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**Application of modern methods in landscape
archaeology – case study Ager Castronovano**

Dott.ssa Klára Preusz

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**University of West Bohemia in Pilsen
Faculty of Philosophy**

Doctoral thesis

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Pilsen 2020

I have written this thesis on my own, and I indicated all the sources, wherefrom I drew information, as is required for a scientific work.

Pilsen, April 30, 2020

Pump

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1 Introduction

The PhD thesis focuses on an area historically known as *Ager Castronovano*, which surrounded the Roman colony of *Castrum Novum* (today Santa Marinella, Lazio, central Italy). The research area lies on the west coast of central Italy in central Lazio region, occupies 42 km² and is framed in the west by the coast of the Tyrrhenian Sea, the inland borders are formed by the rivers Marangone and Rio Fiume.

The area is situated in the region with a rich archaeological research tradition. The first research of the site was carried out as early as the 18th century. The most important study so far that tried to put the site in the context of the surrounding landscape was realised in the 1970s. Although the archaeological exploration of the area continued, the archaeological map published by Pier Andrea Gianfrotta in 1972 has never been upgraded. Some of the more recent studies on the area continued to rely on this publication (Gianfrotta 1972). There were also unsystematic attempts to survey the urban settlement surroundings with the help of archaeological basic survey methods (terrain analysis and topographic survey of relief formations, surface prospection and collection of artefacts) (Gianfrotta 1972; Enei – Nardi Combescure – Poccardi – Beneš – Galletti – Kodýdková – Lureau – Paclíková – Preusz – Squaglia 2015). None of them involved the modern methods of remote sensing, although they have been applied in the Apennine Peninsula since 2005 (Campana 2013, 152; Opitz - Cowley 2012; Gervasi et al. 2009; Lock et al. 2000). In spite of these isolated attempts, the *Ager Castronovano* remained a neglected area in the shadow of famous UNESCO sites like Cerveteri or Tarquinia. The international field research of the deserted colony of *Castrum Novum* started again in 2010 (Desibio – Enei – Nardi Combescure – Poccardi – Sia – Levanto – Squaglia 2015), and since 2016, the Department of Archaeology of the Faculty of Arts, the University of West Bohemia in Pilsen, has been cooperating on this project.

The objectives of my PhD thesis is to find the most suitable methodology among the modern technologies and tools which will lead to comprehensive diachronic analyses to achieve a better understanding of the landscape transformations in the long term perspective, from the prehistory to the modern period, looking chiefly into the impact of humans on the environment and their mutual interaction. The approach is based on the novel non-destructive methods of Landscape Archaeology (Cambi – Terranato 1994; Kuna 2004; Motta 2007). Unlike other similar studies on the Apennine Peninsula, my thesis takes into account not only published data, but it enriches the archaeological dataset with my own empirical research.

The starting point of the thesis is the original archaeological map (Gianfrotta 1972) that contains sites from the prehistoric and classical period. The research area partly copied the area investigated by this researcher but was delimited by natural boundaries, which were supposed to define the Roman *Ager Castronovano*. The same boundaries (Marangone and Rio Fiume rivers) delimited the area of the Post-Medieval estate of *Tenuta di Santa Marinella* (Passigli 2001, 118). In the research area, there has been a large number of archaeological sites discovered since the publication of the map. Therefore, the first step was to create a list of all sites and information about them. The problem was that the localization was often incorrect, or different publications named the same site differently, depending on how the local designation changed, thus it was important to pay attention to the detailed description. Once, when I have completed the list, I transferred to the GIS. Subsequently, it was studied through modern technologies (e.g., historical and contemporary aerial photo analyses, airborne laser scanning, photogrammetry) to get more information on the site. The same methods contributed to the identification of new sites. The last step in the process of data collecting was the field survey and the verification of the data in situ. I divided all identified archaeological components into the chronological and typological categories. In the end, the upgraded archaeological map was established. The map placed the archaeological components in chronological, spatial and environmental contexts. The diachronic, spatial and multicriterial analyses followed. They allowed me to propose further interpretations of the cultural landscape transformation and reconstruct the settlement structure development in the rural landscape that stood on the periphery of the *Suburbium* region (Witcher 2006) and point the central places and their hinterland (Morley 1996; Patterson 2004).

2 Objectives, theoretical framework and methods

2.1 Objectives

The first aim of my PhD thesis is to find the most suitable methodology among the modern technologies and tools (e.g. airborne laser scanning, photogrammetry, geographic information system, multicriterial analyses etc.) which will lead to comprehensive diachronic analyses to achieve a better understanding of the landscape transformations in the long term perspective, from the prehistory to the modern period, looking chiefly into the impact of humans on the environment and their mutual interaction. The main questions of my dissertation are:

What are the most suitable data sources for the Ager Castronovano, and what is their informative value?

What is the archaeological potential of the landscape there, and what components does it contain?

What are the differences in the settlement structure of particular periods and what factors influenced its changes?

Was there any correlation between landscape transformations and historical events?

2.2 Theoretical framework of the thesis

I composed the theoretical framework of my thesis of four fundamental pillars that originate from different disciplines, but their application in different case studies confirmed that they can be beneficial to archaeology.

The first is the Theory of Structural Networks, also called **Actor-Network Theory (ANT)**. Network perspectives in archaeology arose in the 1990s. Its usefulness to archaeological questions has been shown in case studies (e.i. Graham 2006, Sindbaek 2007, Collar 2008). It helps to reconstruct the configuration of networks that influence the exchange of ideas and goods, and changes in such networks that may have an impact on social, religious, and of course, economic systems. The term *actors* refer to diverse factors: various items, objects, places and others. In the humanities, the term *network* is commonly used, for example, in the context of trade exchange, a network of relationships, a network of roads. The network identifies sets of relationships or contacts between the actors, termed as the connectivity. Mathematical graphs visually depict the links between actors, groups and networks. They define the social/cultural/economic environment of the actor. The actor can be both an individual and a social component. The mode of relationships may correspond to symbolism, material, physical, formal or biological conditionality. Individual attributes and meshes can be plotted in a matrix,

allowing further analysis together with other representations. The attractiveness of ANT lies not only in the visualization of complex networks but also in overcoming borders and disciplinary differences. ATN allows a better understanding of complicated relationships in reality. ANT analysis of historical-archaeological empirical data aims to know the interaction between actors, visualize relationships using graphs, respectively, mathematical model. All networks consist of two basic building blocks:

Nodes, i.e. actors represented by a point that may contain metadata (e.g. name, formal properties, etc.),

Edges displayed by lines between nodes, actors. The links can be controlled and/or examined. It can be determined, for example, based on the number of repetitions of the node, which indicates the least expensive energy path.

Another underlying theory is the **Rational Choice Theory** (Catalin 2011, 117) that sees the social actors' rational behaviour as maximizing the expected utility of their actions (Evans and Over 1996, Sen 1977). It explains human behaviour on the assumption that individual actors behave rationally in an economic sense. It means that the different actors have clear and consistent (albeit not necessarily identical) preferences and try to maximize their benefits by their actions (Lock – Pouncett 2007; Müller 2009).

The third theoretical pillar is the **Central Place Theory** (Nakoinz 2010, 251). Since the early 1990s, the central place theory is a widespread theoretical concept for the exploration of exceptional settlement sites, but its benefits lie not only in identifying central places but also in the integration of central places in complex models. Not the central place itself but the mutual relation of core and periphery is the point of interest here (Nakoinz 2010, 252). The centrality is a term used in graph theory and network analysis, describing the interconnection of individual nodes of a given system. This concept analyzes relationships inside any network, to express the importance of a nodal point (e.g. a human, a group, place etc.), and to describe its location in the system. The centrality determines the degree of interconnection of the analysed point and the surrounding network and its overall integration (Christaller 1933, Knitter - Nakoinz 2018, 23).

The last pillar is the **Theory of Structural Holes**. Since archaeological evidence and historical documentation are fragmentary and do not provide enough information to get anywhere near a complete picture of networks in the past, developing methods to reconstruct archaeological networks and infer missing links is crucial (Amati – Shafie – Brandes 2018, 227). The network does not always include all available points; it also contains hollow spaces. The basic criterion of this theory is the efficiency that leads to maximizing contacts across different

categories. The historical archaeology uses this theory for the identification of the primary actor (Burt 1992).

2.3 Methodology

Within the current field of landscape archaeology, three significant movements can be discerned: the first tries to understand the developments throughout more extended periods (*longue durée*). The second movement regards the landscape as a palimpsest, where the remains of previous inscriptions are readable. The third approach perceives the landscape as a structured space in which different communities carry out their activities (Gojda 2000, 2004). The conceptual development of landscape archaeology is closely related to advancements made in methods and technologies. The universal spread of the Geographic Information System (GIS) paved the way for the profound development of the field. The adoption of advanced geospatial databases allows the integration of various geographical data. The contemporary landscape archaeology combines multiple disciplines, both natural sciences and humanities, dealing with the interaction between man and his environment. Real archaeology of the landscape can be talked about when environmental research, remote sensing the earth's surface, the survey of anthropogenic relict, and the study of written and cartographic sources are combined in a comprehensive approach (Gojda 2004).

