Boeotian landscapes. A GIS-based study for the reconstruction and interpretation of the archaeological datasets of ancient Boeotia.

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II.3.5

The Northern mountains of the Copais: Hyettia

TOPOGRAPHICAL SETTING

The *chora* is constituted by the mountains and uplands to the N of the Copais basin, on the Eastern shoulder of Mt.Chlomon (1080m asl). It is a real geographical landscape unit, comprised of a small series of linked plains, which deserves to be considered by itself in order to understand upland settlement chambers. Hyettos was probably the largest centre in the area in historical times, with at least one other quite large settlement coexisting (Olmones?[1]).

The area is marked by the presence of a series of upland

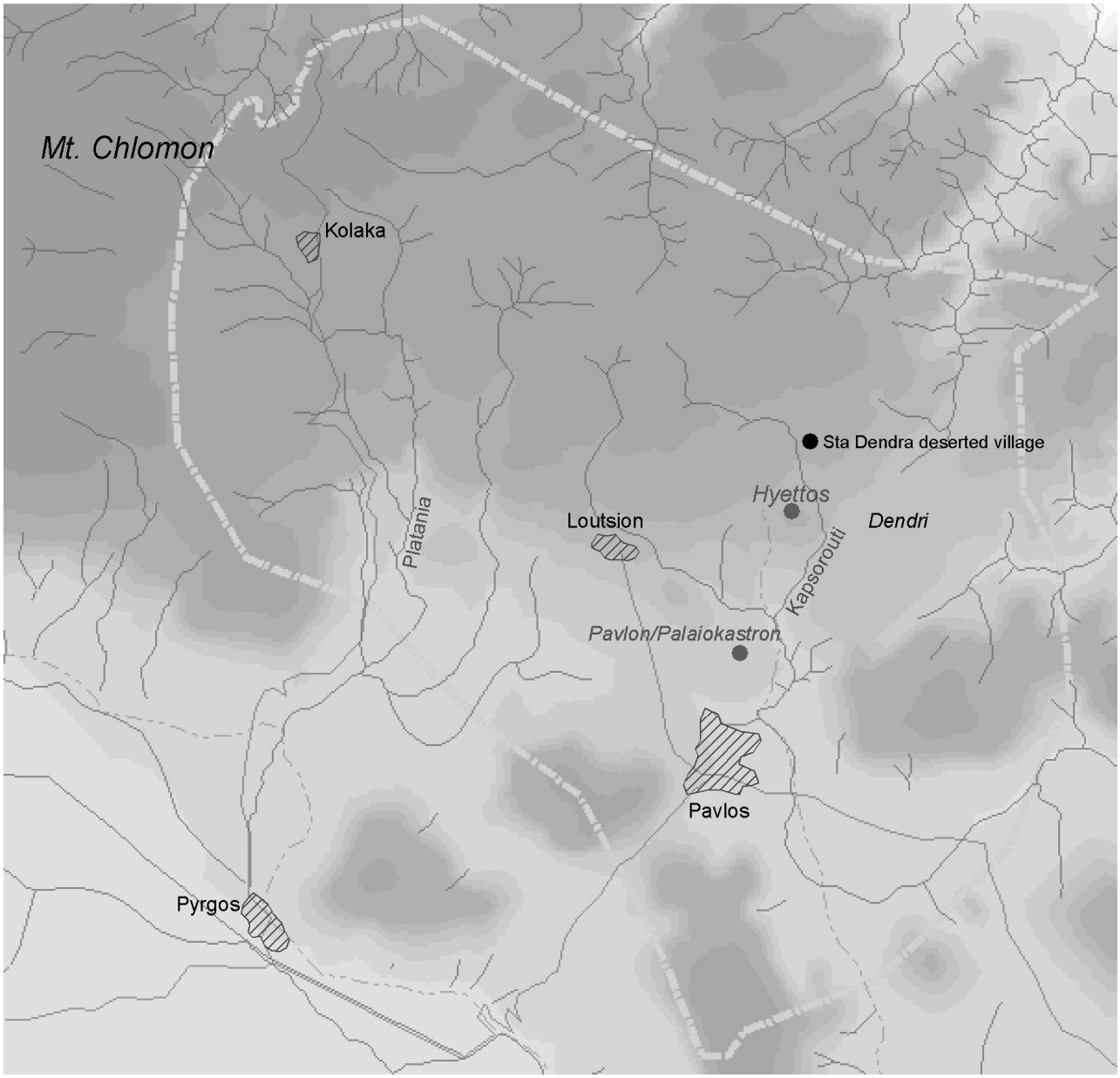

Fig.1. *Topographical setting of the chora of Hyettos.*

[1] See appendix I.5 for identification problems.

plains crossed by rivers and streams. The Kapsorouti stream flows to the SE of the site of Hyettos (and is further augmented by the spring there – see below) and runs to the S, flowing to the E of the site of Pavlon-Palaiokastron. The river crosses almost the entire Hyettos upland plateau.
Lauffer (Kopais I: 176 - sketch 184) draws the stream as coming to the site of Hyettos from the E, while it is not visible as such in the 1:50,000 map, where it seems to emerge at the foot of the acropolis of Hyettos, by the water source, being a small stream beforehand. We should also consider the marshy character of the Dendri area, the flattish area to the E of Hyettos, marked as having a marshy character on the 1:50,000 GYS map[2], though probably not swampy in antiquity[3].

