# 10. LANDSCAPE INVESTIGATIONS IN THE DARIALI PASS

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## *10.1. INTRODUCTION*

Our landscape investigations in Georgia have been conducted using a combination of field survey and remote sensing data, both aimed at developing an understanding of settlement and land use beyond the scale of individual sites. Large scale landscape analysis, especially of later periods, is a relatively new phenomenon in the South Caucasus, but over the last decade or so a range of important survey projects have begun to examine this diverse and archaeologically fascinating region.[1] At the same time, several scholars have made use of landscape data to investigate the emergence and structure of frontier regions in later territorial empires, particularly during the late antique period.[2] The research discussed in this chapter is informed by both of these developing fields. In the Dariali Gorge, our intensive survey to the south of the Dariali Fort was designed to recover archaeological remains from sites and other features in order to contextualise settlement at the fort itself, as well as to assess longer term patterns in land use and past lifeways in an upland environment. This investigation complimented work undertaken by the Persia and its Neighbours project team in Azerbaijan and Dagestan, the overarching aim being to assess the nature of frontiers in this key region, and especially to examine what David Breeze[3] in a different context has labelled the 'frontier in depth'.[4] Here again, however, the evidence recovered requires a wider temporal range than the late antique period, and allows us to examine questions beyond those associated with the form and function of frontiers and empires.

## *10.2. LANDSCAPE INVESTIGATIONS IN KHEVI*

The Dariali Pass Survey area is located in the Kazbegi/Stepantsminda district in the Mtskheta-Mtianeti region of Georgia in the Greater Caucasus Range, and is part of the region historically known as Khevi, which includes the Tergi/Terek River Valley, the Sno River Valley and the Truso Valley (Fig. 10:1). Despite its relatively marginal location, the area has been subject to a number of archaeological and ethnographic research projects over the course of the twentieth century. An excavation undertaken in the 1990s near the now abandoned village of Gveleti had uncovered a number of burials dating to the sixth-eighth centuries AD,[5] and there had been several wide-ranging investigations by Georgian ethnographers and archaeologists at a number of well-known towers, churches and fortifications that stretched along both the Tergi and Sno River Valleys south of Dariali Fort.[6] The objective of our survey was to increase the quantity and density of archaeological remains in the area by combining the use of both historical and modern satellite imagery and pedestrian survey. A key strategy involved the investigation of

[1] Anderson *et al.* 2014; Badalyan *et al.* 2015; Hammer 2014; Lyonnet *et al.* 2012; Ratte *et al.* 2010; see also papers in Anderson *et al.* 2018.
[2] Alizadeh 2014; Lawrence & Wilkinson 2017; Payne 2017.
[3] Breeze 2011.
[4] See also Howard-Johnston 2012.
[5] Mindorashvili 2005; see also chapter 9.1.
[6] E.g. Mindorashvili 2005; Itonishvili 1984; Ts'itlanadze 1976 etc.

terrace field systems in the area. Given the mountainous environment,[7] we hypothesised that periods that witnessed a noticeable increase in terrace construction should be those that saw more general intensified human activity in the landscape. We therefore excavated a number of small soundings in the terrace systems in order to understand their construction and use, and to obtain dating evidence – in particular samples of sediments suitable for analysis by Optically Stimulated Luminescence (OSL).[8]

### *10.2.1. THE PHYSICAL LANDSCAPE OF THE SURVEY AREA*

Our survey area extended along the Tergi/Terek River Valley between the Georgian-Russian border in the north and the settlement of Lower Ukhati in the south, and included a portion of the adjoining Sno Valley (up to the vicinity of the settlement of Karkucha) (Fig. 10:1). Mount Kazbeg, rising 5,047m above sea level (a.s.l.) is the most well-known and prominent geographic feature of this region. Mount Kazbeg formed as a result of significant displacement of the microplates of Transcaucasia exposing weakly metamorphosed volcanic and sedimentary sequences composed of clayey and carboniferous shales, siltstones, gravels and tuff sandstones of Early and Middle Jurassic age.[9] The main geomorphological features and processes visible within the gorge include the extensive fast flowing Tergi River and its associated tributaries, which have significantly altered the floodplain through time. The hydrological history of the gorge can be traced by the preservation of palaeochannels and extensive fluvial terraces that have been dissected by the Tergi River as it formed an anastomosing braided channel in the wider open floodplains in the South. The topography of the mountains is a constant reminder of the glacial processes that occurred, producing deep valleys and glacial scouring on mountain slopes.[10] Due to the rugged volcanic terrain, the gorge is prone to widespread hillslope processes in the form of rock falls and landslides caused by glacial snow-melt. Feeding into the gorge are extensive deep colluvial fans, some are still actively accumulating and others have stabilised, enabling permanent occupation.

As part of the Tergi/Terek River Valley, the Dariali Gorge (or Pass) extends from just north of Stepantsminda (also known as Kazbegi) towards and beyond the Georgian-Russian border. From near Stepantsminda to Dariali Fort, the base of valley descends from c. 1,740m a.s.l. to c. 1,250m a.s.l. The gorge is relatively narrow and steep-sided, particularly on its east side, and historical accounts indicate that it was even narrower in the past.[11] Within the gorge, the Tergi flows rapidly and is prone to regular avulsions within the highly constricted valley floor. Lyall[12] travelling through in the early nineteenth century observed that 'the Terek [Tergi] rolls its course with great rapidity, sometimes separated into a number of branches; no less than 800 soldiers were occupied in raising mounds of great stones and trees, called counter-forces to keep it from destroying the road, and to confine it within a regular channel'. There is a limited amount of flat, arable land within the gorge. Settlement in the recent past appears to have been concentrated on side valleys, lower slopes, plateaus and outcrops ranging in altitude between 1,400 and 2,100m. In the vicinity and south of Stepantsminda, however, the valley opens up considerably. Changes in the geology are also notable at this juncture. The granite and colluvium that predominate in the narrow gorge, transition to sandstones, marls and andesites.

[7] See chapter 10.2.1.
[8] See chapters 10.5.2.4, 10.8 & 24.
[9] Gudjabidze & Gamkrelidze 2003; Zonenshain & Pichon 1986; Philip *et al*., 1989; Volodicheva 2002.
[10] Volodicheva 2002.
[11] Porter 1821: 71-72; see also appendix II.
[12] Lyall 1825: 470.

The wider floodplain, comparatively large areas of gently sloping valley sides and flatter uplands mean that these areas have greater potential for both settlement and cultivation[13] (see Fig. 10:2). Similar conditions exist along the Sno Valley which meets the Tergi River Valley near the village of Achkhoti.

The area can be subject to extremely cold temperatures in the winter, often falling below freezing.[14] Significant snowfall and avalanches have also been known to restrict movement through the region.[15] Most precipitation, however, is received during the summer months.[16] The study region is dominated by subalpine vegetation occurring at altitudes between 1,900-2,500m.[17] At mid to high altitudes, vegetation is sensitive to subtle changes in climate, temperature, wind and soil. The preservation of soil is particularly important in dynamic mountainous environments to prevent erosion. Georgia has a variety of soil types within a small area due to significant vertical zoning. The area investigated largely consists of Mountain-Meadow soils. These soils are widespread in high altitude cold Alpine regions that formed under elevated moistening due to strong leaching.[18] Such soils form on the weathered substrates derived from sedimentary and metamorphic rocks that typically form the Central Caucasus mountain range,[19] which provide perfect conditions for subalpine vegetation such as herbs and grasses. Modern systematic soil survey of the region clearly showed that uplands areas (>1,800m) of the gorge were classified as poor to very poor/unusable soils, and only small patches of land on recently occupied thick colluvial fans are moderate to good quality soil for agriculture.[20] The Mid-Late Holocene pollen records mapped for Georgia by Connor and Kvavadze suggest that the landscape was dominated by coniferous forests and high mountain grasslands.[21] Palynological investigations in the frame of the project[22] reveal changes in the position of the forest line during the last 4,500 years. The landscape of interest in the Central Caucasus is dominated by subalpine vegetation occurring at altitudes between 1,900-2,500m.[23]

### *10.2.2. MODERN LAND USE IN THE REGION*

The extreme topography and upland climate present in the study area encourages stockbreeding (predominantly sheep, but also some cattle), though some cultivation also occurs. The region has an abundance of upland pasture, accessible in the summer months. Transhumance systems in which sheep were moved between summer pastures in the Kazbegi region and winter pastures in the lowlands on either side of the Caucasus range (e.g. the Nogai Steppe in Dagestan) have been in use for hundreds of years; these systems only recently collapsed after access to winter pastures ceased with the closing of the border between Georgia and Russia after the

[13] Radvanyi & Thorez 1977: 308.
[14] Radvanyi & Thorez 1977: 309; Nakhutsrishvili 2003: table 3.8.
[15] Morgan 1889b: 37; Gille 1859; Radvanyi & Thorez 1977: 309.
[16] Bock; Jolls, & Lewis 1995: 131.
[17] Nakhutsrishvili 2013: 13.
[18] Sumner 2000: 160.
[19] Molchanov 2010.
[20] Hanauer *et al*. 2017.
[21] Connor & Kvavadze 2008.
[22] See chapter 22.3.
[23] Nakhutsrishvili 2013: 13.

breakup of the Soviet Union.[24] Cattle were also kept on the available Alpine pasture in the summer, while in the winter they were pastured near to villages, and kept indoors overnight.[25] From at least the mid to late nineteenth century to the present day, agriculture has played a secondary role to pastoralism in the local economy. Sources indicate that small-scale cultivation of vegetables and legumes was common, and areas of relatively flat, arable land not in use for pasturage, were devoted to growing hay needed to feed animals in the winter months.[26] This pattern of agricultural land use appears to continue today, as observed in the field, and seen on the modern WorldView-2 imagery (Fig. 10:3). In the vicinity of most villages, garden plots can be found, while hay is grown near to the villages, and in areas of what may have formerly been upland pasture. In the past, the forest was also heavily exploited. By the time Radvanyi and Thorez[27] were writing their description of the Dariali region in the 1970s, however, forested areas had almost completely disappeared. A comparison of CORONA imagery from the 1970s and modern WorldView-2 imagery from the last c. ten years indicates that reforestation has occurred in some areas (e.g. near to Stepantsminda) (Fig. 10:4; see also Fig. 10:42). This may reflect more recent changes in fuel use by local communities or deliberate policies at regional or national levels or a considerable decrease in pastoral activities.

## *10.3. THE LANDSCAPE SURVEY IN KHEVI*

### *10.3.1. REMOTE SENSING OF SATELLITE IMAGERY*

Both declassified CORONA spy photography and contemporary high resolution imagery (WorldView-2) were used to identify potential archaeological features and for GIS-based analyses (Fig. 10:4). Types of imagery, dates of acquisition, resolution and coverage are detailed in Table 10:1. The CORONA spy photography was registered to orthorectified Landsat imagery obtained from the USGS (United States Geological Survey). The Worldview-2 imagery was purchased from DigitalGlobe in orthorectified format. ASTER (Advanced Spaceborne Thermal Emission and Reflection Radiometer) and 1 arc-second SRTM (Shuttle Radar Topography Mission) data provided information about the topography and were used for Digital Elevation Models (DEM); both have a spatial resolution of 30m.

CORONA, declassified American spy satellite imagery, has become widely used since its release in the 1990s for remote prospection of archaeological sites.[28] Taken in the 1960s and 70s, these images have been useful for viewing a range of landscape types, in the Near East in particular, as these appeared prior to recent programmes of agricultural intensification. However, in this case the CORONA imagery proved less useful than the higher-resolution modern WorldView-2 imagery taken between 2006 and 2012. There are two reasons for this: 1) The CORONA imagery contained a significant amount of shadow, a consequence of the mountainous landscape and the angle of the sun at the time the images were acquired, the effect of which is to overwhelm the more subtle differences in reflectance that have generally characterised archaeological remains; 2) The kinds of archaeological features that characterise this region are more likely to be structures of low-relief as opposed to the tell or tappeh-type sites characteristic of lowland areas across the Near East (often called ‘Gora’ in Georgia). The

[24] Bock *et al*. 1995: 132; Didbulidze & Plachter 2002: 90-95.
[25] Didebulidze & Plachter 2002: 97.
[26] Itonishvili 1953: 190; Mkrtumian 1979: 224; Radvanyi & Thorez 1977: 318.
[27] Radvanyi & Thorez 1977: 318.
[28] Alizadeh & Ur 2007; Beck *et al*. 2007; Casana 2014a; Casana *et al*. 2012; Fowler 2013; Philip *et al*. 2002; Wilkinson *et al*. 2013; Ur 2013.

relatively low quality of the CORONA imagery available, coupled with the dense ground cover characteristic of the region, meant that such sites were often obscured. 3) There has been little to no intensification of cultivation in the region between the 1960s and 2012, and minimal expansion of settlement other than in the vicinity of Stepantsminda and the Upper Tergi River Valley, and therefore far less destruction of cultural remains in recent decades than has been the norm across much of the Near East – thus removing one of the usual advantages of CORONA data.[29] However, where settlement expansion has occurred it appears to have been at the expense of field systems rather than earlier settlements (see for example Fig. 10:4). Ethnographic, demographic and economic studies reinforce this picture. For much of the twentieth century, the major economic activity in the region was pastoralism.[30] It appears that even by the 1930s, cultivation of cereal crops had declined significantly due to the fact that it was cheaper to buy flour imported from elsewhere than it was to produce it locally.[31] In the absence of agricultural intensification, population expansion or major infrastructure projects, the majority of features identified on the CORONA imagery were still visible in a similar state of preservation on the WorldView-2 imagery. The modern imagery was both higher resolution and multispectral, allowing more features to be identified.

Before beginning our first field season, a desk-top assessment of the various imagery sources was undertaken. The types of features that were identified included terrace field systems, abandoned structures (both single features and groups that appeared to represent settlements), and other anomalies that could not clearly be identified as modern. Abandoned structures and settlements were easily distinguished from modern villages and towns as they generally lacked roofs. Linear features, clearly not representing modern roads, were also highlighted as potential paths or drove ways. With few exceptions, all the features identified on the imagery were located within or adjacent to the river valleys. While over the long-term the majority of settlement has been located in the more accessible portions of the river valley, sites and features in the rockier upland terrain may have also existed. However, stone built features (by far the most common building material type in the region) are difficult to distinguish from the natural surroundings in this context.

### *10.3.2. FIELD SURVEY*

Employing traditional pedestrian survey methodologies to mountain/upland environments can be challenging due to terrain, land-cover and accessibility.[32] Traditional full coverage transect survey proved next to impossible over such dramatically steep topography. In light of this, we decided to undertake a hybrid survey methodology which involved visiting all areas of interest identified through the imagery analysis alongside a topographically informed survey that investigated accessible landforms capable of supporting agriculture and pastoral practices. The latter were defined as landforms up to c. 2,000-2,100m a.s.l. with gently sloping or flat topography that could be accessed without unnecessary risk to the surveyors. An additional complication became apparent in the field, where significant ground cover present in the summer impeded site identification and the systematic collection of dating material. In the case of the first issue, this was partly overcome by remote-sensing; the Worldview-2 images used were taken in the autumn (after vegetation had begun to die back and harvesting had taken

[29] Hritz 2014.
[30] Itonishvili 1953; 1984; Mak'alatia 1936: 63; Radvanyi & Thorez 1977: 318.
[31] Radvanyi & Thorez 1977: 318.
[32] See, for example, Ur & Hammer 2009; Gassiot Ballbè *et al*. 2016.

place). At times these provided more information on ground based features than surveyors could see in the field.

In June and July 2013 and July 2014, landscape survey and geoarchaeological investigations were undertaken in the study region.[33] In the first season, we focused on recording historical sites and landscape features in the Dariali Gorge between the Georgian-Russian border and Stepantsminda (see Fig. 10:1). Accessible landforms were traversed by members of the team spaced between five and ten metres apart and all features encountered were recorded. In the following season, efforts were focused on two tasks: spot visits to terrace field systems and other features identified on the imagery along the Tergi River Valley between Stepantsminda and Lower Ukhati, and recording the locations and context of the numerous towers and fortifications that are strung along the Tergi and Sno Valleys. All GPS points were given a unique ID or waypoint (WP) number and are listed below.[34] A site was defined as a broadly spatially contiguous set of features. These were each assigned a DPS (Dariali Pass Survey) number (i.e. DPS-1). Not all features recorded were assigned site numbers; such cases are simply referred to by their WP number. Over the course of the two seasons, we recorded and mapped 21 sites including fortifications, terrace field systems, settlements and burials (Fig. 10:5). An attempt was made to collect a sample of surface ceramics from each site. However, thick vegetation cover and geomorphological processes (e.g. sediment deposition) has meant that little to no ceramic material was recovered. Dating these features is therefore very difficult, if not impossible, except in very broad categories.

### *10.3.3. THE SITES AND FEATURES DATABASE*

We have incorporated the results of the remote sensing and field survey with information gathered from previous archaeological investigations and ethnographic and historical sources to produce a database of sites and features in the region. Both Mindorashvili [35] and Ts'itlanadze[36] offer extensive accounts of archaeological work in the region up to the 1990s. Although much previous research has focused on excavations, a number of surveys of varying type and quality have been carried out. In the late 1800s, several villages are mentioned as having been surveyed[37] and in the 1930s A. Kruglov is reported to have recorded and collected ceramics from c. 300 medieval sites across Khevi (though the material survives, it lacks associated spatial data). [38] Later surveys, undertaken in the 1960s and 70s by the Iv. Javakshavili Institute of History, Archaeology and Ethnography and the Zhinvali Archaeological expedition, led by R. Ramishvili and G. Ghambashidze, focused on recording graves and tombs at numerous locations in Khevi.[39] Finally, during investigations in the region by Davit Mindorashvili,[40] he and his team carried out a survey of the numerous towers in an attempt to understand their construction and date. Ethnographic studies[41] have also provided

[33] The landscape survey was led by Dan Lawrence and Kristen Hopper. Lisa Snape supervised the excavation of terrace field systems and further geoarchaeological sampling. The team was assisted over the course of both seasons by Lana Chologauri, Annamaria Diana, Emanuele Intagliata, Koba Koberidze, Zurab Lemondzhava, Fiona Mowat, Seth Priestman, Lyudmila Shumilovskikh, and Anthi Tiliakou.

[34] See chapter 10.7: Table 10:10.

[35] Mindorashvili 2005.

[36] Ts'itlanadze 1976.

[37] Mindorashvili 2005: 7.

[38] Ts'itlanadze 1976: 9.

[39] Mindorashvili 2005: 12; Ts'itlanadze 1976: 11-12.

[40] Mindorashvili 2005: 151-52.

[41] E.g. Dolidze 1959; Itonishvili 1953; 1967; 1971; 1984; Mak'alatia 1934.

further information on historical villages and landscape features. These data have been integrated with the results of the satellite remote sensing and our own field survey, along with data derived from Soviet period 1:50,000 maps, to create a database of sites and features located within the survey area.[42] Some challenges were encountered in integrating the data from multiple sources, due to variations in spatial certainty. In many cases, clear correlations could be made between sites mentioned in textual sources or visible on maps (often associated with extant villages or well-known historical or archaeological sites) and field or imagery derived data. However, this was not always the case, and where uncertainty exists this has been noted in the site record and following descriptions.

## *10.4. ARCHAEOLOGICAL AND HISTORICAL LANDSCAPES OF KHEVI*

This section will describe the sites and features investigated in the Tergi and Sno River Valleys by the Dariali Pass Survey. The material is presented geographically by valley, moving from north to south. This generally reflects the order in which the survey progressed, and allows us to consider the features identified within their local context. Fortified sites are the most common type in the study region, and are a frequent feature of upland regions in Georgia in general.[43] In Khevi, these include prominent forts (such as Dariali Fort), fortified settlements and individual fortified features such as houses and towers. In many cases they are found in association with modern villages.

### *10.4.1. DARIALI FORT AND CEMETERY (DPS-7)*

Dariali Fort (DPS-7) sits on top of a high promontory on the west bank of the River Tergi, and is mentioned in numerous classical and historical sources[44] (see Figs 10:5-6 for location). A survey of the site and its environs was undertaken by P. Bayern in the late nineteenth century, and excavations were carried out by Ts'itlanadze in 1962-1963 and Mindorashvili in late 1980s; Mindorashvili also investigated a medieval cemetery south of the fort.[45] Excavations by the Caucasian Gates Project (the initial name of our project), between 2013 and 2016, have provided evidence for occupation from the fourth century AD up to c. 1000 AD and between the late thirteenth to early fifteenth centuries.[46] Textual sources, which mention the Caucasian or Caspian Gates, also allow for the possibility of an earlier date.[47]

Prior to the start of excavations at Dariali by the project, all visible and accessible architectural features were recorded with a total station.[48] The fort and the architectural features associated with this defensive structure have been described in more detail elsewhere.[49] A cemetery was also investigated to the SSE of the fort. This was initially brought to our attention by the discovery of several cist burials located in an area c. 80m (north-west to south-east) by 50m (north-east to south-west) that had been bulldozed in preparation for the building work (Fig. 10:7). To determine the extent of the cemetery, the flat areas of the plateau to the west and south of the promontory were systematically traversed and all visible graves were recorded

[42] See chapter 10.7.
[43] Kobychev & Robakidze 1969.
[44] See chapter 25 for references.
[45] Mindorashvili 2005: 8-15; see also chapter 6.
[46] See chapters 2-6 & 25.
[47] See chapter 25.2.
[48] K. Hopper & D. Lawrence in Sauer *et al.* 2015: 890 fig. 5.
[49] See chapters 2-4.

with a single point on the total station. The full extent of the cemetery was difficult to determine due to vegetation cover. A total of 84 graves or possible graves were recorded with varying levels of certainty - low, medium, high, or definite (see Fig. 10:7). The resulting distribution of features clearly favours the areas which were cleared (the density of features, and the certainty attached to them lessened considerably outside of the bulldozed area). With this caveat in mind, it appears that the cemetery extended to the north-west and west of the cleared area for a further 30m (and up to 60 m). The south-eastern limits of the cemetery do not appear to have extended much beyond the cleared area, as only two further possible grave features were located in this direction. To the east, the edge of the cemetery is defined by the sharp drop off to the valley below. Graves eroding out of the face of the plateau edge suggest that the cemetery might have extended further in the past. The excavation of several of these graves has already been reported, and has produced radiocarbon dates spanning the late seventh/eighth-late tenth/early eleventh centuries AD.[50] To the south of the cemetery, no archaeological features were visible, though the landform was accessible for a further c. 700m before reaching the steep banks of the Amali River that flows into the Tergi. No crossing point of the Amali River valley was located.

### *10.4.2. THE DEVDORAKI AND AMALI VALLEYS*

The Devdoraki and Amali Valleys connect the glacier of the same name to the Tergi River Valley via the Devdoraki and Amali Rivers (see Fig. 10:1). The Amali River is deeply incised. Landslides, along this course appear to occur on average every few years or so (mostly recently with devastating effect in 2014 and 2015) and are caused when large amounts of ice break away from the glacier (compare Figs 10:8-9). Similar events are described by nineteenth century travellers.[51] The northern side of the west-east running valley has very steep sides and is highly inaccessible. However, south of the Amali River (beginning from nearly 3km west of where the valley meets the Tergi River Valley) is a gently sloping plateau c. 300-400m wide. At its eastern end, this landform sits roughly 20m above the Amali and Tergi Rivers. Two small lakes are located at the eastern end of the valley. Another small lake is also located at the western end of the valley.

The valley was surveyed from its eastern edge above the Tergi to a point c. 2km into the valley. Due to the proximity to the border, we did not survey further into the valley. However, satellite images and map data indicate isolated features beyond this point that appear to represent single ruined structures. These are on, or near, the route through which the glacier is accessed.[52]

Within the area of pedestrian survey, remains of a settlement and various other stone and earth installations were located and designated as DPS-5 (Fig. 10:10). The settlement and associated enclosures are located approximately 750m into the valley from the point where it intersects with the Tergi River Valley. Some of the structures appear to have been out of use for a considerable period of time, although repairs to a few of the buildings speak to some reuse in the recent past, a view supported by the presence of modern refuse at the site; the structures would not have been suitable for anything beyond temporary shelter during the summer months. However, we did not encounter anyone at or near the village during the survey. Approximately 100m north from the western edge of the settlement are the remains of a wall that runs across the plateau from south to north, ending where it meets the southern bank of the Amali River.

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[50] See chapter 6; cf. A. Tiliakou *et al.* in Sauer *et al.* 2015: 895-96 table 1.

[51] Lyall 1825: 503; Porter 1821: 75-76. See also appendix I.

[52] Itonishvili 1984: 9. See also chapter 10.7: DPS-5.

The wall is positioned near the break of slope above and to the west of the village. The ruined state of this feature makes it difficult to estimate its original height, but it may have been used to keep animals in or out of upper pastures. While the lower portion of the wall is likely buried, it would not have been of sufficient height to serve a defensive purpose (Fig. 10:11). Equally, its narrow width and construction technique suggests it was primarily a field wall, though the stones used in construction are of considerable size for such a purpose. It is possible that it also acted as a boundary marker or served some purpose connected to local disputes in the eighteenth or nineteenth century (see below).

Circular or oval pits of generally between one and five metres in diameter, sometimes connected by linear depressions, were also located throughout the valley, along with a number of rectilinear, stone lined (sometimes employing mortar) semi-subterranean features (Fig. 10:12). These too, often had a linear depression leading to/away from them. The rectilinear semi-subterranean features were roughly five metres in diameter and had a 'window' or gap in the stone-work set into the end opposite to the linear depression. Local residents suggest that the rectilinear features, at least, may have served as foxholes during conflicts in the eighteenth and nineteenth century. It is possible that the circular or oval depressions may have been used similarly or have had an altogether different purpose.

We also located what appeared to be a group of cairns in a prominent location to the west of the larger of the two lakes at the eastern end of the valley (Figs 10:13-15). In 2016, our fieldwork team undertook a detailed survey of these features. A total of 68 certain or probable cairns were identified. Each feature was described, photographed and its extent recorded with a total station. The cairns varied in diameter, with the majority being 1-3m in diameter.[53] There is no obvious trend in orientation. The majority of the cairns were rectangular or sub-rectangular in shape, though irregular, circular and sub-circular morphologies were also recorded.

Due to their clustering and placement in a prominent location, above the zone affected by landslides, we suspected that they might be burial cairns. Approximately 700m south of the entrance to the Amali Valley, a cemetery was excavated by Mindorashvili in the 1990s and dated to the late antique period.[54] Consisting of cist burials, these graves were markedly different, and suggested that the cairns in the Amali Valley, now shown to be unrelated to any burials, may be of another date. However, in the case of the cairns in the Amali Valley we found no obvious structural features.

Excavation of two of the cairns has not revealed any evidence for any form of burial.[55] Clearance cairns, resulting from the clearing of agricultural fields, are found throughout the region, but are generally less uniform in size and are almost always located in proximity to features such as terraces, or field walls. No evidence for ancient or recent cultivation as represented by field systems was evident in the Amali Valley. While it is not impossible that the cairns in the Amali Valley could have resulted from field clearance, it seems strange that in an area replete with rocky ground, such features would be limited to this hilltop, if the goal was to clear the surrounding area for cultivation. The function of these features currently remains a mystery.

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[53] The original count was 72 certain, probable or possible cairns, but four of these have been classified as 'uncertain' from the start, leaving 68 certain or probable cairns. Total station measurements suggest the mean diameter was 2.2m.

[54] Mindorashvili 2005 and chapter 9.1.

[55] See chapter 9.2.

Local informants indicated that the settlement located in this valley was called Daba, and people used to reside here with their herds during the summer months. Writing in the eighteenth century, Vakhust'i Batonishvili (Bagrationi) indicates that there was a place north of Gergeti called Gveleti, that was formerly called Daba;[56] however, Itonishvili[57] indicates that at some point, Daba came to be the name of the place located c. 2km to the north of the village of Gveleti, where animals were brought to graze, and would seem to correspond to the location visited in our survey.

Indeed, the keeping of large herds of sheep in the Dariali region during the summer months appears to have been common up until 1991. Independence from the Soviet Union, insecurity and the resulting establishment of national borders meant that winter pastures, located in Dagestan, were no longer assessable to the inhabitants of this region bringing an end to this transhumance system.[58] As a result, herd sizes have declined dramatically in many parts of Georgia since 1997.[59] While we encountered a few cows and horses near the location (but no sheep or goats), there did not appear to be any intensive use of this landscape for grazing during the visits we made to the site in June/July of 2013 and 2014. It seems possible that the Amali Valley may have been used predominantly for summer grazing over the long term, a supposition supported by the lack of clear evidence for investment in agriculture (i.e. terraces or field walls). Frequent landslides that appear to follow the course of the Amali River may have also influenced land use, as despite the fact that the more elevated areas of the valley may have been out of reach of such landslides, cultivation and even permanent settlement on this landform may have been perceived as risky.

### *10.4.3. FORTIFICATIONS AND SETTLEMENTS ALONG THE TERGI RIVER VALLEY*

Here we present a brief overview of the main settlements, fortifications and landscape features that were recorded by the field survey between the Amali Valley and the junction of the Truso and Tergi Valleys. Three sites were visited in the Dariali Gorge, between the Amali Valley and Stepantsminda/Gergeti. The steep-sided gorge, and the fast-flowing river have created conditions under which settlement and cultivation are limited to the raised west bank of the river near Gveleti (extending along the Tergi River Valley immediately south of the Amali Valley) and several high plateaus (c. 1,800 to 2,100m a.s.l.) also on the west side of the gorge.

#### *10.4.3.1. GVELETI (DPS-1 TO DPS-3)*

Gveleti Settlement (DPS-1) is located at the confluence of the Tbitstskali (Gveletistskali) and the Tergi Rivers (Fig. 10:16). The site consists of the ruins of a settlement and the remains of a tower (Figs 10:17-18). A few modern houses are located at the northern extent of the village, but did not appear to be occupied at the time of the survey, though hay is still harvested in the vicinity. The tower, square at its base and surviving to a height of around 6m, is constructed of large roughly square blocks held together by mortar, and tapers as it increases in height. Only two corners of the tower survive (roughly east and west) (Fig. 10:18). Lyall[60] described 'numerous villages, with square pyramidal towers, and surrounded by walls' particularly on the west bank of the Tergi; he notes that these towers were no longer in use at the time of his

[56] Vakhusht'i = ed. & trans. Brosset 1842: 228-29.
[57] Itonishvili 1971: 144.
[58] Didebulidze & Plachter 2002: 93.
[59] Didebulidze & Plachter 2002: 97.
[60] Lyall 1825: 473.

travels in the early nineteenth century. This tower may well be one of this type. Several other features including an enclosure and a possible cist grave were located c. 100m further west in the side valley (WPs 83-86), on the same side of the river as the village. A church, with remains of frescoes dated to at least the thirteenth/fourteenth century, is reported to be located on a hill north of the village, briefly visited by a member of the team.[61] There is a second small church with a crypt located on the Lower Gveleti Fort identified by Mindorashvili and explored by the fieldwork team.[62]

Across the stream and overlooking the village from the south are two fortifications (DPS-2). Sitting atop high promontories overlooking the Tergi, access to these forts (henceforth referred to as the Upper and Lower Gveleti Forts) is achieved through the side valley mentioned above. The ruins of two towers are mentioned by Mak'alatia[63] at Gveleti, but it is uncertain if this refers to the tower in the village and/or the Upper and Lower Gveleti Forts.

Various archaeological features were recorded in the valley leading up to the main fort including several small stone walls and a walled cave (DPS-3) (Fig. 10:19). Excavations were carried out on the Lower Gveleti Fort and are described above. Radiocarbon dates indicate that activity took place at the lower fort between the late eighth and tenth century, the late tenth and thirteenth century, the late thirteenth and early fifteenth century and the mid-fifteenth and seventeenth century.[64]

The relationship between the forts, and the settlement and tower is unknown. No ceramics were located by the survey due to thick vegetation. A village called Gveleti is mentioned in the document *Gergetis sulta matiane* dating to the fifteenth century.[65] Vakhusht'i Bagrationi, an eighteenth-century geographer, also mentions Gveleti, locating it on the west bank of the Tergi between Gergeti and Dariali.[66] Gveleti was occupied by people from Ingushetia in the nineteenth century and Mokhevians from Tsdo and Kazbegi (Stepantsminda) in the twentieth century.[67] By 1926, the village had only 14 inhabitants comprising four households, though some people from Khevi had summer dwellings and kept animals here.[68] The better state of preservation of the houses and structures observed in the village, suggest that these belong to its most recent incarnation, and they may be of a substantially different date to the tower and forts. Indeed, while we cannot offer a more specific date for many of these features, it is likely that this is a post-medieval village.

A saddle running roughly north-east to south-west sits between the steep rock wall of the gorge and the spurs on which the upper fort at Gveleti is located. Immediately beyond this to the south we located a small rubble retaining wall, perhaps blocking access to the forts from the south (WP-44). After crossing this wall, one finds a small 'goat track' running south along the steep hillside toward the village of Tsdo (see below). Approximately 200m along the track from the wall that was mentioned above is a small square stone structure that may have acted as a lookout (WP-46) (see Fig. 10:16).

### *10.4.3.2. TSDO (DPS-6)*

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[61] Itonishvili 1984: 8; Kruglov 1937: 248, 250 fig. 4; Zakaraia 2008; Dr Denis Beletskiĭ, pers. comm.; see also chapter 8.8.
[62] Mindorashvili 2005: 210, fig. V.4, cf. chapter 8.8.
[63] Mak'alatia 1934: 247.
[64] See chapter 8.
[65] Itonishvili 1984: 8.
[66] Vakhusht'i = ed. & trans. Brosset 1842: 228-29.
[67] Itonishvili 1971: 137-38.
[68] Mak'alatia 1934: 18, 247.

Continuing southwards the next settlement is the village of Tsdo (DPS-6) (see Fig. 10:5 for location). The village and an associated terraced field system[69] sit in a slight depression between the gorge wall proper and a high ridgeline whose eastern edge drops sharply toward the Tergi. The site is accessed from the south via a switchback. At present, the village appears to only be occupied during the summer months by a handful of families. Census information from 1926 indicates that that Tsdo had 31 households and a population of 161;[70] however, over the course of the twentieth century Tsdo, like many of these small villages in Khevi (particularly ones at higher altitudes) were abandoned and the populations moved into towns (such as Stepantsminda) or to larger cities elsewhere.[71]

Interspersed with the modern houses are the remains of what are clearly older stone architectural features; these are more frequent as one ascends the ridge line (Figs 10:20-21). On top of the ridgeline the ruins of numerous stone structures are found, including on the highest point, what appeared to be a small fortification, or perhaps even a tower (Figs 10:22-23). The tower is roughly rectangular, forming a room of 8x4m. Further walls are visible on the same level as the tower, extending to the south and forming an L-shaped complex of structures. Below the tower are numerous roughly circular enclosures. Mak'alatia[72] indicates that by the earlier twentieth century the ruins were part of a chapel called Kviregvtisshvili, and a tomb was located nearby. A stone ram sits on one of the walls of the fortification (Fig. 10:22). An Orthodox Christian shrine is also found on the western edge of this complex (Fig. 10:23). A village of this name is mentioned in a fifteenth century document of Sakdrishvili of Gergeti (გ ე რგ ე ტ ე ლ ს ა ყ დრ ი შ ვ ი ლთა XV ს ა უკ უნ ი ს ს ა ბ უთი , translit. *Gergetel Sakdrishvilta XV saukunis sabuti*).[73]

### *10.4.3.3. DPS-8 AND THE CHKHERI VALLEY*

The remains of another possible settlement and a terraced field system (DPS-8) were located c. 1.8km south of Tsdo on a high plateau (see Fig. 10:5 for location). This site consisted of a cluster of stone walls and structures near the northern edge of the plateau and an extensive terraced field system (including field walls and clearance cairns) (Figs 10:24-25).[74] The structures suggest that the settlement may have only consisted of a few households. While there was no evidence of recent settlement, hay is still harvested and horses grazed on the plateau (clear from the false colour infrared Worldview-2 image and observations made in the field – Fig. 10:26). Itonishvili[75] indicates that an abandoned village called Kobi or Kvabi (ქ ობ ი /ქ ვ ა ბ ი )[76], which is named in textual sources from the second half of the eighteenth century, was located on a plateau to the south of Tsdo. From this description it is probable that DPS-8 is Kobi (Qvabi). If so, it seems that the site was abandoned at least by the 1920s, as it was not mentioned in Mak'alatia's[77] list of villages in the Tergi River valley from 1926.

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[69] See discussion in chapter 10.5.
[70] Mak'alatia 1934: 18.
[71] Radvanyi & Thorez 1977: 315.
[72] Mak'alatia 1934: 246-47.
[73] Itonishvili 1971: 135-36.
[74] See also chapter 10.5 for discussion of the terraces.
[75] Itonishvili 1984: 4, 9.
[76] Not to be confused with the location colloquially called Kobi that is found where the Truso Valley meets the Tergi Valley, i.e. near the village of Lower Ukhati (c. UTM 38N 459848 E, 4712074 N).
[77] Itonishvili 1984: 18-20.

Access to this site is extremely difficult from the north, despite the existence of a rough path. Interestingly, built into the steep rock face on the north approach, we located a small square stone structure that could have served numerous purposes including that of a lookout. Easier access was achieved from the south, where the plateau could be ascended from the north bank of the River Chkheri, near the village of Gergeti, via a steep footpath. However, no vehicle access is possible. The difficult access to the site may account for its relatively early abandonment and lack of later resettlement.
A number of enclosures are also visible along the left (north) bank of the Chkheri River. These could be relatively recent and probably served to keep animals out of areas where fodder is harvested for winter. On a high promontory, further into the valley, several structures were identified through the inspection of satellite imagery and Soviet maps and designated as DPS-52 (Fig. 10:27). A complex of rectilinear rooms was confirmed in the field during a visit to the site in 2017 by Przemysław Polakiewicz, a member of our team. The exact function or date of this feature is not currently known, though its location along the river valley immediately north of Gergeti (see discussion below) may indicate that it functioned as some kind of fortification, lookout or refuge.

### *10.4.3.4. THE TERGI RIVER VALLEY (STEPANTSMINDA/GERGETI TO LOWER UKHATI/KOBI) AND THE SNO VALLEY*

South of where the Chkheri River flows into the Tergi, the Tergi River valley widens considerably. Porter[78] describes the change in terrain well:

> 'We descended gradually into a wide valley, crossing the Terek [Tergi] over a wooden bridge, at no great distance from the village. Here the river totally lost its rapidity and violence, flowing gently through the vale, which its refreshing waters covered with the finest verdure. The bordering mountains, also, at this part, showed luxuriant green, clothing the numerous ravines which indented their sides, and gave shelter to clusters of picturesque huts, inhabited by Ossitinians, and usually drawn around the remains of some old stone tower, which, in ancient days, had commanded and protected these minor passes from the inroads of hostile tribes.'

On its west bank sits the village of Gergeti which is overlooked by the famous Gergeti Church and Monastery, built in the fourteenth century[79] (see Fig. 10:5 for location). Immediately across from Gergeti, on the east bank of the Tergi, is the town of Stepantsminda, formerly known as Kazbegi. The most famous archaeological find from this region, the Kazbeg Treasure, was excavated in the village in 1877. The 'treasure' included several hundred metal objects, including an Achaemenid-period silver bowl that has been dated to the sixth/fifth centuries BC. Unfortunately, the site was looted during the excavations and many objects were dispersed among private collections and museums.[80] The context of these finds is in dispute, however, and it is not certain if the objects were associated with a burial.[81] Other excavations also took place in the latter half of the nineteenth century in and around the village; the finds appears to range from the first century BC/first century AD through to the Middle Ages. The most recent work appears to have been undertaken in the 1960s during which several late medieval burials

[78] Porter 1821: 84.
[79] Zakaraia 1972.
[80] Boardman 2000: fig. 5.73 a, b; Knauss 2006: 81; Miron & Orthmann 1995: 163-64. See also chapter 25.1.
[81] Miron & Orthmann 1995:163-64.

were uncovered.[82] The archaeological evidence, though perhaps biased by the attention that has been focused in this vicinity, suggests that this may have been a favourable location for settlement over the long-term, likely due to the availability of flat or gently sloping land.

Itonishvili[83] indicates that the modern settlement of Stepantsminda is composed of two earlier villages – Kazbegi (Stepantsminda) and Targmani. While many of the sites discussed thus far have either been abandoned or seen reductions in population over the course of the twentieth century, Stepantsminda has grown in size. A comparison of the historical and modern imagery clearly shows that settlement has expanded south into an area that appears to have formally been covered by field systems (see Fig. 10:4). We did not attempt to survey within the limits of Stepantsminda because the modern town would have destroyed or obscured all surface archaeological remains. We did, however, undertake a detailed recording of the field systems located immediately north of the settlement (DPS-9) which is described below.[84] In future, survey to the east and south of Stepantsminda should be prioritised, and development in the town requiring sub-surface work should be monitored.

Southwards from the vicinity of Stepantsminda and Gveleti our survey was much more selective and focused mainly on recording terrace field systems (discussed below). However, we also made brief visits to several abandoned settlements and towers/fortifications. We recorded the remains of a possible settlement and burials (DPS-16) on a gentle slope above the modern village of Kanobi (see Fig. 10:5 for location). The moderately high but flat valley on which the village and site sit is bounded on the south by the deeply incised Tergi River Valley and to the east by another deeply incised river valley, with steeply sloping banks that flows into the Tergi. Little is visible of the old Kanobi either on the imagery or on the ground. Two low mounds were visible approximately 30m apart, but the height of the vegetation may well have obscured less obvious features (WP663-WP664) (Figs 10:28-29). The north-east edge of the site is marked by a steep drop of nearly 30m to the river valley below. Here, walls and/or structures were found eroding out of the section, approximately 20-50cm below ground level (WP662). Further north (c. 40m) along the section, a cist grave was visible, and a second was noted another c. 40m northwards (WP665-WP666).

Near the southern extent of the survey area, we also visited the site of Ukhati (DPS 17) which sits on a high gently sloping plateau above the Tergi floodplain (see Fig. 10:5 for location). There is a sharp drop towards the river on the west side of the plateau. The site is backed by steep mountains to the east. To the south of the site is a deeply incised valley containing the Narvani River that flows into the Tergi. On top of the plateau were the remains of what appears to be a field system, several circular depressions and the remains of a village. Several modern houses appear to be in use, at least seasonally. The topography of the site is reminiscent of sites such as Tsdo (DPS-6) and DPS-8, and it sits at a similar altitude (c. 2,100-2,150m a.s.l.), though clear traces of terracing were not located. Terracing, however, might not have been needed on this wide, gently sloping plateau.

### *10.4.3.5. TOWERS*

Towers were noted as a prominent and already antique feature of the Tergi River valley by the first half of the nineteenth century .[85] Examples, such as that at Gveleti have already been mentioned. The remains of towers are also found in Stepantsminda and Gergeti. These features

[82] Mindorashvili 2005: 6-8; Ts'itlanadze 1976: 10-11.
[83] Itonishvili 1971: 105.
[84] See chapter 10.5.1.3.
[85] Gille 1859: 245; Lyall 1825: 473.

have been commented on by travellers, ethnographers and archaeologists for much of the twentieth century.[86] Most recently, Mindorashvili[87] and his team, during their investigations in their valley between 1988 and 1991, surveyed a number of towers, and made observations on trends in morphology and broad periodisation. However, dating these features is difficult because of the lack of independent dating materials and our limited understanding of the nature and significance of local architectural changes through time.

We visited a number of these tower features during our survey. The majority were associated with settlements (ruined or still extant). These features (along with several that were not visited in the field but are known from other sources) are summarised in Table 10:2. Both semi-circular and square towers are found in the region and may have served as watchtowers or refuges. The semi-circular towers are generally dated to an earlier period (early medieval) than the square ones; this appears to be based on architectural comparisons to examples from other regions.[88] Some of the towers (i.e. the ones in Pansheti, Sno and Sioni) are said to have been built by prominent families as places of refuge and are likely the latest in (Table 10:2; Figs. 10:18, 10:30-38).[89] Did any of the fortifications and towers in the Tergi or Sno River Valleys form an integrated system? Without knowing which towers were contemporary, this is difficult to tell. At this point, we can only say for certain that there was contemporary activity on Dariali Fort and Gveleti Fort, likely in the eighth to tenth or early eleventh centuries and again in the late thirteenth to fourteenth century. None of the surviving dated architecture on Gveleti Fort is earlier than the fourteenth century, even if it seems likely that there were earlier collapsed or demolished dry-stone structures.[90]

Studies evaluating the visibility and inter-visibility of sites and features within an archaeological landscape have provided interesting insights about interconnectivity, particularly in the context of defensive landscapes.[91] While more rigorous models can be applied with the improvement of the data, we evaluated the possibility of an integrated tower communication system by undertaking a visibility analysis in a GIS. A visibility analysis determines the areas of the landscape that are visible from a chosen point (observer point); in this case, the observer points are the towers. An SRTM 30m DEM was used for determining the height of the terrain. The tower locations were determined either from GPS coordinates taken in the field or from satellite imagery; the margin of error for the former is c. 5-10m, while it can be up to 30m for the latter. Furthermore, the original height of most of the towers is difficult to determine given their ruined state, however, a number (e.g. Khurtisi, Pansheti 1, Sioni) are over 10m tall (and in some cases, almost 15 m). Taking this into account, along with the resolution of the DEM, and the lack of information on the original height of the towers, we varied both the observer height (10m, 15m and 20 m) and the height of the surface being observed (ground level, 10m above ground level as represented by the DEM). Bearing these caveats in mind, several observations can be made.

According to the visibility analysis, most of the towers could see at least one other tower. The exceptions were Dariali Fort and Gergeti Tower, from which no other tower was visible at any observer height. For Dariali Fort, it is clear that the parts of the landscape that were visible were almost exclusively to its north and east, regardless of the change in observer height (Fig. 10:39). If, as suggested by travellers to the region in the nineteenth century, the gorge was in

[86] Itonishvili 1967; Mindorashvili 2005; Zakaraia 1972; 1973.
[87] Mindorashvili 2005: 151-55.
[88] Mindorashvili 2005: 151-55.
[89] Itonishvili 1984: 17; Mak'alatia 1934: 124-27.
[90] See chapters 2-4, 8 & 25; cf. Sauer *et al*. 2015.
[91] E.g. Early-Spadoni 2015.

places much narrower in the past, this view would have been further restricted, likely to the east and south in particular. This clearly demonstrates that Dariali Fort was built to guard the pass against enemies coming from the north. The lack of inter-visibility of Gergeti Fort with any other tower is perhaps explained by our lack of knowledge of the location of the towers in Stepantsminda – it seems likely that they would have been able to see or have been seen by the tower at Gergeti since this is straight across the valley.

Depending on observer height and the height of the object being observed, between 44% and 69% of towers/fortifications could see at least two other sites. However, in many cases where this occurred, at least one of the visible sites was in the immediate vicinity of the observer point (e.g. < 50m away), or the two towers that could be viewed were in close proximity to each other (< 50m apart) (e.g. Pansheti Tower 1 can see Pansheti Tower 2, or Khurtisi Tower can see both of the towers on the outcrop south of Lower Ukhati/Kobi) (Tables 10:3-4).

The viewsheds for the Upper and Lower Gveleti Fort do not differ dramatically, though the higher position of the Upper Gveleti Fort offers slightly wider views. The current dating evidence suggests that Dariali Fort was occupied earlier than the Gveleti Forts, though they may have been used contemporaneously in the late thirteen or early fourteenth century AD (and perhaps sometime between the eighth-tenth century AD). However, it does not appear that inter-visibility between these two specific structures was ever a major consideration, although other stations, possibly positioned at higher elevations, could have enabled communication.