My *Ager Castronovano* research combined all described approaches to establish the multi-disciplinary non-destructive methodology to analyse the landscape. It came out of the previously compiled list of archaeological sites; it mined it for more information, added new information and identified new archaeological sites and components to achieve more comprehensive and analysable archaeological dataset.

2.3.1 Analyses of historical maps

Historical maps add a visual representation of the area to the written sources. However, they are focused very often on significant topographical reference points in the landscape, and they are less suitable for the complex studies of the landscape like that in *Ager Castronovano*.¹ The oldest cartographic work mapping the Roman Empire in its early years, the so-called Agrippos map, has not been preserved. Its copy from the 4th century with some supplements from the 8th and 9th century formed the basis for the Peutinger map. *Tabula Peutingeriana* (fig. 1) is dated back to the mid-13th century. It shows *Castro Novo* situated directly on the *Via Aurelia*. The map does not provide any additional information on its surroundings. The next known map is the *Chorografie Tusciae*, made by Girolamo Bellarmato and published in Florence in 1536.

¹ Oldmapsonline.org is a springboard for the orientation in available cartographic sources. After selecting the area of interest, it searches for digitized maps across the online collections.

Another map was created by Ignazio Danti depicts the *Patrimonio del Beato Pietro* in the period from 1580 to 1583. It shows Santa Marinella, Fosso Marangone and Fosso Castrica. Near the delta of Fosso Marangone, there are Torre Chiaruccia and the ruins of *Castrum Novum*. In 1612, Abramo Ortelio published his *Senensis ditionis accurata descriptio*.

The ruins of the lost Roman colonies *Castrum Novum* and *Punicum* were captured in 1620 by a cartographer of German origin L. Holsteins (fig. 2). In the same year, *Castrum Novum*, *Pyrgi* and *Alsium* were depicted on the map *Italia Antica* by C. Tolomeo. Also, Phillipp Clüver captured the site in 1624 *Italia Antiqua*, which was published after his death. This map was reprinted several times, for example, Petrus Bertius printed it in 1685. F. Contini also mapped the area in 1661 (Passigli 2001, fig. 29). The sites Santa Marinella, Torre Chiaruccia and Torre Marangone, were captured on the map section reaching from Santa Severa to Civitavecchia. The map brought information about the division of local forests of Tenuta si San Pietro. Naming them from South (Bb) Tenuta di Santa Severa, Tenuta della Selciata (Cc), Tenuta del Castrina (Dd), Tenuta di Camporosso (Ee), Tenuta Santa Marinella (Ff), Tenuta delle Chiaruccia (Gg).

The Topographer Mario Gentile documented the estate of Santa Marinella owned by the Prince of Palestrina Taddeo Barberini (fig. 3). It was placed between the sea and the three rivers (today Ponton Castrato, Marangone and Santa Maria Morgana). The plan constituted the original, wherefrom the copy was drawn up in 1660 for the Alexandrine Cadastre, as appears from the substantial similarities between the two. The ruins of the church of Santa Maria Morgana are clearly visible on the plan. They are not depicted on the later maps. The existence of this map may have led to the failure to draw up a Santa Marinella Register (Passigli 2001, 110). *Via Aurelia* with the ruins of *Castrum Novum* reappeared on the map in 1692 that forms a part of the *Topografia geometrica dell'Agro Romano* by G. B. Cingolani. In 1696, G. F. Ameti drew up the area again. He described the ruins of *Castrum Novum* as *Capo Linaro*, and ascribed ad *Punicum* in Santa Marinella. The landscape in that period was dominated by the forest Macchia di Santa Marinella, south of which flowed the stream *Castrica*; on the coast, there were the defensive towers Torre del Marrangone and Torre della Chiaruccia.

In 1698, *Castrum Novum* was included on a map by Ptolemy Mercator *Tabulae Europaeum totam Italiam*. In 1729 the map *Nuova accurata descrizione del territorio senese* was published. The growing control of the manor in the 17th and 18th centuries was associated with the efforts to map the smaller territorial components to improve the farming capacity of the area. A map from 1776, made by Benedetto Pergì, depicted the Santa Marinella area along the Marangone River, which separated the city from the territory of Civitavecchia. The map provided more detailed information on the names of individual landscape segments, especially forests

and streams around the city. Also, another map, from 1783, showed the forests of *Agro Romano*. The fascicle of maps, which were made around 1800 and stored in Congregazione del Buon Governo, Xb, focused primarily on the course of *Via Aurelia* (Sansa 2001, fig. 10) and left the area out.

The most credible source representing the area is the IGM 1895 map.² It was the pattern for all younger technical maps. It is, therefore, possible to rectify it in GIS without significant deviations. The map depicted the topography in considerable detail, e.g. farms, infrastructure and the other elements (watering places, fords, and bridges), and it can be used as a *terminus ante* and *post quem*. Due to the morphological predisposition of the territory, it is clear from the map that the modern roads more or less copy these ancient or even prehistoric paths.



Fig. 1: The Tabula Peutingeriana.³

² IGM 1895: Base maps of the Military Geographic Institute (Istituto Geografico Militare) mapping from 1895. A digital non-rectified copy is available for a fee and order from the Military Geographic Institute.

³ The map is available in high resolution scan on https://en.wikipedia.org/wiki/Tabula_Peutingeriana#/media/File:TabulaPeutingeriana.jpg available 1. 10. 2019

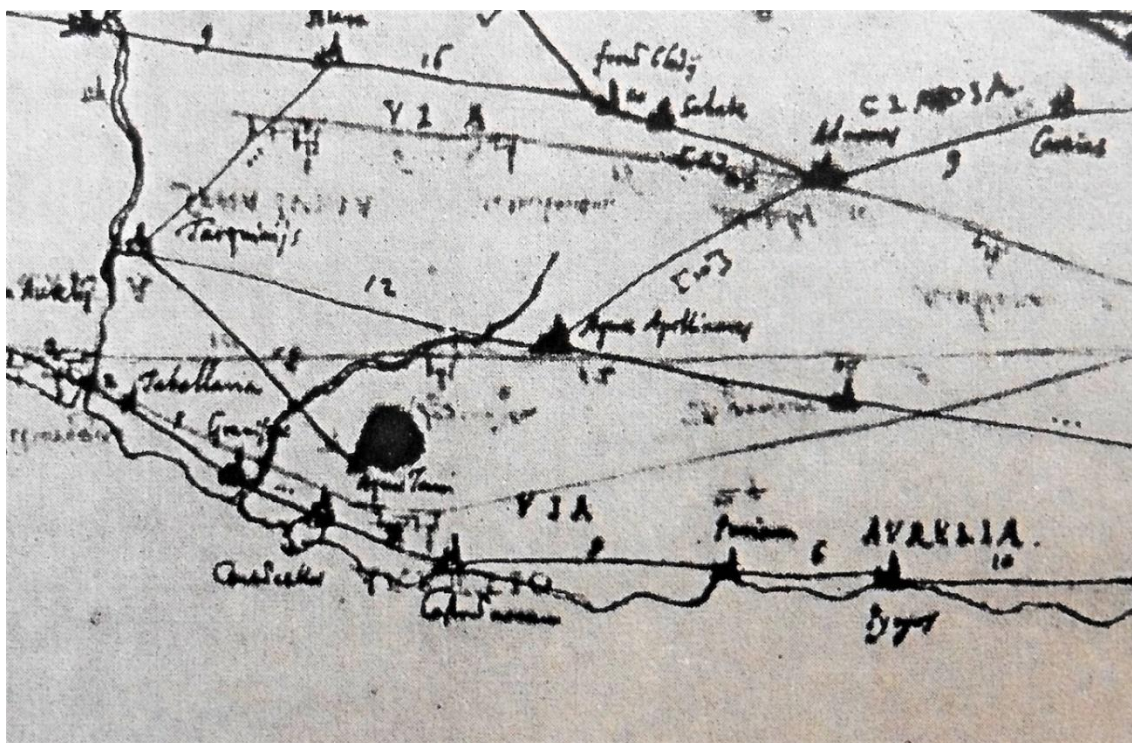


Fig. 2: The Early modern depiction of the extinct Roman colony Castrum Novum on the Holstenius map from 1620 (taken from the archive of Flavio Enei).



Fig. 3: Measurement and plan of the estate of S. Marinella, land surveyor Mario Gentile (ASR, S. Spirito, b. 1481, loose leaflet of S. Marinella, n.1, April 6, 1634). The estate, which is owned by the Prince of Palestrina Taddeo Barberini, is placed between the sea and the three rivers (today Ponton Castrato, Marangone and S. Maria Morgana) (taken from Passigli 2001, 118 fig. 35).



