

# The Zakynthos Archaeology Project

## Preliminary report on the 2009 season

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### Abstract

*The 2009 campaign of the Zakynthos Archaeology Project took place in the area of Lithakia and Keri in the south-west of the island. The landscape in this area is characterized by the Lake of Keri. The lake constitutes a good natural harbour and possesses natural sources of pitch, which, according to historical sources, have been used to repair ships. In addition, the area has many sources of fresh water. These favourable circumstances have contributed to a long history of occupation as was made clear by the archaeological survey. Traces of occupation from the Palaeolithic to the Roman period were attested. An important site was discovered at Lithakia-Kamaroti, where a concentration of Mycenaean-Achaic artifacts was found in association with wall remains at the surface.*

### Keywords

Ionian islands – landscape archaeology – Mycenaean archaeology – geoarchaeology – Palaeolithic.

### Introduction

The fourth campaign of the Zakynthos Archaeology Project focused on our research area A, in the south-west of the island near the towns of Lithakia and Limni Keriou.<sup>1</sup> Part of the area had already been investigated during the preliminary survey of 2005. However, the methods used during that campaign were not intensive and less systematic, and only very few finds were collected. Fields covered in 2005 were also included in the 2009 survey. As has been the case in previous years, the fieldwork of 2009 was carried out in three campaigns: one week from 20-26 April, four weeks from 16 June-12 July and one week from

<sup>1</sup> For a description of the project in general and preliminary reports on previous campaigns: Van Wijngaarden et al. 2005; 2006; 2007; 2008.

13-18 October. The shorter campaigns in April and October were limited in scope and served to familiarise ourselves with the topography and landscape of research area A, and to study finds. Also, our programme of pre-visits and re-visits of certain tracts was continued in these weeks in order to investigate seasonal influences on the survey results.<sup>2</sup>

Most of the actual fieldwork was carried out in the summer, when two survey teams conducted systematic field walking. Each team consisted of a team leader, an assistant and six field walkers. During the October campaign, one team of five persons covered additional fields, which had not been investigated during the summer. In total 1,370 tracts were covered by field walking (Figure 1), resulting in the collection of some 20,000 finds. Most of these finds were ceramics, but, as was the case in previous years, numerous lithics were collected as well.<sup>3</sup> In comparison to research areas B and C, diagnostic ancient archaeological remains were relatively abundant in area A and concentrations of those artifacts stand out more clearly from the general distribution pattern.

### Ambelos

In the western part of our research area, the survey concentrated on the ruins of Ambelos and the fields around it. Ambelos is mentioned as ruined on an 1891 map of the island.<sup>4</sup> However, it is indicated as a village, which is apparently inhabited on a map dating to 1819,<sup>5</sup> which suggests that it was abandoned sometime in the 19th century.<sup>6</sup> The name Ambelos is also mentioned on a map drawn by C. de Lasteyre around 1800 and it is mentioned in a Venetian report dating to 1527.<sup>7</sup> Obviously, the village has a long history. The ruins are situated in the southern foothills of the Vrachionas mountain range on a hill with a church of Ayios Konstantinos. The area appears relatively undisturbed by mechanized agriculture. Considering the age of the village, we hoped to discover remains dating to the pre-modern period or even to Venetian and Medieval times, of which we have identified very few in the previous campaigns.

The ruins of the village itself, as well as the slopes above it to the north and the fields in the valley to the south, were covered by archaeological field walking in

<sup>2</sup> See Van Wijngaarden et al. 2007, 47-49 for a detailed account of the pre- and re-visit program.

<sup>3</sup> Of the ca 15,000 finds stored, some 3,500 were lithics.

<sup>4</sup> Biskinis 1891.

<sup>5</sup> Koumanis 2006.

<sup>6</sup> A building to the south of the Ayios Konstantinos church, now in use as a shed, shows fine architectural details and was, according to its owner, abandoned only a few decades ago. Obviously, some habitation continued after the abandonment of the village.

<sup>7</sup> Arvanitakis 2000, 51.

