

Castiglione del Lago, Gioiella site survey, 2015: preliminary report

Giampiero Bevagna – Pedar W. Foss – Rebecca K. Schindler – Stefano Spiganti¹

A season of intensive site survey just north of Lago di Chiusi at località Gioiella on the border between modern Umbria and Tuscany has revealed evidence for a rural site occupied from ca. the end of the 2nd c. BC through the late 3rd c. AD, based on finewares, wine amphorae, and coin finds. Concentrations of tile and building material suggest two to three buildings placed along a terraced hillslope overlooking the lake. Finds of boxtiles, fragments of monochrome mosaic, lead piping and tiles for pilae are evidence for heated rooms and probably a bath suite. Several pieces of marble (one sculpted) attest to imported decorative elements. There are clear indications of on-site food and cloth production, as well as storage vessels. Nearly a kilometer away, a likely section of ancient road is cut into the side of Poggio S. Maria, running down towards the lake and passing a well-preserved cistern of Roman date. Our investigations are focused on understanding this hydrologically sensitive landscape over time: the development of settlement, agriculture, and political control in the late Republic, the nature of trade and communication with other rural and urban sites in the region, and the relationship between humans and their environment—particularly the manipulation of water—during the site's imperial lifetime. Finally, we seek to understand the site's transition (given scattered evidence for medieval use), to its current buried, cultivated state.

Introduction

The località 'Gioiella' site was intensively surveyed by the 2015 Umbra Institute Summer Archaeology Program in cooperation with Intrageo and DePauw University (Greencastle, Indiana, USA), under a permit granted to the Signor Sindaco del Comune di Castiglione del Lago by the Soprintendenza Archeologica dell'Umbria (Prot. n. 4707, Class n. 34 31 07 / 61, 17 giugno 2015).

The Gioiella site is located on the slopes of a hill overlooking the north shore of Lago di Chiusi in the territory of Castiglione del Lago, Perugia, Umbria, at approximately 43.07142 degrees Latitude 11.963102 degrees Longitude (WGS84), or N 4773236 E 2272751 (Gauss-Boaga Monte Mario 2 [East]), between the villages of Porto, Gioiella, and Vaiano, near the border between Tuscany and Umbria (fig. 1). The environs consist of a patch of rolling hills between Lago Trasimeno, Lago di Chiusi, Lago di Montepulciano, and the Val di Chiana. Our team also marked the location of a possible stretch of ancient road about 830 m. to the east-northeast, on the slopes of Poggio S. Maria, the apex of which rests at 378 m. a.s.l., the highest point along the northern edge of Lago di Chiusi. That possible road continues toward a (Roman-era) cistern set amidst a clump of trees in a field to the south (figs. 2, 18-19). We did not have permission to study the cistern, but its position is clear on satellite imagery.

The main site is located on the southwest slopes of a hill, across two fields, one planted in sunflowers and the other in chickpeas in the summer of 2015, as made accessible by the property owner (fig. 3). The southern, lower slopes of the hill were planted in wheat and were inaccessible to our investigation. The elevation of the fields in which we conducted the intensive site survey ranged from 266.26 to 293.02 m. a.s.l. The soil

¹ Our undergraduate students were: Anne Beath, Erin Crouse, Marcus Lobo, Leigh Plummer, Adam Rathbun, Deanna Reder, and Jessica Tilley (DePauw University); Samantha D'Alecy (The Pennsylvania State University); Michael Homiak (The University of Chicago); Alejandro Reggeti (University of Florida).

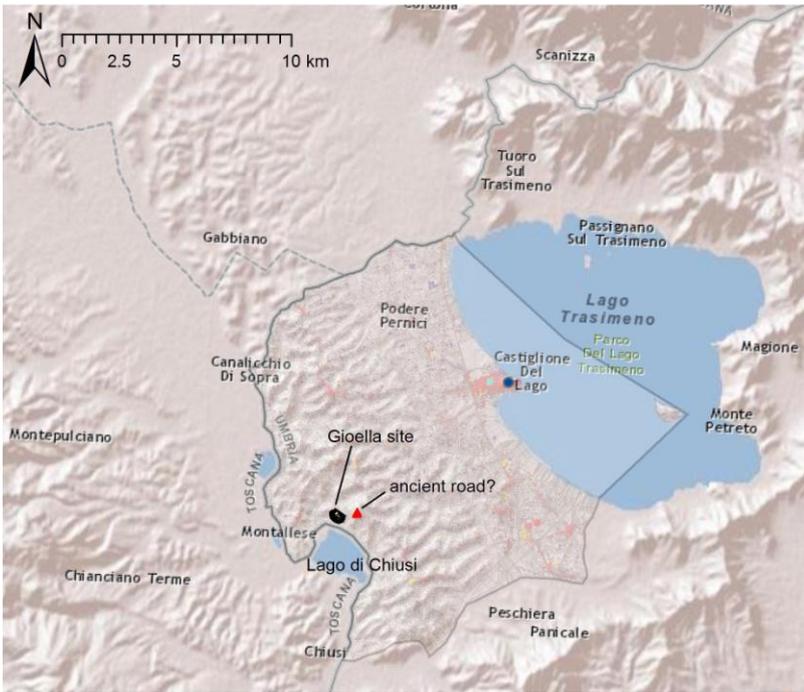


Fig. 1. Location map of the site survey area and possible ancient road, within the (outlined) territory of Castiglione del Lago (ArcGIS 10; P. Foss).

Fig. 2. Detail of the site survey area and possible ancient road. (GoogleEarth/ArcGIS 10; P. Foss).



cover ranged from heavy clay to silty clay, and the ground was well visible, having been ploughed, tilled, and planted.

The Gioiella Site

Survey methodology

At the Gioiella site, we carried out intensive site survey across two fields. One part of the sunflower field had been cleared of its crop, in anticipation of excavation being carried out there. Since the surface there had been disturbed prior to our survey, the central portion of our area of investigation is treated separately from the grid of formally-sampled squares, and is designated as sector '9999' (fig. 3).

The survey used the Gauss-Boaga map projection and Monte Mario 2 [East] map datum for the project GIS (Geographic Information System), using ArcGIS 10 software. Although the Gioiella site technically belongs to Monte Mario 1 [West], being barely west of 12 degrees longitude, the overall project GIS for Castiglione del Lago and Lago Trasimeno falls largely within Monte Mario 2, so, accepting minimal additional distortion for the sake of cartographic coherence, we have kept all results within Monte Mario 2.

We laid out the grid for the intensive archaeological site survey using a Topcon GR-5 real time differential GPS with millimeter positional precision and centimeter accuracy. The system uses a base station receiver that rests at a

known point, and a 'rover' receiver that maps archaeological features or finds (fig. 19). The GR-5 allowed us quickly to lay out the survey grid and map features onto the absolute space of the GIS.

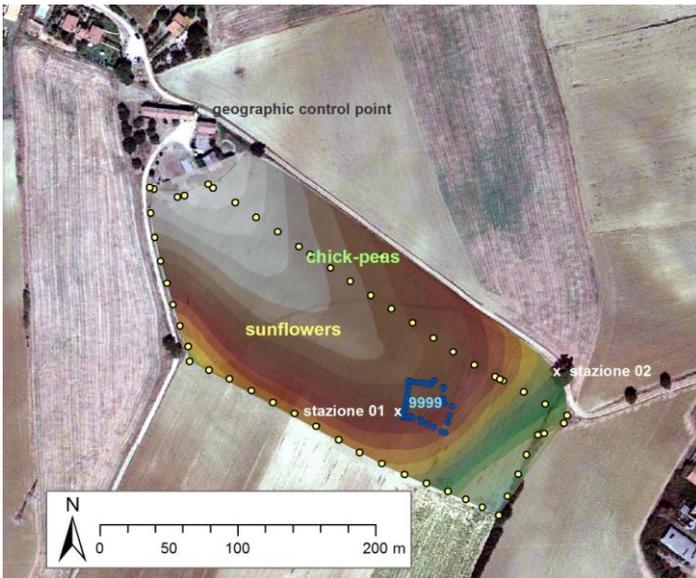


Fig. 3. Gioiella site survey area showing modern plantings (sunflower field outlined in yellow dots; chickpeas planted in the strip to the north) and the area in blue dots (9999) where crops had been cleared in anticipation of possible excavation (GoogleEarth/ArcGIS 10; P. Foss). The comune of Castiglione del Lago's cadastral map geographic control point and two local control points for the survey (stazione 01, 02) have the following (Gauss-Boaga, Monte Mario 2) coordinates:

- geographic control point (NE corner of farm building): N 4773443.60, E 2272585.92, elev. 295.50 m.
- stazione 01 (rebar stake removed at the end of the project): N 4773224.84, E 2272738.81, elev. 282.45 m.
- stazione 02 (top of rebar stake beneath a tile cairn under a large pine tree): N 4773254.15, E 2272852.65, elev. 274.84 m.

crop. Because we could not be sure that artifacts had not been moved in that clearing process, we collected diagnostic pieces and small finds from all of 9999, a total area of 878 sq. m., as one unit.

We initially marked sectors with flags; as the crops grew higher in size, we used range poles to indicate the corners of the sectors for the collectors, which turned out to be an effective strategy (fig. 5). Even as the crops grew, it was still possible to survey the ground in the rows beneath the leaf canopy. Each 4x4 m. sector received a unique number (fig. 4), to which processed and retained finds are linked. For each sector, two students were given exactly two minutes to collect all surface artifacts, with instructions not to pry out objects stuck in the ground, and to retain the same steady pace of collection regardless of the density of finds.