Boundaries
As reported in Fossey 1988: 293, "*Boeotia, in ancient as in modern times, included only the Southern part of the mountainous area which forms the North boundary of the Copais basin. These mountains are an extended Eastern shoulder of mt. Khlomon (1080m) and the Boeotian area lies to the South of the main West-East watershed*". The Boeotian area which constituted the *chora* as presented here is marked by the presence of a small series of linked plains. The nature of the boundaries is discussed by Étienne - Knoepfler (1976: 189-197).

PHYSICAL LAND UNITS and RESOURCES

Though the area looks mountainous in terms of landscape characters (as well as for landscape life – see below), the elevation in fact does not reach values higher than 600m, and therefore, according to our classification of elevation ranges, the mountain segment is not represented (see fig.2 in chapter II.1). The elevation range between 200m and 600m (namely the hilly landscape) is characterised by steep morphologies (H3, H4 and H5 are quite well represented) and stream valleys, which open up into a series of smaller and larger plateaus (class H1, clearly marking a large part of the landscape) with a remarkable difference in elevation compared to the Copais basin not far below, a fact that gives the landscape a mountainous character. The 9% represented by areas below 200m is constituted merely by the plain approaching Pavlos to its SE and the quite steep surrounding foothills (class P4).

Hilly landscape	91%
Mountainous landscape	0%
Plain	9%

1	P1_P2	lacustrine basin, valley	4%
2	P3	gentle slope	1.4%
3	P4	foothill	3.7%
4	H1	plateau	32.8%
5	H2	gentle slope	10.4%
6	H3	moderate slope	21%
7	H4	severe slope	19.3%
8	H5	very severe slope	7.2%
9	M1	plateau	0%
10	M2	plateau/gentle slope	0%
11	M3	moderate slope	0%
12	M4	very severe slope	0%

Table 1. *Percentage of the different physiographical classes present in the Hyettos area (P=plain; H=hill; M=mountain)*

Approaching the area from the SE (from Kastro) one gets the idea of the wide fertile plateaus available in this upland area. The first is the area called *Vargia* on the 1:50,000 GYS map, crossed longitudinally by the road approaching the modern village of Pavlos from the S. Having left Pavlos, and heading to the modern village of Loutsi, another wide upland plateau opens up, crossed by the modern road and marked towards the E by the outstanding rise that was the acropolis of a small ancient *polis* (identified as Olmones, see below). To the NE of 'Olmones', at a distance of about 1.7km, is another rise (identified as the acropolis of ancient Hyettos, see below), closer to the higher hills bordering this system of plateaus. Between the two rises, is another wide flat area (H1), with a gently sloping section (H2), which seems in most part unsuitable for agriculture, while the soil in the Northern part seems less workable (personal visit to the area, and intensive survey results report soil with a lot of pebbles - currently used for olive trees - and no rural sites discovered), while to the N of the Hyettos city site, on a foothill small platform and on the slopes[4], a large number of rural sites were discovered (see fig.2).
To the SE of the acropolis of Hyettos is a wide area where minerals are mined. Black-green soil is still visible today, with a lot of open mines (on the city site itself, along the E slopes of the acropolis) for iron and magnesium (on the nature of these iron sources cf. Petraschek 1954, Bakhuizen 1979).
As noted above, the area is only partially available for agriculture (on part of the plateaus[5] - see fig.7), and is mostly suitable for pasturage. Exploitation of this particular landscape must have been similar through the centuries[6], although the Dendri plain (see above) was

[2] The Dendri basin area takes its name from a deserted village called Sta Dendra to the N of Hyettos – marked as Metochi on the 1:50,000 GYS map.
[3] The plain to the E of the city was probably not swampy in antiquity to judge from heavy offsite and sites on and by it of Greco-Roman date, discovered by the Intensive Survey work carried out by the Boeotia project (see below in text).