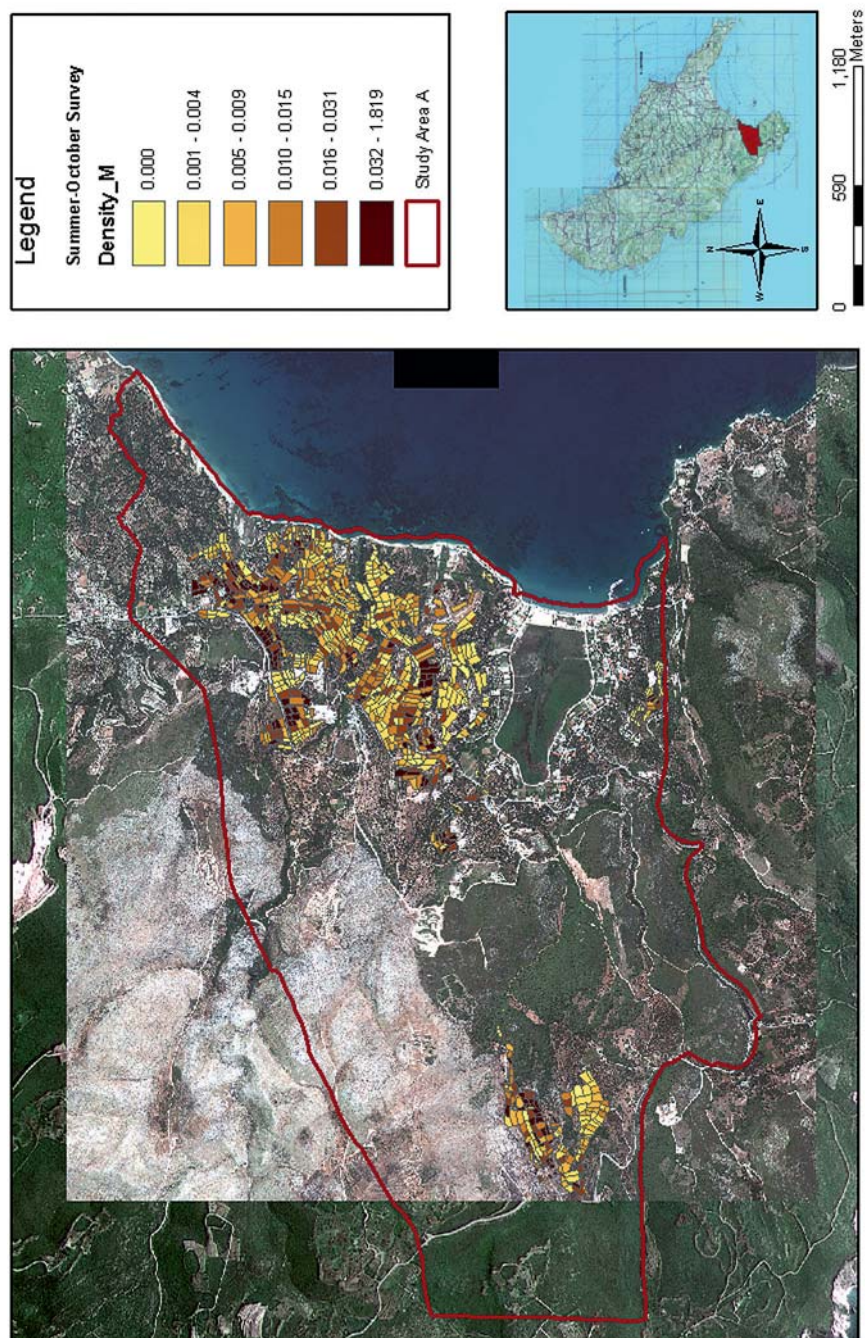


Figure 1. Density map of research area A

the first week of the summer campaign. A total of 187 tracts (2003-2095; 3003-3093; 3748-3752) were surveyed. Study of the collected finds is still in its initial stages, but it appears that clear Medieval or Venetian artifacts have not been found. Almost all objects were assigned an early modern-modern date. Interestingly, one field (tract 3035) yielded some cooking pottery, which has tentatively been assigned to Hellenistic-Roman times, perhaps indicating a farmstead in the area.<sup>8</sup> In contrast to many other areas of Zakynthos, only very few lithic objects were collected.

Despite the scarcity of ancient artifacts, Ambelos did give us a good idea of the material culture of an early modern agricultural village. The small ruined houses of the village are recognizable as piles of unworked fieldstones, sometimes partly surrounded by field walls. They are spaced widely apart and distributed irregularly on gentle terraces to the east of the church of Ayios Konstantinos. Outside of the main cluster of houses, there are at least two structures of larger size and of more elaborate architecture. Around both these structures agricultural installations and threshing floors are still visible (Figure 2). The finds collected from the houses of Ambelos were few and, generally, unremarkable.

Inside one of the houses an enigmatic block was found, which was of local limestone, ca. 47 × 15 × 17 cm in size and cut on one side (Figure 3). The block is inscribed and shows a cross, as well as several letters. In the lower left corner ΦΦ and Φε are easily recognised, while the upper left corner shows ΓΔ and ΝΙ(?). The right side is more severely worn and inscriptions are not recognizable. The inscribed cross is of an unusual type. The inscriptions may represent initials of owners of the house.<sup>9</sup> On mainland Greece, carving dates and names on houses became customary after 1860. According to Forbes, these inscriptions served to turn the house into a monument for the owners who had them built.<sup>10</sup> If our block is evidence of similar practices on Zakynthos, it shows that, despite centuries of political separation, the island shared cultural practices with the Greek mainland.