Both the upper and lower fort at Gveleti can see the entrance to the Amali Valley. Interestingly, the fortlet/tower, at Tsdo is just visible from both Gveleti Forts at multiple observer heights, assuming that the tower at Tsdo was at least 10m high; this was confirmed by observations in the field in which it was clear that the ridgeline on which the Tsdo fort/tower sits was visible from Upper Gveleti Fort. From the opposite direction, a viewer in Tsdo tower (at a 15m observer height) would have been able to see the Upper Gveleti Fort. Even so, it is difficult to determine if Tsdo tower and the Upper Gveleti Fort were ever in direct visual communication as we do not know if the towers/fortifications at these sites were ever contemporary. Tsdo Fort is however, clearly visible from the tower to the south of Stepantsminda, but the Gveleti Forts are not. Factoring in the towers that were said to exist within Stepantsminda itself (for which we do not have location data) could of course, change our perspective on inter-visibility even more. The possibility that such towers could be seen from Tsdo is highly likely, but it is unlikely that they would have been seen by either the Upper or Lower Fort at Gveleti, or by the Gveleti Village Tower. Furthermore, the towers in Stepantsminda may have been considerably later in date than the Gveleti Forts. Most of the other towers and fortifications conform to a similar pattern in that they can see none, one, or two other towers. The overall impression is that these features were placed in defensible positions with good views of their immediate surrounding territory, but were not part of an integrated long-distance signalling or defensive system (even if there might have been short local chains).

This may suggest that in many cases, towers and fortifications were focused on a 'community territory', a concept defined by Given and Hadjianastasis in their study of Cypriot landscapes of the Ottoman period.[92] The community territory is composed of 'networks of places and meanings' the limits of which are defined by daily activities and interactions with the landscape.[93] For instance, a community territory is demarcated not just by the edge of a settlement, but by the limits of daily movement such as trips to fields or pastures, or by the distances that voices or church bells carry from the village. Furthermore, they observed that in

[92] Given & Hadjianastasis 2010.
[93] Given & Hadjianastasis 2010: 43.

the case of the Ottoman villages of the Troodos Foothills, this community territory was often defined by relief and possibly the lack of inter-visibility between the communities.[94]
However, in certain cases more localised integration of the towers and fortifications can be suggested. For example, the towers with the widest views (and which can see the most other towers) are Achkhoti, which is situated at the juncture of the Tergi and Sno River Valleys and the tower/fort south of Stepantsminda. The former has excellent views, can see several other towers and was not clearly associated with a settlement.[95] This suggests that the function of Achkhoti Tower was to monitor traffic coming from the north and access to the Sno Valley. The tower south of Stepantsminda, again, freestanding (as in not within a settlement), also appears to have functioned as a way of monitoring traffic, in particular coming from the south up the valley, and could have been in communication with Tsdo, Panshetti or Arsha/Gaiboteni. In summary, the limited inter-visibility between Dariali Fort and Gveleti Forts (the towers in the Tergi and Sno River Valleys with evidence for use in similar periods) provides no evidence for an integrated regional defence system involving these towers in those specific periods. However, with further refinements to chronological and spatial data and the application of rigorous statistical models, future analysis may be able to better explore these possibilities. It is also possible that defensive communication systems may have existed in particular periods, utilising structures and features that have not survived in the archaeological record. However, it is clear that many of the towers and structures discussed here appear to have functioned as lookouts, or places of refuge in the event of local raids or skirmishes. The free-standing examples such as the one south-west of Gveleti, or above Khurtisi are perhaps more likely to have served as the former. Those within settlements may have also been used as refuges and can also be seen as symbols of wealth and power built by important local families, exemplified by a documented example at Pansheti.[96]

## *10.5. TERRACE FIELD SYSTEMS*

Some of the most robust landscape features noted during the survey were the remains of terrace field systems (Fig. 10:40). These are distinguished by roughly parallel sets of treads and risers running perpendicular to the direction of slope, therefore resembling steps. The treads are the horizontal or gently sloping surface of the 'step', while the risers are the vertical or more steeply sloping portion of the 'step'. Because of their scale and distinct morphology, these were also the most easily identified feature type on both the historical and modern imagery. Furthermore, they appeared, for reasons that will be discussed in detail below, not to have been maintained in the recent past. These systems were of particular interest as they suggested a significant investment in agriculture at some point in the history of the settlement of this landscape. Within the survey area, terrace field systems were located, mapped and in several cases targeted for geoarchaeological investigations.

### *10.5.1. SURVEY AND MAPPING OF TERRACE FIELD SYSTEMS*

Three large terrace field systems were visited and mapped in the Dariali Gorge (DPS-6, DPS-8 and DPS-9). This involved mapping the extent of the terrace risers, associated walls and other

[94] Given & Hadjianastasis 2010: 57; Given & Gregory 2003; see also http://www.scsp.arts.gla.ac.uk/Pages/Fieldwork/viewsheds.html.
[95] The modern village of Achkhoti (next to the tower) was apparently only settled in the twentieth century (Itonishvili 1984: 20).
[96] Mak'alatia 1934: 124.

features, as well as recording construction materials and identifying locations for excavation and geoarchaeological sampling. While several appeared to have been divided into modern plots (often for growing fodder for animals), it was clear that in no case had the terraces been maintained in the recent past. At these locations, each terrace 'riser' was photographed and recorded (a GPS point was taken at each end of the edge of the riser). The construction material visible in the face of the riser (stone or earth) was also recorded, as well as any other features associated with the terraces. A further four systems were also recorded between Stepantsminda and Lower Ukhati/Kobi (DPS-10, DPS-11, DPS-12 and DPS-19), though in lesser detail due to time constraints; however, these systems were clearly visible on the imagery. The plans of these systems clearly indicate elements mapped in the field as compared to those only recorded on the imagery. Finally, one system was located only on the imagery and designated DPS-51.

#### *10.5.1.1. DPS-6*

Remains of a terrace field system were identified on both the CORONA and Worldview-2 imagery in the vicinity of the village of Tsdo (DPS-6) (Fig. 10:41) On the ground, terrace fields were visible on the northern end of the high ridgeline on which the ruins of the fortifications/structures were located (see above), in the valley north of the village and on the hillside above and to the south-west of the village (Fig. 10:42). There was a high correlation between the terraces visible on the imagery and those visible on the ground, though it was clear that the terraces had not been maintained in the recent past. The terrace risers had slumped forward due to erosion and the subsequent deposition of material between the risers and the terraces below them. In total, 44 terraces were recorded in the field, though there are several possible terrace risers visible on the imagery that could not be clearly located on the ground. All of the terraces are located between 1,650 and 1,850m a.s.l. As can be seen in Fig. 10:41, there are several groups of terraces that can be differentiated by location, direction of slope and construction material.

The terraces located on top of the ridgeline (numbered 1-9 and 12 on Fig. 10:41) to the north-east of the village had considerably higher risers than those located on other parts of the site; the largest terrace riser (Terrace 2 on Fig. 10:41) measured c. 5m in height (Fig. 10:43). Furthermore, all in this group were faced with stone. In the vicinity several irregular stone enclosures were located (e.g. between terrace risers 5 and 7). The chronological relationship between these terraces, the enclosures and the ruined fortifications on the southern end of the ridgeline is unclear.

To the north of the village two more sets of terraces are clear. One set of at least seven terraces runs from south to north within the depression between the ridgeline and the gorge side (numbered 10-11, 13-17 and 22 on Fig. 10:41), while another set of at least eleven terraces descend from south-west to north-east along the gorge side (numbered 18-21 and 23-31 on Fig. 10:41). In all cases, the terrace risers appear to have been constructed of earth and were considerably lower in height than those on the ridgeline. Clearance cairns, piles of stone removed from the fields to aid ploughing, were concentrated near terraces 19 and 20. That these features were clearance cairns was clear; they had no structure or internal features that would suggest they were burial cairns, or other kinds of markers. It is possible that these clearance cairns are the result of relatively recent agricultural practices, as they appear in fields that are in use on the WorldView-2 imagery from September 2006 and 2010. However, they could be from a range of dates. It does seem likely, however, that they represent the removal of stones from the fields closest to the settlement. These fields, in particular, show the most obvious evidence for division into small plots for personal gardens.

A linear depression with walls on either side was located running roughly north for c. 30-40m from terrace 24 toward terrace 25; an earthen bank was also visible outside of the wall on the

eastern side. Closer inspection of the imagery suggests the feature may run for c. 70m. The walls were dry-stone and 4-5 courses in height, and not dissimilar in construction to many of the other wall features associated with terrace field systems recorded in this survey. The feature runs perpendicular to the slope. While its function is unknown, it may have served as a channel draining water from the system.

To the south-west of the village, further examples of both stone-lined and earthen terraces were located (numbered 34-44 on Fig. 10:41). These eleven terraces descend down the gorge-side from west to east ending just before the main access road to the site.

The overall impression given by the differences in slope direction and construction material is that the visible remains may include several different phases of construction, and represent use and reuse through time. The fact that the distribution of the modern fields/plots (c. 30ha) almost exactly matches the area covered by the terraces adds to the impression of reuse of the same limited area of cultivatable land over a considerable time. Due to the height of the vegetation cover at the time of the survey, there was little in the way of surface material suitable for dating, with only three very small sherds of pottery having been found across the entire site.

Small garden plots were visible on the terraces immediately north of the village, but the rest of the terraced area appeared to be covered in natural vegetation. However, a Worlview-2 image allows us to clearly identify land cover within the area of the terraces in September 2006 and 2010. A false colour infrared WorldView-2 image produced by using a specific band combination (NIR[1], R, G) of the multispectral image, highlights a patchwork of light red (vegetated) areas and recently harvested plots that appear grey/brown in colour (see Fig. 10:3). This is further supported by the presence of small circular features 2-4m in diameter within the grey/brown plots that probably represent hay stacks recently harvested. Ethnographic studies mention that the hill above the modern settlement (where a number of terraces are located) was used for growing hay for animals, with the harvest commencing in September.[97]

#### *10.5.1.2. DPS-8*

At DPS-8, along with the remains of the structures discussed in the previous section, a total of nineteen terraces were recorded on the ground, covering an area of c. 34ha (Figs 10:44-45). None of the terrace risers were constructed of stone. Located on a relatively flat plateau on the western side of the gorge that ranges in altitude between c. 1,950 and 2,050m a.s.l., the terraces descend from west to east following the natural contours of the plateau. There were several other linear features on the imagery that could not be clearly correlated with terrace risers in the field, but may represent the remains of slumped terraces. The slumping of the terrace risers suggested that they had not been maintained for some time. Confirmation comes from the fact that when images dating to the 1960s/1970s were compared to those taken in the last decade, there was no visible change in the alignment or signature of the terraces. No evidence for modern cropping was identified in the field survey, although horses were being grazed on the plateau. As at Tsdo, however, the false colour infrared image indicates differential ground cover in the autumn suggesting harvesting of the natural vegetation for animal fodder, though less intensively than at Tsdo (Fig. 10:26). No ceramic material was located in the survey.

#### *10.5.1.3. DPS-9*

[97] Itonishvili 1953: 202; 1971: 136.

Another large terrace field system was located on the imagery immediately north of Stepantsminda on the eastern bank of the Tergi (designated DPS-9) (Figs 10:46-47). The fields are separated from the village by a deeply incised stream which flows into the Tergi. The terrace system makes use of a rough triangle of flat land between the stream and the steep walls of the gorge.

There were 46 terraces recorded at DPS-9. The majority were constructed of earth, though there were several stone-lined examples concentrated in the centre of the system. Several of the terraces, while constructed of earth, also had a rubbly stone wall running parallel to the base of the riser (Fig. 10:48). Rough rubble walls run perpendicular to and connect the ends of many of the terraces, forming crude plots. There are also a number of clearance cairns of the same material. The remains of several small structures have been built into some of the terraces. We also recorded 33 circular depressions with a diameter of between 2 and 5m. It was hypothesised that these may act as rainwater or snow-melt collection, but this cannot currently be confirmed. Three rectangular depressions with stone superstructures were also noted. A small chapel, set on a large boulder, is located near the top of the system.

No cultivation was taking place at the time of the visit, though a few small parcels of land had been fenced off for growing hay. In terms of modern agricultural practices, other than within the plots noted in the field survey, there was no differential ground cover visible on the false colour infrared image (Fig. 10:49). There were also considerable amounts of material derived from the steep rocky slopes behind this landform that had been deposited on the terraces and field plots. Cattle were being grazed in this area; a practice which locals indicated had been going on for most of the twentieth century.

The extant field walls appear to post-date the construction of the terraces, though it is difficult to speculate as to when the terraces were last maintained, particularly as some of the stone walls are built into the terraces. What appears clear, however, is that there has been little or no change between the locations of field walls and clearance cairns from the 1960s to the present day, as evidenced by CORONA and WorldView-2 images. Furthermore, a large underground gas pipeline (constructed prior to the CORONA image, which was taken in November 1968) cuts through the system on a north/south axis. These facts would appear to confirm the suggestion that the area was not used for cultivation from at least the mid-twentieth century.

Interestingly, while not visited in the field, field walls that have an identical signature on the CORONA imagery to those discussed above are also visible to the south and east of Stepantsminda. While many of these features are today under the modern village, they are clearly visible on CORONA (Fig. 10:50). The gentle slope of this area means that it may not have required terracing to make it suitable for cultivation. It seems that, at least in the phase represented by the field walls, a much larger area (extending under modern Stepantsminda) was cultivated. However, the entire area covered by terraces and field walls need not have been in use simultaneously. Once more, the lack of surface material renders it hard to date these features and their various phases of use. Despite this, it should be noted that this is the first significantly large, gently sloping, area of land immediately adjacent to the river valley that one encounters when travelling southward along the valley from Dariali Fort.

#### *10.5.1.4. TERRACE FIELDS IN THE TERGI/TEREK VALLEY SOUTH OF STEPANTSMINDA*

The river valley widens considerably south of Stepantsminda. Modern settlements are mainly concentrated on the left bank of the river where the landforms are steeper. On the right bank the slope of the land is more gentle, and where side streams flow into the main river valley the remains of several terrace field systems are visible between Sioni and Lower Ukhati/Kobi (Fig. 10:51).

DPS-12 consists of a heavily eroded terrace and wall system on a gentle slope (<15°) approximately 1.8km south of the village of Sioni. The relationship between the terraces and the walls as at DPS-9, is difficult to determine, but may be later than the last maintenance of the terrace risers (Fig. 10:52).
Roughly 1.5km further east, another set of field boundaries (DPS-51) was located on imagery (Fig. 10:53). While not visited in the field, analysis of the imagery suggests that these features are identical to several noted at DPS-12, though it is difficult to ascertain whether the linear features running parallel to the river valley represent terrace risers or simply rubble walls.
A further 1.5km south-west, in another side valley are DPS-10 and DPS-11 (Figs 10:54-55). These terraces may be part of the same field system, but are separated by a deeply incised gully; together the visible area of terracing appears to cover at least c. 34ha. The stream that flows through the gully is fed by two springs high up on the mountain behind the site. Each terrace riser at DPS-10 is relatively uniform, measuring approximately 1-1.5m high. However, the risers are heavily slumped making it difficult to estimate their original height. The terrace risers are less apparent at DPS-11**,** though walls running perpendicular to the slope were visible, and appeared to be delineating plots. Two circular depressions, resembling those located elsewhere in the survey, were found near the bottom of the system, along with a number of stone structures that may have been part of a now abandoned settlement. Clearance cairns were also evident, but were heavily eroded and overgrown.
All of these systems have been heavily eroded by small drainage channels, and are cut by the Georgian Military Highway, which started to be constructed at the beginning of the nineteenth century and finished in 1863. Little change can be observed between the features visible on the images from the 1960s/1970s and the present day. Furthermore, at DPS-12 for example, the terraces are also cut by a stream which flows into the Tergi, suggesting that the current path of the stream is more recent than this field system, or at the least, there has been significant downcutting since the system was in use. Indeed, palaeochannels can be seen on the WorldView-2 imagery which suggest that the stream may have move gradually westward through time. Only a few small modern plots are visible on these landforms and, at the time of the field survey, appeared to be used for grazing sheep and cows.
Another terrace field system is located near Lower Ukhati/Kobi. Designated DPS-19, it is a relatively small system descending down either side of a rocky outcrop on which a church and the remains of several towers are located (see previous section). The field system may also have been cut by the Georgian Military Highway. Modern field boundaries are visible covering a portion of the terraced area and clearance cairns and rubble walls matching those discussed in the previous examples (e.g. DPS-12 and DPS-9 are found to the north of the highway). The relationship between the church/towers and the fields is indeterminate.

### *10.5.1.5. TERRACE MORPHOLOGY FROM FIELD SURVEY AND REMOTE SENSING*

Some general observations can be made regarding the types and locations of terrace fields. All of the systems are located at altitudes of c. 2,100m a.s.l. or less. Landforms above c. 2,000m a.s.l. in the South Caucasus are more commonly used for pasture,[98] though there are numerous examples of terracing at much higher altitudes from other parts of the world, such as the Andean Mountains, Peru (2,800-3,800m).[99] In this case, however, it seems that the availability

[98] Didebulidze & Plachter 2002.
[99] Inbar & Llerena 2000.

of flat or gently sloping land may have dictated the location of terrace field systems more than altitude.

The terrace examples cited here can be divided into several broad categories. The morphology of the terraces at DPS-6 (Tsdo) and DPS-8 is dictated by the type of landforms on which they sit. At DPS-6, for example, the terraces are far less regular in length, spacing and orientation than the examples located on the alluvial terraces in the wider river valley to the south. Furthermore, the greater range of terrace size and construction type may indicate a lengthy period of use and reuse of these features. At DPS-8, while the terraces are again adapted to the specific topography of this high plateau, there appears to be more uniformity in their orientation and construction than at DPS-6 (Tsdo). This may be a consequence of less subsequent activity after the abandonment of settlement on the plateau.

Similarities can be observed between the terraces at DPS-10, DPS-11, DPS-12, DPS-51 and, though less clearly, at DPS-19. This may be suggestive of a similar date for the construction of these terraces. At all but the last of these sites there is evidence for the division of the terraces into small field plots by walls or linear piles of stone running perpendicular to the terraces. At DPS-10, the size of these field plots can be measured and appear to range between 350 and 4,500 $m^2$ (the size of the largest plot may be exaggerated due to the poor survival of the wall features in some contexts) (Fig. 10:56). Similar sizes are observable on the few plots (< 10) at DPS-11 and DPS-51 that have not been disturbed by roads, tracks, or erosion. The lack of clear examples of terraces at DPS-11, but the presence of walls on the same alignment (and by extension the existence of similar field plots) is interesting.

Similarly, the terraces at DPS-9 have been divided into smaller plots, though the chronological relationship between the terraces and the walls is difficult to ascertain. The maintenance of the terraces would have been made difficult by the construction of the field walls up against the base of the riser, perhaps suggesting that the division into smaller plots was a later development.

In the Kislovodsk Basin, more than 200km to the north-west, on the north side of the Caucasus, terrace field systems have been extensively studied.[100] The origin of mountain terraces in this region was originally thought to date to the Early Bronze Age or the Middle Ages. The Early Bronze Age hypothesis was based on radiocarbon dating of buried soils,[101] and pottery.[102] The dating of terraced field systems in this region to the Early Middle Ages was also based on radiocarbon dating of soils and through the association of the terraces to nearby forts.[103] More recently, a detailed investigation of these terraces was undertaken to test these earlier theories.[104] In this study, ceramics and one radiocarbon date were used to assign certain terrace types to the Early Koban culture (first century BC), while ceramics were used to assign other types to the Classical Koban period (sixth century BC).

One of the three main field system types that were recognised in the region included 'sloping promontories with boundary walls that form allotments of rectangular form with areas from 20-300 to 2,000-3,000$m^2$' that have been dated by association with settlements to the second half of the first millennium AD.[105] While not terraced, they suggest that these types of plots are the result of a particular ploughing technique, i.e. 'cross ploughing with an ard pulled by two oxen'. A similar technique could have resulted in the formation of the plots at the sites under discussion in the Tergi River Valley. This does not necessarily imply a similar date for their

[100] Korobov & Borisov 2013; Borisov & Korobov 2012; Korobov 2012; 2017a; 2017b.
[101] Skripnikova 2007.
[102] Arzhantseva *et al*. 2001: 120.
[103] Korobov & Borisov 2013.
[104] Korobov & Borisov 2013.
[105] Korobov & Borisov 2013: 1090.

construction. A summary of the main archaeological features and the geomorphological setting of each site investigated are provided in Table 10:4.

### *10.5.1.6. MODERN LAND USE AND TERRACE FIELD SYSTEMS IN THE TERGI RIVER VALLEY*

It seems likely that the majority of the terrace systems discussed in this section were not used for cultivation in the recent past. This can be inferred by the lack of change between the 1960s/1970s and the present day, as clear from multiple imagery sources, ethnographic studies and local accounts. Only at DPS-6 (Tsdo) (and to a much lesser extent DPS-8) is there considerable evidence for continued use of the terraced area for growing animal fodder and private gardens. While the terraces may not have been maintained, the large, relatively flat areas of land they provide were clearly used for other purposes. A number of studies conducted between the 1930s and the present indicate that pastoralism was the main economic activity in the region in the twentieth century, with agriculture taking on a secondary role.[106] This reliance on a system of pastoral transhumance remained in place until the closing of the Georgian-Russian border nearly thirty years ago.[107] Mak'alatia,[108] however, does mention some fields and terraces that were in use for agriculture and growing fodder in the 1930s. These are difficult to correlate to specific locations with any certainty. Specific terrace field systems are mentioned by Itonishvili[109] across the river from the village of Kanobi and Khurtisi; the former, called Asakhedi, may correlate to DPS-10 and/or DPS-11, while the latter likely refers to the terraces at DPS-51. In both cases, their reported use appears to have been grazing and growing hay respectively. Overall, it seems that by the 1930s, land previously used for agriculture had been abandoned, or given over to hay fields to produce winter fodder for animals that were not moved to summer pastures at lower altitudes.[110]

It is likely that even prior to the twentieth century, these terrace field systems were not being intensively cultivated. Pastoralism is reported to have become increasingly important to the local economy from the second half of the nineteenth century when, due to the incorporation of Georgia into the Russian Empire, it became easier to move animals to the north Caucasus on a seasonal basis.[111] Furthermore, the fact that the Georgian Military Highway cuts through all of the terrace systems between Sioni and Lower Ukhati/Kobi, suggests that these fields were not in use for cultivation after the construction of the road along its modern route in the nineteenth century.[112] Travelling through the region in the early nineteenth century, Lyall[113] describes the 'barren hills' of the valley between Stepantsminda and Lower Ukhati/Kobi, although it is likely that his description was to some extent exaggerated for poetic effect.

Dating the terraces based on proximity to settlements is problematic, particularly in high mountainous regions, where clear relationship between sites and landscape features are unclear. The constant use of gently sloping to flat landforms for settlement and our incomplete knowledge of the long-term settlement pattern in the region only allow for broad dating proposals. Little to no ceramic evidence was recovered from the surface of the fields due to

[106] Itonishvili 1953: 190-91; Mak'alatia 1934: 63-64; Radvanyi & Thorez 1977: 318.
[107] Didebulidze & Plachter 2002.
[108] Mak'alatia 1934: 63.
[109] Itonishvili 1971: 52-53, 71.
[110] Itonishvili 1953: 190-191; Radvanyi & Thorez 1977: 318.
[111] Itonishvili 1971: 67.
[112] Radvanyi & Thorez 1977: 315.
[113] Lyall 1825: 477.

thick vegetation cover. This could be a factor of preservation (though ceramics were minimal at all locations despite clear differences in recent land use) or reflect ancient/historical land use practices (e.g. the fields were not being manured), or both. However, terrace fills at some sites yielded abundant pots sherds. Although heavily abraded, these ceramics did provide some level of chronological control. This supports our methodology applied in the region combining survey with small scale excavation, which has implications for developing landscape archaeology in high altitude regions elsewhere For this reason, in the 2014 season several terraces were selected for excavation in order to provide information on their construction and maintenance and to obtain samples for absolute dating combined with pottery and palaeoenvironmental/geoarchaeological analysis.

### *10.5.2. GEOARCHAEOLOGICAL INVESTIGATIONS OF SELECTED TERRACES*

Targeting stratigraphy preserved within fields and terraces, which provide a local archive of landscape management, our aim is to determine whether the preservation of earlier systems could be located at these sites. This is important as ancient landscapes in this region have low visibility, partly due to destruction by natural processes commonly occurring in dynamic mountainous environments (landslides, meandering rivers, flash floods), but also by later anthropogenic landscape change. Only four of the sites identified were investigated in more detail due to issues of accessibility and the level of preservation of stratigraphy; these include DPS-10, DPS-9, DPS-8 and DPS-6. Sedimentary descriptions of each terrace are provided below.[114] At each site, a test sample was collected to characterise the sediments and to determine their suitability for OSL dating of quartz minerals.

#### *10.5.2.1. EXCAVATION, RECORDING AND SAMPLING*

Excavations took place in areas least affected by modern disturbance. At each site, slightly different excavation methodologies were employed; they included a combination of hand excavation, auguring, cleaning of naturally eroded sections and machine excavation. Each trench (1x3m) was excavated perpendicular to the edge of the terrace and then down to the lowest fill. At certain site locations, the terraces were naturally eroding from the section undercut by the River Tergi. This meant that each section could be easily cleaned, recorded and sampled without full excavation. Each section was recorded, at a scale of 1:20, onto permatrace to show the thickness and extent of each context and the location of samples taken. Each context was described using standard sedimentary descriptions,[115] which included soil texture, sorting, soil colour, using Munsell soil colour charts and boundary types.[116] All artefacts retrieved were bagged and located on the sections for identification and relative dating purposes. Organic remains, such as charcoal, were also retrieved and assessed to check for suitability for $C^{14}$ dating. OSL tube samples were taken from the basal deposits and overlying sediments were sampled for background radiation measurements. Some trenches were abandoned as they were mainly composed of large boulders and were too unstable and dangerous to sample. OSL sampling involved inserting a 20cm by 4cm black PVC pipe into the deposit, sealing the ends and labelling the sample and the section drawing, and photographing prior to removal. Each tube sample was labelled and sealed with thick black

[114] See chapter 10.8.
[115] Jones *et al*. 1999.
[116] See chapter 10.8.

PVC plastic and black duct-tape to avoid light exposure. An additional sediment sample was taken from around the tube sample (maximum of 30cm distance) for environmental dosimetry analysis. A detailed description of OSL dating methodology is provided below.[117]

***Summary***

At DPS-10, these agricultural terraces reached a maximum depth of 72cm, 74cm and 121cm below ground level respectively and consisted generally of poor-quality cambic umbrisol soils formed on gentle slopes. They were built on top of colluvial fan deposits and well-sorted fluvial sands. The soils uncovered at DPS-9 are broadly characterised as weakly developed regosols with very poor soil quality and little organic material, but abundant rock inclusions. The soils preserved at the modern village of Tsdo (DPS-6, Terrace 4), formed on top of an andosol soil with preserved volcanic ash lenses and pyroclastic material, which had been later modified to form deep hortisols modified by modern agricultural activities. Frequent pottery sherds were recovered from the upper layers and appeared to have been significantly reworked. The maximum depth of the terrace sequence was 251cm below ground level. At DPS-8 the two terraces (Terrace 18-412-16 section and Terrace 10-412-17) had deep humic-rich mountain meadow soils (Umbrisol – Humic soil), typically found in Alpine regions of the Caucasus.[118]

### *10.5.2.2. TERRACE TYPOLOGY*

The terraces investigated can be grouped into four main types;
1) Shallow terraces: Mainly contain thin soil layer above fluvial colluvial sediments on shallow slopes, sometimes found with supporting large stones.
2) Deep walled terraces: Built on steep slopes often above volcanic deposits, if located near modern agricultural plots, upper horizons are often found to be significantly reworked.
3) Deep earthen terraces: Most are found located on fluvial and clay rich deposits formed on steep slopes on plutonic bedrock, soils are highly acidic and humic. Occasionally some have remains of terrace walls which have subsequently collapsed into the terrace riser and covered by sediment aggradation.
4) Stone and cobble filled terraces: Formed on moderately steep slopes where colluvial sedimentation is common. Terrace deposits are usually minerogenic and rich in clay and large stones.
In the case of the Dariali Gorge, the definition of an agricultural terrace becomes unclear, as in many locations, an agricultural terrace is used for different reasons, such as reduction of soil erosion. For example, at DPS-9 large cobbles and stones were used to build a large bank or revetment to provide stability. Furthermore, terraces are constructed to deepen soil and improve water retention and drainage, and the redirection of excess surface water, is among many reasons why terraces are utilised.[119] Not all of the terraces identified could perform all possible functions. However, one dominant function of terraces in this region was to stabilise slopes and to increase surface area for pasture land. Before Soviet times, the area provided pastureland for over a million sheep in the summer seasons.[120]

### *10.5.2.3. STRATIGRAPHIC INVESTIGATIONS*

[117] See chapters 10.8 & 24.
[118] Molchanov 2010.
[119] See review in Arnaez *et al*. 2015.
[120] Radvanyi & Muduyev 2007.

Excavation of terraces and field systems, in combination with the insights provided by the remote sensing of satellite imagery, enabled a deeper understanding of their formation, preservation and function. In a number of sections, remains of walls and single stones and rocks used to stabilise and promote natural sediment build-up were uncovered that were not visible on the ground. This has implications for future survey strategies in upland regions covered by dense vegetation as most pottery was recovered from the fills of the terrace rather than the surface, which can be difficult to see during survey due to dense vegetation

The sites with the most potential for obtaining well-preserved sediment stratigraphy were from thick terrace sequences located on top of high plateau sites. In two cases, terrace sections, 412-10 (DPS-9) and 412-16 (DPS-8), showed evidence for wall collapse and subsequent rebuilding.[121] Rapid deposition and destruction of terraces as a result of natural processes meant that such landscape features had to be continuously maintained and rebuilt. However, in several sections, preserved sediment stratigraphy with thin lenses offered the best opportunity for resetting of quartz minerals.

Where terrace walls were present, they were generally constructed from unworked stone arranged to form deep well-structured walls, such as at DPS-6. In other areas, random large stones were used to aid sediment accumulation, which then became rapidly covered over with sediment to form the riser. Fine-sediment input into the system most like came from many different sources, and was transported downslope via runoff and gravity and then deposited into the fills of terraces. These features are important archives as they trap sediments that provide a record of past anthropogenic activities, climate and environmental change. In dynamic environments, such as the Central Caucasus, the preservation of sediment stratigraphy is usually limited because of the continuous reworking of the landscape, which makes those sediments that are preserved behind terraces of particular importance for environmental reconstruction.

### *10.5.2.4. CHRONOLOGY*

OSL dating is now becoming one of the primary methods for dating ancient agricultural terracing, but has mainly been applied in areas of the Levant and the Mediterranean.[122] The first stage of the OSL characterisation was to understand the mineralogical components and luminescence characteristics of the samples taken from basal deposits from a range of terrace and field systems identified in the field survey. Those with the most suitable characteristics (i.e. frequent bright quartz signals) were assessed using the full measurement procedure. The sample from DPS-10 had very bright signals dominated by feldspar. These minerals require a different measurement procedure to that outlined in our main chapter on OSL dating.[123] As this was beyond the scope of the current research, this sample was excluded from full dating analysis. Samples from DPS-9 contained no quartz due to the nature of the source rock (slate and mudstone) which lacks any large-grained quartz component. The two sites with the best potential for OSL dating were DPS-6 and DPS-8, as the bedrock deposits were of igneous (plutonic) origin which generates abundant quartz. Due to the relatively short transport distances down slope, the majority of grains were only partially exposed to daylight during transport (e.g. by slope runoff processes) prior to deposition. The overlying soil deposits were

[121] See chapter 10.8.
[122] E.g. Avni *et al*. 2013.
[123] See chapter 24.

also sampled from the two sequences but these were affected by both low-intensity quartz signals and bioturbation. Therefore, the basal deposits were used for dating of the earliest depositional event within the terrace/field sequences.
All charcoal recovered from the sections was too small to be dated using $C^{14}$. On the basis of our OSL dates, the basal deposit from terrace 4 at DPS-6 at the modern village of Tsdo, was formed in fifteenth or early sixteenth century AD (1472±40 AD) (Table 10:5). Pottery, ranging in date from the late antique (early medieval in Georgian chronologies) to the late medieval period was also recovered from this sequence. Some of this earlier material may have been present due to anthropogenic sediment reworking during the building of the terrace, but is unlikely to have come from far. The basal deposit from terrace 10 at DPS-8 gave an OSL date of (1722±70 AD), suggesting that it was deposited in the late seventeenth or eighteenth century; one pottery sherd likely dating to a post-sixteenth century AD horizon was found within the fill of the terrace.

### *10.5.3 POTTERY FINDS FROM THE TERRACES*

In terms of the finds from the DPS terrace survey, it is significant to note that three of the main classes in the Dariali Fort Trench F assemblage are well represented amongst the finds from the excavation of two terraces at DPS-9 (i.e. CEMRIB, HASOG and GREBS from Terrace 11 and 45, Table 10:6). The most distinctive and diagnostic category represented within the assemblage is a class of fine cream coloured jars with ribbed decoration covering the whole of the exterior surface (CEMRIB). This class has spans the period from at least the fourth to tenth centuries and for the most part it is difficult to date the fragments more precisely within this range. HASOG is a coarse tempered, hard orange kitchenware that has a similarly long period of circulation that appears to extend into the high medieval period, i.e. even later than CEMRIB. GREBS has a coarse tempered dark grey coloured fabric and burnished exterior surfaces. This class represents the dominant cooking-pot tradition within the Dariali Fort sequence and is dated within a more restricted range from the mid-seventh to ninth centuries (Phases 4 to 5b).
Of the three classes, which are all predominately associated with the early medieval period, CEMRIB is the most abundantly represented and occurs in most levels in both terrace excavations, including at depths of up to 1.60m below the surface. It may be significant that the two potentially earliest dated fragments – a particularly fine cream coloured body sherd and a diagnostic jar rim sherd – come from the deepest levels reached within the Terrace 11 excavation. However, as they come from mixed and reworked contexts, we must be careful with our conclusions. In the same excavation, within what is an admittedly limited ceramic sample, there appears to be some evidence for a decline in the overall proportion of unidentified fragments below around 40cm depth from the surface (a drop of 74% to 33% between the samples from the top 40cm and those below). Although the fragments from the terrace excavations are small and sometimes abraded, we can say that most of the non-identified pieces have a distinctive fabric and inclusions that have no parallel amongst the finds from the excavations so far undertaken at Dariali and Gveleti Forts. Together these sequences appear to cover a fairly broad chronological range, with the fourth to tenth century period well represented at Dariali Fort, and intermittent smaller-scale occupation elsewhere. The most likely explanation for the unidentified pieces is that they belong to classes that circulated during a later period than the main sequence currently known from Dariali Fort (i.e. post tenth century) and probably also later than the eleventh – fifteenth century period represented in the sequence recorded from Gveleti Fort. Unidentified pieces are most likely to belong to the late or post-medieval period. The distribution of non-identified fragments towards the surface within the Terrace 11 excavation may therefore be a significant indicator of the later use of the fields, and the presence of earlier pottery may be taken as an indication of older, relatively undisturbed

deposits at a greater depth. Finally, the overall volume of ceramic finds from the excavations is potentially informative. From contemporary terrace systems in the Kislovodsk basin in the North Caucasus, excavations yielded an average of around 1.5kg of pottery per cubic metre of sieved deposits.[124] This compares to just 370g of pottery from the entire excavation of Terrace 11, and 91g from Terrace 45. This comparison may indicate variation in the intensity or duration of soil enrichment practices. Alternatively, it may simply be related to differences in ceramic finds retrieval methods used in the Kislovodsk Basin and in our project.

### *10.5.4. SUMMARY OF THE RESULTS OF THE TERRACE FIELD INVESTIGATIONS*

While it seems likely that these terrace field systems had fallen out of use by the nineteenth century at the latest, dating their construction and identifying periods of intensive land use in the region is difficult. Within the Dariali Gorge, targeted investigations have resulted in dates for the formation of basal deposits of specific terraces (Table 10:7). The date from Terrace 4 at DPS-6 (Tsdo) indicates construction of this terrace riser in the fifteenth century. Pottery from the excavated sequence reflects a range of classes that may date from the late antique through late medieval period. This may be the result of the reworking of sediment from the area during terrace construction. However, the presence of early medieval pottery types point to an earlier phase of activity within the vicinity. Textual sources confirm the existence of a village called Tsdo from the fifteenth century AD.[125] The location of Terrace 4 within the grouping of similarly constructed (stone-faced) terraces on the high ridgeline on the eastern part of the site may indicate a date for the construction of this entire grouping. If so, its proximity to the ruins of the tower and fortifications, also on the ridgeline, is intriguing but inconclusive. Overall, the nature of terracing at DPS-6 suggests multiple phases of terrace construction, and a continual reworking of this landform up to the present day. This presents a contrast to the terrace system at DPS-8. Here, there is less evidence for variation in terrace construction technique. The settlement on this site, if its identification with that of Kobi (Kvabi) is correct, appears to have been abandoned by at least the early twentieth century if not earlier, although the location may have continued to be used for the growing hay.[126] The basal deposit of Terrace 10 at DPS-8 indicates a date for the construction of this terrace in the early to mid-eighteenth century. This would correlate with mentions of the settlement of Kobi (Kvabi) in documents from the second half of the eighteenth century.[127] While, these results provide us with information on potential periods of terrace construction, we need to be careful in making wider assumptions based on such a small sample.

In more recent times landforms with evidence for terrace field systems appear to have been in use for pasture or for growing animal fodder.[128] However, the eighteenth century Georgian prince and geographer Vakhusht'i Bagrationi indicates that crops included wheat, barley, flax and oats.[129] Even so, it is likely that these crops only produced enough to supply local populations. Indeed, long distance transport of produce is indicated as having been important to inhabitants of Dariali Fort in the tenth century according to Mas'udi,[130] and the diets of

[124] Korobov & Borisov 2013: 1089.
[125] Itonishvili 1971: 135-36.
[126] Itonishvili 1984.
[127] Itonishvili 1984: 9.
[128] See chapter 10.5.1.
[129] Vakhusht'i = ed. & trans. Brosset 1842: 228-29.
[130] Mas'udi 17 = trans. Barbier de Meynard & Pavet de Courteille 1863: 44-45, Marquart 1903: 166-67 and Minorsky 1958: 157.

individuals found in the early medieval cemetery near the fort reflect high $C_4$ values suggesting access to food resources grown in regions with longer-growing seasons and warmer temperatures.[131]

The location of terrace and other field systems within the Tergi River Valley appears to be dictated by the availability of flat or gently sloping landforms at altitudes below c. 2,000-2,100m a.s.l. The initial investment in terrace fields may have occurred at different times throughout the valley. Linking this to increases in population, as seen in other highland regions e.g. the European Alps,[132] and periods of major historical socio-political change, could be two possible reasons for the widespread occurrence of terraces. However, a much larger dataset and improved chronological control of both sites and associated landscape features is required. They do, however, suggest significant investment by local communities, in particular geomorphologically stable landforms. In some cases, the terrace systems suggest use, reuse and potential reworking (i.e. the construction of what appear to be later field plots on the terraced fields at DPS-9). Whether these events represent continual use or periodic investments in cultivation is difficult to decide (perhaps reflecting the changing importance of pastoralism and cultivation over the long-term). However, traces of agricultural investment (i.e. terrace field systems) even if abandoned for a considerable period of time represent 'reusable landscape capital'.[133]

One other possibility for the extensive systems found in the region could be the response to major climate and environmental change. As seen today, rural seasonal activities are closely related to the physical and environmental conditions. For large periods of the year, upland areas are inaccessible due to snow cover, making even small-scale agriculture unfeasible. The construction of terracing in the period between the fifteenth and eighteenth centuries could have been a response to a combination of socio-political change and changes in climate and environment.

The local palaeoenvironmental records now available for the Dariali Gorge can provide some insights, particularly for the late antique periods.[134] Between 850 BC and AD 350 the pollen diagram for the Dariali Gorge indicates an increase in human activity with possible anthropogenic deforestation, possible cultivation of cereals and the intensification of pasture in the region. Furthermore, from AD 350 to 1000, this trend is accompanied by the introduction of walnut growing in the lowland areas. The record shows a hiatus in sedimentation possibly caused by a slope erosion event. However, again from AD 1450 to 1750, there is evidence for human activities, including cultivation and pasturing and the spread of pine forest. Ultimately, while the new pollen data from the Dariali Gorge provide an important starting point, we require further detailed regional high-resolution climate data for the Late Holocene period from the mountainous regions of the Central Caucasus to fully understand climate and environmental impacts on a local and regional scale.

## *10.6. DISCUSSION*

### *10.6.1. PROBLEMS OF INTERPRETATION AND PRESENTATION*

[131] See chapters 6.9, 20; cf. C. Pickard in Sauer *et al*. 2015: 899-900.
[132] Della Casa & Walsh 2007.
[133] Bevan *et al*. 2013: 271.
[134] See chapter 22.3.

There are still many hurdles to overcome before we can construct an accurate and detailed picture of long-term settlement and land use in the study area. However, we can begin to assess the relationship between the fortifications at Dariali and Gveleti and the surrounding landscape. Table 10:8 represents an attempt to provide a comparison between a wider pattern of settlement and land use and the occupation/use of Dariali and Gveleti Forts. As should be clear from the evidence presented, it is not possible to produce a quantified or formal assessment, and here we provide an impressionistic and interpretive visualisation of the data as it stands.
Several aspects should be taken into consideration in interpreting the data regarding the broader regional settlement pattern (the row labelled DPS in the table that represents dated sites and features given a Dariali Pass Survey number):

- This only includes sites and features with dating information, and this information varies in quality and chronological precision.
- The counts of dated features/locations include not just settlements, but churches, burials, hoards etc.
- The increase in the number of sites and features dated to the fifteenth-twentieth centuries is in part a reflection of the relative abundance of textual and ethnographic records relating to these periods compared to the preceding ones. While numerous settlements are mentioned in fifteenth century documents, they may have been occupied considerably earlier, and as such we only have a *terminus ante quem* for their initial settlement.

Correlating the landscape sequence with those at Dariali and Gveleti Forts also requires an understanding of the scale and intensity of occupation at those sites. As in the wider landscape, quantifiable data such as size through time are difficult to measure due to the repeated use of specific locations and consequent erasing of earlier levels. The below interpretation is based on radiocarbon dates[135] and discussions with the excavation team and associated specialists, and again should be taken as impressionistic rather than strictly empirical.

### *10.6.2. LONG-TERM SETTLEMENT AND LAND USE IN KHEVI*

Prior to the mid-first millennium AD, we have a very limited understanding of human settlement in the region. However, this is likely due to our incomplete knowledge of the archaeological record rather than a consequence of limited occupation or use of the area. Furthermore, prehistoric activity in the area may have involved less settled modes of subsistence. A chance find of two Early Bronze Age ceramic vessels (Kura-Araxes ware) by Mindorashvili and his team near the village of Tkarsheti in the early 1990s[136] indicate some activity dating in the third millennium BC.
The Kazbeg Treasure, having been attributed to the sixth/fifth century BC, provides another point of reference in the long-term settlement history of the region, but as an isolated group of finds, offer little context for wider patterns. The objects include a few imports, notably an Achaemenid silver phiala with an Aramaic inscription, but appear to be mainly of local origin; though they reflect wider stylistic patterns apparent in assemblages from across what is now Georgia.[137] This evidence may speak to the connectivity of this region with the wider South

[135] See chapters 2-6, 8, 22.3 & 25.
[136] Mindorashvili 2005: 16.
[137] Knauss 2005: 198.

Caucasus in the Achaemenid period. There may have been some activity in the sixth-third century BC at the base of Dariali Fort as indicated by the radiocarbon dates, perhaps campfires lit by passing travellers.[138] However, further investigation is required before the nature or intensity can be commented upon.

Artefacts (including jewellery and coins) dating to the first century BC-first century AD (possibly from a burial context) have also been found in the vicinity of Stepantsminda.[139] Again, it is difficult to comment on a wider pattern based on such a small sample. The Dariali Fort is mentioned by Greek and Roman authors in texts from the first and second century AD; these indicate its importance as a route-way, and the interest that the Iberians, and possibly Romans had in controlling movement, and perhaps levying taxes in kind for goods passing through it.[140] Some small scale cultivation in the vicinity of Dariali Fort[141] may have been occurring at this time frame (first century BC-first century AD), though the type and intensity of activity cannot be ascertained at this juncture. While speculative, the lack of *in-situ* material dating earlier than the fourth century AD on Dariali Fort may be a consequence of later levelling and rebuilding[142] or could signal a major mismatch between available textual and archaeological data. Wider land use patterns are also complex.

The pollen diagram from a core taken in the Dariali Gorge indicates that between 850 BC and AD 350 there is probable evidence for increased human management of the landscape through deforestation, the possible cultivation of cereals and the intensification of pasture, but understanding how this evidence relates to smaller time blocks within this span is currently not possible.[143]

Excavations on Dariali Fort have produced evidence for a main phase of occupation from the late fourth century AD to c. AD 1000 or to first third of the eleventh century AD.[144] At present there is limited evidence for activity between the fourth and eighth centuries AD in the wider landscape. This takes the form of burials excavated near Gveleti, c. 2.5km south of the Dariali Fort, which produced material dated to between the sixth and eighth centuries AD.[145] However, a fort/tower at Sno may have been built in the seventh century AD,[146] but (as no longer extant) this is hard verify. Pottery located in the terrace fill at Tsdo may be as early as the late antique period indicating activity in the vicinity (it was likely deposited in this context as the result of soil re-working as opposed to the terrace building event), but again the dating is not conclusive.

Several sites and features (mainly churches and associated burials) in the Tergi and Sno River Valleys have been attributed to the ninth-tenth centuries AD. The churches at Sioni, Akhaltsikhe and Arsha Fort have been dated to this period and a specific type of tomb, with similarities to those found in Gergeti and dated to the ninth-tenth centuries, were also found at all three sites.[147] At Tkarsheti, ninth-eleventh century graves are said to have been excavated

[138] See chapter 5.1.
[139] Mindorashvili 2005: 7.
[140] See chapter 25 and Sauer *et al*. 2015 for discussion and list of sources.
[141] See chapter 5.
[142] See chapters 2-3, 25.
[143] See chapters 22.3.4-22.3.6.
[144] See chapter 2-6 & 25.
[145] Mindorashvili 2005.
[146] Mak'alatia (1934: 122-23) indicates that a folk tradition states that a fort/tower at Sno was built in the seventh century on the orders of Shiola Gudushauri. A more recent castle or fortification at Sno may have been built in the seventeenth century (Itonishvili 1984: 21).
[147] Mindorashvili 2005: 12.

in association with the church.[148] There was clearly a relatively significant level of activity at this time, at least in comparison to earlier periods.