Fig. 4: Tenuta di S. Severa (ASR, S. Spirito, b. 1481, Piano Registration and Testing, ca. 1655-1660) (taken from Passigli 2001, 122, fig. 37).



Fig 5: Map section of F. Contini from 1661 showing the area from S. Severa to Civitta Vecchia. From the settlements of the research area S. Marinella, Torre Chiaruccia, Torre Marangone are shown. The individual forests in the area whose boundaries are formed by watercourses are delineated: Bb - Tenuta di S. Severa; Cc - Tenuta della Selciata Dd - Tenuta dele Castrina (Les near Castelsecca); Ee - Tenuta di Camporosso Ff - Tenuta S. Marinella; Gg - Tenuta delle Chiaruccia (taken from Passigli 2001, 106, fig. 29).

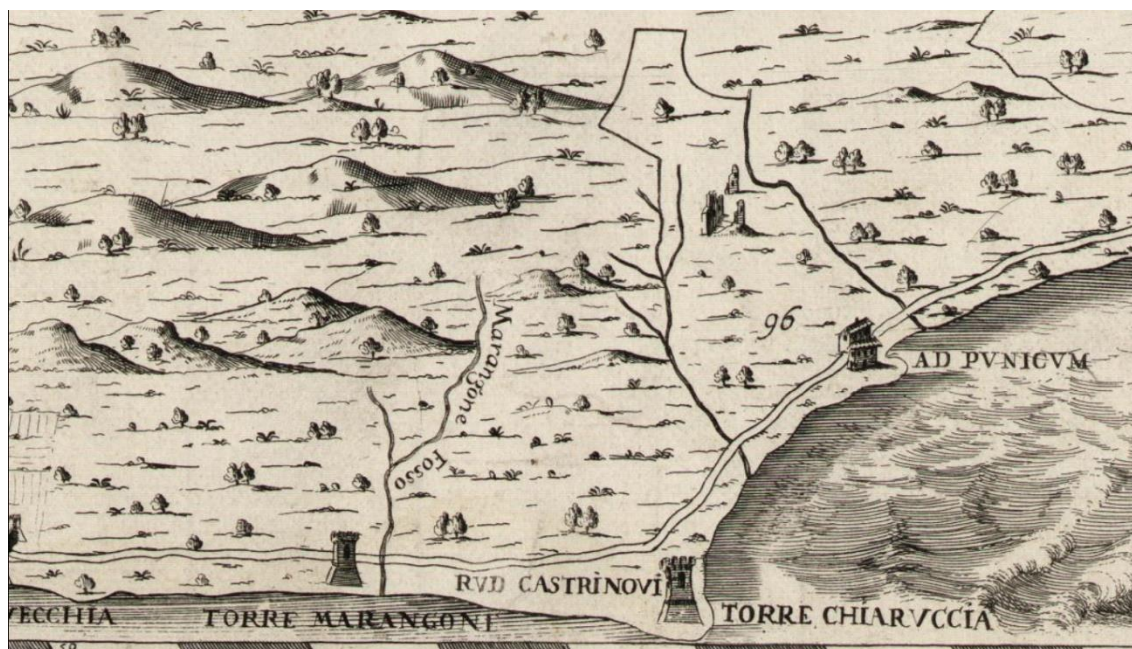


Fig. 6: The section of the map created by G. B. Cingolani in *Topografia geometrica dell'Agro Romano* from 1692.⁴



Fig. 7: Map of the forests of Agro Romano around S. Marinella from 1783 (Cadastré of the Agro Romano estates formed by order of our Lord Pope Pius VI by Msgr. Giuseppe Albani, prefect of Annona, above the report of the visit made by surveyors and by the same Holiness with *motu proprio* approved to serve as regulation, for the cultivation of each [sic] estate of the Agro Romano. The tenor of the same *motu proprio* is added, as well as the edict that was published in sequela. In Rome, 1783).⁵

⁴ <https://gallica.bnf.fr/ark:/12148/btv1b530390973/f1.item.zoom> available 21.3.2020

⁵ <http://www.archiviocapitolinorisorsedigitali.it/index.php/esplora/scheda/Nuova%20pianta%20topografica%20dell'Agro%20romano%20formata%20per%20inserirsi%20nell'opera%20di%20Nicola%20M.a%20Nicolai%20%5B...%5D/152991> available 21.3.2020.



Fig. 8: Via Aurelia with the sites of S. Marinella and T. Chiaruccia on the map of Patromino di S. Pietro, around 1800 (Congregazione del Buon Governo, Series X, b. 4, taken from Sansa 2001, fig. 10).

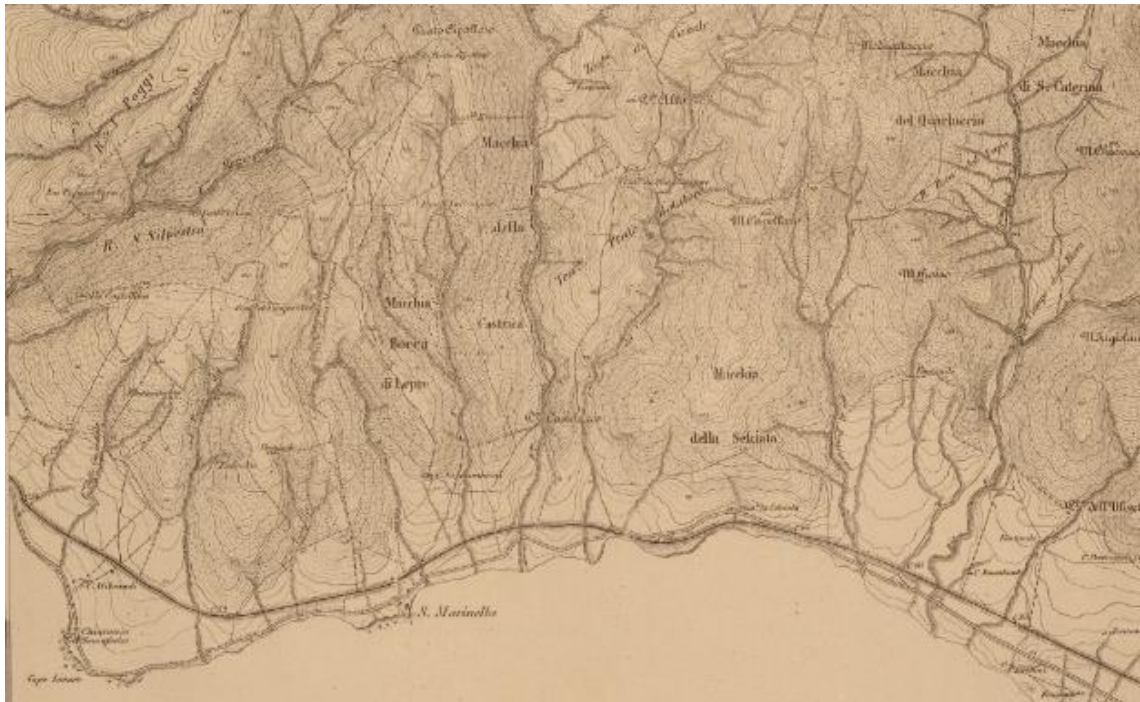


Fig. 9: The IGM 1895, map sheet 142, Santa Marinella area.

2.3.2 Literary and archival research

By combining the information from archaeological literature, archival sources and archaeological maps, I was able to compile the list of the sites in the area and provide them with an approximate dating. Determining the exact geographical position proved to be a difficult task because of the mapping techniques used at the time: the findings reports and the publications generally used a non-uniform planimetric system for positioning of the archaeological elements. They were using the Base maps of the Military Geographic Institute (IGM) with a description of the map sheet and the square in which the sites were located. Such a positioning method has caused a deviation of several hundred meters. Publications often contained maps without the scales or the maps, in which the symbol for a specific archaeological site has occupied space of several kilometres.

For the purposes of the thesis, the site location was determined approximately and collated in a digital GIS environment. The approximate positions of the sites and the vectorized Gianfrotta's archaeological map (fig. 10) after the rectification were transferred to the geographical information system in the ArcGIS environment.⁶

There is the vast Archive of SAEM⁷ located in Villa Giulia in Rome. At the time of writing, it was not accessible for the public or researchers.⁸



Fig. 10: Archaeological map from 1972 of the area under investigation in ArcGIS.

⁶ The base is the IGM 1: 5000 Base Map, which is freely available via the wms server of the Italian National Geoportal (Geoportale Nazionale). The area of interest corresponds to map sheet no. 142, Santa Marinella Region.

⁷ Soprintendenza Archeologia, Belle Arti e Paesaggio per l'area metropolitana di Roma, la provincia di Viterbo e l'Etruria meridionale

⁸ The author of the thesis would like to thank to Flavio Enei and Guido Gurolami for kindly providing their notes on the subject from the period when the archive SAEM was accessible.

