Appendix 4: Surface material distribution by periods from survey area 2

App IV.1.1 The prehistoric assemblage

Like the Bronze Age in the first survey area, the prehistoric period in the second survey is represented by a very small number of finds. They can be divided into two groups. The first consists of about a dozen fragments of various fabric groups or a mere 0.1% of the total surface record. The second comprises a coherent fabric category represented by about 18 fragments or 0.16% of the total surface record. Judging by certain fabric features and shapes, all fragments of the first group can be dated very broadly to later prehistory or to the late 2^{nd}-1^{st} millennium BC. The dating of the second group is less certain, although some of the fabric features also point to a prehistoric date. It must be emphasized that this material doesn't necessarily form a contemporary assemblage and the distribution of the two groups will be analyzed separately. Indeed it is even possible that the fragments of the first smaller group belong to different periods of prehistory.

Table 1: Amount and distribution of the finds securely datable to a late prehistoric period

Total amount and percentage	12, 0.10%
Mean overall density(grid and transect)	0.78 per hectare; 0.13 per hectare
Min/Max density	0/1.33 per 100 sq m.
Site area	/
Total dispersal area	/

Table 2: Amount and distribution of all finds possibly datable to later prehistory

Total amount and percentage	30, 0.26%
Mean overall density(grid and transect)	2.8 per hectare; 0.13 per hectare.
Min/Max density	0/3.33 per 100 sq m.
Site area	/
Total dispersal area	/

Tables 1 and 2 illustrate the negligible presence of finds broadly datable to prehistory in the surface record of the second survey. Even when the above-mentioned fabric group is added to the volume of prehistoric finds, it barely amounts to 30 fragments or 0.26% of all collected material. The scarcity of these finds is further accentuated when the mean overall density is estimated, both for the grid survey and especially for the transect survey. Taking into account only the securely dated finds, the mean overall density is less than 8 fragments per 10 hectares of grid survey and only 1.3 fragments per 10 hectares of transect survey. Including the fabric group with uncertain dating, their density is still less than 3 fragments per 1 hectare of total grid survey. Collections by transect units yielded barely 5 fragments from the actually covered portion of 375 300 sq meters (one third of the entire survey area), amounting to slightly over 1 fragment per 10 hectares! Not surprisingly over 80% of all finds possibly datable to a late

prehistoric period were collected during the total grid survey. Quite probably this is an indicator that we've only recorded a small portion of the possible prehistoric layer in this survey area. Knowing that only about 8% of the surveyed basin was covered by total grid survey, one could expect at least a ten-fold increase in the quantity of later prehistoric finds in case the total grid coverage was 100%[1]. However the spatial distribution of these finds makes this extrapolation unsustainable. In fact that this category of surface material is relatively concentrated is already indicated by the maximum density values. In absolute terms, the securely dated 1.3 fragments per 100 sq meters is a fairly low density by all standards, but it is 166 times the mean density of this category of artifacts collected by total grid survey in the second survey area. Understandably being more numerous, this ratio is somewhat smaller when the group is extended to include the fabric class with uncertain dating. Thus quantitatively, even the appearance of a couple of fragments qualifies as a potential site location.

The situation is seemingly far clearer when projected onto real space (map V_1). Over 80% of all finds possibly datable to later prehistory were collected from grid units on the summit or the upper portions of the eastern ridge. However it has to be stressed that only slightly over 12% of the area covered by the total grid survey fell within the limits of the western ridge. In fact if only the results of the collections by individual field walking transects are observed, one reveals a very symmetric distribution of the securely dated prehistoric finds (map V_2). A pair of isolated fragments was collected on the summits of both the western and the eastern ridge (field blocks 22b and 38b, and on field blocks 167 and 208b) and another isolated piece was found on a field block in the southeast corner of the survey area, closer to the basin's floor (field block 377a). Not much changes if we assume that the transect collections included all material counted; the artifact density variations merely reflect the varying size of the field unit or the varying number of counted artifacts. More importantly these humble 5 fragments are all securely datable to a later prehistoric period, while over 60% of the possibly late prehistoric fragments collected by grid units had uncertain dating. Thus the earlier elaborated extrapolation, assuming fairly equal distribution of late prehistoric material across the survey basin could after all prove justified. The greater amount of prehistoric finds collected by grid units on the eastern ridge could simply reflect the asymmetric coverage of the total grid survey. It was the greater concentration of Roman material that shifted the focus of the grid survey to the eastern ridge; the rare incidences of prehistoric finds could have hardly been noticed during fieldwork and could still less affect the distribution of the total surface record[2].

But even after recognizing this potential survey bias, it cannot be justly claimed that there is an ultra-thin carpet of vestigial prehistoric remains across the entire survey basin. Even the individual transect collections indicate that these fragments were mostly concentrated along the summits of the ridges. This is chiefly confirmed by the grid survey (map V_3). All seven fragments securely dated to a late prehistoric period were collected from grid units on the upper portions or the top of the eastern ridge, while none came from the total grid collections in the central survey sections and on the western

[1] Cf. J. Bintliff, et al Landscape and early farming; Settlement dynamics in Central Greece, 665-674, *Geoarchaeology* 21-7, 2006.; J.L. Bintliff, P. Howard and A.M. Snodgrass, The hidden landscape of prehistoric Greece, 139–168, *Journal of Mediterranean Archaeology* 12, 1999.
[2] J. Bintliff, et al 2006, f.n. 2.

ridge. Three fragments were collected from locations of later, Roman Period sites; the other four were mostly accompanied by Late Ottoman and Early Modern material, though they were also situated in the close vicinity of Roman sites. It is impossible to observe a clear patterning: one, more closely spaced group of three fragments was collected from grid 1, in the northern half of the eastern ridge, while the rest of the finds of this category were collected from grid units spaced over hundreds of meters apart. One prehistoric fragment was identified among the total collections from grid 11, about 400 meters to the south of grid 1 and another one from grid 4, about 150 meters further south. Finally, a pair of finds was collected from a unit on grid 6 giving the maximum density of 1.3 securely dated, later prehistoric shards per 100 sq meters. This distribution closely matches the pattern revealed by the transect survey. Field unit 38b covered by grid 1 produced one securely dated prehistoric fragment and although the total collections on field block 22b covered by grid 8 failed to recover at least one securely dated prehistoric fragment, they did recover one fragment belonging to the fabric group with a possible late prehistoric date.

Allowing that the vaguely defined prehistoric assemblage includes another fabric group of uncertain date, but exhibiting features that clearly set it apart from the fabric groups datable to Roman or later periods, the picture doesn't change significantly (map V_3). Although slightly more numerous than the vague category of prehistoric finds, this fabric group is completely confined to the summit and the upper portions of the eastern ridge. Not a single fragment was collected outside the gridded area along the survey's eastern limit. The difficulty in accepting a prehistoric date for this fabric group arises from the fact that it closely accompanies the major concentrations of Roman material on grids 11 and 6. But on the other hand, it was noted that half of the finds securely dated to a late prehistoric period were collected from sites occupied during the Roman Period[3]. Moreover the fabric group with a possible prehistoric date never accompanies major concentrations of identical Roman material on the lower portions of the eastern ridge or on the basin's floor, while at the same time it does accompany the securely dated prehistoric fragments collected from grid 6, 11 and field block 22b covered by grid 8. Thus both its distribution pattern and its fabric characteristics suggest a possible prehistoric date, although the possibility that it formed a part of the later Roman assemblage shouldn't be written off.

Naturally this doesn't mean that it was contemporary with the rest of the prehistoric finds. Therefore its distribution should be analyzed separately. Unlike the latter this group of finds appears on two locations in visibly greater concentrations and individually on two other grid units. The largest concentration was discovered on grid 11, where from two units in the central part of the grid, 7 fragments were collected, giving densities of 1.3 and 3.3 fragments per 100 sq meters. This tiny "core" is surrounded by a ring of units featuring zero artifact density, though the grid unit to the west yielded a fragment securely datable to later prehistory. Isolated fragments were collected from units on the northern and southern periphery of grid 11. The second larger concentration was discovered nearly 200 meters to the south, on the central units of grid 6. This is a slightly thinner and smaller cluster, with a maximum density of 1.3 fragments per 100 sq meters. As on grid 11, there was a very large concentration of Roman material on this

[3] E. Neustupný, 45-61 ed. E. Neustupný, *Space in Prehistoric Bohemia,* Prague 1998; J.L. Bintliff, P. Howard and A.M. Snodgrass, 155, 1999.

field. But in this case the relation between this fabric group and finds securely dated to later prehistory is even stronger. The highest concentrations of both groups of material were collected from the central unit on grid 6. Individual fragments of this fabric group were collected from four other units on grid 6, mostly contingent to the "core". The slightly larger and more concentrated clusters of this fabric group begin to exhibit the characteristic concentric patterns of dispersal known from other intensive survey projects and the Sopot survey. Unlike the previous group of dispersed and isolated shards, one can recognize a site core (grid units featuring over 1.3 fragments per 100 sq meters or over 2 fragments per unit) and a periphery (units with 1 fragment or about 0.66 fragments per 100 sq m). There are also isolated fragments appearing on distances of not more than 250 meters from the main clusters: on grid 8, less than 100 meters from the cluster on grid 6, the other on grid 2, 250 meters to the north of the cluster on grid 11. To a certain degree this represents the pattern of central clusters and satellites/off-site in a miniature. In striking contrast to the group of finds securely dated to later prehistory, not a single find was collected from individual transects.

The prehistoric surface remains on the western ridge are far less numerous. In total, two fragments were collected from the northern half of the western ridge, spaced about 250 meters apart. One fragment was collected from field unit 167, north of grid 25, the second from field unit 208b, 250 meters to the south. Both were found unrelated to later assemblages, although the find from field 167 was only a short distance and in the inner territory of the small Medieval farm on grid 25. Surprisingly not a single fragment was collected from the total grid survey on the Medieval site and from the rest of the grids on the western ridge (map 3a). Like the prehistoric fragments from the eastern ridge, both fragments were collected near the summit of the ridge.

The difficulties in interpreting these very scant remains are apparent. As we saw, this phenomenon is not without parallels and we encountered very similar situation in the first survey area during the Bronze Age. In the case of Skopian Montenegro interpreting the pattern of the securely and possibly dated prehistoric remains is further complicated by the absence of a coherent assemblage and the possibility that even the material securely identified as prehistoric belongs to completely different periods of prehistory. It is nevertheless important to acknowledge that the overall pattern of distribution of these finds, whether analyzed integrally or separately heralds the distribution of some of the more substantial later periods' assemblages.

App IV.1.2 **The Roman Period (2nd-4th c AD?)**

App IV.1.2.1 Statistical and overall distribution

Table 3 Amount and distribution of finds datable to the Roman Period

Total amount and percentage	3 671, 31.85%
Mean overall density(grid and transect)	33.45 per 1 000 sq m; 1.8 per1 000 sq m.
Min/Max density	0/39.33 per 100 sq m.
Number of "sites"	> 10
Total dispersal area	685 000 sq m.

Roman shards comprise nearly one third of all collected finds in the second survey or 3671 fragments. Because of the selection of the finds gathered by regular grid units their actual number is probably greater, although their share in the total surface record is certainly lower than 30%. This is because an even greater amount of the Late Ottoman-Early Modern material was discarded prior to the processing of the finds. The mean overall artifact density of 1.8 fragments per 1000 sq meters of transect survey is also surprisingly low, although it doesn't include corrections for the lesser degree of survey intensity and the fact that field blocks selected for grid survey were transected even less thoroughly. Compensating for the lesser degree of survey intensity in general, the density of Roman material increases to about 4.5 Roman shards per 1000 sq meters of transect survey. This is very close to the median overall value and higher than the mean density for the eastern ridge.

Dealing with the Roman material in the second survey area it is necessary to introduce mean densities for the eastern and the western half of the survey area. Over 95% of all Roman finds collected by individual field walking transects came from field blocks in the eastern part of the survey. Here they form an almost continuous carpet stretching across the entire eastern slope of the basin, except for its northernmost and southernmost parts. Looking at this distribution, it is evident that Roman finds largely determined the distribution of the overall surface record, although they constitute slightly over one third of all finds collected by individual transects in the eastern half of the survey. In this part of the survey area the mean density recorded by individual transects increases to nearly 3 fragments per 1 000 sq meters or 5-6 fragments per field block. In sharp contrast, in the western half of the survey the mean density recorded by individual transects is about 0.22 fragments per 1 000 sq meters. Nearly 650 fragments were collected from field blocks east of the Skopje-Kučevište asphalt road and only 31 fragments came from field blocks to its west.

The mean overall density of 3.4 fragments per 100 sq meters of total grid survey is a better indicator of the true amount of Roman material on the eastern ridge, but not in the western half of the survey area. This reflects the fact that a much smaller portion of the western ridge was covered by regular grid surveys. These confirmed the near absence of Roman finds on the surface, recording an average of 0.21 fragments per 100 sq. meters. Note that in both cases the difference between the transect and the grid survey mean values are tenfold, even after compensating for the lesser degree of survey intensity. This is a much greater difference than the one observed in the Sopot survey,

where the average grid survey records where about five times the transect survey average. This cannot reflect the actual distribution of the finds, as they were certainly far more focalized in the first survey area. It is rather related to the collection strategies and perhaps, the quality of the finds or the bulkiness of the collections. In Sopot the mean overall value is increased by the intensified transect collections from sites that weren't included in the grid survey. In Skopian Montenegro the individual transect collections from a certain number of site locations were less thorough. At the same time, we'll see that the much higher mean and maximum densities recorded by the total grid surveys in the second survey area can largely be attributed to the existence of a few sites characterized by large quantities of small and badly worn ceramic fragments, most probably brick and tile. It has to be recalled that these weren't included in the figures presented in table 3 and that the mean overall and especially the maximum on-site densities recorded by the grid survey are much higher. In fact on one or two locations we recorded slightly over 80 fragments per 100 sq meters. The mean overall density will increase more gently, reaching to about 5 fragments per 100 sq meters. Only when analyzing the on-site distribution did we realize the important consequences of this lowering of the mean and maximum values recorded by the grid survey. In a number of cases they had the unwanted effect of slightly smearing the site boundaries.

One cannot escape the impression that in the second survey, Roman finds were far less obtrusive than in the first survey area. This is largely determined by the low quality of the on-site material on a certain number of locations, but it also has to do with the similarity between the colors of the local soils and the ceramics. Both usually ranged between buff and light brown, which made the accurate recording or even the detecting of Roman sites a challenging task, despite the fairly high on-site densities. This resembles the situation in the first survey area, where the dark prehistoric fabrics were also difficult to recognize by simply walking over the fields, often resulting in very sharp discrepancies between the transect and grid survey results.

The transect survey collections, when carried out consistently clearly indicate the focalized character of the distribution of Roman finds. Nearly 30% of all Roman finds collected by individual transects were found on less than 3% of the field units dividing the survey area. On these field blocks, the density of Roman shards is at least 11 fragments per 1 000 sq meters, 3-4 times the mean density for the eastern part of the survey. The difficulty in separating them from the surrounding background arises from the fact that they are usually surrounded by an intermediary zone, featuring between 5 and 11 fragments per 1 000 sq meters. Field blocks of this category stretch over an area of considerable size and account for over 30% of all Roman finds collected by individual transects. In this respect too, the distribution of Roman material closely resembles the distribution pattern of the total surface record. Despite the apparent focalization, the transition from the zones of higher to the zones of lower artifact density is fairly gradual. Consequently the task of drawing clear site limits is rather elusive. Actually this is nearly an unattainable objective without the more intensive, total grid surveys.

Taking the group of field units with the highest artifact density, featuring over 11.3 fragments per 1000 sq meters as possible site locations, one can observe at least 10 such foci (map V_4a). They are usually, though not always surrounded by field units featuring between 5.2 and 11.3 fragments per 1000 sq meters. The greatest concentration of these field units is along the top of the eastern ridge, coinciding with the zone of high

overall artifact density. From north to south, these are field units 37; field units 1,2 and 6; field units 22a-23b; field units 320 and 336, the former featuring the highest density of Roman material recorded by the transect survey and field block 351, the southernmost of the group spreading along the survey's eastern limits. Towards the central part of the surveyed basin, there are three individual or groups of field blocks featuring very high density of Roman material. These are the isolated cluster on field block 66; the group of field units 47a-b, 49-50, a short distance to the south; and the southernmost pair of field units 289a-290a. Finally, in the central parts of the survey area where Roman finds become visibly sparser while the overall artifact density remains high, there is only one field block featuring more than 11.3 fragments per 1000 sq meters, field unit 137 near the northern edge of the surveyed basin. It has to be stressed however that on certain field blocks, (277b, 84a and 10) the individual transect collections were less intensive because it was decided to carry out total grid collections on these location during the field block survey. On the western ridge the amount of Roman material visibly declines, never exceeding the threshold of 5 fragments per 1000 sq meters, while 90% of the field units west of the Skopje-Kučevište road have less than 1 fragment per 1000 sq meters.

Field blocks with very high density of Roman material are almost always surrounded by field units featuring between 5.1 and 11.3 fragments per 1000 sq meters. Only field block 328, by the eastern limit of the survey stands isolated, though in this case the high artifact density is very likely artificially enhanced by the small size of the field unit. In some cases they form pairs, in others such as field blocks 45, 46b, 47a-b, 49-50, or 22a-b, 23a-b, 25a-b, they form larger zones of higher artifact density measuring over a couple of hectares. This roughly concentric pattern resembles the distribution of the overall surface record, which complicated maters when deciding about the limits of the total grid survey. Zones with high density of Roman material roughly overlap with zones with very high overall artifact density, although the opposite wasn't necessarily the case. Field units with very high overall artifact density in the central and western survey sections, field units 263, 212a-b, 231, but also in the northeast corner of the survey area, on field blocks 39a-b, 40a-b produced very little or no material datable to the Roman Period. Both the transect and the total grid collections demonstrated that the chief contributor to the increased artifact density on these field units was off-site material datable to the last couple of centuries. These surprising fluctuations in the amount of off-site debris from the recent past will be further examined while discussing the distribution of the total grid collections by periods.

Further complicating the task of drawing the site limits on the basis of the transect survey collections and deciding on the location and the extent of the total grid collections is the fact that on nearly 17% of the field units on the eastern ridge, the density of Roman finds is close to or slightly above the mean district value of 3 fragments per 1000 sq meters. These field blocks feature between 2.5 and 5.1 fragments per 1000 sq meters encompassing the overall median value. Often they accompany field blocks with over 5.1 fragments per 1000 sq meters further enhancing the concentric pattern, but they also appear unrelated to the former. Prior to the total collections it was predicted that this was the off-site zone, gradually becoming thinner on field blocks in the central survey section, and nearly disappearing on field blocks west of the Skopje-Kučevište road. It is obvious however that this is not a continuous carpet of surface material. There are zones of very low artifact density on the eastern ridge featuring less than 1 Roman shard per 1000 sq

meters. These can stretch over several contingent field blocks, such as the group that separates the potential sites on fields 22a-b, 23a-b and 47a-b, 49 or the group of field blocks west of the concentration on field blocks 47a-b, 49-50. These fluctuations in the distribution of Roman finds will be confirmed by the results of the total grid survey.

As argued before it is impossible to determine the size of these clusters solely on the basis of the transect survey results. If for the moment we take the density of 11.3 fragments per 1000 sq meters (we saw in the Sopot survey that on-site densities were at least 3-4 times the district mean value) as the site threshold and the group of field blocks featuring between 5.2 and 11.3 fragments per 1000 sq meters as representing the site halo, we can distinguish between two groups of clusters based on their size. The first group comprises the large clusters on field blocks 1, 2 and 6; 47a-b, 49-50; 22a-b, 23a-b; and 289a-290a. They stretch over two or more neighbouring field blocks and are usually surrounded by several field units featuring between 5.2 and 11.3 fragments per 1000 sq meters. The other group consists of isolated field units, usually accompanied by one or two field blocks featuring between 5.2 and 11.3 fragments per 1000 sq meters. These are the possible sites on field blocks 37, 137, 66, 320, 328, 336 and 351. Predictably these smaller sites produce less extensive halo zones. To these, we can add the possible sites on field blocks 277b, 84a and 10-11 where the transect collections were less intensive. Admittedly the status of certain clusters such as the one on field block 6 remains ambiguous: it is situated at a certain distance from the cluster on field units 1 and 2, but it is in their immediate vicinity, separated by field blocks with above average artifact density. The first group of larger clusters spreads over as much as 1-2 hectares, while the second group doesn't exceed the limits of a single field unit measuring not more than 2-4000 sq meters. The halos of the smaller group of potential sites were usually limited to single field units, while the halos of the group of larger clusters were spread over more than one field unit, surrounding the sites on at least two sides.

A similar problem emerged in the Sopot survey: collections by individual field walking transects provide a spatial framework that is too raw for documenting the size and the inner structure of sites smaller than 5000 sq meters. As in many other regional survey projects, this site-category is often the most predominant and total survey by grid units not larger than 20x20 meters is an indispensable tool for determining their precise size, location and chronology. In the detailed descriptions of the distribution of Roman finds collected by regular grids, we'll see that the great majority of sites barely spread over more than a half of the average field block area. Understandably the size of this site-category will be more than doubled if we limit the analysis to the distribution of finds by field blocks. Worse still, a series of isolated small clusters will be depicted as a large zone spreading over a few contingent field blocks. Nevertheless in a number of instances we will have to rely solely on the transect survey record. The total grid survey could cover only about 10% of the survey area. As we saw in Appendix III, it mostly targeted field blocks featuring very high overall density, which didn't always coincide with the zones of higher density of Roman material. About 40% of the field blocks featuring very high density of Roman finds were entirely or partly left out of the total grid survey (map V_4b). In certain cases these fields were deliberately left out of the regular grid survey, because it was simply impossible to locate substantial clusters of surface material in the later stages of fieldwork. But in a number of instances denser clusters of Roman material were located on field units that didn't belong to the class of very high artifact density and

we became aware of them only after the processing of the material. In cases such as these, the transect survey record presents the only data available and they will be an indispensable source of information. Moreover both the transect and the regular grid survey revealed a rather nuanced pattern of distribution, characterized by nearly sterile areas, zones of low and intermediary densities and high density spots. The inadvertent inclusion of segments of the zones of lower artifact density in the total grid survey demonstrated that the off-site was far from being a continuous and even carpet of surface material. On the contrary, it features considerable fluctuations and linear tendencies that we can only understand through the study of the transect survey record.

But trying to extract the maximum information from the collections by individual transect units, we have to be aware of one very significant weakness of these data. As mentioned in preceding paragraphs, the individual transect collections weren't equally thorough on all field bocks. Sometimes this was done consciously with the aim of preserving the surface record for the regular grid survey and sometimes it simply resulted from the loss of data. It should be stressed that on nearly 70% of the field blocks with surface material, the individual transect collections included more than 33% of the counted material. While this seems like a fairly representative coverage, comparing artifact density on the basis of individual transect collections can be misleading if this factor is not taken into account. Assuming that on each field block the individual transect collections represented 100% of the material counted, we see that this factor doesn't have a particularly strong effect on the overall spatial and statistical distribution of Roman finds, as on the majority of field blocks featuring high density of Roman material transect collections were less intensive (map V_4c). As one might expect, on these field units the artifact density is further increased, ranging between 38 and 119 fragments per 1000 sq meters. The less intensive transect collections on field blocks 10, 86-84a and 272b are unmasked and these field units join the zone of very high artifact density. In addition, field blocks 270a and 394, both located in the central survey section also emerge as potential site locations, featuring 52 and 43 fragments per 1000 sq meters respectively. Note that unlike the majority of the field blocks with high density of Roman material, these two stand fairly isolated, surrounded by a zone of very low artifact density. In other words they don't produce the halo effect, which certainly contributed to their low obtrusiveness in the surface record. There are no significant changes in the western survey half, where artifact density remains below the overall average on all field units. In general, the extents of the various zones of artifact density remain unaffected. If we compare the distribution of field units across the quantity ranges on maps V_4a and V_4c, we'll see only minimal variations. However when it comes to determining the extent of individual site areas and their halos or the nearer off-site, we will have to consider in greater details what fraction of the counted material was included in the individual transect collections.

App IV.1.2.2 Grids 1, 2 and 3 (tables 4 and 5, maps V_5a, V_5b, V_5c)

Probably the greatest surprise of the total grid survey results came from grid 1, where we expected to locate the largest cluster of Roman finds in the second survey. Six of the nine field units covered partly or entirely by this grid (field blocks 38a/b-40a/b, 59-61) featured very high overall densities, forming the most extensive cluster in the second

survey area. However the study of the finds collected by individual transects featuring between 15 and 25% of the material counted, showed that Roman finds were present in quantities higher than the district average only on field blocks 38a and 39b in the eastern half of the gridded area (table 4, map V_5a). As shown on table 4, neither of these field units belong to the zone of very high artifact density. The maximum recorded on field block 38a is about 3 times the mean district density, which is rather low in comparison to other field units covering possible or definite site locations. None the less the difference is considerable and further analysis and the total collections by regular grid units will confirm the existence of a site on this field unit, albeit of a very small size and featuring one of the lowest on-site densities in the second survey.

Table 4: Mean district density and density on possible site locations in the northeast survey quarter, in 1000 sq meters.

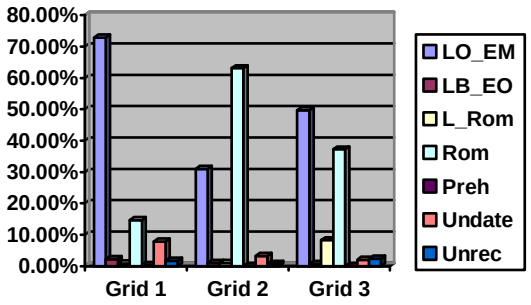
	Field block 37	Field block 38a	Field block 39b	Field block 34	Field block 10
Expected	2.85	2.85	2.85	2.85	2.85
Actual	12.5	8.5	4.5	4	2.5

In case the transect collections included all counted material, artifact density will increase to average on field blocks 38b and 39a and above average on field blocks 38a and 39b (map V_5c). In fact field block 38a joins the zone of very high artifact density, a prediction partly confirmed by the regular grid survey. It was precisely on this field unit that the total collections by regular grid units revealed a tiny cluster featuring between 6 and 11.3 fragments per 100 sq meters or between 10 and 17 fragments per grid unit (map V_5b). It is limited to three neighbouring grid units, in the southeast corner of the gridded area. Like the majority of the Roman sites, it bears a roughly elongated shape. However analyzing the distribution of the total collections by grid units, it was realized that often the total surface record itself tends to concentrate on grid units aligned in one or two neighboring rows. It isn't always possible to decide if the distribution patterns of the overall collections are chiefly defined by the distribution of Roman finds. This was definitely the case on a number of grids, but specifically on grid 1 the amount of Roman material and the size of the cluster are too small to affect the distribution of the overall surface record. One shouldn't exclude the possibility that this is simply an effect of the modern ploughing patterns.

Grid units featuring between 4 and 6 fragments tend to concentrate around the small core of about 11 fragments per 100 sq meters in the southeast corner of the gridded area. On the rest of the grid units, there was a continuous carpet of Roman material with artifact densities ranging between 1.3 and 2.5 fragments per 100 sq meters, i.e. lower than the overall average recorded by the regular grid survey. On isolated grid units, it can increase again to over 3 fragments per 100 sq meters or 5-6 fragments per grid unit and these incidences could have contributed to the increased density on field block 19b. However we will see that this isn't untypical for the zones featuring average or higher than average densities of Roman material. In this context it has to be noted that fluctuations on such a scale were rarely witnessed during the analysis of the off-site carpet in the first survey area. Note the relatively small difference between the grid unit

with the maximum number of Roman finds and the other two units that form this cluster suggesting a core and a narrow peripheral zone spreading mostly to the north and south. The latter are in fact closer to the zone of average artifact density of less than 6 fragments per 100 sq meters. Even if these two grid units are included in the site area, it will still measure less than 500 meters. In reality this site hardly occupied more than 200-250 sq meters and it is the thinnest in the second survey area.

Graph 1: Chronological composition of the finds on grids 1-3



As shown on graph 1, Roman finds amount to about 13% of the material kept from grid 1. It has to be stressed that only about 50% of the finds were kept and this was mainly dictated by the character of the total surface record on this location. On the great majority of the grid units, between 30% and 50% of the collections consisted of roof tile fragments, certainly dated to the Late Ottoman and Early Modern period. In fact very similar shapes and formats were seen in the first survey area and one can still find nearly identical examples standing on older houses in the villages. As mentioned in the main discussion, this material constantly recurred in a few basic formats and fabrics across the entire survey area. Hence the actual percentage of the Roman finds on grid 1 is even smaller, while the percentage of finds datable to the Late Ottoman and Early Modern period will increase to above 80% of the total surface record.

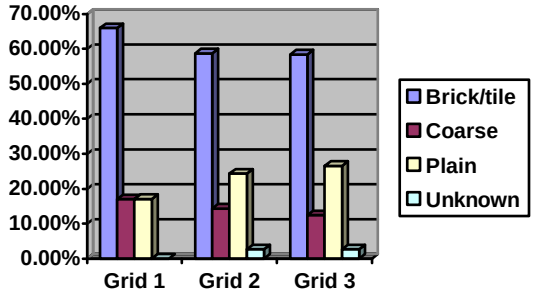
According to the individual transect collections, the zone of average or higher than average artifact density continues to the southeast, over field block 37 and after a brief interval of average density on field blocks 35 and 34, it increases to over 5 fragments per 1000 sq meters on field blocks 33 and 8, up to 120 meters from the edge of grid 1 (map V_5a). This distribution was only partly confirmed after the total collections on grid 2, covering field block 137 and some of the fields on the lower terrace. The main concentration of Roman material was discovered not on field block 137, but on the lower terrace, on field block 34. But this disagreement between the transect and the total grid collections is related to the fact that the individual transect collections from field block 34 were smaller, most probably because of data loss. They comprised less than 15% of the material counted, while on field block 37, almost 50% of the finds were gathered. Indeed if we assume that all counted material was collected, the main concentration shifts to field block 34, gradually declining over field blocks 33 and 8, as well as on the neighbouring field units to the northwest (map V_5c). But even so field block 37 features a higher artifact density than field block 34. This either reflects the fact that the counts by

individual transect units were more accurate on field block 37 or that there were significant changes in the plough-soil over the course of the field campaign.

Essentially grid 2 is a continuation of grid 1, although it had to be laid out separately due to the fields' orientation. Although the quantity of the total surface record is lower than on grid 1, finds datable to the Roman Period are much more prevalent. The main concentration spreads over most of the central section of the gridded area, covering field blocks 37, 34 and 35. It forms a fairly compact cluster with artifact densities ranging from 8.5 to 16 fragments per 100 sq meters, again roughly ten times the density recorded by individual transect collections (map V_5b). The maximum densities of over 14 fragments per 100 sq meters were recorded on two grid units, in the southern half of the grid. This cluster is almost entirely situated within the limits of the lower terrace on field blocks 34 and 35, only its northern end stretching over to the fields on the upper terrace, on field block 37. The core of the "site" on grid 1 is situated only about 60 meters from the northern edge of this site.

The site on grid 2 exhibits a regular concentric pattern. The central cluster defined by the threshold of 8 fragments per 100 sq meters is surrounded by a narrow ring of grid units featuring between 2.6 and 6.5 Roman shards per 100 sq meters or between 4 and 9 fragments per grid unit. Recall that this is equal or slightly higher than the mean density of 3.3 fragments per 100 sq meters of total grid survey. This narrow belt of intermediary density was paralleled on the periphery of the small site on grid 1 and it will recur on most other sites documented by regular grids. On grid units at the periphery of the gridded area, the artifact density drops below 2.5 fragments per 100 sq meters. Excluding the narrow zone featuring between 2.6 and 6.5 fragments per 100 sq meters, the site revealed on grid 2 measures nearly 5000 sq meters. It lacks the characteristic elongated shape of some smaller clusters, though the zone of higher artifact density tends to spread further from the core along one or two rows of grid units, crossing over to the upper terrace on field block 37.

Graph 2: Distribution of Roman material by classes on grids 1-3



Over 60% of the total collection from grid 2 was studied. In this case the most affected by the selection strategy was the category of unrecognizable finds. On many of the grid units that belong to the site area, 20-30% of the total collections consisted of badly worn, defaced fragments. Later during the study of the material, it was realized that these were very probably small bits of Roman brick and tile. Architectural ceramics from the Roman Period were regularly made in soft, soapy fabrics that weathered easily. Were these finds kept for further study, the percentage of Roman finds would have certainly

risen even further. Densities on the two grid units that form the core of the site are going to increase to about 30 fragments per 100 sq meters and on the rest of the site area, they will range between 10 and 15 fragments per 100 sq meters. This however doesn't affect the size of the cluster significantly, because almost 100% of the finds discarded from the peripheral units comprised Late Ottoman-Early Modern tile. In the end, although the decision to discard a portion of the collected material accelerated the processing and study of the finds, it also had the unperceived effect of further blurring the site limits. Were all finds kept for further analysis, the contrast between the site and off-site zone would have been much greater and the site limits would have come out sharper. In this particular case, the site threshold would've been elevated to over 10 fragments per 100 sq meters and on the site halo artifact densities would remain roughly the same, ranging between 3 and 8 fragments per 100 sq meters.

Approximately 40% of the discarded material consisted of the abovementioned Late Ottoman-Early Modern tile categories. On the peripheral units they were the most numerous category, sometimes representing more than 80% of the total collections. It is nevertheless evident that the Roman finds are the predominant chronological group in the collections from grid 2 (graph 1). They comprised at least 60% of the total collection and are doubtless the chief contributor to the increased overall artifact density on this location. We'll see that on most of the securely identified sites, material from the Roman Period represents at least 40% of the total collections. However it has to be noted that on grid 2 this increase also indicates a rather considerable decline in the amounts of Late Ottoman-Early Modern finds from grid 1. It also confirms the suspicions raised in Appendix III, concerning these unexpected fluctuations in the amount of the off-site debris that often lured us into thinking that we were dealing with genuine archaeological surface clusters. Apparently they aren't solely confined to the western ridge of the surveyed basin.

As shown on graph 2, the collections from grid 1 and 2 are very similar regarding the distribution by fabric categories. As on sites from the Roman Period in the first survey, the most prevalent is the category of architectural ceramics, contributing for over 60% of the Roman material. Because of the selection strategy this category is certainly even more predominant in the collections from grid 2. About one quarter of the finds fall into the category of plain fabrics, while the category of coarse ware represents between 12 and 17% of all Roman finds. Again this is remarkably similar to the composition of the domestic assemblages from the Roman Period collected in the Sopot survey. The relatively small number of finds on grid 1 could contribute to the equal percentage of fine and coarse ware. In all other aspects the two assemblages exhibit nearly identical composition. Moreover the same fabric groups can be found in both assemblages, clearly indicating that the pair of clusters was roughly contemporary. All this suggests that these two clusters are perhaps better treated as components of a single site 1-2.

However about 120 meters to the east of site 1-2, the total grid survey revealed another cluster of Roman pottery (maps V_5a and V_5b). This site was located on field blocks 10 and 11 by the eastern survey limit. The increased amount of Roman material were noticed already during the transect survey and we decided to save the material for the total grid survey (table 4). Indeed if we adjust the individual transect collections to represent 100% of the material counted, field block 10, which covers most of the site area, joins the zone of very high artifact density with over 40 fragments per 1000 sq

meters (map V_5c). None of the few finds collected from field block 11 could be dated Roman and the density of Roman material on this field unit remains zero, although the regular grid survey confirmed that a portion of the site spread over this field unit.

Both field units were entirely covered by grid 3. Regarding size, the cluster on grid 3 is of the same rank as the cluster on grid 1. In this particular case the original on-site distribution is probably lost due to secondary dislocation of the surface finds. The site core is limited to two grid units in the southern end of the gridded area, featuring around 20 Roman shards per 100 sq meters. As discussed in Appendix III, the concentration of slightly over 11 fragments per 100 sq meters on the eastern periphery of the grid is probably a result of secondary piling up of larger tile fragments. Originally this material must have come from grid units along or near the southern edge of the grid, near the site core. Outside the two grid units featuring around 20 fragments per 100 sq meters, artifact density suddenly dwindles to 5-6 fragments per 100 sq meters or less. Hence the site area is practically limited to the two grid units in the southern end of the grid, measuring only a few hundred sq meters. Because of the dislocations, the cluster was originally slightly larger and denser. Despite the slight differences, it is undeniably similar to the cluster uncovered on grid 1. Because the original distribution of the finds is lost, it is difficult to determine the exact shape and size of the site. Evidently the site area was mostly limited to two grid units in the southwest corner of the grid, though it is possible that it originally spread over other grid units or had a separate core. But even if we allow for these later disturbances, the site area couldn't have been larger than 500 sq meters.

Table 5: Mean overall and on-site density recorded by the total grid survey, in 100 sq meters.

	Site on grid 1	Site on grid 2	Site on grid 3
Expected	3.4	3.4	3.4
Actual	8	8.1	16

Although occupying a tiny area, the site on grid 3 features the highest artifact density among the Roman sites in the northeast survey section (table 5). It should be noted that only grid units featuring 6 or more fragments per 100 sq meters are included in the site areas, so that the values shown on table 5 don't take into account the site halos. The relatively low density of slightly over 8 fragments per 100 sq meters on site 2 results from the fact that a considerable portion of the Roman finds from this site were discarded and aren't included in the analysis. In contrast, almost 100% of the Roman shards collected from grid 1 were kept for further study. If account is taken of all gathered finds, the mean density on site 2 will certainly increase for 50 to 75%, approaching the mean density on site 3.

Regarding the chronological profile of the total surface record on grid 3, the Late Ottoman-Early Modern finds again become the most predominant group (graph 1). They comprise about 50% of all finds kept for further study, while material datable to the Roman Period represents about 37% of the collections. In the case of grid 3, about 75% of the collected material was kept for a detailed study. Discarded material mostly comprised Late Ottoman-Early Modern tiles and finds worn beyond recognition. Knowing that the bulk of the finds of the latter group were tiny fragments of Roman tile,

the chronological profile of the total collection would differ little from that of the sample collection. Characteristic for this collection is the presence of a small amount of Late Roman finds, comprising nearly 10% of the collection. It has to be stressed however that the greatest portion of the finds determined as Late Roman consists of fragments of Late Roman sigillata; possibly, but not necessarily later than the rest of the plain fabrics datable to the Roman Period. Although the composition of the assemblage is similar to those collected from grids 1 and 2, fine pottery being slightly more represented than the coarse ware, some of the more numerous fabric groups have no parallel among the material collected from the rest of the Roman clusters. More specifically the quality of the finds from grid 3 is evidently higher when compared to the predominant pottery categories on grid 1 and 2. Nearly two dozen fragments had nicely preserved red slip and one fragment had finely executed stamped decoration. This was strictly speaking the only collection of fine Roman pottery from the second survey area[4]. Only rare examples from the rest of the Roman pottery assemblages had preserved faint traces of lean, reddish or brownish slip. Like the architectural ceramics, the majority of the fine ware fragments had worn plain surfaces. Finally, a portion of the brick and tile fragments collected from grid 3 was also made in fabrics different than those usually encountered on the rest of the Roman sites from this survey area. In fact some of the pottery and tile fabrics were only found among the finds from grid 3. This suggests that despite the similarities regarding size and general composition of the assemblage, the cluster on grid 3 differed from most of its neighbours. It is further distinguished by the visible presence of roughly hewn stone, mostly dislocated along the edges of the field and used as a support for the escarpment delimiting the field from the north. This site is also made distinct by its micro-location. The cluster on grid 3 occupies the highest point in the survey area, overlooking the entire basin. It is positioned just above the contour line of 520 meters above sea level, while the clusters on grids 1 and 2 occupy the lower terrace, between the lines of 510 and 520 meters above sea level. The site on grid 3 stands lower only to the small fortification situated about 400 meters to the north-northwest, described in Appendix III. It is noteworthy that the roughly hewn stone-blocks found on both sites are remarkably similar concerning their size and craftsmanship.

App IV.1.2.3 Grids 14, 11 and 5 (tables 6 and 7, maps V_6a-6c, V_7a-c)

The third Roman site occupying the terrace between the contour lines of 510 and 520 meters above the sea is situated 370 meters to the northwest of the cluster on grid 1 (maps V_6a). It lies at the southwest foot of the fortified top of the eastern ridge, near the very apex of the surveyed basin. It spreads over parts of field blocks 84a and 86 and was covered with grid 14. On these field blocks the density of Roman finds recorded by the transect collections barely exceeded the average for field blocks in the eastern half of the survey: it ranges between 4.5 fragments per 1000 sq meters on field block 86, to 6.5 fragments on field block 89 and 7 fragments per 1000 sq meters on field block 85a (table 6). It should be stressed that the transect collections on field block 86 were less intensive, because we wanted to save the surface record for the total collection by regular grid units. The increased density of Roman material on the neighbouring field units was merely

[4] For the distinction between plain and fine pottery in Roman assemblages and the scarcity of the latter see, J.T. Peňa, *Roman Pottery in the Archaeological Record*, Cambridge 2007.

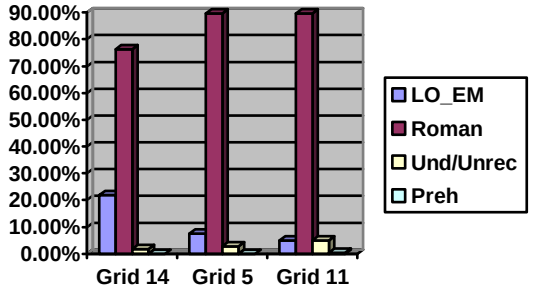
reflecting the intensified collections by individual transects including over 60% of the material counted on field blocks 84b, 85a and 89. Assuming that the individual transect collections included all material counted on these field units, there emerges a much more accurate picture (map V_6c). Both field block 86 and 84a move to the zone of very high artifact density potentially featuring 49 and 47 fragments per 1000 sq meters, while on the surrounding field blocks the artifact density remains slightly above the average. To the southeast, the carpet of Roman finds nearly disappears from the surface of field blocks 87 and 82.

Table 6: Mean overall density and density on field blocks covering potential site locations, in 1000 sq meters.

	Field block 86	Field block 85a	Field block 1	Field block 2	Field block 6
Expected	2.85	2.85	2.85	2.85	2.85
Actual	4.5	7	13.5	33.5	18.5

Not surprisingly when the fields were visited for total collection towards the end of the first year's campaign, the impression was that the amount of surface material had visibly shrunk since the time of the transect survey. The total grid survey confirmed this impression, gathering less than 200 fragments from an area of over 2 700 sq meters. This was one of the smallest total collections from the second survey area. Looking at its chronological profile, it becomes clear that we were able to detect this cluster only thanks to the predominance of Roman pottery in the total surface record. They probably represent more than 80% of the total collection, because most of the discarded finds were worn chunks of Roman tile.