Dariali Fort (or at least parts of it) and the cemetery to its south were also in use during the eighth to tenth or early eleventh centuries AD. A considerably higher volume of artefacts has come from this part of the sequence, in comparison to those from the fourth-seventh century AD. However, the volume of finds is not proportional to the excavated volume, and therefore a misleading metric on its own. There appears to have been a considerable amount of levelling and rebuilding on top of the fort in the eighth-tenth centuries that has likely erased areas of earlier occupation.[149] However, the ceramic analysis of finds from Trench F (on top of Dariali Fort) provides compelling evidence for a possible change in the type of occupation or site use that occurred sometime after the mid-seventh century AD. This may partly explain the difference in the volume (and average weight) of finds, especially as it is accompanied by a change in the composition of the ceramic assemblage.[150] At Gveleti Fort, one radiocarbon date indicates late eighth-tenth century AD activity, but the nature and intensity of occupation then is uncertain.[151]

A potential increase in pasturing and cereal cultivation accompanies possible deforestation in the vicinity of Stepantsminda in the period between AD 350-1000 as indicated by the pollen core. Furthermore, the spread of walnut cultivation is evidenced in the lowland areas as indicated by the constant presence of *Juglans* pollen in the record.[152] Mas'udi, writing in the mid-tenth century, attests that the garrison at Dariali Fort received supplementary provisions of food from Tbilisi, perhaps indicating that cereal cultivation in the local valleys was not producing significant surplus.[153] The isotopic analysis of the individuals recovered from the Dariali cemetery supports this, indicating that several 'had a significant contribution of C4 resources to their diets, i.e. food grown in a climate with a warm temperature and a long growing season'.[154] Interestingly, the ceramic analysis indicates that the sources of ceramic supply varied notably between regions to the north and the south in the fourth and tenth centuries AD;[155] it is possible that food supplies may also have come from various locations through this time period depending on the political, social, and economic circumstances.

There is no evidence for architecture or dated deposits at Dariali Fort between the early eleventh and the late thirteenth or fourteenth centuries; while the fort could have been abandoned, this could also suggest a shift in occupation away from the excavated areas.[156] At present there is no evidence supporting the association of Dariali Fort with Queen Tamara, ruler of Georgia between AD 1178/1184 and 1213, and it is likely that the popular names 'Tamara's Fort' was an attribution post-dating the High Middle Ages.[157] Gveleti Fort, on the other hand, does appear to be in use from the late tenth/eleventh through to the twelfth or thirteenth century.[158] However, there is very limited evidence for activity in the wider landscape, where the only clear evidence comes from graves excavated in Juta and Artkhmo in

[148] Mindorashvili 2005: 13.
[149] See chapters 2-3, 6, 11, 13, 15, 21 & 25.3-25.6.
[150] See chapter 11.
[151] See chapters 8.3 & 8.8.
[152] See chapter 22.3.
[153] Mas'udi 17 = trans. Barbier de Meynard & Pavet de Courteille 1863: 44-45, Marquart 1903: 166-67 and Minorsky 1958: 157.
[154] C. Pickard in Sauer *et al*. 2015: 899-900. See also chapters 6.9 & 20.
[155] See chapter 11.
[156] See chapter 25.6.
[157] See also chapters 25.6-25.7.
[158] See chapter 8.

the late 1800s and attributed to the high medieval period.[159] The paucity of evidence during the High Middle Ages (mid-eleventh to thirteenth centuries) contrasts sharply with the ample archaeological and textual evidence recovered elsewhere in Georgia.

In the wider Khevi region c. 300 sites containing medieval pottery were recorded by A. Kruglov in the 1930s,[160] though perhaps representing a considerable period of time (late antique/early medieval through late medieval). However, the lack of documentation is reported to have made it difficult to associate the recovered material with specific sites.[161]

Several churches are attributed to the thirteenth-fourteenth centuries AD, the most famous, being Gergeti Trinity, constructed in the first half of the fourteenth century.[162] Occupation on Dariali Fort is apparent between the late thirteenth and early fifteenth century, while there is also dated activity on Gveleti Fort during the late thirteenth/fourteenth-fourteenth/early fifteenth centuries, and again from the mid-fifteenth-seventeenth centuries. Understanding the wider settlement pattern becomes much easier from the fifteenth century, as textual evidence[163] now tells us that the following villages within our study area were occupied: Akhaltsikhe, Artkhmo, Gaiboteni, Gveleti Village, Kanobi, Khurtisi, Qeduri, Kobi (Kvabi), Tkarsheti and Tsdo. However, this only provides us with a *terminus ante quem* for their earliest occupation. Historical documents from the eighteenth century,[164] traveller's accounts from the nineteenth century,[165] and ethnographic accounts from the early twentieth century[166] further increase our understanding of settlement in the region for the last three hundred years. This increase in information may be partly responsible for the apparent increase in the number of sites and features that is apparent in Table 10:8 from the fifteenth through nineteenth centuries AD. Even so, increased knowledge of a wider pattern of settlement can allow us to begin to think about connectivity throughout the region. For example, while only speculative, it is possible that Gveleti Fort may often have served as a local refuge for people from nearby settlements, like Gveleti Village, if at least on one occasion for the king of Georgia, Davit VIII.[167] However, some caution needs to be exercised as it appears that villages changed locations through time, but may have maintained the same name.[168]

While we require a larger sample to understand the use of entire terrace field systems, an OSL date from the basal deposit of at Terrace at DPS-6 (Tsdo) of 1460±50 AD, indicates some landscape investment in the vicinity of the site roughly contemporary to the earliest mention in textual sources. The presence of ceramics from the same terrace fill indicates activity in the area from the late antique through the medieval period. At DPS-8, an OSL date from the basal deposit of a terrace provides us with a date of 1730±30 AD. If the site corresponds to that of Kobi (Kvabi), mentioned in fifteenth and eighteenth century texts, then landscape investment in the vicinity seems plausible. Terrace building may have served various purposes, including providing areas for cereal (and other crop) cultivation, growing hay for livestock provisioning and stabilising land forms for animal grazing (and over time likely all three). Determining the

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[159] Mindorashvili 2005: 7.
[160] Mindorashvili 2005: 7.
[161] Ts'itlanadze 1976: 9.
[162] Zaqaria 1972.
[163] *Document of Sakdrishvili of Gergeti from the fifteenth century AD (გერგეტელ საყდრიშვილთა XV საუკუნის)*; see Itonishvili 1971.
[164] See Vakhusht'i = ed. & trans. Brosset 1842; see Itonishvili 1984: 9, 133 for a description of documents from the period of King Erekle (1762-1798).
[165] Porter 1821; Lyall 1825; Gille 1859.
[166] E.g. Mak'alatia 1934.
[167] See chapter 8.
[168] Examples include Arsha, Kanobi, Kobi. See chapters 10.4.3 and 10.7 for further details.

function of individual terraces is not currently possible. However, from the pollen record we can see an increase in human impact on the environment (and an increase in evidence for both cultivation and pasturing), as well as the spread of pine forest between AD 1450 and 1750.[169] By the early twentieth century, a number of villages appear to have dwindled in population or been completely abandoned.[170] Terrace fields appear to have been used mainly for hay, divided into smaller field plots or served as grazing land suggesting that the local economy may have relied more heavily on transhumance and village-based herding, with people and villages engaging in small-scale cultivation of hardy crops. More recently, the closing of the border between Georgia and Russia fundamentally changed the local economy as it put an end to traditional transhumance practices which required free movement between the two states.

### *10.6.3. CONTEXTUALISING AN UPLAND 'FRONTIER' LANDSCAPE – CONTROL AND CONNECTIVITY*

The deposition of scree and sediment from the upper slopes, and the considerably more destructive landslides that occur in the gorge, along with seasonal flooding of the river,[171] make this a very dynamic landscape. A constant issue throughout the landscape survey, and also one apparent in the excavations, is that the clear use and reuse of particular locations for settlement, cultivation and grazing has resulted in the attenuation of earlier landscapes. In the lowland regions of the South Caucasus, it has often been twentieth century and in particular Soviet period, agricultural programmes that have erased or significantly altered earlier landscapes.[172] Our study region appears to have escaped this destruction due to the recent emphasis on pastoralism over agriculture, but this only takes us back to the last period of intensive landscape change, likely in the seventeenth-nineteenth centuries. The investigation of the Dariali Pass and adjoining valleys has provided little evidence for landscape investment contemporary to activity at either Dariali Fort, or the late antique period. This may reflect the poor recovery of earlier landscape features, due to destruction caused by repeated use of the same land forms. However, we should also note that this area is likely to have been used for pasture for long periods of time, and therefore the sorts of infrastructure we might associate with intensive agriculture are less likely to be present. Finally, as a key transport corridor, the interest of external polities may have remained primarily focused on defence and the control of movement rather than food production.

Settlement location appears to be influenced, unsurprisingly, by altitude and the availability of accessible flat to gently sloping land. This is demonstrated quite clearly in the Dariali Gorge (the upper Tergi River Valley, north of Stepantsminda) by a comparison of the results of our 2013 survey (settlements and terrace locations) with data on slope and elevation obtained from a DEM (Digital Elevation Model) based on SRTM data; almost all landforms accessible from the valley bottom with a slope gradient of less than 15° and an elevation equal to or below 2,000m a.s.l. were associated with archaeological sites and features.[173] This does not mean that communities in the past were exploiting these land forms only, but that they were the best locations for settlement and subsistence activities that included some cultivation, and were likely the most accessible, especially during the winter months.

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[169] See chapter 22.3.
[170] See Mak'alatia 1934 and Itonishvili 1984.
[171] See also appendix I.
[172] See appendix III; see also Hammer 2014; Smith & Greene 2009 for examples and discussion.
[173] K. Hopper & D. Lawrence in Sauer *et al*. 2015: 889-92.

Because of more favourable conditions (i.e. larger contiguous areas of flat to gently sloping land), more settlements are located in the vicinity and south of Stepantsminda in both the Tergi and Sno River Valleys. Here, the Tergi River valley is considerably wider and settlements appear to have moved more frequently (e.g. from one side of the river to another), as demonstrated by the ethnographic evidence from the last few centuries. There are several references to villages located on what were colloquially known as former field systems (e.g. Kanobi).[174] Even so, none of the arable land appears to have been out of use for long. While difficult to date, the palimpsest nature of the field systems to the north of Stepantsminda (DPS-9) attests to this. At some point following the construction of the terraces, the system was divided into smaller field plots, and the risers appear to no longer have been maintained. These eventually fell out of use, and the location is now primarily used for grazing of local livestock. The population of the region, and their primary mode of subsistence, may have varied between pastoralism and cultivation through time and certain locations may have fallen out of use. However, the 'reusable landscape capital',[175] or the infrastructure associated with agricultural investment in the landscape, such as terraces, field walls, or clearance cairns would remain and so provide a useful base for reinvestment in the landscape. Despite the fact that there may have been variations in subsistence strategies (possibly influenced by political, cultural and technological changes), there is also clear continuity in terms of land use location influenced by ecological factors.

Architectural traditions of the region appear to also reflect the need for maximising space. Dolidze indicates that two-storey houses, tower houses and fortified houses developed because of the landscape setting; settlements tended to expand upwards to save the limited arable land.[176] This type of architecture also reflects a landscape in which social and political instability is common (though fortifications can also serve as expressions of power). While regionally diverse and adapted to local environments, fortified settlements, notably hilltop settlements, are prominent throughout the highlands of the South Caucasus from the Late Bronze Age.[177] At the regional scale, the endurance of these types of settlements probably reflects the dynamic history of a region that served as a meeting point between the communities of the uplands and lowlands, local polities and successive foreign empires for thousands of years.[178] At the local scale of our study area, tensions must have existed in the past between different groups, from village to village as well as through ethnic and cultural divisions.

Mobility, and seasonality, also played a key role in shaping the politics and economics of this region over the long term. These are important themes in the discussion of long-term settlement patterns and the formation of complex polities in South Caucasus Archaeology.[179] In general, the highland landscapes of the South Caucasus are particularly suited to specific agro-pastoral strategies involving the movement of animals between summer and winter pastures. In the Greater Caucasus, there is an abundance of upland pasture, often only accessible for grazing in the summer months, which formed part of a regional system with winter pastures often in lowland areas of modern Azerbaijan and Dagestan.[180] In Khevi, these traditional systems of

[174] See chapter 10.7: DPS-16 for Kanobi.
[175] Bevan *et al*. 2013.
[176] Dolidze 1959: 246.
[177] Early-Spadoni 2015; Hammer 2014; Lindsay & Greene 2013.
[178] Kohl 1988: 595.
[179] Anderson & Negus-Cleary 2018; Birkett-Rees 2012; Hammer 2014; Lindsay & Greene 2013; Wordsworth forthcoming 2018.
[180] Didebulidze & Plachter 2002: 93.

transhumance were crucial to the local economy up to the end of the Soviet Union, as they have been for at least several centuries, if not millennia.[181]
Over the long-term, the economy may have been heavily reliant on the seasonal movement of animals (especially from the north of the Dariali Pass). How would the economy have been affected by periods in which a fortified and highly controlled frontier zone existed? Furthermore, how would such periods influence or change local settlement patterns? Currently, our understanding of the long-term settlement pattern and local environmental record is not fine-grained enough for us to see the impact of such political changes. The closing of the border between Georgia and Russia nearly 30 years ago brought an end to the traditional transhumance systems of the region that relied on winter pastures in Dagestan, altering the economic focus of the region. This situation, however, may not reflect that of the past, as this modern example relies on the technology and levels of control only possible in modern nation states. Artefact studies, and especially the work on the pottery, indicate that ancient frontier controls must have been more fluid. Through the main period of occupation of Dariali Fort, the garrison, and presumably the wider community living within the Dariali Gorge, continued to receive a regular supply of high-bulk, low-value staple commodities such as coarse pottery from sources located both within the central North Caucasus and the Eastern Georgian lowlands. At the same time, the relative contribution of these supply sources did fluctuate, pointing towards profound changes in the regional subsistence base, particularly during the late Sasanian period.[182] More broadly, however, there is a degree of stability in the sources of ceramic supply and a level of conservatism with the persistence of particular pottery industries through many centuries that reinforces one of the main findings of the landscape study: the continuity and endurance of subsistence practices within the region. The effects of shifts in local, regional and interregional power are varied and complex and require further research to fully elucidate in this context.

## *10.7. DARIALI PASS SURVEY SITE GAZETTEER*

### *Sites surveyed in the field by the DPS*

### DPS-1: Gveleti Village

Coordinates: UTM 38N 469193, 4728414[183]
Location: The remains of the village are located c. 1.5km south of the entrance to the Amali Valley on the western bank of the Tergi River.
Geomorphology/Topography: On a flat area of land just above flood plain. The walls of the gorge rise steeply just east of the village. The village is immediately north of a stream called Tbitstskali (Gveletistskali) that flows into the Tergi.
General Site Description: Foundations of a number of rectangular structures (likely dwellings) and the remains of a square-based tower built of stone, with some brick. The tower sits right next to the stream, just south of the main settlement. A large sub-circular enclosure measuring c. 50m in diameter is located immediately east of rectangular structures.
A further c. 100m along the Gveletistskali Valley from settlement, we located a large irregular enclosure built against the steep rock face on the north side of the valley (WP-86). This side of

[181] Bock *et al*. 1995: 131; Didebulidze & Plachter 2002: 95; Itonishvili 1971: 67.
[182] See chapter 11.
[183] The coordinates indicate the centre point, or main feature of the site. All WPs are listed in chapter 10.7: Table 10:10.

the river valley is not currently accessible from the village. To the west of the large enclosure is what appears to be a single grave marked by a ring of stones, with five flat stones covering the top (WP-84). A rectilinear dry-stone enclosure c. 3.3x1.75m is found another 80m into the valley. One wall utilises a massive boulder (WP-85).
Pottery Types and Dating: No pottery. The abandoned, but still standing building was likely in use in the last century. A village called Gveleti is mentioned in documents from the fifteenth-eighteenth centuries[184] and was inhabited up until the early twentieth century; it appears to have been nearly abandoned by the 1930s.[185]
Recorder and Date: KH, EM, FM, KK 17/6/2013 and 24/6/2013[186]

**DPS-2: Gveleti Fort**

Coordinates: Upper Fort UTM 38N 469170, 4728078; Lower Fort UTM 38N 469339, 4728242
Location: c. 150-300m south of Gveleti Village in the Tergi River Valley
Geomorphology/Topography: The forts are located on top of a narrow spur on the western bank of the Tergi River. The Gveletistskali runs past the northern and western side of the spur. There is a steep drop off to the north, east and south. The lower fort is accessed from the north-west.
The visible remains of the lower fort consist of a square tower with semi-circular enclosures around and below it. The upper fort is further along the spur (to the south-west) at a higher altitude. It is not easily accessible.
Several features were located on the slopes of the gully through which the lower fort is approached. This includes several small sections of wall running both across and perpendicular to the valley (WP-3). There is also a stone room built into the hillside below the fort containing a wooden cross.
Between the spur on which the upper fort sits and the wall of the gorge is a small section of dry-stone wall (c. 1m wide and 8m long) possibly erected to block access to the gully from the south (WP-44). A further 200m to the south-east, also on the steep slope, is a small dry-stone rectilinear structure, 2-3m in diameter that possibly functioned as a lookout post (WP-46). 30m south-west of this feature another section of wall (c. 2 m) long was visible on the hill side.
Site Subdivisions: Upper and lower fort
Pottery Types and Dating: No pottery collected. Radiocarbon dates from the excavations suggest some activity in the late eight-tenth century, late tenth/eleventh-twelfth/thirteenth century, late thirteenth-fourteenth/early fifteenth century and mid-fifteenth-seventeenth century.[187]
Recorder and Date: KH, EM, FM 17/6/2013

**DPS-3: Walled cave near Gveleti**

Coordinates: UTM 38N 469232, 4728170
Location: c. 200m south of Gveleti village in the Tergi River Valley

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[184] *Document of Sakdrishvili of Gergeti from the fifteenth century AD (გერგეტელ საყდრიშვილთა XV საუკუნის)*; Vakhusht'i = ed. & trans. Brosset 1842: 228-29 (from the eighteenth century).
[185] Itonishvili 1971: 137-38; Mak'alatia 1934: 18-20.
[186] KH = Kristen Hopper, DL = Dan Lawrence, LSK = Lisa Snape, SP = Seth Priestman, EM = Eve McDonald, FM = Fiona Mowat, KK = Koba Koberidze, LC = Lana Chologauri, LS = Lyudmilla Shumilovskikh, EI = Emmanuele Intaglia, KER = Kim Eileen Ruf.
[187] See chapter 8.

Geomorphology/Topography: The site is located c. 100m up the wide gully which provides access to the Gveleti Forts.
General Site Description: Cavern with walled entrance. There are two offset stone walls at the entrance that create a narrow passage into the cave. The walls contain mortar. The distance between the two walls is c. 1m. It is possible that some of the material used to construct the walls has been removed from the walls of the cave. The cavern is 5m deep. There appears to be a significant amount of deposit on the cave floor, with ash throughout. A few pieces of burnt wood were found on floor of cavern. No artefacts and no other cultural features visible. The cave may be in use as a shrine.
Pottery Types and Dating: None. The walls appear to be rather recent.
Recorder & Date: KH, EM, FM 17/6/2013

**DPS-4: Gveleti Cemetery**

Coordinates: UTM 38N 469208, 4729335
Location: 1km north of Gveleti village and 2.5km south of Dariali Fort
Geomorphology/Topography: Flat to gently undulating area on west bank of River Tergi. A stream separates the site into two. The area has been disturbed by the building of a pipeline.
General Site Description: Several cist graves were excavated by a Georgian team at the site when a pipeline was put through the location in 1991.[188] No graves were located on the surface in our survey, but several were noted in later seasons eroding out of the bank above the Tergi near this location. In general, the area appears heavily disturbed, and any archaeology would seem to be subsurface.
Pottery Types and Dating: No pottery on surface. Previous excavations suggest a late antique/early medieval date (sixth-eighth centuries AD). Excavations by the team also found relatively recent burials (which do not form part of the cemetery excavated in the early 1990s, but are further south).[189]
Recorder and Date: KH 18/6/2013

**DPS-5: Daba and the lower Amali Valley**

Coordinates: UTM 38N 468646, 4729995
Location: Located in the Amali Valley the entrance of which is c. 1.5km south of the Dariali Fort and the same distance north of Gveleti Village
Geomorphology/Topography: The valley slopes from east to west, with the centre of the valley sitting at least 20m above the deeply incised Amali River which flows along the north side of the valley.
General Site Description: The settlement of Daba is located c. 700m into the valley. Other features are distributed throughout the valley and are described below.
*Settlement*
The village consists of a cluster of structures at the bottom of the valley (WPs 29-40). The village does not have a uniform layout. There are however, several repeated types of structures and arrangements of structures throughout. There are individual units of small square buildings with attached rounded dry-stone enclosures. Several of these enclosures have a long narrow area walled off, with an opening at one end. These resemble sheep runs, but without a second

[188] Mindorashvili 2005; see also chapter 9.1.
[189] See chapter 9.1.

entrance their function is unclear. They are however likely related to keeping animals. The buildings generally have small windows and internal niches, perhaps to keep important belongings. Several of the buildings have been repaired and used in the recent past.
Water is also being funnelled down from a spring higher up in hills on the southern side of the settlement to a makeshift animal trough constructed of rubber tires. It seems likely that animals are still grazed here seasonally. There were no people or animals present at the time of the survey (June/July).
There was a considerably amount of modern refuse at the site, deposited by recent reuse. No pottery was located. It is likely that the settlement dates from the last few hundred years, though some of the structures or indeed the area may have been used in earlier times.

*Wall*

A wall composed of large rocks and boulders up to one metre in diameter has been constructed across the valley running N-S (WPs 20-28). Its northern terminus is just above the steep drop off the river, while the southern end abuts a steep hill side. The wall could have been used to keep animals in the upper pastures. While the lower portion of the wall is likely buried, it would probably not have been of sufficient height to serve a defensive purpose.

*Cairns*

Two cairns constructed of cobbles and stones between 0.10m-0.30m were located on the upper slopes of the valley. One was found next to a road (WP-9), making it possible that they have resulted from field clearance. Another was found at least 40m from the road, perhaps suggesting another use. It is however difficult to tell at this point.
North and east of the settlement, on high undulating plateau we located an area of c. 50x40m which contained c. 68 potential burial cairns (WP-79-81). They are generally constructed of a ring of outer stones, filled with rubble and other large stones. A detailed mapping of these features was undertaken in 2016. To the north and west there is a steep drop to the river valley, and to the east there is a lake. The cairns appear to have a variety of morphologies and no clear pattern of orientation. Excavation established that they do not cover burials and their significance is open to debate.[190]
South of this location, on another rise a few features were noted that might represent cist graves. These are located closer to the settlement (WP-77 and WP-82).

*Rectilinear stone features and circular/sub-circular depressions*

Throughout the course of the valley we located 16 square stone lined semi-subterranean features that were set into the edge of ridges or into mounds (though this may be the upcast from their construction), and often had a ‘channel’ or ‘linear depression’ leading away from them. The first few metres of these linear depressions were often stone lined. These features were roughly 5m in diameter and had a ‘window’ or gap in the stone work set into the end opposite the ‘linear depression’. At least three rectangular depressions were also located, as well as numerous circular and oval depressions, sometimes connected by ‘channels’.
One of the best preserved examples (WP-7) is oriented N-S and measures c. 4m in length. The feature is c. 2.5m for most of its width until the walls step in to form a 0.75m entrance for the front half of its length. A linear depression runs into the feature through this opening. A ‘window’ is located opposite the opening in the back wall of the feature. One (WP-12, WP-15) has a rather elaborate system of linear depressions that extend 18m to the NW and 15m to the SE of the feature. Small side linear depressions only 1-2m in length are placed along the length of these larger linear depressions. The features are in various states of preservation and while not datable at this point, clearly have not been maintained for some considerable time.

[190] See chapter 9.2.

We initially wondered if these features also had some use for collecting water, but their locations and the slope of the 'linear depressions' did not appear to display any uniformity. Several local informants later suggested that these square features may have been foxholes for armed individuals to take cover in related to local conflicts in the eighteenth and nineteenth century. This would explain the 'window' like feature and their strategic locations on high ground or on the edge of a cliff. It is possible that the circular or oval depressions may have served a similar function, or may, as we initially thought, be related to water collection.
Pottery Types and Dating: No pottery. At least part of the settlement called Daba was inhabited until relatively recently.
Recorder and Date: KH, SP, EI, KK, DL 18/6/2013, 24/6/2013

**DPS-6: Tsdo**

Coordinates: UTM 38N 470125, 4726705
Location: 4km north of Stepantsminda on the west side of the Tergi River Valley
Geomorphology/Topography: The village and terrace field system are located on high plateau on the west bank of the river. A high ridgeline on the east side of plateau creates a sheltered 'bowl' between it and the gorge wall. The site can be accessed from the north with some difficulty, but the main access is from the south.
General Site Description:
The site consists of ruined structures interspersed with the modern village of Tsdo. A tower-like structure and circular enclosures are found on the ridgeline just above the village to its east. To the north and south-west of the village is evidence of terraces. The terraces are no longer under cultivation, save for a few small plots and hay fields. Numerous clearance cairns were located within the areas of the terraces. Paths are visible between terraces zigzagging down hillsides.
On the highest point of the ridgeline sits a tower-like structure. It is roughly rectangular, forming a room of 8x4m. A stone ram statue with metal horns is perched on one of the walls of the tower. Further walls are visible on the same platform extending to the south forming an L-shape. A Christian shrine, still in use, sits on the bottom part of the L-shape. Below the tower are numerous roughly circular enclosures.
There is inter-visibility between Tsdo and Gveleti Fort, as well as path along the hillside between them.
Pottery Types and Dating: A few sherds of badly preserved pottery were located near the clearance cairns but no samples were retained. OSL dating of the basal deposit of Terrace 4 provides a date of 1460±50 AD for the construction of that particular terrace. Small sample of ceramics from the excavations of the same terrace indicate possible activity in the area between the late antique and medieval periods.
A village called Tsdo is mentioned in fifteenth century documents, but it could have existed prior to this .[191]
Recorder and Date: KH, SP 20-21/6/2013

**DPS-7: Dariali Fort and Cemetery**

[191] Itonishvili 1971: 135-36; *Document of Sakdrishvili of Gergeti from the fifteenth century AD (გერგეტელ საყდრიშვილთა XV საუკუნის).* See also Kruglov 1937: 247-48.

Coordinates: UTM 38N 469426, 4731692[192]
Location: Approximately 1km south of the Georgian/Russian border in Georgia.
Geomorphology/Topography: Located on a raised landform on the west bank of the Tergi River.
General Site Description: Dariali Fort sits on top of a high flat outcrop on the west bank of the river with excellent views of the pass to the north. In the south, on the opposite side of the pass, is a small stone tower. Visible on top of the fort are several rectangular stone built structures and walls.
Approximately 350m to the south are several cist burials. Investigations at the site suggests an extensive cemetery.
A path is visible extending from the fort, past the cemetery, toward the south (as well as to the north, leading here to a modern bridge across the Tergi River). It has clearly been used as a road in the recent past and probably broadly follows an ancient route. However, it also appears to be the best access track on the high ground from the fort to the south. The track ends c. 1.5km south of the fort, terminating where the Amali meets the Tergi. There are several levels of tracks near this point and, while it is possible to get down near the river terrace, there does not seem to be easy access across the Amali River. Considerable erosion appears to have taken place along the edges of the river terrace.
Site Subdivisions: Fort and cemetery
Pottery Types and Dating: Excavations indicate human presence (fires) from the sixth/fourth century BC onwards and agricultural/horticultural activity in the vicinity of the fort from the first century BC/first century AD, with the main phase of occupation between the late fourth c. AD to the late tenth/early eleventh century. After this, there appears to be a hiatus in occupation (in the excavated areas) until the late thirteenth to early fifteen centuries AD (or a shorter period within these parameters). Following this, there is no evidence for occupation until the twentieth century. The cemetery was in use between the eighth-late tenth/early eleventh centuries AD.[193]
Samples: One bag of pottery was collected from the area of the fort and cemetery.
Recorder and Date: KH 22/6/2013

**DPS-8: Unknown, but possibly Kobi (Kvabi)**

Coordinates: UTM 38N 469844, 4724856
Location: On top of high plateau between c. 2km south of Tsdo and 1.5km north of Gergeti.
Geomorphology/Topography: Site is located at c. 2,000m a.s.l., on a high flat to gently sloping plateau. There is a shear drop off to the Tergi River to the east side of the plateau.
General Site Description: The site consists of field systems (terraces and enclosures), several structures (probably representing the remains of a village, cairns, walls and several channels. There are no roads leading to the site and the best access is achieved by following a hiking trail up the south side of the plateau from the Chkheri River valley.
The remains of several enclosures and structures are clustered on the north-western part of the plateau. These mostly consist of roughly rectilinear structures within or around larger enclosures. In one case, one of the structures appears to be built into a terrace.
Along the northern boundary of the site are two large linear depressions running roughly east-west, with several smaller linear depressions branching off. These may be channels. There is also a concentration of cairns along this northern boundary. Several appear to be clearance cairns, while several others are in close proximity to a large enclosure wall, though their

[192] This point refers to a mid-point of the larger fort/cemetery area.
[193] See chapters 2-6 & 25, with references.

relationship is uncertain. A further few are located near the channel and are difficult to associate with any function at this time.
The terraces on the plateau are all constructed of earth and run roughly parallel in a north-west to south-east direction. There are two cases of roughly north-south-aligned terraces constructed between the ends of two longer north-west to south-east terraces. The system and settlement are completely abandoned.
Pottery Types and Dating: None from survey. OSL dating of the basal sediment from Terrace 10 provide a date of 1730±30 AD for the construction of that terrace. On sherd of pottery from the same terrace suggests a sixteenth century date.
Based on its location, the site may correspond to the settlement of Kobi (Kvabi), which already existed prior to the fifteenth century, when it is recorded that a village called Qobi (Kvabi) donated gifts to Gergeti Church. It is also mentioned in the second half of the eighteenth century in a document from the reign of King Erekle II (1762-1798). It was said to have been abandoned at the end of the eighteenth century, but a new village was built immediately to the north of the old and settled by Osetian people in the nineteenth century. However, it was again abandoned because of hostilities between the Osetians and other local groups. The two villages were said to be separated by fields used for growing hay.[194]
Recorder and Date: DL, KH 5/7/2013

**DPS-9: Field system north of Stepantsminda**

Coordinates: UTM 38N 471414, 4723921
Location: Immediately north of Stepantsminda
Geomorphology/Topography: On a gently sloping landform on the east side of the Tergi River Valley. A stream, which flows into the Tergi, divides the field system from the town. A significant amount of rock and sediment has been deposited from the higher slopes to the east of the system. The fields gently slope towards a sharp drop off into the flood plain.
General Site Description: Field systems associated with the settlement at Stepantsminda. Fields are accessed by crossing a deeply incised stream which runs west toward the Tergi. System consists of at least forty-six terraces descending from east to west. The majority of the terraces are made of earth, but several toward the lower end of the system are constructed of or are reinforced with stone. Running parallel to the front of some of the terraces, as well as perpendicular to them (connecting the ends of the terraces) are numerous dry-stone walls (WP-200-210). Many of these walls have collapsed and are difficult to distinguish from the clearance cairns that are dotted about the fields.
There are several large dry-stone enclosures which appear to be well maintained and in recent use. Many of them have barbed wire and wood incorporated into them and enclose part of a pre-existing terrace. These are likely for keeping grazing animals out of winter fodder.
Numerous circular and sub-circular depressions are also located on the south and west edges of the system, near the steep drop off to the river (e.g. WP-219). They consist of rounded depressions with upcast banks averaging between 1-3m deep and 3-6m in width. There are also two stone-lined depressions (including WP-222). Both are rectangular, with two linear depressions/channels running parallel from one of the long axes. Are these features for water collection? Several natural channels also flow towards the west from the hills above.

[194] Itonishvili 1984: 9, 133.

Several stone structures have also been built into the walls below terraces. In one case very faint remains of rectangular and circular structures were located along one of the few east/west running terraces (WP-225-229).
A small church constructed on top of a very large boulder is also located in the fields (near WP-250). The church was not accessible as it was fenced off due to it being in a poor state of preservation. It was constructed of stone and built between what are possibly two terraces.
Pottery Types and Dating: No pottery visible on surface. See terrace excavation section. Terraces may have fallen out of use (no longer been maintained) by the nineteenth century.
Recorder and Date: DL, KH 6-9/7/2013

**DPS-10: Unknown**

Coordinates: UTM 38N 461578, 4714652
Location: Located on either side of the Georgian Military Highway in the Tergi River. Across the river from Kanobi.
Geomorphology/Topography: On a gentle slope above the Tergi River floodplain on its east side, backed by steeply sloping mountains. The highway cuts the site lengthways approximately two thirds of the way down the system. The bottom edge of the system has been eroded by the Tergi.
General Site Description: Large field system which may be connected to DPS-11; separated from it by a deeply incised gully. Terraces, walls and clearance cairns are clearly evident in the field and on satellite imagery. Two circular depressions (cisterns?) are also found along the upper side of the road edge (WP-631). The terraces seem to be largely uniform, generally 1-1.5m in height. No stones appear to have been used in their facing, and they are heavily slumped. The walls, which run perpendicular to the terraces are probably better described as linear piles of stones; no coursing is visible. The clearance cairns are heavily eroded and overgrown. The field system appears to be laid out to take advantage of run off across the alluvial fan with terraces and walls widening towards the bottom of the system.
Ruined structures are found along the highway edge on its south side. It is possible that there were structures (a settlement?) along the course of the road that was destroyed during the road's construction.
Pottery Types and Dating: No pottery was found on the surface.
Recorder and Date: DL, KH, LSK, LS 5-7/7/2014

**DPS-11: Unknown**

Coordinates: UTM 38N 461162, 4714024
Location: On the same landform as DPS-11, separated from it by a gully.
Geomorphology/Topography: On a gentle slope above the Tergi River floodplain on its east side, backed by steeply sloping mountains. The highway cuts through the site. The bottom edge of the system has been eroded by the Tergi.
General Site Description: A series of walls running perpendicular to the slope of the same alluvial fan on which DPS-10 sits and possibly part of the same system. Some of the walls clearly creating field plots, but there is no evidence of terracing. The 'walls' have no visible courses. Field clearance cairns are common.
Numerous channels run along the slope, perpendicular to the walls. In some cases, stones appear to have been stacked or arranged at the edges of the channels. The channels are fed by a stream flowing between DPS-10 and DPS-11. The stream becomes more deeply incised as it descends and has carved out a deep gully at its confluence with the Tergi. Two springs are

visible on the mountain behind the site. One circular depression (WP-638) was found at the north-eastern edge of the site.
Pottery Types and Dating: N/a
Recorder and Date: DL, KH, LSK, LS 5-7/7/2014

**DPS-12: Unknown**

Coordinates: UTM 38N 464001, 4715817
Location: Located on both sides of the Georgian Military Highway in the Tergi River Valley, on its right (eastern) bank. Across the river from Pkhelshe.
Geomorphology/Topography: On a gentle slope above the Tergi River floodplain, backed by steeply sloping mountains. A stream flows through the middle of the site. It appears to be cut by the Military Highway.
General Site Description: Heavily eroded terrace and wall system. A channel runs through the centre of the site following the slope. A road also cuts across the centre perpendicular to this. The north-eastern part of site is very heavily attenuated by road construction. There is rubble present against the face of the terraces but it is unclear whether this has been piled against them post-use or was part of the original construction. Stone alignments are found running perpendicular to the terraces on the east side of the stream and are probably heavily eroded walls. Clearance cairns are frequent.
Pottery Types and Dating: no pottery was located on surface
Recorder and Date: DL, KH, LSK, LS. 5/7/2014

**DPS-13: Pansheti**

Coordinates: UTM 38N 468604, 4720321
Location: In the Tergi River Valley c. 3km south-west of Stepantsminda.
Geomorphology/Topography: Village is on a low rise above the floodplain and is also built into the lower slopes of the mountain behind.
General Site Description: The village was initially visited because of a prominent tower clearly visible from the road. A second lower (in height and elevation) tower is located within a ruined village behind the modern settlement. The towers and old village are built onto a rocky outcrop. The higher tower is approximately 12m in height; the entrance appears to be formed by a small arched opening on top of a steep cliff. It is surrounded by steep drop offs on all sides. The lower tower is c. 8m in height and more easily accessed. Both towers are square and built of large blocks (c. 0.4x0.4m) bonded with mortar. Construction techniques of the buildings in the old village vary, but include flat slates aligned horizontally, often mixed with courses of larger light stones. There are mineral springs located approximately 1.5km to the north-east of the village.
Pottery Types and Dating: N/a
Recorder and Date: DL, KH, LSK, LS 5/7/2014

**DPS-14: Sioni**

Coordinates: UTM 38N 465521, 4716855
Location: In the Tergi River Valley c. 7.5km south-west of Stepantsminda. Along the eastern side of the Georgian Military Highway to Tbilisi, on the east bank of the Tergi.
Geomorphology/Topography: Situated above Tergi Flood Plain. The village is nestled around a prominent spur jutting out of the hills on the eastern side of the site. The modern village

extends to the other side of the highway and the Tergi onto the lower slopes of the western bank.
General Site Description: The site consists of a church and tower positioned upon a high spur above the village of Sioni. The tower sits on the north-west edge of the spur overlooking the highway. The church is approximately 100m south-east of the tower on the same spur.
Pottery Types and Dating: The church was built in the ninth/tenth century.[195] The tower is likely later (seventeenth-nineteenth century?).[196]
Recorder and Date: DL, KH 13/7/2013

**DPS-15: Sno**

Coordinates: UTM 38N 470329, 4717077
Location: In the Sno River Valley, c. 3.5km south-east of where it flows into the Tergi.
Geomorphology/Topography: Just above the Snostskali River flood plain, nestled against the base of the forested mountains to the north, and a smaller tributary to the east. Terrain gently slopes from the base of the mountain toward the river.
General Site Description: Ruins of church and other structures on a hill top above the village. A tower is set on a large rock outcrop in the middle of the village. The tower appears to have several phases of construction/repair. Within the modern village, there is a significant number of ruined stone structures. Various structures in the village display a distinct style of wall construction – alternating courses of flat stones and small cobbles. There is also a shrine above the village which celebrates the holy day of Atengenoba (12th August).
Pottery Types and Dating: The village is said to have been founded in the early medieval period, but the tower is likely considerably later[197].
Recorder and Date: DL, KH 13/7/2013

**DPS-16: Old Kanobi**

Coordinates: UTM 38N 460888, 4715872
Location: On gentle slope above the modern village of Kanobi on the west side of the Tergi River Valley.
Geomorphology/Topography: On a moderately high slope above the Tergi River floodplain, backed by steeply sloping mountains. The village is bounded on the south by the deeply incised Tergi River Valley and to the east by another steep-sided deeply incised river valley which flows into the Tergi.
General Site Description: The village of Kanobi was initially visited due to its proximity to DPS 10, 11 and 12. A local resident led us to the location of the remains of what might have been an older village above the modern one, located in fields fenced off for animal fodder. The site is located near the edge of the deeply incised river valley which flows along the eastern edge of the site. There is a steep drop off below the site of at least 30m to the river valley below. Walls and/or structures (WP-662) were found eroding out of the top of the section of the river valley, approximately 0.2-0.5m below ground level. 40m further north along the section a cist grave was visible, also eroding out of the section, while a second was visible a further 40m to the north (WP-665-WP-666). Two mounds were also present 10m in from the edge and

[195] Itonishvili 1984: 24; Zaqaria 1972: 45.
[196] Mak'alatia 1934: 123-27.
[197] Mak'alatia 1934: 122.

approximately 30m apart (WP-663-WP-664). They may denote the remains of other structures on the site.
Pottery Types and Dating: No pottery was found. A village called Kanobi is mentioned in a fifteenth century document.[198]
Recorder and Date: DL, KH, LSK, LS 7/7/2014

**DPS-17: Upper Ukhati**

Coordinates: UTM 38N 460538, 4711945
Location: On a high plateau above the east bank of the Tergi, immediately above Lower Ukhati/Kobi.
Geomorphology/Topography: The site sits on a high flat to gently sloping plateau above the Tergi floodplain. There is a sharp drop towards the river on the west side of the plateau. The site is backed by steep mountains to the east. To the south of the site is a deeply incised valley containing the Narvani River which flows into the Tergi.
General Site Description: We visited the site after noting a goat track leading from the slopes above and just south of DPS-11 toward the high plateau on which Ukhati sits. Once on top of the plateau, we noted the remains of a field system, several circular depressions (possibly cisterns) and the remains of a village. Several modern houses exist within the area of ruined buildings and appear to be still in use, at least seasonally. A road leading down from the site was located on the southern side, snaking down through the Narvani River valley that runs perpendicular to the main pass.
According to Mak'alatia's maps of the valley,[199] this site is Upper Ukhati. Lower Ukhati appears to have existed south (and at a lower elevation) likely in the Narvani River valley.
Pottery Types and Dating: No pottery was found. Was occupied in the eighteenth century (but could also have been inhabited earlier and later).[200]
Recorder and Date: DL and KH 10/7/2014

**DPS-18: Old Khurtisi**

Coordinates: UTM 38N 462281, 4716474
Location: On the western side of the Tergi River valley above the modern village of Khurtisi.
Geomorphology/Topography: The site is located on a slope above and to the north-east of the village of Khurtisi. The Kesia River, which flows into the Tergi, runs by the east side of the site through a steep valley.
General Site Description: The site consists of a tower, church (and associated structure). The tower sits on a slightly elevated mound above and to the north of the other structures. There are the remains of the old village of Khurtisi, c. 120m down slope from the tower/church. The tower is circular and the entire south side has collapsed. The walls are 1-1.5m thick. The tower is built on the east side onto the rock outcrop. The base of the tower is 3m lower on the west side than on the other sides.

[198] Itonishvili 1971: 51-52; *Document of Sakdrishvili of Gergeti from the fifteenth century AD (გერგეტელ საყდრიშვილთა XV საუკუნის).*
[199] Mak'alatia 1934.
[200] Itonishvili 1984: 28.

Pottery Types and Dating: A village called Khurtisi is mentioned in fifteenth century documents,[201] the tower may be sixteenth/seventeenth century.[202]
Recorder and Date: DL and KH 12/7/2014

**DPS-19: Tower and Church near Lower Ukhati/Kobi**

Coordinates: UTM 38N 459710, 4711557
Location: On the left bank of the Narvani River c. 800m before it meets the Tergi. Around 500m south of Lower Ukhati/Kobi.
Geomorphology/Topography: Located on a prominent forested outcrop between the Baidara River and the Narvani River immediately south of where they converge with the Tergi.
General Site Description: The site consists of two towers and a church on a prominent outcrop overlooking the pass. The ridgeline on top of the outcrop runs roughly north-west to south-east. On the south-east end of the outcrop is a circular tower, surviving to approximately 3-4m height. A square tower sits at the north-west end. Between the two is a church, which is still in use. A series of terraces (four to five) run roughly parallel to the outcrop (south-east to north-west) on its north-east side down toward the Military Highway. At the bottom of the terraces there are two conjoined circular depressions, similar those found at other sites and preliminarily interpreted as cisterns.
Pottery Types and Dating: No pottery was found.
Recorder and Date: DL, KH, KER 12/7/2014

**DPS-20: Arsha Fort**

Coordinates: UTM 38N E 466628, N 4718722
Location: In the Tergi River Valley, on its western side. Immediately across the river from modern Arsha and beside the village/hamlet of Gaiboteni.
Geomorphology/Topography: Sitting on the lower slopes above the west bank of the Tergi.
General Site Description: Complex of ruined stone structures including at least two towers, one rectangular and one rounded. A wall encloses the complex on the side facing the river. At least three houses amongst the ruins are still inhabited, and there are several garden plots.
Pottery Types and Dating: No pottery was collected. Sixteenth/seventeenth century AD?[203]
Recorder and Date: DL, KH, KER 12/7/2014

**DPS-21: Achkhoti Tower**

Coordinates: UTM 38N E 468140, N 4719017
Location: In the village of Achkhoti immediately after turning off the Military Highway onto the Sno-Akhaltsikhe-Juta road.
Geomorphology/Topography: Set into the north-east side of an outcrop c. 2km south of where the Tergi and Snostskali rivers converge.
General Site Description: A ruined tower is located on the side of an outcrop overlooking the village of Achkhoti. The tower is square (c. 5m in diameter) and aligned north-east to south-

[201] *Document of Sakdrishvili of Gergeti from the fifteenth century AD (გერგეტელ საყდრიშვილთა XV საუკუნის).*
[202] Itonishvili 1971: 65; 1984: 27.
[203] Zakaraia 1973: 69. See also Kruglov 1937: 246.

west. It employs dry-stone masonry. There is an arched window in the north-west side of the tower. The south-east side has almost completely collapsed.
Pottery Types and Dating: N/a
Recorder and Date: DL, KH, KER 12/7/2014

***Sites described in textual sources /maps and/or located on imagery, but not recorded in the field during the landscape survey***

**DPS-22: Unknown**

Coordinates: Unknown
Location: On a hill north of Gveleti Village.
General Site Description: Church with frescoes.[204]
Dating: Thirteenth-fourteenth century AD based on frescoes.[205]

**DPS-23: Stepantsminda**

Coordinates: UTM 38N 470961, 4722866
Geomorphology/Topography: The modern town of Stepantsminda is located on the east bank of the Tergi River. The east side of the valley is gently sloping to flat in this location.
General Site Description: Stepantsminda (formerly known as Kazbegi) is reported to have originally been two villages (Kazbegi and Targmani), that have since amalgamated.[206] The remains of two towers are said to exist in the town; these were called Zaliet and Guguet.[207] The oldest houses still standing in Stepantsminda are no older than the seventeenth or eighteenth century.[208]
Remains of terrace fields and clearance cairns interspersed with modern field/garden plots are visible to the east and south side of Stepantsminda on the CORONA and WorldView-2 imagery.
Dating: The most famous objects from excavations in Stepantsminda come from the 'Kazbegi Treasure' which has been dated to the sixth-fifth century BC.[209] Other excavations in the town have revealed late medieval graves, first century BC-first century AD objects, and an undated statue of a stone ram.[210]

**DPS-24: Artkhnotsi**

Coordinates: None
Location: Tergi River Valley
General Site Description: Settlement no longer exists.
Dating: Unknown, but the site was abandoned by the time Itonishvili was writing about it in the early 1980s.[211]

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[204] Itonishvili 1984: 8; Kruglov 1937: 248, 250 fig. 4; Mak'alatia 1934: 247; Zakaraia 2008; Dr Denis Beletskiĭ, pers. comm.; see also chapter 8.8.
[205] Itonishvili 1984: 8.
[206] Itonishvili 1971.
[207] Itonishvili 1984.
[208] Itonishvili 1984.
[209] Ts'itlanadze 1976: 102-04.
[210] Mindorashvili 2005; see also chapter 25.2.
[211] Itonishvili 1984: 4.