[4] Mainly comprised of very fertile Neogen and flysch formations.
[5] Étienne - Knoepfler 1976: 198 note that, at the time of their study, cereals occupied more than half of the cultivable land, and probably, they say, the same was true in Greco-Roman times. Corn and tobacco are the crops in the plain of Pavlon. Wine production had a limited presence, but probably more than in modern times (Étienne - Knoepfler 1976: 198), and the same would be true for olives.
[6] We have evidence of pirates stealing θρέμματα (Étienne - Knoepfler 1976: 198-9; Fossey 1988: 298). Étienne - Knoepfler 1976: 198 note that people from the area were not probably only shepherds, but husbandry must have played a predominant role

probably not swampy in antiquity and would thus have allowed for good land which could offer rich cereal production. The hills to the N and W were probably cultivated at wider crops with olives and wine.
As Fossey notes (Papers 1990e: 208), in antiquity the population of the plain was perhaps not supported only by agriculture and herding, as today, but also by the exploitation of the local iron sources, essentially the only ones in Boeotia which may have been mined then. Traces of ancient iron working at Pavlon/Palaiokastron were noted (Bakhuizen 1979), and mentioned by ancient sources (for instance Pliny *Nat.Hist.* 128, who mentions magnesium occurring at Hyettos)[7]. Certainly mines were operational during the first half of the 20th century[8]. As pointed out by Étienne & Knoepfler (1976: 200), the Hyettos area is known as one of the regions richest in iron resources in Central Greece.

THE ARCHAEOLOGICAL RECORD

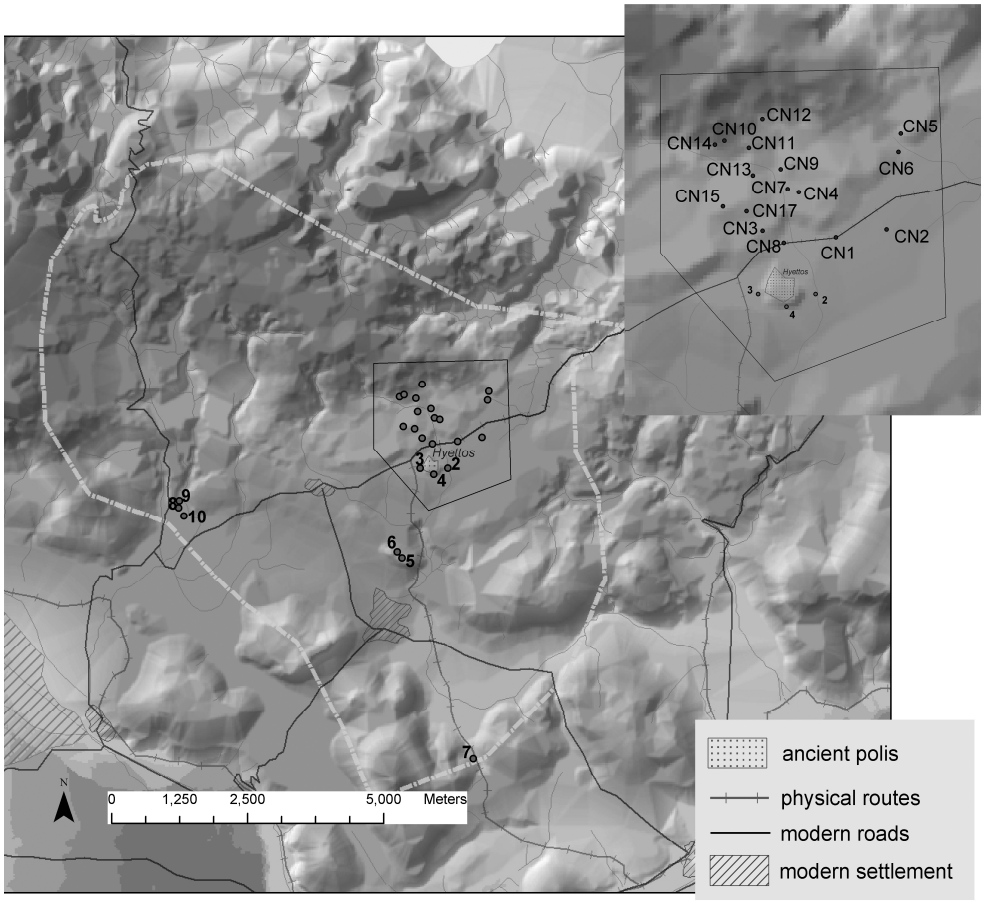

Fig.2. *Archaeological map of the Hyettos chora. The box indicates the area intensively and systematically surveyed.*

in the economy. Sheep-folds were probably quite far from and invisible from the city site, and therefore susceptible to pirate incursions (Étienne - Knoepfler 1976: 199).

[7] Étienne - Knoepfler 1976: 200-1; Fossey 1988: 299. No slag has been found in the area, but if magnetite was exploited, the ore was probably not smelted (Davies 1935: 246).

[8] A small village existed in the first half of the 20th century by one of the mining areas (Mine Tsouka, at the E edge of the territory of Hyettos). It had 68 inhabitants in 1928, but none by 1971 (Étienne - Knoepfler 1976: 200).