Graph 3: Distribution of finds by periods on grids 14, 5 and 11



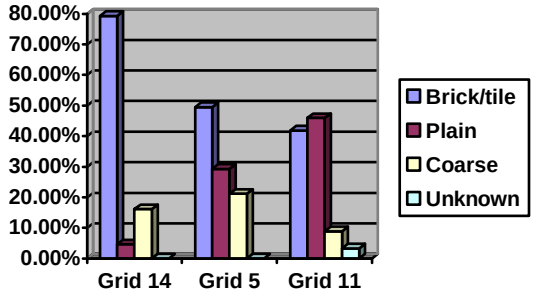
But despite this predominance in the total surface record, the cluster of Roman material on grid 14 looks even thinner than the one on grid 1. The average density on the parts of grid 14 that cover the suspected site barely reaches the on-site threshold of 6.5 fragments per 100 sq meters (table 7, map V_6b). The core of the cluster spreads over three neighbouring units in the central part of the grid. Maximum density was recorded at 8 fragments per 100 sq meters or 12 fragments per unit, though in reality the figure is certainly much higher, probably around 15 Roman shards per 100 sq meters. Consequently the average on-site density will also increase, at least to about 8 fragments

per 100 sq meters. Nearly 60% of the finds were kept, but the greater portion of the discarded shards came precisely from the central grid units where the density of fragmented tile was the greatest. Consequently the cluster occupies only a slightly larger area, certainly stretching at least over one other grid unit from the southern row. In its central parts, the actual density of Roman shards is closer to the density of the overall surface record, ranging between 8 and 15 fragments per 100 sq meters. On units in the eastern and western third of the gridded area, it drops to 6 fragments per 100 sq meters or less. Here as on the clusters on grid 1-2, one can distinguish between a narrower belt defined by densities of 2.5 and 6 fragments per 100 sq meters, extending for not more than a dozen meters around the site core and a more extensive zone featuring below 2.5 fragments per 100 sq meters and spreading for an unknown distance beyond the grid limits. Thus the cluster on grid 14 is actually slightly larger than the clusters on grids 1 and 3. Nevertheless in terms of size it remains within a similar rank, its area barely reaching 500 sq meters. The site on grid 14 is one of the most isolated in the survey area. The surrounding field units have very low densities of Roman material and low overall densities. It is nonetheless certain that most of the site halo spread on field blocks 84a-b, 85a and 89, north and west of the site.

Table 7: Mean overall and on-site density recorded by the regular grid survey, in 100 sq meters.

	Grid 14	Grid 11	Grid 5
Expected	3.4	3.4	3.4
Actual	6.5	14.5	8

Graph 4: Distribution of Roman pottery by basic categories, grids 14, 5 and 11



When the composition of the Roman assemblage is analyzed, the cluster on grid 14 looks very different from the assemblages on grids 1-3. 80% of the finds consist of brick and tile fragments and their presence is certainly larger as they were the most commonly discarded category of finds. The amount of coarse ware is similar to that on the sites on grids 1 and 2 or about 15% of the assemblage, but the presence of plain pottery is a negligible 4.5% of the Roman assemblage. Similarly composed assemblages were collected from the first survey area, using the individual transect as a collection unit. The case of the assemblage from grid 14 confirms that this wasn't necessarily related to

the less intense collection strategy. It differs from the sites discovered in the eastern sectors of the first survey by the absence of pithoi, though it is possible that this category was less distinguishable from the rest of the coarse fabrics from the second survey. It becomes imperative to check if there are other similarly composed clusters in the second survey area and to examine their relation to the cluster uncovered on grid 14 and to clusters featuring full domestic assemblages.

Back to the eastern limit of the survey, but occupying a slightly lower ground than the sites on grids 1, 2 and 14 is one of the denser clusters of Roman material in this survey area (map V_7a). This is a triangular area, defined by a local dirt-road to the west and the Skopje-Pobužje asphalt road to the east. On the north it is delimited by a tall scarp, marking the contour line of 510 meters above the sea. This is still the summit of the eastern ridge, but it has no visual communication with the fortification or the slopes covered by grid 1. During the transect survey it was covered by field blocks 1-6. Higher overall densities were recorded on field units 1 and 6, but the density of Roman pottery was above or close to the average for the eastern ridge on most of these field units. This indicates that Roman finds made up the bulk of the total surface record on this location. Nevertheless despite being much denser than the cluster on grid 14, the Roman site(s) on field blocks 1-6 weren't recognized during the transect survey. Following the overall artifact densities, total grid collections were limited to field blocks 1-2 (grid 11) and 6 (grid 5, map V_7b). In fact the real extent of this cluster remained elusive even after the total grid survey was completed.

The problem arose because of the quality of the material, but also because of the very sharp differences between the artifact densities on the central and peripheral units on grid 11. Recall that the total collections from grids 11 and 5 featured the lowest weight to number ratio in the survey area. The finds were so poorly preserved that individual shards rarely measured more than 2 cm in length. It was as if the surface material was deliberately ground up, both on grid 11 and 5. This could be related to the fact that both fields were vineyards. On the rest of the fields of this triangle planted with cereals, the weight of individual fragments was close to the survey average. A similar phenomenon was observed on one or two vineyards in the Sopot survey, suggesting that it could be related to the finer plowing or harrowing of the topsoil. In such conditions both the ground visibility and the poor state of preservation of the surface material obscure the true limits of the surface cluster. However, admitting that the fragile character of the surface finds is related solely to post-depositional factors would necessarily imply that the increased artifact density was determined by the same factor. Unfortunately the clusters on grids 5 and 11 were the only examples found on vineyards in this survey area. It is noteworthy that they remain a rare example, despite the fact that many other fields were also finely harrowed at the time of the survey. We therefore believe that the low state of preservation of the material on these locations signals that at the time of the survey, it's been lying exposed on the surface for a longer period of time[5].

[5] This seems to be a universal characteristic of vineyards, as they are usually ploughed over with heavy mechanization only once in a few decades, after which the surface is merely harrowed and cleared from wild vegetation, cf. S. Thompson, Side-by-side and back-to-front: exploring intra-regional latitudinal and longitudinal comparability in survey data. Three case studies from Metaponto, southern Italy, 65-85, eds. S.E. Alcock, J. F. Cherry, *Side-by-side survey: comparative regional studies in the Mediterranean World*, Oxford 2004.

The central portion of grid 11 features one of the highest on-site densities of Roman material in the survey area, although the average on-site density of 14.5 fragments per 100 sq meters is not particularly high (cf. tables 5 and 7). This must be related to the on-site distribution pattern. On two grid units in the very centre of the grid, the density of Roman pottery reached over 39 fragments per 100 sq meters or over 50 fragments per grid unit. This is two to three times the densities recorded on grids 1 or 14. Moreover it should be stressed that these figures include only about 62% of the total surface record on this site. As on grid 14 the discarded material consisted almost exclusively of fragments worn beyond recognition, in all probability tiny rounded bits of Roman brick and tile. If these were included, the maximum artifact density on grid 11 would have risen to about 65 Roman shards per 100 sq meters or almost 100 fragments per grid unit. The very high density of Roman finds limited to the four central units of the grid visibly declines on the neighbouring grid units, especially on the pair of grid units to the south, where it suddenly plummets below 10 fragments per 100 sq meters. There is also an evident decrease on the grid units to the north, but these collections still produced about 20 Roman shards per 100 sq meters. The decrease is slightly more pronounced on the westernmost row of grid units, though the density of Roman material remains around 10 fragments per 100 sq meters. A similar situation was recorded on the northernmost row of the gridded area, though here the finds were much better preserved. It is thus quite likely that the site area extended slightly beyond the limits of grid 11. Because of the sharp contrast between the densities recorded on the site core and the site periphery and because of the poorly preserved material, the halo of this site wasn't included in the total grid survey. At the time of the survey, it appeared that outside the limits of field blocks 1-3, artifact density dropped to an off-site level. If the grid was extended for at least another row of grid units along its northern and western ends, the full extent of the site area would have probably been revealed. Excluding this hypothetical outer ring, the area occupied by the site on grid 11 is nearly 2200 sq meters.

Admittedly the results of the total grid survey on field block 6 (grid 5) made us wonder if this intermediary zone didn't spread across the entire area covered by field blocks 1-6 (map V_7b). The total collections on grid 5 practically confirmed the results of the transect survey. With an average density of 8 fragments per 100 sq meters, the cluster on grid 5 is quantitatively comparable to those on grids 1 and 2 (table 7). The highest artifact density of about 15 Roman shards per 100 sq meters was recorded on two units of the northern row, by the tall scarp delimiting the entire area from the north. Overall the density of Roman shards on grid 5 was slightly higher than on the grid units from the periphery of grid 11. However there is a visible increase on the northern row of grid units, almost two times higher than on grid units from the southern row. This also validates the individual transect collections that recorded higher artifact density along the northern third of field unit 6, along the escarpment. As on grids 11 and 14, the actual density of Roman finds is certainly greater, because the majority of the discarded artifacts were worn fragments of Roman tile. Even so the maximum artifact density on this grid never exceeds the limit of 20 fragments per 100 sq meters. It seems as if this is a separate cluster, though much smaller and thinner than its neighbour on grid 11. It is of a similar size to the clusters on grids 1 or 14, measuring a few hundred sq meters. This mirrors the relation between the clusters on grids 1 and 2. However looking more closely at the distribution of the Roman material on grid 5, it is evident that the cluster doesn't exhibit

the typical on-site signature. There lacks a clear focus and a gradual transition to the off-site zone. Artifact density fluctuates at random remaining fairly stable across the gridded area. This is a typical feature of the off-site zone or of a partial on-site distribution. It is thus not implausible to claim that the scatter on grid 5 is a continuation of the halo of site 11, although the local artifact density is well over the threshold of 8 fragments per 100 sq meters. It should be noted that on grid 5 the units measured approximately 100 sq meters, with the exception of the easternmost pair measuring 150 sq meters. Alternatively the cluster on grid 5 could represent a separate site of similar size to that on grid 1, but destroyed and smeared across the field during the construction of the terrace. It is no doubt unfortunate that we failed to clarify the situation by including the intervening stretch in the total grid survey. Judging by the results of the total grid surveys on other site locations, it is likely that the clusters on grids 5 and 11 are separate clusters, bounded together by their proximity and a zone of intermediary artifact density featuring not more than 8 fragments per 100 sq meters.

This is finally indicated by the results of the individual transect collections (map V_7a, table 6). Not being aware of the presence of a site on grid 11, the individual transect collections were equally thorough on all field blocks in the area. Looking at these data, one sees a definite focus on field block 2 with over 33 fragments per 1000 sq meters and on field block 1, where the transect survey recorded about 13 fragments per 1000 sq meters. According to the individual transect collections, the carpet of Roman finds on field block 1 is patchy: the high density from field block 2 gently decreases along the easternmost transect and completely disappears along the central portions of the field, only to return to on-site level on the westernmost transect. That the cluster spreads only partly over field block 3 to the north is indicated by the visibly lower density of slightly over 8 fragments per 1000 sq meters. Further north on field block 4, it declines still further nearly reaching the mean district value. However on the northernmost pair of field blocks, the density of Roman finds increases again, reaching nearly 8 fragments per 1000 sq meters on field block 5 and 18.5 fragments on field block 6, where we suspect the existence of a separate cluster. Note the significant increase on the northernmost transect on this field; the number of collected finds is four times the quantity on the neighbouring transects and equals the number of finds collected by individual transects on field blocks 1 and 2.

Because the collections by individual transect units were of roughly equal intensity on this group of field units, not much changes when the collections are adjusted to represent 100% of the material counted (map V_7c). The main concentration remains on field blocks 1 and 2, featuring 57 and nearly 80 fragments per 1000 sq meters. There is a far more considerable increase on field block 6. With 95.5 fragments per 1000 sq meters, this becomes the densest concentration of Roman material in this survey section, a record that wasn't confirmed by the regular grid survey. This fact once more stresses the low obtrusiveness of the material from field blocks 1 and 2. The increase on the remainder of the field units in this section is gentler and field blocks 4 and 5 are ranked closer to the survey's average. The same applies to field blocks 7a and 7b, covering the terrace above this site. According to the adjusted records of the individual transect collections, artifact density drops below the average on field block 7b and also on field blocks to the west of the site. Thus the contrast between the high density clusters on field

blocks 1-2 and 6 becomes even more pronounced, providing further support for the view that these are two separate clusters, united by a zone of average artifact density.

Roman pottery is even more numerous on these fields than on grid 14. It represents at least 80% of the total surface record (graph 3). Were the entire collections studied, their share would certainly increase to above 90% of all surface finds on grids 5 and 11. Inexplicably the Late Ottoman-Early Modern off-site carpet nearly disappears from this location. It represents not more than 5% of the total surface record on grid 11 and approximately 7.5% on grid 5. Apart from the category of unrecognizable or undated finds, the collection from grid 11 included several fragments of prehistoric and possible prehistoric pottery, amounting to a less than 2% of the total surface record.

Turning to the composition of the Roman assemblages by basic functional categories, they almost appear as an antipode to the assemblage collected from grid 14 (graph 4). Brick and tile fragments represent less than 50% of the assemblages and on grid 11, they are even less numerous than the plain fabrics. On this grid the presence of coarse ware is also lower compared to assemblages from grids 1 and 2, although it still comprises about 10% of the assemblage. But the "unusual" composition of these assemblages is very probably the result of the selection of the gathered material. As mentioned befpre, the collections from both grids were characterized by the rather poor quality of the finds. On the majority of the grid units, 30-35% of the collections were discarded because they consisted of unrecognizable, defaced ceramic fragments. It is almost certain that the great majority of these were in fact, tiny bits of architectural ceramics. Allowing that at least half of the discarded material was brick and tile fragments will raise the share of this category to about 60% of all Roman finds, which is identical to the composition of the domestic assemblages from grids 1 and 2 and from the Sopot survey. Understandably in such a case, the percentage of plain fabrics would also decrease, although it would still represent 25-30% of the entire assemblage.

We observed the scarcity of coarse pottery on grid 11. These fragments represent less than 8% of the total collection on grid 11 compared to over 13% of the Roman collection on grid 2. Note however that among the collections from grid 5 coarse pottery represents slightly over 20%. If the two clusters are merged, the composition by functional categories would be nearly identical to the assemblages from grids 1 and 2. Brick and tile will be represented by over 60% of the collected finds, plain pottery by between 20 and 25% and coarse pottery by between 15 and 20% of the Roman finds. We will see that this difference in the on-site distribution of the basic ceramic classes is not unique to the cluster(s) on grids 5-11.

App IV.1.2.4 <u>The site on field blocks 47a-b, 49-50 and 66 (table 8, maps V_19a-c)</u>

This same terrace marked by the contour lines of 500 and 510 meters above the sea is occupied by one possible and one certain cluster of Roman material. The former was revealed during the transect survey, immediately to the west of grid 2 and about 370 meters to the northwest of grid 11 (maps V_19a, 19b). This is the abovementioned group of field blocks 47a/b, 49, 50 and 66. After studying the collections by individual field walking transects, it was realized that the density of Roman material on three of these field blocks reached above 12 fragments per 1 000 sq meters, nearly identical to the densities recorded on field block 2 or on field block 37 covered by grids 2 and 11 (table

8). The highest artifact density of slightly over 20 fragments per 1000 sq meters was recorded on field block 66, situated less than 100 meters from the western edge of the site on grid 2. The results of the individual transect collections indicate that the bulk of the finds was located in the central parts of the field unit. About 50 meters to the southwest of field block 66, across a local dirt road and an intervening sterile stretch, the density of the Roman material rises to about 13.5 and 11.5 fragments per 1000 sq meters on field blocks 49 and 50. According to the individual transect collection the main concentration of finds was on the boundary between these field blocks. Along the outer transects on both sides, the density of Roman material drops to an off-site level. The third peak is on field block 47a, 30-50 meters to the south of field block 50. The individual transect collections indicate that the distribution of Roman finds on this field block was patchy, with two separate concentrations in the southern and northern half of the field. It is quite likely that this cluster(s) at least partly spread over to field block 47b, the neighbouring field block to the west. This field unit features a fairly modest density of less than 6 fragments per 1000 sq meters, although this is to a certain degree contributed by the large size of the field unit. There is an evident increase in the southern half of field block 47b, suggesting that the bulk of the finds on this field "spilled over" from field block 47a, rather than from the cluster on field blocks 49-50 to the north.

Table 8: Mean district density and density on field blocks covering potential sites, in 1000 sq meters

	Field block 66	Field block 49	Field block 50	Field block 47a	Field block 47b
Expected	2.85	2.85	2.85	2.85	2.85
Actual	20	13.5	11.5	15	5.8

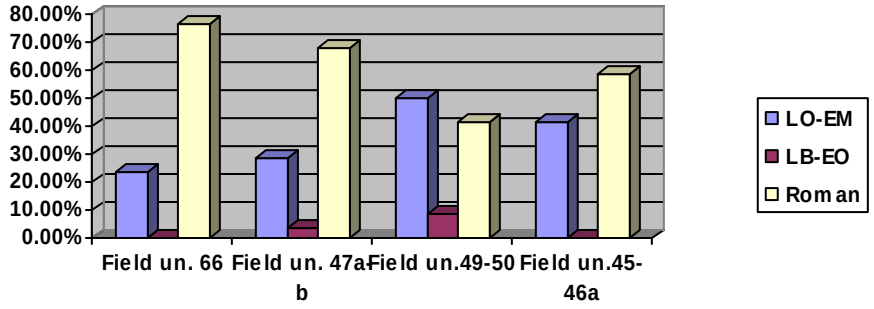
Nothing dramatically changes in the density distribution when the individual transect collections are adjusted to represent 100% of the material counted (map V_19c). The main concentrations remain on field blocks 47a, 49 and 66, the difference being that now field blocks 47a and 49 feature slightly higher artifact densities than field block 66. On the first two the density of Roman material could potentially increase to over 50 fragments per 1000 sq meters, while on field block 66 it rises to about 41 fragments per 1000 sq meters. Furthermore we see an increased contrast between these three field units and field blocks 47b and 50. Assuming that all counted finds were included in the individual transect collections, the artifact density on these two field units increases more gently and they feature only slightly over half the density recorded on the suspected site cores. This fact reinforces the impression that field blocks 47b and 50 cover only portions of this site.

Obviously on no grounds can one speculate about the true extent of these concentrations and still less about their shape and inner-structure. The situation described in the preceding paragraph came to light only after the processing of the finds. In terms of overall artifact density only one of these field units ranked very high, but when revisited for regular grid survey, field block 49 was discovered fallow and nearly sterile. The fact that we failed to locate this cluster the following year, perhaps indicates that it was of a smaller size, similar to the clusters on grids 1 or 3. But unlike the latter two cases, here

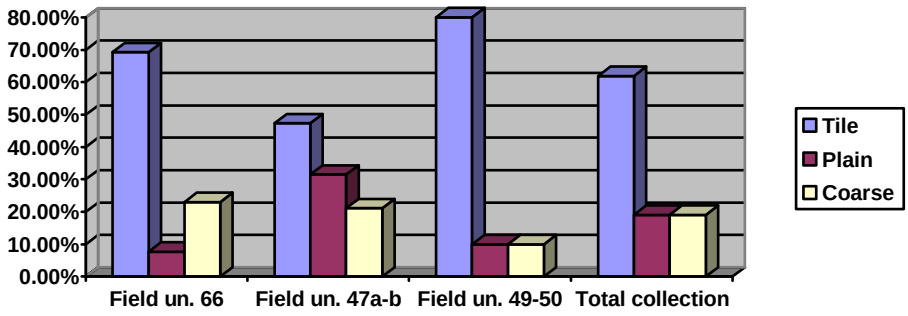
we see increased density of Roman finds spreading over at least three field units. It is therefore more likely that there were a number of separate smaller clusters on all three field units. If this was a more substantial and continuous cluster, it would have hardly passed completely unnoticed during the first year's campaign. Judging by the number and quality of the finds collected by individual transects, the concentration on field blocks 47a could have been the largest of the three clusters. But when one compares the transect collections on this group of field blocks with those partly covered by grids 5 and 11 (field blocks where the individual transect collections were equally thorough as on field blocks 47a-b, 49, 50 and 66), it is evident that the former concentration occupied a slightly larger area. As will be shown these field units don't present an isolated case. On at least two other locations in this survey area we encountered drastically changed surface conditions, even within a period of a single agricultural cycle.

These clusters remained invisible during the quantification of the total surface record partly because the amount of Late Ottoman-Early Modern off-site finds, the most visible fraction of the surface record is considerably shrunken on some of these field blocks. As shown on graph 5, on most of these field units Roman finds represent over 50% of the total surface record. It should be noted that the transect collections included between 33 and 50% of the counted number of fragments. Interestingly only on field blocks 49-50, one of which belonged to the zone of very high overall artifact density was the percentage of Roman finds lower than 50%. Even on field blocks 45 and 46b, situated immediately to the west of this group and featuring lower artifact density, finds datable to the Roman Period comprise nearly 60% of the total surface record. Roman material was present in similar quantities in the total collections from grids 2 and 3, confirming the presence of Roman sites on at least some of these field units.

Graph 5: Chronological profile of the individual transect collections from field blocks 47a-b, 49, 50 and 66.



Graph 6: Distribution of the collections by basic functional categories.



Despite the small size of the collections rarely exceeding 15 fragments per field unit, the individual transect collections were carried out consistently and considering the total number of surface finds counted on these fields they are a representative sample. It is indeed striking that as on grids 5 and 11 we see divergent distribution patterns of the basic functional categories. These observations will have important implications concerning the interpretation of uncertain or partly revealed clusters. Each of the collections represents a differently composed assemblage, although when merged into a single collection they create an assemblage composed identically to those on grids 1 and 2 or to the joined collections from grids 5 and 11. Architectural ceramics represents slightly over 60% of the finds, while plain and coarse ware comprise roughly equal components, each represented by slightly under 20%. However it is evident that the bulk of the architectural ceramics came from the northern half of this group of clusters, from field block 66 and especially from field blocks 49-50. In fact the latter cluster is rather similar to the cluster on grid 14: in both cases, architectural ceramics represent at least 80% of the assemblage, with coarse ware slightly more numerous than plain ware. On field block 66 pottery comprises 30% of the Roman collection, but note the strong presence of coarse ware fragments as opposed to plain pottery. Finally, the collection from field unit 47a-b comes very close to the composition of the total collection from grid 11. In fact we believe that if all finds collected from grid 11 were kept for further analysis, the composition of the two clusters would have been identical. Brick and tile are still the most numerous category, but they represent less than 50% of the finds, while plain pottery is visibly predominant over the coarse fabrics.

Thus given the information available, it is certain that the increased concentration of Roman material on fields blocks 47a-b, 49, 50 and 66 marks the remains of yet another Roman site. In all probability it is structured similarly to the sites on grids 1-2 and 5-11, with one major and one or two minor clusters, all situated within a radius of 50-60 meters. The fact that artifact densities slightly higher than the mean district value were recorded on a number of contingent field units, including field blocks 45 and 46b, indicates that the clusters were surrounded and separated by a zone of intermediary density representing the site halo. This latter phenomenon is another indicator of stable, residential sites[6]. If not related to site-specific taphonomic conditions, the divergent distributions of the basic classes of ceramic artifacts could indicate that each of the

[6] J.L. Bintliff, P. Howard, A.M. Snodgrass, *Testing the Hinterland: The work of the Boeotia Survey* (1989-1991), Cambridge 2007

hypothetical cluster marks the focus of a different activity. We'll see very similar patterns on a number of other Roman sites from this survey area.

App IV.1.2.5 Grids 27, 15-18 (tables 9 and 10, maps V_8a-8c, 9 and V_10)

About 380 meters northwest of this group of field blocks and 180 meters southwest of the cluster on grid 14, during the second year's campaign we accidentally discovered another cluster of Roman material on field blocks 102b-103b (covered by grid 27, maps V_8a, 8b). On these field blocks the large block survey recorded a very low overall artifact density and although there were some Roman finds among the transect collections, they were too few to merit further attention. The highest density of Roman finds was recorded on field block 103a, only slightly over 2 fragments per 1000 sq meters (table 9). Roman finds were absent from the rest of the individual transect collections. Predictably adjusting the individual transect collections to include 100% of the finds counted won't elevate the artifact density on these field units to an on-site level (map V_8c). But in the second year's campaign, while inspecting the extent of the zone of higher artifact density revealed immediately to the west of field blocks 102b-103b, we discovered a concentration of Roman material that passed completely unnoticed during the transect survey. In all likelihood this material was freshly unearthed at the beginning of the second year of the survey, because in the previous year these fields were left fallow. The entire area of field blocks 102a/b, 103a/b and 104a/b was covered by grid 27, although it quickly became clear that the bulk of the material was concentrated in the western half of the gridded area.

Table 9: Mean district and density on field blocks covering potential sites, in 1000 sq meters.

	Field block 103a	Field block 137	Field block 125	Field block 93	Field block 136
Expected	2.85	2.85	2.85	2.85	2.85
Actual	2.1	11.5	8.2	6	9.1

The highest density of Roman material was recorded on two neighbouring grid units along the northern edge of the gridded area, bounded by the terrace wall that separates the field from the north. On one grid unit the total grid survey recorded a density of about 18 fragments per 100 sq meters, on the other 24 fragments per 100 sq meters. On the neighbouring grid units to the east, the density of Roman material suddenly drops below the average for the eastern ridge. There is a somewhat gentler decrease on the pairs of grid units to the west and south of the core of this cluster, featuring between 6 and 10 Roman shards per 100 sq meters. On the next row of grid units, the artifact density drops further, reaching an off-site level or as little as 2.5 fragments per 100 sq meters. However the quantity of Roman finds increases again on grid units towards the southern periphery of the gridded area. This second core consists of four grid units, with artifact densities ranging between 6 and 12 fragments per 100 sq meters. It is evidently thinner and smaller than the core located along the opposite edge of

the field. This is rather similar to the distribution of Roman finds revealed on grid 2. The narrower site area, defined by the threshold of 8.3 fragments per 100 sq meters is briefly interrupted by narrow stretches featuring average quantities of Roman material. Note that the average on-site density is only slightly higher; taking into account only the grid units with artifact density higher than 6.5 fragments per 1000 sq meters, the mean value for the site on grid 27 is about 8.8 fragments per 1000 sq meters (table 10).

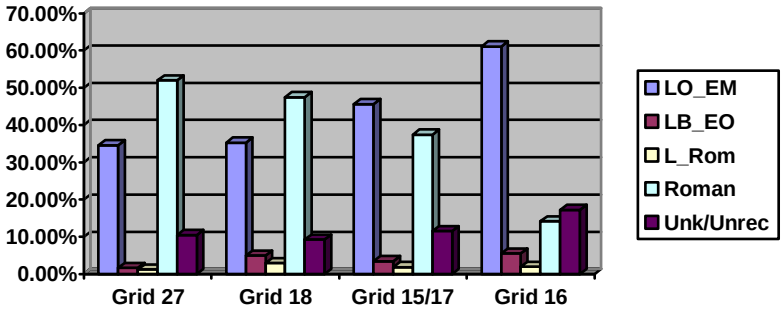
It is possible that originally, the cluster on grid 27 spread slightly further to the north, but was cut by the tall artificial terrace. Unfortunately the exposed profile was completely overgrown, while material was evidently absent from the surface of the neighboring field unit to the north. To the south, the site doesn't spread beyond the limits of field block 102a. The nearest potential concentration in this direction is about 200 meters away on field block 93, where the transect collections recorded slightly over 6 Roman fragments per 1000 sq meters (table 9).

Table 10: Mean overall and average densities for parts of grids 15-18, in 100 sq meters.

	Grid 27	Grid 15(on-site only)	Grid 16	Grid 17	Grid 18 (on-site only)
Expected	3.4	3.4	3.4	3.4	3.4
Actual	8.8	7.5	1.3	5	4.75

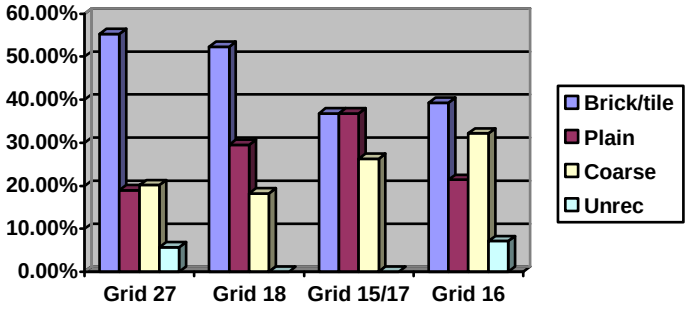
The site discovered on grid 27 occupies an area of nearly 1 800 sq meters, visibly smaller than the clusters on grid 11 and 2, but still several times the size of the sites on grids 3, 14 or 1. Although this estimate is based only on a portion of the total surface record, it is certain that its size wouldn't change significantly if all collected material was included in the analysis. This is because roughly one half of the 40% of discarded material consisted of Late Ottoman-Early Modern tile and their concentration visibly increased in the eastern half of the gridded area. However the density of the cluster would have certainly been greater, especially on those grid units that already feature higher artifact densities. The bulk of the discarded finds from these collections consisted of worn fragments of Roman brick and tile. Including this material in the analysis would elevate the maximum artifact density to over 30 fragments per 100 sq meters on the larger core, approaching the artifact densities recorded on grid 2 and to about 20 fragments per 100 sq meters on the smaller southern core. The average on-site density will also rise to over 10 fragments per 100 sq meters. This will also inevitably increase the difference between the site core and periphery and sharpen the site limits.

Graph 7: Distribution of finds by periods from grids 27, 18, 15-17



The chronological composition of the collections from grid 27 wouldn't change significantly if all collected finds were studied in a greater detail. Roughly an equal number of Late Ottoman-Early Modern and Roman finds were discarded. Most likely the percentages of Roman and unrecognizable pottery would slightly increase, though according to the notes a considerable amount of Late Ottoman and Early Modern tile was also discarded, especially from units in the eastern half of the gridded area. This chronological composition is very similar to the one revealed on grid 2 or on the collections from field units 47a-b, 49, 50 and 66. Typically for field units where Roman sites are recorded or suspected, more than 50% of the collected finds are datable to the Roman Period, while about 34% date to the Late Ottoman-Early Modern Period. There is a slightly greater concentration of unrecognizable or undated material and also small amounts of material datable to the Late Byzantine-Early Ottoman and Late Roman periods. These two chronological categories were virtually absent in the collections from grids 14, 11 and 5, indicating a difference in the chronological composition of the surface record between the eastern ridge and the central sections of the survey.

Graph 8: Composition of the Roman assemblages from grids 27, 18, 15-17



Regarding the presence of the various functional categories, the cluster on grid 27 is similar to the assemblages collected from most of the Roman sites discovered in this survey. Brick and tile comprise over 50% of the assemblage and in reality this percentage is certainly much greater. Compared to the Roman assemblages studied so far, there is a slightly greater percentage of coarse ware. More precisely the coarse ware is slightly more prevalent than the plain ware, though its share in the total assemblage is within the expected limits. About 18% of the Roman collection consists of plain fabrics, while coarse ware comprises nearly 20%. The assemblage from grid 27 comprised roughly the

same fabric groups encountered on the majority of Roman sites in the second survey. But as on the cluster on grid 5-11, the basic fabric categories don't fully overlap (map V_9). Most of the pottery fragments and especially the plain ware were collected from the northern part of the site. On the other hand, the southern half of the cluster mostly consisted of brick and tile fragments. In fact similar intra-site differentiations can be observed on the majority of the revealed clusters, though they aren't as pronounced as on grid 27. This seems to be a characteristic for all major clusters of Roman material in the survey area. On grids 2 and 11 it is likewise possible to observe a tendency of concentration of architectural ceramics in the southern half and on the periphery of the clusters, though less prominently than on grid 27 and the same was true for the elusive site on field blocks 47a-b, 49, 50 and 66. The fact that the cluster on grid 27 was more recently exposed on the surface probably explains the clearer on-site differentiation. One should also note that on the southern core, coarse fabric groups represent visibly greater percentage in the collections than on the larger northern core, where plain ware predominates. Thus when looked at separately, the composition of the southern core resembles the composition of the collection from grid 14 or field blocks 49-50.

Just about 100-120 meters southwest of grid 27, on a slightly lower ground and closer to the floor of the basin, the transect survey revealed a larger group of field blocks featuring very high or higher than average overall artifact density. However the transect collections didn't feature a particularly strong concentration of Roman material in this part of the survey area (map V_8a). The greatest density of Roman finds was recorded on field block 137, where nearly 12 fragments per 1000 sq meters were collected (table 9, cf. tables 6 and 8). On the rest of the field blocks the artifact density never exceeded the threshold of 11 Roman shards per 1000 sq meters. Artifact densities higher than the mean district value were recorded on field blocks 141 and 136 to the north and east of field block 137, featuring 6 and 9 fragments per 1000 sq meters respectively. Further south on field blocks 134, 130 and 129, the density of Roman material drops below the average for this section. Only on field blocks 125 and 93 on the other side of dirt road does the density of Roman material rise significantly above the district average, to about 8 and 6 fragments per 1000 sq meters. Compared to field blocks covering site areas on the eastern ridge these are modest artifact densities, more typical for field units covering the site peripheries. It thus became evident that mostly finds from other periods contributed to the increased overall artifact density in this survey section. To this factor we may also add the degree of intensity of the transect collections, which was lower than usual because at that stage we already decided to carry out total grid collections on at least some of these field units. One always has to bear in mind that the limits and the location of the total grid survey were dictated by the overall artifact densities.

In case the individual transect collections included all material counted from every field block, there appears a slightly better defined concentration on field blocks 125, 129, 134, and 135-137 (map V_8c). Field blocks 125 and 129 shift from the zone of average to the zone of higher than average artifact density, while the opposite is true for field blocks 93 and 141. There is also an increase on field block 92b, though in this case it is probably artificially enhanced by the small size of the field unit. In short, the group of field blocks with higher than average artifact density would have been more compact were all counted finds included in the transect collections. It is notable that in comparison to field blocks covering other sites, the adjusted records of the transect collections

produce lower artifact densities. Thus only field block 137 with about 41 fragments per 1000 sq meters belongs to the zone of very high artifact density. On the rest of the field units that comprise this group, the artifact densities range between 23.5 fragments on field block 125 to slightly over 33 fragments per 1000 sq meters on field block 136. This is only about half the density recorded on field blocks 86, 37 or 1, which covered definite site locations. On the other hand these densities are comparable to those predicted for field block 34, also covering a definite site location.

Because of the orientation of the fields and the presence of tall hedges along their perimeters four separate grids were set up covering field blocks 125-126, 129, 136-137, and 141a/b. These are grids 15-18 (map V_8b). Because they cover a more or less continuous stretch of land, the total survey results will be analyzed integrally. It has to be stressed that this cluster of Roman material came to light only after the study of the collected finds. During the total grid survey, we weren't aware that we were dealing with a continuous cluster of Roman finds. This is partly accounted for by the modern parceling of the terrain into narrow fields and partly by the very low quality of the surface finds. In this respect they are rather similar to the material collected from grids 11 and 5. The collections from grids 15-17 weigh more than the collections from grid 11 and 5, but this is simply because of the stronger presence of Late Ottoman and Early Modern material, particularly roof-tile fragments. The soft Roman tile and pottery was in an apparently poor state of preservation, especially on the narrow fields covered by grids 15-17. All three fields are finely harrowed gardens, giving a further support to the thesis that the increased artifact density is a direct result of the extreme fragmentation of the material and ultimately related to the type of ploughing on gardens and vineyards. On the fields to the north of this group covered by grid 18, Roman material becomes sparser, while individual finds are better preserved and heavier. These fields are planted with cereals and the ploughing is in general not as fine as on gardens and vineyards.

The core of this Roman site was discovered on grid 15 covering field block 125, (map V_8b). On three units in the northwest quarter of the grid, we recorded nearly 30 Roman fragments per 100 sq meters. The figures shown on the map include only studied and certainly dated material. The actual density is probably 50-70% higher approaching the maximum densities recorded on grid 11, although this wasn't the case on all grid units. As on grid 27, the greatest percentage of discarded material (mostly worn brick and tile) came from grid units with very high artifact density. On the southern row of grid units, the density of Roman finds suddenly drops to about 10 fragments per 100 sq meters or less. Only a few fragments of Roman tile were discarded from these collections and the figures shown on the map are very close to the actual quantities. This explains the relatively low average density on grid units with over 6.5 fragments per 100 sq meters, barely reaching 7.5 fragments per 100 sq meters (table 10). The average density of Roman finds for the entire gridded area is only about 5.5 fragments per 100 sq meters. If all finds collected by grid units are included in the analysis, the average density of Roman material on the site area covered by grid 15 will certainly increase to about 10 fragments per 100 sq meters.

There were no Roman finds among the individual transect collections from the next field to the south. To the west on the field covered by grid 16, the amount and distribution of Roman pottery is typical for the off-site zone. The maximum artifact density recorded by the regular grid survey barely exceeds 5 fragments per 100 sq meters

and it approaches this value only on grid units in the eastern end of the field. This could very well be the western periphery or the halo of the site on grid 15. Overall on grid 16, there are on average 1.3 fragments per 100 sq meters, a value three times lower than the survey average (table 10).

Thus the southern and western limits of the cluster are more or less well-defined. The bulk of the site area spreads to the north of grid 15, across grid 17 and over parts of grid 18. Because it doesn't include the discarded material and because of the unequal size of the grid units, the thematic map presented gives the impression that a zone of high artifact density stretches over the entire gridded area. This circumstance has also contributed to the rather low average densities recorded on these two grids, even when the analysis is limited to grid units with artifact densities higher than 6.5 shards per 100 sq meters. Barely 5 fragments per 100 sq meters were recorded on the area covered by grid 17, 4.75 on the part of grid 18 that covers the site area (table 10).

None the less there is an evident decrease in the amount of finds collected from the southern row of units on grid 17 (map V_8b). Here the grid units are slightly larger, measuring between 200 and 225 sq meters. Each grid unit from the southern row yielded about a dozen Roman shards or in terms of density, between 5 and 7 fragments per 100 sq meters. On the northern row of grid units, the density of Roman material rises again; ranging from 10 fragments per 100 sq meters on the westernmost unit, to nearly 20 fragments per 100 sq meters on grid units in the eastern end of the row. These grid units are closer to the standard size of 150 sq meters, but the amount of discarded Roman material is greater. The actual amount of Roman finds on these units is roughly 50% greater than the figures shown on the thematic map or about 30 fragment per 100 sq meters. Recall that this is very close to the maximal densities recorded on the sites on grids 2 and 27. In case all collected finds are included in the analysis, the average density on grid 17 will increase to between 6 and 8 fragments per 100 sq meters.

Very similar to the cluster on grid 27, the two site-cores on grids 15 and 17 are separated by a narrow strip of lower artifact density. They are not symmetrical; the southern one on grid 15 is evidently larger and slightly denser. Interestingly during the analysis of the distribution of the overall surface record on these grids, the maximum artifact density was located on precisely the same grid units where the concentration of Roman material was the highest. Although representing minority, finds datable to the Roman material still had a visible effect on the overall artifact density and distribution.

As mentioned before this cluster of Roman material spreads further north, beyond the limits of grid 17. At the time of the total grid survey, it was thought that the scatters of Roman material on grid 18 represented a separate cluster. But after the analysis of the collected and discarded finds, it became evident that the site continued to spread northwards in a narrow, elongated patch. The maximum artifact density of approximately 20 fragments per 100 sq meters was recorded on a grid unit in the southern end of the gridded area, less than 50 meters north of the core on grid 17. The figures shown on the thematic map are again lower than in reality. On some grid units, the collections almost exclusively consisted of tile fragments, up to half of which were discarded after being weighed and counted. Hence the true amount of Roman material is 70-100% greater, particularly on units in the southeast quarter of the surveyed area. Including the discarded material, the density of Roman finds ranges from about 11-12 fragments per 100 sq meters on the pair of grid units in the southeast corner of grid 18, reaching the maximum

of nearly 20 fragments per 100 sq meters on a grid unit 20 meters to the north. On average in this portion of grid 18, artifact density will increase from about 4.75 fragments to over 8 fragments per 100 sq meters. In other words, artifact density remains stable across most of grid 17 and the southern half of grid 18. Further north it begins to decline, gradually along the eastern limit of the gridded area and more sharply on grid units west of the core. On most units in the northern half of the gridded area, the density of Roman finds doesn't exceed 2.5 fragments per 100 sq meters and the average for the entire grid is only about 2.3 fragments per 100 sq meters. However one grid unit lying about 40 meters northwest from the core on grid 18, at the periphery of the site halo featured a density of about 7.5 fragments per 100 sq meters. It probably signals the presence of a small satellite, situated just outside the northwest corner of the gridded area and spreading over parts of field block 137. Because of the low obtrusiveness of the surface material or changes in the plough-soil, this concentration wasn't included in the regular grid survey.

But regardless of the various problems surrounding the interpretation of the grid survey records, it is evident that the continuation of the site discovered on grids 15 and 17 was limited to the southern halves of the two easternmost rows of units on grid 18. It is more than likely that minor low concentrations, such as the one discovered 40 meters northwest of the core on grid 18, surround the main site on all sides. These are tiny collections, barely approaching the threshold of 8.3 fragments per 100 sq and weighing not more than 4-500 grams. They are almost impossible to grasp during fieldwork, especially in conditions of average to higher than average artifact density. A similarly sized cluster would have certainly been revealed if the grid was extended further east, over the eastern half of field blocks 130 and 135 and possibly on field block 119, about 50 meters to the south of grid 15 (map V_8c, table 9).

The site uncovered on grids 15, 17 and 18 is perhaps the most complex in the second survey area. It comprised three closely spaced cores, one featuring a maximum of nearly 30 fragments per 100 sq meters, the other two about 20 fragments per 100 sq meters. They are spaced at roughly equal distances of 45-50 meters, but bounded together within a zone on intermediary artifact density (map V_10). We believe that a pattern very similar to this one generated the increased density of Roman material on field blocks 47a-b, 49, 50 and 66, though in this case it is unlikely that a zone of on-site density spread over the entire group of field blocks. Clearly the northeast portion of the cluster on grids 15-18 was left out of the gridded area, but it is certain that it didn't spread much beyond the limits of the grid. Along the rest of its perimeter, the site limits roughly correspond to the local dirt-road on the east and to the southern and western edges of grids 15 and 17. Thus defined it occupies slightly over 5 500 sq meters. As mentioned earlier, it is very possible that smaller concentrations, appearing as isolated off-shoots of the zone surrounding the site-cores exist on the neighboring field units. Even if we added the combined areas of these hypothetical satellite clusters, the area of the main site wouldn't extend significantly. Regarding size and shape it doesn't differ much from the cluster discovered on grids 1-2 and 5-11.

One of the main factors surrounding the difficulties of defining the limits of this site was the chronological composition of the total surface record on this location (graph 7). The bulk of the material comprised off-site debris datable to the Late Ottoman and Early Modern Period. This is most evident on grid 16 just outside the site limits. The

absence of a Roman cluster on the field block covered by grid 16 is nicely illustrated by the small percentage of Roman finds comprising less than 15% of the total surface record, while Late Ottoman-Early Modern represent about 60% of the total collections. But even on grids 15 and 17, covering over two thirds of the site area, this category of surface material represents nearly 50% of the total surface record, while Roman finds comprise less than 40%. Surprisingly this relation is reversed on grid 18, where nearly half of the collected material dates to the Roman Period, while about 35% are datable to the Late Ottoman and Early Modern Period. However it must be noted that the figures on graph 7 take into account only about 60% of all collected finds from grids 15-18. In the case of these collections the majority of the discarded material consisted of Late Ottoman-Early Modern roof-tiles and fragments worn beyond recognition. Were all collected finds included in the analysis, finds datable to the Late Ottoman-Early Modern Period would have certainly become the most numerous category on all grids. At the same time, the percentage of the finds datable to the Roman Period would have probably dropped to about 30 to 35% on grids 15, 17 and 18; while on grid 16, outside the site limits, they would represent not more than 5% of the total surface record. The small scatters of Late Roman and Late Byzantine-Early Ottoman finds recorded on grid 27 are present on all grids and in slightly greater quantities. These periods were either completely absent or appeared in very small quantities on fields along the eastern ridge. There is a slight, but evident change in the chronological composition of the off-site record going into the floor of the surveyed basin and onto the western ridge.