### Limni Keriou

The most notable feature in the landscape of research area A is the so-called Lake of Keri or *Limni Keriou* (Figure 4). The lake is very shallow and fully overgrown with reeds. It constitutes a depression caused by the presence of several tectonic

<sup>8</sup> The pottery has been studied only briefly and superficially, and any date mentioned in this report should be considered preliminary. The study of the pottery is coordinated by V. Stissi and N. Pieters (University of Amsterdam).

<sup>9</sup> We thank Fotini Kondyli (University of Amsterdam) for this suggestion.

<sup>10</sup> Forbes 2007, 228, 336-342.





Figure 2. A 19th-century agricultural installation in ruins at Ambelos



Figure 3. Inscribed block from Ambelos

fault lines in the area.<sup>11</sup> The tectonic pressures push up petroleum pitch through cracks in the geological formations and at several points in the lake black pitch rises up to the surface. These spots are easily recognised by their smell. Herodotus (IV, 195) and Plinius (*Naturalis Historia* IV-19) both note this natural phenomenon and the former mentions the methods by which the pitch was recovered. In early modern times, the pitch was used to repair ships, which may also have been its use in antiquity.<sup>12</sup>

The lake is currently separated from the sea by a sand bank, which, at least partly, is artificial.<sup>13</sup> The presence of *gastropode* shells, a marine snail species, in auger corings conducted during our pilot survey in 2005 suggests that in antiquity the coastline was situated more inland.<sup>14</sup> This would indicate that Limni Keriou was an even better natural harbour in the past than it is nowadays (Figure 5).

The southern side of Limni Keriou has developed into a small touristic town and is inaccessible for archaeological research. The landscape to the west and the north of the lake is difficult to access, due to many fences and closed

gardens. As a result, we were only able to study part of the slopes surrounding the lake, mostly on the northern side.

<sup>11</sup> For the geological formation of the lake, see Perisoratis, Vidakis & Mitropoulos n.d., 3-18.

<sup>12</sup> See Holland 1815, 18.

<sup>13</sup> The beach has been enlarged in recent years in the framework of touristic development. In the past, a natural sand bank may have separated the lake and the sea, see Perisoratis, Vidakis & Mitropoulos n.d., 27.

<sup>14</sup> Van Wijngaarden et al. 2005, 67. The formation of the lake is currently studied by Joas van der Laan (VU University Amsterdam).



Figure 4. The lake of Keri (overgrown with reeds) and its surroundings from the north



Figure 5. The northern slopes of Limni Keriou with, to the right, the prominent hill of Panokambi or Kastelli

Directly north of Limni Keriou lies the prominent hill of Panokambos or Kastelli (Figure 5). The name Kastelli refers to the strategic position of the steep hill, on which a gun battery once stood to protect the harbour of Limni Keriou.<sup>15</sup> During our survey, fragments of pre-modern tile were collected that may once have belonged to this installation. At the hill of Kastelli, the presence of prehistoric finds had been reported in the past.<sup>16</sup> H. Zapfe collected 238 lithic artifacts, which he dated to the Neolithic period because of the presence of ceramics. A. Sordinas, however, dated the site to the Early Bronze Age on the basis of the typology of the lithic artifacts. Very recently, holiday houses have been built on the summit of Kastelli, while there are restaurants on the lower slopes. Nevertheless, we collected lithic artifacts and prehistoric pottery on the hill, which we have tentatively assigned Neolithic-Early Bronze Age dates. Even though building activities at Kastelli may have seriously disturbed any subsurface remains,<sup>17</sup> the presence of a prehistoric site has been confirmed.

In addition to the concentration of prehistoric material at Kastelli (Figure 6A), a thin spread of the same type of material was scattered throughout the fields on the northern sides of the lake. There were also a several lithic artifacts, some of which were clearly made of pebble flint. Among the flint objects were a few several small blades made of brown flint instead of the usual grey-white material. One small fragment of obsidian was also collected. The distribution of prehistoric artifacts shows at least three concentrations in addition to Castello (Figure 6B, 6C, 6D). The distribution pattern indicates a significant presence on the north side of the lake in the Neolithic-Early Bronze Age. Considering the thin spread of artifacts, one should think of widely spaced farmsteads or hamlets. In addition to the prehistoric finds, a concentration of tiles and pottery, most probably to be dated in the Roman period, was attested at a hill simply referred to as *Lofos* to the west of the lake (Figure 6E).