**DPS-25: Akhaltsikhe**

Coordinates: UTM 38N 472283, 4715271
Location: In the Sno River Valley to the south-east of Sno. On a gently sloping valley side on the left bank of the Snostskali River at the junction with the Artkhmostskali River.
General Site Description: Settlement and church. There are some ruins and graves in the vicinity of the village which may have been part of the earlier settlement.[212] Mindorashvili reports that tombs (related to the church) were excavated at Akhaltsikhe. These are described as a type of tomb also excavated in Garbani, Sioni and Arsha and that are similar to those found in Gergeti dating to the ninth-tenth century AD.[213]
Burials, church, field systems/enclosures, settlement (archaeological and modern), uncategorised structures
Dating: The church is said to date to the ninth or tenth century AD.[214] The settlement was occupied at least by the fifteenth century AD.[215] Some of the preserved houses are from the nineteenth or early twentieth century.[216]

**DPS-26: Artkhmo**

Coordinates: UTM 38N 470580, 4712253
Location: In the Artkhmostskali River Valley. On the left bank of the Artkhmostskali River, on a high plateau above the floodplain.
General Site Description: Settlement, now abandoned.[217]
The remains of a settlement (unroofed rectangular structures) are visible on the WorldView-2 imagery.
Dating: The village is mentioned in fifteenth century AD texts.[218] Bayern excavated graves in Artkhmo and Juta in the late nineteenth century that contained jewellery and weapons attributed to the high medieval period.[219]

**DPS-27: Juta**

Coordinates: UTM 38 N 479197, 4714083
Location: In the valley of the Jutistskali River
General Site Description: Settlement and burials (Fig. 10:57)
Dating: Bayern excavated graves in Artkhmo and Juta in the late nineteenth century that contained jewellery and weapons attributed to the high medieval period.[220]

**DPS-28: Karkucha**

[212] Itonishvili 1971: 156.
[213] Mindorashvili 2005.
[214] Itonishvili 1984: 2; Zakaraia 1972: 53.
[215] Itonishvili 1971: 156.
[216] Itonishvili 1967: 21.
[217] Itonishvili 1984: 20.
[218] Itonishvili 1971: 161.
[219] Mindorashvili 2005: 7; Ts'itlanadze 1976: 7-8.
[220] Mindorashvili 2005: 7; Ts'itlanadze 1976: 7-8.

Coordinates: UTM 38N 473545, 4714076
Location: In the Sno River Valley, south of Akhaltsikhe. On the right bank of the Snostskali River.
General Site Description: Mentioned by Itonishvili [221] as both a historical and modern settlement, but no further information given.
Dating: Unknown

**DPS-29: Qoseli?**

Coordinates: UTM 38N, 472476, 4715519
Location: In the Sno River Valley, south of Sno and immediately across the river from Akhaltsikhe
General Site Description: Ruins, the remains of a tower and graves are mentioned by Itonishvili at Qoseli.[222]
Dating: None

**DPS-30: Miguda**

Coordinates: UTM 38N, 471141, 4712897 (approx.)
Location: On the right bank of the Artkhmostskali River, above the floodplain. Exact location is difficult to determine.
General Site Description: Settlement; no longer exists.[223]
The location of the site is given on the map by Mak'alatia.[224] A 'ruin' symbol also marks the location on Soviet 1:50,000 topographic maps.
Dating: None

**DPS-31: Mtrekhi**

Coordinates: Unknown
Location: Sno Valley[225]
General Site Description: Settlement, no longer exists.[226]
Dating: None

**DPS-32: Zemosopelai**

Coordinates: Unknown
Location: Snostskali River Valley, very close to Sno.[227]
General Site Description: Ruins of a settlement and two towers (Kvires Tsikheebi).[228]
Dating: None

[221] Itonishvili 1953; 1971; 1984.
[222] Itonishvili 1971: 160-61.
[223] Itonishvili 1984: 4; Itonishvili 1971: 161.
[224] Mak'alatia 1934.
[225] Itonishvili 1984: 4.
[226] Itonishvili 1984: 4.
[227] Itonishvili 1971: 151.
[228] Itonishvili 1971:151.

**DPS-33: Almasiani**

Coordinates: UTM 38N, 458839, 4711962
Location: On the left bank of the Baidara River, immediately before it joins the Tergi River, c. 1km west of Ukhati.
General Site Description: Settlement mentioned in the 1926 census of the region and indicated in this location on Mak'alatia's map,[229] as well as Soviet 1:50,000 maps. Some modern houses are still located here. Itonishvili mentions that Almasiani was only 1km (and across both the Ukhatis Tskali and Bidara Rivers) from Lower Ukhati/Kobi. He also notes that near Almasiani is a place called Ado's Field, named after a settlement of the same name that is no longer extant. Ado, the village is also mentioned in a fifteenth century document.[230]
Dating: None

**DPS-34: Bakhtris Tsminda Giorgi**

Coordinates: UTM 38N 469042, 4732714
Location: Approximately 1km north of Dariali Fort.
General Site Description: Fortified structure now marked by a religious place or shrine. A 'ruin' symbol also marks the location on Soviet 1:50,000 topographic maps.
Dating: See excavation report.[231]

**DPS-35: Gaiboteni**

Coordinates: UTM 38N, 466497, 4718592 (approx.)
Location: In the Tergi River Valley on the left bank of the river. The settlement was situated near to Old Arsha (DPS-20) and immediately across the river from modern Arsha.
General Site Description: Settlement
Dating: Earlier than the fifteenth century.[232]

**DPS-36: Garbani**

Coordinates: UTM 38N, 466704, 4718074
Location: In the Tergi River Valley, immediately to the east of where the Terkhena River flows into the Tergi, on the flat to gently sloping floodplain on the right bank of the Tergi.
General Site Description: Settlement and church. Ruins and terrace fields near the site suggested to Itonishvili that this may be one of the oldest villages in Khevi.[233] Site was surveyed by a team from Iv. Javakshavili institute of history, archaeology and ethnography in the 1960s and the Zhinvali Archaeological expedition, led by R. Ramishvili and G. Ghambashidze excavated tombs, associated with church, in the 1970s, dating to the ninth-tenth century AD.[234]

[229] Mak'alatia 1934.
[230] Itonishvili 1971: 46-48.
[231] See chapter 7.
[232] Itonishvili 1971: 92.
[233] Itonishvili 1971: 91.
[234] Mindorushvili 2005, 12; Ts'itlanadze 1976: 12.

Dating: Itonishvili mentions there is a ninth-tenth century AD church in Garbani.[235]

**DPS-37: Gergeti Village**

Coordinates: UTM 38N, 469782, 4723498
Location: In the Tergi River Valley, on the left bank of the Tergi River. Across the Tergi River from Stepantsminda.
General Site Description: Settlement (still occupied) and tower.[236]
Field systems (date uncertain, but possibly modern) are visible in association with the settlement on the CORONA and WorldView-2 imagery.
Dating: None

**DPS-38: Gergeti Church/Monastery**

Coordinates: UTM 38N, 468854, 4723370
Location: On a high plateau above the village of Gergeti in the Tergi River Valley.
General Site Description: Gergeti church and monastery complex. Several sources describe features near the church/monastery complex. A cave monastery is said to be located between Gergeti and mount Kazbeg.[237] Tombs (or 'underground graves') are also mentioned in the vicinity.[238] Near to Gergeti is a place called Saqotnia (the place of pots); the name either refers to a place where some ceramics were found, or where there was a clay source.[239]
Dating: Gergeti Church was built in first half of the fourteenth century.[240]

**DPS-39: Gikhis Gora**

Coordinates: Unknown
Location: On a small hill on the opposite bank of the river from Khurtisi.
General Site Description: Church, ruins and foundations of a tower. Itonishvili indicates that it was a watchtower.[241]
Dating: None

**DPS-40: Goristsikhe**

Coordinates: UTM 38N 464497, 4716739
Location: In the Tergi River Valley south of Stepantsminda. On the valley side above the Tergi River, on its left bank. Separated from Pkhelshe by an unnamed side stream that flows into the Tergi.
General Site Description: Settlement and tower. Itonishvili[242] indicates that only the base of the tower remains, and that it may be the same tower that is referred to as being located in

[235] Itonishvili 1971: 91.
[236] Itonishvili 1984: 14, 16; Mak'alatia 1934.
[237] Itonishvili 1984: 14, 16.
[238] Mindorashvili 2005.
[239] Itonishvili 1971: 131.
[240] Zakaraia 1972.
[241] Itonishvili 1971: 65.
[242] Itonishvili 1971: 82.

Pkhelshe (located immediately next to Goristsikhe). He also indicates that there are some field systems in the vicinity. Modern field systems are clearly visible on the WorldView-2 imagery.
Dating: None

**DPS-41: Ivais Tsikhe**

Coordinates: Unknown
Location: Located in the Tergi River Valley south of Stepantsminda and north of Khurtisi (very close to Khurtisi tower).
General Site Description: Fortification. The name translates as the 'Castle of Eva. Destroyed by a landslide at some point in the past.[243]
Dating: None

**DPS-42: Merged with DPS-51**

**DPS-43: Kobi (near Lower Ukhati)**

Coordinates: UTM 38N 459834, 4712161
Location: In the Tergi River Valley, at the junction with the Truso Valley**.** Kobi is located on Mak'alatia's [244] map immediately beside the Narvani River, which flows into the Tergi River.[245]
General Site Description: Settlement which no longer exists according to Itonishvili,[246] but the general location is still referred to as Kobi by locals. A settlement called Lower Ukhati is located near here.
Porter, Lyall and Gille mention Kobi in their accounts of travel through the gorge.[247] Lyall[248] says that at Kobi there was a fort surrounded by earth ramparts that was used by travellers. It appears to have been a common stopping point for travellers through the pass.
Dating: Clearly earlier than the early nineteenth century, but how much earlier is difficult to tell.

**DPS-44: Pkhelshe**

Coordinates: UTM 38N 464154, 4716578
Location: In the Tergi River Valley, south of Stepantsminda. Located on the left bank of the river. Separated from Goristsikhe by an unnamed side stream that flows into the Tergi.
General Site Description: Settlement. There was a tower house (a particular type of traditional architecture) in this village recorded by Dolidze.[249] Itonishvili[250] also makes reference to a tower, the base of which was still extant in the 1980s and was used as the location of a religious monument. It is difficult to say whether or not this is the same tower referred to in the vicinity

[243] Itonishvili 1971: 68.
[244] Mak'alatia 1934.
[245] Mak'alatia 1934.
[246] Itonishvili 1984: 4.
[247] Porter 1821; Lyall 1825; Gille 1859.
[248] Lyall 1825: 478.
[249] Dolidze 1959: 240.
[250] Itonishvili 1984: 26.

of Goristsikhe. In the 1960s, a survey of Pkhelshe by the Iv. Javakshavili institute of history, archaeology and ethnography located tombs in the vicinity.[251]
Modern field systems are clearly visible on the WorldView-2 imagery.
Dating: Unknown

**DPS-45: Qeduri**

Coordinates: Unknown
Location: In the Tergi River Valley on the left side of the river. Said to have been located on a rocky outcrop near Tkarsheti.
General Site Description: Settlement. No longer exists.[252]
Dating: The village is mentioned in fifteenth century documents.[253]

**DPS-46: Tkarsheti**

Coordinates: UTM 38N, 465430, 4717909
Location: In the Tergi River Valley, south of Stepantsminda. On a rise above the River, on its left side.
General Site Description: Settlement with tower and church.[254] Itonishvili[255] reports that on the terrace above the village are some ruins. This may refer to DPS-76 (see entry in gazetteer).
Ninth-eleventh century AD graves were excavated in association with the church. Chance find of some Early Bronze Age pottery in the area.[256] Mentioned in a fifteenth century AD document.[257]
'Ruin' symbol on Soviet 1:50,000 map in the vicinity.
Dating: Early Bronze Age (in vicinity), ninth-eleventh century,[258] mentioned in a fifteenth century document.[259]

**DPS-47: Tolgoti**

Coordinates: Unknown
Location: In the Tergi River Valley, south of Stepantsminda. On the opposite side of River Tergi from Lower Ukhati/Kobi.[260]
General Site Description: Settlement. No longer exists.[261]
Dating: None

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[251] Mindorashvili 2005: 10.
[252] Itonishvili 1984: 4.
[253] *Document of Sakdrishvili of Gergeti from the fifteenth century AD (გერგეტელ საყდრიშვილთა XV საუკუნის)*; Itonishvili 1984: 25.
[254] Itonishvili 1971; 1984: 25.
[255] Itonishvili 1971: 85.
[256] Mindorashvili 2005.
[257] *Document of Sakdrishvili of Gergeti from the fifteenth century AD (გერგეტელ საყდრიშვილთა XV საუკუნის)*; Itonishvili 1971: 85.
[258] Mindorashvili 2005: 12-13.
[259] Itonishvili 1971: 85.
[260] Itonishvili 1971: 45.
[261] Itonishvili 1984: 4.

**DPS-48: Toti**

Coordinates: UTM 38N 466538, 4719654
Location: In the Tergi River Valley, south of Stepantsminda, on the left side of the Tergi River. On a high, gently sloping plateau c. 2,100m a.s.l.
General Site Description: Remains of a village are visible on the WorldView-2 imagery. At least one building still roofed, the rest appear abandoned. Fields are visible in the vicinity. Itonishvili[262] reports that people moved from Toti to Arsha because it was too high up in the mountains and living there was difficult. Almost the entire village was abandoned, but was sometimes used for summer houses (Fig. 10:58).
Dating: Earliest settlement unknown, but occupied into the first half of the twentieth century at least. Itonishvili reports that the village existed in the seventeenth century, but does not provide a source.[263]

**DPS-49: Kuchani**

Coordinates: Unknown
Location: In the Tergi River valley to the south of Stepantsminda. On the right bank of the Tergi River, possibly to the east of Sioni and Garbani.
General Site Description: Settlement. No longer exists. Indicated on the map of Mak'alatia[264] with some uncertainty.
Dating: Unknown

**DPS-50: Kalovani**

Coordinates: UTM 38N 466125, 4715801
Location: South of Sioni, on the left bank of the Terkhena River, which flows into the Tergi River.
General Site Description: Settlement, possibly Kalovani as identified by Mak'alatia on his map of the region.[265] On the WorldView-2 imagery (2006-2012) remains of field systems, possible clearance cairns and abandoned structures are visible (Figs 10:59-60). Their orientation is different to modern field systems. On the CORONA imagery, these field systems look very similar in signature to those at DPS-9. At least two 'ruin' symbols within 500m each of other in this location on the Soviet 1: 50,000 map.
Dating: None, but the settlement appears to have been abandoned in the earlier half of the twentieth century.

**DPS-51: Khurtisi Fields**

Coordinates: UTM 38N, 462339, 4715556
Location: In the Tergi River Valley south of Stepantsminda. On the right bank of the Tergi River, opposite Khurtisi.

[262] Itonishvili 1971: 97.
[263] Itonishvili 1971: 96.
[264] Mak'alatia 1934.
[265] Mak'alatia 1934.

General Site Description: Fields/terraces visible on the CORONA and WorldView-2 imagery (Fig. 10:61). Signature is similar to that of DPS-10. The system is cut by the Georgian Military Highway, and the terraces are being eroded by the Tergi River on their north side. There does not appear to be any evidence for cultivation on the WorldView-2 imagery from October 2012. These fields may be the same ones mentioned by Itonishvili, which are said to be located opposite, and on the other side of the river (Tergi), from Khurtisi.[266] They used to be cultivated, but by the early twentieth century they were instead used for hay.
Dating: Unknown

**DPS-52: Unknown**

Coordinates: UTM 38 N, 468614, 4724371
Location: In the Chkheri River Valley, on the left bank of the river, north-east of Gergeti.
General Site Description: Features possibly representing structures and walls/part of a pen/enclosure are visible on the WorldView-2 imagery (2006, 2010, 2012). At the time the imagery was taken in 2012, hay was being harvested from this location (Fig. 10:62).
'Ruin' symbol on Soviet 1: 50,000 map near this location. It may refer to these ruins or those of DPS-69 (see entry below). This location was visited in the field in 2017 by Przemysław Polakiewicz and some rectilinear stone structures were recorded in the field.
Dating: Unknown

Further possible sites were located through the remote sensing of satellite imagery or on maps, but were not ground-truthed due to time or access issues. Their locations and a brief description are listed in Table 10:9. Coordinates for all sites and features recorded during the field survey are also provided (Table 10:10).

## *10.8. SEDIMENTARY DESCRIPTIONS FROM TERRACE FIELD INVESTIGATIONS*

### *DPS-10*

Three sections in this field system near Kanobi (412-4, 412-7 and 412-8) were found naturally exposed and examined (Tables 10:11-13; Figs 10:63-65).

### *DPS-9*

At this site, two sections were hand excavated and two more were machine excavated. Sections 412-10 and 412-11 were both hand excavated, as they could not be accessed by machine. Compared to the other sections, these had well preserved stratigraphy. The two machine excavated sections were not suitable for sampling, as the terraces were mainly composed of clearance stones rather than earthen deposits (Tables 10:14-15; Figs 10:66-67).

### *DPS-6*

[266] Itonishvili 1971: 71.

All terraces located at this site had large stone walls to support the riser. Due to the height of the terraces, only one section was excavated (412-9), through Terrace 4 (Table 10:16; Fig. 10:68).

***DPS-8***

Three trenches were hand excavated and two were recorded and sampled: 412-16, Terrace 18; and 412-17, Terrace 10 (Tables 10:17-18; Figs 10:69-70).

# Tables

Table 10:1: Details of Imagery Used.

| Imagery | Date | Resolution |
|---|---|---|
| Landsat 7 (Path – 170, Row – 030) | 6 October 2002 | 10m panchromatic<br>30m multispectral |
| CORONA 1105 mission<br>(DS1105-1057DF076<br>DS1105-1057DF075) | 7 Nov 1968 | 2-4 m |
| CORONA 1115 mission<br>(DS1115-2154DA083)<br>(DS1115-2154DA084) | 20 Sep 1971 | 2-4 m |
| WorldView-2 | 01 Sept 2010<br>01 October 2012 | 0.5 m |
| Quickbird | 18 Sept 2006 | 0.6 m |
| ASTER (DEM) | | 30 m |
| SRTM (1 arc-second product)<br>(DEM) | | 30 m |

Table 10:2: Towers in the Tergi and Sno River Valleys visited by the DPS (and other selected examples).

| **Location** | **ID** | **Description** | **Associated settlement and other context** | **Dating** | **Visited** |
|---|---|---|---|---|---|
| **Gveleti Village** | DPS -1 | Square base, tapering as it increases in height. Dry-stone. Much of the tower has collapsed, so height cannot be estimated, >5m. | Tower associated with ruins of village; Gveleti Forts located immediately across river to the south | Late medieval? | Yes (Fig. 10:18) |
| **SW of Gergeti** | | Semi-circular | Located SW of Gergeti. Freestanding, not associated with other structure | Not established | no |
| **Stepants minda** | | Remains of two towers are said to be located in Stepantsminda – Guguet and Zaliet. Both have a square base, tapering as they increase in height (Itonishvili 1984: 12). | Within the limits of the modern town | Seventeenth/eighteenth century? (Itonishvili 1984: 11) | no |

| Location | ID | Description | Associated settlement and other context | Dating | Visited |
|---|---|---|---|---|---|
| **S of Stepants minda** | DPS -86 | Remains of a circular tower with attached fort. The tower is preserved to a height of c. 8m, tapering as it increases in height. Dry-stone construction. | South of and overlooking Stepantsminda. | Not established | Yes (Fig. 10:30) |
| **Pansheti** | DPS -13a | Square base, tapering slightly as it increases in height. Lower tower - c. 8m high. Employs mortar. | Associated with old village of Pansheti, which is to the north of the current settlement (Itonishvili 1971: 102) | Not established | Yes (Fig. 10:31) |
| | DPS -13b | Square base, tapering slightly as it increases in height. Upper tower - c. 12m high on the side facing the slope. Employs mortar. Survives to full height. | | | |
| **Arsha** | DPS -20 | Ruins of fortifications with towers, one rectangular and one rounded. | Amongst other ruined buildings, built into a hillside near Gaiboteni, across the river from the modern village of Arsha. This is likely the old village of Arsha which is said to have moved across the river in the 1930s (Itonishvili 1984: 18) | Sixteenth/seventeenth century (but possibly older e.g. ninth/tenth century (Itonishvili 1984: 19); A fort at Arsha is mentioned in seventeenth text (Bagrationi) (Itonishvili 1984: 19) | Yes (Fig. 10:32) |

| Location | ID | Description | Associated settlement and other context | Dating | Visited |
|---|---|---|---|---|---|
| **Sioni** | DPS -14 | Square base, tapering as it increases in height. Employs mortar. Survives nearly to full height (>10m). | Located on the east bank of the Tergi, on a high spur overlooking the village. The tower sits on the north-west edge of the spur overlooking the highway. The church is approximately 100m south-east of the tower on the same spur | The church was built in the ninth/tenth century (Itonishvili 1984: 24; Zakaraia 1972: 45). The tower has been dated to the late medieval period (Itonishvili 1971: 88) | Yes (Figs 10:33-34) |
| **Khurtisi** | DPS -18 | Semi-circular tower. The walls are 1-1.5m thick. The tower is built into the outcropping rock on the east side. The base of the tower is built 3m lower on the west side. At least c. 15m high. | Khurtisi Tower is located next to a Church on an outcrop above and to the north east of the village of Khurtisi. | Sixteenth-seventeenth century (Itonishvili 1984: 27) | Yes (Fig. 10:35) |
| **Near Lower Ukhati/Kobi** | DPS -19a | Ruins of circular/semi-circular tower. Constructed using large stones and mortar. On the south-east end of the outcrop, surviving to approximately 3-4m high. | Towers sit on a prominent forested outcrop which overlooks the valley between the Baidara River and the Narvani River immediately south of where they converge with the Tergi. A church is nestled between the two towers. | Not established | Yes (Fig. 10:36) |
| | DPS -19b | Remains of square tower base. Constructed using large stones and mortar. | | | |

| Location | ID | Description | Associated settlement and other context | Dating | Visited |
|---|---|---|---|---|---|
| **Achkhoti** | DPS -21 | Square base (c. 5m in diameter), tapering as it increases in height. Dry-stone. There is an arched window in the north-west side of the tower. The south-east side has almost completely collapsed. | Located on an outcrop above the modern village of Achkhoti. The village of Achkhoti is relatively recent (twentieth century), prior to this there was only a tower in this location (Itonishvili 1984: 20). | Not established | Yes (Fig. 10:37) |
| **Sno** | DPS -15 | Both a fort and tower are referenced in Sno (Mak'alatia 1934: 121-22). The tower is square at its base, tapering slightly at its top; it appears to have had several phases of construction/repair. | The DPS survey visited the prominent tower which is set on a large rock outcrop in the middle of the village. | Seventeenth century or earlier (Itonishvili 1984); Sixteenth or seventeenth century (Zakaraia 1972: 52) | Yes (Fig. 10:38) |

Table 10:3: Percentage of total number of towers and fortifications in the sample that can see 0, 1, 2, or 3 other towers or fortifications in the Tergi and Sno River Valleys.

| Number of other towers observed | 10m observer height, no surface offset | 10m observer height, 10m surface offset | 15m observer height, no surface offset | 15m observer height, 10m surface offset | 20m observer height, no surface offset | 20 m observer height, 10m surface offset |
|---|---|---|---|---|---|---|
| 0 | 31% | 19% | 19% | 13% | 19% | 13% |
| 1 | 25% | 25% | 38% | 25% | 25% | 19% |
| 2 | 38% | 38% | 38% | 38% | 50% | 44% |
| 3 | 6% | 13% | 6% | 19% | 6% | 19% |
| 4 | 0% | 6% | 0% | 6% | 0% | 6% |

Table 10:4: Inter-visibility between towers/fortifications in the Tergi and Sno River Valleys.

| | Observer Height (m) | Dariali Fort | | Gveleti Village Tower | | Gveleti Upper Fort | | Gveleti Lower Fort | | Tsdo Tower | | Gergeti Tower | | S. Stepants. Tower | | Pansheti Tower 1 | | Pansheti Tower 2 | | Gaiboteni/ Arsha Tower | | Sioni Tower | | Khurtisi Tower | | Tower S of Kobi 1 | | Tower S of Kobi 2 | | Achkhoti Tower | | Sno Tower | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Surface Offset (m) | | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 | 0 | 10 |
| Dariali Fort | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gveleti Village Tower | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gveleti Upper Fort | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gveleti Lower Fort | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tsdo Fort | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gergeti Tower | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| S. Stepants. Tower | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pansheti Tower 1 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pansheti Tower 2 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Gaiboteni/ Arsha Tower | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sioni Tower | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Khurtisi Tower | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tower S of Kobi 1 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Tower S of Kobi 2 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Achkhoti Tower | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sno Tower | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Table 10:5: Summary table of the OSL dates for the two terrace basal deposits.[267]

| **Sample** | **Age model** | **OSL date (BC/AD)** | **$\sigma^{A1}$** | **$\sigma^{B2}$** | **Age (years ago)** |
|---|---|---|---|---|---|
| 412-9.1 | MAM | 1472 AD | ±27 | ±40 | 543 |
| 412-17.2 | MAM | 1722 AD | ±63 | ±70 | 293 |

Table 10:2: Pottery recovered from the terrace excavations[268]

| Site | Location | BGL | Sherds | Part | Class Code/ID |
|---|---|---|---|---|---|
| DPS-8 | Core near settlement 2014 excavation | 0.35 | 2 | Body | 2x reddish brown coarse tempered and heavily abraded body sherds, identification uncertain, Pot sherd from Terrace 10, c. post 15th century? |
| DPS-6 | T4 (from fill in wall) Context 3 | | 2 | Body | 1x possible GREBS body (i.e. the main cooking pot class from Dariali Fort Trench F from mid-7th to 9th century period); 1x thick walled orange pottery body sherd with white inclusions and a grey core. Not a familiar class from the other excavations therefore possibly post 15th century? |
| DPS-6 | T4 | 0.10 | 8 | 1x rim; 7x body | 2x CEMRIB body; 1x possible GREBS body; 1x coarse reddish brown jar rim sherd with a grey core. Class and type not represented in the other excavations so most likely this post-dates the 15th century; 4x mixed body frags. identification uncertain |
| DPS-6 | T4 | 0.40 | 19 | Body | 3x CEMRIB body; 2x HASOG body (1 certain, 1 possible); 8x cream/orange pottery body sherds, possible CEMRIB but identification uncertain; 5x fine orange body sherds, identification uncertain; 1x grey pottery with white inclusions, identification uncertain |
| DPS-6 | T4 | 0.45 | 6 | 1x handle; 5x body | 3x CEMRIB body; 1x HASOG body; 1x coarse reddish-brown body sherd; 1x dark grey cooking pot handle with coarse inclusions, identification uncertain |

[267] See chapters 10.8 & 24.
[268] See chapter 11 on class codes and pottery in general.

| Site | Location | BGL | Sherds | Part | Class Code/ID |
|---|---|---|---|---|---|
| DPS-6 | T4 | 0.50 | 12 | Body | 7x CEMRIB body; 1x HASOG body probable identification; 4x mixed orange pottery body sherds, identification uncertain |
| DPS-6 | T4 | 0.75 | 12 | Body | 4x CEMRIB body; 1x GREBS body (probable but not certain identification); 1x reddish body sherd with white inclusions, identification uncertain; 1x fine reddish body sherd, identification uncertain; 5x small fragments of fine cream/orange body sherds, identification uncertain |
| DPS-6 | T4 | 1.10 | 4 | 1x rim; 3x body | 2x CEMRIB body; 1x coarse cream/orange coloured body, identification uncertain; 1x CEMRIB rim very characteristic jar form with a flared mouth, a triangular section rim and a sharp collar immediately below the lip. The type is clearly related but not identical to the main CEMRIB rim form represented in the Trench F assemblage. |
| DPS-6 | T4 (white layer) Context 5 | 1.60 | 1 | Body | 1x CEMRIB body, particularly fine cream coloured piece maybe earlier than the other pieces (late antique?) |
| DPS-9 | T45 (#1) | | 4 | Body | 3x CEMRIB body; 1x hard reddish-brown body fragment with a black outer surface. Could potentially be GREBS but the identification is uncertain |
| DPS-9 | T45 (#2) | | 1 | Body | 1 x reddish coloured pottery body sherd with coarse inclusions, appears fairly abraded, identification uncertain |
| DPS-9 | T45 (#3) | 1.56 | 1 | Body | 1 x CEMRIB body |
| DPS-9 | T45 (#4) | 1.57 | 1 | Body | 1 x CEMRIB body |

Table 10:7: Summary of characteristics of terrace field systems investigated in the field (see Fig. 10:40).[269]

| Site | Area (ha) | Riser facing material | Terrace riser height | Associated sites/features | Typology | Geomor-phology | Water Source | OSL Sections and Samples | Site |
|---|---|---|---|---|---|---|---|---|---|
| **DPS-6** | 30 | Earth and stone | c. 1-5m. The stone-lined examples on the ridgeline are generally taller than those in the lower areas. | Terraces, settlement (Tsdo), underground tunnels, walls, fort. | Type 2 | High basalt plateau (Histosol, Andosol) | Slope runoff/ snow-melt | 412-9 (1) (Terrace 4) | OSL - basal deposit of Terrace 4 = 1460±50 AD<br><br>Pottery: late antique to medieval, but likely includes material from reworked sediment as a result of terrace construction |
| **DPS-8** | 34 | Earth | Some less than 1 m, but in general no more than 2-2.5m in height. Difficult to estimate as the terraces are heavily slumped. | Field systems, settlement (Kobi or Kvabi?), trackways, possible irrigation channel and garden plots, animal pens | Type 3 and type 2 | High basalt plateau (Umbrisol, Mountain meadow soil) | Slope runoff, snow-melt, spring water | 412-16 (Terrace 10) 412-17 (1) (Terrace 18) | OSL from basal deposit of terrace 10 = 1730±30 AD<br><br>Pottery: one sherd from Terrace ten providing a post-15th century date |
| **DPS-9** | 41 | Earth and stone | Some less than 1 m, but in general no more than 3m in height. Difficult to estimate as the terraces are heavily slumped. | Field systems, Post-medieval to modern church and field plots. Stepantsminda. | Type 4 | Colluvial fan (Regosol) | Slope runoff/ snow-melt | 412-10 (1) 412-11 (1) | No certain dates from ceramics. |

[269] On the OSL samples, see chapters 10.8 & 24.

| Site | Area (ha) | Riser facing material | Terrace riser height | Associated sites/features | Typology | Geomor-phology | Water Source | OSL Sections and Samples | Site |
|---|---|---|---|---|---|---|---|---|---|
| **DPS-10** | 34 | Earth | Most are c. 1-1.5m in height, terraces are heavily slumped. | Field systems, walls. May be associated with settlements on the west side of the Tergi River valley such or remains of possible village near the Military highway at the edge of the system. | Type 1 | Colluvial fan (Fluvisols and umbrisols) | Slope runoff/ snow-melt, river and spring water | 412-4 (1), 412-7 (1) and 412-8 (1, 2) | - |
| **DPS-11** | 37 | Earth | Most are c. 1-1.5m in height, terraces are heavily slumped. | Field systems, walls. May be associated with settlements on the west side of the Tergi River valley such or remains of possible village near the Military highway at the edge of the system. | Type 1 | Colluvial fan (Fluvisols and umbrisols) | Slope runoff/ snow-melt, river and spring water | N/a | - |
| **DPS-12** | 40 | Earth | Most are less than 1m in height, terraces are heavily slumped. | Associated with settlements on the west side of the Tergi River Valley, such as Pkhelshe or Goristsikhe or earlier settlements. | Type 1 and type 4 | Colluvial fan (Fluvisols and umbrisols) | Slope runoff/ snow-melt, river and spring water | N/a | - |

| Site | Area (ha) | Riser facing material | Terrace riser height | Associated sites/features | Typology | Geomor-phology | Water Source | OSL Sections and Samples | Site |
|---|---|---|---|---|---|---|---|---|---|
| **DPS-19** | 19 | N/a | N/a | Kobi? Lower Ukhati? Earlier settlements? | Type 2 | Colluvial fan (Histosol, umbrisols and fluvisols) | Slope runoff/ snow-melt, river and spring water | N/a | - |
| **DPS-51** | 9 | N/a | N/a | Khurtisi? | Type 4 | Colluvial fan (Fluvisols and umbrisols) | -Slope runoff/ snow-melt, river and spring water | N/a | - |

Table 10:8: Compartive visualisation of wider pattern of settlement and land use (DPS) compared to the dates from excavated sequences at Dariali and Gveleti Fort and the pollen core from Stepantsminda. Text within the DPS row indicates that there is an OSL date from a terrace.

| | Bronze Age | Early Iron Age | 11th C. BC | 10th C. BC | 9th C. BC | 8th C. BC | 7th C. BC | 6th C. BC | 5th C. BC | 4th C. BC | 3rd C. BC | 2nd C. BC | 1st C. BC | 1st C. AD | 2nd C. AD | 3rd C. AD | 4th C. AD | 5th C. AD | 6th C. AD | 7th C. AD | 8th C. AD | 9th C. AD | 10th C. AD | 11th C. AD | 12th C. AD | 13th C. AD | 14th C. AD | 15th C. AD | 16th C. AD | 17th C. AD | 18th C. AD | 19th C. AD | 20th C. AD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DPS | | | | | | | | | | | | | | | | | | | | | | | | | | | | Terrace 4 at DPS-6 | | Terrace 10 at DPS-8 | | | |
| *Dariali Fort | | | | | | | | Extent of occupation/activity unknown: seasonal temporary use? | | | | | Activity in area/fields below fort | | | | | c. late 4th-early 11th C. AD | | | | | | | | Late 13th-early 15th C. AD | | | | | | |
| +Gveleti Fort | | | | | | | | | | | | | | | | | | | | | | Late 8th-10th C. AD | | Late 10th /11th-13th C. AD | | | Late 13th-14th/15th C. AD | | Mid-15th-17th C. AD | | | | |
| Pollen sequence | **2550-2150 BC**-open pine forest & burning **2150-1100 BC**-increase in temperate forest line to higher altitudes & burning, possible agriculture | | **1100-850 BC** Decrease in temperate forest line and burning of pine birch forest | | | **850 BC- 350 AD** Possible deforestation by humans, possible cultivation of cereals and intensification of pastures | | | | | | | | | | | | **350-1000 AD** Continued possible deforestation by humans, possible cultivation of cereals and intensification of pastures, as well as beginning of walnut cultivation in lowlands | | | | | | | **1000-1450 AD** hiatus | | | | | | **1450-18750** AD Spread of pine forest and increased human activity | | | |

| DPS – Number of sites expressed as a percentage of the total sample (i.e. 0-2% of 100%). This includes only sites with dating information. | 0.1-2 | 2.1-4 | 4.1-6 | 6.1-8 | 8.1-10 | 10.1-12 | 12.1-14 |
|---|---|---|---|---|---|---|---|

+* Gaps in the sequence do not necessarily imply periods of abandonment. They could also represent periods in which activity at Gveleti or Dariali Fort was occurring at locations that were not excavated

Table 10:9: Possible sites located through remote sensing of satellite imagery or identified from maps.

| Site ID | Coordinates (UTM 38N) | Location | General Site Description (and Data Source) |
|---|---|---|---|
| DPS-53 | 467255, 4719404 | In the Tergi River Valley, south of Stepantsminda. | Possibly part of an old village. Some modern structures also still visible. (WorldView-2 acquired 1 September 2010). |
| DPS-54 | 471270, 4718078 | In a river valley that flows into the Snostskali River near Sno. | Single ruined structure. Imagery source (Quickbird acquired 18 September 2006). |
| DPS-55 | 473544, 4718193 | In a river valley that flows into the Snostskali River near Sno. | Remains of structures (several appear clearly rectilinear). Linear wall features may be the remains of terraces (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010, 'Ruin' symbol near this location on the Soviet 1:50,000 maps). |
| DPS-56 | 473349, 4717862 | In a river valley that flows into the Snostskali River near Sno. | Two possible rectilinear structures (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010) |
| DPS-58 | 472038, 4716411 | In the Snostskali River Valley, south of Sno. On the right bank of the river, on a steep slope | Single ruined rectilinear structure (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010) |
| DPS-59 | 465152, 4715838 | In the Tergi River Valley to the south of Stepantsminda. Separated from DPS-12 by a rocky outcrop jutting into the valley | Features that may be heavily eroded parallel terrace risers or field boundaries. Clearance cairns are also visible. Similar in signature to some of the features at DPS-12 (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010 and 1 October 2012). |
| DPS-61 | 472134, 4712892 | In a high valley running perpendicular to the Artkhmostskali River Valley, north-east of Artkhmo. | Ruined rectilinear structure? (WorldView-2 acquired 1 September 2010 and 1 October 2012, 'Ruin' symbol on Soviet 1:50,000 map). |
| DPS-63 | 465683, 4712351 | South of Stepantsminda. On the right bank of the Terkhena River. | Group of rectilinear structures, possible settlement (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010 and 1 October 2012). |
| DPS-64 | 463932, 4711480 | South of Stepantsminda. In the Narvani River Valley c. 3.5km east of Ukhati | Structures? The CIR image indicates an area of healthy vegetation in the vicinity that may indicate a spring (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010 and 1 October 2012, 'summer settlement' on Soviet 1:50,000 map). |
| DPS-65 | 469856, 4710662 | South of Artkhmo, on the right bank of the Artkhmostskali River. | Structures and enclosures. Possible settlement (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010 and 1 October 2012). |
| DPS-67 | 473954, 4730303 | In the Khde River Valley on the right bank of the river. | Single rectilinear structure. (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010) |
| DPS-68 | | Above the Amali River Valley on a high slope. | Individual structure, L-shaped (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010 and 1 October 2012, 'Ruin' symbol at this location on the Soviet 1:50,000 map). |

| | | | |
|---|---|---|---|
| DPS-69 | 468977, 4724390 | In the Chkheri River Valley, on the left bank of the river, north-east of Gergeti. | Field system/enclosures. These were also observed, but not recorded, in the field (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010 and 1 October 2012, 'Grotto' symbol on the Soviet 1:50,000 map). |
| DPS-70 | 468669, 719330 | At the junction of the Tergi and Snostskali River Valleys. Immediately north of the village of Achkhoti. | Remains of rectilinear structures on the edge of Achkhoti. Could be relatively modern (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010 and 1 October 2012). |
| DPS-71 | 465258, 4718099 | In the Tergi River Valley, on the left of the river. | Possible pen or enclosure (WorldView-2 acquired 1 September 2010). |
| DPS-72 | 463951, 4729537 | In the Amali Valley, approaching the glacier of the same name. | Single ruined structure. Rectilinear. Visible (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010 and 1 October 2012, 'Ruin' symbol at this location on the Soviet 1:50,000 map). |
| DPS-73 | 468408, 4723552 | In the Tergi River Valley. On a hill above the Gergeti Monastery complex. | Single rectilinear structure. Related to the Gergeti Monastery complex (DPS-38) which is located downslope (c. 500m east north-east) from DPS-73 (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010 and 1 October 2012). |
| DPS-74 | 469348, 4718822 | On the right bank of the Snostskali River, immediately east of Achkhoti. | Rectilinear ruined structure (Quickbird acquired 18 September 2006, WorldView-2 acquired 1 September 2010 and 1 October 2012). |
| DPS-75 | 465205, 4717915 | In the Tergi River Valley, on the left bank. Immediately west of Tkarsheti. | Rows of small rectilinear structures within a compound. Cemetery? (WorldView-2 acquired 1 October 2012). |
| DPS-76 | 464388, 4718006 | In the Tergi River Valley. On a steep slope, c. 1km west of Tkarsheti. | Possible terrace field system. Parallel terrace risers visible (WorldView-2 acquired 1 October 2012). |
| DPS-77 | 460695, 4717200 | On a slope above the Tergi River (left bank). | Pens/enclosures (WorldView-2 acquired 1 October 2012, 'Summer settlement' on the Soviet 1: 50,000 maps. |
| DPS-78 | 460559, 4716804 | On a slope above the Tergi River (left bank). | Ruined rectilinear structure. Other anomalies in the area (WorldView-2 acquired 1 October 2012). |
| DPS-79 | 470126, 4727219 (approx.) | In the Tergi River valley, immediately north of Tsdo. | 'Grotto' map feature on Soviet 1: 50,000 map. |
| DPS-80 | 469465, 4728721 (approx.) | In the Tergi River valley, next to the Georgian Military Highway, north of Gveleti. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-81 | 470672, 4726697 (approx.) | In the Tergi River valley, east of Tsdo. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-82 | 470400, 4725951 (approx.) | In the Tergi River valley, south-east of Tsdo. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-83 | 470014, 4725536 (approx.) | In the Tergi River valley, on the left bank. On a slope above the Georgian Military Highway. | 'Ruin' map feature on Soviet 1: 50,000 map. There are the traces of a switchback road nearby, but no clear indication of what it leads to. |
| DPS-84 | 468225, 4727087 (approx.) | In a valley that flows into the Tergi River valley. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-85 | 472730, 4722795 (approx.) | In the Tergi River valley, on the right bank. | 'Ruin' map feature on Soviet 1: 50,000 map. |

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|---|---|---|---|
| DPS-86 | 471420, 4721608 (approx.) | In the Tergi River valley, on the right bank. | 'Ruin' map feature on Soviet 1: 50,000 map. A visit by team members in 2014 located the ruins of a dry-stone tower and fort at this location. The tower blocks access from the ridge which overlooks it. There are steep ravines at the approaches to the fort and its lower walls are on top of steep slopes and close to cliffs. No dating evidence was located |
| DPS-87 | 469165, 4720716 (approx.) | In the Tergi River valley, immediately north of Pansheti. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-88 | 467843, 4719926 (approx.) | In the Tergi River valley, on the left bank, south of Pansheti. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-89 | 471485, 4717951 (approx.) | In a river valley that flows into the Snostskali River near Sno. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-90 | 472252, 4717739 (approx.) | In a river valley that flows into the Snostskali River near Sno. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-91 | 472857, 4717600 (approx.) | In a river valley that flows into the Snostskali River near Sno. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-92 | 471820, 4717363 (approx.) | Above Sno, in the Snostskali River Valley | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-93 | 474818, 4713075 (approx.) | In the Snostskali River Valley, south of Karkucha | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-94 | 474546, 4712524 (approx.) | In a side valley that runs perpendicular to the Snostskali River Valley. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-95 | 474573, 4713354 (approx.) | In the Snostskali River Valley, south of Karkucha | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-96 | 476254, 4714137 (approx.) | In the Kora River Valley. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-97 | 477935, 4713068 (approx.) | In the valley of the Jutistskali River, south of Juta. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-98 | 476676, 4710584 (approx.) | In the Snostskali River Valley, south of Karkucha. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-99 | 471039, 4726570 (approx.) | In the Tergi River valley. | 'Grotto' map feature on Soviet 1: 50,000 map. |
| DPS-100 | 468876, 4707984 (approx.) | In the Artkhmostskali River valley. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-101 | 469407, 4710060 (approx.) | In the Artkhmostskali River valley, south of Artkhmo. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-102 | 466566, 4730550 (approx.) | In the Amali River Valley, c. 3km from where the valley meets the Tergi River. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-103 | 469607, 4732402 (approx.) | In the Tergi River valley, north-east of Dariali Fort (DPS-7). | 'Ruin' map feature on Soviet 1: 50,000 map. Named as 'Darial'. |

| | | | |
|---|---|---|---|
| DPS-104 | 473768, 4730548 (approx.) | In the Khde River Valley, c. 4km from its junction with the Tergi River | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-105 | 464628, 4729377 (approx.) | Above the Amali River Valley on a high slope. | 'Ruin' map feature on Soviet 1: 50,000 map. Named as 'Alpla'. |
| DPS-106 | 470819, 4727631 (approx.) | In the Tergi River valley. | Cross/shrine or tomb. Map feature on Soviet 1: 50,000 map. This feature is not visible on imagery, but a small church/shrine have been observed in the field near this location (but not recorded). |
| DPS-107 | 474878, 4720389 (approx.) | High in the mountains in a river valley that flows into the Snostskali River near Sno. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-108 | 470960, 4716099 (approx.) | In the Snostskali River Valley, on the left (western) bank of the river. On a hill slope above the valley. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-109 | 468247, 4724480 | In the Chkheri River Valley. West of DPS-52. | 'Grotto' map feature on Soviet 1: 50,000 map. |
| DPS-110 | 474782, 4721081 (approx.) | High in the mountains in the river valley that meets the Snostskali at Sno. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-111 | 471064, 4717719 (approx.) | On a hillside, overlooking Sno. In the river valley that flows west and south to join the Snostskali River at Sno. | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-112 | 469539, 4732159 (approx.) | In the Tergi River valley, not far from the Dariali Fort. | Labelled as 'Former Kossak Post' on Soviet 1: 50,000 map. |
| DPS-113 | 472868, 4730963 (approx.) | In the Khde River Valley | 'Ruin' map feature on Soviet 1: 50,000 map. |
| DPS-114 | 475091, 4730230 (approx.) | In the Khde River Valley | 'Ruin' map feature on Soviet 1: 50,000 map. |

Table 10:10: Dariali Pass Survey Waypoint List.[270]

| **WP no.** | **Easting** | **Northing** | **Location** | **Description** | **Year** |
|---|---|---|---|---|---|
| 1 | 469187 | 4728358 | DPS-1 Gveleti Village | Stone walls, other standing structures. Settlement with tower. | 2013 |
| 2 | 469232 | 4728171 | DPS-3 Gveleti Cave | Walled cave. Natural cavern (?) with two walls extending across front creating a partially hidden entrance. | 2013 |
| 3 | 469283 | 4728137 | Between Gveleti Fort(s) and Village | Walls in gully between fort and walled cave. | 2013 |
| 4 | 469323 | 4728232 | Between Gveleti Fort(s) and Village | Small stone room built into hill side. Below fort. Relatively modern? | 2013 |
| 5 | 469339 | 4728243 | DPS-2 Gveleti Fort | Lower fort at Gveleti. | 2013 |
| 6 | 469206 | 4729301 | DPS-4 Gveleti Cemetery | Part of cemetery previously excavated. Pipeline cutting through area. | 2013 |
| 7 | 467915 | 4730326 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature with linear depression leading toward it. | 2013 |

[270] There is a margin of error of up to c. 5-10m for all coordinates listed in the table, due to the accuracy of the GPS.