The selection strategy has also greatly affected the percentages of the various functional categories that comprise the Roman assemblage on grids 15, 17 and 18 (graph 8, maps V_9 and V_10). Nearly all of the discarded Roman material consisted of worn architectural ceramics, which explains the composition of the assemblage on grids 15 and 17. Similarly to the assemblage from grid 11 or field block 47a-b, there are equal percentages of tile and plain pottery fragments, each group being represented by about 35% of the collected material. Coarse ware is less numerous comprising about 25% of the collection. But were the total collections analyzed, the percentage of brick and tile would have certainly risen to over 50% of the Roman assemblage. At the same time the shares of plain and coarse ware would inevitably decrease by a few percent. Nevertheless it is clear that pottery fragments are more numerous on grids 15 and 17 than on grid 18. If the total collections from grid 18 were included in the analysis, brick and tile fragments would have comprised over 60% of all Roman finds, while plain and coarse ware would be represented by about 25 and 15%, respectively. This is consistent with the findings from grid 27, where we also observed a spatial differentiation between the various functional categories within the limits of the site. In the case of the cluster on grids 15-18, architectural ceramics are obviously concentrated in the northern half of the site on grid 18, while plain pottery is mostly limited to the southern cores, on grids 15 and 17. Unlike the clusters on field blocks 47a-b, 49, 50 and 66, there lacks a core predominantly made up of architectural ceramics. Although present in smaller quantities than tile, pottery still represents a considerable portion of the assemblage from grid 18: with nearly 30% of plain fabrics and 18% of coarse ware. Were all finds included in the analysis, the percentage of pottery would have shrunken by 3 to 5%, while architectural ceramics would have represented near 70% of the collection from grid 18.

Of no lesser significance is the composition of the off-site material, collected from grid 16 (graph 8). In this case the original composition is not greatly affected by the selection strategy, because only a very small percentage of the Roman finds was discarded. Similar to the findings from the off-site in the Sopot survey, this collection features a more balanced presence of tile and pottery. Architectural ceramics is still the most numerous class represented by nearly 40% of the collected finds, while plain ware comprises about 20%. The only point of difference is the stronger presence of coarse fabrics representing over 30% of the Roman material on grid 16. Recall that in the Sopot survey, the thin off-site carpet of Roman-Late Roman finds consisted almost exclusively of architectural ceramics and plain pottery. The strong presence of coarse ware could be specific to grid 16, being positioned so close to a site with a full domestic assemblage. But it is equally likely that it merely reflects the very different character of the local fabric groups in the two survey areas. We were able to define only a few coarse fabrics among the Roman assemblages from Sopot and these were often difficult to distinguish from the prehistoric coarse ware. Among the Roman assemblages from Skopian Montenegro on the other hand, it was possible to define as many as 7 different coarse fabrics.

App IV.1.2.6 Grids 4, 6-8 (tables 11, 12 and 13, maps V_11a-11c and V_12)

Occupying the same terrace defined by the contour lines of 490 and 500 meters above the sea, but on the eastern ridge, are a group of field blocks where the transect survey recorded high or very high overall artifact density. These are field blocks 22-24, 318-320, and 327-329. They were partly or entirely covered by grids 4, 6, 7 and 8 (map V_11a, 11b). After the study of the material collected by individual transects, it became evident that the total grid surveys were slightly misplaced. The highest concentration of Roman finds was recorded on field blocks 22a/b-23a/b, featuring between 16 fragments per 1000 sq meters on field block 23a to as much as 33 fragments per 1000 sq meters on field block 22b (table 11). This is identical to the artifact density recorded by the transect survey on field block 2. But because the overall artifact density was lower than on other fields from this group, the total grid survey covered only field block 22a and a smaller portion of field block 22b. Instead the grid was placed over field blocks 318-319 and 326-327 (grids 4 and 7), where the transect survey recorded much smaller densities of Roman material, ranging between 1.8 and 4.5 fragments per 1000 sq meters. But unlike on grids 1, 15, or 17, where the high overall artifact density was chiefly contributed by the presence of large amount of Late Ottoman-Early Modern off-site debris, on grids 4 and 7 the amounts of this material were much smaller. Hence it is quite possible that on the fields covered by these grids, surface conditions changed dramatically over the course of the first year's survey campaign. It is difficult to otherwise explain the high overall artifact density recorded only a few months earlier, during the transect survey. It also proved impossible to locate a cluster of Roman material on field block 328b, where the individual transect collections revealed a density of nearly 21 Roman shards per 1000 sq meters. Only on field block 320 covered by grid 6 was it possible to clearly locate the cluster of surface finds that contributed to the high artifact density of approximately 28 Roman shards per 1000 sq meters. The following year however it wasn't possible to follow the suspected westward continuation of this site over field blocks 321 and 322. On

these two field units the transect collections recorded 3 and 9 fragments per 1000 sq meters respectively.

Needless to stress, the exact size and the character of the clusters of Roman material collected by the transect survey can only be guessed without the high resolution of the total grid survey. One is tempted to think that these couldn't have been particularly large and dense scatters. In fact it is possible that in some cases the bulk of the material had been collected during the transect survey, leaving simply too little evidence on the surface for the total grid survey. Going back to some of the documented clusters, such as those on grid 1, we see that in practice they consist of about 30-40 fragments spread over areas of a few hundred square meters. Clusters of such size can hardly be noticed during the transect survey and surface finds collections would have been carried out as on most fields with average or lower than average overall artifact density. More thorough transect collections, along with the changing surface conditions could easily result in a complete erasure of such small clusters from the surface record. However the case of the site uncovered on grid 27 warns us that even larger and denser clusters could remain completely concealed in the topsoil. During the analysis of the total grid survey results, it needs to be remembered that the revealed distribution map is in all probability, fragmentary.

Grid 4 covers the northern part of this group of field blocks, a triangular area bounded by the Skopje-Pobužje road on the east and a converging dirt-road on the west. These are field blocks 24, 318-319 and part of field block 327 (map V_11a). Already the individual transect collections indicated that there are no larger concentrations of Roman material at this location. Artifact densities barely exceeded the mean overall value on field block 318, with 4.6 fragments per 1000 sq meters (table 11). On the rest of the field units covered by grid 4, the density of Roman finds ranges between 0 and 1.8 fragments per 1000 sq meters. None the less it should be noted that in case all counted finds were included in the transect collections the artifact density on field block 318 could increase to over 35 fragments per 1000 sq meters (map V_11c). Indeed the regular grid survey did reveal a small concentration of finds on this field unit, but it is too tiny to be assigned an on-site status.

The total collection by regular grid units confirmed these observations, gathering less than 50 Roman shards from an area of over 6000 sq meters (map V_11b). This is clearly an off-site zone, mostly featuring between 0 and 3 Roman shards per 100 sq meters, which is an artifact density lower than the average for the eastern ridge recorded by the grid survey. The average density for grid 4 is only about 0.5 fragments per 100 sq meters (table 12). Only on a single grid unit in the southwest corner of the grid does the density of Roman material exceed the limit of 3 shards per 100 sq meters. But we saw that this isn't unusual for the nearer off-site zone. On grid 1 mostly covering the off-site zone, there were also isolated grid units featuring 4-5 fragments per 100 sq meters or 6-8 fragments per grid unit. Realizing that even the overall artifact density is not much greater than the survey area's average, it is difficult to understand the incentive behind the decision to hyper-intensively survey these field blocks. It was perhaps the few larger fragments of Late Roman tile found inserted in the terrace wall that separates field blocks 24 and 318 that made us extend the grid over field block 24. This was one of the rare concentrations of Late Roman material in the survey area. As will be shown a few other field blocks produced a false impression of denser scatters of surface material. In this and

similar cases, one shouldn't exclude the possibility of drastic changes in the surface record, even over the course of a single survey campaign. Moreover at the time when the total grid collections were carried out on these fields blocks, we still had no idea about the character of the material collected by individual transects. It came as a particular surprise to discover that much of the surface record was made up of off-site debris datable to the last couple of centuries.

Table 11: Mean district and density on field blocks covering possible site locations, in 1000 sq meters.

	Field blocks 22a-22b	Field block 23a	Field block 25a	Field block 23b	Field block 318
Expected	2.85	2.85	2.85	2.85	2.85
Actual	25.5	16	7.4	10	4.6

Table 12: Mean overall densities and densities recorded on grids 4, 6-8, in 100 sq meters.

	Grid 4	Grid 8 (on-site only)	Grid 6 (on-site only)	Grid 7 (on-site only)
Expected	3.4	3.4	3.4	3.4
Actual	0.5	9	11.2	10.2

Positive evidence for Roman occupation came from grid 8 covering the narrow terraced fields 22a and partly, field block 22b. As shown on the map, the off-site zone continues over the eastern half of the gridded area (map V_11b). Only on units in the western half of the grid did the density of Roman material suddenly increase from about 0.5 fragments to exactly 6 fragments per 100 sq meters. This cluster spreads over the western half of grid 8, probably extending further west and north over field blocks 22b and 23a. It is composed of 4-5 grid units, forming a roughly elongated cluster. The average density in the western half of grid 8 increases from less than 1 to almost 9 fragments per 100 sq meters (table 12). If all collected finds were kept for further study, the average density on the part of the grid that covers the site area will surely exceed 12 fragments per 100 sq meters. In quantitative terms the on-site status of the cluster on grid 8 is beyond any doubt, but its full extent can only be inferred from the results of the transect survey.

There are no traces on the scarp that separates field blocks 22a/b and 23a/b, but the material collected by individual transects on grid 23a clearly indicates that the cluster spreads further north. The density of 16 fragments per 1000 sq meters is comparable to the densities recorded on field blocks 1 or 37, field blocks on which the regular grid survey confirmed the existence of on-site concentrations. On the neighbouring field block on the west and further north, on field blocks 23b and 25a, the artifact density gradually drops to 10 and 7.5 fragments per 1000 sq meters (table 11). These field units still feature densities higher than the district average, but they don't belong to the highest density range of over 11 fragments per 1000 sq meters. We suspect that they cover most of the site halo and possibly one or two smaller, satellite clusters. Unfortunately at that time of

the grid survey, we were rather confident that the surface record on grid 4 was far more promising. The scatters on field block 23a appeared simply too thin to merit a total survey coverage.

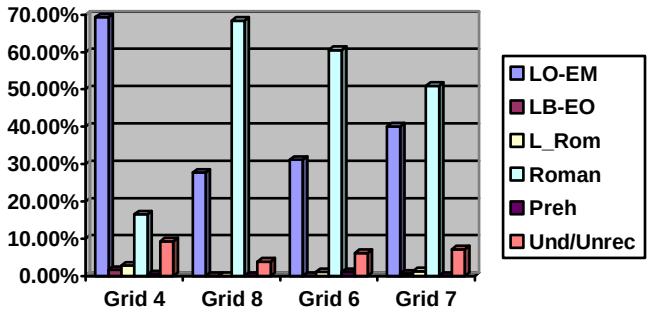
There are no major changes in the extent and the distribution of this high-density zone when the individual transect collections are adjusted to include all counted finds (map V_11c). Field blocks 22b and 22a still represent the core of the site, with 85 and 49 fragments per 1000 sq meters and it is certain that the cluster either spread over field block 23a or there was a separate, smaller cluster on this field unit. There is a gradual decline on the neighbouring field blocks north and south of the group, with densities of about 25 fragments per 1000 sq meters. This is comparable to the density records for the fields between grids 5 and 11, but also on field blocks that covered portions of the sites on grids 2 or 15-18. Hence one shouldn't dismiss the possibility that there were minor, isolated concentrations even on these units.

The total collections on grid 8 recorded the maximum density on a unit laid over the boundary of field blocks 22a and 22b (map V_11b). It featured about 15 fragments per 100 sq meters, excluding the discarded material. Only on the neighbouring grid unit to the east did the artifact density remain above 10 fragments per 100 sq meters. On the surrounding grid units separating the core from the off-site zone, the density of Roman material dropped to between 6 and 8 fragments per 100 sq meters, directly contributing to the lower average value for grid 8. Consequently the very high density of Roman finds recorded by the transect survey on grid 22b must have resulted from the fact that the site core lies precisely at the boundary between field blocks 22a and 22b. The bulk of the material from this cluster is evidently concentrated in the northern row of grid units, by the terrace wall and covers only minor portions of field blocks 22a and 22b.

The revealed portion of the site occupies an area of about 750 sq meters, but it is nearly certain that it spread further north for at least several hundred sq meters. In fact looking at the results of the individual transect collections, it seems that the possible Roman cluster on grid 23a was also concentrated in the northern half of the field, perhaps forming a separate core, similar to those on grids 15-18 and 27 (cf. maps V_11a and V_19a). Note that the northernmost individual transect on field block 23a has the highest number of Roman finds, 6 or an artifact density of about 23 fragments per 1000 sq meters. As already argued the increased density on field block 23b and even on 25a could be related to the halo zone emanating from these clusters.

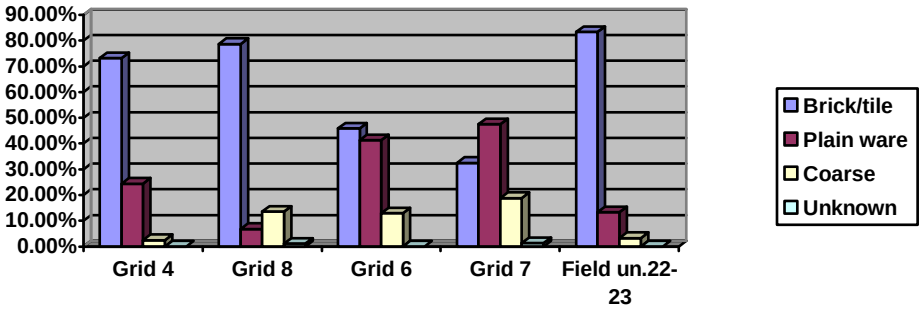
If the suspected northern core on field blocks 23a-b was of the same size as the one revealed on grid 8, their combined areas would measure about 1500 sq meters. Thus regarding size, the cluster on grid 8 is of a similar rank as the cluster on grid 27 and certainly larger than the group of smallest clusters uncovered on grids 1, 14 and 3. Its size wouldn't change significantly if all collected material was included in the analysis, though the recorded densities would surely increase by a small percentage reaching slightly over 20 fragments per 100 sq meters at the site core.

Graph 9: Distribution of finds by period on grids 4, 6-8



Typically for the majority of the Roman sites on the eastern ridge, material datable to the Roman Period is the most predominant category in the surface record. In the case of grid 8, they comprise nearly 70% of the total surface record, while the Late Ottoman and Early Modern finds represent less than 30%. This relation wouldn't change drastically if all collected finds were analyzed. Roughly an equal number of finds from both periods was discarded. In fact the majority of the discarded material consisted of badly worn fragments; their share in the total surface record is probably slightly greater. Although situated only a few meters away from grid 8 across the local dirt-road, there is an almost reversed composition of the surface record on the fields covered by grid 4. Material datable to the Late Ottoman and Early Modern Period comprises at least 70%, while Roman finds represent less than 20% of the total surface record. This is comparable to the chronological composition of the collections from grids 1 and 16, both grids covering larger off-site segments of the terrain. There is a slightly greater amount of unrecognizable or undated material, but also small amounts of Late Byzantine-Early Ottoman and Late Roman finds, material that was so far absent from the total collections on grids on the eastern ridge. Though it failed to reveal traces of a genuine archaeological site, grid 4 yielded one of the rare fragments of prehistoric pottery in the second survey. Most striking of all is the sudden increase in the amount of material datable to the last couple of centuries. Focusing on the absolute quantities of material datable to the Late Ottoman and Early Modern Period, the difference between grids 8 and 4 is more than apparent. Grid 8 covered about 2.5 times a smaller surface than that covered by grid 4, but the amount of Late Ottoman and Early Modern finds is nearly five times smaller than the amount collected from grid 4. Similarly drastic fluctuations in the density of the off-site carpet were observed on grids 1 and 2.

Graph 10: Composition of the Roman assemblages from grids 4, 6-8



The Roman assemblage collected from grid 8 has an almost identical composition to the Roman assemblage from grid 14 or from field blocks 49-50. Counting the discarded material, brick and tile will definitely comprise over 80% of the entire assemblage. Compared to the assemblage collected from grid 14 there is a slightly smaller percentage of coarse ware, though this category still represents around 10% of the assemblage. Only about 7% of the Roman material from grid 8 consists of plain ware and its true share is probably even lower. The site on grid 8 is the sixth cluster of Roman material in both survey areas (including the collection from field blocks 49-50) predominantly comprised of fragments of architectural ceramics. Fragments of pottery are very scarce and in the majority of cases, coarse ware is the predominant category. This can hardly be attributed to inconsistent collection strategies or to the vagueness of categories such as plain and coarse ware. It is possible that these are the remains of non-residential or seasonally inhabited sites, although in the case of this cluster, it is equally possible to argue that we're actually analyzing only a portion of the actual assemblage. Perhaps the bulk of the pottery fragments are concentrated in the suspected northern portion of the site. However the transect collection from field blocks 23a/b and 22b, as well as the analysis of the assemblage composition on grids 18 or the southern core of the cluster on grid 27 suggest otherwise. The ratio of tile to pottery fragments on field blocks 23a/b, where the hypothetical northern half of the site on grid 8 was located is 4 to 1, identical to the ratio between tile and pottery in the total collections from grid 8. Even if the transect collections from all field blocks with higher artifact density that surround the cluster on grid 8 are analyzed, architectural ceramics would still represent over 80% of the assemblage. A larger percentage of pottery was only found among the individual transect collections from field block 25a, situated 50 to 70 meters to the north of grid 8. It must be stressed though that this field block is actually closer to the site on grid 11, where plain pottery prevailed in the total collections. Interestingly in the composition of the transect collections, plain pottery features more prominently than coarse ware. At the same time, in the collections from the southern part of the site on grid 27 or from grid 18, although architectural ceramics are by far the most numerous category, pottery fragments still comprise at least 30% of the assemblage. Thus even if the site on grid 8 extended further north, it isn't very likely that the composition of the assemblage would change dramatically. It is noteworthy that as in the Sopot survey, some of the more prevalent tile fabrics in the assemblages from other Roman sites rarely or never appeared among the assemblage collected from grid 8. It remains unclear if this is related to certain chronological differences or to local production and distribution patterns.

But leaving aside the evidence of the composition of the collected assemblages, the sheer extent of the zone of higher density of Roman material spreading over field blocks 22a-b, 23a-b and 25a-b indicate the presence of another residential site on grid 8. If we focus only on the transect survey records on field blocks 1-6 or 47a-b, 49, 50 and 66 and compare them with the transect survey records on field blocks surrounding grid 8, it is impossible to distinguish between the three (cf. maps V_19a and V_8a). As argued these zones of higher artifact density occupying areas of one hectare or more don't represent the remains of a compact and continuous cluster of surface finds. True on-site densities are limited to a few, closely spaced and smaller clusters surrounded by a zone of intermediary artifact density. Later we'll argue that this zone characterized by artifact densities between 2.5 and 6 fragments per 100 sq meters of grid survey or between 5 and 11 fragments per 1000 sq meters of transect survey represents the site halos or their immediate impact zone. This phenomenon known from intensive survey in Greece and the Near East has been interpreted as marking the inner productive territories of agricultural settlements. The higher artifact density results from a number of partly related activities, such as the bringing of unsorted manure on the most intensively exploited fields, rubbish disposal, but also post-depositional processes of site erosion and smearing[7]. Understandably if this interpretation of the halo phenomenon is correct, it is apparent that it can only be produced by a permanently inhabited site. Recall that in the Sopot survey too, clusters predominantly made up of architectural ceramics left a rather extensive zone of increased artifact density spreading over several neighbouring field blocks.

Comparing the composition of the off-site collections from grid 4 and 16, the differences are quite surprising (graphs 8 and 10). The ratio of architectural ceramics to pottery on grid 4 is actually similar to the ratio between these two categories in domestic assemblages. However although pottery fragments represent about 27% and brick and tile over 70% of this collection, only less than 3% of the finds are coarse ware fragments. This is nearly the opposite from the collections from grid 16 where pottery comprised over 50% of the Roman material and coarse ware in particular represented over 30% of the finds. In this respect the collection from grid 4 is more similar to the off-site collections from the Sopot survey; the only difference being the stronger presence of architectural ceramics on grid 4. Further in the text the composition of more off-site collections will be analyzed and this will hopefully clarify the typical composition of Roman material in the off-site zone in the second survey area.

Less than 100 meters southeast of the cluster on grid 8, the total grid survey revealed yet another cluster of Roman material (map V_11a, 11b). It is situated on field block 320, where the transect survey recorded a density of approximately 28 fragments per 1000 sq meters, one of the higher concentrations of Roman material in this survey area recorded by the individual transect collections. It has to be noted that only less than 30% of the number of counted fragments were collected from this field unit and the theoretical density figure for this field unit is much higher. The field was entirely covered by grid 6 and it was planned to extend the grid westwards over field blocks 321 and 322. According to the individual transect collections these field units featured 3 and 9 fragments per 1000 sq meters suggesting that they probably cover part of the halo of the

[7] J.L. Bintliff, P. Howard, A. Snodgrass, 24, 2007; T.J. Wilkinson, Extensive shard scatters and land-use intensity: some recent results, 31-46, *Journal of Field Archaeology* 16-1, 1989.

site on field block 320 (table 13). Unfortunately this had to be postponed for the second year's campaign, when we encountered a very different situation on the surface of these fields. Because of the apparent scarcity of Roman material on the surface, the total survey was limited to field block 320. Surface material nearly disappeared from field block 325, immediately to the south. This was an abandoned vineyard and transect collections recorded a very low artifact density of slightly over 1 fragment per 1000 sq meters.

Table 13: Mean district and densities on field blocks covering possible site locations, in 1000 sq meters.

	Field block 320	Field block 321	Field block 322	Field block 326	Field block 328
Expected	2.8	2.8	2.8	2.8	2.8
Actual	28.65	3.1	9	4	20

The cluster revealed on grid 6 is slightly larger and denser than the one on grid 8. The maximum density of not more than 23 fragments per 100 sq meters was recorded on one grid unit, in the very centre of the gridded area. On most of the surrounding grid units, the artifact density gradually declines to between 6 and 15 fragments per 100 sq meters. This sudden decline on some of the neighbouring grid units has lowered the average on-site density to slightly over 11 fragments per 100 sq meters. The figures shown on map V_11b and table 12 are only slightly lower than the actual, as the majority of the discarded material from this grid's collections was comprised of Late Ottoman and Early Modern roof-tile fragments. Along the northern and southern edges of the gridded area, the density of Roman finds dwindles still further, ranging between 3 and 4 fragments per 100 sq meters. Evidently the site doesn't spread over the easternmost group of grid units, where the survey recorded less than 2 fragments per 100 sq meters. Only the western limit remains elusive, but judging by the results of the transect survey it seems that only a small portion of the cluster extended into field block 321. It is another question if there is a separate core or a separate cluster further west on field block 322. On both of these field units the artifact densities recorded by the transect survey were much smaller than on field block 320, only slightly over the average for the eastern ridge. 3 shards per 1000 sq meters were recorded on field unit 321, 9 on field block 322. These are modest densities: field block 321 barely exceeds the mean district value, while field block 322 features lower artifact densities than most site locations on which transect collections were carried out thoroughly. In all likelihood the cluster revealed by grid 6 was mostly limited to field block 320, with a possible small satellite on field block 322.

But this interpretation is only partly confirmed if we assume that the individual transect collections represent 100% of the material counted (map V_11c). Field block 320 becomes only a small segment lying at the periphery of a more extensive zone of high and very high artifact density that spreads southwards and westwards. Characteristic for this survey section is the visible increase in the density of Roman material when the collections by individual transects are adjusted to represent 100% of the material counted. This isn't related to the low sample fraction of the transect collections. Including 40-50% of the material counted on the majority of field blocks, they were fairly thorough. That the predicted densities are surprisingly high almost certainly reflects the fact that Roman

finds comprise a considerable percentage of the collections. To illustrate this tendency, we point to the almost fivefold increase on field block 320, where the artifact density could rise to over 118 fragments per 1000 sq meters. A similar increase is predicted for field blocks 321 and 322, with 25 and 44 fragments per 1000 sq meters. Thus although the core of this concentration remains on field block 320, it now appears that a zone of higher artifact density stretches almost uninterruptedly between the sites on grid 8, 6 and 10. Quantitatively field block 322 cannot be excluded from the on-site zone and smaller clusters are even possible on field block 321. Recall that definite on-site concentrations were recorded on grids 15 and 17, on field blocks that belonged to the same density range as field block 321. We nevertheless maintain the view that this is not a continuous on-site concentration, but a few closely spaced clusters of small dimensions, in all probability smaller than the one on grid 6.

The cluster on grid 6 exhibits a regular concentric pattern, which didn't always prove to be the case in this survey area. Allowing for a slight westward extension and excluding the peripheral grid units yielding 4-5 Roman shards, it measured less than 800 sq meters. This approaches the size of the cluster revealed on grid 8, naturally assuming that the latter didn't extend northwards for a greater distance. It is in any case slightly larger and much denser than the group of very small clusters uncovered on grids 1, 3 and 14.

Roman material is still predominant on grid 6, but there is a visible increase in the amounts of Late Ottoman and Early Modern finds (graph 9). Grid 6 covers a smaller area, but the quantity of this material is two times greater than on grid 8. Including the discarded material in the analysis would increase the percentage of the Late Ottoman-Early Modern finds to nearly 40%. On the other hand, the quantity of Roman finds has only slightly risen from grid 8. Nevertheless if all collected material is considered, they will represent slightly over 50% of the total collections from grid 6. Apart from the Roman and the Late Ottoman-Early Modern finds, these collections included a few fragments datable to the Late Roman Period. We saw that one of the larger concentrations of prehistoric material was also collected from the central units on grid 6.

The main reason behind the small number of discarded Roman finds from the total collections is the composition of the assemblage collected from this grid (graph 10, map V_12). It finds certain parallels among the Roman assemblages from grids 11 and 15-17. But the important difference is that only several fragments of worn tile were discarded from the assemblage from grid 6, which wouldn't change significantly the composition of the assemblage. Brick and tile fragments represent only about 45% of all Roman finds, while plain pottery comprises nearly 40%. As on grid 11, coarse ware is represented by only about 10% of the Roman assemblage, an evidently lower percentage when compared to the majority of Roman clusters in this survey. But most striking of all are the almost equal amounts of architectural ceramics and plain pottery. In regards to this one wonders if we didn't give too much weight to the discarded material collected from grids 11 and 15-17. It is certain that in reality there is a greater percentage of brick and tile among the clusters on these grids, but it is possible that it doesn't exceed the amount of plain pottery by a very large margin.

Like these two clusters, the one on grid 6 is accompanied by a nearby cluster with a differently composed assemblage, featuring larger amounts of architectural ceramics and coarse ware. This is the problematic cluster on grid 8 situated at a distance of only

70-80 meters. But the composition of the Roman assemblage on this site is unlike the assemblages of the satellite clusters on grids 18 and 5, which accompany the sites on grids 11 and 15-17. A closer parallel is to be sought among the collections from field blocks 47a-b, 49, 50 and 66, where we had a combination of closely spaced clusters made predominantly of brick and tile and clusters with a higher percentage of plain pottery. It is further possible that the elusive concentrations of Roman finds on field blocks 321 and 322, less than 50 meters to the west of the cluster on grid 6 represents yet another discrete cluster consisting of an assemblage with a stronger participation of architectural ceramics or coarse fabrics. However this wasn't confirmed after the study of the transect collections. The collections from these field units basically repeat the composition of the assemblage collected from grid 6, with tile and plain pottery representing 40% and coarse ware 10% of the collected Roman finds.

Confusingly enough a similarly composed assemblage was discovered on grid 7, only about 25 meters east of the cluster on grid 6 (maps V_11b and V_12, table 12). This grid was set up to cover the southern half of the zone of high overall artifact density spreading over field blocks 319, 326, 328a and 328b, between the dirt road and the Skopje-Pobužje asphalt road. But the study of the transect collections from these field units indicated only tiny amounts of Roman material (map V_11a, table 13). The artifact density on these field units never exceeds 4 fragments per 1000 sq meters, which is too close to the average for the eastern survey section to indicate site remains. On the other two field units covered by grid 7, field blocks 328a and 329, the transect survey recorded 0 and 3.5 fragments per 1000 sq meters. An exception was field block 328b with over 20 Roman shards per 1000 sq meters, but here it proved impossible to locate a separate cluster, although the grid survey was carried out at the end of the first year's campaign. Instead a definite cluster of Roman material was discovered on field block 326, where the transect survey revealed only an average density of 4 Roman shards per 1000 sq meters. On none of these field blocks did we anticipate the existence of a genuine site and collections by individual field walking transect were consistent, usually including about 40-50% of the counted material. As a result of the fairly even collections by individual transect units, there are no drastic changes in the density distribution when they are adjusted to represent 100% of the material counted (map V_11c). On most field units there is only a slight increase and artifact density remains low to average. The only exception is field block 328b, where the density of Roman finds could theoretically rise to over 68 fragments per 1000 sq meters. At a first sight it seems difficult to accept the fact that such a dense cluster could simply disappear from the surface, but we point again to the possibility that the bulk of the finds were collected during the transect survey. Although featuring relatively high densities, in terms of area these are by all standards very small sites.

According to the total collections on grid 7, the site spread over three grid units in the central part of the grid and was completely uncovered. As usual the maximum artifact density is limited to a single grid unit where we collected over 30 fragments datable to the Roman Period, including the few discarded fragments of brick and tile. In terms of artifact density, this is slightly over 20 fragments per 100 sq meters. Similar maximum densities were recorded on a number of other clusters, including those on grids 5, 14, 15 and 17. This is also only slightly lower than the maximum density recorded on the cluster on grid 6. On the neighboring pair of grid units to the east, the density of Roman finds

drops to about 6 fragments per 100 sq meters; while on grid units to the west and especially to the north, it declines even more sharply, decreasing to about 4 fragments per 100 sq meters or less. Evidently regarding size, this site is in the same rank as the clusters on grids 1, 14 or 3. Excluding the zone of less than 6 fragments per 100 sq meters, it barely occupies an area of 500 sq meters. Being fairly compact and spreading over a tiny area, the average density on site 7 is over 10 fragments per 100 sq meters (table 12). This is slightly higher in comparison to the average density recorded on grid 8, though in the latter case a considerable portion of the collected material is not included in density figures. On the other hand, only a few badly worn tile fragments were discarded from the Roman collection from grid 7.

As shown on graph 9, Roman material is still the most numerous chronological group in the surface record on grid 7. Most of the discarded material, accounting for less than 30% of the total collection was made up of Late Ottoman-Early Modern roof-tile and unrecognizable finds. The actual percentage of the Late Ottoman-Early Modern and the Roman material are therefore roughly equal both comprising approximately 45% of the surface record. This fact alone indicates the presence of a Roman site on grid 7. Including the discarded finds in the analysis would also increase the share of unrecognizable material, perhaps to about 7-8% of the total collection. Finally, there are very small amounts of Late Byzantine-Early Ottoman and Late Roman pottery and no traces of prehistoric occupation. In comparison to grid 6 there is a slight decrease in the quantity of Late Ottoman-Early Modern off-site debris, which explains the large percentage of Roman material in the total collections, despite the relatively small volume of the finds.

It is worthy of mention that the total collection from the grid unit representing the core of this site weighed less than one kilogram. In this respect it is even more similar to the collection from grid 11 than the collection from grid 6, where individual finds were better preserved. Unlike grids 11 or 15, grid 7 doesn't cover a garden or a finely ploughed vineyard. Ground conditions on field blocks 319, 326, 328 differed little from the fields covered by grids 6 or 8. All fields were planted with cereals and grid collection was carried out at the same time, towards the end of the first year's campaign. This casts doubt over the earlier elaborated thesis relating modern land-use and the state of preservation of the surface material. But in the case of grid 7, the low weight to count ratio is also related to the small percentage of Roman architectural ceramics (graph 10). They represent only slightly over 30% of the Roman assemblage, making it the collection with the smallest amount of architectural ceramics in this survey area. As mentioned before, only several badly worn fragments datable to the Roman Period were discarded from the total collection. Similarly to the assemblages collected from grids 6 or 11, plain fabrics represent over 40% of all Roman finds. In this case they comprise almost 47% of the assemblage, which is the highest percentage of plain fabrics in the Roman assemblages from the second survey area. However unlike other assemblages with a marked presence of plain fabrics, the collections from grid 7 also include a fairly large percentage of coarse ware, accounting for nearly 20% of all Roman finds. Regarding the presence of this category of finds, the assemblage from grid 7 differs little from the clusters on grids 2 or 27. In contrast, coarse ware comprised not more than 10% of the rest of the assemblages predominantly made of plain fabrics, such as the clusters on grids 6 or 11. Roman assemblages predominantly made of plain ware were also encountered in

the first survey area, but coarse ware was nearly absent on these sites. We'll repeat that these inconsistencies are possibly related to the classifying of the various fabric groups into the vague categories of plain and coarse ware. But at the same time one shouldn't presumptively reject the possibility for a greater variety in the composition of the assemblages on Roman rural sites, especially when there is no other comparative evidence from the region.

The "unusual" composition of the Roman collection from grid 7 brings back the issue of its relation with the clusters on grids 6 and 8. The small site on grid 7 is situated less than 30 meters to the east of the cluster on grid 6, across the dirt road and as explained before, the clusters on grids 6 and 8 are only 70 meters apart when measured from the edge of the site areas. It all seems as if we are dealing with another group of closely spaced clusters featuring differently composed, "complementary" assemblages, like those discovered by the transect survey on field blocks 47a-b, 49, 50 and 66. Indeed, merging the collections from the three grids will result in an assemblage not unlike those from grids 5-11 or 15-18. Brick and tile will become the most predominant category with over 50% of the finds, while coarse fabrics will be represented by nearly 15%. The percentage of plain ware will remain relatively high, but limited to slightly over 30% of the assemblage. The merging of the three clusters on grids 6, 7 and 8 seems like a plausible solution; the distances between these clusters are rather small and the same fabrics appear on all three sites. Moreover we encountered very close parallels studying the distribution of Roman material on other grids. But there are difficulties in applying the same interpretation to this group of clusters. One of the differences from the abovementioned examples is that they don't form a particularly compact group. Despite their proximity to each other, they are all separated by narrower stretches of low or very low artifact density. But most problematic of all is the presence of another cluster featuring full domestic assemblage, situated only about 50 meters to the south of the cluster on grid 6. On no grounds can one exclude this cluster from the supposed group while including the cluster on grid 8 or vice-versa. As will be shown however, the cluster on grid 10 is larger than the combined size of the clusters on grids 6 and 7. It is also certain that it has generated its own extensive halo, mostly spreading to the south of the site area. If the clusters on grids 6 and 7 were indeed its satellites, its impact zone will become far more extensive than the larger sites on grids 2 and 5-11.

App IV.1.2.7 Grids 9-10, 12-13 (tables 14-16, maps V_13a-13c)

The next group of Roman sites to the south occupies the terrace along the contour line of 480 meters above sea level. This is the southern half of the zone of higher overall artifact density stretching continuously for about 450 meters, from the survey's eastern limit almost to its central axis on the west. However the study of the individual transect collections demonstrated that the zones of higher concentration of Roman material didn't always follow the zones of high overall artifact density. Larger quantities of Roman finds were collected from field blocks 324b, 332 and 333a, but not from the group of field blocks 302-303 and 287-288 (map V_13a). In fact even on the former, the transect survey recorded relatively modest quantities ranging between 5 fragments on field block 333a to 9 and 10 fragments per 1000 sq meters on field blocks 324b and 332. This increased density of Roman material spreads further east, across the dirt road on field blocks 331

and 336 featuring 7.5 and 11 fragments per 1000 sq meters. Thus on none of the field blocks in the eastern half of this belt of very high overall density does the amount of Roman material exceed the threshold of 11-12 fragments, characteristic for the great majority of field blocks where the total grid survey recorded on-site concentrations. Compared to the densities recorded on field blocks 22a-b, 320 or 2, they are two to three times lower, although they are considerably higher than the mean district values (table 14, cf. table 13 or 11). Field blocks featuring similar artifact densities in other survey sections were often proven to cover the halo zone, but in a few cases (field blocks 34 or 125) the total grid survey revealed on-site densities. Slightly higher densities of Roman material were encountered on a pair of neighbouring field blocks in the western half of this belt. These are field blocks 289a-290a, on which the transect survey recorded around 12 fragments per 1000 sq meters. Featuring higher overall artifact density, regular grid surveys were planned on a number of these fields. But when revisited for total collection towards the end of the same season, the situation on the surface was drastically changed. On the majority of the field blocks only rare fragments of Late Ottoman-Early Modern debris could be seen and the total grid survey was cancelled. These included not only the pair of field blocks 289a-290, but also field units 336 and 331 to the east of the dirt road. Only on field blocks 332-333a were we able to locate a more substantial cluster of Roman material, although these transects weren't ranked particularly high by the overall artifact density.

Table 14: Mean district density and density on field units covering possible site locations, in 1000 sq meters.

	Field block 332	Field block 333a	Field block 324b	Field block 336
Expected	2.85	2.85	2.85	2.85
Actual	9	5.65	10	11.3

The transect collections were consistent and fairly thorough across this stretch. They included between 40-60% of the material counted, except on field blocks 332 and 333a where we collected less than 30%. On field block 333a in particular, the transect collections represented only about 15% of the individual transect counts. When the transect collections are adjusted to represent 100% of the material counted, the density on this field unit increases most dramatically. It reaches to over 33 fragments per 1000 sq meters, slightly exceeding the density recorded on the neighbouring field block 332 (map V_13c). There are further sharp increases on field blocks 333b and on field block 334b, while the rest of the field units in this survey section remain within the same quantity ranges. On none of the field units discussed in this section does the predicted artifact density exceed the limit of 38 fragments per 1000 sq meters. Seen in this light, the zone of increased density spreading over field blocks 332-334b, 324, 336 and 331 appears as a mere continuation of the zone of very high artifact density on the neighbouring group of field blocks to the north.

Despite the difficulties of locating higher concentrations of surface material and the fact that the artifact densities recorded by the transect survey weren't particularly high, much of this portion of the eastern ridge was covered by grids 9, 10, 12 and 13

(map V_13b). The gridded area included partly or entirely field blocks 332-334, 302-303, and 287-288. At the time of the total collection we weren't aware of the distribution of Roman finds in this part of the survey area and some of the field blocks hiding potential sites, such as field blocks 331 and 336 were unintentionally left out of the gridded area. But as we mentioned earlier, the regular grid survey failed to locate on-site concentrations on most of the field units in this survey section. In fact definite traces of Roman occupation were revealed only on field blocks 332-333a, covered by grid 10. The transect collections revealed densities of about 9 fragments per 1000 sq meters on field block 332 and 5.5 fragments per 1000 sq meters on field block 333a. Despite the fact that these are lower densities than those recorded on field blocks 289a-290a, the cluster on field blocks 332-333a presented a more stable fraction in the surface record (table 17). It has to be stressed that the total grid survey was carried out in the same year as the transect collections. It again illustrates just how dynamic and changeable the surface conditions were in the second survey area. On the rest of the gridded area on grids 9, 12 and 13, the bulk of the total surface record consisted of finds datable to the Late Ottoman and Early Modern Period (graph 12).

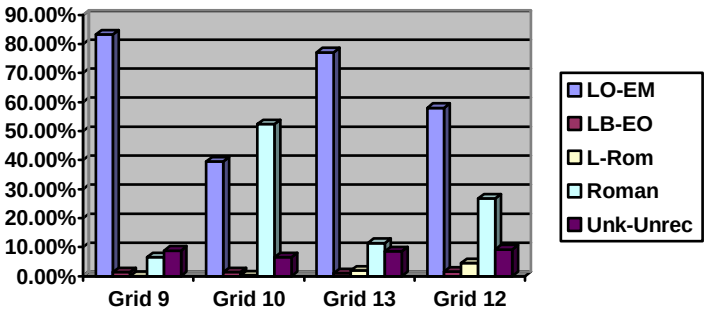
The cluster of Roman finds uncovered on grid 10 belongs to the group of medium-sized sites in this survey area (map V_13b). It bears an elongated shape, measuring 90 meters on the longer and only 20 meters on the shorter axis. The site area is defined by artifact densities higher than 7 fragments per 100 sq meters or roughly 10-11 fragments per grid unit. Unlike some of the discovered Roman sites, there is no clear concentric distribution pattern. Almost across the entire site area, the density of Roman finds fluctuates between 7 and 10 fragments per 100 sq meters. Only slightly greater amounts of material were collected from the southernmost row of grid units, the artifact density barely exceeding 10 fragments per 100 sq meters. However on one grid unit in the southeast corner of the gridded area, the grid survey recorded over 30 fragments per 100 sq meters. This very high concentration has slightly increased the average on-site density, elevating it to almost 10 fragments per 100 sq meters. It is nearly 3 times the survey average and it is similar to the average densities recorded on the majority of sites in the second survey area (table 15). About a dozen worn fragments have been discarded from this collection and the actual number of Roman finds is around 50. From the rest of the collections, not more than one or two scrappy fragments were thrown. This site features one of the sharpest contrasts between the site core and the rest of the site area; on the unit covering the site core, the number of collected Roman finds is 3-4 times greater than on surrounding grid units. The site core is clearly defined even when the distribution of the total surface record is analyzed.

Table 15: Mean overall density and mean density on grids 9, 10, 12 and 13, in 100 sq meters.

	Grid 10 (on-site only)	Grid 9	Grid 13	Grid 12
Actual	3.4	3.4	3.4	3.4
Expected	9.85	0.35	0.65	1.1

The northern and western limits of the site are clear. On the westernmost and northernmost rows of grid units, the artifact density drops below 4 fragments per 100 sq meters. There is also a visible decrease on the easternmost row, though smoother than on the other sides. The easternmost grid unit features slightly over 6 fragments per 100 sq meters, which is just below the site threshold. Evidently the very edge of the site was left out of the gridded area. The site halo almost certainly extended over most of the surface of field block 332, possibly terminating with a satellite cluster on field blocks 336 and 331. On the southern side the site limit coincides with the scarp delimiting the field. On the neighbouring field to the south, field block 335b, there are only scant fragments of recent off-site debris. The transect survey collections recorded around 3 Roman shards per 1000 sq meters. It is unfortunate that the terrace wall was covered with dense grass, completely obscuring the possible archaeological layers on the exposed profile. The southern periphery of the site was in all probability cut by this terrace wall, but judging by the scant surface remains on the neighbouring fields it seems that it didn't extend much beyond the southern limit of field block 332. Allowing for slightly wider margins along its eastern and southern boundaries, the cluster on grid 10 measures about 1900 sq meters. Similarly sized clusters were discovered on grids 27 and 11, the latter being slightly larger and also possibly on grid 8.

