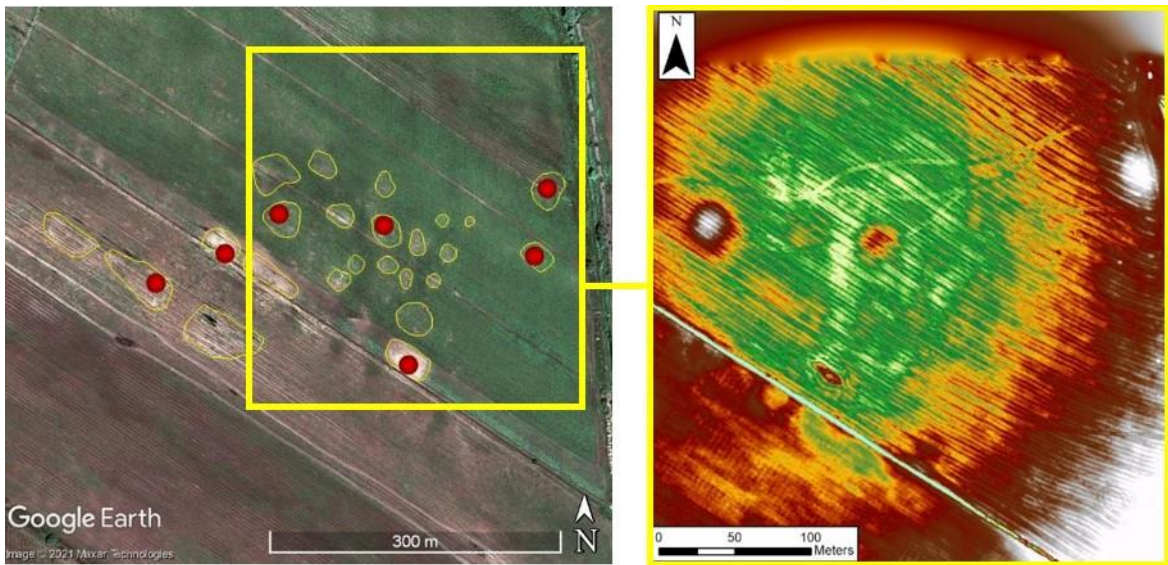


Figure 4: The forested banks of the Alazani River in 1968 on a CORONA imager (Left) and in 2018 on a Landsat 8 image (Right). Note the increase in forest area between the 1960s and present. Images courtesy of the USGS.