1	**HYETTOS**	*Components HO_1 to HO_6*
2	**Hyettos East**	*Component HO_7*
3	**Hyettos West**	*Component HO_8*
4	**Hyettos South**	*Component HO_9*
5	**Pavlon-Palaiokastron**	*Components HO_10 to HO_13* [Olmones?]
6	**Pavlon-Palaiokastron**	*Component HO_14*
7	**Megalovouna-Kiapha**	*Component HO_17*
8/9/10	**Kolaka-Agios Ioannis**	*Components HO_15* (8) *and HO_16* (9) *and HO_18* (10)

Table 2. *List of archaeological components and activity loci mapped in fig.2.*

Knowledge of the archaeological record concerning the area relates mainly to research on the city site of Hyettos and few sites discovered accidentally, mainly through illegal excavations. Additional information on the urban and rural landscape has been added by the intensive systematic artefact surface survey carried out in the area. The known data are therefore quite clustered (see fig.2) around the major settlement sites (namely Hyettos and Pavlon-Pavlokastron), the Mavrovounion mountain pass, and the area S of Kolaka (*components HO_15, HO_16 and HO_18*), which we could consider as belonging topographically to the area of interest.
The graph (fig.3) illustrates the proportion of components discovered within different research frameworks. In comparison to other *chorai*, rescue excavations are not significantly present in the Hyettos *chora*. This is due to the fact that no modern town is in the area, nor have infrastructure works been carried out in the area.

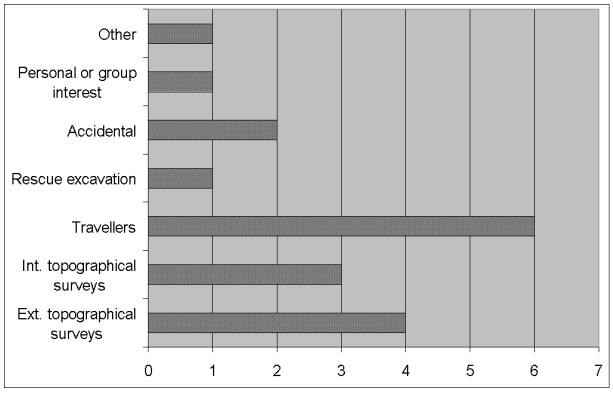

Fig.3. *Graph illustrating the proportion of components discovered within different research frameworks.*

A Systematic Intensive Surface Survey carried out in the area around Hyettos (area surveyed mapped in fig.2) from 1989-1991 by J.L. Bintliff and his team (mainly from the University of Durham, UK) discovered sites listed in appendix I.5 (table SURVEY SITES) and mapped in fig.2 (Bintliff 1992d).

If we include in the statistics the results of the intensive and systematic surface survey that concerned a small area of the *chora*, then the picture changes, as one may expect (fig.4).

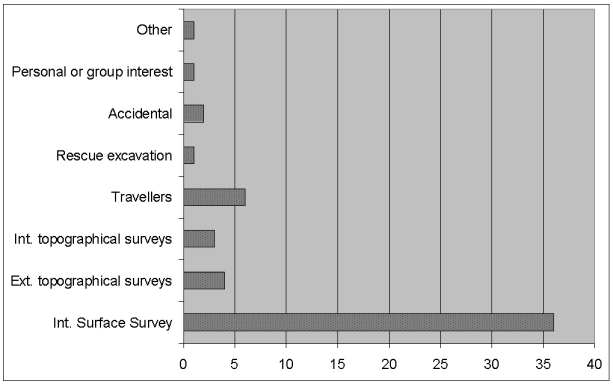

Fig.4. *Graph illustrating the proportion of components discovered within different research frameworks, including Intensive and Systematic Artefact Surface Survey.*

In fig.5 we can see the relationship between known archaeological sites and the distance from the modern road network. No strict correlation is visible because the discoveries of sites came about from different factors (see above).

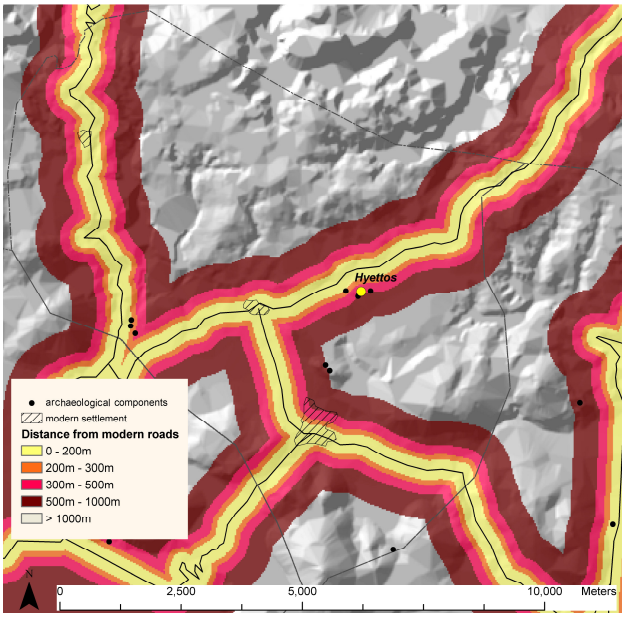

Fig.5. *Relationship between components and modern road network.*

The ratio of known Prehistoric to Greco-Roman components is 3 to 15 (1:5), while among the historical periods, 43% are dated Archaic to Hellenistic, 28.5% Roman-Late Roman, and 28.5% are attributed to the general Greco-Roman period. Adding the results of the intensive artefact surface survey, the ratio of Prehistoric to Greco-Roman components increases only slightly to 7 (4+3) to 48 (33+15) (1:6.8), while among the historical periods, 64% are dated Archaic to Hellenistic (since the number of known rural sites rises), 27% Roman-Late Roman, and only 10% are attributed to the general Greco-Roman period, the chronological attribution being more precise.