2.3.3 Lidar data analyses

The next step in my work was to create the digital terrain model of the area. At present, three sources of DTM are available for the public (fig. 11). The first variant is the Digital Terrain Model 20 m (Modello digitale del terreno - 20 metri).⁹ Its implementation began in the early 1980s for the needs of the Italian Ministry of the Environment and the Protection of Nature and the Sea (Ministero dell'Ambiente e della Tutela del Territorio e del Mare). The numerical model of the terrain was obtained by the interpolation of the contours of the military mapping, the coastline, and the altitudes of the lake levels. The dimension, expressed in meters, is the average altitude value encountered in the area of the base component (pixel) relative to the centre of the cell itself. Various methods have digitized contour lines, so the accuracy of the data depends on the type of terrain (plains, hills, mountains). Planimetric accuracy is, on average, about 3-4 tenths of a millimetre, but the size of 1 pixel is 20 x 20 m. This resolution is insufficient for the identification of most anthropogenic relics in the landscape or its spatial analyses.

The second variant is based on aerial laser scanning realized in 2008 and 2010 for the same ministry.¹⁰ After selecting the ground points and filtering, a digital terrain model was created using the Sky View Factor method (e.g., Davis 2012; Gojda - John 2013). The pixel size is 1x1 for inland and 2x2 m for the coastline. Such a resolution does not allow to observe the minor terrain anomalies. Although the vegetation cover has been classified and filtered, in places with dense Mediterranean vegetation where the laser beam has not penetrated below the vegetation cover, it is not possible to create a real DTM. In such places, the automatic interpolation created the surface, and the lidar data are not trustworthy.

The most suitable variant of DEM for spatial analysis is TINITALY / 01. This DEM was created during the joint project of National Institute of Geophysics and Volcanology and Italian Ministry of the Environment and Territorial Protection (Istituto Nazionale di Geofisica e Vulcanologia and Ministero dell'Ambiente e della Tutela del Territorio) for the derivation of separate DEMs of single administrative regions of Italy. The DEM is composed of 10 m-cell size grid, in the UTM WGS 84 zone 32 projection system.¹¹ The input data came from different sources: i) Technical Cartography (CTRN 5000 maps at 1:5000 scale, contour lines (5 m interval) and spot heights derived from aerial photogrammetric surveys were available in a digital format. For some areas, gullies and ridges determined through photogrammetry were available as 3D polylines. Vertical precision is 1,2 m for spot heights and 2 m for contour lines. Planimetric

⁹ The final DTM is available for free via the National Geoportal wms service.

¹⁰ Upon a reasoned request and for a fee for archival research, data can be obtained in .las or .xyz format. Another source is opentopography.org.

¹¹ Available for research purposes upon motivated request from National Institute of Geophysics and Volcanology.

precision is 2 m. Technical Regional Cartography (CTRN 10000 maps at 1:10000). Contour lines (10 m interval) and spot heights derived from aerial photogrammetric surveys were available in a digital format. For some areas, gullies and ridges, determined through photogrammetry, were available as 3D polylines. Vertical precision is 1.8 m for spot heights and 3.5 m for contour lines. Planimetric precision is 4 m (Tarquini - Isola - Favalli - Mazzarini - Bisson - Pareschi - Boschi 2007; Tarquini - Vinci - Favalli - Doumaz - Fornaciai - Nannipieri 2012; Tarquini - Nannipieri 2017). The name of the single raster holds GPS information about its location and the resolution. For example, the raster "D42081188_0101_DTM" corresponds to WGS 1984: 11,887178 42,086874 Decimal Degrees and the resolution 1x1 metres.

The final DTM for the area was created by merging these different raster datasets: the lower resolution was available for the coastline, higher resolution for the inland. The DTM contains a large number of the errors caused by the wrong classification that complicate DTM based analysis. It was impossible to use DTM 20x20 for the spatial analyses in GIS for this reason; in these cases, the TINITALIA/01 was used.

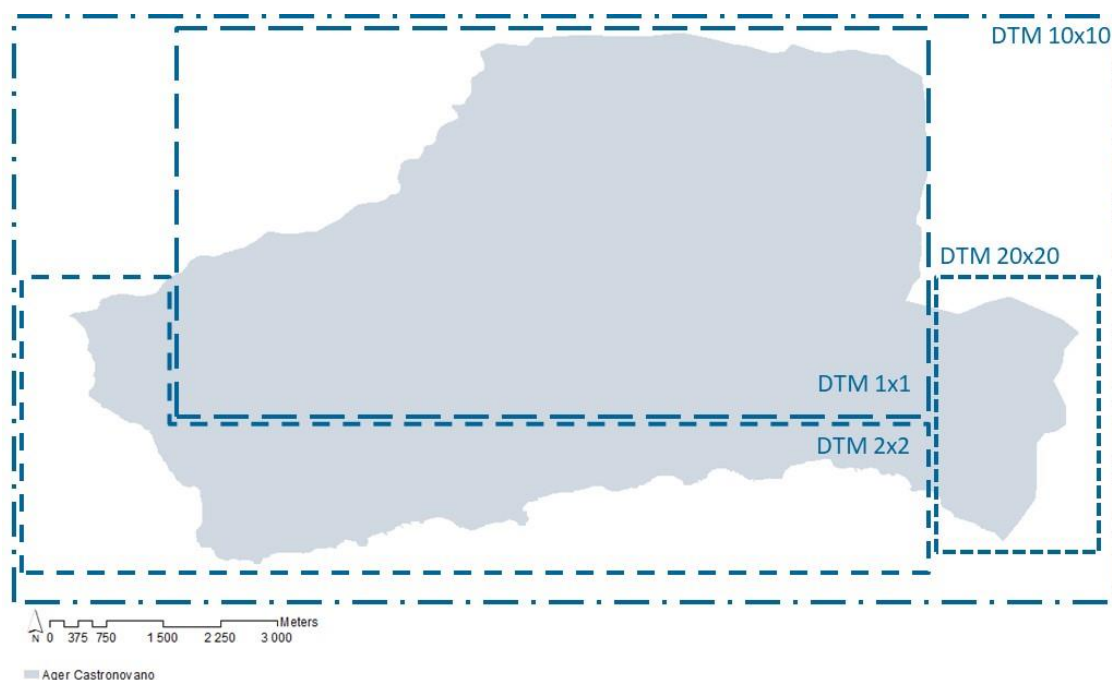


Fig. 11: DTM coverage of study area: DTM 20x20; DTM 2x2x and DTM 1x1.

2.3.4 Analyses of historical and contemporary aerial photographs

Another promising source for this research is aerial photography. Modern buildings cover a large part of the studied area. Historical aerial photographs from 1950 and 1954 allowed me to study the historical situation of the area.¹² In 1950 they were taken from a height of 6 km; in 1954 from 3 km. The time spacing and different resolution provide a comparison of individual anomalies. The images were rectified in ArcGIS for further evaluation. Note that these are perpendicular images, not the orthophoto. Therefore, despite a large number of the georeferencing points, they show deviations that increase towards the edge of the image. The current rectified orthophotos are also available for the research area.¹³

2.3.5 Field survey and the use of documentation methods

The output of the first two phases of my research is a database of sites known from the literature, and of the surface anomalies identified on historical or contemporary aerial photographs, and the DTM. Each data group was assigned one GIS layer. The observation of their superposition enabled to link the site described in the literature to an anomaly in the aerial image and DTM. The approximate locations known from the literature thus become precise positions to which GPS coordinates are attributed or their range refined. These surface anomalies that did not correspond to any previously published site were considered as potential new archaeological components.

Next step in my work was to verify the state of the known sites, identified non published sites in the field (Cambi 1999; Millett 1991; Rathbone 1981, 2008; Witcher 2011), and verify the observations of the remote sensing methods. The survey was carried out both in places of the surface anomalies, and also where other methods did not show any anomaly. It was not possible to apply the field survey on the sites covered by modern construction (65 sites), dense impenetrable vegetation, called *Macchia* (17 sites), or in the military area (1 site). In the areas of pasture (98 sites), field (65 sites). In the areas of the coast (11 sites), sea (2 sites) or river (1 site) it was possible to survey only to a limited extent defined by existing natural conditions (fig. 12). Selected verified components were documented using photographs, photogrammetry, aerial photography, and surveyed using GPS or total station.

There was no need to collect surface fragments at the sites described in the literature or that have been archaeologically excavated. Therefore, the surface collection of artefacts had

¹² A digital, non-rectified copy of the images can be obtained for a fee upon ordering from the Institute of Geography, L'Istituto Geografico Militare.