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 8 | 467563 | 4730375 | DPS-5 Daba and the Amali Valley | Track down to river. | 2013 |
| 9 | 467497 | 4730269 | DPS-5 Daba and the Amali Valley | Cairn, c. 2x2m in size. Composed of small stones (0.10-0.30m) in diameter. On a slight mound. | 2013 |
| 10 | 467649 | 4730235 | DPS-5 Daba and the Amali Valley | Cairn, c. 2x2m. Composed of small stones (0.10-0.30m) in diameter. On a slight mound. | 2013 |
| 11 | 467713 | 4730235 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature, with linear depression leading toward it. | 2013 |
| 12 | 467786 | 4730194 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature, with linear depression leading toward it. | 2013 |
| 14 | 467828 | 4730255 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature, with linear depression leading toward it. | 2013 |
| 15 | 467794 | 4730219 | DPS-5 Daba and the Amali Valley | Limit of linear depression. Extension of WP-12. Ending in a pit (7x4m). | 2013 |
| 16 | 467843 | 4730215 | DPS-5 Daba and the Amali Valley | Cobble lined depression 11x5m. | 2013 |
| 17 | 467913 | 4730152 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature, with linear depression leading toward it. | 2013 |
| 18 | 468054 | 4730182 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature, with linear depression leading toward it. | 2013 |
| 19 | 468201 | 4730111 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature, with linear depression leading toward it. | 2013 |
| 20 | 468349 | 4730174 | DPS-5 Daba and the Amali Valley | Wall running roughly N-S across valley. | 2013 |
| 21 | 468336 | 4730152 | DPS-5 Daba and the Amali Valley | Wall running roughly N-S across valley. | 2013 |
| 22 | 468319 | 4730085 | DPS-5 Daba and the Amali Valley | Wall running roughly N-S across valley. | 2013 |
| 23 | 468319 | 4730085 | | | |
| 24 | 468309 | 4730051 | | | |
| 25 | 468312 | 4730020 | | | |
| 26 | 468302 | 4729973 | | | |
| 27 | 468310 | 4729953 | | | |
| 28 | 468301 | 4730008 | | | |
| 29 | 468444 | 4729964 | DPS-5 Daba and the Amali Valley | Boundaries of settlement (Daba). | 2013 |
| 30 | 468407 | 4730024 | | | |
| 31 | 468434 | 4730064 | | | |
| 32 | 468498 | 4730099 | | | |
| 33 | 468538 | 4730093 | | | |
| 34 | 468580 | 4730059 | | | |
| 35 | 468672 | 4730015 | | | |
| 36 | 468729 | 4729974 | | | |
| 37 | 468772 | 4729910 | | | |
| 38 | 468729 | 4729891 | | | |
| 39 | 468589 | 4729907 | | | |
| 40 | 468515 | 4729970 | | | |
| 41 | 467668 | 4730220 | Track | Points along well-worn track leading down valley. | 2013 |
| 42 | 467716 | 4730192 | | | |
| 43 | 467719 | 4730133 | | | |
| 44 | 469170 | 4728079 | Valley to South of Gveleti Fort | Wall across pass behind Gveleti Forts. | 2013 |
| 45 | 469239 | 4727992 | Valley to South of Gveleti Fort | Gully below wall which provides access (although difficult) to the pass. | 2013 |
| 46 | 469311 | 4727918 | Hill side between Gveleti and Tsdo | Small fortlet on animal track between Gveleti forts and Tsdo. 30m SW of this 'fortlet' is another section of wall (2m in length) on the hill side. | 2013 |
| 48 | 469435 | 4727725 | Hillside between Gveleti and Tsdo | Gully with access up to goat track. | 2013 |
| 48 | 470125 | 4726705 | DPS-6 Tsdo | Fort and enclosures above modern village of Tsdo. South end of site. | 2013 |
| 49 | 470175 | 4726851 | DPS-6 Tsdo | Northern end of features above Tsdo. | 2013 |
| 50 | 470226 | 4726860 | DPS-6 Tsdo | Point of inter-visibility between Tsdo and Lower Fort at Gveleti. | 2013 |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 51 | 470272 | 4727009 | DPS-6 Tsdo | Sharp drop (at least 10-12m) at edge of large terrace on ridge line NW of Tsdo. | 2013 |
| 52 | 470492 | 4727013 | DPS-6 Tsdo | Lower terrace with steep drop to river below. Terrace is accessed by well-worn path zigzagging up hill. | 2013 |
| 53 | 469938 | 4726920 | DPS-6 Tsdo | Clearance cairn on western side of field terraces at Tsdo. Pottery found here. Many other clearance cairns found nearby. | 2013 |
| 54 | 470065 | 4727177 | DPS-6 Tsdo | Square stone built structure on top of ridge line. Identical in design to those seen previously (see WP-7). | 2013 |
| 55 | 470088 | 4727160 | DPS-6 Tsdo | Small circular stone enclosure about 2m across made from medium sized boulders | 2013 |
| 56 | 470133 | 4727126 | DPS-6 Tsdo | An alignment of seven large boulders running alongside a well-worn path that connects a higher terrace to the valley below. | 2013 |
| 57 | 470182 | 4727021 | DPS-6 Tsdo | On a plateau just below the top of the ridge. There are banked areas of earth forming the edge of terraces, field clearance mounds and a roughly circular enclosure about 10m across formed of boulders. | 2013 |
| 58 | 470170 | 4726773 | DPS-6 Tsdo | Square tower-like structure at the highest point on the ridge c. 4m wide and 8m long. It has a little window in one end, with a lintel. The window looks straight down into the valley. Down below the fort there are numerous sub-circular enclosures. | 2013 |
| 59 | 469363 | 4731694 | DPS-7 Dariali Fort | Base of Dariali Fort (on the S side, N of the cemetery). | 2013 |
| 60 | 469539 | 4731518 | DPS-7 Dariali Fort | Area of cist burials to the N of Dariali Fort. | 2013 |
| 61 | 469511 | 4731457 | DPS-7 Dariali Fort | Another possible cist grave? | 2013 |
| 62 | 469445 | 4730499 | Track S of Dariali Fort | End of track leading S from Dariali Fort. Ends at a steep drop into the Amali River Valley. Due to erosion on the river banks, it is difficult to tell how the river was crossed in the past. | 2013 |
| 63 | 469380 | 4731833 | DPS-7 Dariali Fort | Top of Dariali Fort. | 2013 |
| 64 | 469270 | 4729552 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature (4x3m), with linear depression extending from it (oriented N-S). | 2013 |
| 65 | 469293 | 4729569 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature (2x3 m), oriented NW-SE. 10m long linear depression running away from it toward the SE. | 2013 |
| 66 | 469279 | 4729670 | DPS-5 Daba and the Amali Valley | Rectangular depression (similar to others in the valley). Small stones collected in base. | 2013 |
| 67 | 469274 | 4729728 | DPS-5 Daba and the Amali Valley | Rectangular depression (similar to others in the valley). Small stones collected in base. | 2013 |
| 68 | 469374 | 4729683 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature (2x2m), oriented N-S. Traces of mortar. 15m long linear depression running into it. On cliff edge. | 2013 |
| 69 | 469437 | 4730000 | DPS-5 Daba and the Amali Valley | Overflow channel from lakes running E toward Tergi River. | 2013 |
| 70 | 469468 | 4730118 | DPS-5 Daba and the Amali Valley | Boggy area, possibly lake in times of high rainfall. | 2013 |
| 71 | 469488 | 4730181 | DPS-5 Daba and the Amali Valley | Rectangular depression (similar to others in the valley), 15x10m. Associated linear depression. Small stones collected in base. Water runs from high ground to overflow over cliff edge. | 2013 |
| 72 | 469474 | 4730200 | DPS-5 Daba and the Amali Valley | Rectangular depression (similar to others in the valley). Small stones collected in base. | 2013 |
| 73 | 469387 | 4730226 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature. Oriented NE-SW. Evidence of mortar between stones. 3x2m. Perched on top of cliff edge. 5m linear depression running into it from SW. | 2013 |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 74 | 469373 | 4730131 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature. Oriented E-W. 7x2.5m. Much larger than other examples. Linear depression (5m long) runs into feature at a right angle from the higher ground to the S. | 2013 |
| 75 | 469063 | 4730143 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature. Oriented E-W. 5x3m. Perched on cliff edge. | 2013 |
| 76 | 468886 | 4729969 | DPS-5 Daba and the Amali Valley | Rectilinear stone feature. Resembles others in valley. | 2013 |
| 77 | 468951 | 4729983 | DPS-5 Daba and the Amali Valley | Cairn, oriented E-W. | 2013 |
| 78 | 469041 | 4730077 | DPS-5 Daba and the Amali Valley | Round to oblong cairns. Often with an outer ring of stones, filled and stacked with smaller stones. Grouped on top of an elevated area. | 2013 |
| 79 | 469061 | 4730078 | | | |
| 80 | 469079 | 4730098 | | | |
| 81 | 469079 | 4730115 | | | |
| 82 | 469123 | 4729887 | DPS-5 Daba and the Amali Valley | Cairn, oriented N-S. | 2013 |
| 83 | 468921 | 4728216 | Valley S of Gveleti, N bank of river | Enclosure walls. Dry-stone. Square enclosure with two ends built against base of rock face. On same bank of Gveletistskali as ruined village at Gveleti, but not accessible from same side of river. | 2013 |
| 84 | 468998 | 4728247 | Valley S of Gveleti, N bank of river | Large single grave. Ring of large stones in an oblong pattern. Filled with smaller stones. Five flat stones laid on top of these stones down the centre of the grave. 3.7x2.3m. Oriented NW-SE. On same bank of stream as WP-85. | 2013 |
| 85 | 469028 | 4728268 | Valley S of Gveleti, N bank of river | Small stone room/enclosure. 3.3x1.75m. One of the long axes uses a massive boulder, while the other is constructed of smaller stones. Dry-stone, double faced. Deeper on the inside. | 2013 |
| 86 | 469047 | 4728307 | Valley S of Gveleti, N bank of river | Large irregular enclosure with ends built into the base of the rock face. Possible animal pen. At least 60m across. One small stone room built against the S wall. Similar to WP-85 except both walls constructed of dry-stone. | 2013 |
| 87 | 469289 | 4730135 | DPS-5 Daba and the Amali Valley | Circular depression with stone wall surrounding it. Approximately two courses high, dry-stone, no mortar. An earthen channel runs SSW towards lake. | 2013 |
| 88 | 470167 | 4726978 | DPS-6-Tsdo | Irregular dry-stone enclosure on W facing slope of ridgeline, mid-size rocks to large boulders, several courses visible, but crude construction. Length = 10m on N-S axis. | 2013 |
| 89 | 469875 | 4727092 | DPS-6-Tsdo | Top of stone-lined channel running for 30-40 m. The channel runs from the last terrace of a complex set running E-W and N-S on the hills behind and may have drained both systems in the past. 4-5 courses visible, no mortar, E side has earthen bank as well. | 2013 |
| 90 | 469767 | 4725132 | DPS-8 | Three-sided walled structure built right at the base of the cliff below DPS-8 at top of very steep slope. Dry-stone walls of large blocks - up to seven courses high. Unclear function, but lack of wall on sloping side suggests it may have been a water conduit. | 2013 |
| 91 | 469695 | 4725034 | DPS-8 | Cairn, probably field clearance. | 2013 |
| 92 | 469668 | 4725034 | DPS-8 | Start of long enclosure wall around wider field system. | 2013 |
| 93 | 469713 | 4725051 | DPS-8 | Gap in enclosure wall, possible entrance, with cairn and tumble on the end. | 2013 |
| 94 | 469719 | 4725052 | DPS-8 | Cairn on long wall, probably field clearance | 2013 |
| 95 | 469745 | 4725052 | DPS-8 | End of long wall, again incorporating a cairn/stone pile | 2013 |
| 96 | 469702 | 4725074 | DPS-8 | Round cairn. | 2013 |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 97 | 469726 | 4725075 | DPS-8 | Small cairn (1m diameter) with very large stones. | 2013 |
| 98 | 469759 | 4725081 | DPS-8 | Two small cairns under 1m in diameter, on top of two large boulders. | 2013 |
| 99 | 469671 | 4725088 | DPS-8 | Western end of channel running into gully further to the W. Channel is 3m wide, earthen banks visible on both sides in some areas. | 2013 |
| 100 | 469744 | 4725106 | DPS-8 | Continuation of WP-99. Channel to edge of cliff, section clearly eroded away - probably met channel of WP- 101-102. | 2013 |
| 101 | 469747 | 4725105 | DPS-8 | West end of second channel; probably met 99-100 channel and then funnelled water off cliff. | 2013 |
| 102 | 469781 | 4725096 | DPS-8 | Eastern end of channel starting at WP- 101 Similar to other one (WP- 99-100), 3m wide; earthen banks. | 2013 |
| 103 | 469787 | 4725086 | DPS-8 | Southern end of N-S channel running straight off cliff (at WP- 104). Does not connect to WP- 101-102 channel | 2013 |
| 104 | 469788 | 4725101 | DPS-8 | Northern end of N-S channel running back to WP- 103. | 2013 |
| 105 | 469777 | 4725076 | DPS-8 | Small cairn, 1x1.5m, medium to large stones, irregular shape. | 2013 |
| 106 | 469796 | 4725072 | DPS-8 | Small irregular cairn resembling a sort of long rectangle. Constructed of small to medium stones. | 2013 |
| 107 | 469863 | 4725094 | DPS-8 | WP- 107-111 are various points around structure. WP- 107 = outward channel edge. | 2013 |
| 108 | 469841 | 4725100 | DPS-8 | WP- 107-111 are various points around structure. WP-108 = edge. | 2013 |
| 109 | 469834 | 4725094 | DPS-8 | WP- 107-111 are various points around structure. – WP-109 = channel leading into structure, runs straight for approximately 6m. | 2013 |
| 110 | 469838 | 4725084 | DPS-8 | WP- 107-111 are various points around structure. WP- 110 = edge. | 2013 |
| 111 | 469857 | 4725081 | DPS-8 | WP- 107-111 are various points around structure. WP-111 = outward channel edge. | 2013 |
| 112 | 469856 | 4725090 | DPS-8 | Wall within structure; delimited by WP-107-111., Several courses high and relatively wide. Could be related to water control? | 2013 |
| 113 | 469875 | 4725084 | DPS-8 | Cairn. | 2013 |
| 114 | 469878 | 4725078 | DPS-8 | Cairn in alignment of five cairns, WP114-118, all round, 1-1.25m diameter, medium sized stones. | 2013 |
| 115 | 469881 | 4725079 | DPS-8 | Cairn in alignment of 5 cairns, WP- 114-118, all round, 1-1.25m diameter, medium sized stones. | 2013 |
| 116 | 469891 | 4725073 | DPS-8 | Cairn in alignment of 5 cairns, WP-114-118, all round, 1-1.25m diameter, medium sized stones. | 2013 |
| 117 | 469898 | 4725070 | DPS-8 | Cairn in alignment of 5 cairns, WP- 114-118, all round, 1-1.25m diameter, medium sized stones. | 2013 |
| 118 | 469902 | 4725070 | DPS-8 | Cairn in alignment of 5 cairns, WP- 114-118, all round, 1-1.25m diameter, medium sized stones. | 2013 |
| 119 | 469946 | 4725027 | DPS-8 | End of 6m wide channel coming from structure (WP- 107-111), may be natural depression, but looks anthropogenic in places. | 2013 |
| 120 | 469962 | 4725033 | DPS-8 | Cairn on top of boulder. | 2013 |
| 121 | 470004 | 4725006 | DPS-8 | Small circular cairn, 1m diameter. | 2013 |
| 122 | 469991 | 4725002 | DPS-8 | Small circular cairn, 1m diameter. | 2013 |
| 123 | 470014 | 4724982 | DPS-8 | Small circular cairn, 1m diameter. | 2013 |
| 124 | 469975 | 4724959 | DPS-8 | 'Scoop' out of terrace, may be erosion but only visible in one area. | 2013 |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 125 | 469969 | 4724951 | DPS-8 | 125-128 are the four corners of a small structure with a platform at WP- 128. | 2013 |
| 126 | 469961 | 4724954 | | | |
| 127 | 469961 | 4724965 | | | |
| 128 | 469969 | 4724961 | | | |
| 129 | 469662 | 4725023 | DPS-8 | Start of long enclosure wall on the other side of WP- 92. | 2013 |
| 130 | 469665 | 4725012 | DPS-8 | Continuation of long enclosure wall starting at WP- 129. | 2013 |
| 131 | 469698 | 4724991 | DPS-8 | Gap in enclosure wall - possible entrance - running from WP-129 through WP-130. | 2013 |
| 132 | 469717 | 4724981 | DPS-8 | Junction of enclosure wall (WP-129-131) with another wall that runs toward a structure. | 2013 |
| 133 | 469743 | 4724977 | DPS-8 | Structure at end of wall running from 132. | 2013 |
| 134 | 469746 | 4724980 | DPS-8 | Centre of dry-stone structure, square with 5x5m dry-stone walls, at least 4 courses high. | 2013 |
| 135 | 469754 | 4724991 | DPS-8 | Dry-stone structure built into terrace, 10m along long terrace, 5m out, at least 3 courses visible, aligned with structure visible at WP-136. | 2013 |
| 136 | 469754 | 4724991 | DPS-8 | Dry-stone structure built in front of (and joining) structure at WP- 135, 10m along long terrace, 5m out, at least three courses visible. This structure has a wall half way along dividing it into two 5x5m rooms. | 2013 |
| 137 | 469745 | 4725007 | DPS-8 | Wall of compound around structures WP-137-140 and joining other walls at WP-133. | 2013 |
| 138 | 469779 | 4725000 | | | |
| 139 | 469777 | 4724978 | | | |
| 140 | 469777 | 4724923 | | | |
| 141 | 469733 | 4724964 | DPS-8 | WP- 141-150 are the corners of a set of structures with three separate 'rooms' and two curved walls on the outside. | 2013 |
| 142 | 469722 | 4724962 | | | |
| 143 | 469715 | 4724965 | | | |
| 144 | 469713 | 4724963 | | | |
| 145 | 469707 | 4724962 | | | |
| 146 | 469701 | 4724959 | | | |
| 147 | 469703 | 4724944 | | | |
| 148 | 469718 | 4724950 | | | |
| 149 | 469726 | 4724953 | | | |
| 150 | 469737 | 4724959 | | | |
| 151 | 469714 | 4724975 | DPS-8 | WP- 151-154 are the corners of a smaller structure within the complex of structures in this area. A wall runs from WP- 152 to WP- 132 and the long enclosure wall. | 2013 |
| 152 | 469711 | 4724978 | | | |
| 153 | 469707 | 4724977 | | | |
| 154 | 469708 | 4724970 | | | |
| 155 | 469638 | 4724907 | DPS-8 | WP- 155-162 are a series of fields surrounding and to the E of the structures. All structure walls were dry-stone, none more than three or four courses and barely visible in places. | 2013 |
| 156 | 469623 | 4724984 | | | |
| 157 | 469638 | 4724959 | | | |
| 158 | 469658 | 4724965 | | | |
| 159 | 469675 | 4724891 | | | |
| 160 | 469728 | 4724897 | | | |
| 161 | 469701 | 4724921 | | | |
| 162 | 469669 | 4724939 | | | |
| 200 | 471742 | 4723556 | DPS-9 | WP-200-203 small structure linked to larger enclosure (200-210), 2x2m dry-stone wall forming square on three sides, fourth side is part of larger enclosure wall. | 2013 |
| 201 | 471739 | 4723562 | | | |
| 202 | 471747 | 4723558 | | | |
| 203 | 471749 | 4723557 | | | |
| 204 | 471766 | 4723551 | DPS-9 | Start of dry-stone wall extending out from enclosure (WP-200-210) via gap to enclosure (WP-215-218). | 2013 |
| 205 | 471775 | 4723557 | DPS-9 | Gap in dry-stone wall starting at WP-204 and extending past WP-211. | 2013 |
| 206 | 471765 | 4723504 | DPS-9 | Continuation of dry-stone wall, clearly still in use. Six to seven courses high. Wire fence on top. | 2013 |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 207 | 471704 | 4723498 | DPS-9 | Continuation of dry-stone wall, clearly still in use. Six to seven courses high. Wire fence on top. Start of dry-stone wall coming off and ending at WP-208. | 2013 |
| 208 | 471707 | 4723489 | DPS-9 | End of dry-stone wall coming from WP-207 and enclosure, clearly related but not maintained. | 2013 |
| 209 | 471681 | 4723528 | DPS-9 | Continuation of dry-stone wall, clearly still in use. Six to seven courses high. Wire fence on top. | 2013 |
| 210 | 471725 | 4723562 | DPS-9 | Continuation of dry-stone wall, clearly still in use. Six to seven courses high. Wire fence on top. Joins WP-200 again to form enclosure. | 2013 |
| 211 | 471775 | 4723565 | DPS-9 | WP-211-214 from a half circle dry-stone wall structure that is in turn joined to a wall running between enclosures WP-200-210 and WP-215-218-211 and WP-212 where it joins wall, WP-213 and WP-214 outer edges. | 2013 |
| 212 | 471801 | 4723564 | | | |
| 213 | 471788 | 4723558 | | | |
| 214 | 471788 | 4723553 | | | |
| 215 | 471818 | 4723563 | DPS-9 | WP-215-218 is a dry-stone wall enclosure, similar to 200-210. Six to seven courses visible in a well-structured wall. Well-maintained with wire topping the wall. Protects area inside from grazing animals. | 2013 |
| 216 | 471872 | 4723573 | | | |
| 217 | 471910 | 4723470 | | | |
| 218 | 471844 | 4723476 | | | |
| 219 | 471807 | 4723592 | DPS-9 | Depression, circular, 4x4m diameter, 2m deep. 0.5m earth bank on all sides. Small stones in the bottom probably fallen in through use and post-use. | 2013 |
| 220 | 471805 | 4723620 | DPS-9 | WP- 220-221 are E and W ends of large pile of rubble and stones, likely a destroyed wall. | 2013 |
| 221 | 471851 | 4723631 | | | |
| 222 | 471854 | 4723638 | DPS-9 | Stone lined depression. Walls are three courses high on S side where structure is best preserved. Elongated semi-circle shape, 3x2m. | 2013 |
| 223 | 471929 | 4723616 | DPS-9 | Area of possible (natural?) channels coming down from mountainside. | 2013 |
| 224 | 471845 | 4723650 | DPS-9 | Cistern (?) at base of (natural) channel below cliff. 7x4 m, 1m wide. Walls visible, sloping down slightly. On the downslope end, there is a very ephemeral wall. | 2013 |
| 225 | 471856 | 4723707 | DPS-9 | WP-225-228 set of structures (?) running down higher spur. One definite structure, 7x5m with internal walls (WP-225). Very hard to interpret, especially as covered by undergrowth | 2013 |
| 226 | 471836 | 4723712 | | | |
| 227 | 471830 | 4723720 | | | |
| 228 | 471817 | 4723730 | | | |
| 229 | 471811 | 4723725 | DPS-9 | WP-229-232 are corners of low dry-stone wall, three to four courses, 0.5m wide. Wall crosses terrace 5 at WP-232 | 2013 |
| 230 | 471856 | 4723691 | | | |
| 231 | 471828 | 4723668 | | | |
| 232 | 471787 | 4723685 | | | |
| 233 | 471789 | 4723627 | DPS-9 | WP-233-234 are a dry-stone wall between Terrace 6 and the wall that runs between 236 and 235. Low and rather ephemeral, but definitely present. | 2013 |
| 234 | 471773 | 4723639 | | | |
| 235 | 471752 | 4723639 | DPS-9 | WP-235-238 is a dry-stone wall between Terraces 6 and 7. WP-236 and 237 on Terrace 6 respectively, join WP-235 and 238 on Terrace 7. The other end of WP-235 is dry-stone wall between WP-241 and 242. | 2013 |
| 236 | 471793 | 4723641 | | | 2013 |
| 237 | 471791 | 4723601 | | | 2013 |
| 238 | 471745 | 4723597 | | | 2013 |
| 239 | 471731 | 4723596 | DPS-9 | WP-239-240 is a dry-stone wall between Terraces 8 and 9. These waypoints are the points of intersection with the terraces. Wall is well preserved, up to six courses in places. | 2013 |
| 240 | 471704 | 4723604 | | | 2013 |
| 241 | 471672 | 4723659 | DPS-9 | WP-241-242 is a continuation of the dry-stone wall beginning at WP-235 on Terrace 7. WP-242 represents the end and possible intersection with Terrace 10. | 2013 |
| 242 | 471698 | 4723645 | | | 2013 |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 243 | 471723 | 4723720 | DPS-9 | Intersection of dry-stone wall starting at WP-232 with Terrace 10. The wall continues past the end of Terrace 11. | 2013 |
| 244 | 471733 | 4723741 | DPS-9 | Dry-stone wall abuts Terrace 11 and heads W via WP-246 ending at WP-258 on the NE side of Terrace 13. | 2013 |
| 245 | 471757 | 4723794 | DPS-9 | End of Terrace 11 and junction with dry-stone wall running from edge of Terrace 5 down the hill | 2013 |
| 246 | 471694 | 4723754 | DPS-9 | Continuation of dry-stone wall beginning at WP-244 and ending at Terrace 13. | 2013 |
| 247 | 471720 | 4723739 | DPS-9 | WP-247-248 is a small dry-stone wall connecting WP-244-246 and a wall between S ends of Terraces 11 and 13. WP-248 is also where this wall meets the wall between the terraces. | 2013 |
| 248 | 471711 | 4723713 | | | 2013 |
| 249 | 471721 | 4723809 | DPS-9 | End of dry-stone wall starting at Terrace 11. | 2013 |
| 250 | 471715 | 4723806 | DPS-9 | WP-250-260: various points around small church complex. Church itself within barbed wire enclosure. Whole complex seems isolated from other systems, although loosely follows alignment of Terrace 12 at W edge. Wall runs from WP-250-251-252-253-254-257-259-260 and back up to alignment with WP-250. Wall between WP-252 and 258 and further internal walls between WP-255, 256 and 252-258 wall | 2013 |
| 251 | 471721 | 4723818 | | | |
| 252 | 471696 | 4723845 | | | |
| 253 | 471703 | 4723861 | | | |
| 254 | 471653 | 4723878 | | | |
| 255 | 471643 | 4723862 | | | |
| 256 | 471630 | 4723835 | | | |
| 258 | 471654 | 4723779 | | | |
| 259 | 471646 | 4723783 | | | |
| 260 | 471646 | 4723756 | | | |
| 261 | 471625 | 4723682 | DPS-9 | Dry-stone wall heading E and connecting to WP-241. | 2013 |
| 262 | 471617 | 4723634 | DPS-9 | Point at which dry-stone wall emerges from middle part of Terrace 14. | 2013 |
| 263 | 471608 | 4723609 | DPS-9 | WP-263-264 is a dry-stone wall on S end of Terrace 14. | 2013 |
| 264 | 471590 | 4723614 | DPS-9 | WP-263-264 is a dry-stone wall on S end of Terrace 14. | 2013 |
| 265 | 471602 | 4723599 | DPS-9 | Circular depression (cistern?), 4x4m diameter, 2m deep. Earthen banks on three sides and small stones in bottom, although not lined - more likely fallen in during use/post-use. | 2013 |
| 266 | 471610 | 4723560 | DPS-9 | WP-266-270 (excluding WP-269) are the rough edges of area heavily disturbed by gas pipeline put in before CORONA images were taken (i.e. it is visible on CORONA). Clearly the result of earth moving activities during pipeline construction. | 2013 |
| 267 | 471592 | 4723599 | | | 2013 |
| 268 | 471563 | 4723666 | | | 2013 |
| 269 | 471583 | 4723698 | DPS-9 | End of dry-stone wall connecting to WP-261. | 2013 |
| 270 | 471560 | 4723711 | DPS-9 | WP-266-270 (excluding WP-269) are the rough edges of an area heavily disturbed by a gas pipeline put in before CORONA images were taken (i.e. it is visible on CORONA). Clearly the result of earth moving activities during pipeline construction. | 2013 |
| 271 | 471569 | 4723832 | DPS-9 | End of dry-stone wall connecting to mid-point of Terrace 12 at WP-257. | 2013 |
| 272 | 471601 | 4723909 | DPS-9 | Point at which dry-stone wall coming from WP-254 crosses Terrace 16 and continues W for 30m ending at WP-275. | 2013 |
| 273 | 471587 | 4723925 | DPS-9 | WP-273-274 are the start and end of double walled feature coming off dry-stone wall between WP-272 and 275. 1-1.5m gap between very shallow walls. Possible channel or routeway? | 2013 |
| 274 | 471614 | 4723935 | | | |
| 275 | 471554 | 4723936 | DPS-9 | End of dry-stone wall coming from WP-272. | 2013 |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 276 | 471636 | 4723994 | DPS-9 | Circular depression (cistern?), 4x4m diameter, 1.5m deep, low earthen banks on all sides. | 2013 |
| 277 | 471634 | 4723994 | DPS-9 | Junction of dry-stone wall with end of Terrace 18, continues E for an indeterminate distance and W to WP- 278. | 2013 |
| 278 | 471592 | 4724041 | DPS-9 | End of dry-stone wall running past Terrace 18 at 277. | 2013 |
| 279 | 471616 | 4724012 | DPS-9 | Circular depression (cistern?), 4x4m diameter, 2m deep, low earth banks. | 2013 |
| 280 | 471661 | 4723590 | DPS-9 | Bottom of dry-stone wall that joins WP-240, mostly rubble, possible courses visible. | 2013 |
| 281 | 471597 | 4723610 | DPS-9 | Walled enclosure with dry-stone wall, four to seven courses, lots of rubble in centre, edge follows Terrace 20. | 2013 |
| 282 | 471655 | 4723601 | | | |
| 283 | 471654 | 4723658 | | | |
| 284 | 471626 | 4723680 | | | |
| 285 | 471619 | 4723676 | DPS-9 | Dry-stone wall connecting to WP- 270. There are a few standing stones but mostly rubble. | 2013 |
| 286 | 471567 | 4723701 | DPS-9 | Dry-stone wall running W, connects to WP-288, three to four courses visible in places but mostly rubble. | 2013 |
| 287 | 471556 | 4723696 | DPS-9 | Dry-stone wall running S from WP-286-288 wall, very hard to define and mostly rubble. | 2013 |
| 288 | 471519 | 4723717 | DPS-9 | Dry-stone wall running W, connects to WP-286, three to four courses visible in places but mostly rubble. | 2013 |
| 289 | 471503 | 4723630 | DPS-9 | Dry-stone wall, mostly rubble; may be damaged from pipeline to S. Joins WP-289. | 2013 |
| 290 | 471558 | 4723640 | DPS-9 | Dry-stone wall, but mostly rubble; may be damaged from pipeline to S. Joins WP-288. | 2013 |
| 291 | 471501 | 4723677 | DPS-9 | Dry-stone wall running in front of Terrace 21, from WP- 291-293. Five courses in places. | 2013 |
| 292 | 471504 | 4723702 | | | |
| 293 | 471488 | 4723708 | | | |
| 294 | 471499 | 4723723 | DPS-9 | Dry-stone wall running between WP-292 and 294, toward and perpendicular to wall between 291 and 293. | 2013 |
| 295 | 471505 | 4723790 | DPS-9 | Dry-stone wall running towards Terrace 19, mostly rubble. | 2013 |
| 296 | 471533 | 4723792 | | | |
| 297 | 471542 | 4723827 | DPS-9 | Very ephemeral dry-stone wall running between WP-297 and 298. | 2013 |
| 298 | 471508 | 4723841 | | | |
| 299 | 471543 | 4723848 | DPS-9 | Very long dry-stone wall running from WP 299 to 300 and coming off Terrace 15. Aligned with other walls to bottom of system, but broken by various tracks and bulldozed areas. | 2013 |
| 300 | 471503 | 4723871 | | | |
| 301 | 471642 | 4724079 | DPS-9 | Dry-stone wall extending between WP-301 and 302, running from break of slope | 2013 |
| 302 | 471618 | 4724081 | DPS-9 | | |
| 303 | 471594 | 4724050 | DPS-9 | Dry-stone wall, represented mostly by tumble and rubble extending from Terrace 19 between WP-303 and 304. Fades out just before Terrace 25. | 2013 |
| 304 | 471563 | 4724067 | DPS-9 | | |
| 305 | 471576 | 4724118 | DPS-9 | WP- 305-308 is an enclosure still in use; encircled by wire fence laid over well maintained dry-stone wall that is five to six courses high. Field inside has not been grazed recently. At WP-308 there is also a small L shaped dry-stone wall structure (1x1m) built out from a massive boulder of very flat stones up to five courses high. | 2013 |
| 306 | 471526 | 4724230 | | | |
| 307 | 471509 | 4724186 | | | |
| 308 | 471526 | 4724173 | | | |
| 309 | 471539 | 4724158 | DPS-9 | Structure built into internal side of dry-stone wall WP- 305-308. 7x4m in length running along wall. Appears to have small internal platform. | 2013 |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 310 | 471517 | 4724161 | DPS-9 | Dry-stone wall with opening coming off from WP- 308. Wall makes a right angle here and ends at WP- 311. | 2013 |
| 311 | 471495 | 4724166 | DPS-9 | End of dry-stone wall starting at WP- 308 and running through to WP- 311. | 2013 |
| 312 | 471548 | 4724099 | DPS-9 | Start of dry-stone wall running to WP- 314. Extends out from dry-stone wall (WP-305-313). | 2013 |
| 313 | 471527 | 4724067 | DPS-9 | End of dry-stone wall that began at WP-305. | 2013 |
| 314 | 471518 | 4724104 | DPS-9 | End of dry-stone wall that began at WP-312. | 2013 |
| 315 | 471539 | 4724039 | DPS-9 | Depression (cistern ?) dug into side of Terrace 26, 3x4m diameter, 1.5m deep, small earthen banks on all sides, small stones and rubble fallen into bottom. | 2013 |
| 316 | 471475 | 4724068 | DPS-9 | WP- 316-318 form a L-shaped wall in front of Terrace 27. Quite rubbly, but four to five courses visible in places. | 2013 |
| 317 | 471501 | 4724050 | | | |
| 318 | 471499 | 4724040 | | | |
| 319 | 471443 | 4723918 | DPS-9 | WP- 319-320 is a dry-stone wall (mainly rubble) It, passes Terrace 29 and ends at Terrace 30. | 2013 |
| 320 | 471402 | 4723943 | | | |
| 321 | 471391 | 4723926 | DPS-9 | Start of very long dry-stone wall running downhill towards end of entire field system. Ends at WP- 396. | 2013 |
| 322 | 471365 | 4723874 | DPS-9 | WP- 322-323 is a dry-stone wall running from the end of Terrace 30 to Terrace 31. Four to five courses visible in several places, constructed of small stones. | 2013 |
| 323 | 471450 | 4723863 | | | |
| 324 | 471413 | 4723743 | DPS-9 | WP- 324-327 is a dry-stone wall with gap between 325 and 326. Two to three courses in places but mostly eroded out. | 2013 |
| 325 | 471419 | 4723756 | | | |
| 326 | 471421 | 4723758 | | | |
| 327 | 471451 | 4723795 | | | |
| 328 | 471472 | 4723846 | DPS-9 | WP- 328-329 is the end of a dry-stone wall. It is also the junction point of this wall with the wall that runs between WP- 330-331. This wall runs in front of Terrace 33. | 2013 |
| 329 | 471485 | 4723876 | | | |
| 330 | 471467 | 4723875 | DPS-9 | WP- 330-331 is a dry-stone wall, mostly rubble. | 2013 |
| 331 | 471492 | 4723885 | | | |
| 332 | 471482 | 4723889 | DPS-9 | Circular depression (cistern?), round, 4x4m, 1.5m deep, low earth bank visible around edge. | 2013 |
| 333 | 471483 | 4723800 | DPS-9 | WP- 333-334 form a dry-stone wall ending just before Terrace 22. | 2013 |
| 334 | 471496 | 4723796 | | | |
| 335 | 471462 | 4723568 | DPS-9 | WP- 335-337 is a dry-stone wall. It is the first intact wall W of pipeline disturbance. Begins at WP-335, turns corner at WP-336 and ends at WP-337. | 2013 |
| 336 | 471443 | 4723612 | | | |
| 337 | 471475 | 4723586 | | | |
| 338 | 471441 | 4723608 | DPS-9 | Structure, possibly cistern (?), built into wall formed by WP-339-342. On two sides of structure, there are two parallel lines of stone visible. Dry-stone construction. Four courses visible on inner side, but only rubble/tumble on other side. | 2013 |
| 339 | 471440 | 4723614 | DPS-9 | WP-339-340 form dry-stone wall extension of enclosure delimited by WP-341-345 and include the structure described in WP-338. | 2013 |
| 340 | 471431 | 4723603 | | | 2013 |
| 341 | 471400 | 4723621 | DPS-9 | WP-341-345 form a dry-stone wall enclosure. Walls are four to five courses in places and generally quite easily discernible. WP-341 is a gap in the wall, probably modern. WP- 342 is a possible cairn. WP-343 marks a continuation point of the wall. WP-344 marks a clear change in lichen colour on the wall, from green to reddish orange. | 2013 |
| 342 | 471385 | 4723640 | | | |
| 343 | 471391 | 4723656 | | | |
| 344 | 471431 | 4723661 | | | |
| 345 | 471422 | 4723609 | | | |
| 346 | 471438 | 4723656 | DPS-9 | | 2013 |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 347 | 471464 | 4723661 | | WP- 346-347 is a dry-stone wall running from Terrace 34 (WP- 346) to end in field (WP-347). | |
| 348 | Number omitted | | | | |
| 349 | 471468 | 4723686 | DPS-9 | WP-349-350 is a dry-stone wall coming off Terrace 34. WP-350 is also the junction point of this wall. A small wall that connects to the wall is formed by WP-352-355 | 2013 |
| 350 | 471435 | 4723699 | | | |
| 351 | 471449 | 4723706 | DPS-9 | Circular depression (cistern?) in middle of field, 6x6m diameter, 1.5m deep. Earthen banks. Small stones accumulated in bottom. | 2013 |
| 352 | 471465 | 4723721 | DPS-9 | WP-352-353 is a dry-stone wall, up to six courses in places. Continues to 354 and turns outwards at 355 | 2013 |
| 353 | 471435 | 4723727 | | | |
| 354 | 471416 | 4723725 | | | |
| 355 | 471415 | 4723735 | | | |
| 356 | 471430 | 4723821 | DPS-9 | Structure, 7x5m built into Terrace 32 (stone lined terrace). Four to five courses remain standing. The terrace wall may form the back of the structure Aligned along terrace with structure at 357. | 2013 |
| 357 | 471431 | 4723833 | DPS-9 | Structure similar to 356 but less well preserved. | 2013 |
| 358 | 471433 | 4724054 | DPS-9 | Rounded depression (cistern?), 5x4 m, 2m deep. Earthen banks. Rocks accumulated in bottom. | 2013 |
| 359 | 471454 | 4724075 | DPS-9 | Rounded depression (cistern?), 5x4 m, 1.5m deep. Earthen banks. Rocks accumulated in bottom. | 2013 |
| 360 | 471460 | 4724084 | DPS-9 | WP-360-361 is a dry-stone wall that has been damaged by the building of the pipeline. Very probably related to start of wall on other side of pipeline, WP-375. | 2013 |
| 361 | 471439 | 4724115 | | | |
| 362 | 471464 | 4724191 | DPS-9 | WP-362-365 is a very long dry-stone wall, poorly preserved. It has been destroyed by bulldozing at top (WP-362) and between WP-363 and 364. | 2013 |
| 363 | 471453 | 4724200 | | | |
| 364 | 471438 | 4724216 | | | |
| 365 | 471425 | 4724234 | | | |
| 366 | 471406 | 4724266 | DPS-9 | WP-366-367 is a dry-stone wall. The lowest wall in the system. As such it runs to the cliff edge at WP-367. Two to three courses are visible, as well as some related tumble. | 2013 |
| 367 | 471354 | 4724301 | | | |
| 368 | 471325 | 4724209 | DPS-9 | Bottom of dry-stone wall leading to enclosure (WP-369-374), joins enclosure at WP-369. | 2013 |
| 369 | 471362 | 4724178 | DPS-9 | WP- 369-374 is a dry-stone wall enclosure, not presently maintained, but walls preserved three to four courses high. Destroyed by bulldozing between WP-370 and 371. Joins second set of walls at WP-372 and a wall running behind Terrace at WP-373. | 2013 |
| 370 | 471387 | 4724233 | | | |
| 371 | 471411 | 4724190 | | | |
| 372 | 471400 | 4724163 | | | |
| 373 | 471388 | 4724175 | | | |
| 374 | 471369 | 4724170 | | | |
| 375 | 471403 | 4724156 | DPS-9 | WP-375-376 is a dry-stone wall extending from enclosure (WP-369-374) at WP- 372. It may be an extension of WP-360-361 wall. WP-376 represents the end of this wall at the start of the area disturbed by pipeline construction. | 2013 |
| 376 | 471422 | 4724129 | | | |
| 377 | 471394 | 4724091 | DPS-9 | WP-377-378 is a dry-stone wall extending from Terrace 35. It may be aligned with others further up in the system. | 2013 |
| 378 | 471423 | 4724061 | | | |
| 379 | 471417 | 4724131 | DPS-9 | WP-379-380 is a dry-stone wall running directly in front of Terrace 35 and curving down to Terrace 38. | 2013 |
| 380 | 471354 | 4724077 | | | |
| 381 | 471355 | 4724089 | DPS-9 | WP-381-384 is a dry-stone wall running between and perpendicular to WP-379 and 380, and wall formed by WP-374 and 383. Mostly rubble and tumble but was clearly once a wall. | 2013 |
| 382 | 471319 | 4724117 | | | |
| 383 | 471322 | 4724128 | | | |
| 384 | 471303 | 4724133 | | | |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 385 | 471278 | 4724152 | DPS-9 | Depression (cistern?), 4x4 m, 2m deep. Low earthen banks. Stones collected in bottom. | 2013 |
| 386 | 471262 | 4724083 | DPS-9 | WP-386-387-388/398-399, C shaped dry-stone wall with hard corners. WP-386-387 is a very low, but clear wall. WP-388/398-399 is much less clear and represented by an extended pile of rubble. | 2013 |
| 387 | 471283 | 4724071 | | | |
| 388 | 471267 | 4724051 | | | |
| 389 | 471228 | 4724021 | DPS-9 | WP-389-392, odd structure, rectangular and stone lined, approximately 10x4m and 1m deep. Waypoints are on four corners. Two channels lead off of it to other structure (cistern?) at WP-393. | 2013 |
| 390 | 471224 | 4724014 | | | |
| 391 | 471213 | 4724020 | | | |
| 392 | 471219 | 4724027 | | | |
| 393 | 471213 | 4724011 | DPS-9 | Depression (cistern?) with short channel (approx. 4m) leading to stone lined cistern/structure at WP-389-392. 2x2 m, 1m deep, Earthen banks. No stones collected in bottom. | 2013 |
| 394 | 471339 | 4723980 | DPS-9 | End of dry-stone wall running from end of Terrace 38 to end of Terrace 39 and over Terrace 40. | 2013 |
| 395 | 471385 | 4723961 | DPS-9 | End of dry-stone wall running from end of Terrace 30, mostly collapsed, some structure visible in places. | 2013 |
| 396 | 471316 | 4723978 | DPS-9 | Dry-stone wall running from WP- 321 via Terrace 30, still standing to five or six courses in places. | 2013 |
| 397 | 471284 | 4724002 | DPS-9 | Circular depression (cistern?), 4x4 m, 1m deep, banked earth sides. | 2013 |
| 398 | 471268 | 4724051 | DPS-9 | WP-386-387-388/398-399, C shaped dry-stone wall with hard corners. WP-386-387 is a very low, but clear wall. WP-388/398-399 is much less clear and represented by an extended pile of rubble. | 2013 |
| 399 | 471237 | 4724071 | | | |
| 400 | 471238 | 4723940 | DPS-9 | WP-400-401 is a dry-stone wall leading from S end of Terrace 40 heading W. | 2013 |
| 401 | 471160 | 4723964 | | | |
| 402 | 471207 | 4723939 | DPS-9 | Depression (cistern?), 7x4 m, 2m deep, rounded with earth banks and stones in bottom. | 2013 |
| 403 | 471264 | 4723951 | DPS-9 | Circular depression (cistern?), 5x5 m, 3m deep, with earth banks and stones in bottom. | 2013 |
| 404 | 471234 | 4723924 | DPS-9 | WP-404-406 is a dry-stone wall starting at middle point on Terrace 40. WP-405 is a gap in this wall (probably not secondary, but an original opening). | 2013 |
| 405 | 471297 | 4723907 | | | |
| 406 | 471354 | 4723883 | | | |
| 407 | 471383 | 4723934 | DPS-9 | End of dry-stone wall extending from WP-406 in front of Terrace 30. | 2013 |
| 408 | 471498 | 4723602 | DPS-9 | South end of gas pipeline oriented roughly N-S. Extends across much of the terrace and field system. | 2013 |
| 409 | 471398 | 4724385 | DPS-9 | North end of gas pipeline that began at WP-408. | 2013 |
| 410 | 471057 | 4725799 | Tracks N of DPS-9 | Rock shelter (natural) with small wall, four to five courses high. Large horned goat skull placed in cave. | 2013 |
| 411 | 470797 | 4725316 | Tracks N of DPS-9 | SE corner of large concrete structure on river bank. | 2013 |
| 412 | 471257 | 4724022 | DPS-9 | WP-412-413 is a dry-stone wall extending from Terrace 40. | 2013 |
| 413 | 471210 | 4724029 | | | |
| 414 | 471189 | 4723982 | DPS-9 | Circular depression (cistern?), circular, 6x6m, 2.5m deep, with earth banks and stones in bottom. | 2013 |
| 415 | 471134 | 4723917 | DPS-9 | WP-415-421 is a dry-stone wall extending from Terrace 41 toward Terrace 40, It is cut by a track just before Terrace 40, probably originally joined it. | 2013 |
| 416 | 471091 | 4723900 | DPS-9 | WP-416-418 is a dry-stone wall running via S end of Terrace 41, cut by track at 417, reaching Terrace 40 at 418. | 2013 |
| 417 | 471120 | 4723854 | | | |
| 418 | 471196 | 4723846 | | | |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 419 | 471134 | 4723860 | DPS-9 | Circular depression (cistern?), 3x3 m, 1m deep, earth banks and stones in bottom. | 2013 |
| 420 | 471122 | 4723883 | DPS-9 | Depression (cistern?) 5x2 m, 1m deep, elongated but rounded with banked earth and small stones in bottom. | 2013 |
| 421 | 471195 | 4723859 | DPS-9 | WP-415-421is a dry-stone wall extending from Terrace 41 to Terrace 40, cut by track just before Terrace 40, probably originally joined it. | 2013 |
| 422 | 471212 | 4723896 | DPS-9 | 422-427 is a dry-stone wall coming off Terrace 40. A waypoint was taken at each corner. Three to four courses are visible in places. | 2013 |
| 423 | 471179 | 4723905 | | | |
| 424 | 471188 | 4723950 | | | |
| 426 | 471222 | 4723929 | | | |
| 427 | 471209 | 4723929 | | | |
| 428 | 471202 | 4723935 | DPS-9 | Depression (cistern?). | 2013 |
| 429 | 471204 | 4723871 | DPS-9 | 429-431, Channel (?) running along top of Terrace 40. 1m wide, low earthen banks, heavily eroded. Cut by modern track at WP-230. | 2013 |
| 430 | 471206 | 4723859 | | | |
| 431 | 471198 | 4723844 | | | |
| 432 | 471187 | 4723826 | DPS-9 | Stone lined rectangular structure with two channels coming off it set into larger wall. Very similar morphology to structure at WP-389-392 but without depression (cistern?) attached. 6x4 m, 1.5m deep. WP-432 and 433 are the two ends on the long axis. | 2013 |
| 433 | 471180 | 4723832 | | | 2013 |
| 434 | 471132 | 4723845 | DPS-9 | WP-434-435 runs from wall with cistern (?) (WP-432-433) to edge of cliff (WP-435). It clearly used to extend further but edge of cliff has collapsed into gorge. | 2013 |
| 435 | 471160 | 4723769 | | | |
| 436 | 471133 | 4723783 | DPS-9 | WP-436-437 is a heavily tumbled wall running E-W near river edge. | 2013 |
| 437 | 471181 | 4723784 | | | |
| 438 | 471169 | 4723795 | DPS-9 | Circular depression (cistern?), 4x4 m, 1m deep, banked earth edges. | 2013 |
| 439 | 471195 | 4723781 | DPS-9 | WP-439-447 is a complex series of walls with multiple corners and one large enclosure (WP-443-447). Joins Terrace 46 at WP-445 and larger walls at WP-446 and 447 respectively on E side. Connects, eventually, to system associated with WP-324. | 2013 |
| 440 | 471237 | 4723765 | | | |
| 441 | 471233 | 4723761 | | | |
| 442 | 471239 | 4723765 | | | |
| 443 | 471245 | 4723761 | | | |
| 444 | 471246 | 4723753 | | | |
| 445 | 471282 | 4723767 | | | |
| 446 | 471291 | 4723765 | | | |
| 447 | 471261 | 4723708 | | | |
| 448 | 471390 | 4723671 | DPS-9 | Long dry-stone wall extending from WP-447 extending to WP-448 via S corner of Terrace 44. WP-448 also marks S edge of Terrace 45 running to WP-449. | 2013 |
| 449 | 471405 | 4723731 | DPS-9 | Long dry-stone wall extending from WP-446 to WP-449 via N corner of Terrace 44. WP-449 also marks N edge of Terrace 45 running to WP-448. | 2013 |
| 450 | 471347 | 4723714 | DPS-9 | Rounded depression (cistern?), 6x7 m, 2.5m deep, earthen banks, stones in bottom. | 2013 |
| 451 | 471362 | 4723761 | DPS-9 | Circular depression (cistern?), round, 2x2m, 0.5m deep, banked earth, no stones in bottom. | 2013 |
| 452 | 471391 | 4723785 | DPS-9 | WP-452-453 rubble dry-stone wall heading. | 2013 |
| 453 | 471322 | 4723819 | | | |
| 454 | 471339 | 4723884 | DPS-9 | WP-454-457 enclosure wall coming off wall (WP-405-407) to form roughly square field (waypoints taken- on corners). | 2013 |
| 455 | 471293 | 4723839 | | | |
| 456 | 471283 | 4723845 | | | |
| 457 | 471274 | 4723910 | | | |
| 458 | 471258 | 4723860 | DPS-9 | Rounded depression (cistern?), 3x4 m, 2m deep, earthen banks. | 2013 |
| 459 | 471286 | 4723799 | DPS-9 | End of wall starting at 455 and abutting enclosure 454-457. | 2013 |
| 460 | 471271 | 4723823 | DPS-9 | Circular depression (cistern?), 5x5 m, 3m deep, earthen banks. | 2013 |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 461 | 471219 | 4723845 | DPS-9 | Circular depression (cistern?), 6x3 m, 1.5m deep, elongated but rounded ends, earthen bank on all sides. | 2013 |
| 462 | 468750 | 4730020 | DPS-5 Daba and the Amali Valley | Stone lined rectangular cistern 3.5x1.8 m, 0.7m deep with linear depression running into larger complex (WP-462-465). | 2013 |
| 463 | 468754 | 4730007 | | | |
| 464 | 468764 | 4730013 | DPS-5 Daba and the Amali Valley | Start of linear depression associated with WP-462 and WP- 463. Runs down to ruined village and WP- 465. | 2013 |
| 465 | 468740 | 4729981 | DPS-5 Daba and the Amali Valley | End of visible part of linear depression beginning at WP-464 and including two depressions WP-462 and 463. Linear depression probably continued into village, but is now eroded away. | 2013 |
| 466 | 468741 | 4729975 | DPS-5 Daba and the Amali Valley | Village-end of linear depression and circular depression complex (WP-466-471). Like WP-465, this linear depression probably continued further into village but now stops at this waypoint. | 2013 |
| 467 | 468777 | 4729997 | DPS-5 Daba and the Amali Valley | Continuation of linear depression visible from 466; point at which it is joined by other linear depression associated with circular depression at WP-469. | 2013 |
| 468 | 468786 | 4730016 | DPS-5 Daba and the Amali Valley | End of visible part of linear depression beginning at 466. | 2013 |
| 469 | 468789 | 4729996 | DPS-5 Daba and the Amali Valley | Roundish depression (cistern?), 7x5 m, 1.5m deep, earth banks visible, joined to linear depression WP-466-468 by short further linear depression ending at 469 | 2013 |
| 470 | 468774 | 4729979 | DPS-5 Daba and the Amali Valley | WP-470 and 471 are double depressions (cisterns?) either side of linear depression between 466 and 468 (like leaves on a plant). Both circular c. 6x6m, 1.5-2m deep, earth banking on sides | 2013 |
| 471 | 468765 | 4729990 | | | |
| 472 | 468669 | 4730026 | DPS-5 Daba and the Amali Valley | WP-472-474 is a small linear depression complex dug into bank above village to form Y shape. WP-472 bottom of Y, WP-473 and 474 ends of top two prongs. | 2013 |
| 473 | 468643 | 4730040 | | | |
| 474 | 468648 | 4730032 | | | |
| 475 | 470323 | 4717078 | Sno Village | Tower within village. | 2013 |
| 476 | 472323 | 4715381 | Akhaltsikhe Village | Village built into hillside and extended into plain below - now two villages, Qoselta on hilltop and Akhaltsikhe below. | 2013 |
| 477 | 473673 | 4713937 | Karkucha Village | Village visited in vehicle survey. | 2013 |
| 478 | 465557 | 4716870 | Sioni Village | Church and separate tower on high point above village and valley. | 2013 |
| 481 | 464029 | 4716528 | Pkhelshe | Village with anomaly to W but proved impossible to get to. | 2013 |
| 482 | 468725 | 4720285 | Pansheti | Tower and other structures on ridge above village. | 2013 |
| 600 | 468613 | 4720315 | Pansheti | Village. | 2014 |
| 601 | 461546 | 4714357 | DPS-10 | Terrace centre point. | 2014 |
| 602 | 461542 | 4714387 | DPS-10 | Terrace centre point. | 2014 |
| 603 | 461589 | 4714364 | DPS-10 | Terrace centre point. | 2014 |
| 604 | 461587 | 4714384 | DPS-10 | Terrace centre point. | 2014 |
| 605 | 461596 | 4714436 | DPS-10 | Terrace centre point. | 2014 |
| 607 | 461538 | 4714427 | DPS-10 | Terrace centre point. | 2014 |
| 608 | 461566 | 4714453 | DPS-10 | Terrace centre point. | 2014 |
| 609 | 461596 | 4714482 | DPS-10 | Terrace centre point. | 2014 |
| 610 | 461572 | 4714491 | DPS-10 | Terrace centre point. | 2014 |
| 612 | 461532 | 4714497 | DPS-10 | Terrace centre point. | 2014 |
| 613 | 461569 | 4714529 | DPS-10 | Terrace centre point. | 2014 |
| 614 | 461608 | 4714549 | DPS-10 | Terrace centre point. | 2014 |
| 615 | 461584 | 4714558 | DPS-10 | Terrace centre point. | 2014 |
| 616 | 461542 | 4714583 | DPS-10 | Terrace centre point. | 2014 |
| 617 | 461580 | 4714585 | DPS-10 | Terrace centre point. | 2014 |
| 618 | 461615 | 4714597 | DPS-10 | Terrace centre point. | 2014 |
| 619 | 461589 | 4714607 | DPS-10 | Terrace centre point. | 2014 |
| 620 | 461539 | 4714611 | DPS-10 | Terrace centre point. | 2014 |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 621 | 461508 | 4714623 | DPS-10 | Terrace centre point. | 2014 |
| 622 | 461538 | 4714632 | DPS-10 | Terrace centre point. | 2014 |
| 623 | 461593 | 4714633 | DPS-10 | Terrace centre point. | 2014 |
| 624 | 461603 | 4714659 | DPS-10 | Terrace centre point. | 2014 |
| 625 | 461550 | 4714656 | DPS-10 | Terrace centre point. | 2014 |
| 626 | 461510 | 4714676 | DPS-10 | Terrace centre point. | 2014 |
| 627 | 461565 | 4714677 | DPS-10 | Terrace centre point. | 2014 |
| 628 | 461605 | 4714683 | DPS-10 | Terrace centre point. | 2014 |
| 629 | 461778 | 4714786 | DPS-10 | End point of remains of village. | 2014 |
| 630 | 461598 | 4714730 | DPS-10 | End point of remains of village. | 2014 |
| 631 | 461516 | 4714703 | DPS-10 | Point between two circular depression (cisterns?) c. 2m in diameter. | 2014 |
| 632 | 461395 | 4714122 | DPS-11 | Edges of modern track. | 2014 |
| 633 | 461378 | 4714137 | DPS-11 | Edges of modern track. | 2014 |
| 634 | 461369 | 4714145 | DPS-11 | Edges of modern track. | 2014 |
| 635 | 461357 | 4714063 | DPS-11 | Edges of modern track. | 2014 |
| 636 | 461319 | 4714074 | DPS-11 | Edges of modern track. | 2014 |
| 637 | 461243 | 4714278 | DPS-11 | Edge of field plot. | 2014 |
| 638 | 461162 | 4714360 | DPS-11 | Circular depression (cistern?) – 1-2m in diameter. | 2014 |
| 639 | 463988 | 4715827 | DPS-12 | Terrace centre point. | 2014 |
| 640 | 464027 | 4715786 | DPS-12 | Terrace centre point. | 2014 |
| 641 | 464071 | 4715752 | DPS-12 | Terrace centre point. | 2014 |
| 643 | 464149 | 4715667 | DPS-12 | Terrace centre point. | 2014 |
| 644 | 464169 | 4715651 | DPS-12 | Terrace centre point. | 2014 |
| 645 | 464182 | 4715641 | DPS-12 | Terrace centre point. | 2014 |
| 646 | 464112 | 4715448 | DPS-12 | Terrace centre point. | 2014 |
| 647 | 464071 | 4715462 | DPS-12 | Terrace centre point. | 2014 |
| 648 | 464051 | 4715488 | DPS-12 | Terrace centre point. | 2014 |
| 649 | 464011 | 4715554 | DPS-12 | Terrace centre point. | 2014 |
| 650 | 463977 | 4715581 | DPS-12 | Terrace centre point. | 2014 |
| 651 | 463949 | 4715641 | DPS-12 | Terrace centre point. | 2014 |
| 652 | 463927 | 4715712 | DPS-12 | Terrace centre point. | 2014 |
| 653 | 463918 | 4715730 | DPS-12 | Terrace centre point. | 2014 |
| 654 | 463883 | 4715798 | DPS-12 | Terrace centre point. | 2014 |
| 655 | 460721 | 4713351 | Tergi River Valley, S of Stepantsminda | Top of section. | 2014 |
| 656 | 460837 | 4713483 | Tergi River Valley, S of Stepantsminda | Channel with rocks on either side directing water over the edge. | 2014 |
| 657 | 460904 | 4713538 | Tergi River Valley, S of Stepantsminda | Wall across gullies. | 2014 |
| 658 | 460891 | 4713553 | Tergi River Valley, S of Stepantsminda | Wall across gullies. | 2014 |
| 659 | 460955 | 4713684 | Tergi River Valley, S of Stepantsminda | S end of a wall across a gully. | 2014 |
| 660 | 460956 | 4713696 | Tergi River Valley, S of Stepantsminda | N end of a wall across a gully. | 2014 |
| 661 | 461032 | 4714263 | Tergi River Valley, S of Stepantsminda | Corner of stone structure in DPS-10. | 2014 |
| 662 | 460949 | 4715875 | Tergi River Valley, S of Stepantsminda | Wall eroding out of section in gully face at DPS-16. | 2014 |
| 663 | 460940 | 4715870 | DPS-16 | Mound at DPS-16. | 2014 |
| 664 | 460912 | 4715883 | DPS-16 | Mound at DPS-16. | 2014 |
| 665 | 460914 | 4715901 | DPS-16 | Cist grave eroding out of section in gully face at DPS-16. | 2014 |
| 666 | 460894 | 4715942 | DPS-16 | Cist grave eroding out of section in gully face at DPS-16. | 2014 |
| 667 | 467162 | 4718127 | Arsha | Modern tower structure above Arsha. | 2014 |
| 668 | 460799 | 4713465 | Tergi River Valley, S of Stepantsminda | OSL Sample. | 2014 |
| 669 | Number omitted. | | | | |
| 670 | 460900 | 4713983 | DPS-11 | Section | 2014 |
| 671 | 460961 | 4714167 | DPS-11 | Section | 2014 |
| 672 | 460297 | 4711885 | DPS-17 | Centre point of three circular depressions. | 2014 |
| 673 | 460278 | 4711879 | DPS-17 | SW edge of site and possible terrace system. | 2014 |
| 674 | 460176 | 4711988 | DPS-17 | NW edge of site and possible terrace system. | 2014 |