## Kamaroti

The area of Kamaroti is situated to the north of Limni Keriou and is separated from it by the *Kornos* stream, which contained water even in summer. The hill

<sup>15</sup> Salvator 1904, 177. Salvator uses the past tense when mentioning the gun battery, clearly indicating that during his visit in 1902 it was no longer there. On several old maps the hill is indicated as Kastelli, which is also the name Salvator uses. Following Zapfe (1937), Sordinas (1970, 128) and Kourtesi-Phillipaki (1993, 34) refer to the hill as Castello. On the modern 1:5000 topographic map (leaf 6186-1) the hill is indicated by the name of Panokambos, which is also the name used by the current inhabitants to indicate the area in general.

<sup>16</sup> Zapfe 1937, 158-163; Sordinas 1970, 128. Also Kourtesi-Phillipaki 1993, 34.

<sup>17</sup> Zapfe (1937, 159) remarks that on the top of the hill bedrock is visible so that it is unlikely that archaeological remains would be *in situ* below the surface.



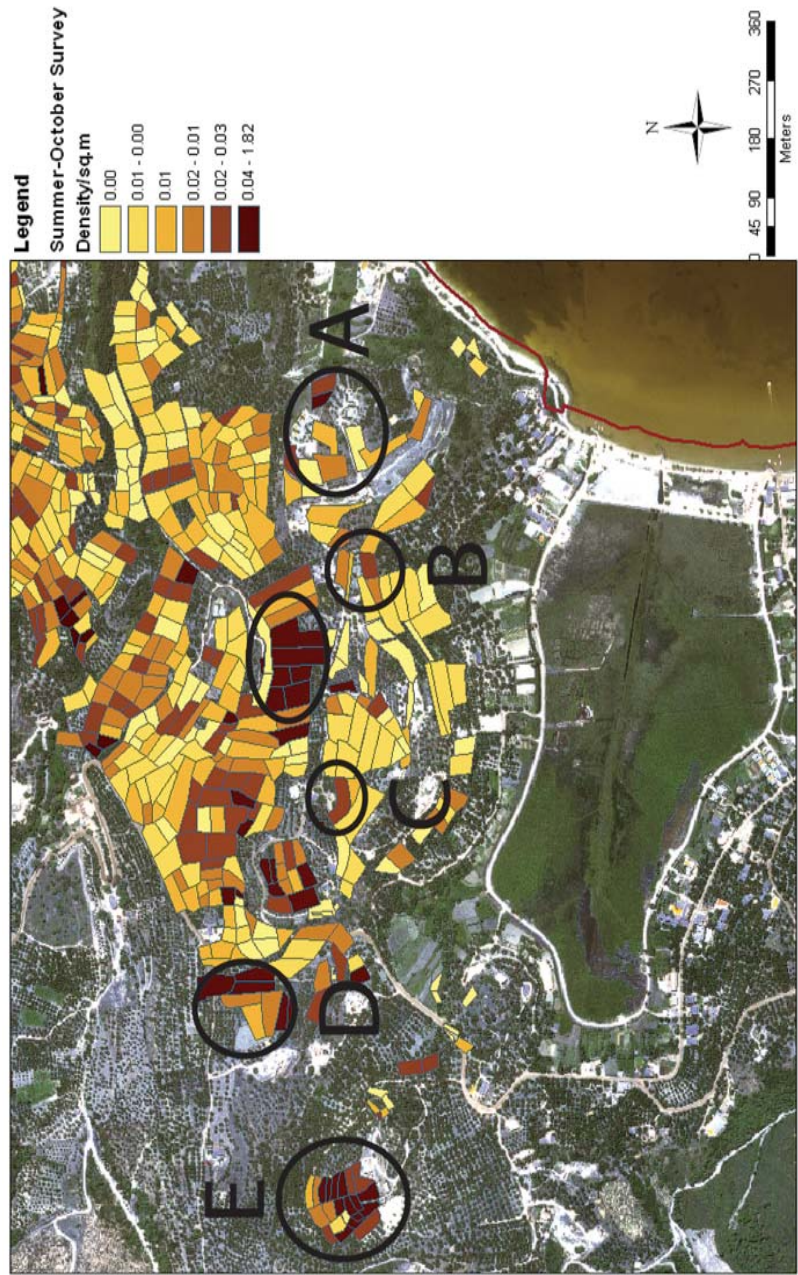


Figure 6. Density map of the northern slopes of Limni Keriou



of Kamaroti rises 82 meters above sea level. The western and southern slopes of the hill are fairly steep, but the northern and eastern sides slope fairly gently (Figure 7). To the northeast, the hill borders on a significant landslide, while the eastern slopes end abruptly at a cliff ca 10-20 meters above sea level. The cliff is the result of significant uplift due to tectonic pressures and subsequent erosion through undercutting by the sea.<sup>18</sup>

Nowadays, Kamaroti hill is extensively cultivated with olives on bulldozed terraces. However, the gentle eastern slopes above the sea have not been bulldozed and a landscape of a more traditional agricultural type is still in place. In this landscape, there are clear signs of quarrying activities of unknown date (Figure 8). Moreover, there are a number of very ruined houses situated near the gully, in the area marked A in Figure 7.<sup>19</sup> The walls of these ruins are constructed of unworked field stones, but they incorporate dressed blocks of probable ancient manufacture, such as a stone threshold with posthole (Figure 9).