¹³ More up-to-date orthophotos are available via application Google Earth. A freely available rectified orthophoto from 2012 is possible to access via the wms server of the National Geoportal (Geoportale Nazionale) available 15.7.2017
http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/WMS_v1.3/raster/ortofoto_colore_12.map.

been performed in 74 sites, where the vegetation conditions allowed, or it was relevant. The extensive synthesizing surface collection has been applied wherever the unidentified sites were suspected in order to confirm their existence. It involved the collection of field data that directly derived from a particular model of functional components of the structure under investigation. The definition of these components assumes that the "synthesis" of partial observations (i.e. comparison of phenomena with the model, with other cases, etc.) was continuously performed directly in the field (Kuna 2001, 28). The intensive collection has been performed in specific cases in aim to deepen the information about the site. The collected material was processed and deposited in the depository of the Museo del Mare e della Navigazione Antica in Santa Severa. The issue of surface collection of artefacts is complex, and their use is often discussed (e.g., Terrenato 2004, 44). One should be aware of several taphonomical processes which could limit the outcomes of field prospection. These are natural factors (e.g., climate, erosion) and cultural factors (e.g., agriculture, construction) which have a significant influence on the preservation of archaeological situations (Taylor 2000). Sites from the earlier periods, which contained less archaeological residue, could disappear entirely under the younger settlements or due to erosion. For example, as research in southern Etruria showed, the prehistoric settlement was often destroyed by the later Roman agricultural activity. Nevertheless, collection of material culture artefacts can provide an insight into location, dating and extent of a settlement (van Leusen 2002, 128). Additionally, deposits of alluvial sediments complicate the identification of sites near watercourses. During the study of terrain relics in such an area, the erosion contributed to the identification of sites from the Bronze Age, Etruscan, and Roman villas. The erosion creases created by the rain revealed cultural strata rich in datable material in their profiles.

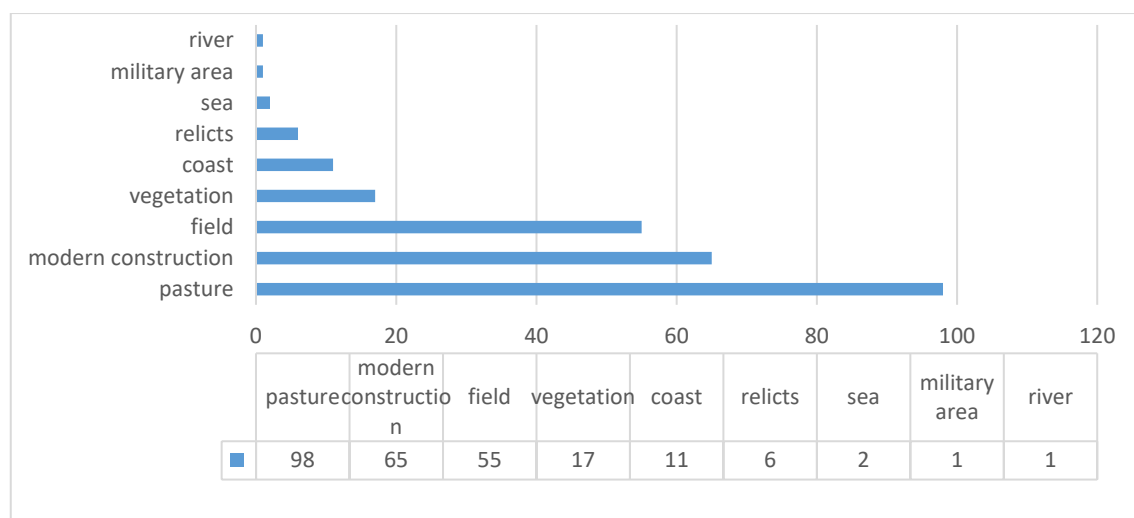


Fig. 12. The current state of sites and the number of sites in that condition.

In the chosen cases, there the application of remote photogrammetry was tested. The main motive was the assumption that a georeferenced DTM (i.e. the digital model of the Earth's surface including vegetation) could reveal the structures hidden beneath the terrain surface in places where the vegetation did not occur or where it has formed just a thin monolithic layer. Therefore, photogrammetric documentation from above had been taken, and that it was processed in Agisoft and georeferenced in ArcGIS. A LAS dataset was created from a georeferenced point cloud. It was interpolated by the IDW method and visualized by the Hillshade method. The final output was the high-resolution DTM able to detect even the traces of ploughing. In tested cases, there it did not contribute to the identification of underground structures, because of the regular use of heavy equipment (such as deep ploughing or bulldozer and the others) for surface treatment.

2.3.6 Crowdsourcing

Communication with local residents offers valuable information for landscape research. Residents could guide researchers to the location of various archaeological structures or point to an increased concentration of the artefacts in their surroundings. In the case of built-up areas with a lack of archaeological documentation, such testimonies are the only link between, for example, anomalies in a historical aerial photograph and their understanding (Paclíková et al. 2018). The survey was carried out mainly in the group being composed of local inhabitants who were interested in archaeology; namely in the Archaeological Group of the Cerveteri (Gruppo Archeologico del Territorio Cerite, GATC). Later on, some local inhabitants with no particular interest in archaeology were involved. The 40 people agreed to participate in the research in the form of unstructured interviews — the direct questions to determine the respondent's awareness of the archaeological sites around Santa Marinella. Most of the substantive replies came from GATC members. Five of them were even able to identify anthropogenic relics in the field.

2.4 Archaeological data processing

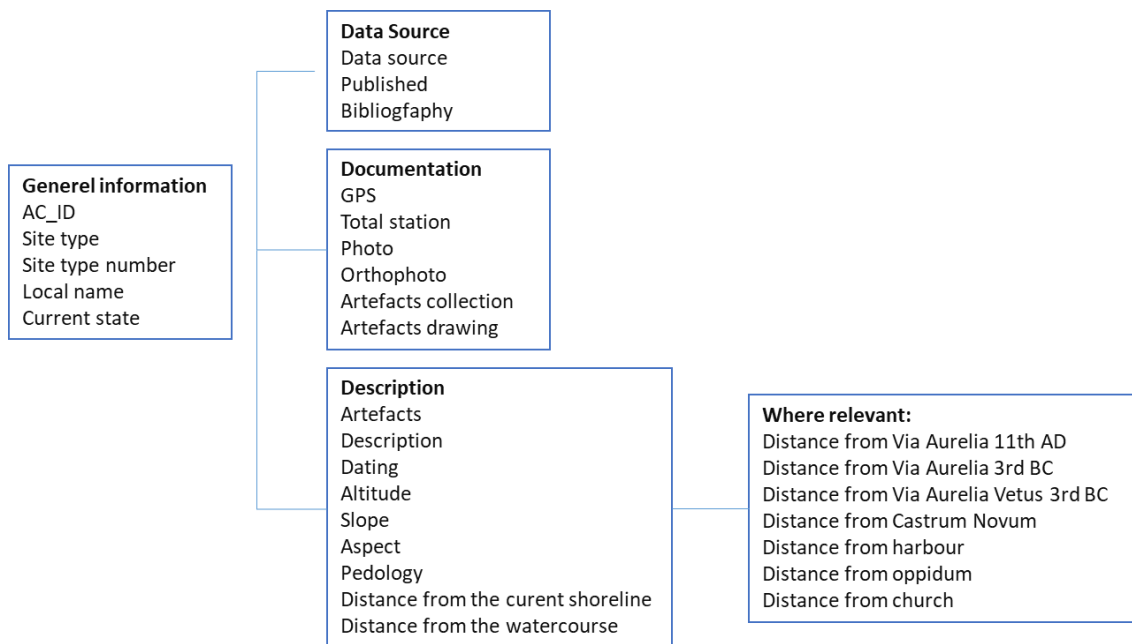


Fig. 13: The structure of the database created in MS Access for Ager Castronovano data collection.

All collected data are stored in the MS Access database. This database was the basis for further data processing in ArcGIS 10.5. Its structure was constructed to unify the depth of the information and to allow observation of common phenomena and mutual comparison (fig. 13). Then, the data were transferred in the GIS environment to further processing. With available input data, it was possible to calculate the **elevation** (from the contour map); the **slope** (from the set of three DTMs available), **pedological background** (from the vectorised pedological map) the **watercourse distance** (from the vectorized hydrological map), the **distance from the current shoreline**, the **distance from main roads** (from reconstructed courses of roads) and the **distance between components**, where it was relevant. Such spatial analyses are often applied in prehistoric archaeology (e. i. Casarotto – De Guio – Ferrarese – Leonardi 2011), or that of classical periods (e. i. Witcher 2008; Casarotto - Pelgrom – Stek 2019). From advanced GIS analyses were applied:

2.4.1 Thiessen polygons

Thiessen polygons are otherwise known as Voronoi polygons or Voronoi diagrams. It is a method of decomposing metric space determined by distances to a given discrete set of the objects in space, for example, a discrete set of points. They are an essential method for the analysis of proximity and neighbourhood, used to allocate space to the nearest point feature. It defines an area around a point, where every location is nearer to this point than to all the others

(in 2D representation).¹⁴ In the thesis, it was used in combination with Euclidean distance for the definition of the most probable area of influence of single components (Bailey – Gatrell 1995, Goodchild 2007, 110-117).