ANALYSIS OF THE *CHORA* LANDSCAPE

PREHISTORIC PERIOD

An EH settlement has been recognised through intensive artefact surface survey, as well as cist graves (SurveySite CN3), probably Prehistoric (MH?), to the immediate N of the Hyettos city site (see fig.2), whilst robbing activities in the area brought to light the existence of a large LH burial area to the W of Loutsi Village, S of the hamlet of Kolaka, probably indicating a large Prehistoric centre in the area.

The picture of prehistoric landscape available for the *chora* is, generally speaking, quite poor, considering the probable exploitation of this kind of landscape, suitable for husbandry, especially in the EH period, in conjunction with the secondary product revolution (see chapter II.3.1 and figs. 6 to 9).

GRECO-ROMAN ANTIQUITY[9]

Town level

The town level of the *chora* is represented by the Hyettos site. The only ancient source which provides information about Hyettos is Pausanias (IX 24. 3-4, 36.6), who mentions Hyettos as a κώμη[10] (jointly with Olmones) which never reached the town level and was dependent on the *polis* of Orchomenos. On the other hand, as pointed out by Étienne - Knoepfler 1976, epigraphical evidence shows that Hyettos was independent in the Archaic period and until the Late Roman period, with probably a short period (447-387) during which it was annexed by its strong neighbour[11]. Moreover, intensive and systematic urban survey (Bintliff 1992d) determined the maximum extension of the Classical–Early Hellenistic city as ca. 20ha, showing a quite large town in the Boeotian panorama, which needed and had good land (mid fertile) in its surroundings. Since it had control of this upland area, historical and political factors take it also to the *polis* level. Hyettos provides evidence in its inscriptions for Hellenistic population decline (the later Hellenistic ephebic lists from the acropolis wall) and financial and economic crises (Roesch 1965b: 256-61; Étienne-Knoepfler 1976: 201-210), observed also in the intensive survey results (Bintliff 1999d: 27-29). The reductive situation continues in the Mid Roman/Late Roman period and is also referred to by Pausanias (see below – LONG TERM SETTLEMENT TRENDS).

Village level

Archaeologically, the site of Pavlon/Palaiokastron (identifiable with Olmones - see *components HO_10 to HO_13*) shows characters of a dependent settlement. As long as we cannot prove its identification with ancient Olmones[12], we should consider it as a smaller second rank dependent settlement. Apart from the possible settlement at Pavlon-Palaiokastron no other nucleated settlement site is known from the area.

Rural segment

The rural segment does not seem to be represented in the archaeological record available in the bibliography – including mainly rescue excavation and extensive surveys (with the exception of the evidence of unknown date S of Kolaka village – *component HO_15*). On the other hand, from the picture resulting from the intensive and systematic artefact surface survey carried out in the area, one can obtain much more information concerning rural sites, from isolated farms and sheds in the Classical-Hellenistic period to villa sites in the Roman and Late Roman periods (see below – LONG TERM SETTLEMENT TRENDS). In the Classical-Early Hellenistic period the finds in the area of ancient Hyettos conform to the 'picture of relatively low rural density and a concentration in small to medium farms' noticed also at Tanagra and Haliartos but also in other Greek surveys, in contrast to the picture of high rural density, including large Classical rural sites found in the survey sector S of Thespiae city (Bintliff-Howard-Snodgrass 2007: 146).

Since husbandry played an important role in the economy of Hyettos, one must hypothesise the presence of a number of sheep-folds (αυλαί) in the area, especially in the elevated areas surrounding the plains. They were probably quite far from and invisible from the city site, as Étienne - Knoepfler (1976: 199) point out, and therefore susceptible to pirate incursions (as testified by Hyettos' decrees mentioning pirates stealing θρέμματα).

Burial areas

Components HO_7, *HO_8* (and *HO_9*) are burial areas related to the city site and immediately at its outskirts below the acropolis hill.

There is apparently no evidence for rural burials, not even from intensive artefact surface surveys.

Cult places/Religious areas

No evidence is known for the area.

Forts and fortifications

In addition to the fortified acropolis of Hyettos, and the fortified site identified by some scholars with ancient Olmones (see above), the only known fort is *component HO_17*, along the upland route corresponding to a mountain pass.

LONG TERM SETTLEMENT TRENDS IN THE CHORA *LANDSCAPE*

As seen above, the two prominent sites of Hyettos and the supposed Olmones lie along the central axis of an upland plain with fairly good land. Considering the territory of ancient Hyettos, the most fertile areas extend

[9] Period maps are included in chapter II.4, figs.17-19-21-23-25-27.