| WP no. | Easting | Northing | Location | Description | Year |
|---|---|---|---|---|---|
| 675 | 460189 | 4712161 | DPS-17 | Two circular depressions. | 2014 |
| 676 | 460437 | 4711984 | DPS-17 | Bottom terrace to the NE of ruined village. | 2014 |
| 677 | 460482 | 4711848 | DPS-17 | Top terrace to the N of ruined village. | 2014 |
| 678 | 466624 | 4718720 | DPS-20 | Ruined fort at Gaiboteni/Arsha. | 2014 |
| 679 | 462243 | 4716551 | DPS-18 | Khurtisi tower and church. | 2014 |
| 680 | 459644 | 4711597 | DPS-19 | Lower Ukhati/Kobi tower and church. | 2014 |
| 681 | 468144 | 4719011 | DPS-21 | Achkhoti tower. | 2014 |
| 682 | 460891 | 4713889 | DPS-11 | Exposed terrace section sampled for OSL. | 2014 |

Table 10:11: Section 412-4.

| Depth (cm) (BGL) | Context number | Munsell soil colour | Description |
|---|---|---|---|
| 0-17cm | 1 | Dusky red (2.5Y3/2) | Loose, poorly sorted, frequent pebble inclusions, frequent roots, gradual boundary. |
| 17-68cm | 2 | Dark reddish brown (2.5Y3/3) | Soft and loose loamy sand, with visible silicate minerals, moderately well-sorted occasional granules, gradual boundary. |
| 20-70cm | 3 | Dark reddish brown (2.5Y3/3) | Loose loamy sand, frequent pebbles and large stones, occasional charcoal, gradual boundary. |
| 54-67cm | 4 | Dark reddish brown (2.5Y3/3) | Loose poorly sorted coarse sand and gravel deposit, gradual boundary. |
| 68-74cm | 5 | Dark reddish brown (2.5Y3/3) | Compact, moderately sorted loamy silt, organic, sharp boundary. |
| 74-77cm | 6 | Dark reddish brown (2.5Y3/3) | Compact silty clay deposit with occasional grit inclusions, gradual boundary. |
| 77-90cm | 7 | Dark reddish brown (2.5Y3/3) | Compact silty clay deposit with occasional grit inclusions, sharp boundary. |
| 90-121cm | 8 | Dark yellowish brown (10YR3/6) | Loose and poorly sorted coarse sand and gravel deposit, sharp boundary. |
| >85cm | 9 | Reddish brown (2.5Y4/3) | Compact, moderately sorted, fine and coarse sand, calcium carbonate present, lower boundary not excavated. |

Table 10:12: Section 412-7.

| Depth (cm) (BGL) | Context number | Munsell soil colour | Description |
|---|---|---|---|
| 0-13cm | 1 | Dusky red (2.5Y3/2) | Compact, loam silt with occasional gravel inclusions, frequent roots, gradual boundary |
| 13-43cm | 2 | Reddish brown (2.5Y4/4) | Soft and loose loamy sand, with visible silicate minerals, moderately well sorted with occasional granules, gradual boundary. |
| 64-76cm | 3 | Reddish brown (2.5Y4/3) | Loose poorly sorted coarse sand and gravel deposit, gradual boundary. |
| 43-50cm | 4 | Dark reddish brown (2.5Y3/3) | Compact, moderately sorted sands, sharp boundary. |
| 50-74cm | 5 | Dark reddish brown (2.5Y3/3) | Compact, moderately well sorted loamy silt, occasional organic material and grit inclusions, sharp boundary. |
| 50+cm | 6 | Reddish brown (2.5Y4/3) | Moderately compact, poorly sorted sand and gravel deposit. Lowest boundary not excavated. |

Table 10:13: Section 412-8.

| Depth (cm) (BGL) | Context number | Munsell soil colour | Description |
|---|---|---|---|
| 0-12cm | 1 | Dusky red (2.5Y3/2) | Compact, loam silt with occasional gravel inclusions, frequent roots, gradual boundary |
| 12-42cm | 2 | Reddish brown (2.5Y4/4) | Loose sandy silt loam, poorly sorted, frequent pebble inclusions, gradual boundary |
| 31-41cm | 3 | Olive brown (5Y5/3) | Moderately sorted sandy silt, gradual boundary. |
| 41-53cm | 4 | Olive brown (5Y5/3) | Loose, poorly sorted sandy silt, gradual boundary. |
| 42-72cm | 5 | Olive yellow (5Y6/6) | Moderately compact, well sorted coarse laminated sands, lowest boundary not excavated. |

Table 10:14: Section 412-10.

| Depth (cm) (BGL) | Context number | Munsell soil colour | Description |
|---|---|---|---|
| 0-8cm | 1 | Very dark greyish brown (5Y3/2) | Compact, silty clay with occasional gravel inclusions, frequent roots, gradual boundary |
| 8-105cm | 2 | Dark olive grey (5Y3/2) | Compact silty clay loam, poorly sorted, frequent pebble inclusions, gradual boundary |
| 105-137cm | 3 | Dark olive grey (5Y3/2) | Moderately compact sandy silt, frequent stones (slate), pebbles and pottery fragments, gradual boundary. |
| Collapsed wall | 4 | N/a | N/a |
| >137cm | 5 | Dark olive grey (5Y3/2) | Compact, silty clay, frequent pebble inclusions lowest boundary not excavated. |

Table 10:15: Section 412-11.

| Depth (cm) (BGL) | Context number | Munsell soil colour | Description |
|---|---|---|---|
| 0-16cm | 1 | Very dark greyish brown (5Y3/2) | Moderately compact, sandy silt with occasional gravel inclusions, moderately sorted, frequent roots, gradual boundary. |
| 16-49cm | 2 | Dark olive grey (5Y3/2) | Compact sandy silt, poorly sorted, frequent pebble inclusions, gradual boundary |
| 49-146cm | 3 | Dark olive grey (5Y3/2) | Compact silty clay, frequent stones and poorly sorted, gradual boundary. |
| 146-191cm | 4 | Dark olive grey (5Y3/2) | Compact sandy silt with occasional large stones and frequent pebbles, poorly sorted, underlying boundary not excavated. |

Table 10:16: Section 412-9.

| Depth (cm) (BGL) | Context number | Munsell soil colour | Description |
|---|---|---|---|
| 0-13cm | 1 | Very dark greyish brown (10YR3/2) | Moderately compact, sandy silt with occasional gravel inclusions, moderately sorted, frequent roots, gradual boundary. |
| 13-75cm | 2 | Light yellowish brown (10YR6/4) | Loose sandy silt, poorly sorted, occasional stone and pebble inclusions, some flecks of charcoal, abundant pottery, gradual boundary. |
| 75-127cm | 3 | Greyish brown (10YR5/2) | Loose and crumbly sandy silt, poorly sorted, occasional stones and pottery fragments and frequent carbonate nodules occurred, sharp boundary. |
| 127-145cm | 4 | Dark olive grey (5Y3/2) | Compact silty clay with occasional stones, moderately sorted, sharp boundary. |
| 145-193cm | 5 | Dark yellowish brown (10YR4/4) | Compact sandy silt, poorly sorted, occasional stones and rock, one potsherd, sharp boundary. |
| 193-211cm | 6 | Light olive brown (2.5Y5/4) | Compact silty loam, well sorted, occasional grit inclusions, sharp boundary. |
| 211-222cm | 7 | Olive yellow (2.5Y6/6) | Compact silty loam, well sorted, occasional grit inclusions, sharp boundary. |
| 222-244cm | 8 | Grey (7.5Y6/1) | Compact silty loam, well sorted, occasional grit inclusions, sharp boundary. |
| 244-251cm | 9 | Olive yellow (2.5Y6/6) | Compact silty loam, well sorted, occasional grit inclusions, sharp boundary. |
| >244 | 10 | Grey (7.5Y6/1) | Compact silty loam, well sorted, occasional grit inclusions, lowest boundary not fully excavated. |
| 94-162cm | 11 | Wall | N/a |

Table 10:17: Section 412-16.

| Depth (cm) (BGL) | Context number | Munsell soil colour | Description |
|---|---|---|---|
| 0-5cm | 1 | Yellowish brown (10YR5/4) | Compact, sandy silt with occasional grit inclusions, moderately sorted, frequent roots, gradual boundary. |
| 5-69cm | 2 | Very dark brown, (10YR2/2) | Loose, loamy silt, moderately sorted, organic with frequent rootlets, frequent grit inclusions, gradual boundary. |
| 69-118cm | 3 | Very dark greyish brown (10YR3/2) | Loose, loamy silt, moderately sorted, organic with rootlets, frequent grit inclusions, gradual boundary. |
| 118-161cm | 4 | Very dark greyish brown (10YR3/2) | Loose sandy silt with pebbles and grit, poorly sorted, sharp boundary. |
| 161-194cm | 5 | Dark greyish brown (10YR4/2) | Compact sandy clay, moderately sorted, occasional stones and grit inclusions, one potsherd, sharp boundary. |

| | | | |
|---|---|---|---|
| >194cm | 6 | Yellowish brown (10YR5/4) | Compact silty clay, well sorted, occasional grit inclusions, frequent calcareous nodules, lowest boundary not excavated. |
| 159-179cm | 7 | N/a | Collapsed wall |

Table 10:18: Section 412-17.

| **Depth (cm) (BGL)** | **Context number** | **Munsell soil colour** | **Description** |
|---|---|---|---|
| 0-5cm | 1 | Yellowish brown (10YR5/4) | Compact, sandy silt with occasional grit inclusions, moderately sorted, frequent roots, gradual boundary. |
| 5-85cm | 2 | Dark greyish brown (10YR4/2) | Loose, loamy silt with frequent flecks of charcoal, pebbles and large stones, moderately sorted, gradual boundary. |
| 85-118cm | 3 | Very dark brown (10YR2/2) | Moderately compact, sandy silt, moderately sorted, organic with rootlets, frequent grit inclusions, gradual boundary. |
| 118-127cm | 4 | Very dark greyish brown (10YR3/2) | Compact sandy silt, frequent grit inclusions, moderately sorted, sharp boundary. |
| 127-137cm | 5 | Dark greyish brown (10YR4/2) | Compact sandy clay, moderately sorted, occasional stones and grit inclusions, sharp boundary. |
| >137cm | 6 | Yellowish brown (10YR5/4) | Compact silty clay, well sorted, occasional grit inclusions, lowest boundary not excavated. |
| >116cm | 7 | N/a | Compact stone layer, sub-angular in shape, 5cm in size, only exposed on the West side of trench, continued beyond limit of excavation. |
| 116-129cm | 8 | N/a | Collapsed wall |

# Images

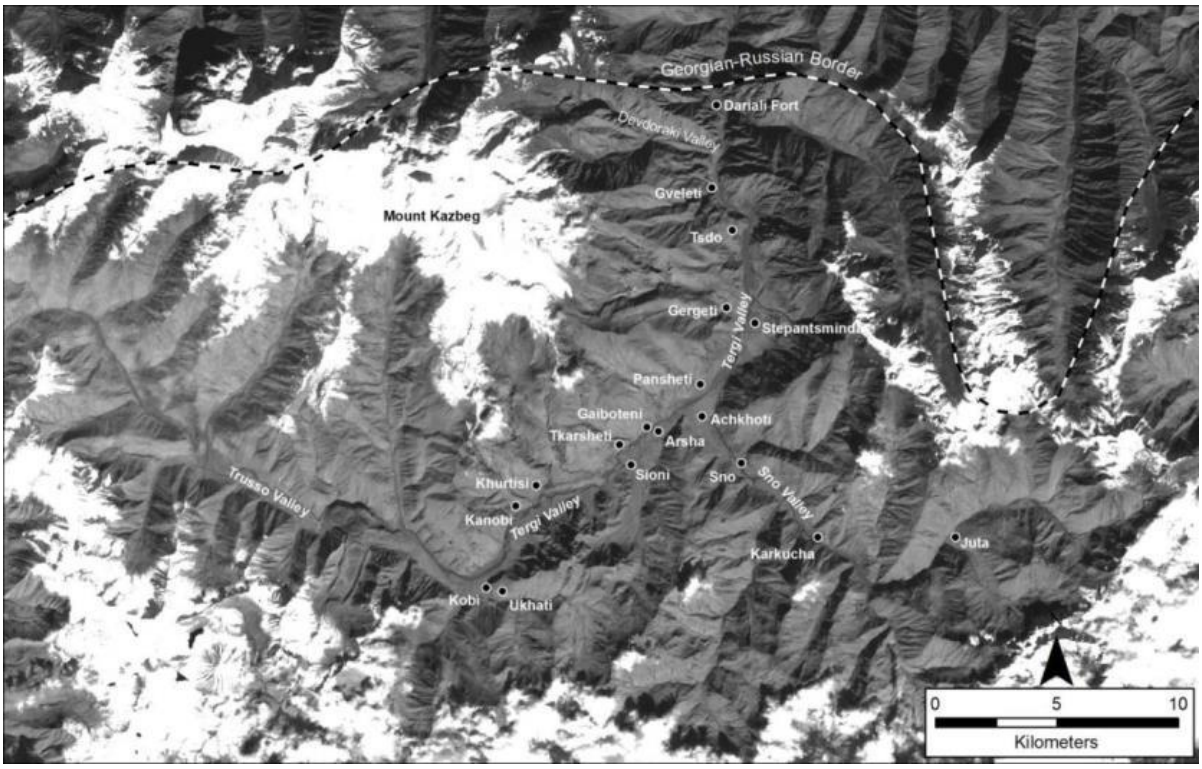

Fig. 10:1: Location of the Darial Gorge and the valleys that make up historical Khevi. Imagery: panchromatic Landsat 7 acquired 6 October 2002 (data available from the U.S. Geological Survey.

Fig. 10:2: A) The Tergi River Valley near Dariali Fort, B) The Tergi River Valley near Sioni, C) The Sno River Valley near Sno.

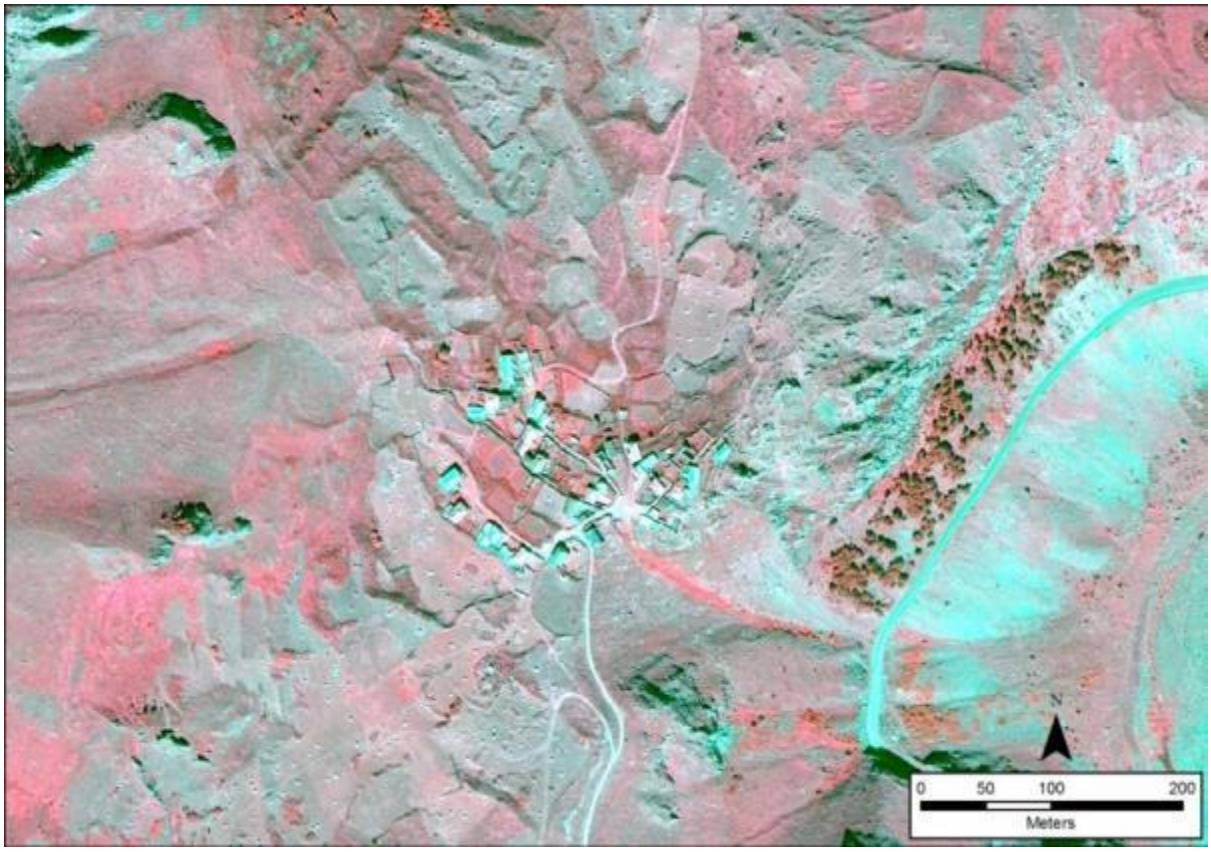

Fig. 10:3: A false colour infrared (NIR1, R, G) image of fields in the vicinity of Tsdo (DPS-6). Vegetation appears bright red, while the recently harvested fields appear grey. Hay bales (visible as small light-coloured dots) are visible within the harvested fields to the north and south-west of the village. Imagery: WorldView-2 acquired 1 September 2010 (© DigitalGlobe, Inc. All Rights Reserved).


Fig. 10:4: Satellite images of the settlement of Stepantsminda. A) Landsat 7 acquired 6 October 2002 (data available from the U.S. Geological Survey), B) WorldView-2 acquired 1 September 2010 (© DigitalGlobe, Inc. All Rights Reserved), C) CORONA Mission 1105 acquired 7 November 1968 (data available from the U.S. Geological Survey).

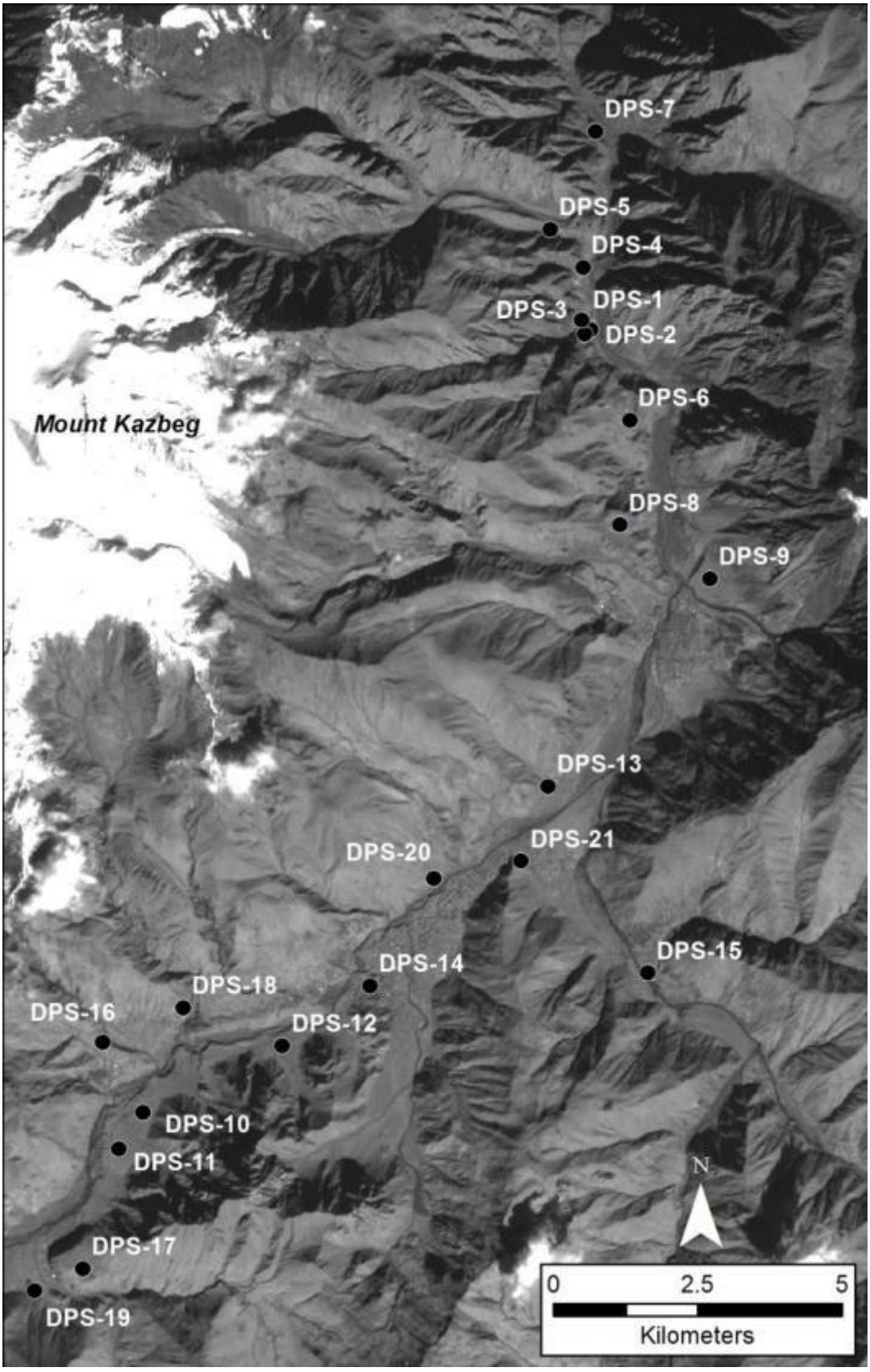

Fig. 10:5: Sites recorded by the DPS survey. Imagery: panchromatic Landsat 7 acquired 6 October 2002 (data available from the U.S. Geological Survey)

Fig. 10:6: Location of Dariali Fort cemetery (DPS-7). Imagery: WorldView-2 acquired 1 September 2010 (© DigitalGlobe, Inc. All Rights Reserved).

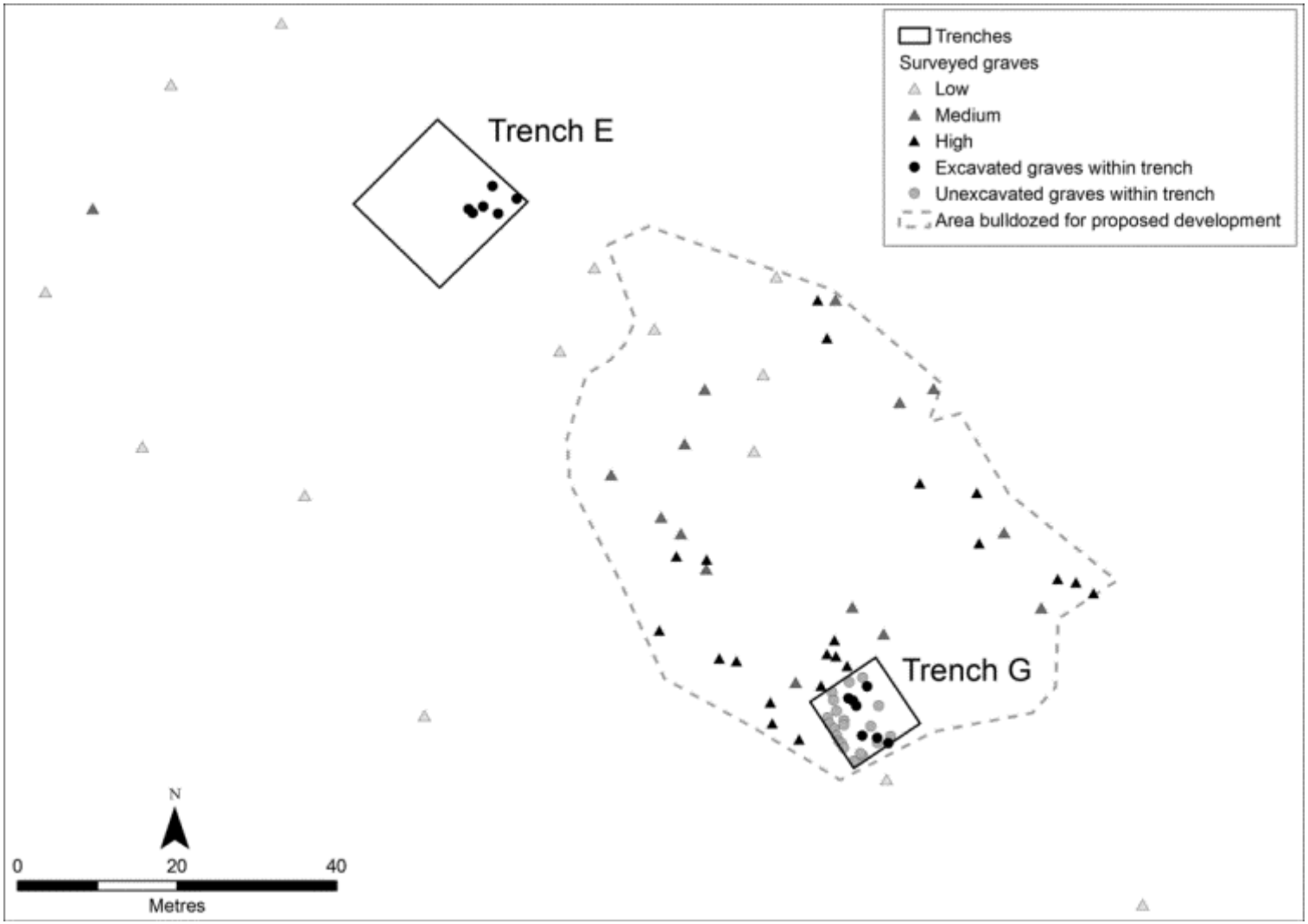


Fig. 10:7: Graves south of Dariali Fort and the locations of Trench E and G. Each feature was assigned a certainty assessment – low, medium, high, or definite (within the limits of the cleared Trench E or G areas).

Fig. 10:8: The Amali Valley looking west toward the glacier in 2013. Photo by Dan Lawrence.

Fig. 10:9: The Amali Valley looking east in 2016 following the landslide. Drone Photo by Davit Naskidashvili.

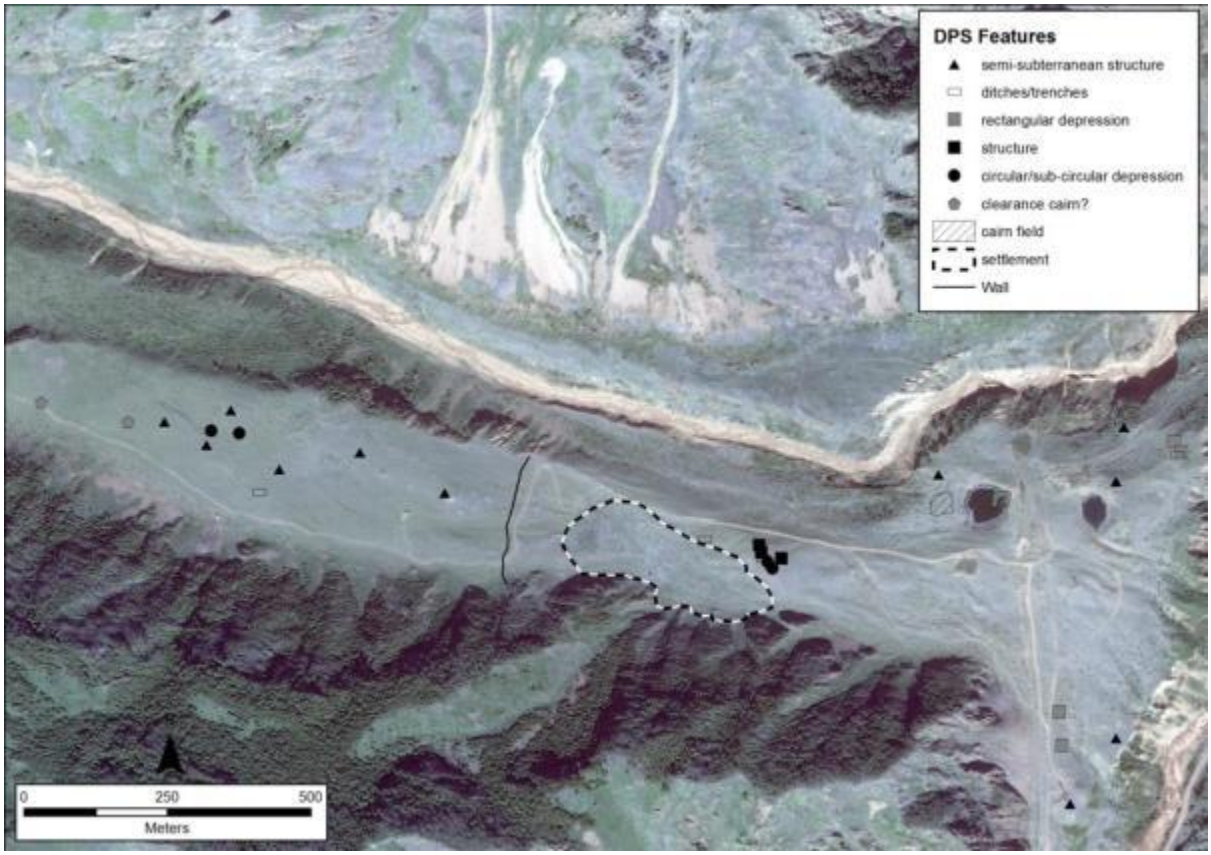

Fig. 10:10: Map of the features recorded in the Amali Valley. This includes a settlement (DPS-5) indicated by the broken line and associated features within the valley. Imagery: WorldView-2 acquired 1 September 2010 (© DigitalGlobe, Inc. All Rights Reserved).

Fig. 10:11: The settlement of Daba in the Amali Valley. The wall which spans the width of the valley is visible in the mid ground parallel to, and in front of, the modern track. Photo by Dan Lawrence.

Fig. 10:12: Semi-subterranean features in the Amali Valley. Photo by Seth Priestman.

Fig. 10:13: Location of the cairn field next to the lake. Drone Photo by Davit Naskidashvili.

Fig. 10:14: Closer view of the cairn field in the Amali Valley. Drone Photo by Davit Naskidashvili.

Fig. 10:15: One of the cairns in the Amali Valley. Photo by Kristen Hopper.

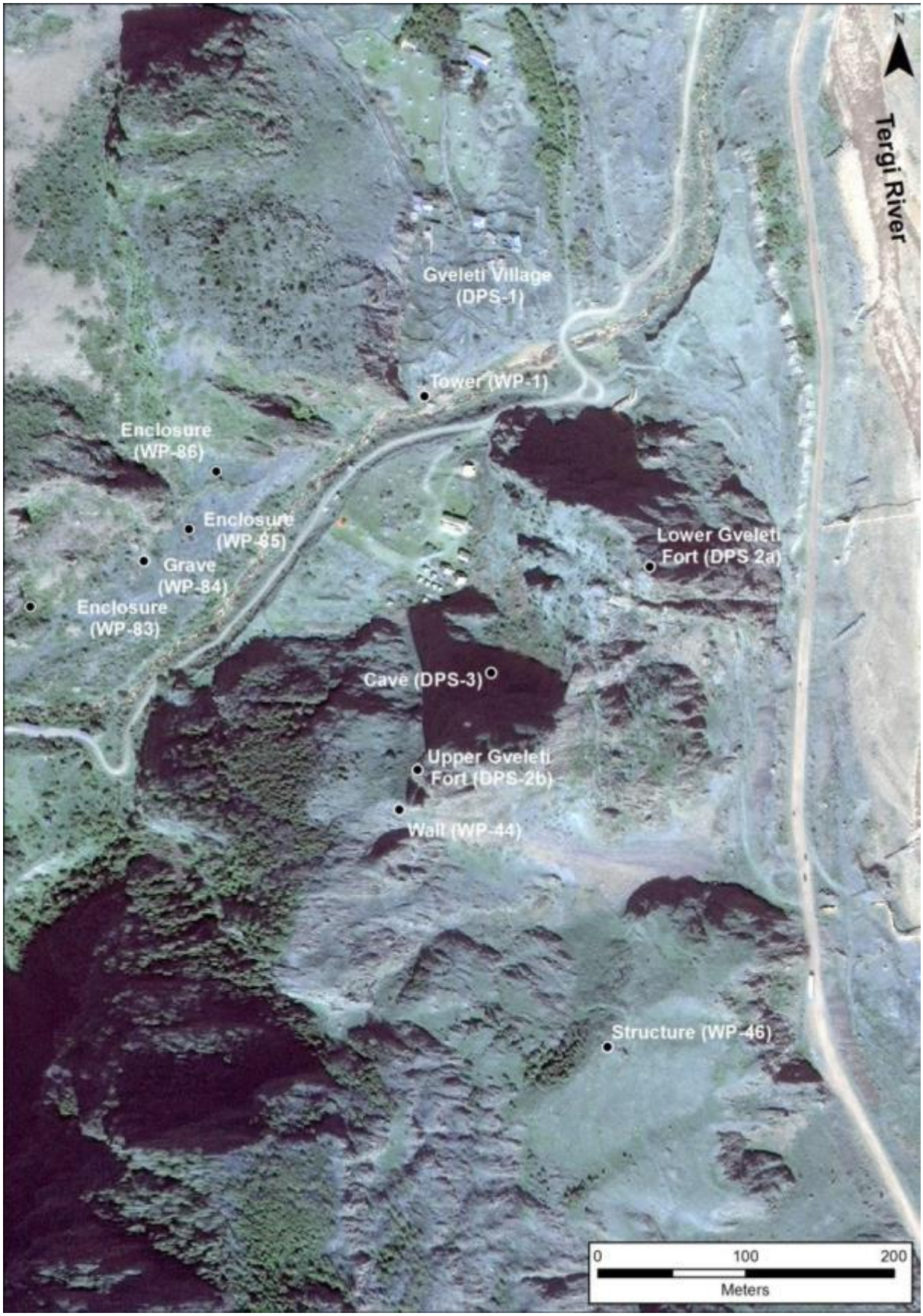

Fig. 10:16: Map of features near Gveleti ). Imagery: WorldView-2 acquired 1 September 2010 (© DigitalGlobe, Inc. All Rights Reserved).

Fig. 10:17: Gveleti Village, looking north. Photo by Seth Priestman.

Fig. 10:18: Ruins of tower at Gveleti. Photo by Kristen Hopper.

Fig. 10:19: The approach to Gveleti Fort. The holiday camp is in the foreground. The walled cave is indicated with an arrow. Photo by Kristen Hopper.