Graph 11: Distribution of finds by periods on grids 9, 10, 12 and 13



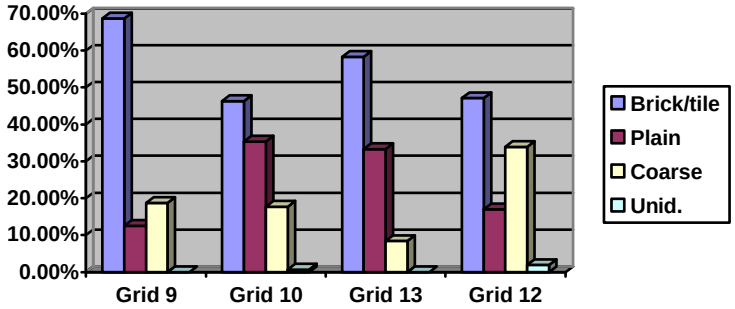
In this section of the survey area the Roman material is the predominant chronological group only on grid 10. The chronological composition of the rest of the total collections by grid units is typical for the off-site zone. In contrast the Roman finds on grid 10 comprise about 50% of the total surface record, while 40% of the finds are datable to the Late Ottoman and Early Modern periods. In reality however this ratio is probably reversed, because the great majority of the discarded finds were fragments of Late Ottoman-Early Modern roof tiles. Compared to fields closer to the top of the ridge there is an evident increase in the amount of this material, but the distribution of the overall surface record is still largely dictated by finds datable to the Roman Period. There are only insignificant quantities of Late Byzantine-Early Ottoman and Late Roman material and no traces of prehistoric finds.

The chronological profile of the collections from grid 9 clearly reflects the sudden decrease of Roman finds outside the limits of the site on grid 10 (map V_13b). Essentially this grid is an extension of grid 10, covering field blocks 324, 333b-334b and 300. According to the transect survey records, the zone of higher overall artifact density spread over most field blocks of this group (map V_13a). However larger quantities of

Roman material were recorded only on field blocks 333a/b and 324b, where the artifact density ranged between 5 and 10 Roman shards per 1000 sq meters. Although these are only slightly lower densities than those recorded by the transect survey on field block 332, the study of the grid collections demonstrated that there are no larger concentrations of Roman material on field blocks 333b and 324b. More precisely, almost the entire collection of Roman finds from this grid came from the easternmost rows of grid units. This is in all probability the halo of the site uncovered on grid 10, mirroring the situation on grids 15 and 16. Only on two grid units did the grid survey record densities higher than 1 fragment per 100 sq meters. On the great majority of grid units, there were no Roman finds among the total collections and the average density for grid 9 is only 0.35 fragments per 100 sq meters. The off-site carpet of Roman finds nearly disappears in this section of the eastern ridge. In comparison, the off-site zone uncovered on grids 1 or 4 featured at least 1 fragment per 100 sq meters and on some grid units, it could rise to 4-5 fragments per 100 sq meters. Grid 9 represents one of those cases where the records of the transect survey simply weren't confirmed by the total grid survey. According to the individual transect collections, the site on field block 332 or at least its halo spread westward over field blocks 333b and 324 (cf. maps V_13a and V_13b). Both the transect and the total grid surveys were carried out in the first year's campaign and the collections by transect units were equally intensive. It is possible that the individual transect collections on these fields completely depleted the suspected carpet of Roman material. But this merely confirms that Roman finds were truly present in very small quantities on the fields to the west of the cluster on grid 10.

Because the majority of the discarded finds were either badly worn or datable to the Late Ottoman-Early Modern Period, the share of the latter in the total collection is probably well over 80%. Consequently Roman finds comprise only a small percentage of the total collection on grid 9, which is very similar to the chronological compositions of the off-site on grid 1 or 4 (compare with graphs 1 and 9). There is also the usual amount of unrecognizable finds and small quantities of Late Byzantine-Early Ottoman finds, typical for most total collections from the lower portions of the eastern ridge.

Graph 12: Composition of the Roman assemblages from grids 9-10, 12-13



The Roman assemblage collected from grid 10 features a functional composition similar to the assemblages from the clusters on grids 2 or 27 (graph 12, map V_12). The percentage of brick and tile is still lower than on grid 2, 3 or 18, but this is the most numerous functional category and in reality, its share is probably slightly higher. At least a portion of the discarded, unidentifiable material was made up of worn pieces of Roman

brick and tile. Compared to some of the domestic assemblages in this survey area, there is a relatively large percentage of plain ware. This category comprises about 33% of all Roman finds, but we saw that this wasn't unusual for the Roman sites in the second survey. It is actually very similar to the percentage of plain ware on grids 15-18 or on grids 5-11. Regarding the composition of the assemblage, the cluster on grid 10 falls between this group and its smaller neighbours found on grids 6 and 7, where plain fabrics comprised over 40% of the assemblages and architectural ceramics was even less numerous. Around 18% of all Roman finds on grid 10 are represented by coarse ware. This is again typical for the majority of the residential sites in the survey area. Finally, the spatial distribution of the various categories within the limits of the site on grid 10 closely resembles the intra-site distributions revealed on grids 15-18 or 27. In fact, on grid 10 this spatial differentiation is even more pronounced. The bulk of the architectural ceramics is evidently concentrated in the western half of the site, while most of the pottery was collected from gird units in the eastern half, from the site core (map V_12).

Outside the site limits, the percentage of brick and tile suddenly increases to nearly 70% of the small collection from grid 9. As the tile component of the cluster on grid 10 was in the western half of the grid, it is nearly certain that the thin scatter on grid 9 is but the edge of this site. A similar percentage of architectural ceramics was collected from grid 4, but there are differences regarding the presence of the basic fabric categories. On grid 4, the great majority of the pottery material comprised plain ware fragments and only a negligible percentage of coarse ware. The ratio of these two categories on grid 9 is much more balanced. Coarse ware is more numerous, comprising about 18% of the all Roman finds. Plain fabrics represent approximately 12% of the collection. However it has to be stressed that the collection from grid 9 (like the one from grid 16) cannot be readily taken as a representative of the off-site record. It is too small consisting of only a dozen and a half fragments and it is positioned in the immediate vicinity of a more substantial domestic assemblage. As the majority of the Roman finds came from the units along the eastern edge of the grid, it is possible that they are actually part of the site edge. The collection from grid 16 comes from a similar location, from the very edge of the site. Interestingly there was also a greater percentage of coarse ware on grid 16, though pottery was much more prevalent than architectural ceramics.

As noted in a preceding paragraph, the cluster on grid 10 is situated only about 50 meters to the southeast of the cluster on grid 6. It thus completes the group of clusters discovered on grids 6-8, in the central portions of the eastern ridge. For obvious reasons it is difficult to decide in a fashion that is non-arbitrary, which of these clusters functioned as parts of a single installation and which were independent establishments. It is in any case noteworthy that most field blocks featuring an intermediary density of Roman material are situated to the south and east of grid 10. On the northern side, the productive territory of this farm would have been limited considerably by the close proximity of the sites on grids 6 and 7. Finally, the absence of Roman finds to the west of the site was confirmed by the total collections on grids 9 and 13. This leaves only the field blocks to the south, below the site on grid 10 as the likely area of the site halo. If the impact zone of this site spread mostly on the terraces to the east and north, then it certainly included the clusters on grids 6 and 7 as satellite clusters. Considering the size of this cluster, its composition and the fairly extensive halo zone to the south, it is more probable that it functioned separately from the clusters on grids 6 and 7.

Table 16: Mean district density and density on field blocks covered by grids 9, 12 and 13, in 1000 sq meters.

	Field block 333b	Field block 302	Field block 302'	Field block 286
Expected	2.85	2.85	2.85	2.85
Actual	3	1.6	4.2	1.5

Less than 40 meters to the west of grid 9 and on the same terrace, the transect survey recorded very high overall artifact densities on a group of four field blocks. These are field blocks 302b-303b and field blocks 287-288a, partly or entirely covered by grids 12 and 13 (maps V_13a, 13b). As in the case of grids 9 and 10, the total collections were carried out at the end of the first year's campaign. Already during the collection of the finds it became clear that the surface record was much sparser than anticipated and that it mostly comprised Late Ottoman and Early Modern finds. These suspicions were confirmed after the study of the individual transect collections. On the abovementioned four field units featuring very high overall artifact density, the density of Roman material was average or lower than average (table 16). Except for field block 303b with slightly over 5 Roman shards per 1000 sq meters, on the rest of the field blocks the transect collections recorded less than 4 fragments per 1000 sq meters. It is clear that the scatters on these field units cannot qualify as potential on-site locations. Assuming that the individual transect collections included all material counted will have no visible effect on the density distribution on this location. To be sure, both field blocks 302' and 303b feature artifact density higher than the sector's average, but the regular grid survey covering portions of both field units failed to reveal definite on-site concentrations (map V_13c).

In fact what the study of the transect collections showed is that the total grid survey completely missed out the main concentration of Roman finds situated slightly to the north, on field blocks 289a and 290a (table 17). As explained earlier, despite the close inspection of the surface both at the end of the first year and throughout the second year's campaign, it proved impossible to locate a major cluster of Roman finds on these fields. The results of the total collections from grids 12 and 13 also discouraged us from extending the gridded area further to the north. This is very similar to the situation encountered on grid 4; it is difficult to understand why the transect survey overestimated the quantities of the total surface record on these locations. One possible factor is the better state of preservation of the surface finds, indicated by the relatively high weight to count ratio. At the same time one shouldn't exclude the possibility of more drastic changes in the composition of the surface record in the period between the transect and the total grid survey. Finally, it has to be stressed that on some of these field blocks, individual transect collections were more thorough, especially on field blocks 302, 289a and 290a, where we've collected over 50% of the material counted. This circumstance could have also diminished the presence of Roman material on the surface, but only if it was present in small quantities.

The small percentage of Roman finds on grid 13, where they comprise only about 10% of the total collection is a sure indicator that there are no traces of Roman

occupation on field blocks 302a/b (map V_13b, graph 11). The average artifact density on the area covered by grid 13 is only 0.65 fragments per 100 sq meters (table 15). In this respect the situation on grid 13 is almost an exact copy of the chronological profile of the total collections from grid 9. However the distribution of the dozen Roman fragments on this grid is very different from the usual off-site distributions. Instead of a thin and evenly spread carpet of finds, almost 90% of all Roman material was collected from a single unit in the centre of the grid. On two neighbouring units, the grid survey recorded very low densities of 0.5 and 1 fragment per 100 sq meters, while in the collections from the rest of the gridded area, Roman material was completely absent. This highly focalized distribution pattern is more similar to on-site than off-site distributions. In fact the only aspect that distinguishes the Roman collection from grid 13 from the rest of the Roman sites is the absolute quantity of the collected material. Although several times greater than the surroundings, the maximum density of 6 Roman shards per 100 sq meters is simply too low to be recognized as a distinct site core. In this survey area such densities were typically recorded on the very edge of the site area and sometimes even in the off-site zone. This small concentration of Roman material would have been comfortably interpreted as an unusual fluctuation in the off-site carpet was there a density of at least 1 fragment per 100 sq meters on the rest of the grid units. But in circumstances where the density of Roman finds in the immediate surrounding is nearly zero, it is difficult to accept this explanation. The fact that the immediate surroundings of this tiny cluster were almost free of off-site debris is perhaps telling something about the ancient land-use of this part of the surveyed landscape. It recalls a similar phenomenon observed in the hyper-intensive survey of the Boeotian countryside, during the Classical Period, albeit in different circumstances[8]. There the much denser off-site carpet spreading for kilometers around larger urban centres suddenly falters on certain locations and the usual worn off-site finds are replaced by smaller quantities of fine, much better preserved pottery with clear sepulchral connotations. These manifestations have been interpreted as the remains of small family mausoleums, the sparseness or complete absence of off-site debris indicating that these locations weren't part of the ancient agricultural zone.

In the case of the collection from grid 13 the presence of the various functional categories is not much different from the full domestic assemblages from the clusters on grids 2 or 10 (graph 12). Brick and tile represent nearly 60%, while plain fabrics comprise just over 30% of all Roman finds. Coarse ware is represented by less than 10% of the collection, which as we saw is also not unusual. Very similarly composed pottery assemblages were collected from grids 6 and 11, though in these clusters architectural ceramics comprised a considerably smaller portion. Moreover they are many times larger and surrounded by extensive zones of lower artifact density. Even the very small clusters on grids 1, 3 or 14 emerged from a wider zone featuring between 1 and 3 Roman shards per 100 sq meters. In contrast, the tiny cluster on grid 13 stands almost completely isolated. In this respect it does resemble small cemetery sites, but unfortunately there is nothing among the pottery finds to suggest even a possible funerary use (for example, a lamp fragment or fragments of luxurious pottery). The composition of the assemblage itself differs little from the composition of the collection from grid 4, readily recognized as off-site material (compare with graph 10).

[8] J.L. Bintliff, P. Howard, A.M. Snodgrass et al. 2007, LSE4, THS1, THS11.

About 40 meters west-northwest of the dubious cluster on grid 13, Roman material briefly reappears on the surface (map V_13b). It forms a thin carpet over the central portion of grid 12, completely disappearing from the surface record in the western third of the gridded area. The density of Roman finds gradually increases from 1.3 shards per 100 sq meters on the second pair of grid units from the east, to nearly 4 fragments per 100 sq meters in the very centre of the grid. Into the western half of the grid, it again decreases to about 1.3 fragments per 100 sq meters, before reaching zero on the four westernmost pairs of grid units. On average there were 1.1 fragments per 100 sq meters on the narrow field covered by grid 12. This is a visibly higher density than that recorded on grids 9 or 13, but it's still well below the survey average (table 15). In this case the regular grid survey basically confirmed the lower than average artifact densities indicated by the individual transect collections. Larger quantities of Roman finds were collected from field units 289a and 290a, only about 30 meters north of the grid's boundary. This fact is being deliberately repeated, because it is possible that the scatters of Roman finds collected from grid 12 are actually part of the site halo emanating from the probable cluster on field blocks 289a-290a. Similar quantities and distribution patterns can be observed outside the site limits on grids 1, 15-18 or 27. It is less likely, though not impossible that this is a simple continuation of the off-site carpet after the gap on the field blocks covered by grids 9 and 13. At the same time it has to be noted that the density of Roman finds is slightly higher in comparison to typical off-site zones (best exemplified on grid 1 and 4), while the revealed cluster has definite edges on the eastern and western side. The sharp decrease in the quantity of finds on the central row of grid units is characteristic for both the site halos and the off-site zone.

As shown on graph 11, finds datable to the Roman Period represent over 20% of the total collection from grid 12. Including the discarded fragments mostly consisting of Late Ottoman-Early Modern roof tile, the actual percentage of Roman finds is slightly lower. This is similar to the situation on grids 1 and 4 covering the off-site zone. It is nevertheless visibly higher especially when compared to the percentage of Roman material on grids 13 and 9. The Late Ottoman-Early Modern finds are by far the most prevalent category comprising nearly 60% of the surface record. There is also a slight, but not insignificant increase in the amounts of the Late Roman finds. In the total collections from grids 9, 10 and 13, they represented around 1% of the finds; while on grid 12, their share in the total surface record rises to about 4.5%. The thin but persistent carpet of Late Byzantine-Early Ottoman material recorded on the neighbouring grids was also confirmed in the total collections from grid 12.

The collection of Roman finds from grid 12 features a rather peculiar composition (graph 12). Pottery is slightly more numerous than architectural ceramics. Brick and tile comprise about 45%, while pottery fragments represent slightly over 50% of all Roman finds. Much more unusual is the ratio of coarse to plain fabrics; the former represent over 30%, the latter less than 20% of the Roman assemblage. The collection of Roman finds from grid 16 has a nearly identical composition. Coarse ware was also more numerous on grid 9, but here architectural ceramics accounted for nearly 70% of the assemblage. These results show that there is very little consistency in the composition of the Roman assemblages, especially among the collections from the off-site zone. The collections of Roman material from grids 12 and 16 feature a more balanced presence of the general fabric categories, coarse fabrics being more numerous than plain fabric groups. At the

other end stand the collections from grids 4 and 9, where at least 70% of all Roman finds consisted of fragments of brick and tile. These variations in the composition of the off-site material could be related to the proximity to larger domestic clusters. As mentioned before, grid 16 covers the western edge of the site on grids 15-18, while grid 12 could cover the southern periphery of the elusive cluster on field blocks 289a and 290a. In the collections from both grids pottery is more prevalent than tile and there is a considerable percentage of coarse ware. However this composition wasn't repeated on grid 9, despite its proximity to the domestic cluster on grid 10.

App IV.1.2.8 The site on field blocks 289a-291a (table 17, maps V_13a-b, 13d, V_20a-20b)

We now must turn our attention back to the transect survey records in order to examine the possibility of yet another cluster or group of clusters on field blocks 289a-290a, 30 to 50 meters to the north of grid 12. After the study of the individual transect collections, it became clear that there was an increased density of Roman finds on these fields, exceeding the limit of 11.3 fragments per 1000 sq meters. Both field blocks feature over 12 fragments per 1000 sq meters, which is lower than the densities recorded on most major sites, but it is comparable to the density recorded on field blocks covered by grid 2 and higher than the density recorded on the fields covered by grid 10. Moreover the density of Roman material stays above the mean district value on three neighbouring field blocks, two on the east and one on the north (maps V_13a, 20a). These are field blocks 303b, 294 and 291a, all three featuring between 5 and 5.5 fragments per 1000 sq meters. Such densities are typical for the off-site in the immediate surroundings of sites or the site halos. Further north and east, after some 30 to 50 meters, the density of Roman finds decreases below the mean overall value, although it briefly returns to a level higher than the mean district value on field blocks 295 and 296 with 5 and over 7 fragments per 1000 sq meters (table 17). On the other hand note the sharp decrease on field blocks to the west, where on some neighbouring field units (field blocks 290b, 291) the Roman material completely disappears from the surface record. Thus as on a number of other site locations, the transect survey picked up a fairly compact zone of higher artifact density spreading over several neighbouring field blocks or an area of about 1 to 1.5 hectares. We have a nearly identical situation on the group of field blocks 47a-b, 49, 50 and 66, 250-300 meters to the north and on field blocks 1-6. Two or more field blocks with densities higher than 11.3 fragments per 1000 sq meters are accompanied by field blocks featuring between 5 and 11 fragments per 1000 sq meters on at least one side. We think that as on the group of field blocks 47a-b, 49, 50 and 66 these concentric patterns reflect the site and its halo or the immediate impact zone.

Table 17: Mean district and density on field blocks 289a-291 and the immediate surroundings, in 1000 sq meters.

	Field block 289a	Field block 290a	Field block 291a	Field block 303b	Field block 296
Expected	2.8	2.8	2.8	2.8	2.8
Actual	12	12.9	5.25	5.65	7.35

One can only speculate about the size and the inner structure of the likely site on field blocks 289a-290a. Judging by the records of the individual transect collections, like most other sites in this survey area it consisted of at least two separate cores or clusters (maps V_20a-b). Larger quantities of Roman finds were collected from the northern half of field block 289a, 3 to 4 fragments per individual transect and the northern third of field block 290a, where 8 fragments were collected from the northernmost transect. In terms of artifact density these are low values, ranging between 1.5 to a maximum of 3.3 fragments per 100 sq meters on field block 290a. Even after compensating for the lower degree of survey intensity multiplying the number of collected finds by a factor of 2.5, the density on these field units remains fairly low, only slightly higher than the site threshold. It has to be noted however that in the case of this survey area, the difference between the quantities of Roman finds collected by individual field walking transects and regular grid units was in some cases tenfold. If this was the case on field blocks 289a-290a, then we can predict the true densities to reach over 11 fragments per 100 sq meters on the southern core and over 30 fragments per 100 sq meters on the northern core. These values are strikingly similar to the densities recorded on the majority of Roman sites in the second survey. Limiting the on-site densities to the northern half of field block 289a and the northern third of field block 290a and also judging by the fairly modest extent of the zone of intermediary density on the field blocks to the east, this cluster ranks as a medium-sized site, not larger than 2000 sq meters. This puts it in the same rank as a number of other sites in the second survey, including the clusters on grids 10, 27 and possibly grid 8. Like its northern neighbour on field blocks 47a-b and 49-50, it consisted of at least two separate components.

However one issue waiting to be addressed threatens the validity of the interpretation proposed in the preceding paragraphs. Earlier we mentioned that on field blocks 289a-290a the transect collections were more thorough than on the neighbouring field blocks. In this particular case the difference is disconcerting, for while on field blocks 289a and 290a the transect collections included 55 and 73% of the material counted, on field blocks 294 and 303b supposedly covering the site halo, they included only about 25% of the counted finds. Isn't then the increased density of Roman finds on field block 289a-290a merely reflecting the increased thoroughness of the individual transect collections? Indeed if we adjust the individual transect collections so that they represent 100% of the material counted, the integrity of the site on field blocks 289a-290a will be weakened (map V_13d). The artifact density on these two field blocks increases slightly in comparison to the increase on field blocks 291a, 294, 303b and 295. For the former we predicted 27 and 22 fragments per 1000 sq meters, while for the latter group the predicted density is only slightly lower, ranging from 19 and 20 fragments on field

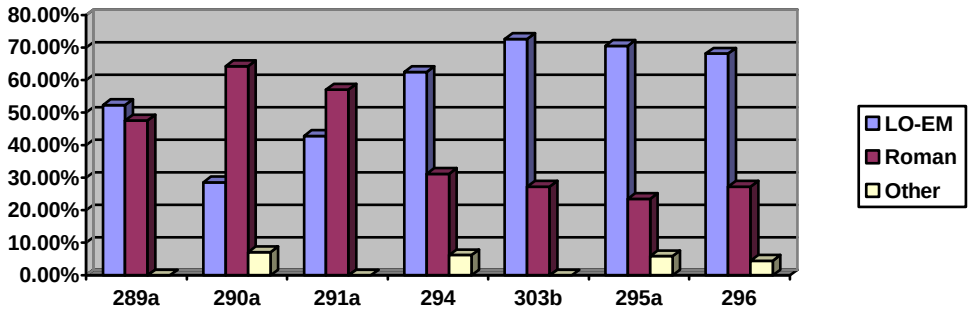
blocks 294 and 295, 26 on field block 303b and 21 fragments per 1000 sq meters on field blocks 291a. As a result we get a fairly extensive zone of higher than average artifact density, lacking significant inner variations. The integral group is still fairly compact, clearly emerging from the surrounding zone of average or lower than average artifact density, but now it is impossible to separate some of the peripheral field units (field blocks 303b or 295) from the site area because they feature artifact densities only slightly lower than field blocks 289a-290a. The implications are that either the hypothetical site spread over a much larger area or that we are dealing with an off-site zone featuring unusually high artifact density.

In our view both of these explanations are unlikely. If there was a continuous cluster of on-site density across this entire stretch, it becomes difficult to comprehend the fact that it almost completely disappeared from the surface record by the end of the first year's campaign. At the same time, the densities recorded by the transect collections are too high to be interpreted as a continuation of the off-site zone from the upper portions of the eastern ridge. As explained in the preceding sections, this group of field blocks is separated from the high density clusters on the upper terraces by a fairly wide stretch of low and very low artifact density. The densities of over 20 fragments per 1000 sq meters predicted for some of these field block is typically found on field blocks in the immediate surroundings of sites. But in this case, the nearest sites on grid 10 or on field blocks 47a-b, 49, 50 and 66 are at least 200 meters away. We therefore maintain the interpretation that there was a genuine site spreading over parts of these field units, although its precise location and limits remain beyond our reach. It is only certain that it was of a size and rank similar to the majority of Roman sites discovered in the second survey.

A closer look at the records of the transect survey will expose the source of the problem surrounding the predicted density values (maps V_13a, 13d). The theoretical densities on the individual transect units on field blocks 289a-290a are still visibly higher than on the neighbouring field units to the west. The two cores on the northernmost transects on field blocks 289a and 290a are clearly distinguishable with 11.3 and 12 Roman shards. In the rest of the individual transect collections, there are no more than 5 shards datable to the Roman Period. The easternmost transect on field block 303b for which we predict over 9 Roman fragments is an exception, suggesting that the site area partly spread over this field unit. It is likely that the small differences between the densities predicted for the integral field units stems from the artifact distribution within the field blocks' limits, as well as from the fact that the transect survey recorded much higher overall densities on the peripheral field blocks of the group, especially on field blocks 294-295 and 303b. More specifically, on the field blocks which we believe cover most of the site area, field blocks 289a-290a, the distribution of Roman finds is highly focalized. The bulk of the finds are concentrated on smaller sections of the field blocks, while on certain individual transects the number of Roman finds was zero. On the peripheral field blocks 294 or 303b, the distribution of the Roman finds is far more even with a few shards collected from every individual transect unit. Thus although the distribution on field blocks 289a-290a is more typical for site areas and the one on field blocks 294-295 for the off-site zone, the absence of Roman finds from entire sections of the former has minimized the difference between the two groups. In addition, the higher overall densities recorded on field blocks covering the halo zone directly influences the theoretical densities of Roman material. Even though the Roman finds comprise a smaller

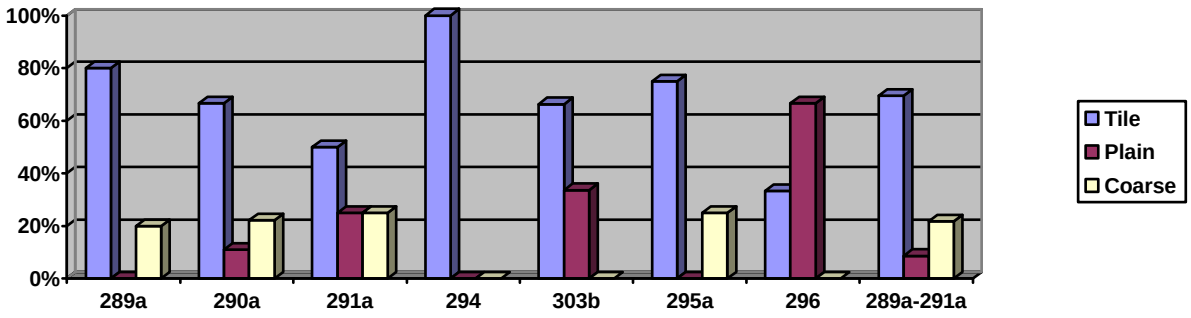
percentage than on field blocks 289a-290a (see graph 13), the densities predicted for field blocks 294-295 or 303b are not much lower.

Graph 13: Distribution of finds by periods from field blocks 289-291a, 294, 303b, 295 and 296.



Looking at the chronological composition of the material collected from field blocks 289a-290a and the surrounding field blocks, we find further support for the above-elaborated interpretation. Unless Roman finds were somehow more obtrusive than the accompanying Late Ottoman-Early Modern material, which is hardly the case in this survey area, the chronology of the material collected by individual transect units should be representative for the total surface record on these field units. Material datable to the Roman Period comprises nearly 50% of the collected finds on field block 289a and over 60% of the collections from field block 290a. Roman finds are also the most numerous group on field block 291, where we predicted a fairly high artifact density of over 21 fragments per 1000 sq meters. Thus it wouldn't be surprising if there was another core on this field block or more likely, a portion of the core in the northern third of field block 290a partly spread over the neighbouring field block to the north. To the west of this group, on field blocks 294 and 303b, material datable to the Roman Period comprises between 25 and 30% of the collected material. This is very close to the percentage of Roman finds in the total collection from grid 12; a scatter of finds which we interpreted as the halo of the site on field blocks 289a-290a. Hence it is clear that the high artifact density predicted for these field units is directly related to the high overall artifact density, not to the increased presence of Roman material. Finally, on field blocks 295a and 296, 70 to 100 meters to the east of the site, where individual transect collections included over 50% of the counted finds, the Roman material comprises an even smaller portion despite the fact that collections were more thorough on these fields.

Graph 14: Composition of the Roman assemblages by basic functional categories.



One could argue that the prominence of architectural ceramics in most of the individual transect collections (cf. graph 6) is largely determined by the greater obtrusiveness of this category in the surface record. This is a reasonable claim and indeed transect collections seem to include consistently higher percentage of brick and tile, but with a few exceptions, this is also true for the total grid collections. Moreover on both graphs we see transect collections predominantly made up of pottery and these examples are equally rare in both transect and grid collections. It is still very likely that in individual transect collections, especially when carried out less thoroughly, architectural ceramics will be overrepresented, but they are certainly not insensitive to the more significant changes in the functional composition of the material.

This is actually illustrated by the collections from field blocks 289-291a and the surrounding field units (graph 14). Focusing on the site area covered by field blocks 289a-291a, we see the characteristic divergent patterns of distribution of the basic functional categories. The collection from field block 289a covering the southern third of the site looks exactly like the assemblages on grids 8 and 14, with architectural ceramics representing 80% of the collection and a particularly high percentage of coarse ware or 20%. Plain fabrics are completely missing. Clearly this is "the brick and tile component" of the site. Into the central portions of the site on field block 290a, the composition becomes slightly more balanced. Plain pottery appears, comprising barely 10% of the collection, while the percentage of coarse ware is only slightly increased from the previous field unit. Architectural ceramics represent about 63% of the collection of Roman finds. On field block 291a covering the northern third of the site, the ratio of architectural ceramics to pottery is almost completely reversed, with pottery comprising slightly over one half of the Roman finds. It should be stressed that on this field unit, the individual transect collections were the least intensive among the analyzed group. This gradual shift in balance towards a "pottery-based assemblage" is related to the dramatic increase in the percentage of plain fabrics. On field block 291a they comprise about 25% of the Roman material and a total grid collection on this field would have certainly recorded an even stronger presence of plain pottery. In this respect the cluster on field blocks 289a-291a closely follows the pattern of spatial differentiation between architectural ceramics and plain pottery observed on nearly all sites in this survey area.

Taken as a whole (the bars on the extreme right on graph 14), the collection from the field blocks covering the expected site area is not dissimilar to the clusters on grids 8 and 14, predominantly made up of brick and tile. But this collection is clearly

distinguished by the fairly high percentage of coarse ware, represented by slightly over 20% of the finds. Plain fabrics comprise only about 8-9% of the material. An almost identically composed collection came from field block 66 (graph 7), but we believe that in both cases a total collection by regular grids would inevitably increase the percentage of both plain and coarse pottery, bringing both collections closer to the full domestic assemblages from grids 10 or 27.

Outside the site area on field blocks to the east of the site, the whimsical changes in the composition of the collections observed on a number of other field blocks scattered across the eastern ridge were confirmed over a much shorter distance (maps V_13a, 20b). On field block 294 contingent to the northern half of the cluster or its "pottery component", tile comprises 100% of the small collection. Even if allowing that the pottery finds were completely overlooked during the transect collections, their true amount was certainly insignificant on this field. Oddly enough on field block 303b bordering the southern, "brick and tile component" of the site, the percentage of plain fabric sharply increases to over 33% of the collection. Coarse pottery found in consistent quantities across the site area is completely absent from the collections from both field units. As explained earlier, about 100 meters to the east of the site on field blocks 289a-291a, after a brief interval of low artifact density, Roman material briefly reappears in higher quantities on the neighbouring pair of field blocks 295a and 296. Here again we see two very different collections: the one from field block 295a consists of about ¾ of architectural ceramics and ¼ of coarse pottery, while on field block 296 plain pottery suddenly appears, representing an unparalleled 63% of the collection. In fact the latter two collections imitate the relation between the northern and southern components on the cluster on field blocks 289a-291a, albeit far more dramatically and on a smaller scale. As argued before, the quantity of Roman finds on these two fields is too low to indicate the remains of a separate residential site.

These unexpected and unpredicatble fluctuations in the presence of the basic functional ceramic categories in the collections from the off-site zone are difficult to explain. Later in the analysis we will see this phenomenon occurring regardless of the intensity of the collections or the size of the sample.

App IV.1.2.9 Grids 19, 20 and 26 (tables 18, 19, 20, maps V_14a-14d, V_15, V_16a-16c and V_17)

As on grids 9, 12 and 13, the total grid survey on field block 263 by the central axis of the surveyed basin failed to reveal larger concentrations of Roman material (map V_14a, 14b). The high overall artifact density prompted us to carry out a total collection on this field block, but the study of the transect collections showed that the bulk of the finds dated to the last couple of centuries. A somewhat larger concentration of Roman finds was collected from field block 270a, about 70 meters north of field block 263 or slightly over 5 fragments per 1000 sq meters. On the next several field units to the south, including field block 263, the density of Roman material rarely exceeds 2 fragments per 1000 sq meters. There is also a slight increase on field block 394, at the southern end of the survey section, but it barely exceeds the mean district value (table 18). Compared to the quantities of Roman material found on the group of field blocks covering the upper portions of the eastern ridge or the group of field blocks in the northern part of the

surveyed basin, these are very small quantities. Understandably it is quite possible that a number of clusters of minor size, such as those uncovered on grid 1 or 14 went unnoticed. Recall that small clusters of Roman material were discovered even on field blocks where the transect survey recorded average or lower than average densities of Roman pottery. None the less the almost complete absence of field blocks with at least an average artifact density signals that there were no major residential sites in this survey section. Otherwise one would expect to see at least a zone of average density, spreading over a number of field units, representing the traces of the site halo. At this point it is appropriate to cite the example of the site on grid 27. Although it went completely unnoticed during the transect survey, the extensive zone of average and low artifact density spreading over field blocks immediately to the south of the site area was recorded by the individual transect collections.

Table 18: Mean district density and density on field blocks 270-271, 277b and 394, in 1000 sq meters

	Field block 271	Field block 270a	Field block 277b	Field block 394
Expected	2.8	2.8	2.8	2.8
Actual	2.3	5.25	1.25	3.3

The collections by individual transect units in this part of the survey area were less intensive and they rarely represented over 40% of the material counted. But even if the individual transect collections are adjusted to represent 100% of the material counted, the general picture remains unchanged (map V_14c). Two pairs of field units come to the fore, featuring artifact densities higher than the district average and comparable to the densities recorded on the field blocks covering genuine archaeological sites. These are field blocks 271 and 270a with 19.5 and 51 fragments per 1000 sq meters and field blocks 277b and 394 with 27.4 and 43.25 fragments per 1000 sq meters. They are located at the opposite ends of this survey section and separated by a large stretch of low and very low artifact density. Except for the one on field block 277b, none of these concentrations were recognized prior to the analysis of the transect collections and they were left out of the regular grid survey. It is possible and even likely that these field units cover on-site clusters, but because the high artifact density is limited to two pairs of field blocks, we believe that these aren't the remains of larger residential sites.

The concentration on field blocks 270a-271 came to light only after the processing of the finds and the adjustment of the individual transect collections, representing less than 25% of the material counted. Hence the impressive increase on this pair of field units. The density predicted for field block 270a is particularly high and almost certainly indicates the presence of site remains. The reason why this field block appeared so inconspicuous during the transect survey is probably related to the low state of preservation, characteristic for the majority of finds collected from fields along the Skopje-Kučevište road. We saw this on the example of the total collections from grids 15-17 and it is also characteristic for the material collected from grid 19. The high concentration on field block 270a doesn't continue on the neighbouring field block to the west, but on the neighbouring field to the north, on field block 271 (map V_14c).

According to the individual transect collections this wasn't a continuation of the hypothetical cluster on field block 270a, but a separate and much smaller satellite. Almost all Roman finds from field block 271 came from the northernmost transect unit, while on field block 270a they are mostly concentrated in the southern half of the field unit. Judging by the distribution within the field block limits and the absence of a visible site halo, we believe that these were minor, probably non-residential sites.

Understandably the samples of surface material collected by individual transect units are too small to be subjected to a meaningful analysis. We should nevertheless mention the surprising variety of general classes among the few collected finds: apart from the expected one or two worn tile fragments, there are isolated shards of plain and coarse pottery and one of the rare examples of amphora fragments.

There are no doubts that the carpet of Roman material covers the central survey section, but the definition of sites in this survey section proved particularly delicate. Even on field block 263, where not a single find from the transect collections dated to the Roman Period, the total collection by grid units produced an assemblage not much smaller than those collected from grids 13 or 12. As explained in Appendix III, grid 19 was limited to field block 263. On the field to the north there were no conditions to extend the grid survey, while the quantity of surface material on the field to the south was visibly diminished. Already during the total collections on grid 19, it became clear that most of the gathered finds were fragments of Late Ottoman-Early Modern ceramics. There is an apparent increase in the amounts of off-site debris from the past couple of centuries on field blocks along the Skopje-Kučevište asphalt road. This was also observed during the total collections on grids 15, 16 and 17, approximately 300 meters north of grid 19. But as will be shown, these larger concentrations of Late Ottoman-Early Modern off-site debris are limited to a certain number of field blocks. As on the eastern ridge, there are considerable fluctuations in the quantity of this material and this is one of the main reasons behind the decision to carry out total surveys on these field units.

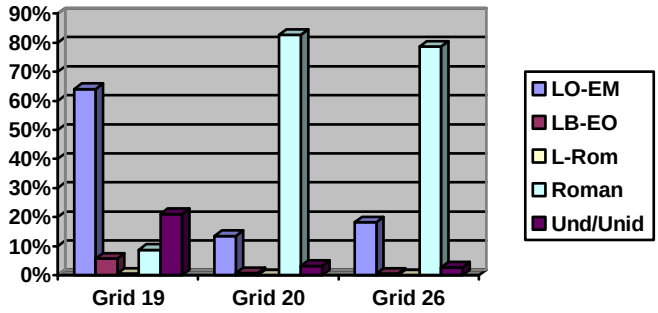
Table 19: Mean overall density and mean density on grids 19, 20 and 26, in 100 sq meters.

	Grid 19	Grid 20 (on-site only)	Grid 26 (on-site only)
Expected	3.4	3.4	3.4
Actual	1.5	15.8	7.10

With an average density of only 1.5 fragments per 100 sq meters, the scatter on grid 19 is less than half the survey average and cannot be assigned an on-site status (table 19). However as on grid 13, it is the inner distribution of the finds that casts doubts over the assumption that this is a segment of the local off-site carpet (map V_14b). Over 30% of the Roman finds were collected from a single unit, in the centre of the northern row of the grid. Here the artifact density reached nearly 8 fragments per 100 sq meters, which is far from the maximal densities recorded on most other Roman sites, but it is also well above the densities normally recorded in the off-site zone. Moreover and in contrast to the situation on grid 13, there is a clear concentric pattern: on the surrounding grid units, artifact density drops to 3.3 fragments per 100 sq meters and on the periphery of the

gridded area, to about 1 fragment per 100 sq meters. In this respect the cluster on grid 19 behaves like a miniature residential site. Yet because of the small numbers involved, one can never be sure if the pattern observed isn't a mere coincidence. The distribution of Roman finds on this grid chiefly follows the distribution of the total surface record.

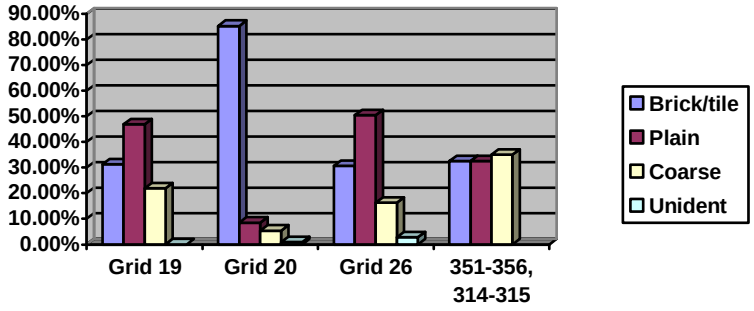
Graph 15: Distribution of finds by period on grids 19, 20 and 26.



Typically for the off-site zone, only less then 10% of the total collection from grid 19 can be dated to the Roman Period (graph 15). The actual percentage is certainly even lower, as the bulk of the discarded finds were fragments of the characteristic Late Ottoman-Early Modern roof tiles. There is a somewhat greater percentage of undated or unidentifiable fragments, but in all other aspects the chronological profile of the total collections from grid 19 resembles the chronology of the finds collected from grids 9 or 13 (cf. graph 11). Judging by the minor presence of Roman finds in the total surface record, it seems unlikely that there are traces of intense, residential activities on grid 19.

It is unfortunate that the very low ground visibility prevented total grid survey on the neighbouring field block to the north. As in the case of the clusters on grid 8 and 12, there is a possibility that the site extended further north and that we're dealing with only a portion of a larger cluster. At the same time, there aren't any particularly strong arguments to fully reject the claim that this is but a segment of the Roman off-site carpet. The transect survey didn't reveal traces of Roman Period occupation on the neighbouring field units, as was the case with the fields north of grid 12. Field block 261 to the south of the gridded area featured only about 1.7 fragments per 1000 sq meters, while on field units 264 to the north of the grid, the transect collections recorded 1.3 fragments per 1000 sq meters. Although field blocks in the surrounding feature less than 1 Roman shard per 1000 sq meters, the increase on field blocks 261 and 264 is too slight. The highest density of Roman finds in this section was recorded on field block 260b (2.5 fragments per 1000 sq meters) 50 meters south of the gridded area, but this increase is merely due to the small size of this field unit and it is still below the mean district value.

Graph 16: Composition of the Roman assemblages from grids 19, 20 and 26



Not unusually for the gardens on the floor of the surveyed basin, the collected finds were rather poorly preserved. This is also reflected in the high percentage of undated or unrecognizable material in the overall collection. On average individual fragments rarely weighed over 50 grams and this figure includes the better preserved and heavier Late Ottoman-Early Modern finds. Along with the small size of the Roman collection, this factor gave further support to the view that the cluster on grid 19 is a segment of the off-site carpet. Regarding the presence of the various functional categories, this is one of the Roman assemblages where pottery is more numerous than architectural ceramics. Brick and tile represent slightly over 30%, while pottery fragments represent over 60% of all Roman finds from grid 19. If all finds were included in the analysis, the percentage of unrecognizable fragments would have most probably risen to nearly 10%. The ratio of plain to coarse ware is roughly 2:1, the former class representing over 40%, the latter around 20% of all Roman finds from this grid. Similarly composed were the collections from grids 12 and 16, though in these cases architectural ceramics comprised at least 40% of the assemblage. The small Roman assemblage from grid 7 presents a much closer parallel, basically repeating the composition of the collection from grid 19 (cf. graph 10). The only difference is that on grid 7 plain ware is even more numerous, comprising nearly 50% of the assemblage. These unpredictable variations in the composition of the collected ceramic assemblages seriously undermine the initial expectations that the conspicuous absence or presence of the general fabric categories can be indicative of the clusters' character and function.

Because of the relatively small percentage of brick and tile, the cluster on grid 19 differs from the majority of settlement sites of the Roman Period. But assuming that this is only part of a possible site, it could be argued that the bulk of the architectural ceramics was concentrated on its undiscovered portion. Divergent distribution patterns of the basic functional classes were observed on most residential sites in this survey. This intra-site differentiation was particularly pronounced on grid 10. Focusing only on the eastern half of this cluster, we'll discover an almost identically composed assemblage as the one on grid 19. At the same time however it is difficult to ignore the much smaller size of the collection and the very poor state of preservation of the material. Even the tiny clusters on grids 1 and 14 comprise 50-70% larger collections than the one gathered from grid 19. Bearing in mind the inconsistencies in the composition of the studied off-site collections, it is impossible to decide for certain if this is a segment of the off-site zone or a peripheral part of a genuine site, but the sheer paucity of Roman finds on this and the surrounding fields strongly point to the off-site character of this collection. As on grids 7 or 11, it is

possible that the elevated density of Roman material was in part a contribution of the fragmented character of the finds on grid 19.