[10] Pausanias describes a second rank settlement as Askra, for instance, in the same way (κώμη), while he describes the second rank settlement of Alalkomenai as πολύχνη.

[11] Otherwise Orchomenos and Hyettos used to constitute two separate 'districts'.

[12] See appendix I.5 for the question of identification.

W and NW of the city, while the area to the E and S, towards the Pavlon-Palaiokastron (Olmones?) site is full of stones and not suitable for agriculture (fig.7). Thus, the territory available to the Pavlon-Palaiokastron site mainly extended to its W and S. If the identification with Olmones is accepted, an inscription from Hyettos (IG VII 1808), stating that the Hyettos settlement chamber was bordered by the territory of Olmones to the W and S, would fit this picture[13].

If the site at Pavlon-Palaiokastron is to be identified with ancient Olmones, then one may ask why the two small *poleis* (*komai*) according to Pausanias, or the main *polis* of Hyettos and the dependent settlement at Pavlon/Palaiokastron according to archaeological and epigraphical information, were both long-lived in this relatively small area, from early history to Late Roman times (this is confirmed for Hyettos, still unproved for the supposed Olmones, though still present in Pausanias' time at least). The results of the cost-distance analysis[14] show that there is not enough space in the area for two fully extending ½-hour-walking-distance-radius potential settlement chambers. The existence of both the two ancient settlements could be related to the peculiar economic exploitation of the area, based, as seen earlier, on farming, herding, and also mining, as well to its upland location, both of which also allow in later periods for the existence of two or more settlements.

In fact, there are three Ottoman villages in the wider *chora* of ancient Hyettos, all appearing in the 1466 archives (Andrea Loutsi, Pavlo Muzak and Gjin Vendre) and concentrated in this open upland section of the landscape. The first two continue till today (Lutsi and Pavlo) and are associated with alluvial soils in their vicinity (fertile soils on fig.7), in the area of the possible territory of the second settlement of the *chora* of Hyettos (Pavlon/Palaiokastron), which is situated just N of modern Pavlo. Conversely, in the territory strictly exploited by the ancient city of Hyettos there is no Ottoman or modern village. Although there is probably a lack of continuity of the Greek population of the Greco-Roman city, the deserted village of Sta Dendra, identified by the Boeotia survey half a kilometre N of the city, indicates a probable continuity of the Greco-Roman city through the earlier Middle Ages. It is also mentioned in the Ottoman archives of 1466 (Albanian hamlet Gjin Vendre) which continues in Early Turkish times (Bintliff-Kiel in preparation). The village is associated with available mid fertile soil; see above for the town of Hyettos[15].

Further to the NW is the modern small upland hamlet of Kolaka. In ancient times, the ancient *polis* of *Kyrtone* (not yet identified) should probably also have been in this area. Kyrtone is an ancient *kome* mentioned by Pausanias (as *polichni*) as on a high mountain, close to a water source from the rock. Forchhammer (1857: 17) places Kyrtone where we know that Hyettos is, while Oldfather (1916: 163ff, followed by Papachatzis 1981: 166) identifies as Kyrtone the area of the modern village of Kolaka. The village belongs today to the province (*nomos*) of Lokris, as well as having a much lower location (Ag. Ioannis), to the S of Kolaka and to the W of Loutsion village and not very far from it (ca 2.5km), where some remains of ancient[16] structures are visible above the Platania torrent (*component HO_15*). The area is on the Chlomon mountain, close to a water source and with patches of mid fertile land available (see figs. 1 and 7 and Étienne - Knoepfler 1976: 211), and might indicate a possible settlement area, working as such at least in some periods of history and exploiting upland midland zones (see fig.6). The LH burials (*components HO_16 and HO_18*) known from the area of Kolaka indicate also a possible Mycenaean centre in the area.

Therefore, this upland plain and its surrounding mountainous areas may support many larger and smaller settlements, at times very close to each other. This may be linked to the life system in a mountainous landscape, which usually produces a dispersed settlement pattern, with often no need of a very large central hub.

As for the rural landscape in ancient times, intensive surveys in the area surrounding Hyettos (Bintliff 1992d) testify to the presence of rural sites, concentrated to the N of the city, in the basin and hills towards the mountain slopes, and associated with the mid-fertile zone (fig.7). The rural occupation recognised through intensive survey seems to be mainly Classical and Hellenistic, with small rural sites and farmsteads[17]. Classical-Hellenistic sites seem to be much closer to the city site than in other cases in Boeotia (see Thespiae and Tanagra for instance, in chapters II.3.9 and II.3.14). The finds in this area of ancient Hyettos conform to the 'picture of relatively low rural density and a concentration in small to medium farms' noticed also at Tanagra and Haliartos but also in other Greek surveys, in contrast to the picture of high rural density, including large Classical rural sites found in the survey sector S of the city of Thespiae (Bintliff-Howard-Snodgrass 2007: 146).