Interestingly, the material collected by the field survey teams on the lower eastern slopes of Kamaroti included significant proportions of coarse prehistoric pottery, which has, tentatively, been assigned to the Early and Middle Bronze Ages. These were especially abundant in the area marked with B in Figure 7. In the same area, a Mycenaean kylix stem was also picked up (tract 3122/3158). In addition, there were also some finds from later periods, such as a rim fragment of possible Archaic date (Figure 10). Among the ceramic finds in the area were several fragments that have been assigned to the Archaic period, while there was also some black-glazed pottery and tile fragments of Classical-Hellenistic date.

The landscape at the lower eastern slopes of Kamaroti appears to be a palimpsest of several periods. The collected pottery indicates a significant prehistoric presence in the area, probably from the Early Bronze Age onwards. The architectural elements, as well as some of the pottery, are evidence of activity in the period from Archaic to Hellenistic times. The ruins in the area probably belong to the Late Middle Ages or the Venetian period and it is possible that they are related to the signs of quarrying in the area. Near the coast, at point C in Figure 7, are the remains of an early modern small defensive structure. Finally, the agricultural terracing system, which is still in use, probably dates back to the early 20th century or even earlier. The multi-layered character of the landscape not only reflects the human presence in the area, but is also due to the fact that the fields have been disturbed only marginally by modern farming methods.

<sup>18</sup> According to the measurements by Lagios et al (2007, 134 fig. 8), uplift in the area in the year 2005-2006 was c. 25 mm. A study of the formation of the landscape at Kamaroti is currently being carried out by R. Goudriaan (Utrecht University).

<sup>19</sup> None of the historical maps available to us indicate a village in the area.