Immediately after collection, we sorted, counted and weighed objects in the following categories: tile, ceramics (separately: amphorae, courseware, cookware, dolia, mortaria, and fineware), and small finds. All diagnostic ceramics and all small finds were retained (bagged and tagged under the sector number) for subsequent cleaning, documentation (including drawings and photos), database entry, and preliminary study. Tiles were not kept unless they served a special function, such as for a column or a *tubulus* (a 'boxflue' tile used to create a convection duct in the walls of a heated room in a bath).

Finds and Chronology

The survey collected a total of 12,734 objects from the site (Table 1, below), of which 536 items were kept for inventory, and the rest discarded, as non-diagnostic, at the base of the pine tree marked 'stazione 02' (fig. 3). The inventory objects are currently stored in a strongroom of the antiquarium comunale in Castiglione del Lago.

A 4x4 m. intensive survey grid was established on the same alignment as a preliminary grid established for the possible excavation, aligned with an azimuth of 7 deg. 4 min., 56.3 sec. from true north. The intensive survey grid has wide full-coverage transects extending N, S, E, and W from the excavation area, plus transects along concentric rectangles connecting those cardinal transects. The total area of investigation extended 32 4x4 m. squares (which we call 'sectors') north-south and 25 sectors east-west (800 sectors total). We systematically surveyed 255 of those sectors, resulting in 32% sample coverage for the total area of investigation—a high number that gives confidence to our results (fig. 4).

In addition, we surveyed two areas non-systematically—collecting diagnostic ceramics and small finds whose qualitative data could usefully supplement the quantitative data from the systematic survey (fig. 4). Sector 8888, a total area of 4459 sq. m., covered a large portion of the chickpea field and was rich in finds. Sector 8888 overlapped the intensive systematic survey grid, but we collected material from 8888 only *after* we had finished our intensive systematic survey collection. Sector 9999 was at the center of the systematic survey, as noted above; its surface had been disturbed from the removal of the sunflower

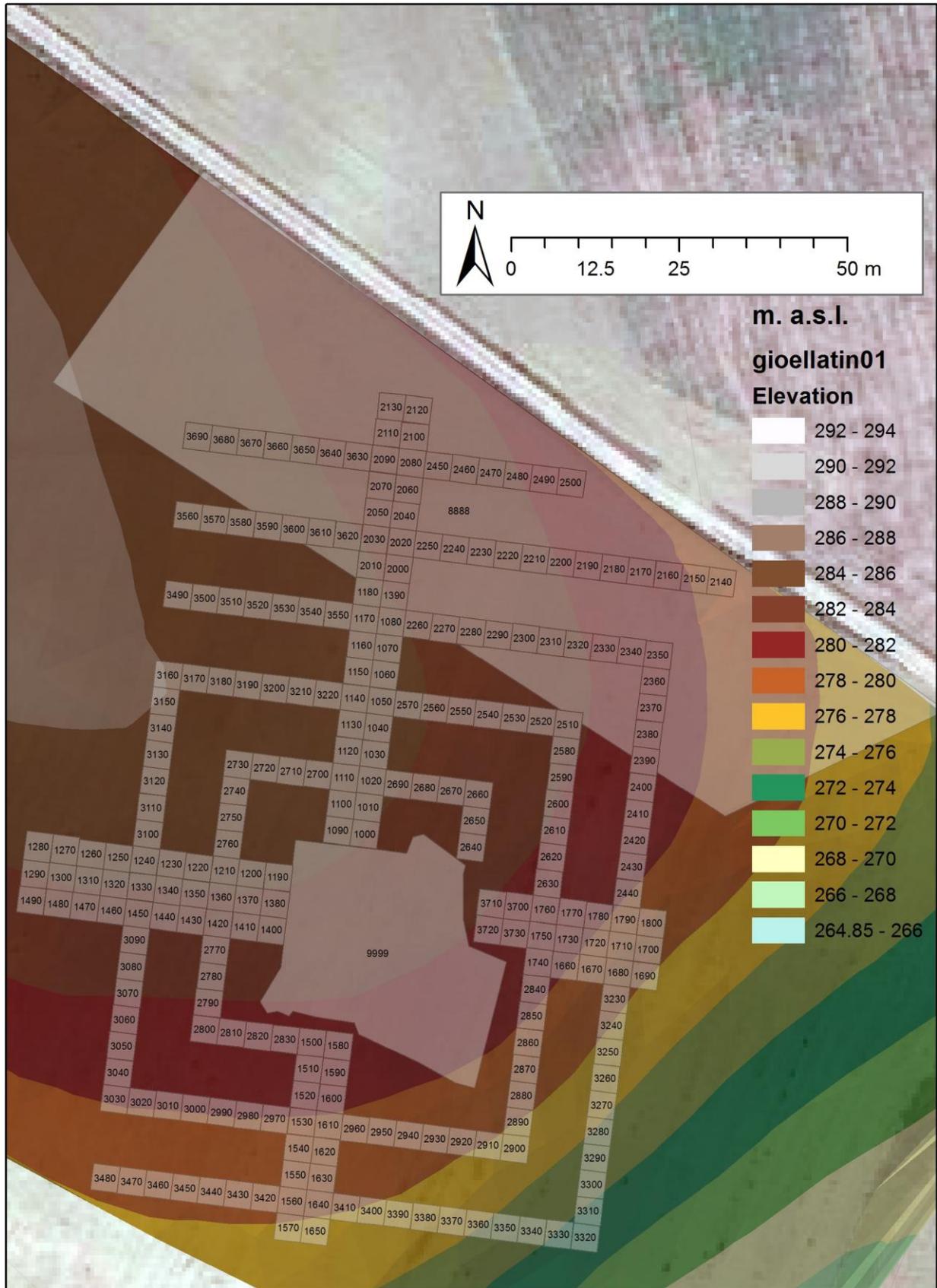


Fig. 4. Gioiella site survey area showing the area of intensive investigation, the sample of 4x4 m. systematically surveyed squares (labeled with their sector number), the two non-systematically surveyed sectors: 8888 and 9999, and elevation contours at 2-m. intervals (GoogleEarth/ArcGIS 10; P. Foss).

Fig. 5. A site sector in Gioiella site survey area marked with range poles as two students collect surface finds (photo is taken from the fourth point of the square; P. Foss).



Material	Systematic survey (225 sectors, nos. 1000-3730)	Non-systematic survey (sector 8888)	Non-systematic survey (sector 9999)	Date
tile	11,541 (878.42 kg)	4 (0.30 kg)	3 (0.20 kg)	
amphorae	24 (1.86 kg)	5 (0.30 kg)	11 (1.00 kg)	1 st c. BC – 2 nd c. AD
courseware, of which:	420 (3.02 kg)	11 (0.15 kg)	54 (1.11 kg)	
clear/green glazed ware	9	2	0	'post-antique'
cookware	64 (4.41 kg)	1 (0.10 kg)	12 (0.30 kg)	
<i>dolia</i>	2 (0.31 kg)	0	2 (1.45 kg)	
<i>mortarium</i>	0	0	1	
fineware, of which:	57 (0.64 kg)	1 (0.02 kg)	72 (0.44 kg)	
<i>vernice nera</i>	0	0	6	3 rd -early 1 st c. BC
<i>sigillata italica</i> (figs. 6-7)	27	1	51	1 st c. BC-1 st c. AD
<i>pareti sottili</i>	2	0	15	3 rd c. BC – 2 nd c. AD
<i>maiolica</i>	2	0	0	14 th -16 th c. AD
building material:				
non-local sandstone	12	-	-	
cement/mortar fragments	66	-	3	
<i>opus reticulatum</i> facing	1	0	0	
curved tile for column	2	0	1	
<i>tubulus</i> tile	1	0	3	
<i>cementizio a base fittile</i> (i.e., <i>cocciopesto</i>)	2	1	3	
mosaic <i>tesserae</i>	192	0	10	
painted plaster	0	0	1	
worked marble	1	2	0	
loomweight	1	0	0	
spindlewhorl	0	0	1	
glass	1	0	5	
bone	37	3	6	
iron nails	0	0	2	
lead piping, fragments	0	0	10	
bronze upholstery nail	0	0	1	
bronze coin	0	0	1 (+ 1 stray)	(stray: AD 270-275)

Table 1. Finds from the systematic and non-systematic survey collection at the Gioiella site. '-' means we did not look to collect that object type in a non-systematic sector. Only items deemed diagnostic were collected in the non-systematic sectors. The coin from sector 9999 is not yet identifiable. Between sectors 2900 and 9999 was found another, Aurelianic coin (fig. 8) as a stray find. Mosaic *tesserae* were counted individually, though most were found collectively in larger chunks of flooring.

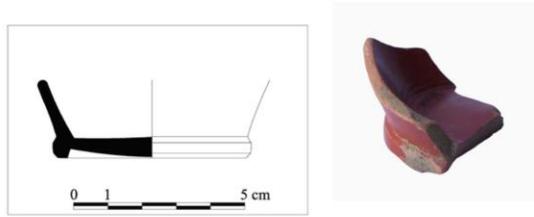


Fig. 6a.
Sigillata italica, wheel-made cup. Inv. no. 653029, sector 9999. Well levigated pink fabric, 7.5 YR 8/4; uniform and completely covering red slip, 2.5 YR 4/8. Fragment of base with foot. H 2.3 cm; reconstructed diam. of foot 5.8 cm. Ring-footed base with concave interior and convex exterior, walls slightly flared; form *Conspectus* B 4.11, specifically variants 22-25 (*Conspectus*, pp. 162-63).