Around 260 meters south of field block 263, along the Skopje-Kučevište road, the transect survey recorded a higher than average overall artifact density on two field blocks, 276b and 277b. The study of the finds gathered by individual field walking transects showed that the density of Roman finds on these units is lower than average, 2.3 fragments per 1000 sq meters on field block 276b, 1.2 on field block 277b (table 18, map V_14a). But this is simply because the individual transect collections on the latter field unit were less intensive including less than 15% of the counted material. Already during the transect survey it became evident that there was a greater concentration of Roman material on field block 277b and it was decided to preserve the surface record for the total grid survey. As will be shown the discovery of this site at an early stage was mostly caused by the presence of larger fragments of architectural ceramics, but also because of the drastic decline in the amount of Late Ottoman and Early Modern material, which when in large quantities often obscured finds from earlier periods. On most surrounding field units the transect collections represent over 50% of the counted material. Nevertheless the density of Roman finds is barely higher than on field block 277b.

In case the transect collections included all material counted, this field unit clearly stands apart from its surroundings, potentially featuring over 27 fragments per 1000 sq meters (map V_14c). Even this value is not particularly high and field block 277b doesn't belong to zone of very high artifact density. In reality the density of Roman material was certainly higher, because for two individual transect units data were missing and we had no sample base to predict the artifact density in case all counted finds were collected. There is a particularly dramatic increment on field block 394, situated only about 25 meters to the south. The predicted density of Roman finds for this field unit is over 43 fragments per 1000 sq meters, making it the southernmost field block with very high artifact density. This is comparable or higher than the densities predicted for the majority of the sites discussed so far. We believe that the theoretical densities would have been similar for field block 277b was there at least a minimal sample from all individual transect units. Field block 394 was left out of the regular grid survey because it featured an average overall artifact density. None the less it is reasonable to expect a cluster of size and composition similar to the one discovered on field blocks 277b. The two are separated by a narrow field unit where Roman material was absent, although it has to be noted that ground visibility on this field was lower than average. Like the pair of field blocks 270-271, field blocks 277b and 394 stand isolated, surrounded by fairly extensive zones of low or very low artifact densities. When compared to the majority of the sites discovered in the second survey, they leave a different signature in the surface record, lacking a site halo. Therefore we argue that these aren't necessarily the remains of fully residential sites. We see that even very small sites, like the one on grids 14 or 6 tend to be surrounded by field units featuring average or higher than average artifact densities.

The total grid survey was limited to field block 277b and partly covered the southern end of field block 276b. It revealed a very large concentration of Roman finds, mostly limited to two grid units in the southwest corner of grid 20 (map V_14b). The site area is limited to field block 277b, only the edge of the site extending into field block 276b. Taking only the portion on field block 277b or the southern half of the grid, the average artifact density is nearly 16 fragments per 100 sq meters, 9.85 on the integral

gridded area (table 19). Either way the artifact density is much higher than the survey average and along with the site on grid 3, site 20 is one of the densest clusters in the survey area. The site core is located on one grid unit in the southwest corner of the grid, where the grid survey recorded nearly 40 Roman shards per 100 sq meters. Knowing that the bulk of the discarded material came from this grid unit, the actual artifact density could increase to almost 80 fragments per 100 sq meters. This is by far the highest maximum artifact density recorded on Roman sites in this survey area, approaching the artifact densities recorded on prehistoric sites in the Sopot survey. On the next two grid units, along the southern and western edge of the grid, artifact density sharply decreases to 40 and 25 fragments per 100 sq meters. If count is taken of all collected material, the decline is smoother along the southern edge. This is because apart from the site core, the greatest portion of discarded material came from the neighboring grid unit to the east. Nearly three quarters of the discarded finds came from these two grid units. For the rest of the total collections, the values shown on map V_14b are far more accurate. Further away from the core of this cluster, the artifact densities suddenly drop to an off-site level. Again the decrease is sharper along the western edge of the grid. On the northernmost row of grid units, the artifact density never exceeds the limit of 3 fragments per 100 sq meters, but along the southern edge, on the grid unit in the southeast corner of the grid, the total survey recorded over 10 fragments per 100 sq meters. This implies that the site area extends beyond the grid's eastern limit. However the very low densities recorded on the rest of the units of the easternmost row indicate that it couldn't spread for a very long distance. On these grid units the density of Roman material diminishes to about 1 fragment per 100 sq meters. Most probably another row of grid units to the east would capture the site in its entirety, including a portion of the site halo. On the south and on the west, the site limits coincide with the limits of the field. On these sides field block 277b is delimited by tall hedges. This field is situated at the corner where the Skopje-Kučevište road links up with a local dirt-road. It is impossible to follow the cluster of Roman finds on the fields west of the Skopje- Kučevište road or on the neighbouring fields to the south. Therefore we cannot be sure if the concentration on field block 394 formed a separate cluster or if it was a continuation of the cluster on field block 277b. Judging by the low impact on surrounding fields, it is likelier that these are two separate clusters of small or small to medium size. It is possible that parts of the site on grid 20 remain hidden beneath the field's hedge and under the roads that bound it along the west and south. In any case the cluster revealed occupies at least 600 sq meters, allowing that it spread several meters further to the east.

The chronological composition of the total collection from grid 20 is the sheer opposite of the collection from grid 19 (graph 15). It bluntly demonstrates the sudden and very drastic changes in the quantity of Late Ottoman-Early Modern off-site finds. Because the bulk of the discarded finds was made up of tiny fragments of Roman tile, it is certain that Roman finds comprise more than 90% of the total surface record on grid 20. The increase in the amounts of Roman material from grid 19 is more than apparent further emphasizing the off-site character of the latter collection, but even more drastic is the dwindling of the amounts of the Late Ottoman and Early Modern finds. The drop from grid 19, situated only about 250 away is at least tenfold. The Roman assemblage from grid 20 is certainly not the largest collection of Roman finds in this survey area, but on no other grid collection is this material so overwhelming. Exceptions are the total

collections from grids 11 and 14, where again the carpet of Late Ottoman-Early Modern debris suddenly became much thinner.

The cluster of Roman finds on grid 20 was noticed at an early stage of the field survey thanks to this predominance of Roman material on the surface. But there was another factor and this was the large concentration and the bulkiness of the finds. In the first survey, it wasn't unusual to notice dense clusters of surface material by simply walking over the fields. But in the Skopian Montenegro survey this was rarely possible; larger concentrations of Late Ottoman-Early Modern off-site debris were detected sooner than genuine archaeological sites. The cluster on grid 20 stood apart primarily because it was made up of larger quantities of unusually well preserved brick and tile fragments (map V_15). Larger concentrations of Roman material were also documented on grid 11, but this was realized only after the study of the grid collections. Unlike the cluster on grid 20, it was predominantly made of pottery and in general, the finds were very poorly preserved. Returning briefly to the weight of the collections on grid 20, we see that the heaviest collection in the survey area came precisely from the grid unit covering the core of this cluster. On average, individual fragments weigh between 100 and 150 grams. In comparison, individual finds from grid 19 usually weighed between 15 and 50 grams (see map 31 in Appendix 3).

These differences also reflect the composition of the Roman assemblage from grid 20 (graph 16). As all discarded finds were either badly worn tile fragments or unrecognizable shards, it is certain that architectural ceramics represent over 90% of the assemblage. Even on the similarly composed clusters on grids 8 and 14, at least 15% of the finds consisted of pottery fragments. In the assemblage from grid 20, in the event that all collected finds were processed, pottery would represent less than 10% of all Roman finds. Unlike the clusters on grids 8 and 14, coarse ware is present in smaller amounts than the plain fabrics. They represent less than 5% of the finds, while plain pottery comprises slightly over 7%. But these differences are too small and they present no firm reason to distinguish the cluster on grid 20 from those uncovered on grids 8 and 14. Understandably the latter two clusters are thinner and also perhaps slightly larger. Most importantly however, both the site on grids 8 and 14 have produced relatively extensive halos, while the one on grid 20 and its hypothetical neighbours on field blocks 394 and 270-271 have left almost no traces in their immediate surroundings.

The last cluster of Roman finds discovered in this survey area came to light only after the detailed study of the material gathered by individual transects and the hastily executed grid survey on field blocks 348 and 351, towards the very end of the second year's campaign. Regarding the overall quantity of surface finds, these field blocks were outside the large zones of very high artifact density stretching over the upper sections of the eastern ridge. Admittedly the transect survey revealed higher than average overall artifact density on both field blocks, but it was much lower compared to field blocks 320 or 2. Moreover it was surrounded by a zone of average or lower than average density, making it appear as a small outlet of the larger zone spreading only about 120 meters to the north. However completing the study of the collections by individual field walking transects, it became evident that the concentration of finds on field blocks 348 and 351 was only the centre of a larger zone of higher density of Roman material, which practically tied onto the chain of clusters uncovered on grids 6-10 and further north on grids 5 and 11 (map V_16a). It extends discontinuously westwards, along the terrace

bounded by the contour lines of 460 and 470 meters above sea level. In essence it runs parallel to the chain of clusters uncovered on grids 6-8 and 10, along a lower terrace. It consists of a group of several field blocks featuring artifact densities higher than 5 fragments per 1000 sq meters. These include field blocks 348-349 and 351-353, forming the continuous but not very compact centre of this zone. Densities higher than 5 fragments per 1000 sq meters further appear on field blocks 356-357, 314-315 and 342, forming a discontinuous outer belt. It is quite possible that it also partly extends beyond the eastern limit of the survey, on the other side of the local dirt road. With the exception of field block 351, on the rest of these field blocks the transect survey recorded between 6 and 9 fragments per 1000 sq meters (table 20, 21).

Table 20: Mean district density and density recorded on field blocks covering site 26 and its immediate surroundings, in 1000 sq meters.

	Field block 351	Field block 348	Field block 352	Field block 353	Field block 350a
Expected	2.8	2.8	2.8	2.8	2.8
Actual	22.15	6.1	7.3	5.3	4.1

By far the highest density of Roman material was discovered on field block 351, where slightly over 22 fragments per 1000 sq meters were recorded. This field block clearly stands apart from its surroundings, approaching the densities recorded on field block 320 (grid 6) or on field block 1 (grid 11). The individual transect collections comprise almost 50% of the counted material, which is not very different than the intensity of transect collections on the neighbouring field blocks. In fact even on field units where the collections represent over 50% of the counted finds, the density of Roman material is at least 2.5, 3 times lower. Next in terms of artifact density come field blocks 348 and 352, with 6 and 7.2 fragments per 1000 sq meters respectively, although transect collections were very thorough, especially on field block 352. Both field blocks are contingent to field block 351 forming a roughly concentric pattern. After a brief decline on the next ring of field units to the south and west of the cluster, artifact densities rise again to over 5 fragments per 1000 sq meters on field blocks 356 and 357 about 50 meters to the south and to over 8 fragments on field blocks 314 and 315, nearly 200 meters to the west from field block 351. On field block 342 situated about 120 meters northwest of field block 351 the density of Roman finds briefly increases again, reaching nearly 8 fragments per 1000 sq meters.

Table 21: Mean district density and density recorded on field blocks covering the outer territory of the site on grid 26, in 1000 sq meters.

	Field block 356	Field block 357	Field block 314	Field block 315	Field block 342
Expected	2.8	2.8	2.8	2.8	2.8
Actual	5.5	6.45	8	8.3	7.85

There are evident similarities between the spreading of this carpet and those stretching over field blocks 289a-291a or over field blocks 47a-b, 49, 50 and 66 (cf. maps V_13a and V_19a). On these and on other site locations where individual transect collections were thorough enough, the patterns of distribution picked up by the transect survey were surprisingly similar. One or two field units featuring artifact densities many times higher than the district average are surrounded by a fairly large zone of intermediary or higher than average density. These field units can feature roughly about twice the mean district density. Throughout this study we argue that this zone of intermediary density covers the site halo and the satellite clusters. The carpet of Roman material centered on field block 351 is somewhat thinner, but it is equally or even more extensive.

Under the pressure of time and being faced with the same material found on the rest of the Roman sites in this survey area, it was decided to limit the total grid survey to field blocks 351 and 348 (maps V_16b, 17). By doing so we inevitably gave up any chance of learning about the true amount of Roman finds and their distribution outside the gridded area. Looking at the distribution of Roman shards by individual transects, it is evident that their quantity shrinks considerably outside field block 351. In the central and western thirds of this field block, the individual transect collections included 6 Roman shards, which when corrected for the lower ground visibility amounts to about 5 fragments per 100 sq meters. Only on the northernmost transect on field block 352 and along the central transect on field block 342 does the density of Roman finds stay above 3 fragments per 100 sq meters. On the rest of these field blocks, the individual transect collections included not more than 1 or 2 Roman shards. As mentioned, on the majority of field blocks the collections by individual transects were fairly thorough, including about 50% of the counted material. An exception is field block 355, where we've collected only about 20%. But given the low overall artifact density on this field, even if we collected all finds seen during the transect survey, the density of Roman finds would barely reach 3.5 per 100 sq meters. What these observations suggest is that apart from the peaks on field block 342 and on field blocks 314-315, the higher than average carpet of Roman finds outside the gridded area was relatively even. Like with most other examples, this zone of intermediary density doesn't spread symmetrically to the central cluster. In this case it is most extensive to the southwest, reaching the maximum radius of nearly 170 meters. The location of field block 342, halfway between the clusters on grids 10 and 26 is rather ambiguous. In this respect it resembles the concentration on field block 66, situated at a roughly equal distance between the cluster on grid 2 and 47a-b, 49-50.

Because the collections by individual transect units were of a roughly equal intensity across this survey section, the record of the adjusted transect collections chiefly confirms the observations elaborated in the preceding paragraph (map V_16c). Overall the increase is moderate, with the maximum density of 54 fragments per 1000 sq meters predicted for field block 351, while on the surrounding field units it ranges between 15 and 25 fragments per 1000 sq meters. Thus it is evident that these values are very close to the densities predicted for the majority of field blocks covering definite site locations (cf. maps V_7c or V_11c). The field block covering most of the site area almost always features above 40 fragments per 1000 sq meters, while field blocks covering the site peripheries and halos featured densities lower than 30 fragments per 1000 sq meters. In

this particular case the difference between the densities recorded on field block 351 and on its neighbours is unchanged. None the less there are minor changes when the transect collections are adjusted to represent 100% of the material counted. It reveals that the density on field block 315 was artificially elevated by the more thorough transect collections, while the less intensive collections on field blocks 341 and 342 north of the site have probably underestimated the density of Roman material. In general the extents of the site area and of the site halo require little or no correction (cf. maps V_16a and V_16c). Note however that field block 342 has joined the zone of very high density, with about 40 fragments per 1000 sq meters. We believe that this isolated concentration standing halfway between the sites on field block 351 and grid 10 is a satellite cluster.

Grid 26 covered the entire surface of field block 351 and the greater portion of field block 348, chiefly confirming the results of the transect survey (map V_16b). The maximum densities of 15 and 10 Roman shards per 100 sq meters were recorded on two grid units in the northeast half of field block 351. The quantities of collected Roman finds shown on the thematic map are greater than on the majority of Roman sites in the survey area, but note that the collection units are also twice the size of the usual 10 by 15 meters module. In the case of grid 26 the individual units measure around 225 sq meters and the average density on grid 26 is slightly over 7 fragments per 100 sq meters or more than twice the survey average recorded by the grid survey (table 19). In comparison to other sites covered by the regular grid survey, this cluster is indeed slightly thinner.

On the northernmost row of units covering field block 348 the artifact density sharply drops to less than 3 fragments per 100 sq meters, which coincided with the transect survey records. On grid units to the south and west the decline is gentler. On the southern pair of grid units the total grid survey recorded 10 and 6.5 Roman fragments per 100 sq meters. In all probability the site spread slightly beyond the southern and western limits of the gridded area, into field blocks 351b and 352. The former of the two featured very low ground visibility and there were no Roman finds among the transect collections; but on field block 352, the transect survey recorded almost 4 Roman shards per 100 sq meters on the northernmost transect. As discussed the quantity of Roman finds in the rest of the individual transect collections from the area was considerably lower, which suggests that the cluster on grid 26 partly spread over the neighbouring field block to the southwest. On the basis of the individual transect collections it was also suggested that the site was surrounded by a fairly even carpet of off-site material, mostly spreading to the southwest. It is possible that by extending the total grid survey over this entire zone there will appear more clusters of Roman material but of a smaller size, similar to the satellite clusters on grid 1, 18 or 7. On the neighbouring fields to the east, beyond the dirt-road and the eastern limit of the survey, we couldn't follow the cluster of Roman material. It probably terminates somewhere beneath the hedge of the field or the dirt-road. Allowing for wider margins along its southern and western limits, the cluster on grid 26 occupies an area of over 2 200 sq meters. It ranks as a medium-sized site for this survey area, similar to the clusters on grids 10, 5-11 or 27.

The maximum artifact density of 15 and the average density of 7.10 fragments per 100 sq meters are amongst the lower on-site densities recorded by the grid survey (cf. tables 7, 12, 19). This circumstance partly explains why the cluster on grid 26 was discerned only after the study of the gathered finds. It has to be stressed however that the actual densities are at least 15 to 20 percent higher. As with the rest of the total

collections, up to 30-40% of the collected finds were discarded and in this case they mostly consisted of worn fragments of Roman brick and tile. Including this material in the analysis will increase the artifact density on both the centre and the periphery of the gridded area. The maximum density will reach nearly 20 fragments per 100 sq meters, which is close to the maximum densities recorded on the majority of Roman sites and to the usual tenfold difference between the maximum density recorded by the regular grid and the transect survey. Predictably on peripheral grid units the increase is slighter because a smaller number of finds were discarded and excluded from the analysis, thus having little effect on the actual size of the cluster.

On grid 26 finds datable to the Roman Period are almost as numerous in the total surface record as on grid 20, regardless of the much lower density (graph 15). Including the discarded finds they would certainly comprise over 80% of the total collection, though it has to be emphasized that about 40% of the discarded material dated to the Late Ottoman-Early Modern Period. The figure shown on graph 15 is a more or less faithful representation of the chronological composition of the total surface record on grid 26. The Late Ottoman-Early Modern finds barely constitute 20% of the collection and there are almost no other periods in the surface record. This explains why the group of field blocks surrounding the cluster on grid 26 ranked average or slightly above average in terms of overall artifact density.

In spite of their predominance on the surface of the gridded area, the greater concentration of Roman finds wasn't discovered during the transect survey. This is certainly related to the relatively low overall artifact density, but as was shown the type and the quality of the surface material can further contribute to its obtrusiveness. The collections from grid 26 never weigh more than 2.5 kilograms, 4 times less than the heaviest collection from grid 20. On average individual fragments weighed between 40 and 55 fragments, close to the weight of individual fragments collected from grids 19 or 11. However in the case of the collections from grid 26, this is more related to the type rather than to the quality of the ceramic fragments (graph 16). As on grids 19 and 7, architectural ceramics are represented by only 30% of all Roman finds. It has to be remembered though that on grid 26, the discarded Roman finds almost entirely consisted of brick and tile fragments. Taking account of this material would almost double the number of tile fragments, increasing the percentage of architectural ceramics to about 55% of the Roman assemblage. At the same time the percentage of plain ware would decrease to about 30-33% of the assemblage, which is nearly identical to the share of this category in the collections from grids 15-17. The percentage of coarse ware is also within the expected range or about 15%. In general this is a similarly composed assemblage to those collected from grids 6, 10 and 15-17. In this group of clusters architectural ceramics represented about 50% of the total collections, while plain and coarse fabrics comprised about 30 and between 15 and 20%. It is unlikely that this composition would change if we included the neighbouring field units in the total grid survey. Brick and tile are virtually absent in the transect collections from field blocks 352 and 355 in the immediate surrounding of the cluster on grid 26. Even when the transect collections from this entire zone are analyzed excluding the collections from field blocks 351 and 348, the share of architectural ceramics remains low, representing only about 32-33% of all Roman finds. It is thus almost certain that the cluster on grid 26 wasn't surrounded by satellite clusters predominantly made up of architectural ceramics. On field blocks covering the site halo,

pottery comprises about 65% of the collections of Roman material and unlike on grid 26, there is an equal percentage of coarse and plain fabric groups (the bar on the extreme right on graph 16, V_map 17).

App IV.1.2.10 The off-site and the site halos (tables 22a and 22b, maps V_5a/c - 20a/c)

Neither the transect nor the grid survey managed to discover a major cluster of Roman finds west of the Skopje-Kučevište asphalt road, on the western ridge of the surveyed basin (map V_18a). Needless to mention it is always possible that smaller sites went unnoticed, especially in a survey area with dynamic surface conditions and a lot of background noise. But giving at least some credit to the transect survey results (carried out over the entire survey area in the first year's campaign), it is impossible to ignore the sharp contrast in the quantities of Roman material collected from field blocks east and west of the Skopje - Kučevište road. Recall that over 95% of all Roman finds came from field blocks east of this road. Roman finds were collected from only about two dozens field blocks in the western half of the survey area, although on average the collections by individual transects were more intensive than on field blocks in the eastern survey half. On these field blocks the density of Roman finds rarely exceeds 3 fragments per 1000 sq meters and the mean district value is well below 1 fragment per 1000 sq meters or only 0.2 Roman shards per 1000 sq meters. Only on field bocks 152, 160a, 167, 171 and 170, all situated at the northern end of the section, opposite the large cluster on grids 15-18, does the artifact density reach between 3 and 4.5 fragments per 1000 sq meters. On the eastern ridge field blocks featuring similar artifact densities were proven to be part of the off-site zone. However on the western ridge, even these very low artifact densities are at least ten times the district average (table 22a). This is comparable to the difference between the mean district and on-site densities in the eastern survey half. And yet the one or two fragments collected per field unit can hardly be assigned an on-site status. Moreover these find-spots don't form a coherent pattern; they are dispersed rather randomly across the northern half of the western ridge, almost disappearing in its central and southern sections. This thin carpet covering much of the northwest survey quarter and a narrow strip along the Skopje - Kučevište road is a logical continuation of the carpet of Roman material in the eastern survey half. That even on these field blocks the artifact density exceeds the average for the western survey half, merely reflect the near absence of Roman material from the great majority of the transect collections. Even if we limit the analysis to the northern end of the ridge, where the majority of these find-spots are located, the district average remains quite low, barely exceeding 0.5 fragments per 1000 sq meters. Chiefly guided by the amounts of the total surface record, the total grid survey accidentally covered only two field blocks featuring over 2.5 Roman shards per 1000 sq meters, field blocks 170 and 171. As will be shown, on neither of these two field units did the grid survey revealed clusters with on-site densities.

The carpet of Roman material on the western ridge looks even sparser when the individual transect collections are adjusted to represent 100% of the material counted (map V_18c). Only field block 160a falls within the median density range with predicted 8.9 fragments per 1000 sq meters, but this simply reflects its very small size. On the rest of the field blocks in this survey half, the densities predicted are always lower than 7

fragments per 1000 sq meters and they all fall within the lower than average density range.

Table 22a: Mean district density and density on field blocks in the western survey half in 1000 sq meters.

	Field block 160a	Field block 171	Field block 167	Field block 196	Field block 152
Expected	0.2	0.2	0.2	0.2	0.2
Actual	4.45	4.45	3.7	3.75	3.35

The total collections by regular grid units merely confirmed the scarcity of Roman material on the western ridge and its random distribution on a field block level. Both findings are instructive of the off-site character of this material. Most of the regular grids in this survey section covered field blocks where the transect collections didn't record Roman material. Nevertheless the total collections by regular grids showed that Roman material was present in tiny quantities even on these field blocks. On all three grids 21-24 covering different portions of the western ridge, the total grid collections included a handful of Roman shards. They are evenly distributed across several grid units producing maximum artifact densities not higher than 2 fragments per 100 sq meters and average densities lower than 0.5 fragments per 100 sq meters (map V_18b, table 22). These scatters inevitably lack a focus, although they are fairly compact and usually spread over neighbouring grid units. On the eastern ridge, only on grids 9 and on parts of grids 1 and 4 did we reveal comparable densities of Roman material.

Table 22b: Mean district density and average density recorded on grids in the western survey half, in 100 sq meters.

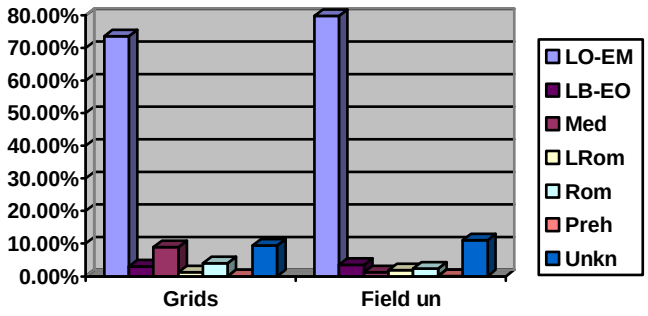
	Grid 21	Grid 22	Grid 23	Grid 24	Grid 25
Expected	0.22	0.22	0.22	0.22	0.22
Actual	0.29	0.11	0.12	0	0.36

On field blocks 170 and 171 where the transect survey recorded artifact densities higher than the survey's average, the total collections from grid 25 revealed densities only slightly higher than those on grids 21-24. As on the latter the maximum density of Roman finds never exceeds 2 fragments per 100 sq meters, although there are a larger number of grid units featuring over 1 fragment per 100 sq meters, while the scatter occupies a greater portion of the gridded area. As on the grids covering the southern and central portions of the ridge, the range between the maximum and minimum artifact density on grid 25 is negligible. The dozen badly worn fragments were found randomly dispersed across the gridded area. This confirms the increased density of Roman material in the northern end of the sector indicated by the transect survey collections, but it also points to its off-site character. Identical situation was revealed on parts of grids 1, 4 and 16 on the eastern ridge, but in the case of the scatter on grid 25 the transect survey didn't reveal on-site densities on the surrounding field blocks. Field blocks 170 and 171 were

among the group of field blocks in the northern half of the survey sector featuring artifact densities close to the mean value for the eastern ridge. This slightly elevated density in the northern half of the western ridge is only partly attributable to the small size of the field units and the fact that the collections by transect units regularly included over 60% of the material counted. The total survey on grid 25 confirms that there is a genuine increase in the northern half of the western ridge, but it is still much lower than the off-site densities recorded in the vicinity of the sites on the eastern ridge. It could be related to a more extensive off-site carpet spreading from beyond the northwest survey limit or alternatively, it could stem from the denser off-site on the eastern ridge.

Looking integrally at the distribution of Roman material across the western survey section by grids, we see that the increase along the south-north axis is rather inconsiderable (table 22). The average density of Roman finds on grids 23-24 in the southern half of the western ridge is less than 1 fragment per 1000 sq meters. 150 meters to the north on grid 21 it increases to nearly 3 fragments per 1000 sq meters of grid survey, but then it sharply declines below 1 fragment per 1000 sq meters on grid 22, about 85 meters to the northwest. Finally, on grid 25 covering field blocks 170-171, the average density recorded by the grid survey increases again, but only to about 3.6 fragments per 1000 sq. In comparison the total survey on grids 4 or 13 recorded an average of nearly 6 fragments per 1000 sq meters. Note that when the off-site zone is in question, the discrepancy between the transect and the grid survey results is greatly diminished. Even on the eastern ridge, the transect survey record is a fairly accurate measure of the average densities recorded on the gridded areas.

Graph 17: Chronological composition of the material from the western ridge

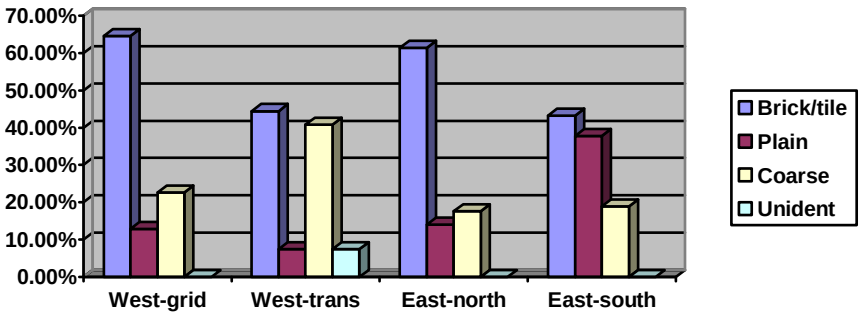


The sparseness of finds datable to the Roman Period on the western ridge is bluntly illustrated on graph 17. In both the grid and the transect collections Roman finds represent but a small fraction, 3.95% of the total grid and 2.90% of the transect collections. It has to be noted that the slightly larger quantities in the grid collections are merely reflecting the fact that nearly 100% of the discarded material consisted of Late Ottoman-Early Modern tile. If this material is included in the analysis, Roman finds will comprise an even smaller fraction of the grid collections. On the other hand were the collections by transect units total, the percentage of Roman material will probably be higher than 3%. These are in any case very small quantities, even when compared to the grid collections from the eastern ridge featuring the lowest percentage of Roman material. On grids 9 and 4 Roman finds represented at least 5% of the collections and the

integral grid and transect collections from the eastern ridge featured more than 30% of Roman material.

As we saw in the detailed presentation of the results of the regular grid survey, the fluctuations in the composition of the off-site collections from the eastern ridge are no less considerable than the fluctuations in the density of the off-site carpet across the survey area. There is very little consistency between the compositions of the collections of Roman material from grids covering the off-site, regardless of their micro-location and proximity to clusters featuring on-site densities. As with the on-site clusters, there are collections predominantly made up of tile (the finds from grids 9 and 4) and collections made up of roughly equal amounts of tile and pottery fragments (grids 19 and 16). Although this doesn't seem to be related to the location of the grid, one should allow that the small size of the collections, limited to narrow segments of the surveyed landscape can somehow affect the composition of the off-site assemblages. In order to check against this potential source of bias, we'll compare the composition of the collections by individual field walking transects from two larger sections of the eastern ridge (avoiding field units covering definite or suspected sites) with the composition of the grid and transect collections of Roman material from the western ridge. Because of the very small size of the latter, we'll analyze the integral collections, separately for the grid and the transect collections.

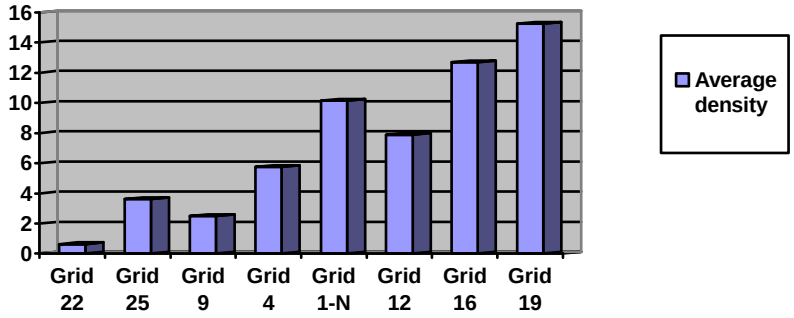
Graph 18: Composition of transect collections of Roman material from the eastern ridge and of the total Roman collection from the western ridge.



Graph 18 shows that regardless of how representative the collection samples were, variations in the assemblages occur not only across different parts of the surveyed area, but also with changing collection techniques. On the western ridge there are differences in the composition of the Roman assemblages collected by individual transects and regular grid units. In the grid collections evenly spaced along the upper portions of the ridge, brick and tile comprise nearly 65% of all Roman finds and the percentage of coarse ware is almost twice as high as the percentage of plain ware. However a very different picture emerges when the transect collections are analyzed including those from field units covered by the grid survey. Now brick and tile represent nearly 45% and coarse ware slightly over 40% of all Roman finds. The presence of plain ware is even less significant, with approximately 7% of the collections. As there are definitely no traces of Roman sites on the western ridge, these results further undermine the suggestion that the increased presence of coarse ware in the off-site collections from grids 12 and 16 is related to the proximity of residential sites.

The possible flaws in the classification of the pottery fabric groups don't cancel the fact that there are considerable variations in the off-site record from the second survey. Looking at the collections of Roman finds by individual field walking transects from larger sections of the survey area (excluding the site and potential site areas), the variations become even more apparent (graph 18). The transect collections from the entire western ridge, from the northern and southern halves of the eastern ridge, each presents a differently composed assemblage. On the western ridge where the off-site carpet was the thinnest, there are roughly equal amounts of architectural ceramics and coarse pottery and very little plain ware. In the collections of Roman pottery from the southern half of the eastern ridge where the off-site carpet is slightly denser, there is roughly the same percentage of brick and tile, but fine/plain pottery is much more numerous than the coarse ware. Finally, in the northern half of the eastern ridge featuring the densest off-site carpet in the second survey, architectural ceramic is the most predominant category with over 60% of the collections, while there are roughly equal amounts of fine/plain and coarse ware. Worse still we saw very similar variations in the composition of the on-site assemblages, making it impossible to distinguish between the on-site and the off-site solely on this basis. In fact the only aspect that distinguishes the on-site from the off-site zone in the second survey area is the sheer quantity of the surface material. Even the quality of the finds isn't always the best indicator. Although off-site material was nearly always very badly worn, the material from certain site locations (grids 11 or 7) was equally fragmented.

Graph 19: Average densities of Roman material in the off-site recorded by grid areas in 1000 sq m



There are apparent differences between the off-site carpets on the western and eastern ridge, illustrated both by the transect and the grid surveys. Most prominent is the sheer difference in the quantity of the collected material. This is most clearly visible on the off-site segments, unwittingly covered by the total collections on grids 1, 4, 12 or 16 (graph 19). On these grid units the artifact density is at least twice as high as the densities recorded on grids in the western survey half (the bars on the left). Compare the average densities recorded on grids 22 and 25 on the western ridge, with those recorded on grids on the eastern ridge closer to clusters featuring on-site density. West of the Skopje-Kučevište road the average density per gridded area never exceeds 4 fragments per 1000 sq meters and on some gridded location it drops below 1 fragment per 1000 sq meters. But the off-site carpet on the eastern ridge also exhibits considerable variations across various parts of this survey section. On grid units covering the off-site zone along the top

and the upper portions of the eastern ridge, the average density of Roman finds ranges from 6 fragments per 1000 sq meters on grid 4 to over 10 fragments per 1000 sq meters on the northern half of grid 1 (excluding the satellite cluster in the southern half of the grid). Similar densities were recorded on grid 12, immediately to the south of the site on field blocks 289a-291a. But on grid 9 the quantity of Roman material suddenly shrank to less than 3 fragments per 1000 sq meters, equalling the densities recorded by the grid survey on the western ridge. These relatively dramatic fluctuations over fairly short distances seem to be related to the proximity of sites, although this wasn't necessarily the case. Grid 9 featuring some of the lowest densities of Roman material on the eastern ridge is situated in the immediate vicinity of the cluster on grid 10, while on grid 19 located in the central survey section and unrelated to any definite or possible sites, the total collections recorded an average density of slightly over 15 fragments per 1000 sq meters, basically approaching the density typical for the halo zone. It is in any instance evident that while the off-site carpet on the western ridge is much thinner and fairly even, on the eastern ridge the off-site zone features far more substantial quantities of material and its distribution is quite complex.

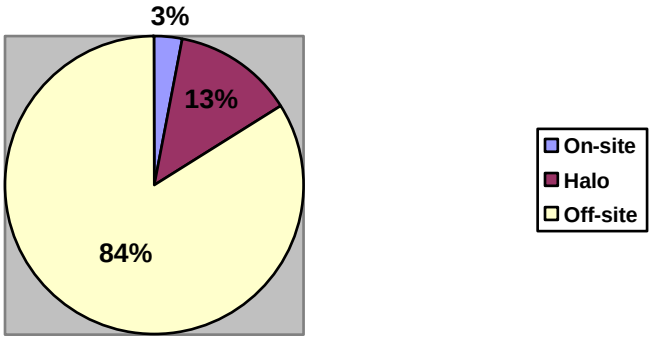
Although we were fortunate enough to cover a portion of this off-site zone by the total grid survey, the overall pattern remains beyond our grasp. This skepticism mainly stems from the observed discrepancies between the transect and the grid survey records on certain parts of the eastern ridge. It is therefore rather difficult to predict the quantity and the inner distribution of the off-site outside the gridded area. On certain field units such as those covered by grid 9, the total collections by regular grid units didn't confirm the results of the transect collections and revealed even smaller artifact densities than those indicated by the transect collections. On others such as grid 19, the total grid survey revealed substantial quantities of off-site material, although the transect collections indicated a complete absence of Roman material. Nevertheless on the majority of the field blocks where the transect collections included at least 30% of the material counted and featured an artifact density over 2.5 Roman fragments per 1000 sq meters, the total grid survey recorded a mean density of at least 5-6 fragments per 1000 sq meters. This is most clearly illustrated on grid 1 covering several contingent field blocks on which the transect survey recorded between 1.5 and 4.7 fragments per 1000 sq meters. On sections of the grid covering field blocks 39b or 61, both featuring over 4 fragments per 1000 sq meters, the grid survey recorded an average of nearly 10 fragment per 1000 sq meters, while on field blocks 38b or 40b featuring less than 2 fragments per 1000 sq meters of transect survey, the grid survey recorded average densities of 3.5 and 5 fragments per 1000 sq meters. A similar tendency can be observed when one compares the results of the total grid survey on field block 24 featuring zero artifact density (grid 4) and the neighbouring field block 318 (covered by the same grid) with 4.6 fragments per 1000 sq meters of grid survey. On the former the total collections by regular grids recorded about 4 fragments per 1000 sq meters, while on the latter the average density of Roman finds increased to over 6 fragments per 1000 sq meters (cf. maps V_11a and 11b).

When the average densities recorded by the grid surveys on various parts of the off-site zone on the eastern ridge are compared, the differences are not insignificant. This is because of the considerable fluctuations in the local artifact densities within the limits of a single grid. Usually the bulk of the finds collected from the grids on the eastern ridge were found concentrated on one or two grid units. This is especially characteristic for the

off-site segments covered by grids 1, 4, 9 or 19. On grid sections covering field blocks with artifact densities higher than 3-4 fragments per 1000 sq meters, the total collections included between 1 and 3 Roman fragments on all but one or two grid units, where the number of Roman shards could increase to 7 or 8. With the exception of grids 19 and 12, such peaks are untypical for field units featuring less than 3-4 fragments per 1000 sq meters of transect survey. Actually the density of Roman material on the latter group of field blocks differs little from the density recorded by the regular grid survey on the western ridge. On the eastern ridge, only small segments of this zone of ultra low density of Roman material were revealed, mostly on grid 9, the northern half of grid 4 and the eastern parts of grid 1. We believe that this zone extends over the majority of field blocks featuring less than 3-4 fragments per 1000 sq meters of transect survey. As the survey on grid 25 on the western ridge showed, even field blocks featuring over 4 fragments per 1000 sq meters of transect survey could easily belong to this zone. But on the other hand, the total surveys on grids 19 and 12 warn us that small, localized clusters consisting of several fragments per grid unit can occur even on field blocks where the transect survey recorded very low quantities of Roman material. In this context we may also add the case of grid 27, where the total collections revealed a medium-sized cluster on fields that were nearly sterile according to the individual transect collections. It is thus very difficult to even roughly determine the extent of the zone characterized by average densities lower than 4-5 fragments per 1000 sq meters on the eastern ridge. It is probably safer to confine its limits to the threshold of 2.5 fragments per 1000 sq meters of transect survey; as suggested by the statistical distribution, the field units tend to cluster below and above this limit.

With a few exceptions, the portion of the off-site characterized by average densities consistently higher than 5 fragment per 1000 sq meters and maximal densities of up to 6-7 fragments per 100 sq meters should be limited to field blocks featuring over 2.5 fragments per 1000 sq meters. As there are at least three examples of field blocks where the total grid survey revealed artifact densities much lower than expected on the basis of the transect collections and many more examples where we decided to cancel the grid survey because of the visible scarceness of surface material, it is likely that this zone of intermediary density is mostly confined to field units featuring at least 5 fragments per 1000 sq meters of transect survey. In general it occupies not more than 20% of the survey area, while the off-site portion characterized by average densities consistently lower than 5 fragments per 1000 sq meters spreads over at least 80% of the survey area. Considering the fact that the combined areas of the clusters on which we recorded on-site densities measure about 3 hectares or 3% of the survey area, it is likelier that the share of this zone of intermediary density is closer to 10 than to 20% of the systematically surveyed area. In absolute terms it occupied over 10, while the zone of very low density of Roman material occupied over 80 hectares (graph 20).

Graph 20: The extent of the three basic density zones in the second survey area in percentage.



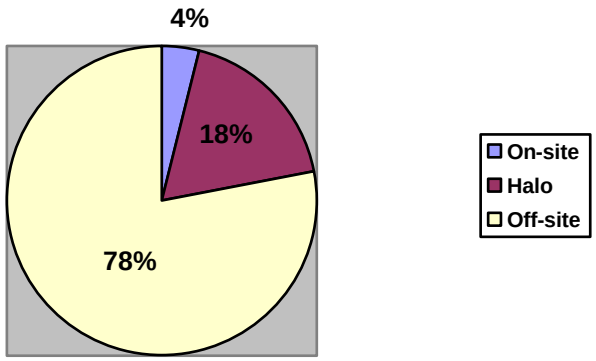
This differentiation within the off-site zone was already indicated by the analysis of the transect survey results. The "nearer" off-site zone characterized by average densities consistently higher than 5 fragments per 1000 sq meters and maximal densities of 6-7 fragments per 100 sq meters, more or less coincide with field blocks ranked second by the density of Roman material or featuring between 5.1 and 11.3 fragments per 1000 sq meters. It is possible that some of these field blocks really feature smaller quantities of Roman finds, as much as it's possible that some of the field blocks that feature between 2.5 and 5.1 fragments per 1000 sq meters belong to this "nearer" off-site zone. But in principle this doesn't change significantly its extent.

According to the transect survey, field blocks with intermediary artifact density clearly tend to cluster around field blocks with very high artifact density, creating roughly concentric patterns of distribution. As the grid surveys on field block 263 or 232b-233 showed (grids 19 and 10), this wasn't necessarily the case, but it is clear that in the great majority of cases, the portion of the off-site featuring higher artifact densities is closely related to clusters with on-site densities. This is the principle difference between the off-site on the western and the eastern ridge. On the former it spreads in an ultra-thin and discontinuous but persistent carpet, while on the latter it clearly emanates from the clusters of on-site densities, creating irregular and extensive patches of intermediary density, sometimes overlapping and sometimes separated by stretches of low artifact density. This zone is most compact along the summit and the upper portions of the eastern ridge, where the concentration of sites is the greatest. It forms an almost continuous belt stretching between field block 38b on the north to field block 356 on the south. Into the lower terraces of the eastern ridge and in the central section of the survey, it becomes patchier. The elusive cluster on field blocks 289a-291a is separated from the neighbouring clusters on grid 10 and on field blocks 47a-b, 49, 50 and 66 by up to 150 meters wide stretches of low artifact density. The clusters revealed on grids 15-18, 27 and 20 in the central survey section are even more isolated (map V_4a).