2.4.2 Path distance

So-called The Path Distance tools create an output raster in which each cell is assigned the accumulative cost from the cheapest source cell. In other words, it calculates, for each cell, the least accumulative cost distance from or to the least-cost source, while accounting for a surface distance along with horizontal and vertical cost factors. The algorithm utilizes the node/link cell representation. In this representation, the centre of the cell is considered a node. Links connect each node to the nodes adjacent to it. Every link has an impedance associated with it. The impedance is derived from the costs associated with the cells at each end of the link (from the cost surface) and from the direction of movement.¹⁵ In the case of Ager Castronovano data set, this calculation helped to establish the 1. easily accessible areas; 2. difficult to access areas; and 3. barriers in motion areas for every chronological group.

2.4.3 Visibility

The analyses of the visibility bases on the DTM.¹⁶ The available lidar data and DTM are not sufficient for this analysis, therefore it was calculated only for the palaeolithic and mesolithic dataset (Terrenato 2000, 60-71, Terrenato – Ammerman 1996, 91–109).

2.4.4 Point density

The Point Density calculates the density of point features around each output raster cell (Orton 2004, 299 – 315). Conceptually, an area is defined around each raster cell centre, and the number of points that fall within the area is totalled and divided by the surface of the area. If a population field setting other than NONE is used, the item's value determines the number of times to count the point. For example, an item with a value of three would cause the point to be counted as three points. The values can be integer or floating-point. If an area component is selected, the calculated density for the cell is multiplied by the appropriate factor before it is written to the output raster.¹⁷ In this research, the point density was used for calculation of the intensity of international commercial contact from the set of coins found in *Castrum Novum*. The result is described in the Commercial communications of Castrum Novum and its *ager* paragraph.

¹⁴ <https://support.esri.com/en/technical-article/000015377>

¹⁵ <https://desktop.arcgis.com/en/arcmap/10.3/tools/spatial-analyst-toolbox/path-distance.htm> available 1.10.2019

¹⁶ <https://pro.arcgis.com/en/pro-app/tool-reference/3d-analyst/visibility.htm> available 1.10.2019

¹⁷ <https://desktop.arcgis.com/en/arcmap/10.3/tools/spatial-analyst-toolbox/how-point-density-works.htm> available 1.10.2019

2.4.5 Kernel Density

Conceptually, a smoothly curved surface is fitted over each point. The surface value is highest at the location of the point and diminishes with increasing distance from the point, reaching zero at the Search radius distance from the point. Only a circular neighbourhood is possible. The volume under the surface equals the Population field value for the point, or 1 if NONE is specified. The density at each output raster cell is calculated by adding the values of all the kernel surfaces where they overlay the raster cell centre. If a population field setting other than NONE is used, each item's value determines the number of times to count the point. For example, a value of 3 would cause the point to be counted as three points. The values can be integer or floating-point.¹⁸ In this thesis, the Kernel density analysis was used to analyse the density of settlement structure in a single period.

2.4.6 Multicriterial analysis

Multicriterial analysis works with two different variables: the exogenous (explanatory) and the endogenous (explained). In the first phase of model construction, the factors mentioned above have been identified as the exogenous with the defined values. Based on the logic of the matter, the value of the agricultural locality (villa) is endogenous (Goodchild 2007, 185-190; Goodchild – Witcher 2010, 187–220).

In the ArcGIS, there the layers for all criteria had been created. Until this step, the ranges of values in the rasters had differed considerably. For multi-criteria analysis, it was necessary to standardize all these layers in such a way that they contained the same range of the values. A typical standardization method is to convert the original values of the grid cells to a selected range of values. It results in a linear redistribution of values. For the application of the state to the analysis result, the weights need to be assigned to the individual criteria. The impact of one criterion on another one may be more pronounced in the decision-making process. The sum of all weights for each criterion is supposed to be equal to 1. There are several procedures for setting weights for the criteria. This study uses a paired comparison, called Saaty. The individual criteria are evaluated according to their relative importance to another criterion on a nine-digit scale 1/9 to 9, where 1/9 represents the least significant value and nine the most important value (fig. 14). Two criteria are compared with each other, and their relationship is determined. This mutual evaluation of individual criteria results in the matrix $n \times n$, where n represents the number of criteria.

¹⁸ <https://desktop.arcgis.com/en/arcmap/10.3/tools/spatial-analyst-toolbox/how-kernel-density-works.htm> available 1.10.2019

Method of multi-criteria selection evaluation allows comparing any number of essential criteria. Firstly, the analysis captures the local environmental characteristics, resulting from the archaeological, geographical and historical methods. Then it produces a long-time perspective. It is based on the automatized mathematical-statistical evaluation. The result is the multicriterial model, depicting developmental tendencies and changes (fig. 15 and 16).

Pair rating scale								
1/9	1/7	1/5	1/3	1	3	5	7	9
extremely	much	more	moderately	equal	moderately	more	much	extremely
not significant					very significant			

Fig. 14: Pair rating scale, according to Saaty (from Longley et al. 2005).

	altitude	slope	aspect	geology	ecopedology	pedology	distance from water	distance from main road	distance from central place
altitude	1	1/5	3	1/3	1/3	1/3	1	3	3
slope	5	1	5	3	3	3	1	7	7
aspect	1/3	1/5	1	1/3	1/3	1/3	1/3	3	3
geology	3	1/3	3	1	1	1/3	1	3	7
ecopedology	3	1/3	3	1	1	1/3	1	3	7
pedology	3	1/3	3	3	3	1	1	7	7
distance from water	1	1	3	1	1	1	1	3	5
distance from main road	1/3	1/7	1/3	1/3	1/3	1/7	1/3	1	1
distance to central place	1/3	1/7	1/3	1/7	1/7	1/7	1/5	1	1
sum	17	0,985	21,66	10,143	10,143	6,618	6,866	31	41

Fig. 15: Expression of the relative importance of individual factors in pairwise comparison Saaty.

	altitude	slope	aspect	geology	ecopedology	pedology	distance from water	distance from main road	distance from central place	weight
altitude	0,059	0,203	0,139	0,033	0,033	0,050	0,146	0,097	0,073	0,093
slope	0,294	1,015	0,231	0,296	0,296	0,453	0,146	0,226	0,171	0,348
aspect	0,020	0,203	0,046	0,033	0,033	0,05	0,049	0,097	0,073	0,067
geology	0,176	0,338	0,139	0,099	0,099	0,05	0,146	0,097	0,171	0,146
ecopedology	0,176	0,338	0,139	0,099	0,099	0,05	0,146	0,097	0,171	0,146
pedology	0,176	0,338	0,139	0,296	0,296	0,151	0,146	0,226	0,171	0,215
distance from water	0,059	1,015	0,139	0,099	0,099	0,151	0,146	0,097	0,122	0,214
distance from main roads	0,020	0,145	0,015	0,033	0,033	0,022	0,049	0,032	0,024	0,041
distance from central place	0,020	0,145	0,015	0,014	0,014	0,022	0,029	0,032	0,024	0,035

Fig. 16: Expression of the weight of individual factors in pairwise comparison Saaty.

3 State of research in the area of the Santa Marinella municipality

The archaeological study of the landscape in central Italy has undergone a relatively quick formation process. The first phase was delimited to the period between the 18th century and the 1950s (Cambi 1994). It was focused on the anthropogeographic perspective. From such point of view, the environment had determined the way of life, choice of location, and economy in connection with technology and society. The distribution of artefacts was viewed in correlation with the physical geography of the environment. The first landscape surveys in Italy were carried out by topographers. Sir William Gell and Antonio Nibby documented the topography of Rome and the Roman countryside (Nibby - Gell 1820; Gell 1834; Nibby 1837). George Dennis and Thomas Ashby focused on archaeological monuments. Dennis wrote *Cities and Cemeteries of Etruria* in 1848. Thomas Ashby established a similar list of monuments of the classical period *The Roman Campagna in Classical Time* (1927). The first attempt to place archaeological sites in their landscape context dated to the end of the 19th century, when Pasqui and Cozza mapped and described the Bronze Age centres around Narce, today's Civita Castellana. The pioneering experiments with the interpretation of aerial photographs after World War II (Schmiedt-Chevallier 1959; Schmiedt-Chevallier 1960; Bradford 1947) and research by Thomas Ashby concluded this phase.

John Ward-Perkins (Ward-Perkins 1962) laid the foundations of more systematic landscape archaeology in central Italy with his research of southern Etruria. The Tiber Valley project has lasted 20 years (1950-1970). It represents unequalled and a unique dataset. Another attempt to describe the landscape of the Roman period in Italy comprehensively is the edition of *Forma Italia* from the early 1970s. Piero-Alfredo Gianfrotta (Gianfrotta 1972) processed the territory of central Italy. Based on the map of the Military Geographic Institute (IGM), he registered the known monuments from the prehistoric and classical periods.