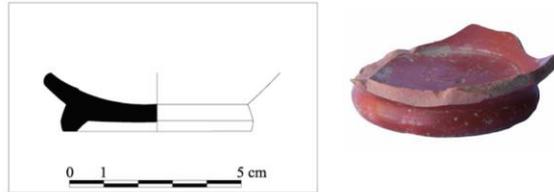


Fig. 6b.
Sigillata italica, wheel-made cup. Inv. no. 653031, sector 9999. Well levigated pink fabric, 7.5 YR 8/4; uniform and completely covering red slip, 2.5 YR 4/8. Fragment of base with foot. H 1.8 cm; diam. of foot 5.6 cm. Ring-footed base with slightly concave interior and gently convex exterior, walls slightly flared; form *Conspectus* B 3.16-17, specifically variants 31-33, 36-38, 43-45 (*Conspectus*, pp. 160-61).

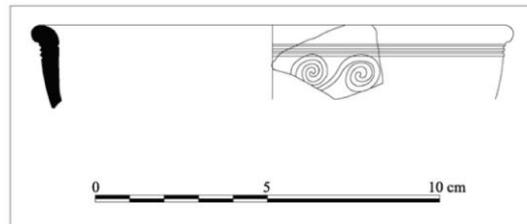


Fig. 6c.
Sigillata italica, mould-made cup. Inv. no. 653036, sector 9999. Well levigated pink fabric, 7.5 YR 8/4; uniform and completely covering red slip, 2.5 YR 4/8. Fragment of rim and wall. H 2.2 cm; reconstructed diam. of rim 14 cm. Everted rim grooved beneath the lip, double spiral scroll applied decoration on wall, form *Conspectus* 37 (*Conspectus*, pp. 116-117, 149-150). Tiberian to late 1 c. AD.

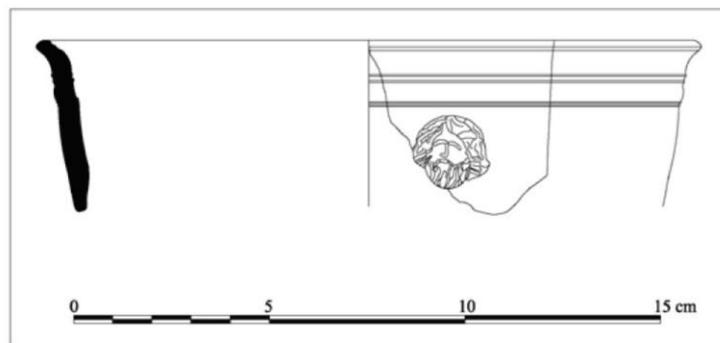


Fig. 6d.
Sigillata italica, wheel-made cup. Inv. no. 653037, sector 9999. Well levigated pink fabric, 7.5 YR 8/4; uniform and completely covering red slip, 2.5 YR 4/8. Fragment of rim and wall. H 1.8 cm; reconstructed diam. of rim 17 cm. Slightly everted rim with a convex and then concave gentle moulding, each framed by grooves, beneath the lip; mould-made bearded head applied on wall, form *Conspectus* 27, variant 27.2.1 (*Conspectus*, pp. 100-101). Tiberian-Neronian.

Fig. 6. *Sigillata italica* bowls from sector 9999 (S. Spiganti).

Chronologically, the earliest material (ca. 3rd–early 1st c. BC) seems to be the six small pieces of *vernice nera* found non-systematically in sector 9999. Of the *sigillata italica*, four cups and two plates have clear forms (figs. 6-7), and date to the 1st c. AD. Seventeen pieces of thin-walled semi-fineware (*pareti sottile*) broadly overlap the other ceramic data, ca. late 3rd c. BC–2nd c. AD. A legible bronze *antonianus* of Aurelian (AD 270-275) was a stray find just northwest of sector 2900 (figs. 8, 14). Thereafter there seems to be a gap until (fig. 16) the appearance of a coarseware with clear or green glaze (generally post-antique; 11 pieces) and then maiolica (ca. 14th-16th c. AD; 2 fragments).

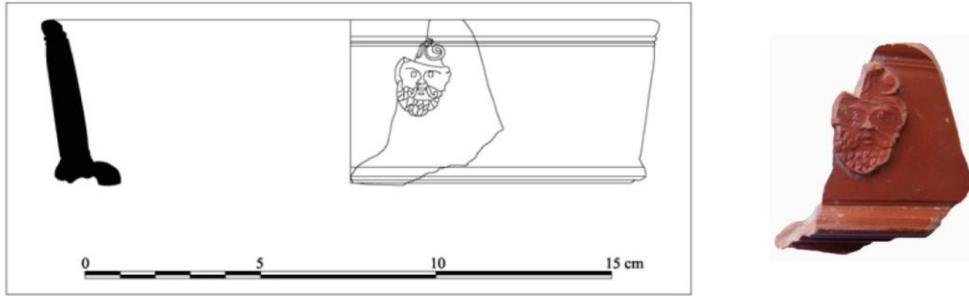


Fig. 7a.

Sigillata italica, wheel-made plate. Inv. no. 653027, sector 9999. Well levigated pink fabric, 7.5 YR 8/4; uniform and completely covering red slip, 2.5 YR 4/8. Fragment of rim and wall. H 4.8 cm; reconstructed diam. of rim 17.6 cm. Straight rim above a simple lip, with a groove below on the interior, and two smaller grooves below on the exterior; a sharp shoulder defines a transition to the base; mould-made bearded head of a satyr applied on wall, form *Conspectus* 21, variant 21.3.1 (*Conspectus*, pp. 88-89). Augustan-Domitianic.

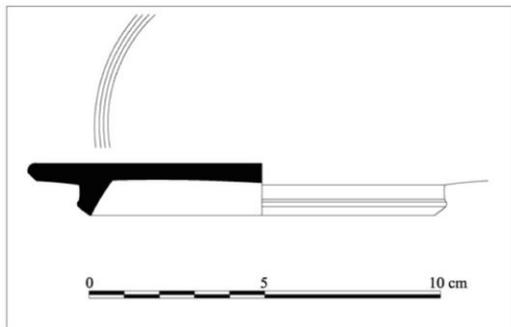


Fig. 7b.

Sigillata italica, wheel-made plate. Inv. no. 653030, sector 9999. Well levigated pink fabric, 7.5 YR 8/4; uniform and completely covering red slip, 2.5 YR 4/8. Fragment of base. H 1.4 cm; reconstructed diam. of foot 10.5 cm. Flat foot, having a ring base angled outward. Internal surface with three concentric grooves; form *Conspectus* B 2.4, refer to variants 1, 2, 4.1-4, 5, 11 (*Conspectus*, pp. 156-157).

Fig. 7. Sigillata italica plates from sector 9999 (S. Spiganti).

Coin: *antoninianus*. Inv. no. 653079. Bronze; 2.43 grams, diameter 2.1 cm. Obverse: IMP AVRELIANVS AVG — bust of Aurelianus, dressed in a draped cuirass, wearing radiate crown on head. Reverse: illegible. Mint: not identifiable.



Fig. 8. Antoninianus of Aurelian; stray find. Photos and descriptions (S. Spiganti).

The survey has not recovered any pieces of African Red Slip pottery, which suggests: that the site went out of use during the 2nd-5th centuries AD (and that the Aurelianic coin is not evidence of occupation), that ARS was not reaching the site, or that the owners of the site chose substitute ceramics. ARS is the predominant western Mediterranean fineware during the mid-late Empire, and is documented as such by the site survey at Ocrinum, to the south down the Tiber Valley². The Gioiella site, probably belonging to the territory of ancient Clusium (Chiusi), would presumably not have been cut off from commercial networks that brought ARS to other sites around Lago Trasimeno in the 2nd c. AD. However, robust local production at sites such as the villa at Ossaia (Cortona), just north of the northwest corner of Lago Trasimeno, may have provided mid-late imperial

² HAY, KEAY, MILLETT 2013: 92.

Fig. 9. Sculpted marble fragment from sector 3270; find F04; inv. no. 652854 (P. Foss).



tableware for the Gioiella site, located at the southern extent of the Val di Chiana³. Future study should compare the orange-slipped fine-ware from Ossaia with yet-unidentified Gioiella examples, in concert with additional survey and/or excavation at the site and its environs, to address this question.

Amphorae fragments were highly fragmented and weathered, with three toes and parts of 14 handles surviving; *dolia* fragments numbered only four. These numbers seem quite low; see below for a discussion of distribution patterns. We have identified examples of a Dressel 1 (perhaps 1B) toe, a Spello Type handle, and Dressel 2-5 handle (broad range: 1st c. BC - 2nd c. AD)⁴.

Notable finds include three pieces of worked marble: one Numidian (*giallo antico*, find F01, sector 8888), one badly worn chunk of large-crystal white marble (find F06, sector 8888), and one piece of white fine-grained marble (find F04, inv. no. 652854, sector 3270) which appears to have belonged either to a work of sculpted drapery or floral architectural decoration (fig. 9). We also recovered many mosaic tesserae (singly and in chunks), and ten pieces of lead piping. The most overwhelmingly common object was tile (largely roof tile, though some thicker fragments belong perhaps to floor tile); tile was collected in every single sector surveyed.

Function

The distribution of **building material** (tile, large chunks of non-local sandstone rubble, cement, plaster, and a likely *opus reticulatum* facing stone) is enlightening. There appear to be two clusters of construction: one on the south-southwest side, and one towards the north-northeast (fig. 10). Both clusters are located along a slight flattening of the hill (ca. 278-284 m. a.s.l.) that may represent ancient terracing. As heavy chunks of construction material are more resistant to downhill erosion than smaller, lighter objects, this building material may help us situate buildings at the site along a terrace that wrapped around the prow of the hill from the north to the south, overlooking the Lago di Chiusi and the small valley that runs down toward it, and catching consequent breezes (fig. 17).