A few considerable sites seem to be attested in the Roman/Late Roman period (fig.2 - CN 5,6,7,8,14; fig.27 in chapter II.4), along with the city itself progressively shrinking to a small village level on the acropolis (see appendix I.5). A substantial Late Roman villa complex (CN7) associated with a highly fertile secluded basin of deep soils was located 1km N of the ancient city (fig.2 and fig.7). An olive press found here, constructed in secondary use from a monumental base brought from the declined city, indicates both the intensified land use and

[13] από \ δε δύσεως οι Αρέσκοντος Ολμωνί \ ου κληρονόμοι, από δε μεσημβρίας Σύμφορος Ολμώνιος (IG VII 1808, line 2), mentioned by Lauffer (Kopais I: 178).

[14] See chapter II.3.1 –LONG TERM SETTLEMENT TRENDS.

[15] The village can be associated with the fertile area immediately to the N of Hyettos and exploited in antiquity by the ancient city (fig.7).

[16] Unfortunately unspecified whether Greco-Roman or Medieval (see *component HO_15*).

[17] Inferences from the contemporary ephebic lists for the Boeotian Confederacy (Roesch 1965b: 256-61; Étienne-Knoepfler 1976: 201-210) suggest a total population of some 3,500 people in town and country for the state of Hyettos, of which around 70% lived in the city and 30% in rural hamlets and farms (Bintliff 1992d).

economic specialisation taking place in the Late Roman period, as well as the abandonment of parts of the city to the advantage of Roman villa-owners (see fig.27 in chapter II.4).