The first years of the 1980s marked the third phase. In this period, the landscape began to be understood as having played an active role in cultural transformations, and modern technologies were involved in the research (Cambi 1994). In recent years, the study of small and medium-sized rural localities has become more common, supported by an increase in archaeological surveys carried out in Italy over the last half-century. These include surveys in Luni (Mills 1981), Cosa and Albenga Valley (Dyson 1978, 1981), Sangro Valley (Lloyd et al. 1997; Lock et al. 2000), Fregellae (Coarelli - Monti 1998), Biferno Valley (Barker 1995a, 1995b), Liri Valley (Wightman 1981), San Vincenzo survey (Hodges 1988), Tuscania (Barker 1988; Rasmussen 1991), Rieti (Coccia - Mattingly 1992) and various surveys of southern Etruria (Duncan 1958;

Frederiksen - Ward Perkins 1957; Jones 1963; Kahane et al. 1968; Potter 1979), Cecina Valley Project (Terrenato 1996) and Ager Ceretanus (Enei 2001), the Tuscania Survey project led by Graeme Barker (Barker - Rasmussen - Grant 1993). In past decades, local researchers, such as Odoardo Totti (e.g. 1990) or Antonio Maffei (e. g. 2011), tried to describe the development of the landscape in the Roman period. However, the published conclusions contained very poor topographic identification in all cases and could not be used for further research.

The most recent studies are conducted by Sara Nardi-Combescure and describe developments in South Etruria between the 2nd and 15th centuries (Nardi-Combescure 2002). Robert Witcher created an inter-regional study comparing the development of individual areas of Etruria (e.g. Witcher 2006). Helen Goodchild's dissertation entitled *Modeling Roman Agricultural Production in the Middle Tiber Valley* (Goodchild 2007), central Italy, and the thesis of Cristiana De Vita named *Il VI-V secolo a.C. e il paesaggio rurale* (De Vita 2018). These researches so far focused on classical and prehistoric monuments, leaving the younger period aside. Giancarlo Pastura studied the area between Monti Cimini and Tiber from the 6th to the 12th century (Pastura2017). Junio Bugli focused on Via Aurelia between Rome and Civitavecchia in the Middle Ages period (Bugli 2011). However, these studies were concentrated on larger or neighbouring areas, and the *Ager Castronovano* was the only marginal point of interest.

4 Castrum Novum (AC071)

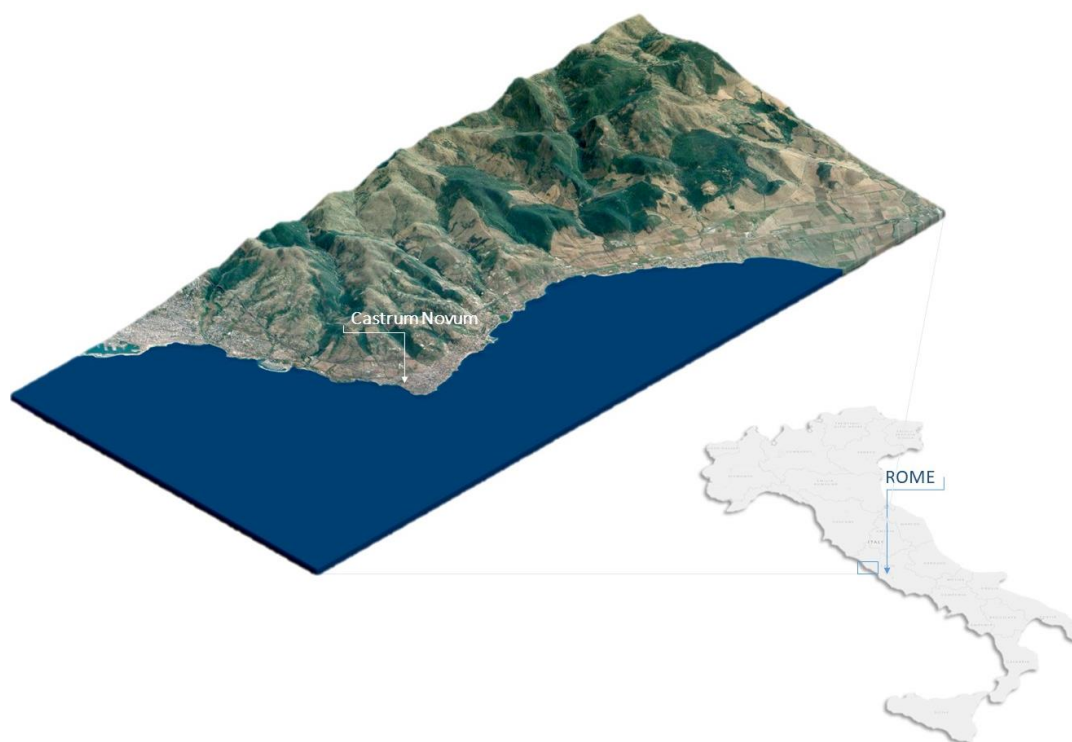


Fig. 17: The location of *Castrum Novum*, today *Santa Marinella* in *Tuscia, Lazio, Italy*.

4.1 The history of the site

Castrum Novum was founded on the place with a long history of uninterrupted human occupation. The study of coastal stratigraphy brought to the light remnants from the Villanova and Etruscan period (Poccardi 2012, 2014, 2015). These periods are not very well known yet, and they are the subject of further research of the chosen area. The period after the establishment of *Maritima Civium Romanorum* in 264 BC has been known much better. It was established at the beginning of the first Punic war for defensive purposes to control the northern Tyrrhenian Sea together with the other colonies (Cornell 1995). The city lies at a strategic position between *Caere* and *Tarquini*a, and it took over the function of *Castrum Vetus*. Allegedly, the *Castrum Vetus* was situated on the top of the hill *Castellina del Marangone*, towering over the coast. The name "new camp" referred to the original military function of the colony. Its advantageous position allowed to control both the newly established *Via Aurelia* (241 BC) and the coast. The precolonial origins of the site are not yet well-known. Important sources for the ancient period are epigraphs from archaeological research in *Santa Marinella*. Most of them are kept in the Archaeological Museum in *Civitavecchia*. The inscriptions always referred to the settlement as a colony. The foundation of the colony was a codified administrative procedure approved by the Roman Senate. The petitioner introduced a place to establish a colony, defined

whether it would be a Latin or Roman colony, how many settlers would move in, and how many lots of land would belong to it. Three commissioners then supervised the implementation. Titus Livius and Velleius mentioned *Castro Novo* between 290 and 264 BC (Foster 1919). However, there are two colonies of the same name in this period. Neither of the authors specified to which they referred. The Roman occupation in southern Etruria initiated the construction of the *Castrum Novum*. It was intended to consolidate Roman power and prevent possible Carthaginian invasions into the area. In the first phase of its life, in the middle period of the Republic, the colony was directly subordinate to Rome without an administrative apparatus of its own. The first inhabitants were poor Romans, who were attracted by the possibility of acquiring a modest amount of land. With the construction of *Via Aurelia*, this situation changed dramatically. With a direct link to Rome, the economy of the two colonies (*Castrum Novum* and *Pyrgi*) on the new route flourished. The military character of the colony is illustrated by a report on the involvement of the *Castrum* in the revolt against praetor Gai Livio 191 BC, who wanted to impose disproportionate duties on coastal colonies (Haak 2011). In this period, Rome was preparing for the Aitolian War in central Greece (191-189 BC).

Castrum Novum was mentioned to have developed an urban character, not before the first century BC. The colony underwent the second process of deduction at the turn of the era, probably under the reign of Gaius Julius Caesar (100-44 BC). Several epigraphs refer to the colony as "Julian" (Julia). The attribute may refer to Caesar, the second triumvirate (43-33 BC) or Octavian August (63-14 BC) (Haak 2011). This step was, most likely, to reduce the rights and property of a growing city. One of the epigraphs illustrated the displeasure of the local elite and its efforts to elevate its standard of residence. Lucius Ateius Capitone had built the curia, archives, theatre, portico, and banquet halls at his expenses. Archaeological excavation confirmed this statement (e.g., Enei 2013). At the beginning of the Imperial period, the majority of the population consisted of *ingenuitas* (born free) and *libertatis* (liberated for merit by their master). The advantageous position and proximity of Rome began to attract wealthy Roman aristocrats and Imperial families. Archaeological research and coincidental findings illustrate this. For example, one villa -Villa Maritima **AC068** was owned by Ulpiano, a Roman judge, and the prefect (e.g., Gianfrotta 1972). Numerous found dedications refer to Hadrian, Antonius Pius or Gallien with his family. Along the *Via Aurelia*, there were other large Roman villas such as Grottacce **AC067**, Grottini (beyond the research area), Punta della Vipera **AC069**.