A particular class of building material and decoration may be related to a **bath complex** at the site: tiles cut and curved to be mortared together into columns or *pilae* for a hypocaust (sectors 1550, 2760, 9999); fragments of waterproof terracotta-infused cement, i.e., 'cocciopesto' or *cementizio a base fittile* (sectors 1200, 1220, 8888, 9999); pieces of *tubuli*, or box tiles, to conduct hot air up the faces of walls (sectors 2840, 9999); mosaic tesserae; ten fragments of lead piping (sector 9999); and pieces of marble: sculpture (sector 3270, fig. 9), and perhaps revetment (two stray finds in sector 8888).

The patterning of objects associated with bathing shows a clear cluster in the central and southeast areas (fig. 11), with a smaller concentration of tesserae in the northwest (but not combined in the northwest with any other bath-associated finds except one chunk of *cementizio a base fittile*). Of course, the presence of *cementizio a base fittile* does not definitively indicate a bath suite, any more than the column tiles, marble, mosaic tesserae, or even lead objects do. But the *tubuli* are a clear sign of a heated space, so one explanation for the other variables is a bath, or at the very least, heated rooms. Small objects such as tesserae can easily be moved by the plough or by erosion, which may explain their concentrations down the southeast slope. But the

³ FRACCHIA 2006a: 81-82; FRACCHIA 2006b.

⁴ KEAY, WILLIAMS 2005/2014; SPERANZA 2011: 294-295; SPERANZA 2008: 280-1.

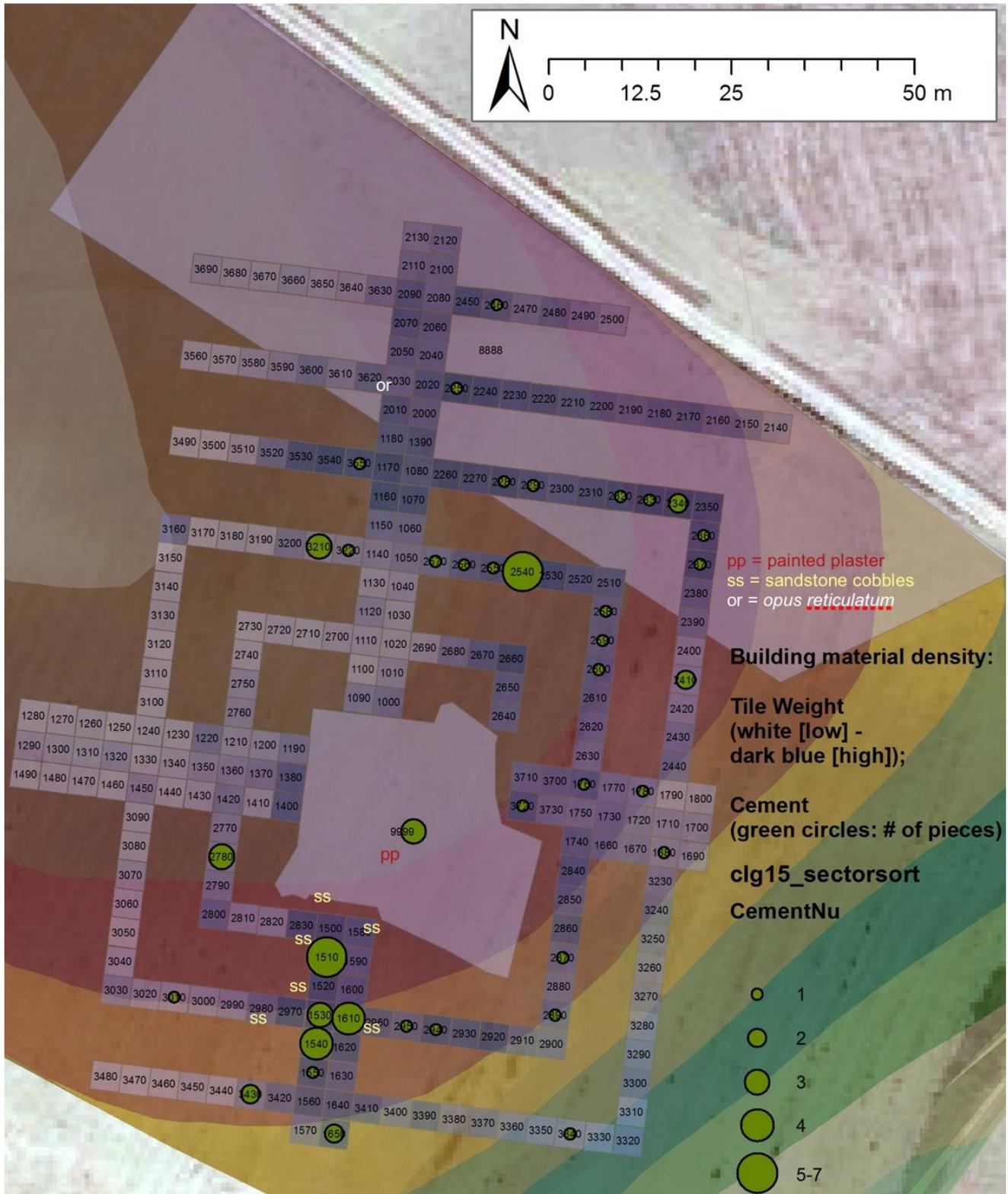


Fig. 10. Gioiella site survey area showing the distribution of five variables related to building material: weight of tile (from 0.01 - 17.7 kg. per sector), chunks of cement, painted plaster, non-local cobbles of sandstone, and a cut facing stone likely belonging to opus reticulatum. Contours at 2-meter intervals (GoogleEarth/ArcGIS 10; P. Foss).

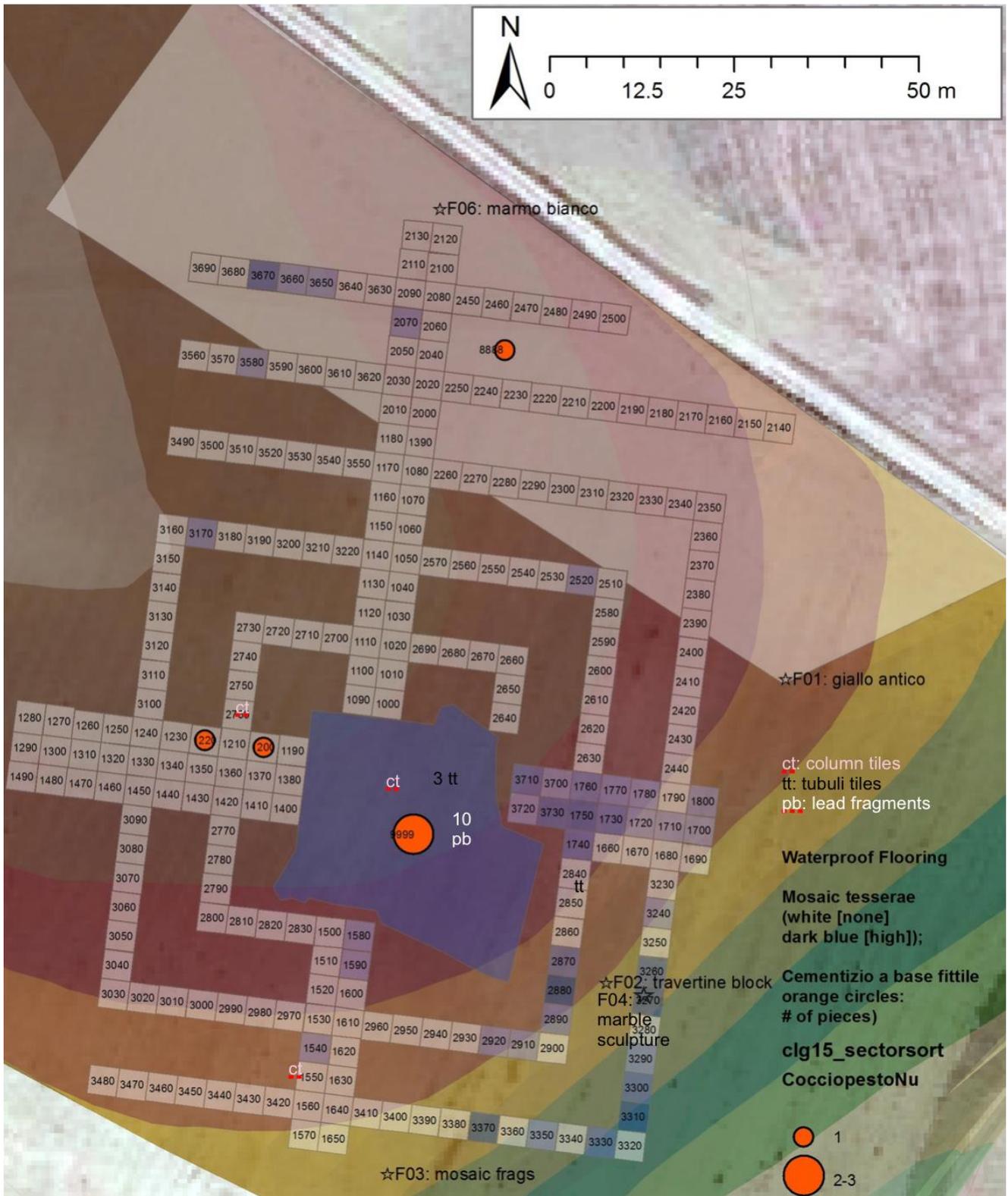


Fig. 11. Gioiella site survey area showing the distribution of six variables perhaps related to a bath complex: mosaic tesserae (shading from white to dark blue, from 1-43 pieces), chunks of cocciopesto (cementizio a base fittile), pieces of tubuli, curved tiles for columns or furnace pilae, and fragments of lead piping and marble decoration (F01, F06: possible revetment; F04: fragment of marble sculpture). F02: a large travertine block, and F03: large chunks of mosaic, were reported to us (with GPS coordinates) by a local resident. Contours at 2-meter intervals (GoogleEarth/ArcGIS 10, P. Foss).

localization of tesserae is relatively contained, and distinctively *different* than that of tile (compare figs. 8 and 12).