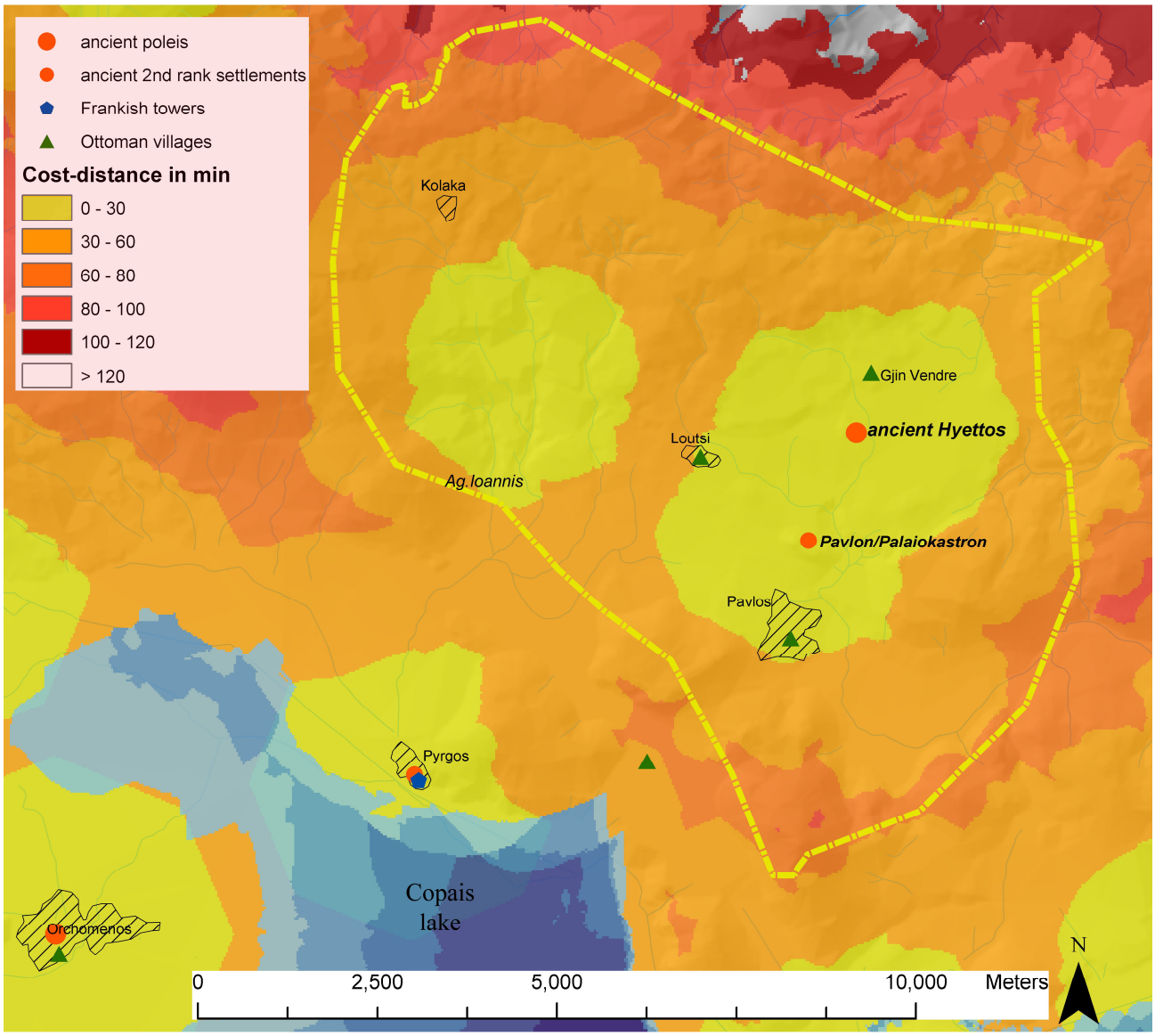

Fig.6. *Classified surface representing the cost-weighted distance (1/2 h walking and further ranges) from recognised 1st and 2nd rank ancient settlements (represented by larger and smaller dots). Areas without dots indicate potential settlement chambers. Ottoman villages and Frankish towers have also been added to the map to show their spatial relationship with the Greco-Roman settlement network and to appreciate potential settlement chambers.*

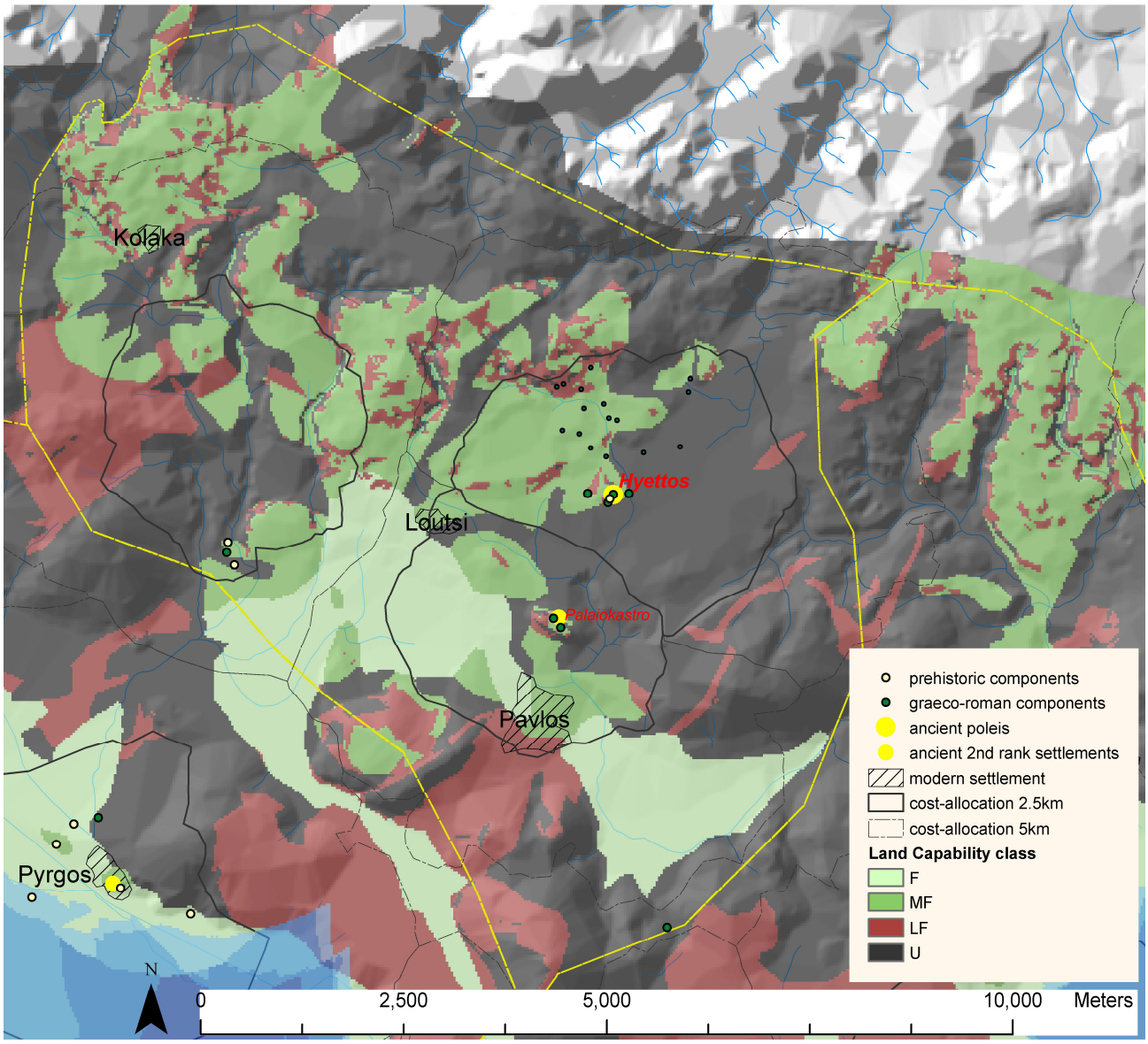

Fig.7. *Map showing the Greco-Roman settlement network, the polygons resulting from the cost-distance analysis (marking half an hour and one hour walking time distance) and dots representing the known archaeological components (same as in fig.2), with land capability information underlain.*