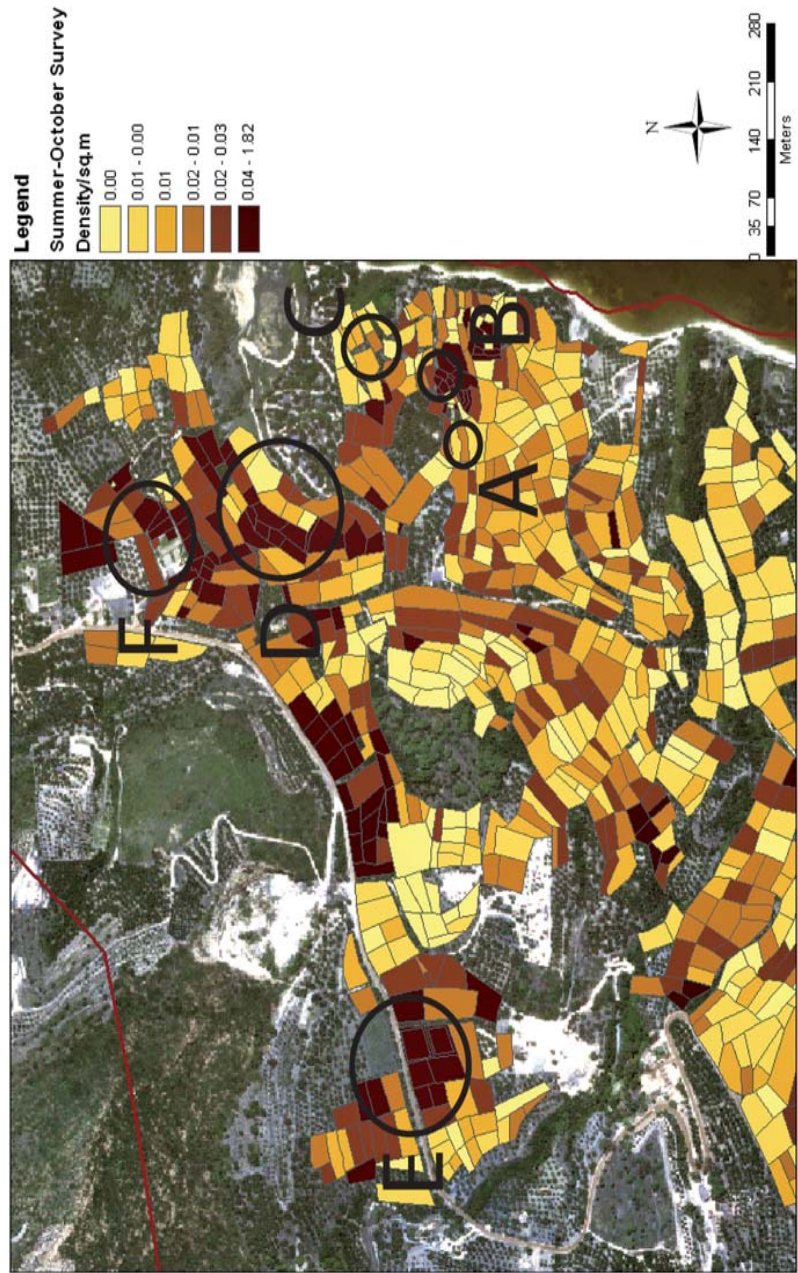


Figure 7. Density map of Lithakia-Kamaroti



Figure 8. Quarried and partly worked block at the eastern slopes of Kamaroti



Figure 9. Probable ancient threshold block from the lower eastern slopes at Kamaroti



Figure 10. Finds from the lower eastern slopes at Kamaroti, including a possible Archaic rim fragment (no. 12)

### The Mycenaean site at Kamaroti

At the top of Kamaroti hill, in the area marked D in Figure 7, a concentration of Mycenaean artifacts was discovered during the pilot survey of 2005, including a steatite button or *conulus*.<sup>20</sup> During the 2009 campaign, the fields on the hill were investigated intensively by archaeological field walking. Because it was clear that we were dealing with a significant concentration of archaeological artifacts, special survey methods

were used. The hill was first covered by intensive survey during which quantities of artifacts were recorded with the help of clickers. The find densities relative to the surrounding areas were thus established (Figure 7). Then, the tracts within the concentration were subdivided into smaller tracts, in which full collection of surface material was carried out. Considering the fragmented state of archaeological surface finds on Zakynthos, we felt that full collection of surface material would give us the greatest possibilities to assess the site chronologically and functionally.<sup>21</sup>

<sup>20</sup> Van Wijngaarden et al. 2005, 67-68, 73 (Site Bo5-7).

<sup>21</sup> The disadvantage of full collection of surface material is that a concentration of finds essentially 'disappears' when no further archaeological artifacts are brought to the surface. This would be in contrast to the non-destructive character of archaeological survey. However, tests with pre-visits during the April campaign and re-visits during the October campaign showed that erosion by rainfall continues to expose archaeological material at Kamaroti.

The quantity and quality of the material thus collected clearly showed the presence of a significant archaeological site at Kamaroti (Figure 11).

The hill of Kamaroti consists of bulldozed terraces, on which olives are being cultivated.<sup>22</sup> Only on the top and the north-eastern slopes pine trees are growing. In spite of the extensive recent restructuring of the landscape, older agricultural terrace walls are visible and still largely determine the shape of the fields. Interestingly, several terrace walls incorporate older stretches of wall (Figure 12), while several buried walls are recognizable on the surface near the top of the hill.<sup>23</sup> Particularly notable is a group of walls that seem to form a square structure of ca. 5 by 4.5 meters (Figure 12). The strategic location and the excellent view of the bay of Laganas suggest that these are the remains of a small defensive structure.

The finds that were collected confirmed the importance of the Mycenaean presence on the hill of Kamaroti. Among the pottery were various decorated fragments, for example the LH II fragment shown in Figure 13A. Several small goblet stem fragments that were also found on the surface may belong to the same period. The sherd with a triangle and zigzag pattern of Figure 13B, however, should be dated later in the Mycenaean period, possibly in LH IIIC. The Mycenaean finds were distributed over much of the hill, but clearly concentrated on the upper terraces and near the 'square structure' referred to above. Among the collected material were also some coarse pottery fragments which probably belong to the Early to Middle Bronze Age. Moreover, in the area of the 'square structure' there were a number of finds, which have tentatively been assigned to the Iron Age and the Archaic period and indicate human presence after the Bronze Age (Figure 14). Pottery that could be assigned to Hellenistic-Roman times was found on the lower terraces of the north-western slopes of the hill.

Kamaroti hill clearly represents an important archaeological site with different periods of occupation. The quality of the Mycenaean finds, which included decorated pottery and the steatite *conulus*, suggests the presence of graves from this period.<sup>24</sup> However, the presence of Bronze Age cooking pottery and the visible walls on the surface indicate settlement remains as well.