Objects suggesting **domestic industry** are patterned more similarly to tile: food processing, including cookwares, a *mortarium* (sector 9999), and animal bone; and cloth processing, with a terracotta spindlewhorl in sector 3550 and a pyramidal loomweight from sector 9999 (fig. 12). These objects cluster in the central, south, east, and northeast of the site—that is, where the buildings on site were likely to have been arranged along a hill terrace.

As for **transport and storage vessels**, amphorae fragments show concentrations in the central and southern areas, and to a far lesser extent in the north (fig. 13). A total of 0.3 kg. and 1.0 kg. of amphorae were collected from sectors 8888 and 9999 respectively (but non-systematically, so are they not visually compared in fig. 13). The three identifiable amphorae fragments, as noted above, date ca. 1st c. BC – 2nd c. AD. They are associated with wine, and come from the central-south part of the site (sectors 1520, 9999). All of the identified amphorae are likely to have transported wine, and all might have been produced in central Italy, though the condition of the survey finds makes it premature to be too specific about their loci of production. In any case, the finds suggest that regionally produced wine was consumed, but probably not produced, at the site.

The largest *dolium* fragment (more than 26 cm. long and weighing over a kilo) came from sector 9999; such a piece is unlikely to have travelled far. Since *dolia* were often buried, this fragment could indicate the depth and extent of damage that deep ploughing has done to the site over the last century. Alternatively, given the few *dolia* sherds so far recovered, more may be located much deeper underground, untouched. It would be puzzling if storage facilities at the site were limited, since there tends to be an expansion of storerooms at Roman villas in first-century BC Italy⁵.

Metal was sparse (other than the ten fragments of lead piping found in sector 9999). Two iron nails and a bronze button-tack for upholstering furniture (with a portion of leather that looks to be preserved underneath the head of the tack) were recovered from sector 9999. The two bronze coins have already been discussed (figs. 8, 14).

The distribution of **coarseware** at the site shows strong concentrations in the south, east, and north (fig. 15). This correlates with the distribution of tiles and cookware (proxies for the locations of buildings). Diagnostic coarseware was collected from 8888 and 9999, but non-systematically, so numbers cannot be compared with the systematic survey. The distribution of coarseware is notably different from that of *sigillata* (fig. 15). Fine and semi-fine tableware is concentrated in the same center-east area as one of the concentrations of mosaic tesserae (fig. 11), but in an area relatively light on tile (fig. 10). *Sigillata* is found in small fragments across much of the site, but is completely absent in the northeast and southeast, and sparse in the north and south, where coarseware is dense. There are *sigillata* plates with rouletted hatching, and cups with relief decoration: acanthus scrolls, and bearded human and satyr heads, dating from the 1st c. BC to 1st c. AD (figs. 6-7). Area 9999, besides having the only examples of *vernice nera*, our earliest chronological evidence, is also the principal location for the *parete sottile* thin-walled semi-fine ware recovered from the site (fig. 15). Our evidence for dining, or at least storage of objects for dining, is quite strong in the center-east of the site.

Two other classes of ceramic should be noted: a coarseware with a clear or green glaze (which probably cannot be classified any more precisely than 'post-antique'), and maiolica of a type that may date roughly between the 14th-16th c. (fig. 16). The distribution of these post-Roman wares is distinct, with small scatters to the west and especially to the north, and with just two fragments probably eroded down the southeast slope. This suggests a topographic shift in usage during the broad period from medieval to early modern. It is telling that none of this post-Roman pottery was found at the heart of the Roman-period site, which appears to have been located along the terrace at the south, center, and east of the site. If some Roman structures still stood into the medieval period, perhaps some they were re-used at the north edge of the site. However, nothing definitive can be said without additional data or excavation.

⁵ VAN OYEN 2015.

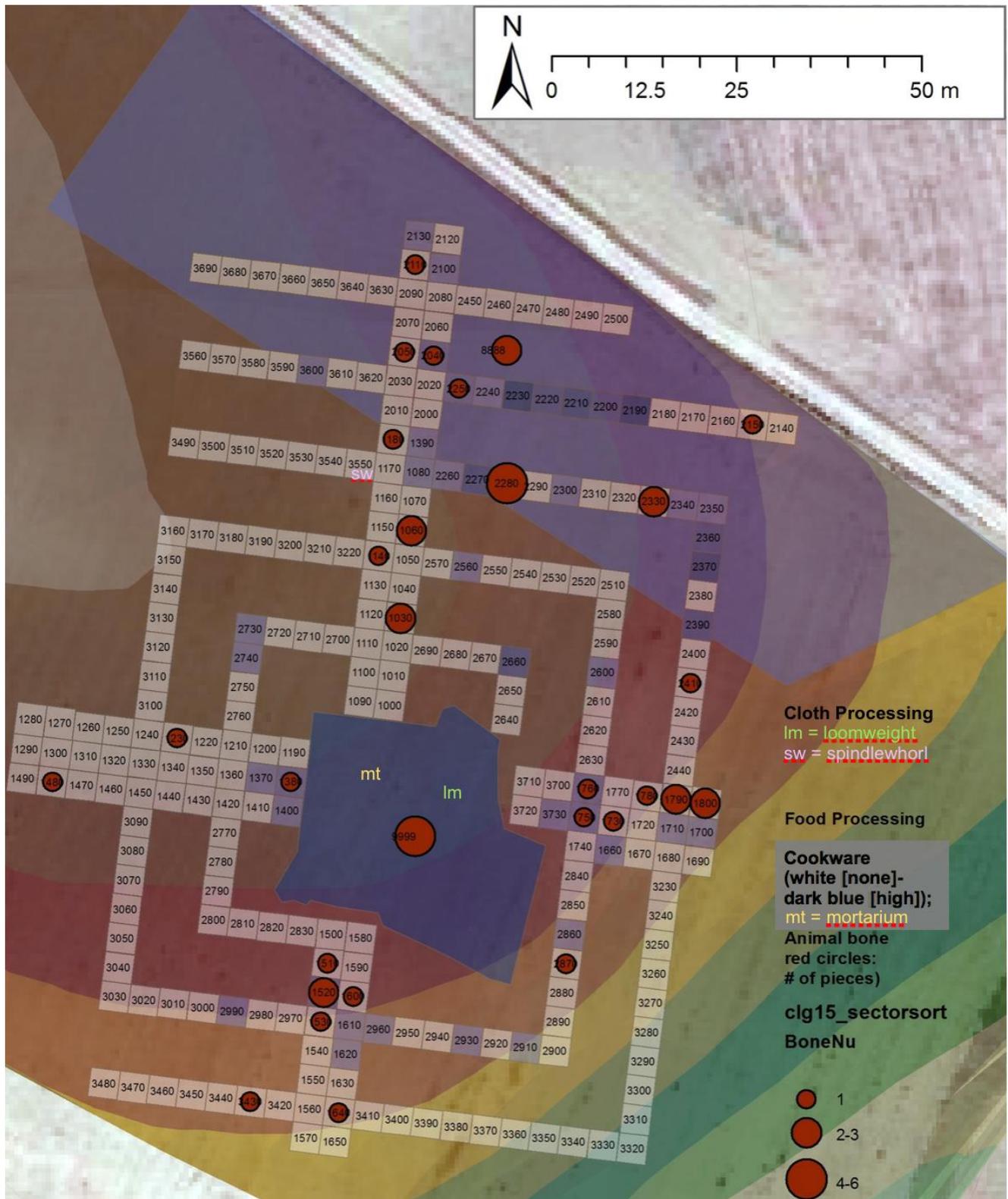


Fig. 12. Gioiella site survey area showing the distribution of five variables related to domestic industry (food and cloth processing): cookware (shading from white to dark blue, from 1-12 pieces), pieces of animal bone, and a mortarium; a loomweight and a spindlewhorl. Contours at 2-meter intervals (GoogleEarth/ArcGIS 10, P. Foss).