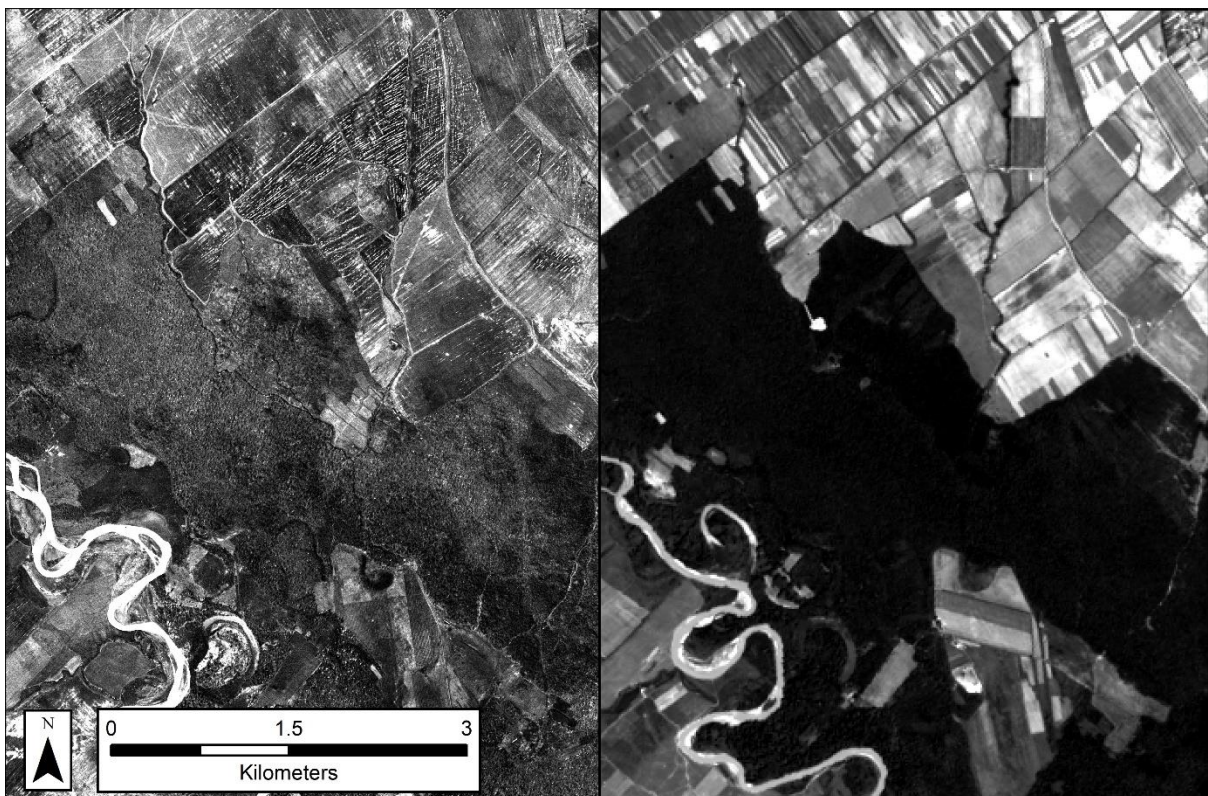


Figure 5: Survey in upland landscapes. Here there are visible remains of abandoned terrace systems.



Figure 6: Map showing site location and types located in the Lagodekhit Survey, supplemented by information from the Georgian National Cultural Heritage Database (<https://memkvidreoba.gov.ge>). Base map Landsat 8 (courtesy of the USGS).

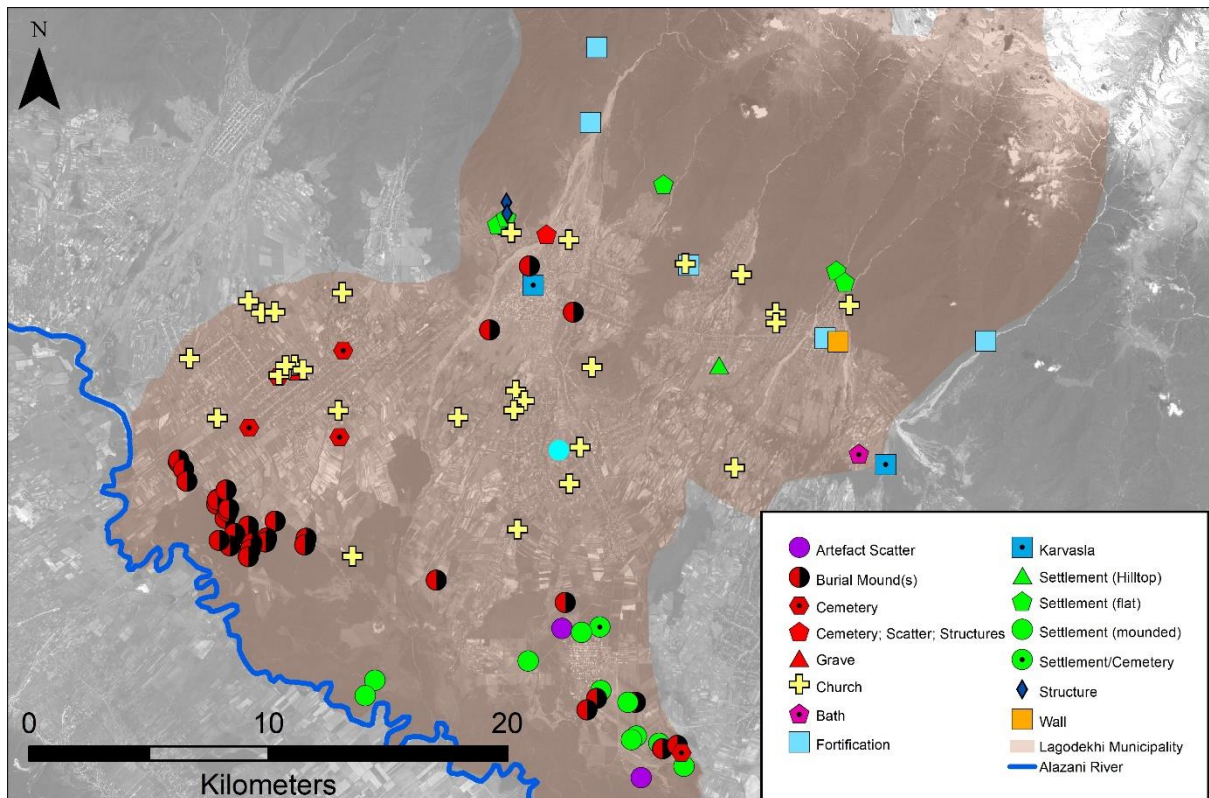


Figure 7: The kurgan located near the village of Kabali.



Figure 8: A possible hearth feature located in the upland landscapes. This may be part of a Medieval village.



Figure 9: The karvasla (caravanersai) near Kabali.



Figure 10: Remains of a possible wall feature encircle the karvasla (also visible) on a CORONA image from 1968. Image courtesy of the USGS.