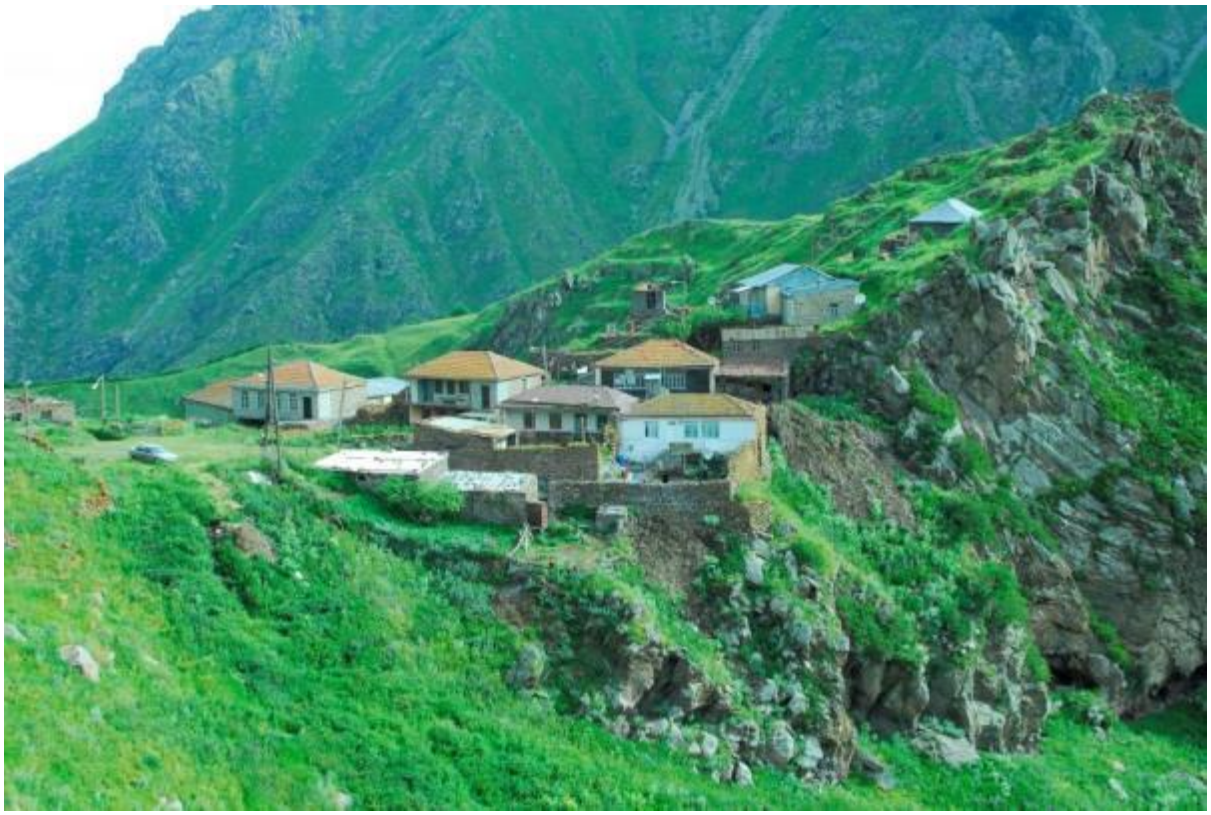

Fig. 10:20: The Village of Tsdo looking north-west. Photo by Dan Lawrence.

Fig. 10:21: Ruins of earlier structures between the modern houses at Tsdo. Ruins are also visible on the ridgeline in the background. Photo by Seth Priestman.

Fig. 10:22: The fortified building or tower on the outcrop above Tsdo overlooking the Tergi River. A stone statue of a ram is visible on top of the wall. Photo by Dan Lawrence.

Fig. 10:23: Left: the tower-like structure at Tsdo (with ram) and the modern shrine (white stone structure). Right: the stone ram. Photos by Dan Lawrence.

Fig. 10:24: Structures at DPS-8. Possibly the remains of the settlement called Kobi (Kvabi). Photo by Dan Lawrence.

Fig. 10:25: Wall and other features at DPS-8. Photo by Dan Lawrence.

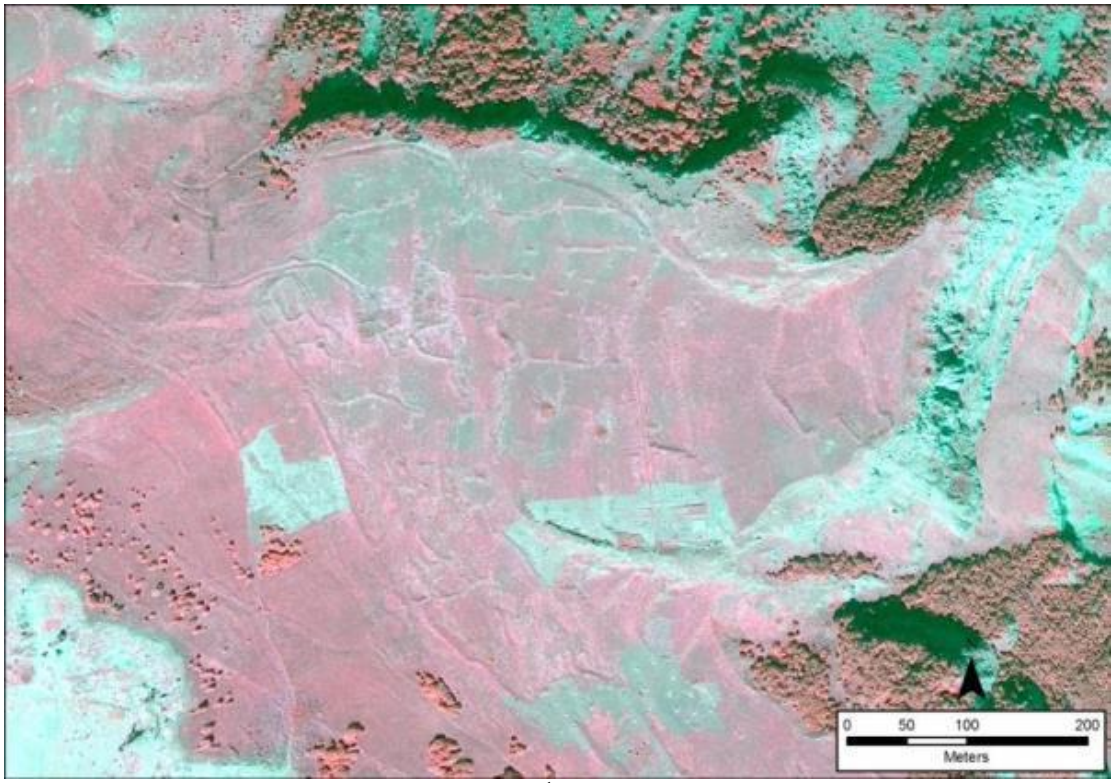


Fig. 10:26: A false colour infrared (NIR[1], R, G) image of fields in the vicinity of DPS-8. Vegetation appears bright red, while the recently harvested fields appear grey. Hay bales (visible as small light coloured dots) are visible within the harvested fields in the bottom centre of the image. Imagery: WorldView-2 acquired 1 September 2010 (© DigitalGlobe, Inc. All Rights Reserved).

Fig. 10:27: Photos of structures on hill in the Chkheri Valley (DPS-52) looking toward Stepantsminda. Photo by Przemysław Polakiewicz**.**

Fig. 10:28: Low mounds in field at Old Kanobi (DPS-16). Photo by Kristen Hopper.

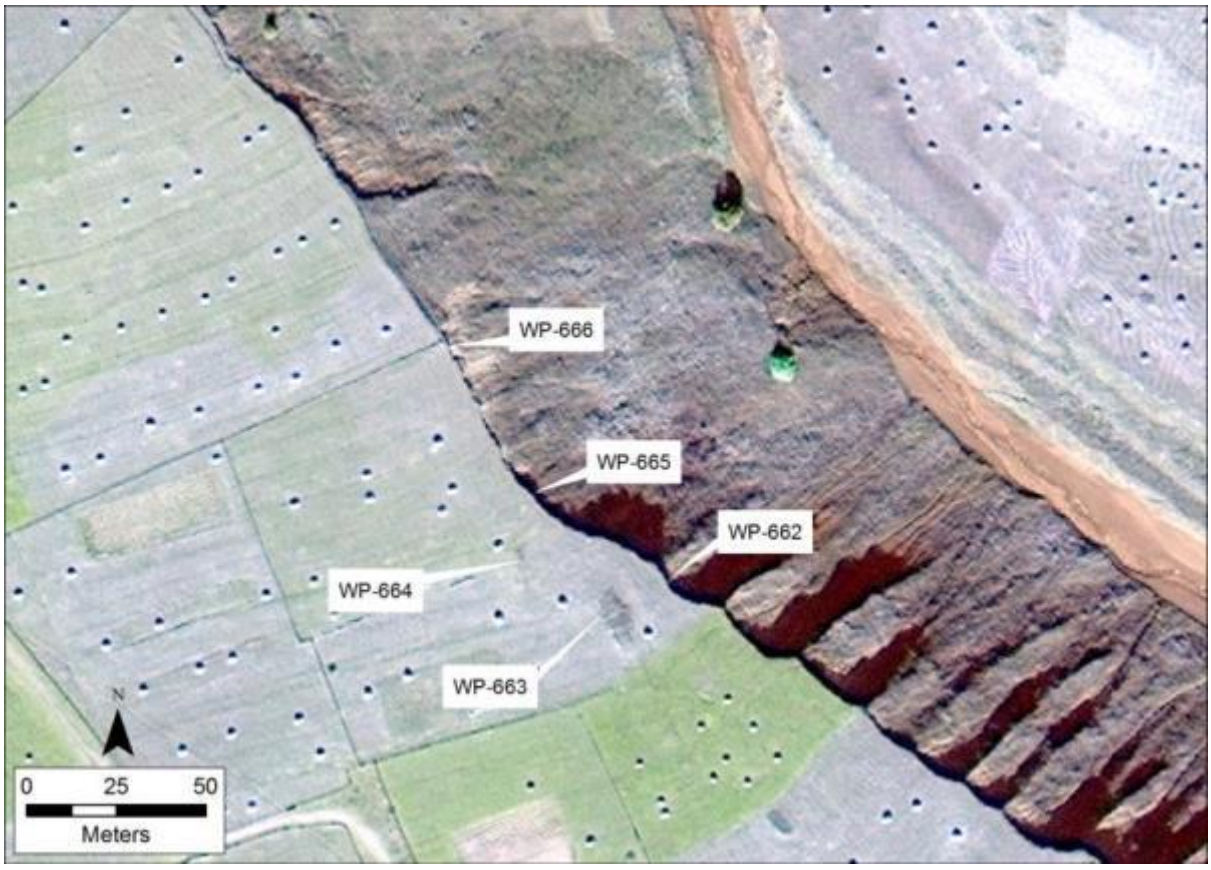


Fig. 10:29: Features recorded at DPS-16 (Old Kanobi). Imagery: WorldView-2 acquired 1 October 2012 (© DigitalGlobe, Inc. All Rights Reserved).

Fig.10:30: Tower south of Stepantsminda. Photo by Eberhard Sauer

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Fig. 10:31: Towers in Pansheti. Photo by Kristen Hopper.

Fig. 10:32: Arsha Fort. Photo by Kristen Hopper.

Fig. 10:33: Sioni Tower and church view. Photo by Dan Lawrence.

Fig. 10:34: Sioni Tower. Photo by Kristen Hopper.

Fig. 10:35: Khurtisi Tower. Photo by Dan Lawrence.

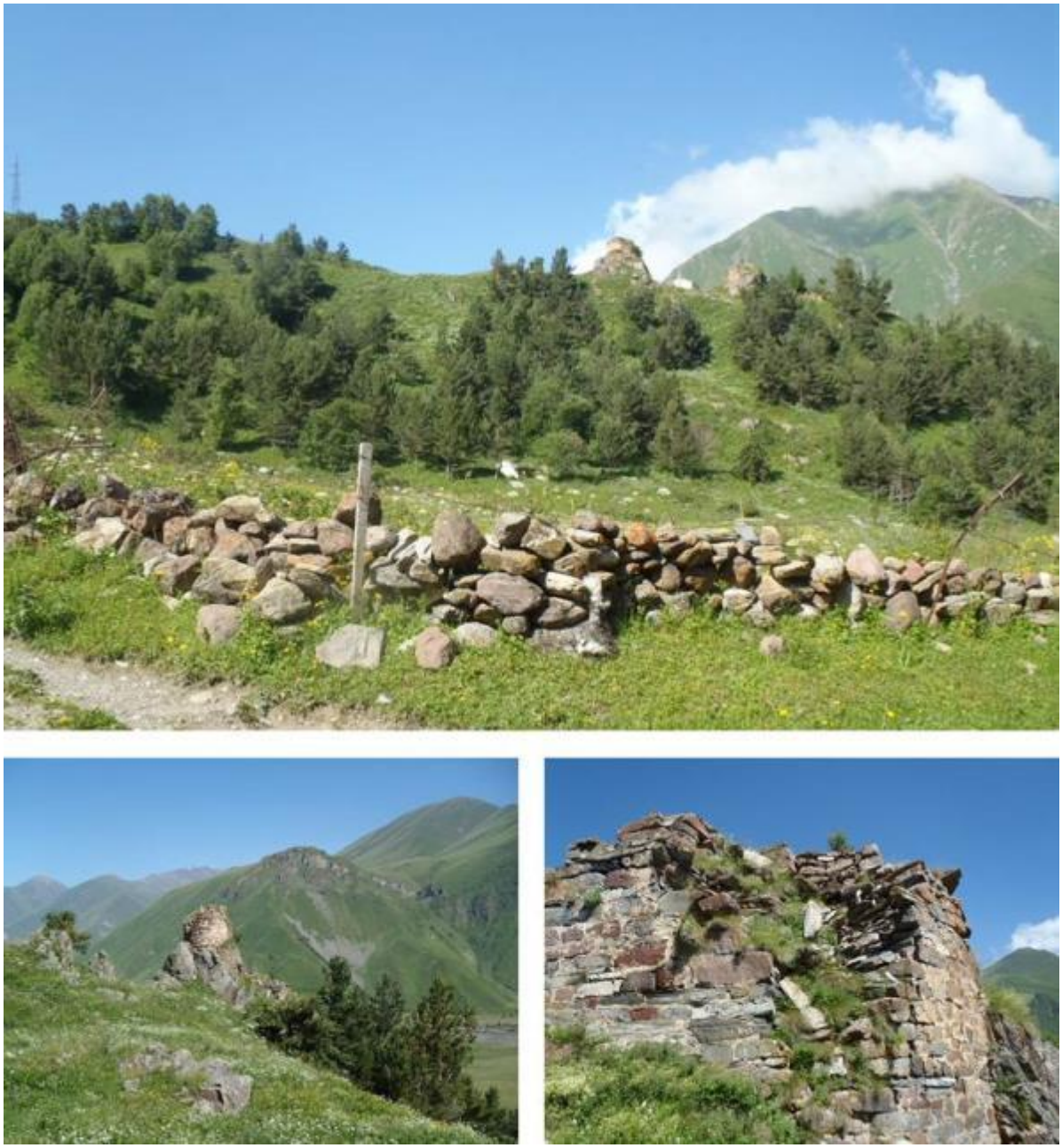

Fig. 10:36: Towers near Kobi and Ukhati. Photos by Kristen Hopper.

Fig. 10:37: Achkhoti Tower. Photo by Kristen Hopper.

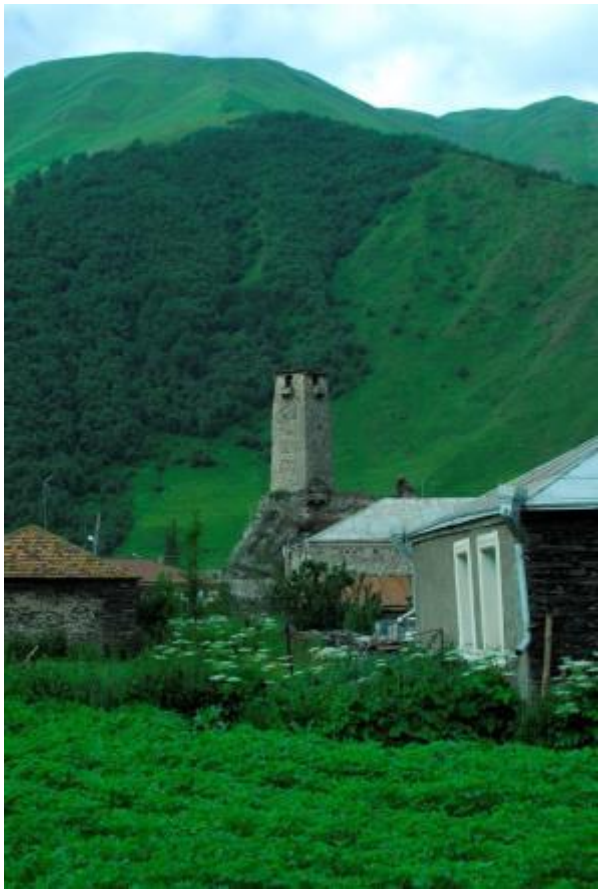

Fig. 10:38: Sno Tower. Photo by Dan Lawrence.

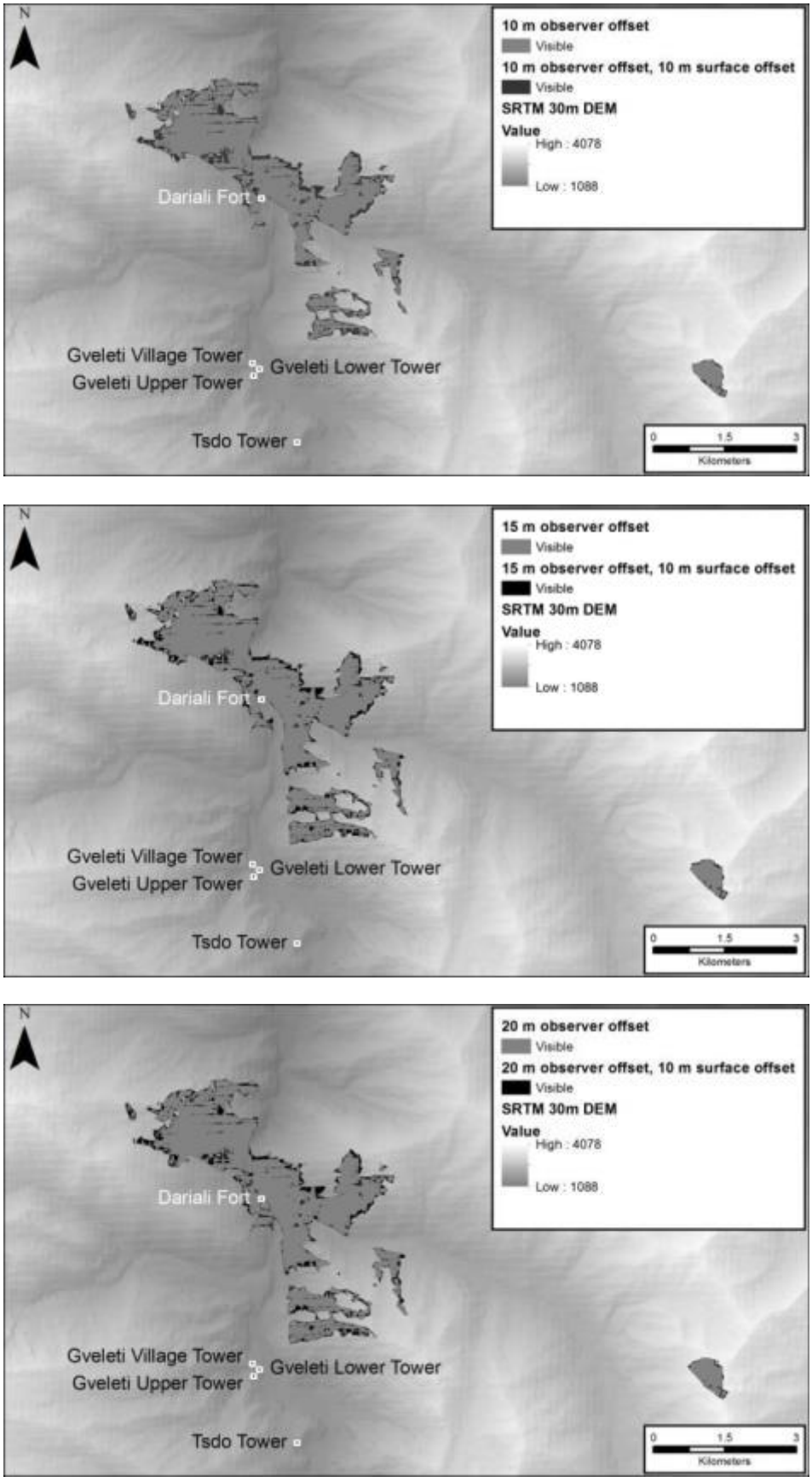

Fig. 10:39: Visibility from Dariali Fort for 10m, 15m and 20m observer heights. Imagery: SRTM 30m DEM (data available from the U.S. Geological Survey).

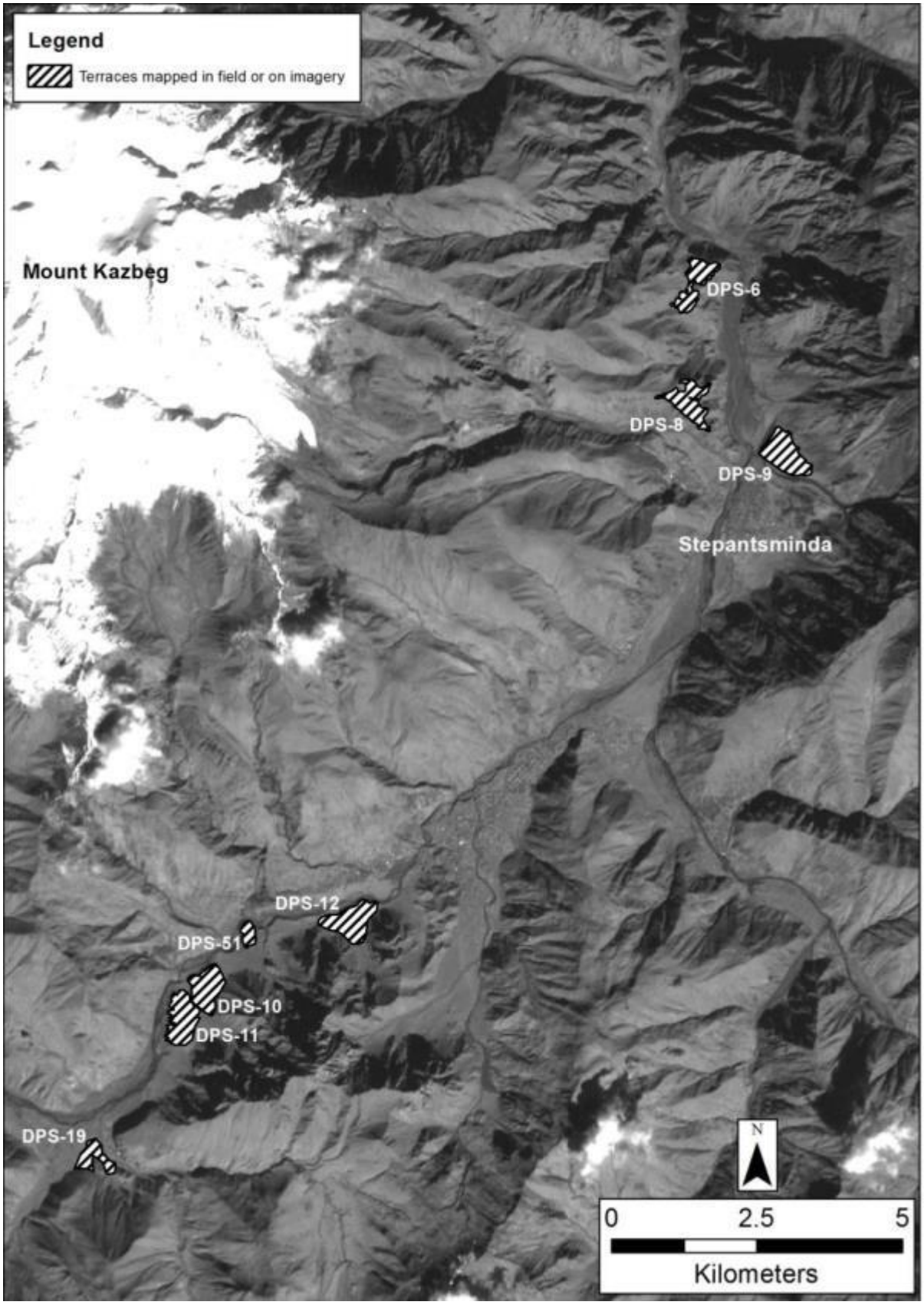

Fig. 10:40: Location of terraces mapped in the field and on the imagery. Imagery: panchromatic Landsat 7 acquired 6 October 2002 (data available from the U.S. Geological Survey).

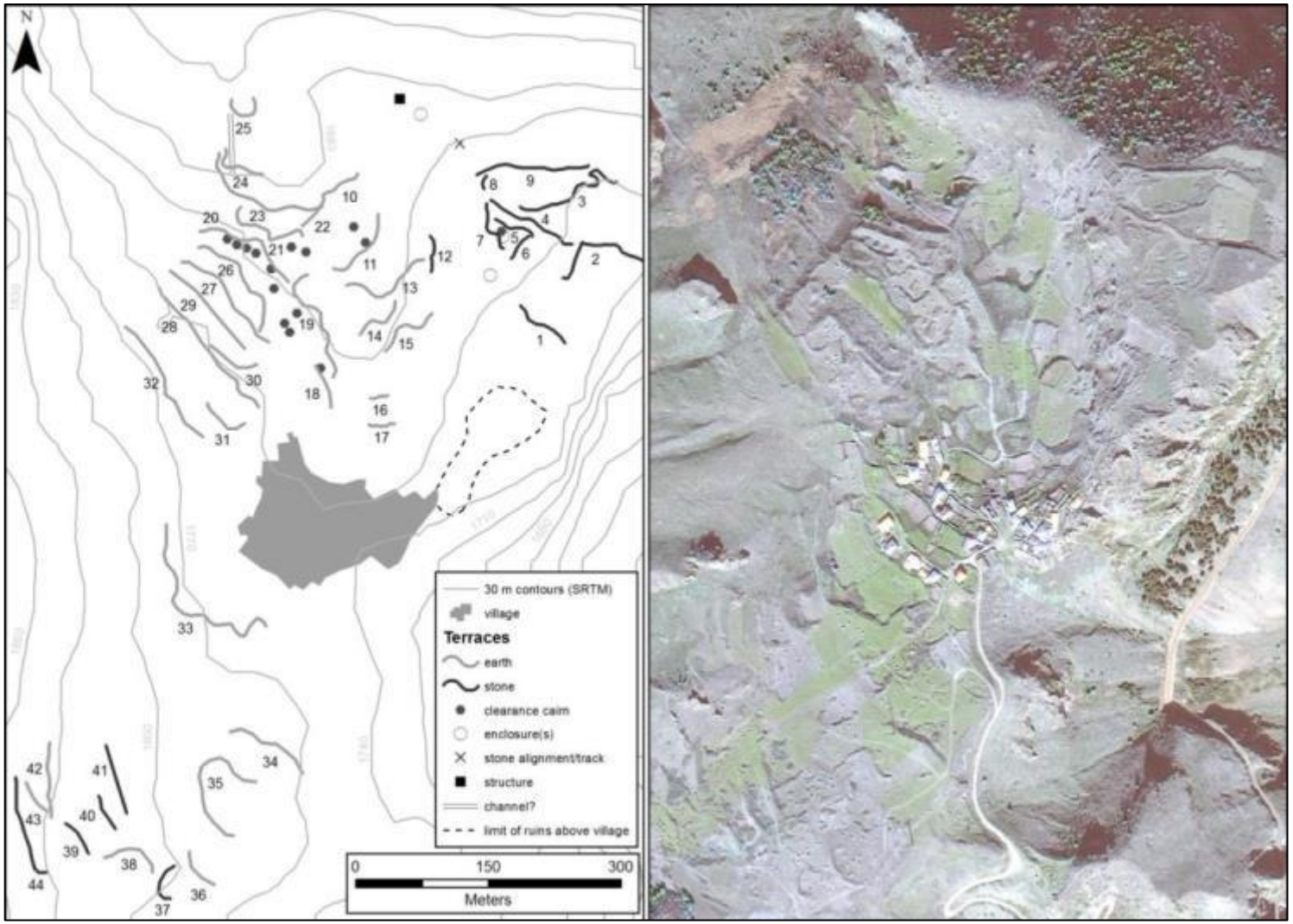


Fig. 10:41: Plan of the terraced fields and other features mapped at Tsdo (DPS-6). Imagery: WorldView-2 acquired 1 October 2012 (© DigitalGlobe, Inc. All Rights Reserved).

Fig. 10:42: Looking south toward the terraced fields at Tsdo (DPS-6). Photo by Seth Priestman.

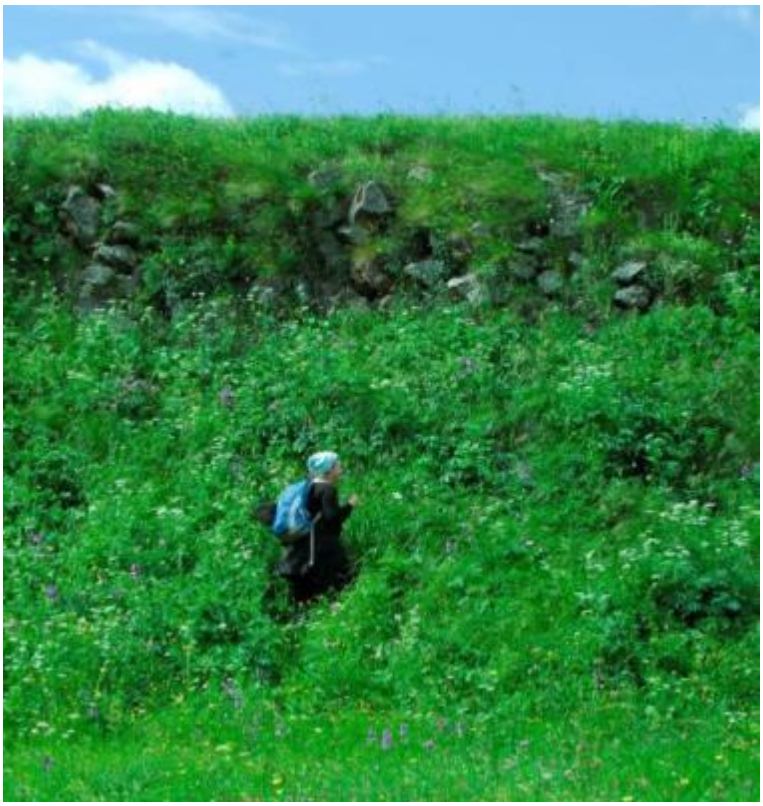

Fig. 10:43: Terrace riser 5 at Tsdo (DPS-6). The riser is c. 5m high and the facing is constructed of stone. Photo by Dan Lawrence.

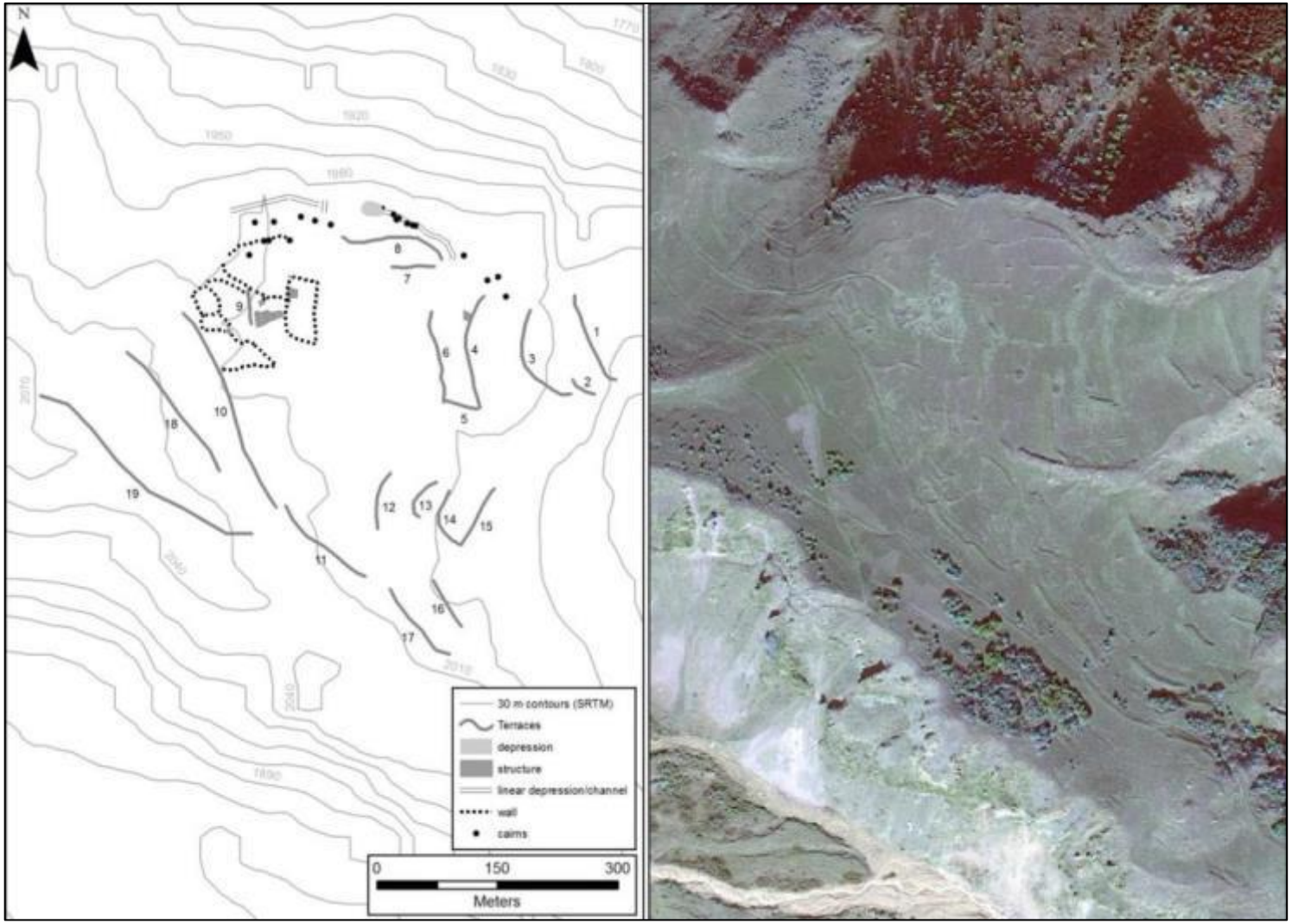


Fig. 10:44: Plan of terraces and other features at DPS-8. Imagery: WorldView-2 acquired 1 October2012 (© DigitalGlobe, Inc. All Rights Reserved).

Fig. 10:45: Terraces at DPS-8. Stepantsminda is visible in the background of the image. Photo by Dan Lawrence.

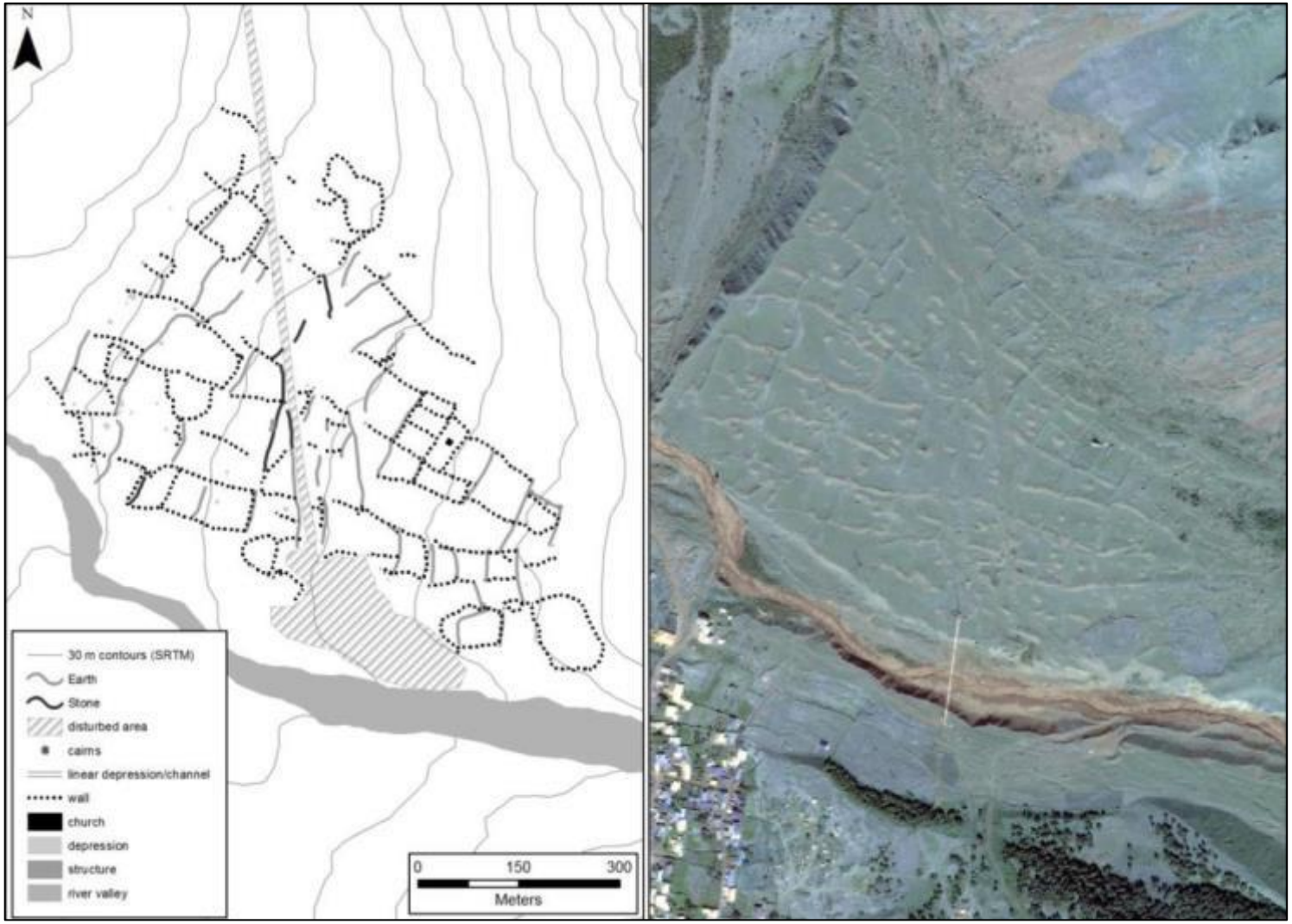


Fig. 10:46: Plan of terraces and other features at DPS-9. Imagery: WorldView-2 acquired 1 October2012 (© DigitalGlobe, Inc. All Rights Reserved).

Fig. 10:47: DPS-9. Stepantsminda is located to the east of the terrace field system. Photo by Dan Lawrence.

Fig. 10:48: One of the terraces at DPS-9. A rubble wall has been built at the bottom of the terrace riser. Photo by Dan Lawrence.

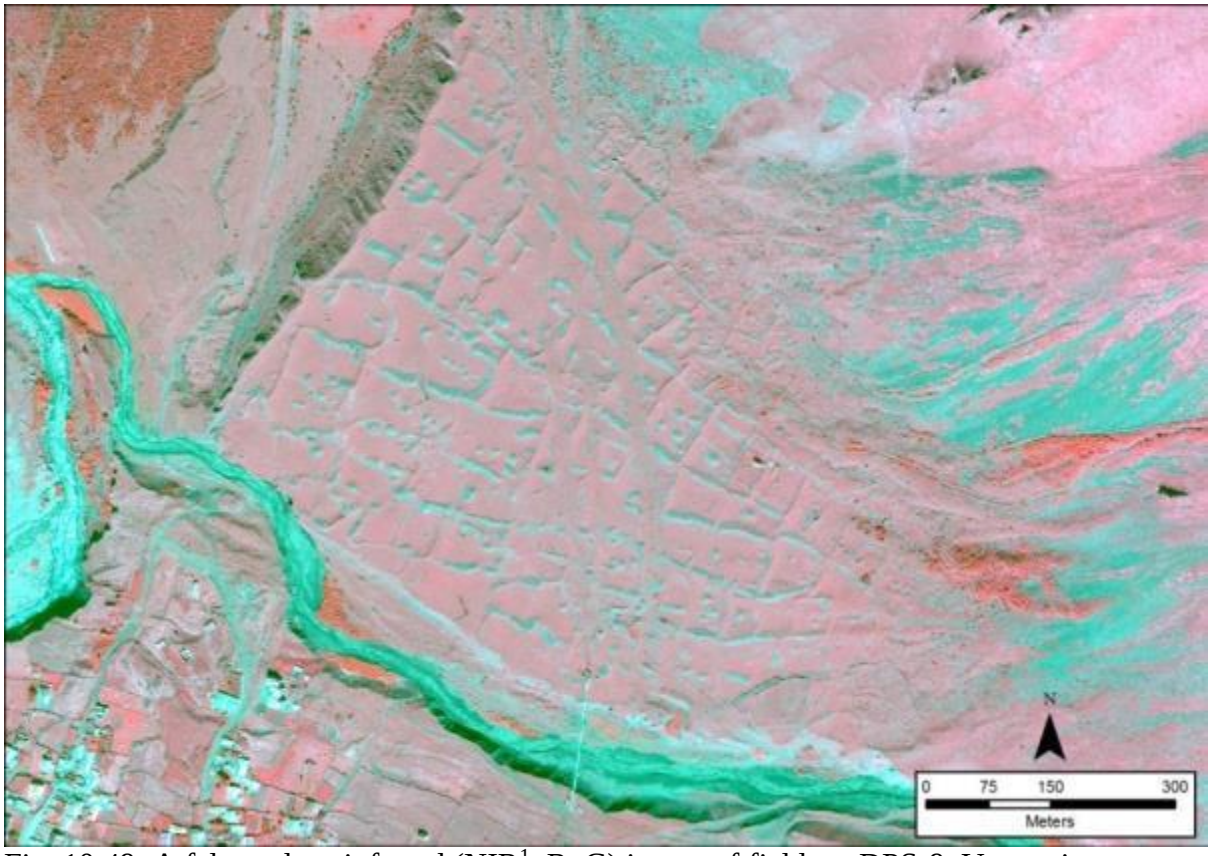

Fig. 10:49: A false colour infrared (NIR[1], R, G) image of fields at DPS-9. Vegetation appears bright red. The lack of different ground cover within the field plots, excepting the small fenced in areas in bottom right of the image suggests that hay harvesting does not take place here. Imagery: WorldView-2 acquired 1 September 2010 (© DigitalGlobe, Inc. All Rights Reserved).

Fig. 10:50: Field systems in the vicinity of Stepantsminda visible on a CORONA image (left) acquired 7 November 1968 (data available from the U.S. Geological Survey) and on a WorldView-2 image (right) acquired 1 September 2010 (© DigitalGlobe, Inc. All Rights Reserved). Note that the field systems visible to the south of Stepantsminda on the CORONA image were built over by the time the WorldView-2 image was taken.

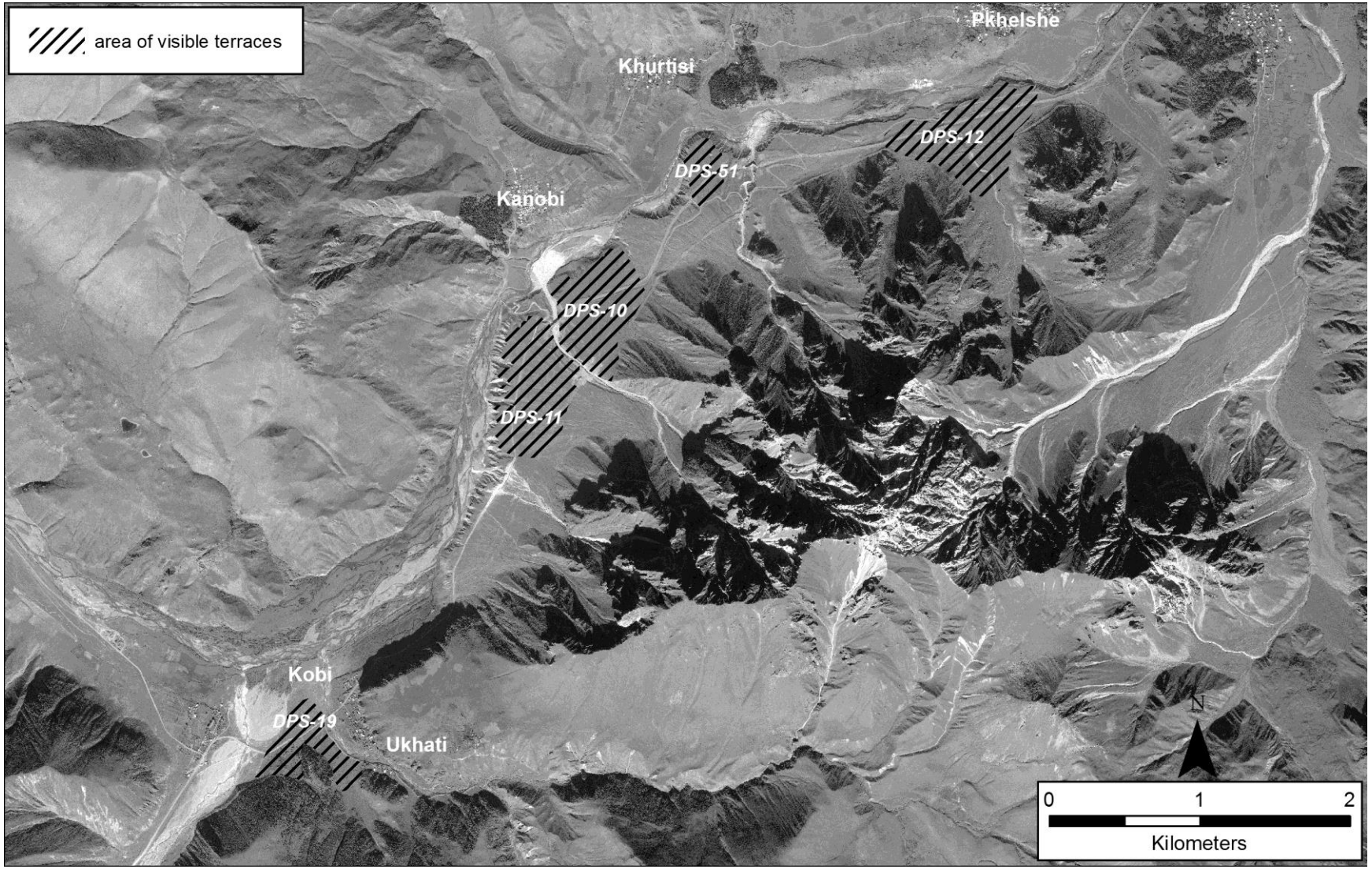

Fig. 10:51: Terraces south of Stepantsminda. (© DigitalGlobe, Inc. All Rights Reserved).