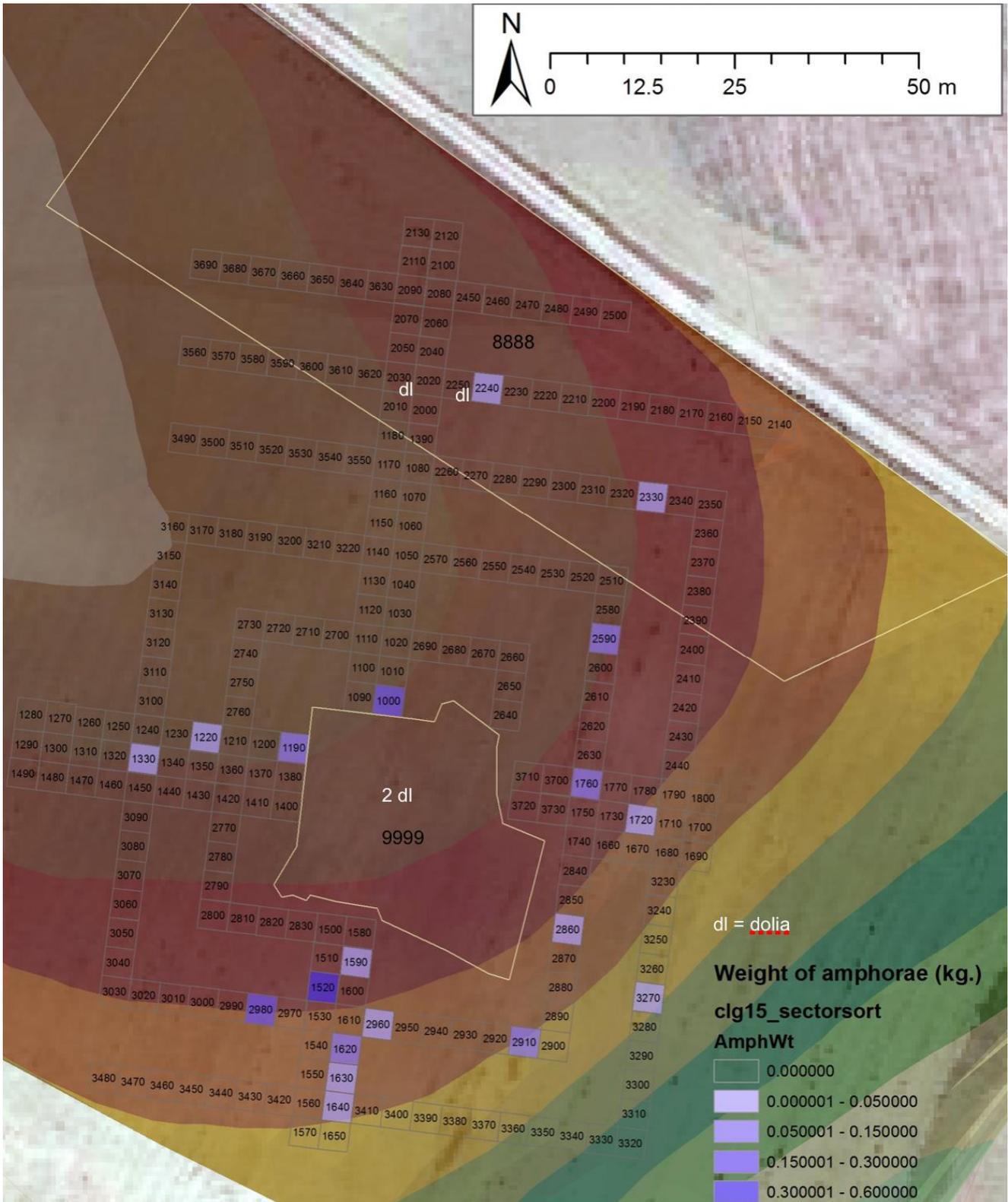


Fig. 13. Gioiella site survey area showing the distribution of two variables related to bulk foodstuff transport and storage: the weight of amphorae shards (shading from light to dark blue, from 0.01-0.60 kg.), and presence of dolia fragments. Contours at 2-meter intervals (GoogleEarth/ArcGIS 10, P. Foss).

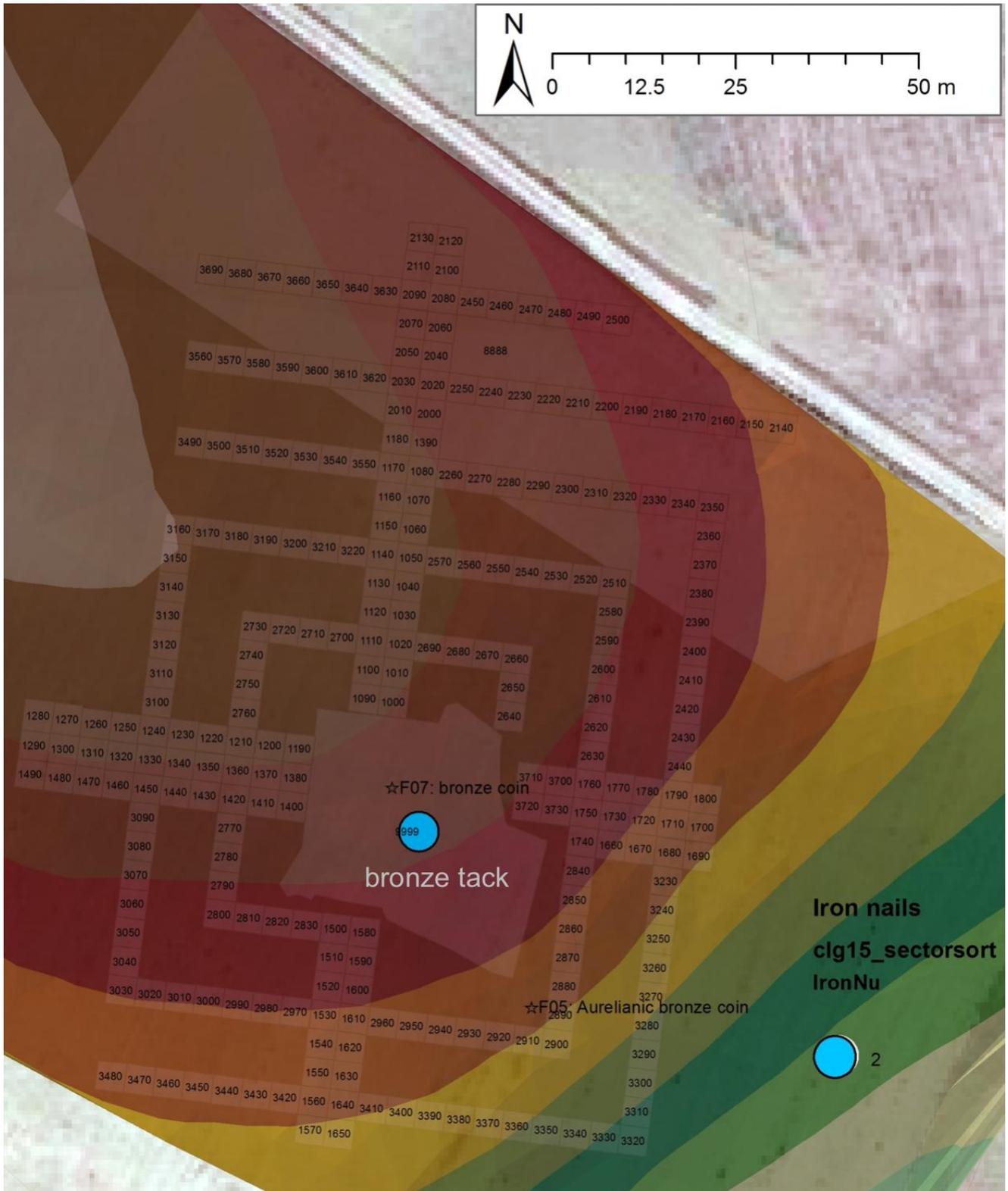


Fig. 14. Gioiella site survey area showing the distribution of 2 iron nails, 2 bronze coins (F05 and F07), and a bronze upholstery tack. Contours at 2-meter intervals (GoogleEarth/ArcGIS 10, P. Foss).