Our research in 2009 clearly shows that the area of Kamaroti as a whole constitutes an important archaeological zone. In addition to the remains found on the hill and on the lower eastern slope, a concentration of pottery probably dating to Classical-Roman periods was attested to the north of the hill in the area marked

<sup>22</sup> Historical aerial photographs show that this bulldozing took place between 1972 and 1986.

<sup>23</sup> With the help of K. Nikolakopoulos of IGME, the topography and all wall remains at Kamaroti have been mapped by means of digital GPS. A detailed plan and model of the remains at the hill is currently in preparation.

<sup>24</sup> The hill is referred to as *Kokala* (bones) by local inhabitants. Moreover, one of the owners told us that he had seen many bones during bulldozing activities.



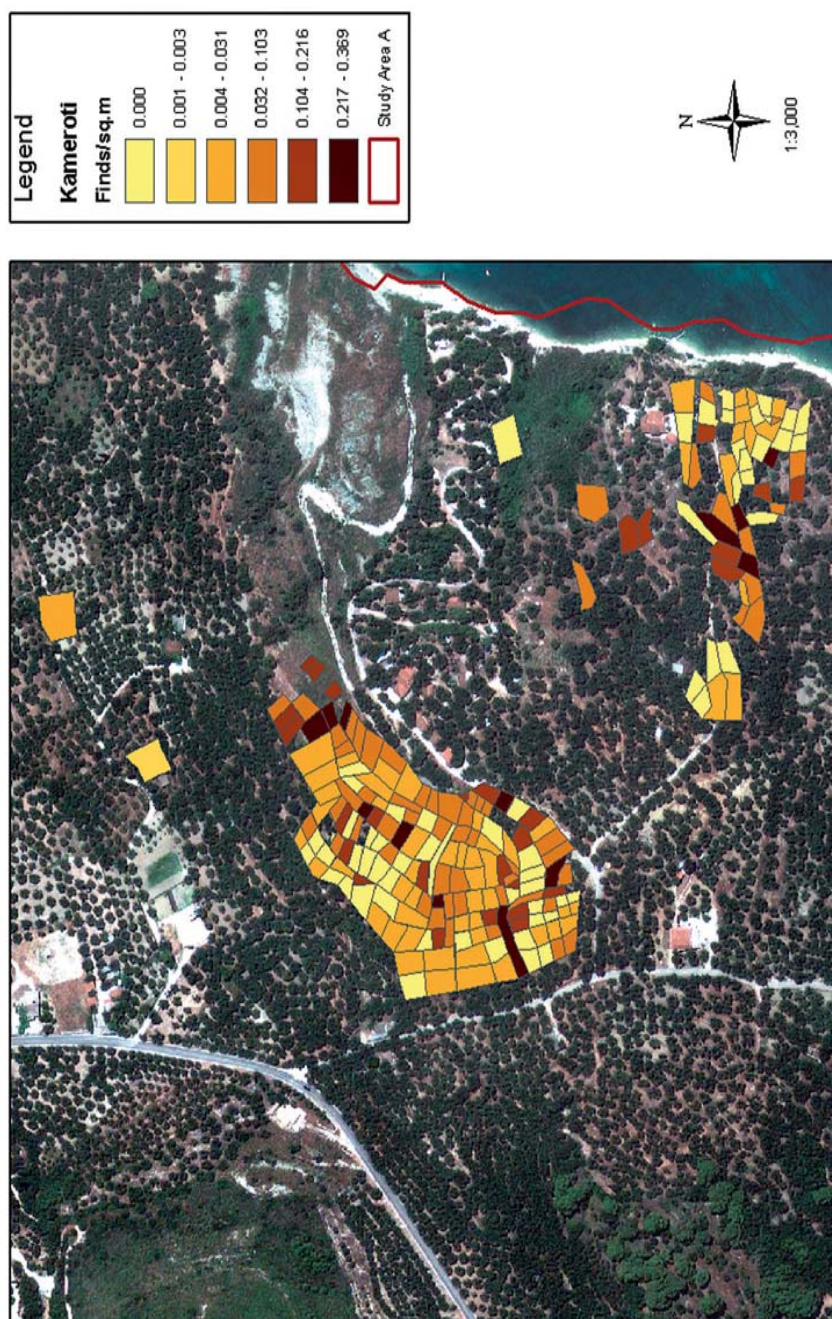


Figure 11. Density map of Kamaroti hill



Figure 12. Wall remains at Kamaroti hill (the 'square structure')



Figure 13. Mycenaean decorated pottery from Kamaroti hill. A = LH II decorated sherd; B = various decorated sherds; C = small kylix stems

E in Figure 7. Moreover, the quantities of ancient artifacts in between these concentrations appeared higher in this area than had been the case in previous seasons. This intensive use of the landscape in different periods can probably be related to the excellent harbour of Limni Keriou and the ubiquitous water sources in the area.<sup>25</sup>

### Lithics

In comparison to research area B, the area near Machairado where we worked during 2007 and 2008, lithic artifacts were less common in research area A. In particular, the wide distribution of lithic finds in the fields around Machairado, where most tracts contained significant proportions of this material, was not paralleled during 2009. In the area around Ambelos hardly any lithics were identified, while only limited numbers were collected at Kamaroti. As noted above, an exception should be made for the northern slopes of Limni Keriou, where lithic artifacts were discovered among the prehistoric finds. Some of these artifacts appear to have been made from pebble flint.<sup>26</sup> In addition, one small obsidian fragment was found.