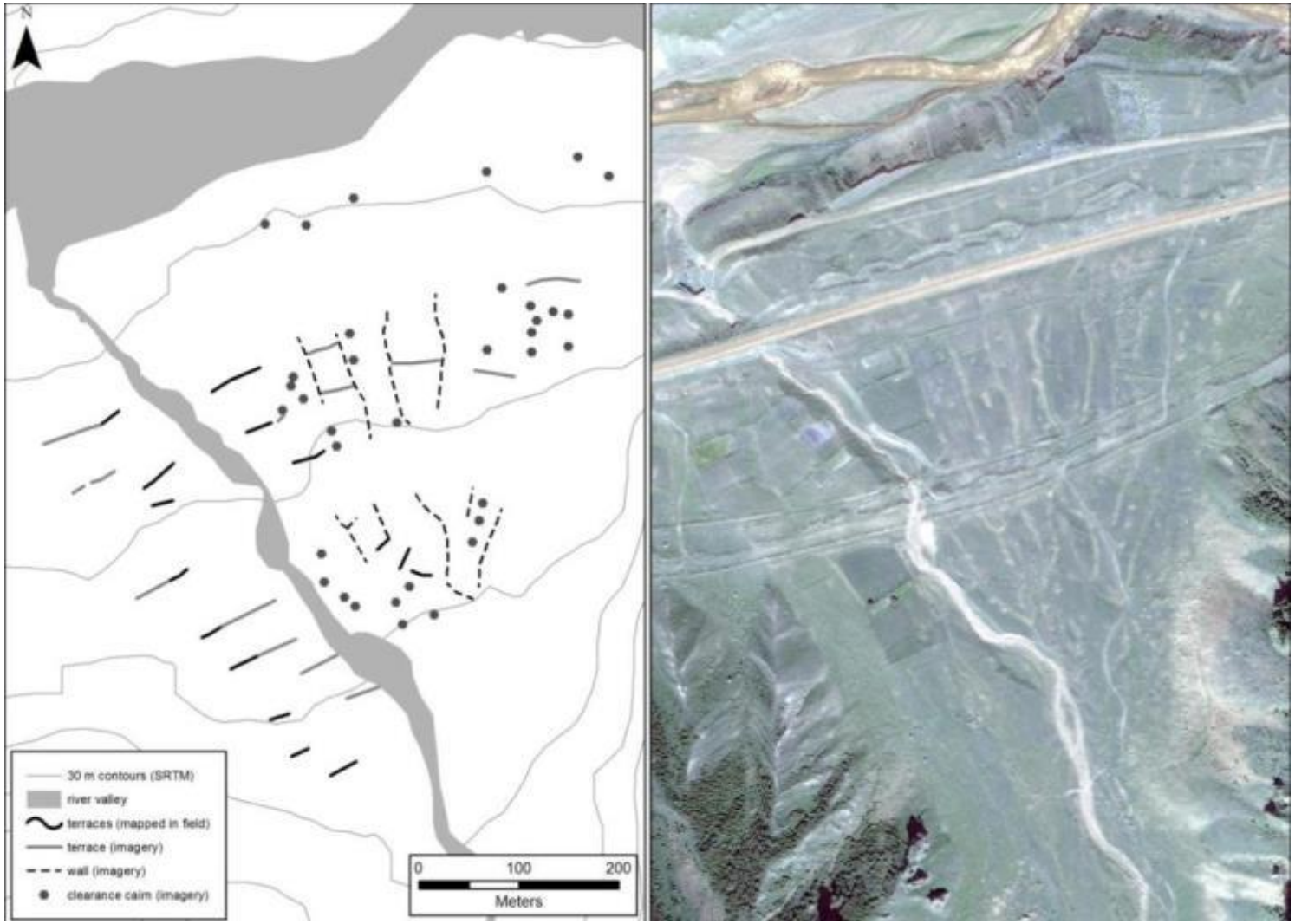

Fig. 10:52: Plan of terraces and other features at DPS-12. Imagery: WorldView-2 acquired 1 September 2010 (© DigitalGlobe, Inc. All Rights Reserved).

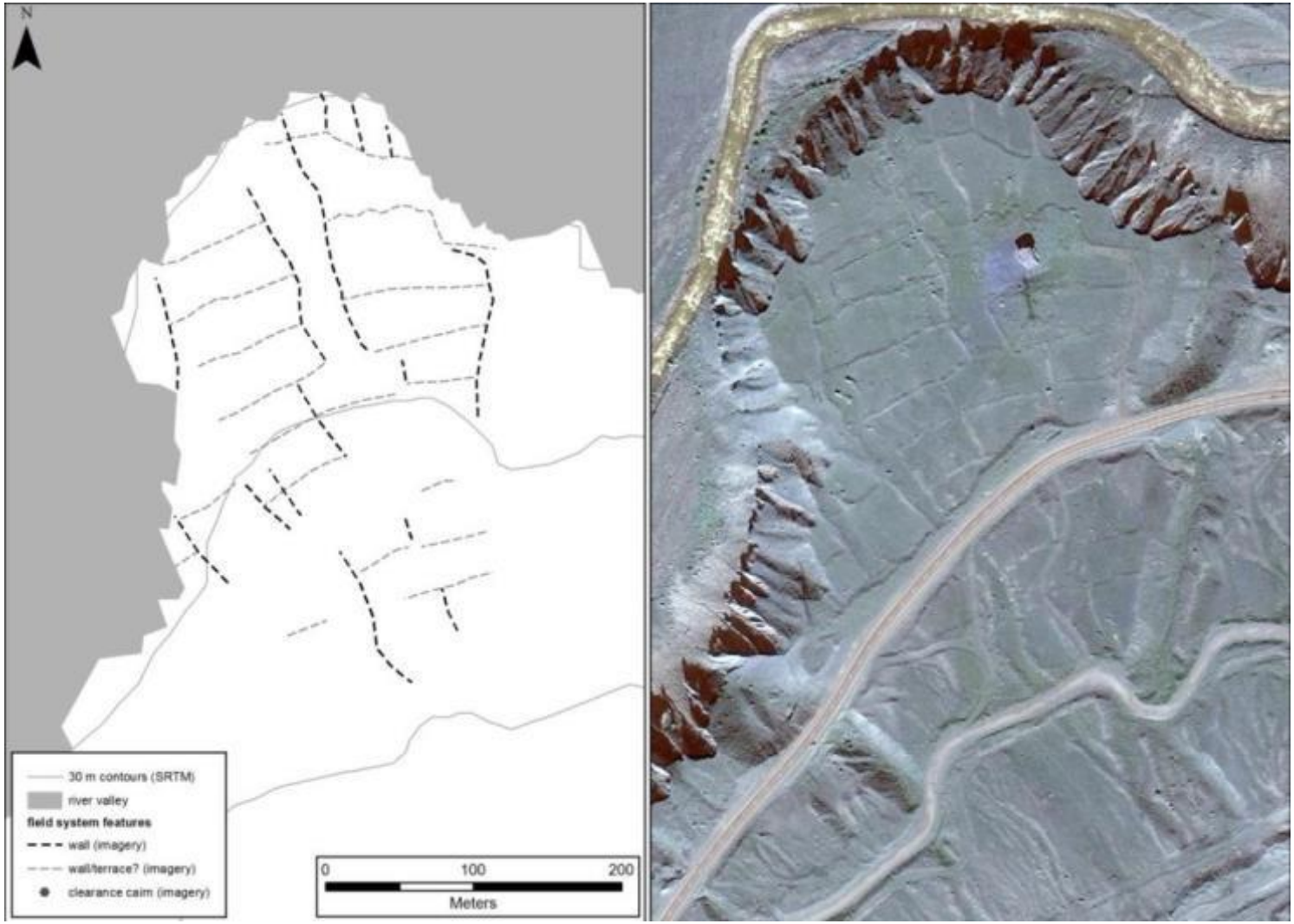

Fig. 10:53: Plan of terraces and other features at DPS-51. Imagery: WorldView-2 acquired 1 October 2012 (© DigitalGlobe, Inc. All Rights Reserved).

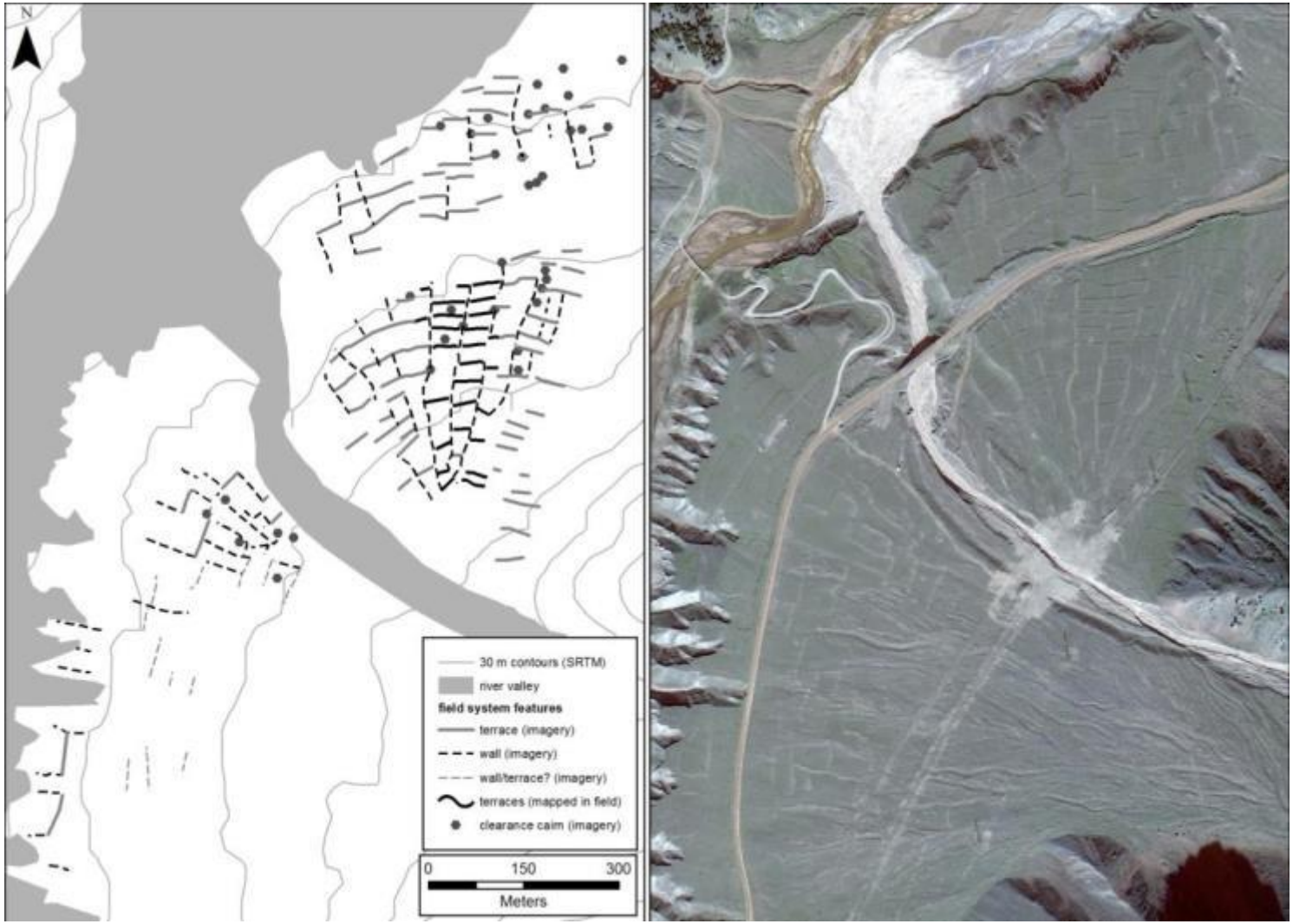

Fig. 10:54: Plan of terraces and other features at DPS-10 and DPS-11. Imagery: WorldView-2 acquired 1 October 2012 (© DigitalGlobe, Inc. All Rights Reserved).

Fig. 10:55: DPS-10 and 11 looking south-west. Photo by Dan Lawrence.

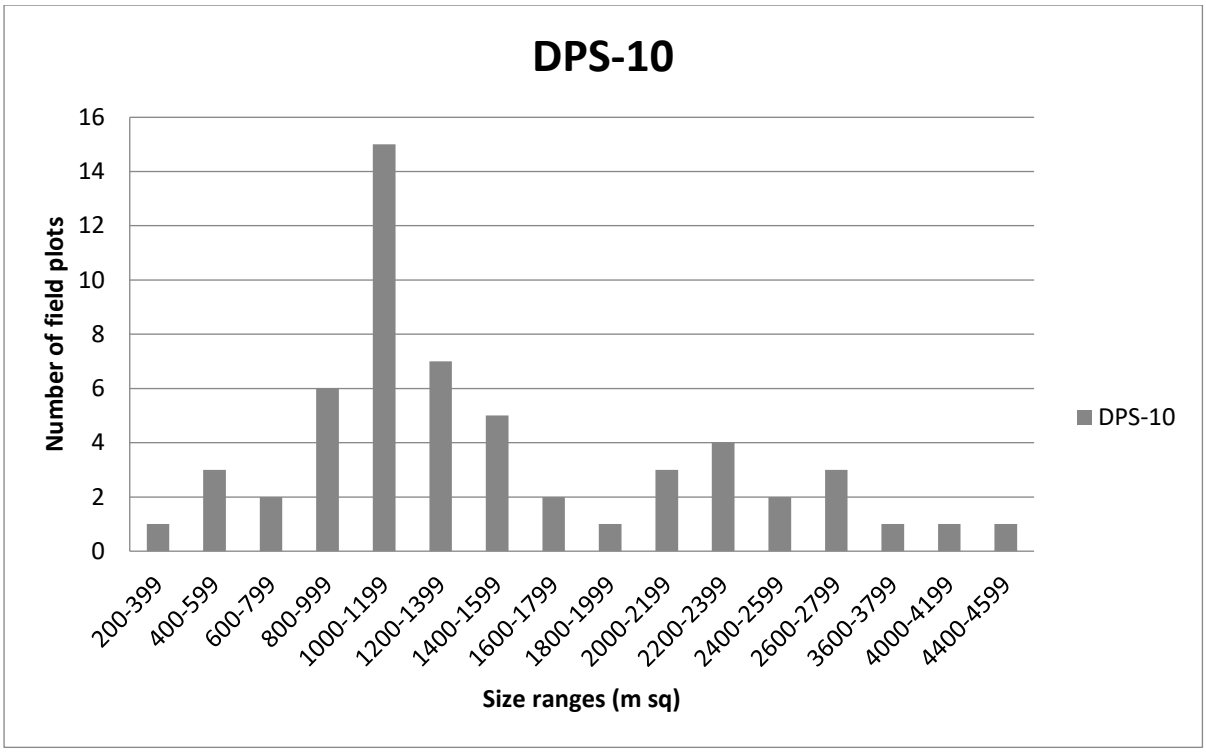


Fig. 10:56: Size range of field plots at DPS-10.

Fig. 10:57: DPS-26. Imagery: WorldView-2 acquired 1 September 2010. (© DigitalGlobe, Inc. All Rights Reserved).

Fig. 10:58: DPS-48. Imagery: WorldView-2 acquired 1 October 2012 (© DigitalGlobe, Inc. All Rights Reserved).

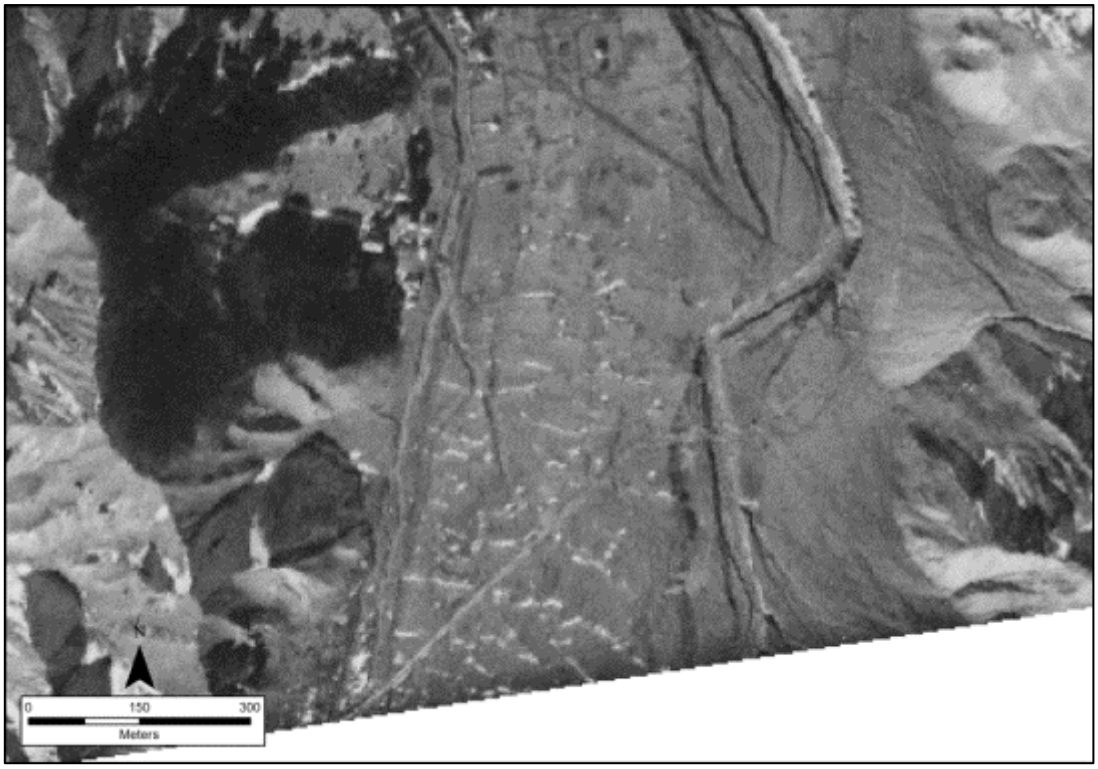

Fig. 10:59: Field systems at DPS-50. Imagery: CORONA Mission 1105 acquired 7 November 1968.

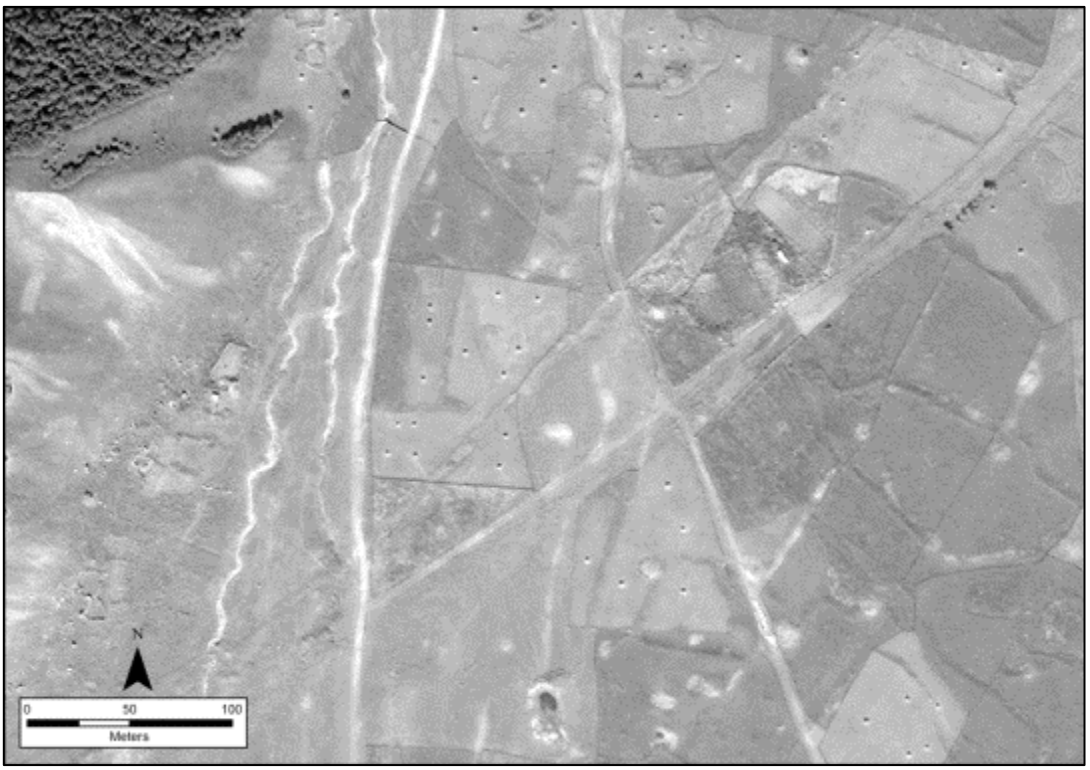

Fig. 10:60: Features at DPS-50 including ruined structures and enclosures (indicated by arrows), field walls and possible clearance cairns. Imagery: WorldView-2 acquired on 1 September 2010 (© DigitalGlobe, Inc. All Rights Reserved).

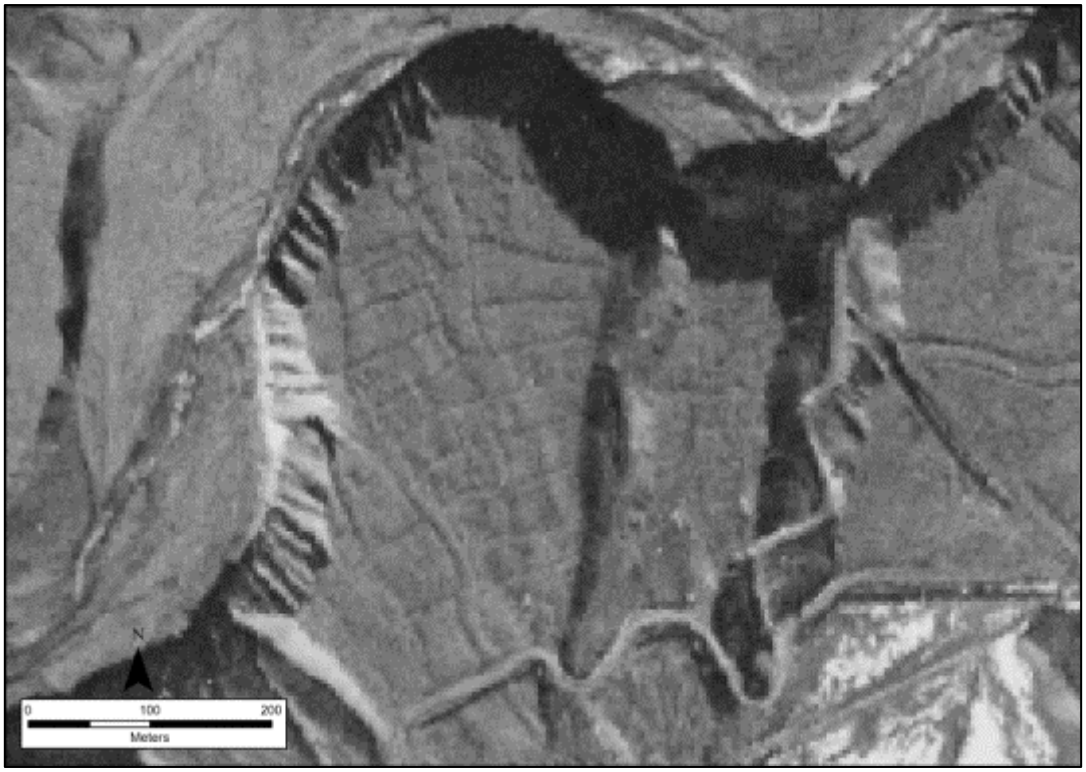

Fig. 10:61: DPS-51. Imagery: CORONA Mission 1105 acquired 7 November 1968.

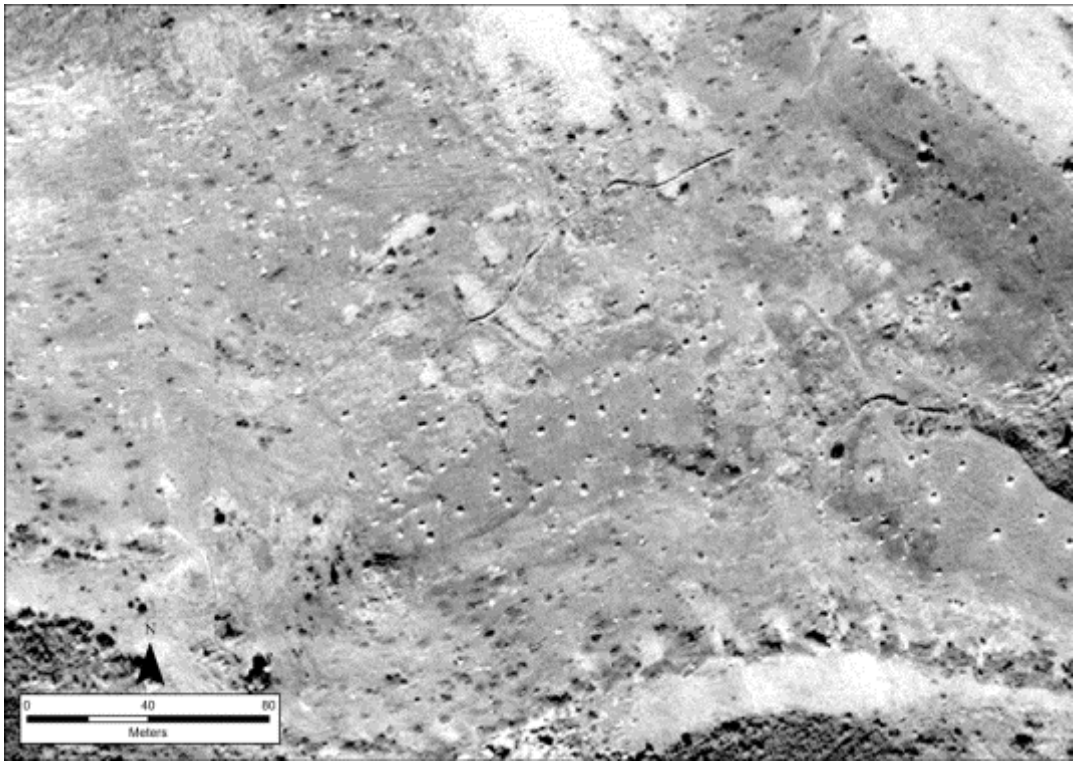

Fig. 10:62: DPS-52. Imagery: WorldView-2 acquired 1 October 2012 (© DigitalGlobe, Inc. All Rights Reserved).

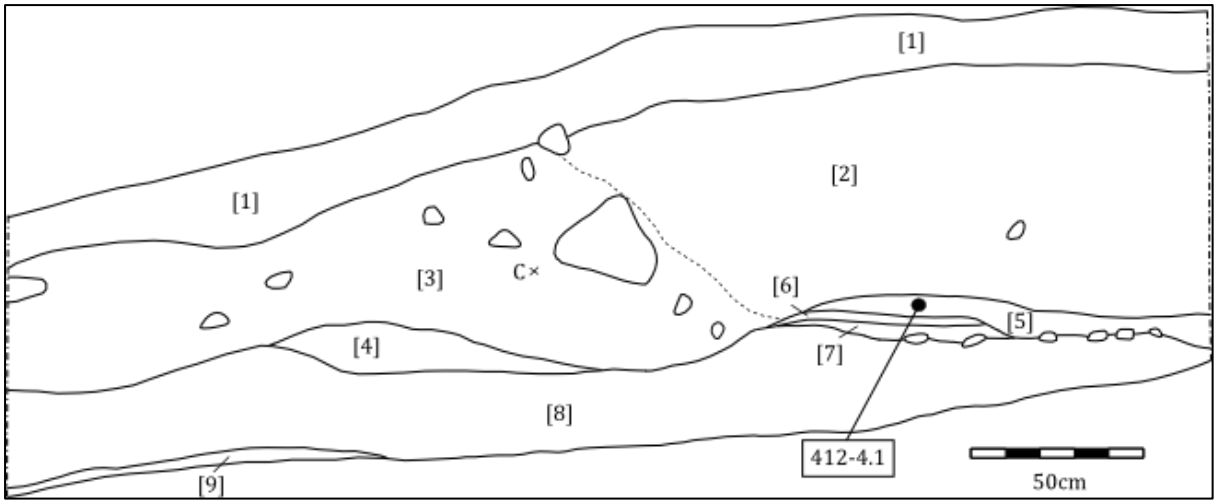

Fig. 10:63: Section through terrace sequence 412-4 at DPS-10. The locations of OSL test samples are indicated.

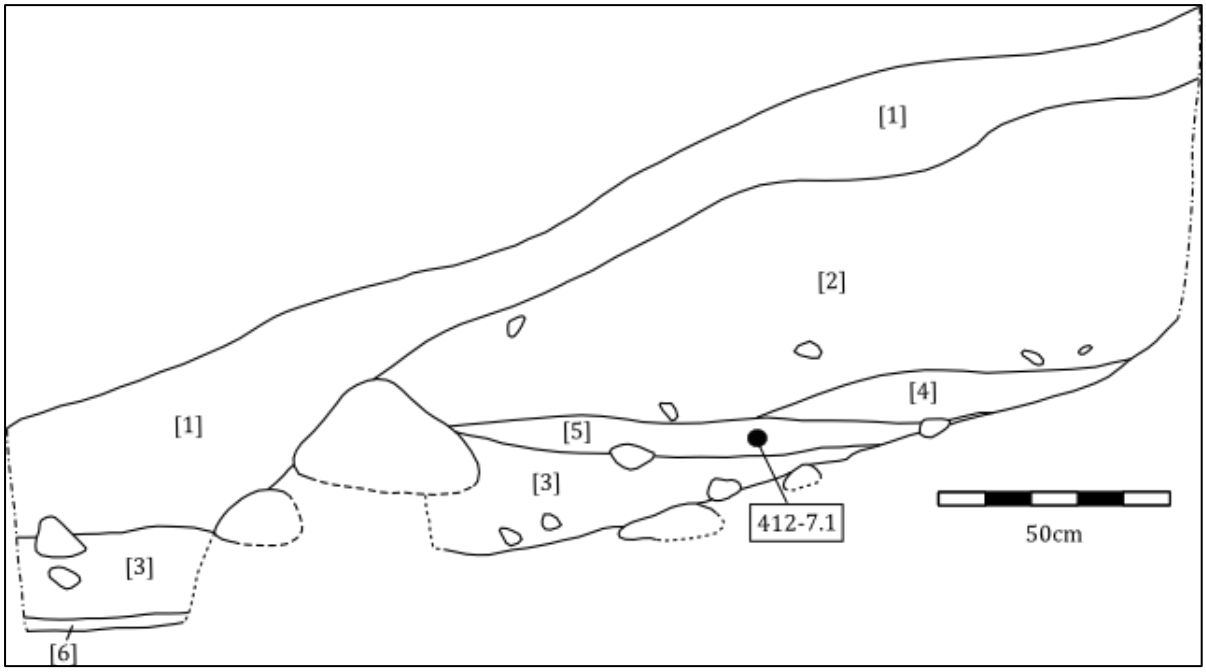

Fig. 10:64: Section through terrace sequence 412-7 at DPS-10. The locations of OSL test samples are indicated.

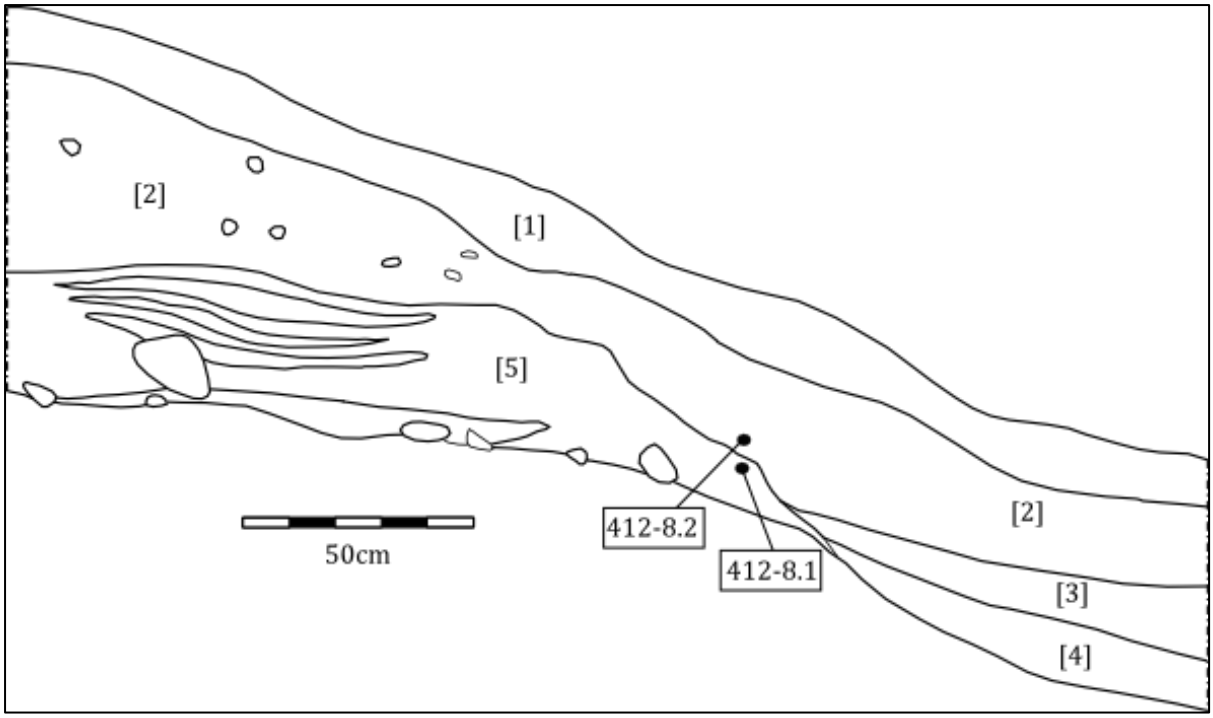

Fig. 10:65: Section through terrace sequence 412-8 at DPS-10. The locations of OSL test samples are indicated.

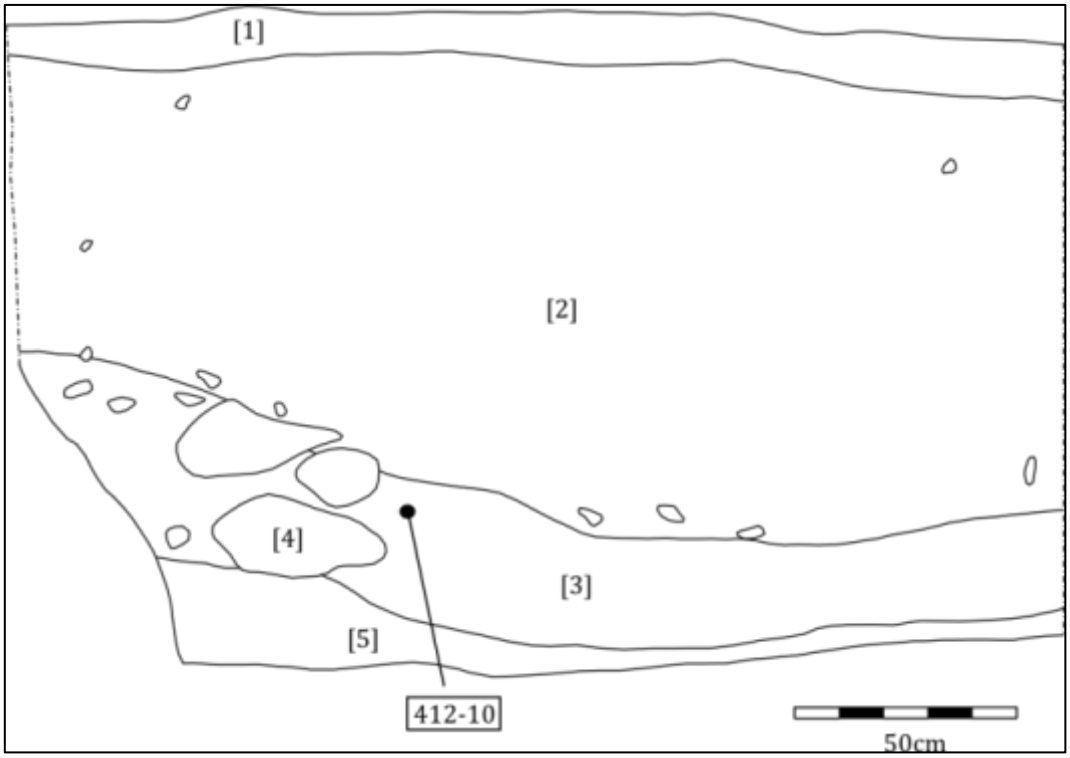

Fig. 10:66: Section through terrace sequence 412-10 at DPS-9. The locations of OSL test samples are indicated.

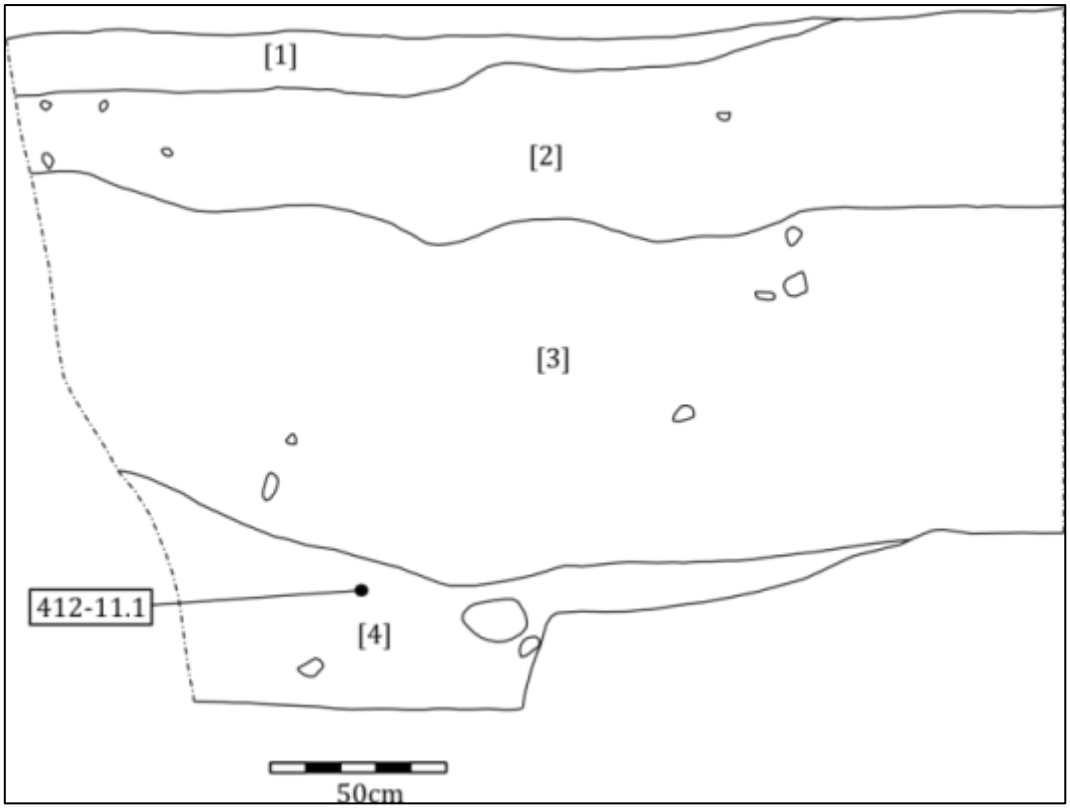


Fig. 10:67: Section through terrace sequence 412-11 at DPS-9. The locations of OSL test samples are indicated.

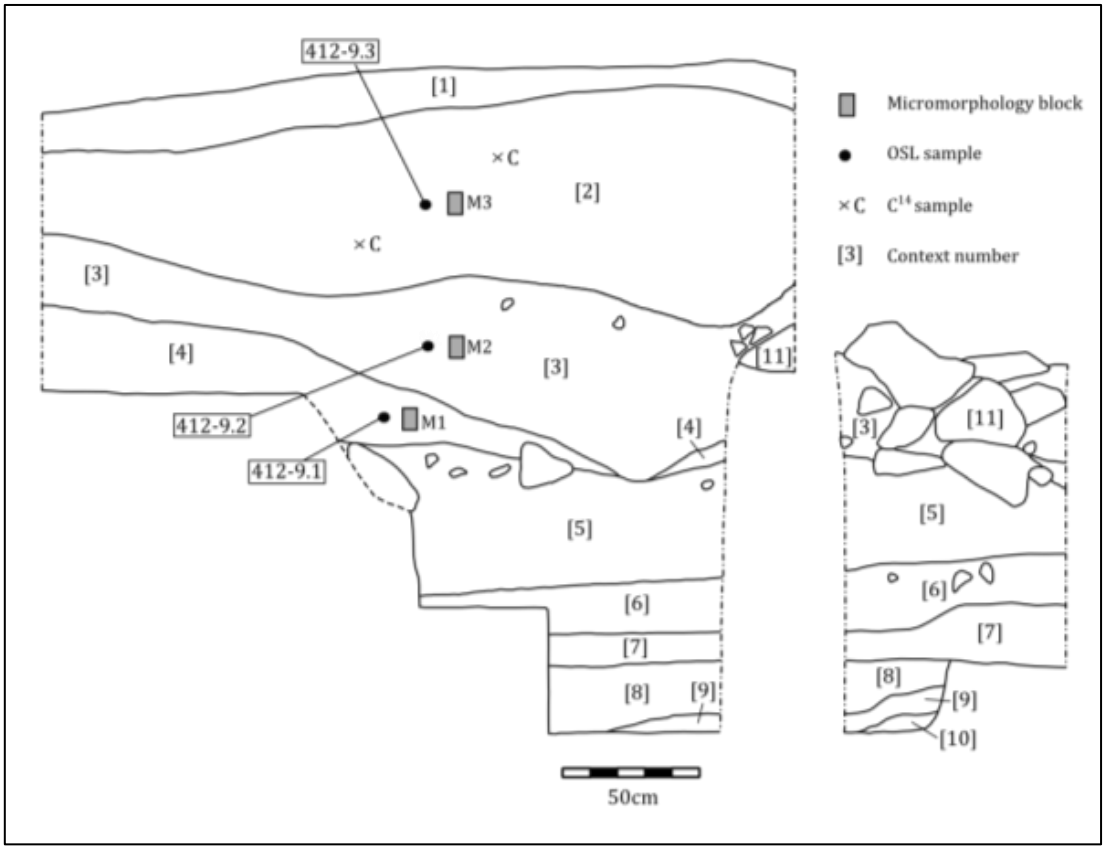


Fig. 10:68: Section through terrace sequence 412-9 at DPS-6. The locations of OSL test samples and micromorphology blocks are indicated.

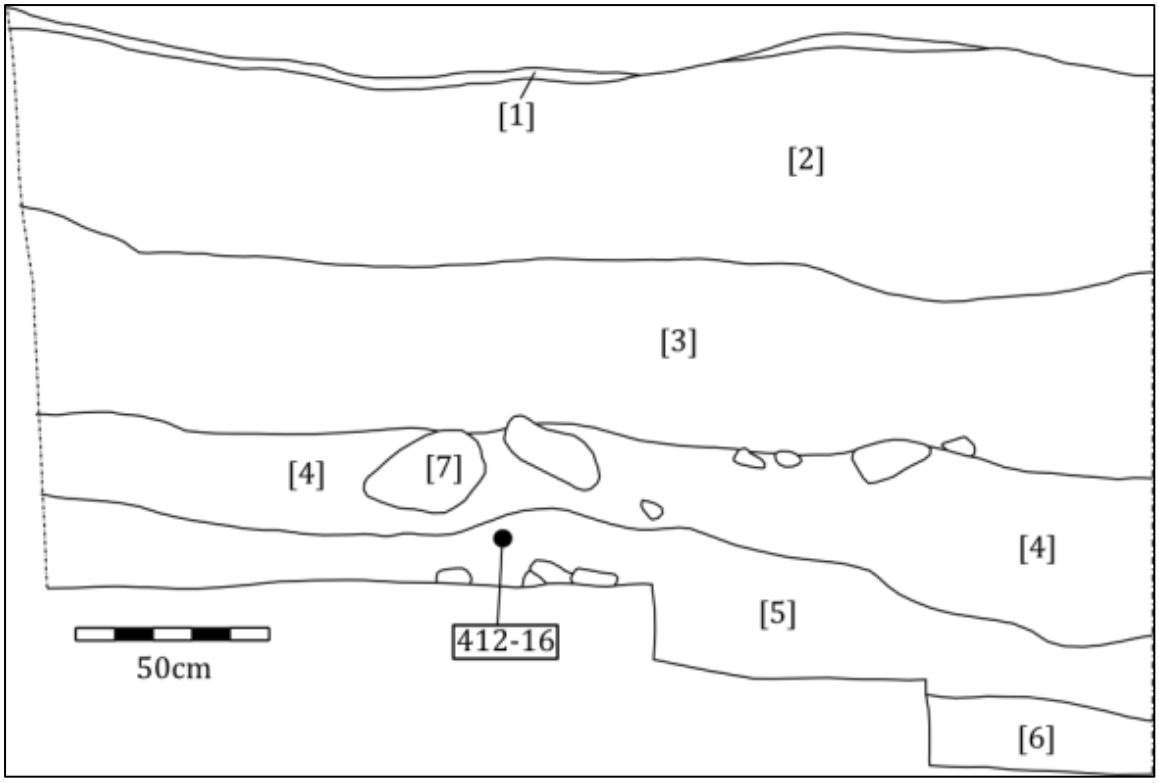

Fig. 10:69: Section through terrace sequence 412-16 at DPS-8. The locations of OSL test samples are indicated.

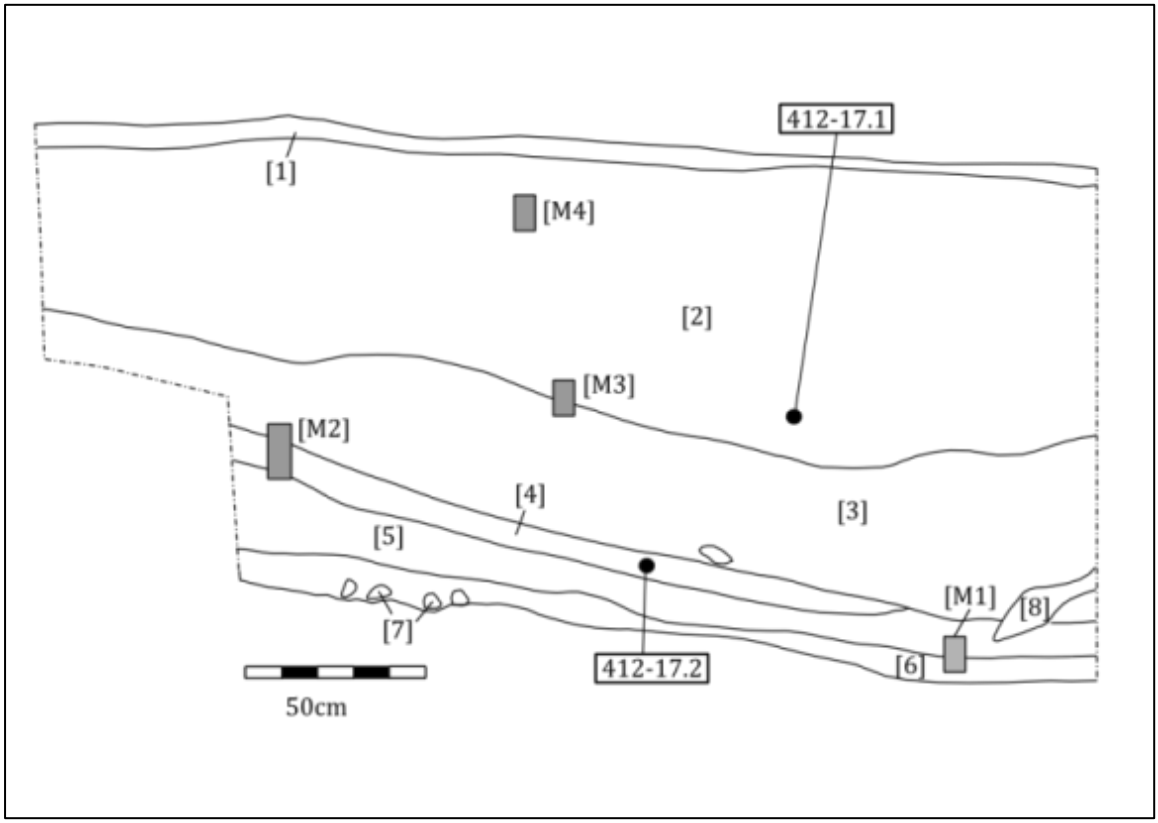

Fig. 10:70: Section through terrace sequence 412-17 at DPS-8. The locations of OSL test samples and micromorphology blocks are indicated.