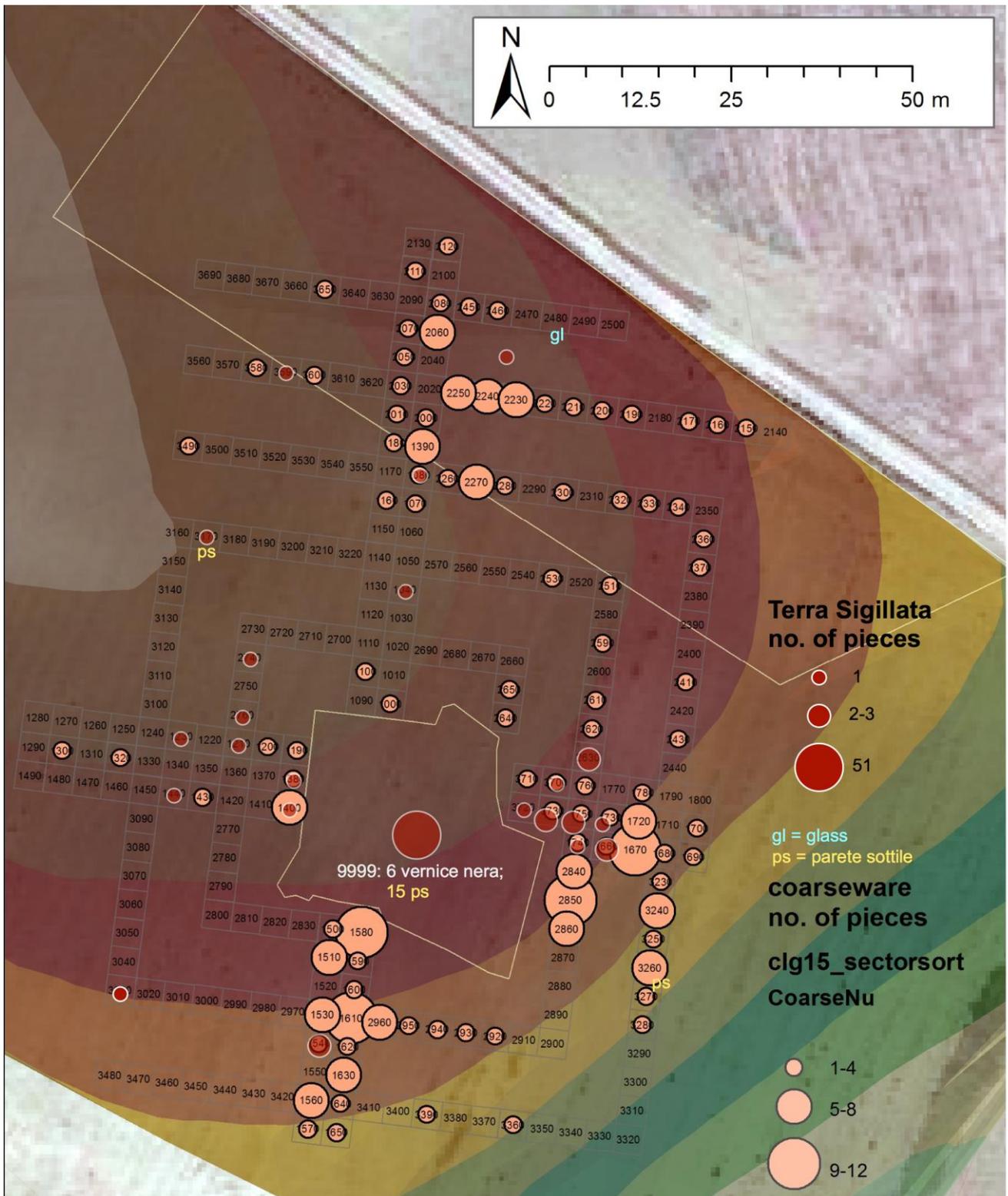


Fig. 15. Gioiella site survey area showing the distribution of coarseware (peach), fine (red), and semi-fine table wares: terra sigillata, vernice nera, parete sottile (thin-walled semi-fine ware for the table) and a single fragment of an ancient glass flask. Contours at 2-meter intervals (GoogleEarth/ArcGIS 10, P. Foss).

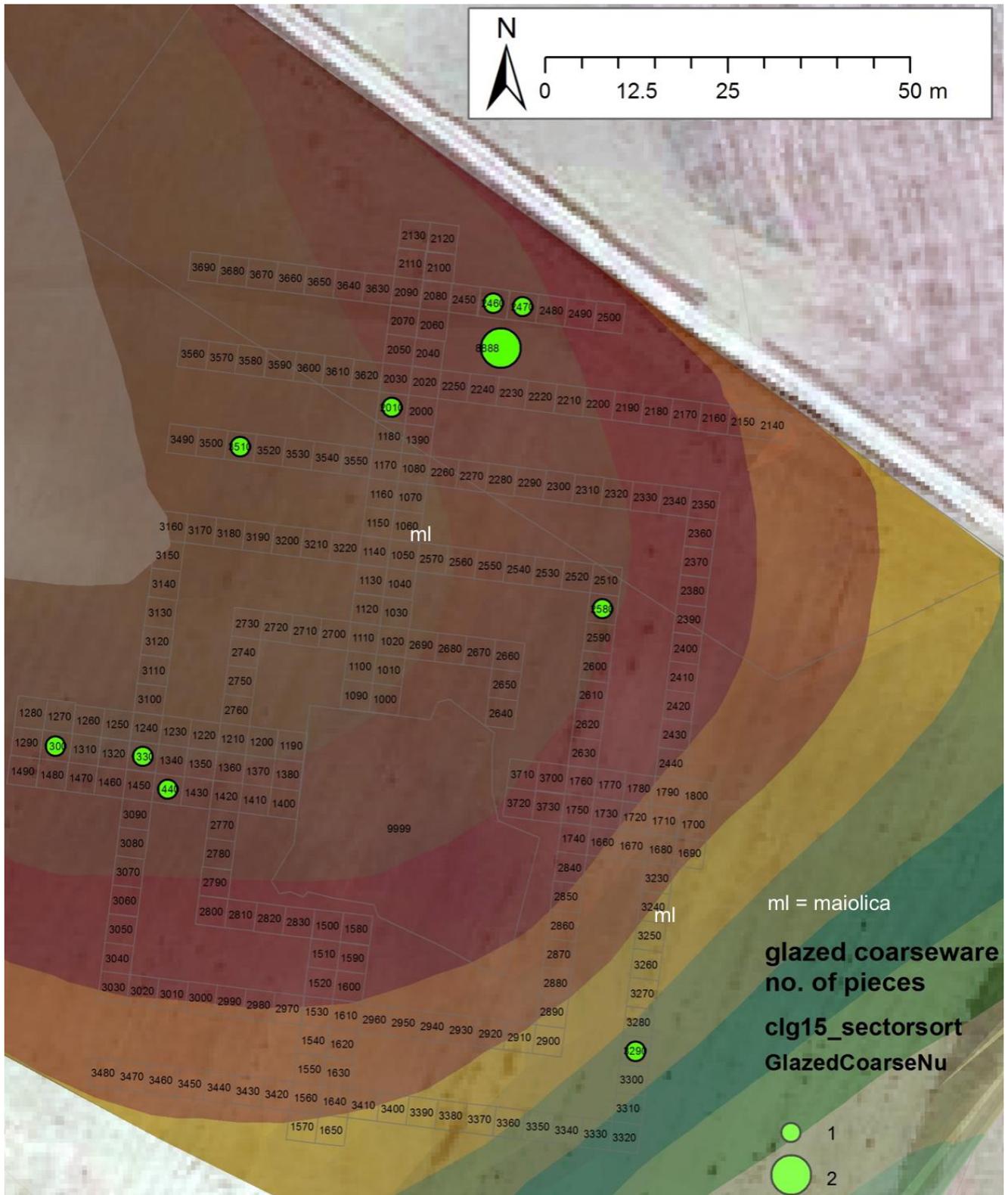


Fig. 16. Gioiella site survey area showing the distribution of glazed coarseware and maiolica. Contours at 2-meter intervals (GoogleEarth/ArcGIS 10, P. Foss).

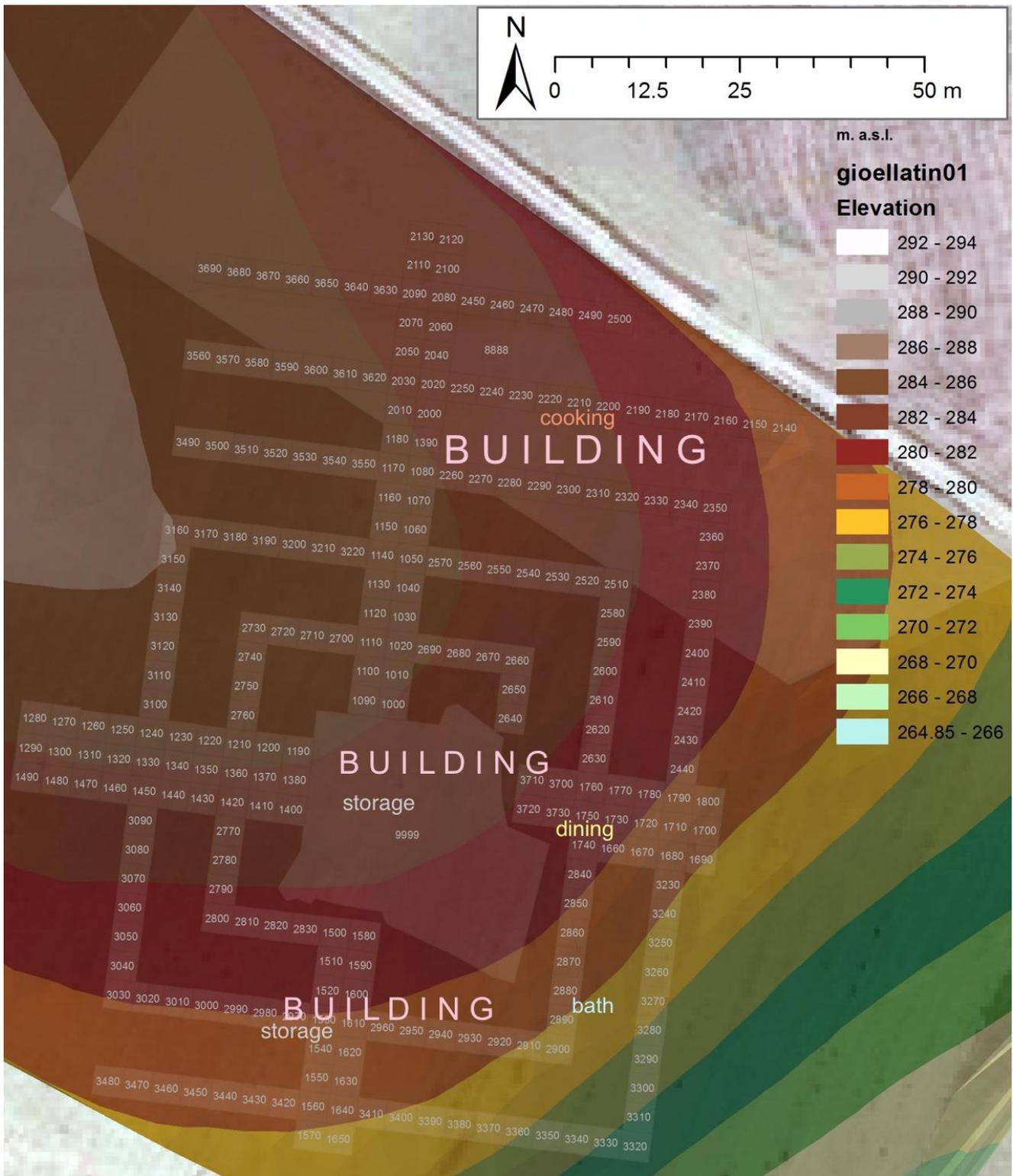


Fig. 17. Gioiella site survey area and possible functional areas over contour map (GoogleEarth/ArcGIS 10, P. Foss).