<sup>25</sup> The karst landscape of Zakynthos contains many underground water sources. The spring of Avisou and nearby springs, about 200 meters to the west of Limni Keriou, nowadays constitute the most important sources of fresh water for the many hotels on the island.

<sup>26</sup> The study of the lithic material is coordinated by Professor G. Kourtesi-Phillipaki (Kapodistrian University of Athens).



Figure 14. Post-Mycenaean pottery from Kamaroti. Black glazed sherd and an Archaic? base



Figure 15. Lithic artifacts and some pottery photographed in the field (tract 2911)

In contrast to the relative scarcity of lithics in general, two concentrations of this material were attested. The first of these (tracts 2696-2702; 7594-7597) is located somewhat to the west of Kamaroti (Figure 7F). Even though the systematic study of these finds still needs to begin, the impression was that many of the lithic artefacts in these tracts bore great resemblance to the artifacts discovered in research area B, most of which were assigned to the Middle Palaeolithic period.<sup>27</sup> A second concentration of lithic finds was discovered in the area of Perlakia to the north of Limni Keriou (Figure 6F). Large quantities of lithics and some pottery were discovered in these fields (tracts 2911-2913; 7500-7501), which had recently been ploughed (Figure 15). The first impression was that the raw material of these lithics was somewhat lighter in colour than the usual material from research area B. Perhaps, this concentration is related to the nearby human presence during the Neolithic-Early Bronze Age. Among the large quantities of lithics the tracts yielded some pottery that could be prehistoric, but there was also later pottery (Figure 15). Both concentrations of lithics in research area A were situated on slopes with soils that were somewhat darker and more red in colour than surrounding fields. Our research in areas B and C had indicated a significant and prolonged human presence during the Palaeolithic period.<sup>28</sup> Systematic study of the lithic artifacts will indicate whether this was also the case for the area of Limni Keriou.

## Conclusions

The archaeological survey in the area of Limni Keriou proved very fruitful in terms of archaeological remains. In comparison to other seasons, ancient remains

<sup>27</sup> Van Wijngaarden et al. 2008, 76-78.

<sup>28</sup> Van Wijngaarden et al. 2006, 40-42; Van Wijngaarden et al. 2007, 51; Van Wijngaarden et al. 2008, 76-78.

were relatively abundant. Moreover, find concentrations, generally, could be delineated and defined in spatial terms more clearly than was the case in the plains of research area B. To some extent, this may be the result of the nature of human presence in the area. However, it is also likely that differences in agricultural practices play a role. Preliminary conclusions for research area A on Zakynthos are:

- The origin of the village of Ambelos, which is now in ruins, cannot definitively be determined. Finds that can immediately be recognized as medieval or Venetian have not been found, but detailed study of the pottery from the village should provide clues about the age of the site.
- A small concentration of Hellenistic-Roman artifacts near Ambelos may represent the presence of an ancient farmstead in the area.
- During the 19th century, the village of Ambelos may have shared some cultural practices with the Greek mainland.
- Archaeological material on the slopes of Keri Lake suggests the presence of small farmsteads or hamlets during the Neolithic-Early Bronze Age.
- On the hill referred to as *Lofos*, west of the lake, finds dating to Hellenistic-Roman times have been attested.
- The landscape at the lower eastern slopes of Kamaroti is a palimpsest of different periods. There are signs of quarrying and the remains of a pre-modern village. Surface finds were relatively abundant. Most of the collected artifacts appear to belong to the Bronze Age, but there is also material from Archaic-Roman times. Unfortunately, this area is very difficult to interpret topographically.
- The hill of Kamaroti is an important archaeological site. Surface material dates the site to the Mycenaean period, but some earlier and somewhat later material is present as well. There are various walls visible on the surface, which may belong to ancient structures.
- Even though lithic artifacts appear to be less abundant in area A than in the two other research areas, there are clear concentrations of this material. Some of these may belong to the Neolithic-Bronze Age human presence, but it is possible that the area also has evidence for Palaeolithic activity.
- The excellent harbour of Limni Keriou seems to have been in use in many periods.

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