Adjusting the individual transect collections to represent 100% of the material counted results only in minor and localized corrections of the three basic density zones (map V_4c). These will be briefly described during the discussion of the extent and distribution of the individual site halos. The overall extent and distribution of the zones of high, intermediary and low density remain unchanged (graph 21). There is an expected but a slight expansion of the on-site density zone. It includes a small number of field units on which the transect collections were deliberately reduced to very small samples

(field blocks 86 or 277b) and it spreads over 4% of the field units in the second survey. It has to be stressed that in terms of surface area, this is almost certainly smaller than 4 hectares, as only a few sites spread over entire field units. There is a somewhat greater increase in the number of field units featuring intermediary or higher than average artifact density. In the record of the adjusted transect collections this range is defined by the thresholds of 7 and 38 fragments per 1000 sq meters. This zone includes almost 18% of all field units; though we repeat that in reality these figures are far more flexible. Suffices to mention the example of field blocks 289a-291a where we suspected a genuine site or field blocks 125 and 129, where the regular grid survey confirmed the presence of definite site locations. All of these field units belong to the higher than average density zone. On the other hand, on field blocks 328 or 333b, the first belonging to the zone of very high artifact density, the latter to the higher than average density zone, we were only able to find average or lower than average quantities of material. Predictably the zone of lower than average artifact density, which we believe coincides with the off-site is slightly reduced, extending over 78% of the field units. In terms of size this zone is certainly more extensive, occupying at least 80 hectares. This is because in reality, higher concentrations of surface material are almost always very focalized, limited to smaller portions of the field units.

Graph 21: The extent of the three basic density zones according to the record of the adjusted transect collections, in percentage.



Although the relation between the zone of intermediary artifact density and the clusters featuring on-site density is beyond any doubt, it is difficult to partition and assign a separate portion to each of the sites discovered. This is because of the character of the on-site distribution and the difficulties in deciding which of the clusters presented separate dwellings and which ones existed as components of an integral establishment. This problem is particularly pronounced along the eastern limit of the survey, where we have a series of closely spaced small or small to medium sized clusters. This can hardly be achieved in a non-arbitrary fashion. One either has to take into account the maximum radius of these zones or provisionally divide the overlapping areas between two neighbouring sites.

The clusters on grids 1-2 are surrounded by the zone of intermediary artifact density on at least two sides (map V_5a). To the north it stretches over most of grid 1, over a distance of 140 meters, measured from the edge of the cluster on grid 2 or 70

meters when measured from the cluster on grid 1. It is nearly certain that this zone also spread to the west of this site, over field blocks 36a-b, both featuring over 2.5 fragments per 1000 sq meters of transect survey. But on this side it could spread over a distance of not more than 40 meters from the edge of the cluster on grid 2. The site on field blocks 47a-b, 49, 50 and 66 is situated only about 90 meters to the west of the cluster on grid 2 and their halos probably overlapped. On the northeast this site is bounded by overgrown fields and the extent of the site halo in this direction remains unknown. However it is very likely that it spread to the east-southeast, over field blocks 32-33, 8 and 7a-b. This is a continuous belt of artifact densities ranging between 2.7 and 5.4 Roman shards per 1000 sq meters, extending for nearly 200 meters from the edge of the cluster on grid 2. But in all probability the part of this zone covered by field blocks 7a-7b belongs to the cluster on grids 5-11 situated immediately to the south, on a lower terrace. Thus the halo of the site on grids 1-2 reaches its maximum extent of nearly 140 meters on field blocks to the north, over the terrace above the site. Because of the proximity of the sites on field blocks 47a-b, 49, 50 and 66 and the one on grids 5-11, the halo radii on the western and southeastern side are shorter, measuring approximately 40 and 80 meters respectively.

There are no major changes in the halo of the site on grids 1-2 when the transect collections are adjusted to represent 100% of the material counted (map V_5c). The stretches that separate this site from the sites on field blocks 47a-b, 49, 50 and 66 and the one on grids 5-11 still belong to the zone of average and higher than average artifact density, now delimited by the thresholds of 7 and 38 fragments per 100 sq meters. In general, the carpet looks thinner, because both field blocks 32 on the southeast and field block 36a on the northwest feature less than 7 fragments per 1000 sq meters. The largest portion of the halo zone spread over the upper terrace, north of the site. Note that the adjusted transect survey records indicate a more contracted zone, limited to field blocks 38b, 39a-39b and 40b. Even so, north of the site the maximum halo radius measures over 140 meters, measured from the northern edge of the cluster on grid 2.

The small cluster on grid 3 stands isolated on the top of the eastern ridge. It is surrounded by field units that are either sterile or feature very low densities of Roman material (maps V_5a, 5b). To the west it is separated from the cluster on grids 1-2 by an 80 meters long, overgrown stretch. There is no evidence that the zone of intermediary density spread beyond the limits of the gridded area, although it is likely that it continued for a short distance over the neighbouring fields to the west. The halo of this site has a maximum radius of less than 50 meters, mostly spreading over higher ground to the north of the cluster. Because of the small size of the transect collections and because of the small extent of the halo of site 3, the transect survey failed to record even an average artifact density on field block 11. Assuming that the transect collections include all material counted will reveal the presence of a site on field block 10, but not its halo spreading over field block 11 (map V_5c). Only after the hyper-intensive survey by regular grid units did it become clear that the high density predicted for field block 10 signalled the presence of a very small site that generated its own contracted halo over field blocks 10 and 11.

The extent of the halo surrounding the clusters on grids 5-11 is to a certain degree problematic. This is because the exact relation between the clusters on grids 5 and 11 wasn't fully clarified. More specifically the northern limit of the cluster on grid 11 remained elusive, although it was suggested that the site didn't spread much beyond the

limits of the gridded area and that the collection from grid 5 was a physically separate cluster. Apart from the stretch separating the two clusters, field blocks featuring intermediary density of Roman material are to be found to the north and south of this site (map V_7a). On the north, these are field blocks 7a-b with 2.7 and 3.2 fragments per 1000 sq meters, while on the south field blocks 28a, 25a-b featuring 3.8, 7 and 7.5 fragments per 1000 sq meters. West of this site there spreads a larger zone characterized by artifact densities lower than 2 fragments per 1000 sq meters. It extends for over 200 meters from the site edge before reaching the halo of the site on field blocks 47a-b, 49, 50 and 66. The halo zone around the cluster on grids 5-11 is not as extensive as the halo of the cluster on grids 1-2. On the north it is limited to field blocks 7a-b, extending for not more than 70 meters from the edge of the cluster on grid 11. On the south its halo radius is even shorter, terminating after 60 meters on field block 23a, which is in all probability part of the cluster on grid 8. If the latter is a full residential site, it is certain that on field blocks 25a-b their halos overlapped. It is possible that there was a larger eastward extension, spreading over the portion of the ridge left out of the survey area. At present, this portion of the ridge is cut by the Skopje-Pobužje road. Only to the west-southwest of this cluster, along field block 28a does the zone of intermediary density extend for over 100 meters. It must be noted that this field features less than 4 fragments per 1000 sq meters; even if the site halo spread over this field unit, it is unlikely that it covered its entire length of 130 meters.

This pattern is further deepened when the transect collections are adjusted to represent 100% of the material counted (map V_7c). North of the site the extent of the halo becomes even more limited, because field block 7b is shifted to the zone of lower than average artifact density, with only about 5.5 fragments per 1000 sq meters. However field block 8, situated in this same direction and halfway between the sites on grids 1-2 and 5-11, continues to feature higher than average artifact density. Indeed with a predicted density of over 26 fragments per 1000 sq meters, this field unit approaches the theoretical densities on field blocks covering site locations. Unless reflecting its smaller size, this increase could signal the presence of a small satellite cluster. On the fields to the west of the site the situation is unchanged, with average artifact density limited to field block 28a. A density of 11.6 fragments per 1000 sq meters was predicted for this field unit, which is again barely over the survey average.

Because of the dispersed inner distribution with on-site densities recorded on four separate field units, determining the extent of the halo surrounding the site on field blocks 47a-b, 49, 50 and 66 is equally problematic (map V_19a). It probably spread over field blocks 57-58 to the north and also overlapped with the halo of the site on grids 1-2, covering parts of grid 1 and field blocks 36a-b. Understandably in the case of this site, we could only guess if the increased density on field block 66 was hiding an independent settlement unit, a satellite cluster or a component of a larger, dispersed establishment. If the concentration on field block 66 represents a separate residential site, its maximum halo radius extended for not more than 70 meters. On the east it is confined by the halo of the site on grids 1-2. The maximum halo radius of 70 meters possibly extends in a northeast direction, partly documented by the total collections on grid 1. But this estimate excludes the satellite cluster on grid 1 treating it as a part of the halo of the main cluster on grid 2. Allowing that the cluster on grid 1 produced a separate zone of intermediary density would limit the halo of the neighbouring cluster to not more than 50 meters. On

the opposite side, over field blocks 57 and 58, this intermediary zone was evidently receding after a couple of dozen meters. The bulk of the finds contributing to the density of over 4 fragments per 1000 sq meters on field block 57 was collected from the easternmost transect unit. Further west, the quantity of Roman material is visibly diminished. The transect collections from field block 58 produced but a single Roman shard and the increased artifact density is simply a result of the small size of this field unit.

So far the elusive cluster on field block 66 was chiefly related to the concentrations on field blocks 49-50 and 47a-b, though we also considered the possibility that it was an independent site. In reality however, it is equally possible that this was a satellite gravitating towards the neighbouring cluster on grid 2 (map V_19a). Apart from the simple fact that field block 66 is closer to field block 50 than to the western edge of the cluster on grid 2, there are no other reasons to maintain the interpretation adopted. In fact looking at the density of Roman material on the intervening stretches, the concentration on field block 66 is part of a continuous zone of intermediary density spreading from the cluster on grid 2. This zone doesn't continue south of the dirt road, on the pair of field blocks that separate the concentrations on field blocks 66 from those on field blocks 49-50. Topographically too, the concentration on field block 66 is closer to the cluster on grid 2 than to the clusters on field blocks 49-50 and 47a-b. The latter two occupy the neighbouring lower terrace. It must be admitted that there are hardly any objective ways to settle this issue. We'll see at least one or two other examples of ambiguously positioned satellites. We can only consider the implications of this final possibility that the increased density on field block 66 marks the presence of a small satellite of the site on grid 2. Understandably in such a case, the radius of the halo of site 2 increases to a maximum extent of over 120 meters in a westward direction, including field block 58. This also implies that the halo of the clusters on field blocks 47a-b and 49-50 is mostly limited on the lower terraces south of this site.

Assuming that all material counted was included in the transect collections doesn't confirm this observation (map V_19c). One clearly sees that the extent of the halo is limited to field blocks 57, 36b and 59. The densities predicted for these field units are relatively low, ranging between 8.5 fragments on field block 59 to over 15 fragments on field block 36b. Field blocks 58 and 36a with 3.75 and 6 fragments per 1000 sq meters belong to the zone of lower than average artifact density. In such a case, the concentration on field block 66 looks equally isolated from the site on field blocks 47a-b, 49 and 50 and from the one on grids 1-2. The fact that it is situated at the periphery of a wider zone of higher than average artifact density suggests that this was a minor, satellite cluster. Note the almost complete absence of Roman material among the transect collections from the stretch between field block 66 and the northern survey limit. As mentioned before, it is impossible to decide if this hypothetical satellite belonged to the larger sites on grids 1-2 or to the one on field blocks 47a-b, 49 and 50.

Earlier we suggested the existence of two separate clusters, one spreading along the border between field blocks 49 and 50, the other centered in the southern half of field block 47a. Judging by the regular grid surveys on field blocks that had a similar amount and distribution of Roman material, the halo of this site extended over most of field blocks 47a, 49 and 50, and certainly continued to spread over field block 47b and to the east, over field blocks 45 and 46b (map V_19a). Note that all three field units feature a

roughly equal density of Roman material or about 5.5 fragments per 1000 sq meters. Beyond the limits of this compact zone, the quantity of Roman finds is visibly reduced, especially on field blocks to the west and east. Only to the south does the artifact density remain close to the limit of 2.5 fragments per 1000 sq meters of transect survey, though with the exception of field block 71a, where artifact density again rose to 5.5 fragments per 1000 sq meters, this limit was barely exceeded. Admittedly further south, on field blocks 67 and 91 about 130 meters to the south of the clusters on field blocks 47a, 49-50, the transect survey recorded artifact densities of 3.5 and 3.9 fragments per 1000 sq meters. However this pair of field blocks is much closer to the neighbouring site to the south, the one on field blocks 289a-291a and there is a possibility that it was part of this site's halo. It is rather difficult to decide if the group of field blocks to the south of field block 47a-b featuring between 1.5 and 2.5 fragments per 1000 sq meters belongs to the halo zone or to the farther off-site. The total survey on grid 1 and especially the sections covering field blocks 38b or 40b demonstrated that the latter is not impossible. The higher concentrations on field blocks 71a and 29a further contribute to the extent of this zone. It is possible that these signal the remains of satellite clusters, especially the higher concentration on field block 71a. Finally, the proximity of the cluster(s) on field blocks 289a-291a also suggests that there was a continuous zone of intermediary density stretching between these two groups of clusters on the central section of the eastern ridge. Assuming that the halos of these two sites partly intersected, the zone belonging to the cluster on field blocks 47a-b, and 49-50 extended for about 80 meters to the south including field block 93. To the southeast, the limits are much clearer coinciding with field block 45. Further east, there is an extensive zone of low artifact density reaching nearly to the western edge of the cluster on grid 11. The site halo is most extensive to the north, its radius approaching the size of the halo of the site on grids 1-2. But this assumes that the concentration on field block 66 was a satellite cluster that didn't produce a separate halo. If this was a separate residential site or a satellite of the cluster on grid 2, the halo of its neighbour on field blocks 47a-b, 49 and 50 spread mostly to the south and southeast, over a distance of about 80 meters.

There is much less density fluctuation in the halo of this site when the transect collections are adjusted to represent 100% of the material counted (map V_19c). Instead of a fairly variable density ranging between 2 and 7 fragments per 1000 sq meters, one sees an uninterrupted carpet of intermediary density, mostly limited to field blocks to the south and southeast of the site. The artifact density predicted for these field units ranges between 7.25 and 11 fragments per 1000 sq meters and they all belong to the median range of artifact density. This analysis shows that the increased density on field block 71, southwest of the site area wasn't signaling the presence of a satellite cluster on the halo's periphery, but simply resulted from the more inclusive transect collections. Field block 46b likewise joins the zone of average artifact density, while field block 29a with 6.75 fragments per 1000 sq meters now belongs to the off-site zone. As a consequence of these modifications the halo of the site on field blocks 47a-b, 49, 50 and 66 becomes more compact and its limits emerge more clearly. To the south and southeast, the halo radii don't exceed 80 meters (field block 29a falling outside the site halo), while to the southwest, the maximum halo radii extends to almost 150 meters. In all likelihood this is an overestimate, chiefly contributed by the large size of field block 71a; it is questionable if a carpet of intermediary density spread over the entire area of this field unit. The

density predicted for the area to the east of the site on field blocks 47a-b, 49, 50 and 66 remains below the average. Thus the observation that the halo of this site is mostly limited to the fields south of the site area is chiefly confirmed.

Not surprisingly the site on grid 14 spreading over field block 86 and partly over field block 84a left a less extensive zone of intermediary density (map V_6a). In comparison to the clusters on grids 1-2 or 5-11 this was a thinner and a much smaller site. It is surrounded by field blocks with artifact density higher than the mean district value to the north and the west. Apart from field block 84a, these include field blocks 84b, 85a and 89. They all feature between 6.1 and 9.5 fragments per 1000 sq meters of transect survey. Outside this group of field blocks, the density of Roman material sharply decreases below the threshold of 2.5 fragments per 1000 sq meters. The average densities of between 3 and 4 fragments per 1000 sq meters on field blocks 109a, 110 and 113a, about 40 to 60 meters to west and the southwest are probably enhanced by the small size of these field units. The maximum extent of this site's halo measured from the northern edge of the cluster on grid 14 is about 85 meters, though it is unlikely that the entire surface of field block 84b was covered by a carpet of intermediary density of Roman finds. It is likelier that it extended for not more than 50 meters, as it does in a northeast direction over field block 89. As with the site on grids 1-2, the halo of the site on grid 14 mostly spreads over a higher ground.

The adjusting of the individual transect collections leaves no major impact on the extent of the halo of site 14 (map V_6c). It is still confined to field blocks 84a-b, 85a and 89, the chief difference being that field block 89 with slightly over 14 fragments per 1000 sq meters now joins the zone of average artifact density, while the densities predicted for the field blocks 84b and 85a are slightly above the average and range between 16 and 17 fragments per 1000 sq meters. This perhaps indicates that the site halo mostly spread to the northwest of the site area.

The problems surrounding the definition of the halo of the fully residential site on grid 27 are related to the discrepancies between the transect and the grid survey on this location. It is certain that the site halo spread over most of the gridded area, with a maximum radius of 75 meters, measured from the eastern edge of the cluster. To the north and south the extent of the site halo is less clear. The density of Roman material fluctuates between 2 and 3 fragments per 1000 sq meters on most field blocks to the south of the cluster (map V_8a). These include field blocks 97a-b, 100a-b and 101a-b. If this entire group was covered by a carpet of intermediary density, its maximum radius on the south would reach slightly over 80 meters. This zone continues further south over field blocks 97a-b, 95a and 93, but these field units are much closer to the site on grids 15-18 and probably belong to its halo zone. On fields to the north of the cluster on grid 27, the carpet of Roman material is patchier. Artifact density reached between 4 and 5 fragments per 1000 sq meters on field blocks 106, 143d and 143a, about 60 to 75 meters from the northern edge of the cluster, but some of these field units (such as field blocks 106 and 143d) are rather small, which probably contributed to the elevated artifact density. As with the site on field blocks 47a-b, 49-50, the halo of this site mostly spreads over the lower terraces, south of the site area.

So far we demonstrated that the adjusting of the individual transect collections has only a minor effect on the extent and the dispersal of the zone of intermediary artifact density. This is also the case for the halo of site 27 (map V_8c). There are nonetheless a

few minor corrections which do produce a more intelligible density map. On the majority of the field units the increase is moderate, with artifact densities ranging from 5 fragments on field blocks 100a and 101b, 6 and 7 on field blocks 97a and 101a, to 12 fragments per 1000 sq meters on field block 100b. Only on field block 97b do we see a more substantial increase with predicted 20 fragments per 1000 sq meters. It is possible however that the high density on this field unit is artificially enhanced by its smaller size. Thus, although the extent of the halo zone remains unchanged, artifact density becomes visibly increased in its western half, on field blocks 97b, 100-101b. This is to be expected, as these fields are within the reach of both the cluster on grid 27 and the one on grids 15-18.

The discrepancies between the transect and the grid survey results also complicate the delineation of the zone of intermediary density surrounding the site on grids 15-18. In this case, the source of the problem lies in the less thorough collections by individual field walking transects, especially in the southern half of this group of field blocks where less than 40% of the counted material was collected. Nevertheless, the fairly extensive area covered by the regular grid survey indicated that the site halo extended over most of the field blocks to the north and west of the site (maps V_8a, 8b). According to the transect survey some of these field units including field blocks 126, 137 and 141a feature less than 2 fragments per 1000 sq meters, but the total survey by regular grids confirmed the spreading of the site halo with artifact densities ranging between 1.5 and 6.5 fragments per 100 sq meters. It is most extensive to the north, where it spreads for over 85 meters measured from the edge of the cluster on grid 18. As argued earlier, in the case of this site, the core on grid 18 is linked with the core on grid 17 with a zone of on-site density and doesn't represent a separate satellite cluster. If we nevertheless treat it as a satellite cluster lacking a separate halo, the maximum halo radius would extend for over 110 meters including field block 141, at the northern limit of the survey area. The total survey on grid 16 to the west of the site core revealed a belt of intermediary density, at least 55 meter wide. However in all probability it didn't extend over a much greater distance. Note the scarcity of Roman material on field blocks between grid 16 and the northern edge of the survey area. To the east the halo zone certainly spread over field blocks 135 and 130, featuring 6 and 2.5 fragments per 1000 sq meters. In all likelihood it spread further east into field blocks 97b, 95a and 93, partly overlapping with the halo surrounding the cluster on grid 27. Assuming that these field blocks fall within the impact zone of the site on grids 15-18 will set its limit at a distance of nearly 125 meters measured from the eastern edge of the cluster on grid 17. The field blocks to the south of the site on grids 15-18 feature much lower densities of Roman material. According to the individual transect collections, field blocks 123 and 124 were sterile, although artifact density suddenly increased on field blocks 119 and 93 situated at distances of 70 and 55 meters from the southern edge of the cluster on grid 15. It is noteworthy that the individual transect collections on these field units were of a similar intensity to those on field blocks to the north, covering the site area. If this record is accurate then there wasn't an extensive carpet of intermediary density to the south of the site, but isolated satellite clusters on field blocks 119 and 93. We will see a very similar pattern in the surroundings of the site on field blocks 289a-291a.

Because of the unequal intensity of the individual transect collections, assuming that they comprise 100% of the material counted has a more considerable effect on the

density distribution in this part of the survey area (map V_8c). Discussing the limits of the site area, we observed that the cluster of field blocks with higher than average artifact density becomes more compact when the transect collections are adjusted to represent 100% of the material counted. Some of the peripheral units of the group, primarily field blocks 93 and 141 situated on the southern and northern edge are shifted from the zone of higher than average to the zone of average or lower than average artifact density. Field block 93 merges into the zone of average density spreading to the southeast of the site area. This undermines the possibility of a satellite cluster on field block 93, but it doesn't affect the extent of the site halo in this direction. Of a greater significance is the very low density predicted for field block 141, with less than 6 fragments per 1000 sq meters. This circumstance barely shortens the maximum halo radius for about 20 meters, but it casts the concentration on field blocks 136 and 137 into a sharper relief. This potential site greatly resembles the concentration on field block 66. Both are fairly limited and stand at the ends of more extensive zones of higher than average or very high artifact density. These are in all probability smaller satellites that extend the impact zone of the central sites. It is difficult to decide whether they produced a small halo of their own, especially without the high resolution of the regular grid survey. There are no major corrections in the density distribution on the fields west and south of the site area. In these directions the density of Roman material is lower than average, comparable to the distribution on the northern end of the western ridge. The halo of the site on grids 15-18 spreads chiefly to the north and to the southeast, reaching the maximum radii of over 110 meters.

Drawing the extent of the zone of intermediary density around the clusters on grids 6-8 and 10 is made highly problematic by their close spacing (maps V_11a, 12). If for the moment each cluster is treated as a separate residential site, their respective halo zones are going to be very limited. As explained in one of the preceding paragraphs, the site on grid 8 certainly spread over field blocks 22a-b and partly over field block 23a. The total grid survey clearly showed that the site area was limited to the western half of field block 22a. The eastern half was covered by a zone of intermediary density that extended for slightly over 90 meters, reaching the eastern survey limit. This segment of the off-site was covered by grid 4, where we see that the density of Roman finds decreases below 1 fragment per 100 sq meters in the eastern third of the grid. It is possible that the site halo was equally extensive on fields to the west of the site area. It certainly extended over the western half of field block 22b and continued further west, over field block 299 where the transect survey recorded about 4.5 fragments per 1000 sq meters. To the north and south, the halo zone is limited by the proximity of the clusters on grids 6 and 5-11. The halo of site 8 definitely spread over field blocks 23b and 317a; the former featuring slightly over 10 fragments per 1000 sq meters, the latter nearly 6 fragments per 1000 sq meters. It also probably spread over field blocks 25a-b, 317a-b and even over field block 323 with over 3.5 fragments per 1000 sq meters, but only partly because these field blocks are very close to the neighbouring clusters on grids 6 and 5-11. In both directions the halo radii are not longer than 30 meters.

The extent and the structure of the halo zone of site 8 remain unaltered when the transect collections are adjusted to represent 100% of the material counted (map V_11c). Characteristic for this survey section is the considerable increase in artifact density not only on field units covering the on-site zone, but also on field blocks that certainly fall outside the site area. Thus even on field block 318 where the regular grid survey

confirmed the existence of a halo segment, the density predicted is over 35 fragments per 1000 sq meters. Relatively high artifact densities are also predicted for field blocks 25a-b, with 24 and 14 fragments per 1000 sq meters, as well as for field block 317b with over 24 fragments per 1000 sq meters. Note that although field block 317a joins the zone of average artifact density, it still features a relatively modest density of 7 fragments per 1000 sq meters. This is logical as field block 317b is situated immediately below the core of site 8, while field block 317a is further away, above the site on grid 6. Thus the halo zone around site 8 is limited on all but the western side by the close proximity of other residential sites. To the west the halo zone terminates on field block 299, after which there spreads a narrow belt of very low artifact density.

The pair of clusters on grids 6-7 has an even more contracted room for their site halos (map V_11a). If these two sites generated their own zones of intermediary density, they probably largely overlapped, both with the halos of the sites on grids 8 and 10 and with each other. But the distance between the clusters on grids 6 and 7 is less than 30 meters and in order to maintain consistency with the earlier analysis they are better treated as a single site. To the north and partly to the east, the spreading of the site halo was revealed by the total collections on grid 4. Allowing that it intersects with the halo that emanated from the cluster on grid 8 wouldn't diminish the maximum extent. Measured from the eastern edge of the cluster on grid 6 the maximum halo radius is 85 meters long, while from the edge of the cluster on grid 7 it is reduced to 70 meters. It is possible that this zone of intermediary density spread beyond the eastern limits of the gridded area, over field block 328b. But on this field unit the transect survey collections recorded on-site densities of approximately 20 fragments per 1000 sq meters. As explained during the total collections on grid 7, we observed only rare fragments of Late Ottoman-Early Modern off-site debris on field block 328b and we didn't extend grid 7 into this direction. Yet the high density recorded by the transect survey cannot be fully attributed to the small size of the field unit or the more intensive collections. Therefore the increased artifact density on field block 328b was interpreted as a possible cluster, measuring not more than 500 sq meters. In all likelihood this was a small, satellite cluster that simply wasn't accessible by the end of the first year's campaign, although visibility conditions and land-use were hardly changed. Assuming that it was a third component of the pair of clusters on grids 6-7 will extend the maximum halo radius for over 120 meters, measured from the eastern edge of the cluster on grid 6 or 77 meters from the edge of the small cluster on grid 7. However this elusive cluster is better left out of the analysis, as it could easily gravitate around possible sites on the top of the eastern ridge, outside the survey limit.

On field blocks south of these two clusters, on field blocks 325 and 329, the density of Roman material decreases to about 1.3 and 3.5 fragments per 1000 sq meters. It is likely that the site halo spread at least over field block 329 east of the local dirt-road, extending for about 30 meters from the southern edge of the cluster on grid 7. Even if the zone of intermediary density spread to the south of the cluster on grid 6, it couldn't have extended for over 30 meters, because immediately to the south of field block 325 is the eastern end of the cluster on grid 10. On field blocks 331 and 336 to the south of field block 329, the density of Roman material steadily increases. Over 7 fragments per 1000 sq meters were recorded on field block 331 and 11.3 fragments per 1000 sq meters on field block 336. The concentration on field block 336 situated about 75 meters to the

south of the cluster on grid 7 features artifact density slightly higher than the site threshold. It is therefore likelier that we are dealing with yet another satellite cluster rather than with an extensive off-site carpet emanating from the small cluster on grid 7. This could be a satellite of the medium-sized cluster on grid 10, although the distance of about 100 meters is greater than the usual interval between the main cluster and its satellite. Note that like other smaller satellite clusters documented only by the transect survey this potential cluster didn't leave a very extensive impact zone. Outside field blocks 331 and 336 the artifact density sharply decreases below the mean survey value and a number of field units were discovered sterile.

To the west of the cluster on grid 6, there is also an extensive zone of artifact density higher than the threshold of 2.5 fragments per 1000 sq meters (map V_11a). It spreads over field blocks 321 with about 3 fragments per 1000 sq meters, increasing to slightly over 9 fragments per 1000 sq meters on field block 332. The zone of intermediary artifact density spreads further west on field block 323, over 120 meters to the west of the cluster on grid 6. Here the transect collections recorded a density of about 3.6 fragments per 1000 sq meters. It must be stressed however that this field block is much closer to the cluster on grid 8, situated only about 60 meters to the north and on a higher ground. It is therefore likelier that field block 323 belongs to the impact zone of the cluster on grid 8. The maximum halo radius west of the cluster on grid 6 measures about 55 meters, roughly coinciding with the western limit of field block 322. Looking at the distribution of the Roman material by individual field walking transects, it is possible that there was another small satellite cluster in the western half of field block 322.

Assuming that the individual transect collections included all material counted during the transect survey will result in a few minor changes (map V_11c). Field block 336 joins the zone of higher than average artifact density, though with predicted 34.75 fragments per 1000 sq meters it is still very close to the site threshold. This field unit is situated between 70 and 90 meters to the south of the cluster on grid 7 and it is unlikely that the increased density on field blocks 331 and 336 marks a continuous carpet of intermediary density spreading from site 7. The concentration(s) on field blocks 331 and 336 is quite probably another example of a satellite cluster situated on the edge of a wider zone of higher than average artifact density, like those on field blocks 66 or 136-137. Thus on the east, the halo of the clusters on grids 6 and 7 is mostly confined to the field blocks covered by grid 4, terminating with the satellite on field block 328b. The densities predicted for field blocks situated to the west of the cluster on grid 6 are fairly high, reaching to 25.8 fragments on field block 321 and 43.75 fragments per 1000 sq meters on field block 322. This gives further support to the thesis that there was another component of this site on field block 322, about 50 to 60 meters west of grid 6. Although the adjusted transect survey records indicate a much denser carpet on the fields lying west of the site, the halo radius was shorter than on the eastern side, being limited by the proximity of the sites on grids 8 and 10.

But although situated in the immediate vicinity of the site on grid 6, even field blocks 321 and 322 are not falling safely within the halo zone of this site. The medium-sized cluster on grid 10 is also contingent to this pair of fields, occupying the lower terrace, only about 60 meters to the southwest of grid 6. It is therefore highly probable that there was a considerable overlap between these two neighbouring sites. However the further spreading of the zone of intermediary density suggests that this doesn't have to be

the case and that field blocks 321 and 322 could still largely belong to the halo of the site on grid 6. Although the transect survey indicated an extensive halo on the fields to the west of the cluster on grid 10, this wasn't confirmed by the total grid survey (maps V_13a, 13b). At a distance of 50 meters from the western edge of the site, Roman material nearly disappears from the surface record. The sites on grid 10 and on field blocks 289a-291a were evidently separated by a larger sterile or nearly sterile stretch, which finds close parallels in the lacuna separating the clusters on grids 5-11 and the one on field blocks 47a-b, 49, 50 and 66. As explained earlier, to the north the carpet of intermediary density generated by the cluster on grid 10 couldn't have been very extensive because of the proximity of the clusters on grids 6 and 8. But on field blocks covering the lower terraces south of this site, there is a fairly extensive belt characterized by artifact densities ranging between 2 and 4.8 fragments per 1000 sq meters (map V_13a). Two of these, field blocks 334b and 335a don't exceed the limit of 2 fragments per 1000 sq meters and hardly qualify as segments of the "nearer" off-site. On field blocks 334a, 335b and 341 the transect survey recorded between 3 and 4.8 fragments per 1000 sq meters. Note that on the field blocks to the west of grid 10 featuring similar or even higher artifact densities, the total grid survey revealed an ultra-thin carpet of Roman material, characteristic for the "farther" off-site on the western ridge. We believe that the true artifact densities on the terraces south of this site are slightly higher because of two principle reasons. First, the relatively high artifact densities recorded on field blocks 333b and 334b west of the site could be related to the fact that they encompassed the very edge of the site area. And secondly, approximately 60 meters to the south of the edge of the site area on field block 342, the transect survey revealed a density of nearly 8 Roman fragments per 1000 sq meters. This recalls the situations revealed in the halo zones of the clusters on grids 15-18 and on field blocks 47a-b, 49, 50 and 66. The higher artifact density on field block 342 could signal the presence of a tiny, satellite cluster that formed a part of the halo of the site on grid 10. If this continuous stretch of slightly elevated artifact density truly represents the halo of this site, then its maximum radius to the south measures about 85 meters.

We already discussed the situation on the field blocks to the east of grid 10, beyond the local dirt road. It is certain that the halo of the cluster on grid 10 spread over the entire area of field block 332. The status of the elusive concentration on field block 336 on the other side of the dirt road remains problematic. It could represent a zone of intermediary density spreading over from field block 332 or more likely a separate, satellite cluster. In either way it will extend the halo of the site on grid 10 to over 140 meters, measured from the site's eastern edge. As we saw such an extent of the site halo is not unusual, although in this case one has to be reserved about the status of the concentration on field block 336.

The relatively small size of the individual transect collections from field blocks south of the site on grid 10 have slightly underestimated the artifact density on this site's halo (map V_11c). This is especially true for field blocks 334b and 335a, which now join the zones of average and higher than average artifact density, with predicted 18.5 and 12.2 fragments per 1000 sq meters. As a result the entire stretch south of the site on grid 10 features artifact densities constantly higher than the average. This zone terminates with a fairly high concentration predicted for field blocks 341 and 342 or 19 and 40 fragments per 1000 sq meters. Further south on the next row of field units there is a

narrow stretch of low and average artifact density, which probably coincides with the limit that separates the halos of the sites on grids 10 and 26. We interpreted the increased density on field block 342 as another satellite cluster lying at the edge of the site halo, but in this case one shouldn't exclude the possibility that we are dealing with another residential site. Unlike the concentrations on peripheral field blocks, such as those on field block 336 or 66, the one on field block 342 is surrounded by field units featuring average artifact densities on all four sides. If this was the case, than the halo radius of site 10 is much shorter on the southern side, extending for not more than 30 meters. This possibility further implies that the halo of this site was most extensive to the east, including the greater portion of field block 332 and field blocks 331 and 336 on other side of the dirt-road. In this direction the maximum halo radius measures over 140 meters.

Thus regardless of the various problems, it is possible to assign a portion of the zone of intermediary density to each of the clusters on grids 6-8 and 10. The clusters on grids 8 and 6-7 had their most extensive halos on fields to the east and west, on the same terraces occupied by the site. The halo of the slightly larger cluster on grid 10 was also mostly confined to the same terrace, but spread almost entirely to the east of the site, terminating with a possible satellite on field block 336. It is also evident that there was a narrower belt of intermediary density on the lower terrace, south of the site, but the exact extent of the halo on this side remains problematic. It all depends on the character of the concentration on field block 342. To be sure there are further alternative readings of the survey records, especially because we cannot be certain which of these clusters presented independent settlement units and which were merely dependent satellites. It is particularly unfortunate that the full extent and the character of the cluster on grid 8 remained problematic. During the preceding analysis we assumed that it represented the remains of a partly uncovered residential site, while the closely spaced clusters on grids 6 and 7 were treated as a single, dispersed establishment. But as we saw in the preceding paragraphs and in the main discussion in chapter V, these are rather heavy assumptions, as on no grounds can one merge the clusters on grids 6 and 7, while separating the clusters on grids 10 or even the one on grid 8, situated between 50 and 60 meters from the edge of the cluster on grid 6. Moreover it was necessary to exclude the elusive clusters on field blocks east of the dirt road from the analysis, because of the possibility that they belonged to residential sites outside the survey limits. We were therefore unable to clearly delimit the zone of intermediary density to the east of the clusters on grid 7.

The merging of these clusters into a hypothetical dispersed establishment can hardly present a complete solution to the problem, because in such a case there emerges the question of which of the clusters present the central, residential component and which were outbuildings. We saw this problem while dealing with the site on field blocks 47a-b, 49-50 and 66. In any instance measuring from the edge of the assumed central cluster, the extent of the site halo grows considerably. In the case of the site on field blocks 47a-b, 49, 50 and 66 it extended for over 140 meters to the north and similar radii will be measured for the merged clusters on grids 6-8. Naturally it all depends on which of the clusters will be taken as the centre of the site. If this is the cluster on grid 8 located at the northern end of this group, the maximum halo radius will reach to over 160 meters in a southeast direction. This is very unlikely, especially in view of the considerable distance between the clusters on grids 7 and 8, situated over 100 meters apart. The cluster on grid

10 on the other hand is a larger cluster, with a full domestic assemblage and a fairly large potential for an extensive site halo. We therefore adopted the view presented earlier, according to which sites 8 and 10 are separate residential site, while the clusters on grids 6 and 7 represent the components of a single establishment.

The extent of the halo surrounding the site on field blocks 289a-291a was already discussed during the attempt to draw the site limits on the basis of the transect survey records. The very existence of this site was indicated by the results of the total survey on grid 12. Here we were lucky to reveal what appears to be a segment of a halo zone in its entire width. The density of Roman finds was constantly above 2 fragments per 100 sq meters, over a 60 meters wide belt. On certain grid units we recorded over 4 fragments per 100 sq meters. This is a segment of a more extensive carpet of intermediary density, stretching from the southern edge of the site on field block 289a, across field blocks 288a, 287, 284 and terminating with field block 283, over 110 meters south of the edge of the site area on field block 289a (map V_20b). Evidently the artifact density is far from even across this stretch. According to the transect collections, the density of Roman material shows a clear tendency to decline from 4 fragments per 1000 sq meters on field block 288a immediately to the south of the site area, to 1.5 fragments on field block 287 covered by grid 12. Further south, on field block 284, the density of Roman material suddenly increases to over 7 fragments per 1000 sq meters with a larger concentration in the northern half of the field unit. Typically for the halo zones of larger sites in this survey area there appear at least one or two smaller and thinner satellite clusters, often at their very peripheries. In this case the possible satellite cluster is situated at approximately 85 meters from the southern edge of the site on field blocks 289a-291a. The density of Roman material stays close to the mean district value on the neighbouring field block 283 to the south. Here the transect survey recorded 3.7 fragments per 1000 sq meters. It is surprising that outside this 120 meters long belt, on field blocks to the east and west, the density of Roman finds suddenly drops below 2 fragments per 1000 sq meters.

On field blocks bordering the site area on the west, the Roman material almost disappears from the individual transect collections. Field block 289b features about 1 fragment per 1000 sq meters, while the collections from field blocks 290b-291b completely lacked shards datable to the Roman Period. The only exception is field block 288b situated immediately to the southwest of the component on field block 289a. Here the density of Roman finds suddenly increases to 5.5 fragments per 1000 sq meters, higher than on the neighbouring field block 288a. But further south it again decreases to about 1 fragment per 1000 sq meters.

The halo of the site on field blocks 289a-291a also spreads over a considerable distance across field blocks to its east. Apart from the neighbouring field blocks 294 and 303b with 5.1 and 5.6 fragments per 1000 sq meters, it probably includes the small peak in density on field blocks 295a and 296, where the transect survey recorded 5.3 and 7.3 fragments per 1000 sq meters respectively. Field block 296 is located slightly over 100 meters from the eastern edge of the site area on field block 290a. In many aspects this smaller concentration is analogous to the supposed satellite cluster on field block 284, to the south of the site.

To the north the halo of the site on field blocks 289a-291a borders and possibly overlaps with the halo of the site on field blocks 47a-b, 49, 50 and 66 (map V_19a). The

two sites are situated almost 200 meters apart. After a 30 meters wide interval of very low density, the zone of intermediary density reemerges on field block 91 with almost 4 fragments per 1000 sq meters and continues north until it merges with the impact zone of the site on field blocks 47a-b, 49, 50 and 66. Assuming that the clusters were of a roughly equal size and status, this continuous belt of intermediary artifact density was simply split into two equal halves, the northern one belonging to the site on field blocks 47a-b, 49, 50 and 66, the southern to the site on field block 289a-291a.

When the individual transect collections are adjusted to represent 100% of the material counted, the halo surrounding the site on field block 289a-291a becomes more compact and better defined (map V_13d). On the one hand, the peripheral field blocks 295' and 296 where we suspected a minor satellite are relegated to the zone of average artifact density, with predicted 12.5 and 13.7 fragments per 1000 sq meters. At the same time there is a significant increment on field blocks 303a and 295, as both are shifted from the zone of lower than average to the zones of average and higher than average artifact density. For field block 303a we predicted nearly 9 fragments, for field block 295 over 20 fragments per 1000 sq meters. In consequence, the increase on field blocks 295' and 296 now appears as the edge of a fairly extensive zone of intermediary density, spreading continuously for over 140 meters east of the site area. It was evidently limited to the northern half of this section, because the regular grid surveys on grids 9 and 13 demonstrated that it didn't spread beyond the limits of field block 303b. South of the site area, the record of the adjusted transect collections indicate a brief interval of lower than average artifact density, spreading over field blocks 287 and 288a. This wasn't confirmed by the regular grid survey that showed a continuous belt of intermediary density ending with a possible satellite cluster on field block 284, located 70 to 80 meters south of the site area. The records of the adjusted transect collections confirmed the absence of halo on the fields west of the site area. On this side there is a gentle increase on field block 288b, with predicted 8 fragments per 1000 sq meters. Only on this and on the neighbouring field block to the south do the theoretical densities exceed the threshold of 7 fragments per 1000 sq meters. The rest of the field blocks are sterile or feature very low artifact densities. Finally, the record of the adjusted transect collections confirms that the site halo also extended over field blocks north of the site. In this direction the maximum halo radius measures between 80 and 90 meters, including field blocks 293 and 91. The limit between the sites on field blocks 289a-291a and 47a-b, 49, 50 remains on field block 92, situated halfway between the two sites.

Apart from the site on grid 3, the only other site that lacks a more extensive zone of intermediary density in its immediate surroundings is the site on grid 20; accidentally these are the lowest and the highest clusters of Roman material in this survey area. In both instances the individual transect collections from the field blocks where the site was located were purposefully less thorough, but the collections from neighbouring units included around 50% of the counted material. And yet field blocks 275-277a and 275b-276b gave densities of less than 2.5 Roman shards per 1000 sq meters and this is also true for field blocks 278-281, situated further to the east (map V_14a). To the south the Roman material briefly reappears on field blocks 392-394, but only on field block 394 does the artifact density exceed the threshold of 2.5 fragments per 1000 sq meters. Admittedly the limited extent of the gridded area doesn't help in verifying these results. One can observe a narrow strip featuring between 2 and 3 fragments per 100 sq meters

and it is evident that this zone spread for an unknown distance beyond the gridded area. But the very decision to limit the total grid survey to field block 277b was chiefly inspired by the sudden dwindling in the amount of Roman material outside the limits of field block 277b. We saw that such sharp differences between the artifact densities recorded on the central and peripheral portions of the site areas were rather typical for this survey area.

Almost nothing changes when one looks at the record of the adjusted transect collections (map V_14c). Artifact density remains below the average across this entire survey section, with the exception of field blocks 277b and 394. The fact that the latter joins the zone of very high artifact density indicates that this is a separate cluster of a rank and size similar to those of site 20 rather than a segment of a halo zone. In all likelihood this situation is repeated on field blocks 270a and 271, situated 400 meters to the north at the other end of the survey section.