Fig. 18. Google Earth image of linear feature (possible ancient road) on Poggio S. Maria. Dotted line indicates the centerline of the portions of the feature visible from the air, though the feature continues some distance south under the tree cover. Point 'A' indicates the viewpoint of fig. 19 (P. Foss).



Interpretations

The site appears to have been constructed along the top edge of a hillslope projecting southeast; that hillslope may have been flattened and widened to form a terrace upon which buildings were situated, between ca. 280-284 m. a.s.l. (fig. 17). Our earliest evidence (*vernice nera*), ca. 3rd-early 1st c. BC, comes from the area of 9999, perhaps the kernel of the complex (fig. 15). By the Roman imperial period, the site may have expanded; *sigillata* is slightly more widespread, and several forms suggest Augustan occupation (figs. 6-7). Masses of tile from the south, center-east, and north (fig. 10) suggest that large roofed buildings were present, perhaps strung out along the curved terrace. In the area of these structures, the site has evidence in the imperial period for food production: a mortarium and cooking wares (fig. 12); storage (amphorae and *dolia*, fig. 13); domestic production of cloth (loom-weight, spindlewhorl, fig. 12); and elegant dining (decorated *sigillata* tablewares and a glass bottle, figs. 6-7, 15). At least parts of the structures were decorated (*opus reticulatum* facing, painted plaster, marble facing, black-and-white mosaics, a fragment of marble sculpture, figs. 9, 11). Moreover, the complex likely had a bath (*tubuli* for conveying heated air; lead pipes for supplying water, fig. 11). Evidence for dining appears most strongly in the center-east part of the site, while the tesserae are concentrated in that same location, as well as in the south-east. Cookwares are densest in the northeast (fig. 12). Evidence for storage is concentrated in the center and south of the site.

The Aurelianic coin is, so far, our only evidence for the 3rd c. AD (figs. 8, 14). At some point, the focus of activity at the site seems to have shifted to the north, as shown by the glazed coarseware and few fragments of maiolica (fig. 16). With the construction of the present-day farmhouses at the top of the hill (figs. 2-3), however, the site was completely abandoned and reverted to farmland.

For future investigation and perhaps excavation, one could suggest the following areas: for a possible dining area, the area around sector 1750 on the east side; for storage, sectors 1620-9999 in the center-south; for cooking, 2210 in the north; for a probable bath suite, sector 2880 to the southeast (though tesserae may have eroded some distance down the hill). Geoprospection is also recommended, particularly ground-penetrating radar, which would be appropriate for the geology and the soil conditions.

The most likely explanation for the site, given the variety of evidence, is that of a villa with limited agricultural processing and storage facilities, as well as a residential portion with well-decorated and furnished reception, dining, and bathing areas. The site's position at the point of the hill, facing southeast towards the small valley that admits breezes, and overlooking the lake, would have been a pleasant and sensible location for a com-



Fig. 19. View south at the possible road towards Lago di Chiusi, from Point 'A' in Fig. 18. Student A. Rathbun at left holds the rover receiver for the Topcon GR-5 GPS system. Dotted line indicates the centerline of the feature (P. Foss).

plex that perhaps began its existence by the end of the 2nd c. BC, and continued at some level at least to the end of the 3rd c. AD, with sporadic activity occurring even afterwards.

A possible ancient road

A suspicious linear feature was observed on Google Earth during the pre-fieldwork stage of research, located on the western upper slope of Poggio S. Maria, with a north-south orientation, just below and to the west of a radio antenna installation, which reportedly revealed archaeological material during its construction (figs. 2, 18). The elevation of the feature's extent that we surveyed (that south of Point A in fig. 18) ranged from 342.03 to 362.93 m a.s.l., and the total length of the feature that can be reasonably ascertained on the ground is about 200 m.

The linear feature is lined on either side with trees and scrub, and flanked by two modern field roads. Ground-truthing revealed nearly vertical cuts on either side, with a flat bottom profile not typical of a natural drainage channel. Such a 'U' profile is frequently typical of ancient roads, as well-built and packed roadbeds do not tend to rut, but allow runoff to flow smoothly off their course (fig. 19)⁶.

No road paving was visible during our inspection of the feature, but probes with rebar suggested a soil depth of 30-60 cm over a hard layer. The width of the feature is at least 3-3.5 m., though not having clear edges makes it impossible at this time to determine a true width.

The continuation of the feature's line to the south is intriguing, as it passes close to a cistern about 380 m. further downslope towards the lake (fig. 2). The cistern presumably belongs to the Roman period; hydraulic cement is clearly visible on the lower interior face of the structure, and cisterns are not uncommon along thoroughfares. While this cistern is not necessarily connected with the possible road, and we do not yet know how the cistern was supplied (or what it supplied), its position close to, but upslope from, Lago di Chiusi suggests that the lake may not have been a reliably clean source of water.

At least two local residents do recall from their youth that an 'old road' was visible on this stretch. Confirmation of the identity of this feature could be achieved by means of a strategic sondage traversing the hypo-

⁶ HARRIS 1965: 113-133, Pls. XXXa and XXXIIIb show a similar cut profile.

thetical roadbed. This would be a relatively brief, inexpensive, and unobtrusive operation that could yield important information, including whether this feature is a candidate for a portion of the Via Cassia, an important Republican-era road network that led from Rome to Fiesole, but whose course north of Clusium (Chiusi) has received less attention. Scholarship has generally held that the Via Cassia continued directly up the Val di Chiana, but recent work suggests that the 'road' is better understood as a 'road system' with many branches. The Via Cassia entered Clusium from the east (on its route from Città della Pieve), and branched out after leaving Clusium on the west⁷. Given that the area immediately west of Lago di Chiusi was poorly drained and marshy in antiquity, perhaps a course branching off east of Clusium, and going around the eastern side of Lago di Chiusi, was part of such a system. Even if not associable with the Via Cassia, this possible road section could add valuable understanding to the local communications network on the west side of Lago Trasimeno. It is also possible, of course, that the feature belongs to the Etruscan or medieval period.

Conclusions

Based on the survey, it is not possible to know how deeply buried the Gioiella site buildings are, and to what extent ploughing and erosion have damaged them. It is likely that significant damage has occurred; floor levels would probably have to be near a meter below the surface to escape destruction. Dolium and mosaic fragments do attest some floor-level damage, though the massive quantity of roof tiles (and in many cases, their large size) shows that the site cannot have been thoroughly decimated. Artifacts suggest an occupation from about the end of the 2nd c. BC through the 3rd c. AD, with limited later activity of vague date. The Gioiella site was probably a Roman villa that took advantage of deep soils (though their clayey nature limited their ability to drain, the slope of the hill would have kept them workable), and a prominent position on this hill spur overlooking Lago di Chiusi.

From what source the villa gained water for its thermal installation is unclear, though the Roman-era cistern located 720 m. to the southeast (and about 20 m. higher in elevation) is an intriguing feature. That cistern falls close to the line of a probable ancient road, set along the slopes of Poggio S. Maria, and with a cut visible towards its upper crest. Though covered with perhaps 50-70 cm. of soil, this possible road could be verified through a limited sondage, or perhaps Ground-Penetrating Radar.

Investigation of the possible road; mapping, cleaning, study, and drawing of the cistern; and strategic excavation and geoprospection at the Gioiella villa site would all be low-impact, high-results activities that could shed light on the infrastructural networks of communication, trade, and water supply that would have permitted and assisted intensive agricultural development of this hilly zone north of Lago di Chiusi during the period that Rome took direct control, and thereafter during Roman domination.

Pedar W. Foss - DePauw University
Giampiero Bevagna - The Umbra Institute
Rebecca K. Schindler - DePauw University
Stefano Spiganti - Intrageo

BIBLIOGRAPHY

- FRACCHIA, H., 2006a, *The villa at Ossaia and the Territory of Cortona in the Roman Period*, Syracuse.
FRACCHIA, H., 2006b, "Middle to Late Imperial Ceramic Production and Evolution in the Southeastern Val di Chiana", in D. MALFITANA, *et al.* (eds.), *Old Pottery in a New Century*, Catania: 125-137.
HARRIS W., 1965, "The Via Cassia and the Via Traiana Nova between Bolsena and Chiusi", in *Papers of the British School at Rome* 33: 113-133.
HAY S., KEAY S., MILLETT M., 2013, *Otricoli (Otricoli, Umbria): an Archaeological Survey of the Roman Town*, Archaeological Monographs of the British School of Rome 22, London.
ETTLINGER E., 1990, *Conspectus Formarum Terrae Sigillatae Italico Modo Confectae*, Bonn, Habelt.

⁷ MOSCA 2002: 135-138, and also pp. 151-166, 181-190, 197-205.

- KEAY S., WILLIAMS D., 2005/2014, "Roman Amphorae: a digital resource, York, Archaeology Data Service", *University of Southampton*, http://archaeologydataservice.ac.uk/archives/view/amphora_ahrb_2005/index.cfm.
- MOSCA A., 2002, *Un sistema stradale romano tra Roma e Firenze*, Florence.
- SPERANZA S. 2011, "Anfore", in M. BERGAMINI (ed.), *Scoppieto II. I materiali*, Florence.
- SPERANZA S. 2008, "Anfore", in M. BERGAMINI (ed.), *Antiquarium comunale di Baschi*, Milan.
- VAN OYEN A., 2015, "The moral architecture of villa storage in Italy in the 1st c. B.C.", in *Journal of Roman Archaeology* 28: 97-123.