The "nearer" off-site surrounding the cluster on grid 26 was described in the preceding section. Being positioned by the southeastern limit of the survey area, the eastward extent of the halo of this site is completely unknown. But that the halo zone rarely spreads symmetrically around the site area is indicated by the transect survey on field blocks 343-344 and 346-347, immediately to the north of grid 26 (map V_16a). On all units except for field block 346, the density of Roman material is below 2.5 fragments per 1000 sq meters and even the latter field unit barely features 2.6 fragments per 1000 sq meters. Evidently the bulk of the "off-site" finds from the surroundings of this site came from field blocks to its west. To the southwest after a brief decrease on field block 356 with 2.2 fragments per 1000 sq meters, artifact density is nearly doubled on field block 357. In this direction, the halo zone extends for a maximum of 85 meters measured from the southern edge of the site. On field blocks to the west, except for field block 351b where the absence of Roman finds could be related to the low ground visibility, artifact density stays fairly high, ranging from 3.5 fragments on field block 354 to almost 6.5 fragments per 1000 sq meters on field block 355. The western edge of this field block is situated over 160 meters from the edge of the cluster on grid 26. This is a surprisingly large halo radius, especially in view of the medium size and the low density of this cluster. Perhaps the elongated shape of the field units in this part of the survey grossly enhances the extent of the zone of intermediary density. But that the impact zone of the cluster on grid 26 is particularly extensive, especially to the west is confirmed by the sudden peak on field blocks 314 and 315, the latter situated about 200 meters west of the site area. As we saw in the main discussion, such distances are typical for neighbouring residential sites, the distance between a satellite and a central cluster never exceeding 80-90 meters.

Assuming that the individual transect collections included 100% of the material counted doesn't have an effect on the extent of this carpet of intermediary density, but it shows that the density of Roman material can increase considerably over the entire stretch (map V_16c). This fact makes us reconsider the possibility that there existed another residential site, situated west of the cluster on grid 26 and south of the cluster on grid 10. We already pointed to the very high artifact density predicted for field block 342, only 30 meters to the north of field blocks 314-315. According to the record of the adjusted transect collections, the artifact density on this field unit could reach to over 40 fragments per 1000 sq meters. This figure is comparable to the densities predicted for the

majority of field units covering definite site remains and it is actually higher than the density predicted for field blocks 332 and 333a where we discovered the remains of site 10. Moreover given that all material counted was included in the individual transect collections, artifact density increases considerably on all units surrounding field block 342. On the northeast and southwest, it is flanked by field blocks where the densities predicted range between 7.5 and 14.5 fragments per 1000 sq meters. These include field blocks 344a and 345a to the northeast and field blocks 344-346 to the southwest. On the neighbouring field block to the east 341, artifact density increases to nearly 20 fragments per 1000 sq meters. As a result of these modifications, the concentration on field block 342 appears more like a separate focus of occupation than like a low peak in an extensive carpet of lower than average to average artifact density. Finally the increase on field blocks 314 and 315 is much gentler. Separated from the halo of the site on grid 26 by a narrow strip of sterile surface, they are obviously more closely related to the hypothetical focus on field block 342. It is likelier that this pair of field units with predicted 14 and 22 fragments per 1000 sq meters represents a segment of the halo of the hypothetical site on field block 342 rather than a continuation of the halos of sites 10 or 26, situated at distances of up to 200 meters.

Like the rest of the sites left out of the regular grid survey, the size of this hypothetical cluster remains elusive. It is in any case evident that it was limited to field block 342 and that it lacked satellite clusters. Indeed looking at the artifact distribution by individual transect units, one notices an increased density limited to the central sections of the field block, approaching the densities recorded by individual transects on field block 351 (map V_16a). Note however that in the record of the adjusted transect collections this concentration is not particularly high (map V_16c). It is even lower than on some of the individual transect units from the surrounding field blocks, although in these examples the densities are predicted on the basis of very small samples. What these observations suggest is that even if there is a genuine site on field block 342, it was probably of a very small size, comparable to the size of the sites on grids 1, 3 or 7.

The existence of yet another fully residential site in this survey section doesn't restrict the halos of the sites on grids 10 and 26. On the contrary, we stressed the fact that the extensive zone of intermediary density spreading to the south of grid 10 and to the west of grid 26 is too large and dense to be interpreted as the halos of the two medium-sized sites discovered on these grids. In all likelihood the possible site on field block 342 didn't occupy more than half of the field block's area and its halo could potentially spread not only over the rest of field block 342 and the neighbouring field block 341, but also southwards, over field blocks 345, 314, 315 and 312. In this direction the maximum halo radius could extend to almost 150 meters, measured from the southern edge of field block 342. Thus even if we assume that the neighbouring field blocks to the north 334a and 334b covered the southern halo of site 10, the hypothetical site on field block 342 is still left with a substantial carpet of intermediary artifact density in its surroundings, especially in view of its small size. It is in fact comparable to the halos of some of the larger sites in this survey area. At the same time the site on grid 26 continues to feature one of the most extensive halos in the second survey area. To the west it terminates with the western borders of field blocks 349, 350a, 353-354 and 357, about 130 meters from the edge of the site. To the south it includes field block 356, extending the maximum halo radius to almost 90 meters measured from the southern edge of the site.

In spite of the difficulties related with the delimitation of the halo zones surrounding each of the individual or group of clusters, it was deemed important to examine this phenomenon in a greater detail. It should be noted that a nearly identical phenomenon has been observed on small rural sites in central Greece and the Near East[9]. In the case of the second survey area it was necessary to make a distinction between this zone of intermediary density and the "farther" off-site, characterized by an ultra-thin but persistent carpet of Roman material. The two zones differ not only in terms of quantity of material, but also in terms of inner distribution and relation to the clusters with on-site densities. Adopting the view that the former portion of the off-site is mostly generated by the bringing of unsorted manure on the most intensively cultivated fields located in the immediate vicinity of the farms, alongside rubbish disposal and other non-residential activities, the existence and the extent of this zone were often indicators of the character or the very existence of residential sites. Such an effect on the surface record can hardly be envisioned without continuously inhabited and stable agricultural settlements and the presence of compact and fairly extensive site halos helped us identify the residential sites on field blocks 342, 289a-291a, 47a-b, 49-50 and 66 and suggested a fully residential character for the cluster on grid 8. Inversely its absence on fields surrounding the high concentrations on field blocks 277b and 270a-271 casts doubts over the residential character of these scatters.

App IV.1.3 The Late Roman Period (Table 23, 24, graph 22, maps V_23a-c, V_24)

In total only 138 fragments could be dated to the Late Roman Period, excluding the small group of fine ware from grid 3. The grid survey recorded less than 1 fragment per 1000 sq meters and only 1.5 fragments per hectare were recorded by field walking transects. After compensating for the lesser survey intensity, the mean artifact density increases to about 3.7 Late Roman shards per one hectare of transect survey. Thus the average density recorded by the regular grid survey is only about 2.5 times higher. The difference is negligible when compared to the difference between the grid and the transect survey records of the mean overall density of Roman material. On average 33 Roman shards were collected per 1000 sq meters of total grid survey, 1.8 shards per 1000 sq meters of transect survey. Here the difference is multifold, despite the fact that the Roman finds were present on almost half of the field blocks. That there lacks a greater concentration of Late Roman finds is most clearly illustrated by the very low maximum density of 2.65 fragments per 100 sq meters. Such small amounts of surface material are impossible to be aware of during fieldwork, even when conducting a total grid survey. In comparison to the material broadly dated Roman, the Late Roman finds have a much narrower density range: 0.66 and 2.5 per 100 sq meters were the minimum and the maximum values recorded by the grid survey, 0.7 and 4.3 fragments per 1000 sq meters of transect survey. The absence of settlement remains is finally indicated by the very large extent of the total dispersal area. The small collection was found dispersed across an area of over 10 hectares.

[9] J.L. Bintliff, P. Howard, A. Snodgrass, 24, 2007; J.L. Bintliff, The Leiden University Ancient Cities of Boeotia Project: 2005 Season at Tangara, 29-38, *Pharos* 13, 2006; T.J. Wilkinson, tab. 1, 1989.

Table 23: Amount and distribution of Late Roman finds

Total amount and percentage	138, 1.20%
Mean overall density(grid and transect)	0.9 per 1 000 sq m; 0.15 per1 000 sq m.
Min/Max density	0/2.65 per 100 sq m.
Number of "sites"	/
Total dispersal area	ca 110 000 sq m.

The spatial distribution of Late Roman finds collected by individual field walking transects indicates that there is almost no continuity with the previous period (map V_23a). Late Roman finds were collected from about 50 field blocks or about 10% of the surveyed area. On these field blocks the artifact density ranged between 0.75 and 4.5 fragments per 1000 sq meters. In absolute terms this is not more than 2 Late Roman shards per field block. These field units are dispersed across the entire survey area, although there is an evident concentration in the northwest quarter of the basin. Nearly 60% of the field units from which Late Roman finds were collected are situated in the northern halves of the western ridge and on the basin's floor. This material is almost totally absent among the transect collections from the southern half of the western ridge and from the greater portion of the eastern ridge. Isolated field blocks featuring one or two finds appear both in the southeast and northeast corners of the surveyed basin. But pairs or groups of contingent field blocks featuring Late Roman material appear only in the northwest quarter of the survey.

Due to the fact that on over 90% of the field walking units, the density of Late Roman finds is zero, all of the field units on which this material is represented by a single fragment feature at least 4-5 times the mean overall density. Because of the great degree of dispersal, even the mean district value in the northwestern survey quarter where the great majority of the find-spots of Late Roman material is located is too low or about 2.2 fragments per hectare (table 24). Thus we enter a rather paradoxical situation, where in relative terms, the one or two Late Roman shards are comparable to the clusters of Roman material with on-site densities. Obviously the problem is purely theoretical, though it seemingly threatens one of the criteria by which we tested the on-site status of the surface clusters. The example of the thin scatter of Late Roman finds serves to show that the residual analysis which helped us define site locations more elaborately is only applicable to a specific pattern of artifact distribution[10]. The ideal case is represented by the dense and fairly even off-site carpets, punctuated by much denser concentrations of artifacts. It is exemplified by the Classical Period landscapes of central Greece or some of the Aegean islands. There the surprisingly dense and continuous off-site carpet results in considerable average densities, which inevitably raise the on-site threshold. Although we could observe an analogous phenomenon in some of our rural landscapes, the off-site carpets are much sparser and large sections of the survey areas were nearly sterile. Even in the case of the Roman Period in the second survey area, over half of the field units featured zero artifact density. As a consequence, the on-site threshold was almost always many times higher than the overall and the district averages[11]. In the case of the Late

[10] J. Bintliff, P. Howard, A. Snodgrass, 34-37, 2007; J. Bintliff, P. Howard, Studying needles in haystacks - Surface survey and the rural landscape of Central Greece in Roman times, 51-91, *Pharos* 7, 1999.
[11] Cf. J. Bintliff, P. Howard, A. Snodgrass, tables A1, A3, A4, 2007.

Roman Period in the second survey, the absence of larger concentrations of surface material coupled with the high degree of dispersal of the artifacts prevent us from carrying out the residual analysis with meaningful results. Admittedly one could argue that the similarly distributed material from certain prehistoric periods didn't stop us from defining site locations by using the same principle[12]. However the few finds of prehistoric pottery cannot be compared with the scatter of the Late Roman material, not only because of the temporal factor, but also because being much sparser, the one or two prehistoric shards do present a far more significant concentration in quantitative terms.

Table 24: Mean district density and density on individual field blocks in the northwest survey section, in 1000 sq meters.

	Field block 216a	Field block 217a	Field block 218a	Field block 205b	Field block 150
Expected	0.22	0.22	0.22	0.22	0.22
Actual	3.85	1.75	0.75	3.90	3.95

The largest and the densest cluster of Late Roman material was revealed on the top of the western ridge, in its central parts (map V_23a). It comprised a group of five contingent field blocks 212a, 216-218a/b, on which the transect survey recorded between 1 and 3.8 Late Roman shards per 1000 sq meters. They form a roughly concentric pattern, with field block 216a featuring 3.8 fragments at the centre of the group and field blocks 212a and 217a with 1.5 fragments per 1000 sq meters to the north and south. Even higher densities nearing 4 fragments per 1000 sq meters were recorded on field blocks 205b and 150, situated 130 and 300 meters to the north and northwest, further up the western ridge. Both field blocks are coupled by field units featuring about 1.5 fragments per 1000 sq meters. Pairs of field units featuring Late Roman material are also present in the central portion of the basin, along the Skopje-Kučevište asphalt road. These are field blocks 123-124, 129 and 137 partly covered by grids 15-17. According to the transect survey, artifact density ranged between 1.3 fragments on field block 129, 1.8 on field blocks 123 and 124 and 2.3 fragments per 1000 sq meters on field block 137. They form a fairly compact group by the northern survey limit, though they aren't contingent. This is the only location on which a Roman site is "covered" by a slightly higher concentration of Late Roman material. Another more scattered group appeared 100-200 meters to the south; these are field blocks 265, 270a, 273a and 274a, all situated by the Skopje-Kučevište asphalt road. According to the transect collections, this group is not very different than the previous regarding artifact density and in fact they are perhaps better treated as a continuous carpet covering the northern half of the central survey section. Field blocks 265 and 273a both feature around 2.3 fragments per 1000 sq meters, while on field blocks 270a the collections by individual transects recorded 1.75 fragments per 1000 sq meters. The highest density of slightly over 3 Late Roman shards per 1000 sq meters were

[12] D. Pettegrew, Chasing the Classical farmstead: assessing the formation and signature of rural settlement in Greek Landscape Archaeology, 189- 209, *Journal of Mediterranean* Archaeology 14-3, 2001; J. Bintliff et al. Classical farms, hidden prehistoric landscapes and Greek rural survey: a response and an update; 259-265, *Journal of Mediterranean Archaeology*, 15-2, 2002.

recorded on field blocks 274a, although this value is slightly enhanced by the small size of the field unit. On the eastern ridge too, there are field blocks where the transect survey recorded over 2 fragments per 1000 sq meters, but these appear isolated, separated by wide stretches on which Late Roman finds were completely missing. Field block 302 on the lower terraces and field block 327 on the top of the eastern ridge feature 2.7 and 3.2 fragments per 1000 sq meters respectively, repeating the densities recorded on field blocks in other survey sections.

This pattern is not necessarily related to the small size of the field blocks or to the more intensive collections by individual transects. In general field blocks featuring over 2.5 fragments per 1000 sq meters tend to be smaller and this is certainly related to the very small differences in the quantities of Late Roman material, smaller than the variation in the size of the field blocks. If we look at the distribution of the Late Roman finds in absolute numbers the differences between field blocks are further minimized, although the higher concentration of this material in the northwest survey quarter persists (map V_23b). Likewise field blocks on which Late Roman finds were recorded tend to be more thoroughly transected, but this certainly wasn't the only decisive factor. Late Roman finds were present among collections that included less than 40% of the material counted and they were almost completely absent among the very intensive transect collections from the southern end of the survey area. Only on about 4% of the field blocks did Late Roman finds comprise more than 10% of the transect collections. But even in these cases, assuming that total collections were carried out merely enhances the overall pattern described in the preceding paragraphs (map V_23c). Note that now field blocks belonging to the range of very high artifact density are completely limited to the northwest survey section, with a visible concentration on field blocks 212a and 216a. For these two field units, we predict densities of over 19 and 18 fragments per 1000 sq meters. They are surrounded by an outer ring of average and lower than average densities on field blocks 213, 217a, 218a and 218b. The increase is gentler on field blocks 205b and 150, both of which are shifted to the zone of higher than average artifact density. In the northern half of the central survey section, the group of field blocks covered by grids 15-18 (field blocks 125, 126, 129 and 137) continues to feature increased artifact density. It even becomes more compact, though the densities predicted for these field blocks are lower than those predicted for field blocks on the western ridge. However comparable densities of about 17 fragments per 1000 sq meters are predicted for field block 270a, where we also recorded larger amounts of Roman material. In the southern half of the central survey section and on the eastern ridge, the isolated field blocks featuring Late Roman finds are relegated to the zone of higher than average artifact and average artifact density. Only field block 10 covering site 3 shows a considerable increase and in fact this field block features the highest theoretical density in the second survey area or 44 fragments per 1000 sq meters. But in this case, it is certain that the increase is contributed by the presence of fine ware that although datable to the late 4th century is probably contemporary with the material broadly dated to the Roman Period. If this field unit is ignored, the maximum density of the Late Roman finds inferred on the basis of the adjusted transect collection doesn't exceed 20 fragments per 1000 sq meters.

Understandably these scant remains came to light only after the processing of the collected material. An exception is the small group of tile fragments that quickly seized our attention during the total survey on grid 4, on the top of the eastern ridge. They were

found inserted in the terrace wall that separates field block 24 from the overgrown field to the south and clearly stood out by their size and state of preservation. In reality these few fragments came from one or two tiles that were unaccompanied by other finds datable to the Late Roman Period and they gave a maximum artifact density of only 1.6 fragments per 100 sq meters. Excluding the denser concentration on grid 3 fully overlapping with the Roman site, the total survey revealed similar densities on most other gridded fields.

A slightly larger and denser concentration of Late Roman finds was collected from grid 17 (map V_24). This is field block 129, where the transect survey recorded nearly 1.5 fragments per 1000 sq meters. Similar densities were recorded on field blocks 123 and 124, 20-30 meters to the south, but because of the lower overall artifact densities, they weren't included in the regular grid survey. In fact only field block 137 was partly covered by grid 18, but the total collections weren't extended over the entire field because of the low overall density. Nevertheless the total collections from grid 17 are sufficient to illustrate the actual amount of Late Roman material on a field block where the transect survey recorded over 1 fragment per 1000 sq meters. Moreover like field blocks 216a and 270a this field unit was less thoroughly transected and were all counted finds collected, the density of Late Roman finds could increase to over 10 fragments per 1000 sq meters. We were thus lucky to include in the total grid survey one of the few field units where larger concentrations of Late Roman material were at least theoretically possible.

A greater concentration of material was recorded on three contingent grid units, at the western limit between grids 15 and 17. It seems as if the "cluster" continues over to the easternmost unit on grid 16. In relation to the Roman site, it is located at the edge of the site area, but not far from the site core on grid 15. The density of the Late Roman finds on these grid units is barely over 1.5 fragments per 100 sq meters; note that the grid unit with the maximum number of finds is also slightly larger than the rest. Not taking into account the artifact density, the thematic map creates a false impression that this grid unit covered the core of the cluster. In total only 9 fragments constitute this "site". We see however that fluctuations of such a small scale are not unusual for this portion of the surveyed terrain. A similar, but even thinner "cluster" was uncovered on four grid units in the eastern half of grid 17, situated about 40 meters away and on a pair of grid units along the western edge of grid 18. In both cases the density of Late Roman finds increases to about 1.3 fragments per 100 sq meters after a larger, sterile interval. The latter findings also illustrate that even very small concentrations of surface material could contribute to densities higher than 2 fragments per 1000 sq meters of transect survey.

The maximum density of 2.65 fragments per 100 sq meters was recorded on grid 12, on a unit in the northwest corner of the gridded area. As argued in the previous section, this grid probably covered the halo of the Roman site on field blocks 289a-291a. Unlike the scatters on grids 15 or 17, this is an isolated concentration. On the rest of the units from this grid the density of Late Roman finds drops below 1 fragment per 1000 sq meters and the core in the northwest corner of the grid stands isolated. It is noteworthy than in the case of field block 288b the collections by transect units didn't include Late Roman finds, even though they represented 70% of the material counted. Unless changes in the surface record are involved, this could be related to the fact that on grid 12 the Late Roman finds were found clustered on a single unit. The transect survey collections are

certainly better suited to detect more widespread scatters, even if they are much thinner, as on grids 17 and 18.

On the eastern ridge the total survey on grid 13 accidentally covered the southern half of field block 302, which according to the transect collections features slightly over 3 fragments per 1000 sq meters. The total collections included but a pair of Late Roman shards collected from two units from the northernmost row. Even if one allows that there was a larger concentration in the northern half of the field unit outside the gridded area, it couldn't have been a very substantial cluster and certainly not a settlement site. Grids 1, 4 and 10 also covered partly or entirely field blocks on which the transect collections included Late Roman finds. The transect collections from field blocks 40a, 327 and 332 included but a few, spatially unrelated fragments.

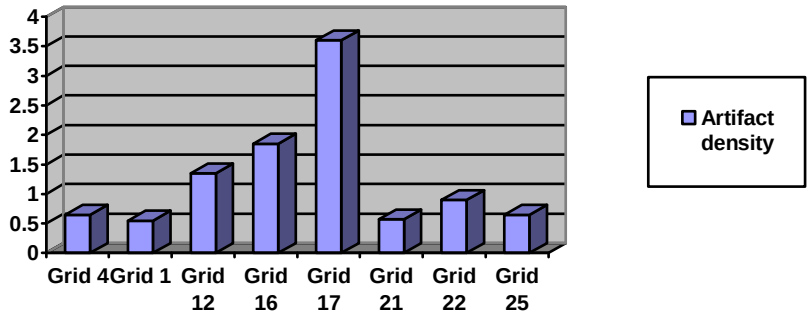
We saw that predicting the true amounts of surface material on the basis of the transect survey records is far from straightforward. We are in any case confident that similarly small quantities contributed to the increased density of Late Roman finds on the group of field blocks along the top and the upper portions of the western ridge. The total grid survey accidentally covered the larger part of the northernmost field block of this group 212a, featuring approximately 1.5 fragments per 1000 sq meters and slightly over 19 fragments per 1000 sq meters in case the transect collections included all material counted. However the artifact density recorded by the total survey on grid 22 was lower even in comparison to the densities indicated by the selective transect collections. Barely a few fragments from the total collections on grid 22 could be dated to the Late Roman Period and the maximum artifact density didn't exceed the limit of 0.6 fragments per 100 sq meters or 1 shard per grid unit.

Thus there are a number of features regarding the distribution of the Late Roman material that point to its off-site character. As mentioned in the introduction to this section, in the first place this is the very small range between the minimum and the maximum density recorded by the regular grid survey. The grid unit with the maximum artifact density features only 2.5 times greater amount of material than grid units on which the Late Roman finds are present in minimal quantities Such differences are not characteristic for clusters with on-site densities, except for the cases when a prehistoric period is represented by vestigial remains. This interpretation can hardly apply to the relatively recent and fairly obtrusive Late Roman material. As was shown, isolated fragments were virtually found among most total collections regardless of their location. This ultra-thin carpet interrupted by sterile stretches and low peaks is rather more similar to the distribution of the Roman finds in the "farther" off-site zone. Furthermore, even when present in slightly larger quantities as on grids 15, 17 or 12, the scatters of Late Roman finds hardly exhibit the characteristic on-site signature. They are rather randomly dispersed across the gridded areas, lacking a definite focus. In addition to the low density and the random distribution on a field block level, we also need to point to the lack of a full domestic assemblage and the poor state of preservation of the finds. The almost complete absence of architectural ceramics is particularly striking.

But while it can be argued that on a field block level the distribution pattern of the Late Roman finds is totally random, it was possible to observe an overall linear tendency in the distribution of the material collected by transect units. Whether the transect collections are adjusted or not, there is a small but visible increase on field blocks in the northwest quarter of the survey area. In order to test this observation we estimated the

average densities recorded by separate grids from various survey sections. This exercise only partly confirmed the observations made on the basis of the individual transect collections, though as was soon discovered the limited and focused grid survey coverage doesn't necessarily offer a more reliable record for assessing distribution trends over larger areas.

Graph 22: Average density of Late Roman finds by gridded areas (in 1000 sq m)



As shown on graph 22, there is an evident increase in the average density of Late Roman finds along a south-north axis, but only in the central survey section. Here the average density recorded by the regular grid survey increases from 0 on grid 20, to about 1 and 1.3 fragments per 1000 sq meters on grids 19 and 12 and then to 1.75 fragments on grid 16. On the neighbouring grid 17, the density of Late Roman finds is more than doubled reaching 3.6 shards per 1000 sq meters, but on the neighbouring grids to the north and northeast (grids 18 and 27) it decreases to less than 1 fragment per 1000 sq meters. While there is an evident, albeit unsteady tendency to increase on grids in the central survey sections, this is hardly the case on grids covering the eastern and western ridge. In both survey sections the average density of Late Roman finds recorded by the regular grid survey remains stable across the entire lengths of the ridges. On most of the grids covering the eastern and western ridge the total survey recorded an average of about 0.5 fragments per 1000 sq meters. The slight increase on grid 22 where we recorded nearly 1 fragment per 1000 sq meters seems to confirm the transect survey results, which indicated an elevated density on field blocks in the central portion of western ridge. On grid 25 covering field blocks in the northern half of the western ridge, the density of Late Roman finds drops to about 0.5 fragments per 1000 sq meters. Most surprising of all was the revelation that the average artifact densities were roughly equal on the gridded areas on both ridges. This is not what the transect collections indicated. This discrepancy between the transect and the grid survey records could be related to the partial and selective coverage of the grid survey, especially on the western ridge. Here only two field blocks on which the transect survey recorded the presence of Late Roman finds were included in the gridded areas. On the eastern ridge the more extensive grid survey accidentally included at least 4 or 5 field units featuring Late Roman material among the transect collections. But on the other hand, while the collections from all grids on the western ridge yielded at least a few fragments datable to the Late Roman Period, on the eastern ridge this material was totally absent from grids 9, 8 and 5-11. It is thus possible that after all, there is a greater concentration of Late Roman finds on the western ridge, though the differences are much lower than expected.

This brief analysis of the grid survey data showed that apart from the central survey sections, there aren't particularly strong linear tendencies in the distribution of Late Roman material in the second survey area. Both within the limits of a single grid and across different survey sections, the fluctuations in the amount of Late Roman material are slight and fairly random. This doesn't need to fully contradict the transect survey record, but it challenges the assumption that there was an overall increase in the artifact density towards the northwest corner of the survey area. This tendency was limited to the central survey sections, while on the western ridge the increment is more focalized and limited to the central top portions of the ridge.

App IV.1.4 The Middle and Late Byzantine Period (early 10th-early 14th century; tables 25, 26, graph 23, maps V_25a-b, 26)

Table 25: Amount and distribution of finds datable to the Middle and Late Byzantine Period

Total amount and percentage	85; 0.75%
Mean overall density(grid and transect)	0.8 per 1000 sq m; 0.93 per hectare
Min/Max density	0/7.6 per 100 sq m.
Site area	ca 1500+500 sq m.
Total dispersal area	ca 1 hectare

The cluster of finds possibly datable to the Middle Ages was discovered towards the end of the second year's campaign, after the study of the individual transect collections. Looking at the amount and distribution of the assemblage, this is hardly surprising. Only 85 fragments from all gathered finds belong to this assemblage. This is nearly 50% less than the finds datable to the Late Roman Period and only 0.75% of all studied material. Their actual percentage in the total surface record is certainly much lower. The mean overall density by individual transect records is predictably several times lower in comparison to the more evenly spread carpet of Late Roman material. On average the transect collections recorded 3.7 Late Roman shards and less than 1 Medieval shard per hectare. But when the overall densities recorded by total grid survey are compared, they are nearly equal. Both periods are represented by slightly under 1 fragment per 1000 sq meters of total grid survey. This is certainly related to the greater concentration of finds datable to the Medieval Period; their maximum density is nearly three times the maximum density of the Late Roman finds, reaching about 7.6 fragments per 100 sq meters. The possible Medieval assemblage is limited to several field blocks, totaling an area of 1 hectare. Although more numerous, the Late Roman finds were dispersed across a 10 times greater area. Therefore despite the visibly smaller collection and the lower overall mean artifact density, finds datable to the Medieval Period form an on-site cluster, while the Late Roman finds were interpreted as a part of an extensive off-site carpet.

Being so much concentrated, the possible Medieval assemblage presents a problem similar to the one encountered during the analysis of the Late Roman material. All field blocks on which this material is present are ranked above the mean district average, even if we limit the analysis only to the northern end of the western ridge (table

26). We encountered a similar problem dealing with the prehistoric assemblages in the first survey area, although there finds belonging to the same time-period were more dispersed, at least within the limits of a single survey district. However in contrast to the Late Roman assemblage from the second survey, in these cases (including the possible Medieval assemblage in the second survey) the maximal densities not only exceeded the district average by a vast margin, but they are also several times higher than the density recorded on the rest of the field units featuring densities higher than the average. In principle the distribution pattern of the assemblage broadly dated to the Medieval Period lacks one of the key features that characterized the distribution of the Roman finds in both survey areas, the off-site carpet. None the less the considerable density variations still allow one to differentiate between the site, the site halo and the possible satellites. In the case of the Late Roman assemblage from the second survey, although all field units featured artifact densities higher than the average, the differences between field units featuring this material were minimal.

Table 26: Mean district and density on field blocks featuring finds broadly dated to the Middle Age, in 1000 sq meters

	Field block 171	Field block 170	Field block 186	Field block 188	Field block 157
Expected	0.3	0.3	0.3	0.3	0.3
Actual	17.85	2.85	3.25	5.85	1.75

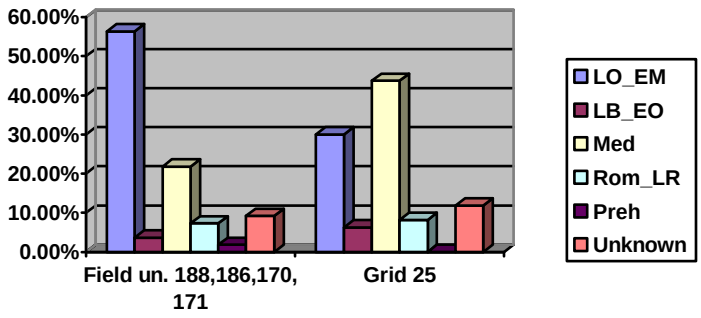
Fragments belonging to the possible Medieval assemblage were discovered among the transect collections from 7 field units, all concentrated in the northern half of the western ridge (map V_25a). The greatest concentration was revealed on a group of four contingent field units. From south to north, these are field blocks 188, 186, 170 and 171. The highest artifact density was recorded on field block 171 or nearly 18 fragments per 1000 sq meters. At the opposite end of the group on field block 188, the transect survey revealed a density of less than 6 fragments per 1000 sq meters. On field blocks 186 and 170 in the middle of the group, the transect survey recorded around 3 fragments per 1000 sq meters. A similar artifact density was recorded on three isolated field blocks, 50 to 150 meters north and west of the main group, on field blocks 183, 167 and 158. The first two field blocks situated closer to the larger group featured 2.8 and 3.1 fragments per 1000 sq meters, while on field block 158 by the northern survey limit the collections by transect units recorded 1.7 fragment per 1000 sq meters. In terms of the number of collected finds, on these field blocks the transect collections included but one or two fragments datable to the Medieval Period. On the rest of the field units in this survey area there were no fragments datable to this period.

The collections by individual transect units on this group of field blocks and on the western ridge in general were carried out consistently. They are fairly thorough, usually including between 40 and 60% of the material counted. Only on field block 167 were the transect collections more intensive, representing almost 80% of the finds counted. This circumstance along with the small size of the field unit has perhaps slightly elevated the artifact density. Because on these field blocks the number of counted finds is lower than the survey average, assuming that total collections were made wouldn't

change the pattern described in the preceding paragraph (map V_25b). It will only further enhance the artifact density on the least thoroughly transected field blocks 188 and 170. Were all counted finds collected, the artifact density will increase from 5.8 to 10.1 fragments per 1000 sq meters on field block 188 and from 2.8 to nearly 5 fragments per 1000 sq meters on field block 170. On the rest of the field units from this group the artifact density would have increased for less than 20-25%.

Regardless of the relatively high artifact density on field blocks 171 and 180, the cluster(s) of finds datable to the Medieval Period remained virtually invisible during fieldwork. The overall artifact density was below the average on all but one of the field blocks featuring a greater concentration of finds datable to the Medieval Period. Even so a large portion of the surface record consisted of material datable to the last couple of centuries. More precisely over 55% of the finds collected by individual field walking transects can be dated to the Late Ottoman-Early Modern Period. Examples of the fabrics that constitute the possible Medieval assemblage represent just over 20% of the collected material. Other periods were also represented by smaller percentages, including a single prehistoric fragment. In general the finds on these fields were rather poorly preserved, as reflected by the fairly large percentage of unrecognizable material.

Graph 23: Distribution by periods of the material collected from grid 25 and the surrounding fields



The context in which the Medieval assemblage was discovered created difficulties during the precise recording of the cluster by a total grid survey. We saw that even in the cases of much denser clusters, representing nearly 90% of the total surface record, the uncovering of the integral site areas sometimes proved problematic. Because of the fairly low overall quantities, but mostly because of the very low volume of the collections, the total grid survey was limited to field blocks 171 and 170 (map V_26). It partly covered field blocks 169 and 172 on the west and field block 165 on the east. At the time of the collection it was thought that the surface record on the gridded area mostly consisted of worn off-site debris, discarded in the past couple of centuries. This is hardly a surprise with total collections weighing not more than one kilogram. It all seemed as if there were yet again drastic changes in the composition of the surface record and that the original cluster had been depleted by the individual transect collections the previous year.

However the study of the total collections from grid 25 revealed a larger concentration of possible Medieval pottery, especially in the central units of the gridded area. The chronological profile of the total collections doesn't differ dramatically from the chronology of the transect collections. The figure in graph 23 doesn't include the

discarded material, predominantly consisting of Late Ottoman-Early Modern tile. They comprise nearly 30% of the total surface record on grid 25. Taking this material into account, finds datable to the Medieval Period will comprise less than 30% of the total collections. Despite the elimination of the completely burnt and worn fragments, the unrecognizable finds still comprise over 10% of the collections. This indicates the low quality of the finds; even collections from the site area weighed only a few hundred grams.

In essence the results of the transect survey were confirmed, the core of the cluster was located on the boundary between field blocks 170 and 171. This unit featured the maximum artifact density of 7.5 Medieval shards per 100 sq meters. On the neighbouring three units to the north, east and west, the artifact density dropped to slightly over 5 fragments per 100 sq meters. On grid units along the southern limit of the gridded area artifact density declined still further, ranging between 3 and 4 fragments per 100 sq meters. This fairly gradual transition between the core and the periphery of the site, as well as the low maximum density further complicated the recording of this site by regular grid collections. During fieldwork it was simply impossible to tell where the thin cluster of worn and tiny fragments terminated. However the northern and eastern limits of the site are more or less clear. On units in the northwest and northeast corners of the gridded area, the total grid survey recorded less than 2 Medieval shards per 100 sq meters. Finally, on the easternmost pair of grid units covering parts of field block 165, Medieval finds completely disappear from the surface record.

It is evident that the cluster spread beyond the southern and also possibly, the western limit of grid 25. Judging by the results of the large block survey, there is an evident decline on the neighbouring field block to the south, but the density of Medieval finds rose again on field block 188, about 40 meters south of the revealed site core. Compensating for the lesser degree of survey intensity and assuming that all finds were collected by the individual transect units, the artifact density on this field will barely exceed 2.5 fragments per 100 sq meters. This implies that the core revealed in the central parts of the gridded area was surrounded by a fairly extensive, peripheral zone or site-halo, spreading southwards for over 50 meters. As explained however, focusing solely on the individual transect collections, it is more likely that the distribution of this material wasn't even across the entire surface of field blocks 186 and 188. The bulk of the possible Medieval finds collected by individual field walking transects came from a single transect unit, covering the central portion of field block 188. It included 75% of the Medieval finds from this field unit, which basically equals the number of finds collected by individual transect from field block 171. In the rest of the individual transect collections from these field units, Medieval material was represented by not more than one fragment.

Limiting the site area to grid units featuring over 3 Medieval shards per 100 sq meters, the site on grid 25 measures nearly 1 500 sq meters. This estimate allows for slightly wider margins along the southern and possibly the western site boundaries, but it doesn't take into account the evident increase in artifact density on field block 188. As argued, this was very probably a smaller and thinner satellite cluster, limited to the central portions of the field block. Without the more intense total survey data, its exact size can only be guessed. Allowing that it occupied half of the field block's area, it will measure not more than 1000 sq meters. As we don't know the true amount of surface

finds on this field unit, it is difficult to decide if it belongs to the site halo or if it presents the remains of a separate residential unit. Judging by the fairly sharp increase in the amounts of the possible Medieval finds on the central transect unit, the latter interpretation seems likelier. In such a case the total occupied area during the Middle Age measured between 2000 and 2500 sq meters. The surrounding zone characterized by artifact densities lower than 1-2 fragments per 100 sq meters is confined to a 30 to 50 meters wide stretch to the south of the site (depending on whether the increased density on field block 188 is seen as part of the site halo or a site component) and narrower, 10 to 15 meters wide belts along the rest of the site periphery. As explained earlier, this zone of intermediary density reappears on a few field blocks to the west and to the north of the site area. It indicates that the impact zone of the possible Medieval site also spread over a slightly higher ground, along the top and the western slopes of the ridge. The maximum radius of this discontinuous zone measures almost 150 meters, measured from the northern and western edges of the site area. It is thus comparable to the halo radii of most of the medium-sized Roman sites, although the artifact density was evidently much lower.

App IV.1.5 The Late Byzantine-Early Ottoman Period (late 14th- early 18th century; table 27, graph 24, maps V_27a-b, 28a-b)

Table 27: Amount and distribution of finds datable to the Late Byzantine-Early Ottoman Period

Total amount and percentage	245; 2.10%
Mean overall density(grid and transect)	1.6 per 1000 sq m; 2.70 per hectare
Min/Max density	0/3.1 per 100 sq m.
Site area	/
Total dispersal area	ca 160 000 sq meters

The study of both the transect and the grid collections proved that there weren't any traces of human occupation from this period in the survey area. In total 245 fragments were dated to the Late Byzantine and Early Ottoman Period. This material comprises slightly over 2% of the total collection, excluding the discarded material. Taking account of the total surface record, they probably represent slightly over 1%. The carpet of the Late Byzantine-Early Ottoman finds is evidently denser in comparison to the possible Medieval or the Late Roman scatters. There are approximately 1.6 fragments per 1000 sq meters of total grid survey and 2.70 fragments per 1 hectare of transect survey. The latter figure doesn't include compensation for the lesser degree of survey intensity; when this factor is accounted for, it increases to 6.8 fragments per hectare. Interestingly the ratio between the two records roughly equals the ratio between the Late Roman fragments collected by grid and transect survey. In both cases the number of finds collected by the regular grid survey is between 2.5 and 3 times the number of finds collected by individual transects, increased by a factor of 2.5 to compensate for the lesser degree of survey intensity. In comparison, when material datable to the Medieval or the Roman Period is considered, the ratio between these two categories is 8 or 9 to 1. The absence of larger concentrations of finds datable to the Late Byzantine and Early

Ottoman Period is also indicated by the fairly low maximum density. Even the small collection of finds possibly datable to the Middle Age forms a two times denser cluster. The recorded maximum of 3.1 fragments per 100 sq meters is only slightly higher than that of the twice less numerous Late Roman collection. The two collections are also very similar regarding the total dispersal area. Finds datable to the Late Byzantine-Early Ottoman Period are even more widespread, which directly contributes to the relatively low overall densities.

As was the case with the previous two assemblages, the overall survey average is so low that even the presence of a single fragment produces a higher artifact density. The district averages are equally insignificant threshold values because of the extreme dispersal of the material; they remain very low even in the northwest quarter of the survey. The difference between the minimum and the maximum densities on field blocks on which this material is present almost equals the span of the density range for the Medieval assemblage, but this is merely due to the much smaller size of the latter. In comparison to the Roman Period for which we also have definite traces of permanent settlement in the surface record, the difference between the lowest and the highest density recorded by the transect survey is much lower. For the Roman Period, artifact density fluctuated between 0.8 and 33.6 fragments per 1000 sq meters of transect survey (or between 1 and 119 when the transect collections are adjusted to represent 100% of the material counted); for the Late Byzantine-Early Ottoman Period, it ranged between 0.7 and 10.5 (or between 1 and 26.6 per 1000 sq meters in the record of the adjusted transect collections).

Looking at the distribution of the Late Byzantine-Early Ottoman finds by field blocks, one quickly notices the similarity with the overall distribution of the Late Roman material (cf. maps V_23 and V_27a). Of the 87 field units on which the transect collections included material datable to this period, 48 or 55% are located in the northwest quarter of the survey area, in the northern halves of the western and central survey sections. Over 60% of the Late Byzantine-Early Ottoman material collected by transect units came from these survey sections. The northeast quarter of the survey area contained less than 25% of the field units with Late Byzantine-Early Ottoman material and slightly over 20% of the finds from the transect collections. Field units on which this material was present in the transect collections become evidently sparser in the southern half of the survey. There are only 13 field blocks featuring finds from the Late Byzantine-Early Ottoman Period in the southern halves of the eastern and central survey sections and only 6 in the southern half of the western ridge. The entire southern half of the survey area gave only 15% of the material datable to this period.

Not unusually for the second survey, this is not a continuous carpet with gradual changes in the artifact density. Field blocks on which the transect collections included Late Byzantine-Early Ottoman finds appear isolated, in pairs or in clusters of not more than 5 contingent field blocks. As explained earlier, the differences in the artifact densities recorded by the transect collections are fairly insignificant. They range between 0.7 and 10.5 fragments per 1000 sq meters, but in terms of the number of collected finds, each of the field blocks on which this material was present gave between 1 and 5 fragments. As with the Late Roman finds, field blocks measuring less than 1000-1200 sq meters tend to rank higher regarding artifact density. This has the effect of slightly

enhancing the amount of Late Byzantine-Early Ottoman finds on the northern half of the western ridge, where on average field units were smaller.

A more extensive scatter of Late Byzantine-Early Ottoman finds appeared on the group of field blocks 168-172 largely overlapping with the cluster of the possible Medieval finds. This potential find-spot deserves a more detailed discussion, especially because of its close proximity to the supposedly earlier assemblage on grid 25. It could indicate prolonged, non-residential activities immediately to the west of the possible Medieval site. On five contingent field units the density of Late Byzantine-Early Ottoman material is above the average for the group of field blocks on which this material is present. Moreover the cluster seems to exhibit an inner structure, with a "core" on field block 168 featuring slightly over 10 fragments per 1000 sq meter, a "halo" zone over field blocks 169, 170 and 172, with densities of about 2.5 fragments per 1000 sq meters and a lower peak on field block 171, where the transect survey recorded 4.5 fragments per 1000 sq meters. It has to be noted however that the increase on this last field unit might stem from the later dating of a coarse fabric group which could equally belong to the earlier, Medieval assemblage.

This increase in the amount of the Late Byzantine-Early Ottoman material came to light only after the processing of the collected finds. Luckily because of its proximity to the Medieval cluster, we inadvertently included the eastern half of this zone in the total grid survey. The total collections on grid 25 covering field blocks 170, 171 and parts of field blocks 169 and 172 revealed only a thin, discontinuous scatter of Late Byzantine-Early Ottoman finds. They represent around 6% of the collections, including the handful of coarse pottery fragments that could belong to the possible Medieval assemblage (map V_28b, graph 23). The maximum density of Late Byzantine-Early Ottoman finds on grid 25 is 2 fragments per 100 sq meters. This is a four-fold increase in comparison to the transect survey records. Even if we allow for a similar increase on field block 168, the "core" of this cluster, the maximum density recorded by the grid survey would barely reach 4 fragments per 100 sq meters. In terms of number of collected finds, 4 fragments were collected from field block 168, 1 or 2 from the rest of the field blocks forming this group. The maximum amounts collected by the grid survey are 3 shards per unit on grid 25 and hypothetical 6 fragments per grid unit on field block 168. It has to be stressed that visibility conditions on all of these field units were excellent. At the time of the transect collections they were freshly plowed fields, while during the grid collections they were covered by a sparse turf.

It is not so much the low quantities of finds and the lack of a full domestic assemblage that casts doubts over the character of this material, as the occurrence of similar densities on a number of other field units in the northern half of the survey area (map V_27a). About 170 meters to the south of field block 168 on field block 207, the transect collections recorded over 6.5 fragments per 1000 sq meters or a total of 5 Late Byzantine-Early Ottoman finds. Nearly 3 fragments per 1000 sq meters were recorded on field block 198, only about 30 meters to the north of field block 207. To the west and north of field block 168, artifact density climbs to over 2 fragments per 1000 sq meters on a number of field units in the northwest corner of the survey. In terms of artifact density field blocks 158, 170a and 174a differ little from field blocks 171 or 172; indeed some of them are ranked even higher in terms of artifact density. Further south along the top of the western ridge and along its lower terraces, the carpet of the Late Byzantine-

Early Ottoman material becomes thinner and patchier. On the great majority of field units to the south and east of field block 207, the transect collections yielded but a single fragment datable to this period. However on field block 223, on the lower terraces and about 300 meters southeast of the group of field blocks 168-172, artifact density increases again to over 6 fragments per 1000 sq meters.

On the floor of the surveyed basin, in the northern half of the central survey section, the concentration of field blocks featuring Late Byzantine-Early Ottoman material is hardly diminished. They don't form compact and structured clusters such as the one on field blocks 168-172, but they are closely spaced covering nearly 40% of the surface in this survey section. Two larger groups of field blocks came to light. One includes field blocks 123, 126, 131, 133-134, located between the Skopje-Kučevište road and a converging dirt-road coming from the north. The second group consisting of field blocks 91-93, 97a-b and 101b is situated further east, towards the foot of the eastern ridge. On these field units forming a nearly continuous stretch, the individual transect collections recorded a somewhat lower artifact density. It ranges between 1.5 and 3.3 fragments per 1000 sq meters. However it has to be stressed that on average these field units are not only larger, but were also less thoroughly transected than field blocks on the western ridge. As mentioned before on the western ridge the collections by transect units regularly included at least 50% of the material counted, but in the central survey sections often less than 40% of the counted finds were gathered. Theoretically this can have a considerable effect on the density of Late Byzantine-Early Ottoman finds, especially on field blocks 123, 126, 134, 97a and 97b where we collected only between 15 and 30% of the material counted. Assuming that all finds counted by individual transect units were collected, artifact density will increase considerably: 5 and 8 fragments on field blocks 123 and 126, 13 fragments on field block 129, 11 and 20 fragments on field blocks 97a-b, to over 26 fragments per 1000 sq meters on field 134, which is also the maximum for the entire survey area (map V_27b). But looking at the situation on the western ridge, the potential artifact densities are not much lower. Were all finds collected, the density of the Late Byzantine-Early Ottoman shards will increase to 14 fragments on field block 168, 15 on field block 207, 13 on field block 223 and the maximum of 19 and 25 fragments per 1000 sq meters on field blocks 211a and 212a, the latter partly covered by the grid survey. Thus despite the considerable increase in artifact density on certain field units, such as field blocks 97a-b, 134 or 211a, the overall pattern is hardly affected by the inconsistencies in the collections by individual transect units. Admittedly the differences between field blocks become slightly more pronounced approaching the density range of the Medieval assemblage, which we know comprised an on-site cluster. This fact however hardly challenges the off-site character of the Late Byzantine-Early Ottoman material. Instead of the characteristic pattern of concentric zones of decreasing artifact density, field blocks featuring over 10 fragments per 1000 sq meters appear isolated or in pairs and are randomly dispersed across the northwest survey quarter. They are mostly unrelated to field units featuring less than 10 or 5 fragments per 1000 sq meters. Finally, assuming that all counted material was collected shows that the group of field blocks 168-172 is not an isolated example. Another group of field blocks featuring even higher artifact densities appears about 250 meters to the south, including field blocks 211a-212a, 216 and 214. The groups of field units in the northern half of the central survey section form clusters of similar density and extent.

The decline in the density of the Late Byzantine-Early Ottoman finds on the eastern ridge and in the southern halves of the western and central survey sections is evident. The inconsistencies in the collections by individual transects have a negligible effect on field units in these survey sections. Artifact densities higher than 4.5 fragments per 1000 sq meters were only recorded on field blocks 49. It stands isolated on the lower terraces of the eastern ridge. On the surrounding field units, artifact density drops below 1.5 fragments per 1000 sq meters. Only field blocks 88a and 292 towards the central survey section feature artifact densities higher than 2.5 fragments per 1000 sq meters. The situation is barely changed if we assume that all counted material was collected. Artifact density further increases on field block 49 reaching to over 17 fragments per 1000 sq meters, which ranks it higher than most field units in the central survey section and on the western ridge. There is a far more prominent increase on field blocks 40a and 34, both covered by the total grid survey (grids 1 and 2). Theoretically these two field units could feature 13 and 7 fragments per 1000 sq meters.

On the southern half of the eastern ridge and in the central survey section artifact densities are in general lower than 4.4 fragments per 1000 sq meters. In fact only three field units featured over 2.5 fragments per 1000 sq meters: field block 327 near the top of the ridge and field blocks 368a and 385a on the floor of the basin. They are separated by larger sterile stretches, interrupted by low concentrations on isolated or pairs of field blocks. As the total surface record in these survey sections is also sparser, assuming that total collections by individual transect were carried out will make little difference in the density and distribution of Late Byzantine-Early Ottoman finds. The artifact density increases proportionally on almost all field units. On field blocks 327 and 368a it reaches the district maximum of approximately 7 fragments per 1000 sq meters, while on the majority of field blocks it remains below 5 fragments per 1000 sq meters. Exceptions are field block 321 on the upper terraces and field block 382a near the southern survey limit. On these two field units the density of the Late Byzantine-Early Ottoman finds could potentially increase to 9 and 6 fragments per 1000 sq meters.

This trend of decreasing artifact density continues in the southern half of the western ridge. Of the six field units on which the transect collections included Late Byzantine-Early Ottoman finds, only field block 413 featured density higher than 2.5 fragments per 1000 sq meters. Note however the small size of this field unit. In principle one fragment was collected from each of the six field blocks randomly scattered across the survey section. Assuming that all counted material was collected will merely increase the maximum density to about 5 fragments per 1000 sq meters on field block 463b, on the upper terraces of the western ridge.

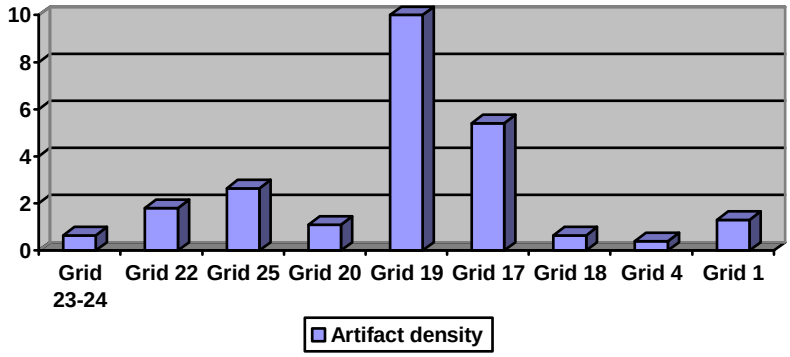
A number of field units featuring artifact densities higher than 4 fragments per 1000 sq meters were included in the total grid survey by chance (map V_28a). Apart from field blocks 169-172 entirely or partly covered by grid 25, the regular grid survey included field blocks 212a, where artifact densities could increase to over 19 fragments per 1000 sq meters, field blocks 126 and 129 with 8 and 13 fragments per 1000 sq meters and field blocks 34 and 40a with 7 and 12 fragments per 1000 sq meters. The total collections by grid units confirmed the absence of archaeological sites from this period, even on field blocks featuring some of the highest artifact densities according to the transect survey. On certain field units and most prominently on field blocks 34, 40a and 212a, the total grid survey revealed maximal densities lower than those predicted on the

basis of the transect record. On grids 1, 2 and 22 covering these field blocks, the maximum density never exceeds 10 fragments per 1000 sq meters and the average densities on the gridded areas are very close to the densities recorded by the individual transect collections. Recall that this was also the case with the off-site carpet of Roman material; the discrepancies between the densities recorded by the transect and the grid surveys were much lower than in the zones of on-site density. The thin scatters revealed on grids 1, 2 and 22 resemble the distribution of the Late Roman finds on a field block level. They cover greater portions of the gridded areas, but the difference between the minimal and maximal densities is negligible and there is no visible patterning.

Identical situation was revealed on grids 16, 17 and as we saw, on grid 25 (map V_28b). In these cases the increased artifact density indicated by the transect collections was confirmed and on some grid units the total grid survey recorded 2 fragments per 100 sq meters. The carpet of Late Byzantine-Early Ottoman finds is evidently denser, as on a number of grid units we recorded over 1 fragment per 100 sq meters, but the range between the minimum and the maximum density remains low and there lacks a clear focus.

Small quantities of Late Byzantine-Early Ottoman finds were gathered even from grids covering field blocks that were sterile according to the transect collections. In fact the greatest concentration of Late Byzantine-Early Ottoman material in this survey area was discovered on field block 263, covered by grid 19. Here on four contingent grid units the total grid survey recorded a density of about 3 fragments per 100 sq meters, although the Late Byzantine-Early Ottoman finds were completely absent among the transect collections. This must be related to the fact that transect collections from this field unit were simply less intensive, as it was decided to save the surface record for the total grid survey. Although even denser than the scatters on grids 16 and 25, this cluster also lacks the typical on-site signature. Finds datable to the Late Byzantine-Early Ottoman Period are more or less evenly distributed across the gridded area.

Graph 24: Average density of LB-EO finds by gridded areas (in 1000 sq meters)



In conclusion to this section we compare the average densities recorded by the total survey on grids covering different portions of the survey area. As observed in the analysis of the distribution of the Late Roman finds, the grid survey with its limited focus doesn't offer the best record of overall trends. The gridded areas aren't necessarily representative of the entire section and overall linear trends are almost completely overwhelmed by local densities. At the same time however, the total grid survey does

provide a more accurate estimate of the true amounts of material on the surface than the individual transect collections.

One quickly notices the similarities with the distribution of the Late Roman finds by gridded sections (cf. graph 22). By far the highest artifact densities were recorded on grids covering part of the central survey section and the differences between the artifact densities recorded on grids covering the eastern and western ridge were slight. In the case of the Late Byzantine-Early Ottoman material the differences in artifact density are somewhat more pronounced, although they remain within the range established by the individual transect collections. But unlike the Late Roman material, finds dating to the Late Byzantine-Early Ottoman Period are not concentrated in the northern half of the central survey section. Although the total collections from grid 17 produced one of the highest concentrations of Late Byzantine-Early Ottoman shards or over 5 fragments per 1000 sq meters, this is still almost twice as low as the density recorded on grid 19 in the central part of the section. For the Late Byzantine-Early Ottoman collection the decline on the northernmost grid 18 is much sharper, with artifact density plummeting well below 1 fragment per 1000 sq meters.

Unlike the Late Roman material the total grid survey picked up linear increasing tendencies, both along the eastern and the western ridge. On the eastern ridge the density of the Late Byzantine-Early Ottoman material grows from slightly over 0.3 fragments per 1000 sq meters on grid 4 covering the central portions of the ridge, to nearly 1.5 fragments on grid 1, in the northern half of the ridge. On grids covering the lower terraces of the eastern ridge (grids 9, 10, 12-13), the average density is even lower, never exceeding 0.5 fragments per 1000 sq meters. On the western ridge too, there is a gradual increase along a south-north axis: 0.5 fragments per 1000 sq meters were recorded on grids 23-24, almost 2 fragments on grid 22 in the central parts of the ridge and 2.5 fragments per 1000 sq meters on grid 25, near the northern survey limit. As we saw however this increase on grid 25 covering the possible Medieval site is slightly dubious because it includes a category of coarse fabrics that is not securely dated. This doesn't challenge the fact that finds datable to the Late Byzantine-Early Ottoman Period are at least slightly more numerous on the western than on the eastern ridge.

As with the Late Roman material, we were surprised to discover such high artifact densities on grids covering the central survey section. According to the total grid survey they aren't equal, but sometimes several times higher than the densities recorded on the western ridge. This could be related to the fact that for the greater part, the total grid survey on the western ridge missed the field blocks on which the transect collections indicated higher densities of the Late Byzantine-Early Ottoman finds. After all on some grids in the central survey section (grids 18, 20 and 27) the artifact density also dropped below 1 fragment per 1000 sq meters. Nevertheless although grids 22 and 25 covered field blocks on which the transect survey indicated higher concentrations of Late Byzantine-Early Ottoman finds, the average artifact densities were 2.5 to 5 times lower than on grids 17 and 19. This sharp difference between the artifact densities on the central survey section and on the western or the eastern ridge applies not only to the Late Roman material, but also to the off-site carpet of Roman finds. Recall that on grid 19 we also recorded increased densities of Roman material, which could neither be upgraded to an on-site status nor could be related to the halo of a nearby site. Initially it was even thought that the elevated densities on some of the field blocks along the Skopje-

Kučevište asphalt road might be related to the extreme fragmentation of the surface material. Grids 15-17 and 19 cover finely harrowed gardens and the increased artifact density could ultimately stem from the modern land-use. At the same time we shouldn't exclude the possibility that the off-site carpet on these fields was truly denser; a result of more intensive exploitation and manuring over the course of at least three different historical periods. As discussed in chapter IV, this section probably hosts the most fertile soils in the survey area and it is likely that they were among the most intensely cultivated sections of the basin[13].

App IV.1.6 The Late Ottoman-Early Modern Period (18th-20th century, table 28, graph 25-27, maps V_29a-b, V_30-32)

Table 28: Amount and distribution of finds datable to the Late Ottoman-Early Modern Period

Total amount and percentage	6347; 55.10%
Mean overall density(grid and transect)	42 per 1000 sq m; 6.8 per 1000 sq m
Min/Max density	0/34 per 100 sq m.
Site area	/
Total dispersal area	ca 935 000 sq meters

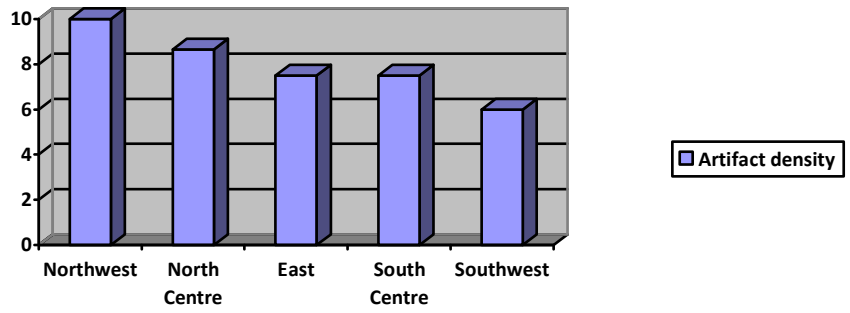
Most of the figures given in table 28 are a gross underestimate of the actual amount and density of this material. Even after the discard of more than half of the Late Ottoman-Early Modern finds from the total collections, they still represent over 55% of the material studied. If all collected material was kept, they would have probably represented nearly 75% of the total surface record. Consequently the mean overall densities recorded by the grid and transect survey are also 50 to 75% higher than the given estimates. Were all collected finds included in the analysis, the mean overall artifact densities would have increased to nearly 75 fragments per 1000 sq meters of total grid survey and over 13 fragments per 1000 sq meters of transect survey. These figures not only indicate the very large amounts of surface material datable to the past couple of centuries, but they also reveal that this dense carpet of surface finds is spread over a larger area. As in the cases of the Late Roman and the Late Byzantine-Early Ottoman collections, the artifact density recorded by the total grid survey is only about 2.5 times the density records of the transect survey corrected for the visibility conditions and the lesser survey intensity. This is also indicated by the maximum density recorded by the total grid survey. Although the true maximum density is probably 100% higher than the given 34 fragments per 100 sq meters, it still wouldn't be much higher than the maximum density of Roman finds. Recall that the latter also constitute a considerable portion of the discarded material in the majority of the total grid collections. Thus despite the fact that finds datable to the Late Ottoman-Early Modern Period are at least three times more numerous than the Roman finds in the total surface record, their maximum density is not much greater than the maximum density of the Roman material. Except for field blocks

[13] Cf. R. Shiel, A. Stewart, The soils and agricultural potential of the Thespiai area, 95-109, J. Bintliff, P. Howard, A. Snodgrass et al, 2007; R. Jones, ed. *Manure Matters: Historical, Archaeological and Ethnographic Perspectives*, Ashgate 2012.

lacking surface material or where data were missing, this material covers the entire surveyed surface of over 1 sq km.

Considering only the raw transect survey records, not compensating for the less intensive collections and the variable visibility conditions, the mean overall density of the Late Ottoman-Early Modern finds is almost 7 fragments per 1000 sq meters. If we compare the average values for the separate survey sections, the northern half of the western ridge clearly stands apart with over 10 fragments per 1000 sq meters (graph 25). In the northern half of the central survey section, the average density of Late Ottoman-Early Modern finds drops to 8.65 fragments per 1000 sq meters and to 7.5 fragments along the eastern ridge and in the southern half of the central survey section. A more dramatic decline was recorded on the southern half of the western ridge, with average densities of less than 6 fragments per 1000 sq meters of transect survey. These relatively subtle changes in the average densities are another indicator of the even dispersal of the finds datable to this period.

Graph 25: Average density of LO-EM finds across different survey sections, in 1000 sq meters.



At a first sight there lacks a clear overall distribution pattern of the finds datable to the Late Ottoman-Early Modern Period. Very high densities were recorded on about 10% of the field units, dispersed across various portions of the survey area (map V_29a). On these field units artifact density ranged between 17 and 50 fragments per 1000 sq meters. They appear isolated, in pairs or form larger clusters of several contingent field units occupying a couple of hectares. Field units ranked second by the density of Late Ottoman-Early Modern finds with between 9 and 17 fragments per 1000 sq meters follow the same pattern, though they are more widespread appearing on the survey's southern periphery. They constitute about 21% of all field blocks. The most numerous group of field blocks representing almost 28% of the survey area featured between 4 and 9 fragments per 1000 sq meters, which encompasses the survey and most of the district averages. This is also the most evenly spread group of field units; their dispersal across the survey area is almost isotropic. On the rest of the field units, the transect survey recorded less than 4 fragments per 1000 sq meters: between 0.7 and 4.1 fragments on 27% and less than 0.7 fragments per 1000 sq meters on 14% of the field units. These two categories are evidently clustered in the southern and eastern parts of the survey, although they appear sporadically on the northern periphery. It should be recalled that some of the field blocks belonging to the last category also include units for which data were missing.

Thus there is an overall pattern of decline along the northwest-southeast and the north-south axes, albeit a faint one. In order to get a better insight into the dispersal structure of the off-site carpet we'll analyze the distribution of the various zones of artifact density, section by section.

The greatest concentration or nearly half of the group of field units with the highest artifact density are situated in the northwest quarter of the survey area. On 23 field blocks in this section of the survey, we recorded over 17 Late Ottoman and Early Modern shards per 1000 sq meters. One of these field blocks, 174a on the survey's northwest limit featured the maximum density of Late Ottoman-Early Modern finds recorded by the transect survey or over 51 fragments per 1000 sq meters. But this could very well reflect the unusually small size of the field unit. More commonly the transect survey recorded between 17 and 30 fragments per 1000 sq meters. Larger concentrations were discovered on field blocks 168, 183-184 and on field blocks 205a and 207, about 140 meters to the south. While they aren't necessarily contiguous, these field units are always surrounded by a more extensive zone with artifact densities ranging between 9 and 17 fragments per 1000 sq meters. This latter group constitutes slightly over 20% of all field units, but in the northwest section they cover roughly half of the surveyed area. Field blocks featuring less than 10 Late Ottoman-Early Modern shards per 1000 sq meters are a minority in this survey section, although they still represent over 30% of all field units in the northwest survey quarter. They are visibly concentrated in the eastern half of the section, on the lower slopes of the western ridge. The bulk of the finds was collected from field units covering the summit and the upper portion of the western ridge.

A more drastic decrease in the quantities of Late Ottoman-Early Modern material was documented in the southern half of the western ridge or in the southwest survey sector (map V_29a). Only on about 10% of the field walking units did the transect survey record over 10 fragments per 1000 sq meters and only 5% featured over 17 fragments per 1000 sq meters. Two groups of field blocks in the northern end of the section stand out with artifact densities ranging between 17 and 25 shards per 1000 sq meters. These are field units 230-233 and 496-497, about 100 meters to the south. Unlike in the northwest section these clusters are surrounded by field units featuring less than 9 fragments per 1000 sq meters. The increase on these field units from the surrounding background is at least threefold, which explains why both groups were included in the total grid survey. Filed units featuring less than 9 fragments per 1000 sq meters cover nearly 90% of the surface in this survey section. Evidently in this part of the surveyed basin, the density of Late Ottoman-Early Modern finds declines proportionally to the decline in the density of the total surface record. Field blocks featuring over 17 fragments per 1000 sq meters never appear at a distance greater than 2 kilometers from the centre of the village, although a thinner off-site carpet continues to spread indefinitely along the crest and the slope of the western ridge.

Such fluctuations cannot be observed on field blocks along the central axis of the surveyed basin. Here both the overall volume of surface material and the Late Ottoman-Early Modern off-site carpet are more evenly dispersed. Less than 10% of the field units belong to the group of field blocks with very high density of Late Ottoman-Early Modern finds, but about 50% of the field units feature between 9 and 17 fragments per 1000 sq meters. The dozen field units featuring artifact densities higher than 17 fragments per 1000 sq meters appear isolated or in smaller groups along the Skopje-Kučevište asphalt

road. Somewhat unexpectedly we recorded between 13 and 27 fragments per 1000 sq meters on a group of 6 contingent field blocks near the southern limit of the survey, 2.3 kilometers south of the village centre on field blocks 382-385a/b. Significantly all but the pair of field units 403 and 404 are on the eastern, lower side of the road. As in the northwest section, field units ranked second by the density of the Late Ottoman-Early Modern finds accompany the field blocks with the highest artifact density. Less than 20% of the field blocks in the central survey section featured artifact densities lower than 4 fragments per 1000 sq meters. Like field units belonging to the zone of higher artifact density they are evenly distributed along the road.

Over to the eastern third of the survey area, there is a barely visible thinning out of the off-site carpet of Late Ottoman-Early Modern material. Only 16 out of 245 field units belong to the category of very high artifact density. However atypically for off-site scatters, they are mainly concentrated in two groups; one in the northeast corner of the survey completely covered by grid 1 (field blocks 39a-40a, 60), the other 400 meters to the south, partly covered by grids 9, 12 and 13 (field blocks 300-302, 287). Moreover these clusters are in both cases surrounded by field blocks featuring between 9 and 17 fragments per 1000 sq meters, creating larger concentric zones of higher than average artifact density. On the great majority of field blocks in this survey section, the transect survey recorded less than 9 Late Ottoman-Early Modern shards per 1000 sq meters, while nearly 50% featured less than 4 fragments per 1000 sq meters. This further accentuates the concentric pattern revealed on the two groups of field blocks covered by grids 1, 12 and 13. Both clusters look very much like foci of intense residential activities; they are practically mimicking the distribution of Roman material in the same survey section. The total grid survey was actually aiming to cover precisely these two zones of higher artifact density. Further confusing the interpretation, the Late Ottoman-Early Modern material suddenly disappears from the surface on field blocks 2-6 or 351 on the survey's eastern periphery, where we discovered Roman sites. A few hundred meters away on field block 320, where the Roman cluster on grid 6 was discovered, both the transect and the grid survey recorded a very high density of Late Ottoman-Early Modern material (map V_29a).

At a first sight, these peculiar patterns seem impossible to explain. Evidently the sudden peaks and depressions in the quantity of the Late Ottoman-Early Modern off-site debris are unrelated to access. The group of field blocks 300-302 and 287 in particular lies hundreds of meters away from the local dirt-roads linking the fields with the main local roads. The same is true for the field bocks covered by grid 1, situated at an equal distance from the Skopje-Pobužje road and the dirt road that provides access to fields in the northeast quarter of the survey. On the other hand the Roman sites revealed on field blocks 351 and 2-6 (grid 26, 5-11), although situated along the roads were almost completely free of off-site material. To be sure similar irregularities were observed in the off-site distribution of the material from other periods and in the off-site carpet in the Sopot survey. But in these cases larger concentrations of off-site debris were usually confined to isolated field walking units and rarely on a pair of neighbouring units. As argued in the main discussion, it is very unlikely that these are the remains of forgotten non-residential activities, such as agricultural sheds or winter camps for the herds. Even allowing for the possibility that they were completely erased from the landscape in the past century, it is impossible that they've produced such extensive surface scatters. At the

same time in terms of size and density, these clusters are undistinguishable from the more evenly distributed clusters in the central and the western survey sections. In principle, the two zones of higher artifact density on the eastern ridge are better articulated on the density map because they are separated by wide stretches of artifact density lower than the survey average. On the northern half of the western ridge and in the central survey section, the variations between neighbouring field units are less pronounced and the zones of higher artifact density are more closely spaced. As with the Late Byzantine-Early Ottoman and the Late Roman collections, it seems that the carpet is becoming denser towards the northwest quarter of the survey, while the maximum densities remain fairly stable at about 30 fragments per 1000 sq meters.

The overall pattern of distribution by field blocks doesn't change considerably, even assuming that total collections were carried out on all field blocks (map v_29b). The northwest quarter of the surveyed basin still features a visibly higher artifact density, although the northern half of the western ridge loses its prominence, especially the smaller field units in the northwest corner of the survey. Field blocks in the northern half of the central survey section feature higher artifact densities, especially field blocks 118, 97a/b and 134. On the western ridge the maximum density has shifted to the central portion of the ridge, on field blocks 205a, 207, 212a and 212b. Understandably assuming that all counted material was collected the overall densities are also increased. The maximum densities on the western ridge range from 50 and 70 fragments on field blocks 205a and 207, to 65 and 93 fragments on field blocks 231 and 230 and to 72 and 112 fragments per 1000 sq meters on field blocks 212a-b. Even higher densities are predicted for the northern half of the central survey section: 51 fragments on field block 133, 65 on field blocks 129 and 134 where transect collections recorded less than 10 fragments per 1000 sq meters, to nearly 100 and 120 fragments per 1000 sq meters on field blocks 118 and 97b. Note that the increase is higher but comparable to that predicted for the Late Byzantine-Early Ottoman collection, the hypothetical maximum densities being three times the maximum densities recorded by the individual transect collections. As this increment is more or less proportional on all field blocks on which this material was present in the transect collections, the changes in the distribution patterns are relatively slight. While in the northern half of the western ridge some of the field blocks were relegated from the zone of highest to the zone of higher than average artifact density, in the northern half of the central survey section the zone of highest artifact density expanded over field blocks 124, 126, 129 and 134 (covered by grids 15-18) towards the northern survey limit.

On the eastern ridge the changes are somewhat more significant. The cluster revealed on the upper terraces covered by field blocks 38a/b-40a/b (grid 1) becomes considerably denser with artifact densities ranging from 70 on field blocks 39a-40a, to 77 on field block 38b, 125 on field block 38a and 172 fragments per 1000 sq meters on field block 40a, the maximum density of Late Ottoman-Early Modern finds in the second survey. This makes it the largest and the densest concentration of Late Ottoman-Early Modern material, but at the same time it spoils the seemingly concentric pattern indicated by the transect collections. Were all counted finds included in the collections, the group of field blocks covered by grid 1 would have emerged as an isolated island of high artifact density, as on the neighbouring field units the increase is much lower. The second concentration spread over the lower terraces of the ridge is evidently thinner, although

now it extends across the entire width of the ridge, perfectly coinciding with the zone of very high overall artifact density. On what was assumed to be the core of this zone, field blocks 300-302 and 287, the artifact densities never reaches the limit of 60 fragments per 1000 sq meters. The density of the Late Ottoman-Early Modern finds could theoretically rise to 45 fragments on field block 288a and 55 fragments per 1000 sq meters on field blocks 287 and 300. The maximum artifact densities move towards the eastern survey limit, to field blocks 318 with 60 fragments and field blocks 320 and 328b featuring 82 and 88 fragments per 1000 sq meters. In this case too, the onsite-like distribution disappears, replaced by a 500 meters long belt of high artifact density stretching along the terrace delimited by the contour lines of 490 and 480 meters above the sea.

In the southern half of the survey area, the inconsistencies in the collections by individual transects bear little effect on the pattern revealed. Assuming that all counted material was collected wouldn't affect the main concentrations spreading over field blocks 382a-385b in the central survey section and on field blocks 230-233 and 495-497 on the western ridge. The maximal densities remain visibly lower than those predicted for the northern survey sections. On the floor of the basin, the density of the Late Ottoman-Early Modern finds would have ranged from about 20 fragments on field blocks 383a-b and 384 to nearly 40 fragments per 1000 sq meters on field blocks 385a and 276b, outside this group. In fact the sharpest increase is on field block 277b, which being selected for total grid collections was transected less thoroughly. On the southern half of the western ridge the zone of highest artifact density is even more limited. Around 30 fragments per 1000 sq meters were predicted for field blocks 496 and 497 and 35 and 60 for field blocks 403 and 404, at the foot of the ridge.

Thus assuming that all material counted was included in the individual transect collections and that the collected finds are a representative sample of the total surface record has a similar effect as it did on the carpet of Late Byzantine-Early Ottoman finds. Artifact densities become slightly higher in the northern half of the central survey section and in addition, the concentrations of Late Ottoman-Early Modern finds on the eastern ridge gain in prominence and extent. The differences between the zones of very low and very high artifact density are predictably even more pronounced, but the seemingly concentric patterns become totally blurred. Overall however, the earlier observation of a linear increase along a south-north and southeast-northwest axis is still valid.

Turning to the results of the total grid surveys, the picture becomes somewhat clearer (map V_30). One firstly notices that for certain field units the predicted values are much closer to the true amount of surface material than those indicated by the selective transect collections. The most apparent examples are field blocks 125 and 129, covered by grids 15 and 17 (map V_31). On these two field blocks the collections by individual transect units recorded average and lower than average densities of Late Ottoman-Early Modern finds, although the number of finds collected suggested that the true density could be much higher. This was confirmed with the total collections by regular grid units. Some of the highest concentrations of Late Ottoman-Early Modern finds were collected from grids 15 and 17, reaching to over 20 fragments per 100 sq meters on certain grid units or almost 5 times the mean density recorded by the grid survey. On the other hand, on several field blocks belonging to the category of very high artifact density according to the transect survey, the grid survey collections yielded relatively humble quantities of Late Ottoman-Early Modern finds. Such was the case with the total collections from grids

13 and 12 or the collections from grids covering portions of the western ridge, grids 21-24 (map V_32). In all of these cases the total grid survey covered field blocks featuring over 20 fragments per 1000 sq meters of transect survey and the predicted values were much higher. In this respect one would expect to encounter similar quantities to those recorded on grids 15-17. Indeed according to the transect survey, field blocks 212a and 212b covered by grid 22 could feature over 110 and 70 fragments, while on field blocks 387 or 300 covered by grids 12 and 13, theoretically the artifact density could rise to over 50 fragments per 1000 sq meters. Yet the total grid survey rarely recorded maximum densities higher than 6-7 fragments per 100 sq meters. Similar mismatches between the transect and the grid survey results were already observed while discussing the distribution of the Roman material and they were also present in the first survey area. It can be related to a number of potential factors including changing surface conditions, but the size and the quality of the surface material seem to be among the most decisive. On most of the field units where the transect survey overestimated the quantities of the Late Ottoman-Early Modern finds, there were larger amounts of architectural ceramics on the surface. This is particularly evident on field blocks featuring very high artifact density on the western ridge, but also on the group of field blocks covered by grids 12 and 13, on the eastern ridge (map V_30). In contrast field blocks 125 and 129, like most other field blocks in the central survey section lack larger amounts of architectural ceramics. It follows that the discussed zones of higher artifact density were in fact average scatters consisting of larger concentrations of architectural ceramics. They were simply more obtrusive than the much larger concentrations of worn pottery fragments on field blocks along the Skopje-Kučevište asphalt road.

On a micro-level within the limits of single grids, the fluctuation in artifact densities can also be quite significant. On certain grids the material is evenly distributed across the gridded area, while on others there are considerable variations, sometimes resulting in non-random patterns of distribution. The first group includes grids on which finds datable to the Late Ottoman-Early Modern Period were present in smaller quantities, such as grids 25, 22, 12, 18, 27, 2 and 26. On these grids the total survey revealed thin, discontinuous scatters, with artifact density varying between 0.6 and 6 fragments per 100 sq meters. Regarding the lack of focus and inner structure, they are identical to the off-site segments of the Late Byzantine-Early Ottoman or the Late Roman material. To this group of grids we may add grid 19, where the total collections also revealed an even carpet covering most of the gridded area, but the densities were much higher (map V_32). On three contingent units in the central part of the grid, artifact density rose to over 30 fragments per 100 sq meters, including the survey's maximum of 34 fragments per 100 sq meters. We repeat that the figures shown on the thematic map don't include the entire collections. In reality the maximum density could be almost 100% higher on most of the grids.

On the other group including grids 1, 10, 13, 15-17, 21 and 23-24, the differences between the maximum and minimum recorded densities are more considerable (map V_31, 32). They can range from 0.6 fragments per 100 sq meters to over 10 fragments on grids 23-24, 20 fragments on grids 21, 16 and 17, to 25 fragments on grids 1 and 15. In some of these cases such as grids 15 or 17, the fluctuations are almost random, but in others the bulk of the material is evidently concentrated on certain portion of the gridded area. For example, on grid 23-24 there is an evident concentration of the Late Ottoman-

Early Modern material in the central part of the grid. A group of several contingent grid units feature about 10 fragments per 100 sq meters. They are surrounded by a zone of grid units featuring between 5 and 6 fragments per 100 sq meters, while further away from the core, the density of Late Ottoman-Early Modern finds drops below 2-3 fragments per 100 sq meters. Another example of a roughly concentric pattern is the substantial concentration collected from grid 1. Here we have two "cores" separated by a zone of lower artifact density. One, larger and better articulated is located in the southern half of the gridded area; the second comprising an elongated, discontinuous patch was limited to the northern third of the grid. Similar but smaller and thinner "cores" were revealed on grids 10 or 21.

Thus the distribution pattern of the Late Ottoman-Early Modern material exhibits the characteristic on-site signature, both across larger survey sections and on a field block level. To a certain degree this presents a problem of interpretation, because quantitatively one cannot distinguish between the clusters of Roman material and these anomalous peaks in the off-site carpet from the past couple of centuries. The range between the minimum and maximum values is similar or even higher than that for the Roman material and the "cores" are often separated by zones of intermediary artifact density. Looking more closely at the distribution on a micro-level, it becomes clear that this resemblance is only superfluous. Both on grids 1 and 23-24, the problematic cores coincide almost perfectly with field units on which the transect survey indicated higher artifact density. On grid 1 the southern core mostly covers field block 38a, where the transect survey recorded around 15 fragments per 1000 sq meters or over 120 were all finds collected. The smaller northern core receives its elongated shape thanks to the fact that grid units featuring over 10 fragments per 100 sq meters are mostly limited to field blocks 40a and 40b, with theoretical densities of 170 and 77 fragments per 1000 sq meters. Outside the limits of these fields, in the central portion of the grid and along its northern periphery, artifact density drops below 10 fragments per 100 sq meters. On grids 23-24 too, the core in the central parts of the grid coincides with field block 496. According to the transect survey, on this field artifact density was the highest among the field units covered by grids 23-24. On both grids the total survey merely confirmed the results of the transect survey.

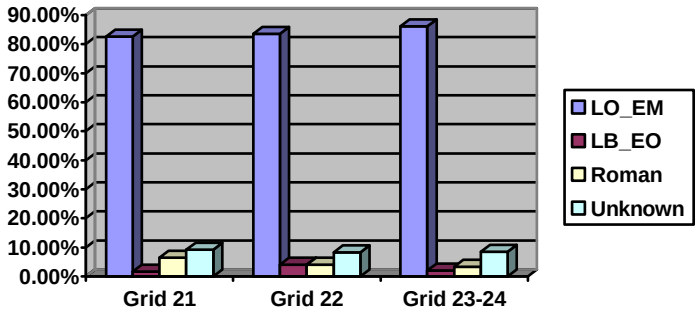
It is no accident that the Late Ottoman-Early Modern off-site carpet exhibits the greatest degree of patterning precisely on those grids that cover more than one contingent field block. As demonstrated by the total survey on grids 2 or 4, this wasn't necessarily the case, but the greatest variations in artifact density are usually observed on grids encompassing more than one field unit. This shouldn't be seen as a surprise or an anomaly. In fact it presents an accurate record of the way in which this material was dispersed across the surface. As there are absolutely no doubts that this material originated from the bringing of unsorted manure on the fields, the observed variations in quantity across the fields merely reflect that fact that manure was brought to each agricultural field separately or perhaps on smaller groups of contingent fields. During the two seasons of fieldwork in Skopian Montenegro, we had a chance to directly observe the way in which manure was dispersed across the fields[14]. Manure was normally brought to

[14] Cf. H. Forbes, Lost souls: Ethnographic observations on manuring practices in a Mediterranean community, 159-172, ed. R. Jones, *Manure Matters: Historical, Archaeological and Ethnographic Perspectives*, Ashgate 2012.

the fields by late summer-early autumn and was piled up on the edge of the field and left for a couple of weeks to further rot and ferment. Immediately prior to ploughing, the material is shoveled onto the selected fields and then with the first ploughing it is dispersed across the entire surface. However this dispersal can hardly be thorough enough to produce an even carpet of artifacts across the entire field. While it is possible to more or less evenly disperse the manure itself, the inorganic rubbish will predictably remain denser on the spot where it was originally dumped, even after years of repetitive ploughing. This creates the roughly concentric patterns, which often closely resemble the characteristic on-site signatures. But unlike on genuine settlement sites, these scatters can hardly spread over neighbouring fields and create extensive site-halos, especially when the fields belong to different owners and are separated by hedges or terraces. Hence the fairly dense concentrations recorded on grid 1 suddenly disappear on the fields covered by grid 2 and situated on a lower terrace. In essence the roughly concentric pattern in the distribution of off-site finds observed on certain grids is perhaps paralleled by the narrow bands of intermediary density surrounding almost every site in the survey areas. Both phenomena could be related to secondary dispersal or smearing of the original cluster.

Finally on a third group of grids, the material datable to the last couple of centuries was almost completely absent. These are grids 5-11 and 8 on the top of the eastern ridge and grids 14 and 20 on its lower terraces and on the basin's floor. As we saw in the section dealing with the distribution of the Roman finds, the Late Ottoman-Early Modern finds represent less than 10% of the total surface record on these locations. On the rest of the grids this material represented at least 50% of the finds collected, while on grids lacking remains from other periods it can represent up to 80-90% of the total surface record. Such was the chronological profile of the total collections from grids 21, 22 and 23-24 covering portions of the western ridge. As shown on graph 26, on all three grids the Late Ottoman-Early Modern material comprises at least 80% of the material studied. The remaining 20% are mostly made up of unidentifiable fragments, Roman and Late Byzantine-Early Ottoman material. It should be stressed that the true percentage of the Late Ottoman-Early Modern finds is certainly higher, most probably exceeding 90% of all finds collected. As on most other grids covering the off-site zone, the majority of the discarded material consisted of fragments of Late Ottoman-Early Modern roof-tiles.

Graph 26: Distribution by periods of the total collections from grids 21, 22 and 23-24

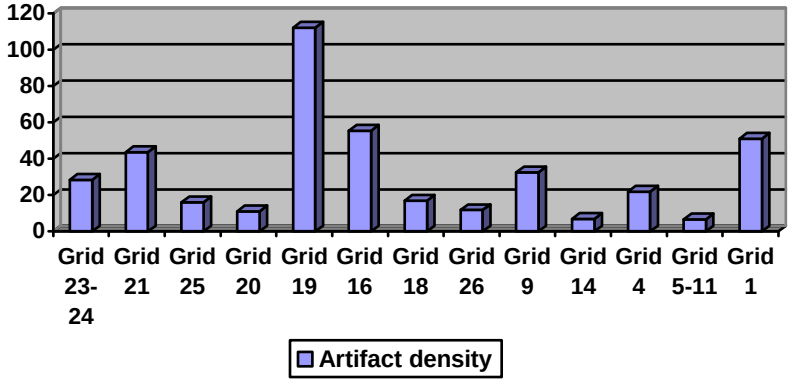


Describing the distribution of the off-site record from the last couple of centuries by field blocks, we observed a more or less clear trend of increase in artifact density

along the south-north and the east-west axes. However a quick look at the density variations within survey sections and between gridded areas will reveal a far more complex picture. As with the Late Byzantine-Early Ottoman and the Late Roman material, when the average densities by gridded areas are compared the linear trends indicated by the transect survey disappear. On the western ridge (the bars to the left on graph 27) the average density increases from 25 fragments per 1000 sq meters on the southernmost pair of grids 23-24, to slightly over 40 fragments on grid 21 covering the central part of the ridge. But this tendency doesn't continue into the northern half of the ridge, because on grid 25 the total grid survey recorded less than 20 fragments per 1000 sq meters. The fluctuations in artifact density are even more dramatic in the central survey section. In the southern half of the sector represented by grid 20, there are barely 10 Late Ottoman-Early Modern shards per 1000 sq meters. Only less than 200 meters to the north, on grid 19 the total grid survey recorded the highest average for the second survey or over 112 fragments per 1000 sq meters. Further north on grid 16, the off-site carpet becomes twice as thin, featuring about 57 fragments per 1000 sq meters. This declining trend continues over to grid 18, towards the northern survey limit. Here the total grid survey recorded less than 20 fragments per 1000 sq meters.

These random fluctuations continue into the eastern third of the survey area. The average densities are not much different than those recorded on the grids on the western ridge, although it has to be pointed out that the artifact densities lower than 10 fragments per 1000 sq meters were recorded on a larger number of grids in this survey section. On the lower terraces of the ridge, the density of these finds ranges from less than 10 fragments on grid 26, to over 30 fragments on grid 9 and dropping to about 5 fragments per 1000 sq meters on grid 14, by the northern survey limit. On the upper terraces too, there lacks a clear linear trend: slightly over 20 fragments were recorded on grid 4, less than 4 fragments on grids 11-5, about 100 meters to the north and over 50 fragments on grid 1 covering the northeast corner of the survey area. Relatively low artifact densities were also recorded on grids 6-8, ranging from 12 fragments on grid 8, 17 on grid 7 to 21 fragments per 1000 sq meters on grid 6.

Graph 27: Average densities of LO-EM finds by grids (in 1000 sq meters)



This brief analysis doesn't challenge the observations made on the basis of the transect survey record. The density of the Late Ottoman-Early Modern off-site carpet decreases from north to south along the western and the eastern ridge and more steadily along the Skopje-Kučevište asphalt road. The average densities recorded by the regular

grids merely reflect local trends and situation. However their comparison revealed two important facts that couldn't be grasped solely on the basis of the transect survey record. These are the very sharp and unpredictable variations in artifact density from field block to field block and the visibly higher densities on certain field units in the central survey section. Recall that very similar trends were observed when the average densities of the Late Byzantine-Early Ottoman and the Late Roman material were compared by gridded areas. In all of these periods the off-site carpet was by far the densest on fields in the central survey section. We believe that this shows that fields on the floor of the surveyed basin were intensively exploited, perhaps even continuously over the past 5-6 centuries.