The primary written sources for the period between the late antiquity and early Middle Ages are the maritime travel books: *Itinerarium Maritimum* and *De Reditu Suo*, both dating to the 4th century. They indicated *Castrum Novum* as a place suitable for temporary anchoring.

De Reditu Suo, written between 415 and 418, described *Castrum Novum* as a place devastated by time and water, with a dilapidated gate (Nardi-Squalia 2011). The description of Rutilius Claudius Namatianus of his return journey to Gaul from Rome is especially relevant. He describes a landscape in an evident state of degradation, and risky to traverse. The writer's words have been used to highlight the critical state of the Roman state main road and the need for alternative routes. He recommended the sea road because of the economic benefits; time-saving and with more personal safety. From his writing, it is likely that Namatianus's nostalgic feeling led him to emphasize the darker features of his story to fulfil the purpose of a moralizing travel diary, as it was defined. The upheaval of the Greek-Gothic war (535-553), clenched the studied territory, as well as the rest of Italy. According to chronicler Procopius, the *Via Aurelia*, the fundamental axis between Rome and Civitavecchia, was considered crucial for the supply from the Tyrrhenian port to the capital, which the Romans controlled to starve the barbarians who had taken the city (Bugli 2011). Between the 5th and 7th centuries, *Colonia Iulia Castrum Novum* appeared in the writings of the martyrdom of Saints Secundian, Marcellian and Verian (Hodges 1874). After prolonged torture, their bodies were incinerated in 250 AD between ruins of the *Castrum Novum*. Probably, the last work citing the name of the colony is the "*Chronicon*" of Benedict of Soracte and the *Libellus de Imperatoria Potestate in the Roma* describing the inspection of Grimoald to Centumcelle and near ports in 749 AD (Nardi-Squalia 2011, 6).

In following periods, the area appeared with the names *Capolinaro*, *Caput Nari*, or *Caput Linaris*. In 1471 *Sanctine Marinellae* was mentioned in a document regarding the repair of the tower. Subsequent available notices are reports of the Santa Marinella fortress keepers. Since 1530, this fort, together with the Ospedale di Santo Spirito di Sassia, had become a permanent part of the defence system built during the reign of Pope Pius V (Nardi-Squalia 2011, 6).

The Prince of Palestrina Taddeo Barberini¹⁹ owned the estate of Santa Marinella in the 17th century (Passigli 2001, 118). It was between the sea and the three rivers (today Ponton Castrato, Marangone and S. Maria Morgana). In this period, the church of Santa Maria Morgana was in ruins. Fig. 120 A (in the attachments): The orthophoto 2019 of all excavated components; B: the topography of the site (Enei – Preusz – Preusz 2020). Fig. 121 C: the planimetry of the site from Gianfrotta 1972.

¹⁹ Taddeo Barberini (1603–1647) was an Italian nobleman, who became Prince of Palestrina and Gonfalonier of the Church; commander of the Papal Army. He was a nephew of Pope Urban VIII and brother of Cardinals Francesco Barberini and Antonio Barberini (Merola 1964).

4.2 From digging to archaeological research

The ancient ruins at the site of the abandoned Roman colony of *Castrum Novum* **AC071_1/6** probably never completely disappeared from the memory of the local inhabitants. Travellers and cartographers in the 16th century depict them in their travel diaries and maps (c.f. paragraph about History and Cartography). They identified its position at the Chiaruccia Tower in the second half of the 18th century, during the intense archaeological research promoted by the Reverend Apostolic Chamber, under the pontificate of Pius VI (1717-1799). The Pope was very interested in works of art hidden in the area of the lost city. He supported the first systematic excavations conducted by Giovanni Corradi. The findings from this period still adorn the collections of the Vatican Museums (Girolami 2013). Numerous excavations were carried out in the years 1776-1779, and 1795-96. Unfortunately, the documentation of these researches is entirely insufficient for obtaining useful notes for the topography of the town, and for identifying the limits. It does not even serve to determine the excavated areas accurately. In the first two years, 1777-1778, the excavations were carried out in the coastal area of the Torre Chiaruccia.

Taking into account the number of workers and the duration of excavations, it is possible to suppose that the major part of the city was dug. As administrative sources report, they led to the discovery of numerous materials, including epigraphs, coins, statues, columns and decorative marbles. Here are some to name the most significant: Hermas of Aspasia veiled with Greek inscription; Neck-to-knee emperor torso, bigger than natural with his arms and beautiful German trophies; marble relief; sitting dog - huge; the figure in a toga with the head of the authentic expression of almost colossal size; a young boy in toga missing his head; small Bacchus exceptionally preserved; an altar consecrated to Apollo by L. Statilio Primo; an altar dedicated by citizens of *Castrum Novum*, an altar dedicated to L. Domitian; and more. Other findings were lead water pipes of different sizes with names of the owners, that informed about the presence of aqueduct in the imperial property. It seems that at the time of the excavations, ruins were still visible, and the first research was conducted around them. Various rooms were discovered with remains of marble floors, some with mosaic floors and a lined marble pool with an inscription dedicated to Hadrian. On April 20, 1778, the work brought to the light a casket containing 122 gold coins. They were almost all sold away, but their list is preserved. It contained 15 specimens of Nero; 2 of Galba; 2 by Vitellius; 3 by Vespasian; 2 of Titus; 6 of Domitian; 3 of Nerva; 40 of Trajan (including some with the representation of the Trajan column, the Trajan Forum, the Basilica Ulpia and the Parthian triumph); 10 from Plotina; 1 from Marciana; 3 by Matidia and 29 by Hadrian. Shortly after that, another 60 were found (Gianfrotta 1972, 82).

In 1779, the excavations continued more inland than in previous years. In this phase, ancient lead pipes, for a total weight of more than 700 pounds, 15 gold and 33 silver medals, were unearthed. These findings have been considered of little value since the excavations were interrupted and resumed only 16 years afterwards. In 1795-96 research was conducted again, but to a much lesser extent compared to previous ones. It brought up "a fragment of a draped female figure, corroded and lacking head, arms, legs". In the following years, the excavations were abandoned, and only sporadically the owners of parcels continued to search for antiquities, but with poor results. In 1879, one of the owners, Mr Alibrandi-Valentini, informed the archaeologist Dr Annovazzi about the discovery of a wall with column bases at *Via Aurelia*. It was about 100 meters long, probably identifiable as a portico, connected to a series of rooms. The columns of the portico (diam. 0,40 m) were partly smooth and partly fluted, with the intercolumniation of about 4 m. Two of them faced the main entrance, 4,20 m wide, which was accessed via two steps. A short distance from it, two basins, remains of rooms with a mosaic floor and walls plastered with stucco and even part of a wall in thick stone (more than a meter thick?) were discovered and were interpreted probably as a section of the city walls. These excavations also brought to light a road with tombs beside it. They also led to the discovery of numerous materials including various glass and ceramic objects, amphorae and bricks with stamps. In 1891, a life-size marble head belonging to a statue of Trajan was accidentally found in the area of the city (Gianfrotta 1972, 83). The following finds and excavations were mostly illegal, as reported in numerous documents in the archive of SAEM.

As it is possible to observe now, the area saw significant construction developments after the foundation of Santa Marinella city in 1949. The number of preliminary archaeological excavation could not keep up with such a massive building-up. Even the amount of information collected by Gianfrotta in 70' showed the lack of archaeological research in the area of the site. He noted: "Castrum Novum stretched along the seashore, where remains of buildings are still visible, for about 400 meters and they were developed inside for about 300 meters in the area called "Bufolareccia" with the southern limit located just south of the Alibrandi farmhouse, near which were identified remains of the city walls". According to his observation, *Via Aurelia* crossed the colony in the Republican period. The route perhaps passed along the central axis of the city, located in the north-west - south-east direction. In the Imperial period, the *Aurelia*, rectified in the second century, barely touched the inhabited area, running slightly further inland. There was no mention of the discovery of public buildings during the excavations in the 18th century. However, epigraphic monuments which have been found in this period reflected the existence of the *curia* and the *tabularium* restored by Lucius Ateius Capitone, who also had

the theatre and portico built there at his own expense. The inscriptions also mentioned an altar dedicated to Apollo restored by Lucius Statilius Pollio and built by Lucius Statilius Primus, they also informed about the existence of *duumviri quinquennales* of Augustales and *magistri vici*. The inscription CIL, VI. 951, which appears to come from *Castrum Novum* (Gianfrotta 1972,83).

The relicts, visible in the period of Gianfrotta, were in reality, scarce, battered and not contributing much to the topographical reconstruction of the city. The first group of ruins was right along the seashore about three hundred meters from the Chiaruccia Tower. It consisted of a 0,70 m thick concrete wall in *opus incertum*; further on was a small basin; a little further on, there was a small quadrangular area of which only three sides remained since the sea destroyed the fourth. The surviving walls had a reticulated cladding with stone blocks and reached a maximum height of one meter. A little further on was the outlet of a sewer (0,39 m wide; 1,41 m high), filled mainly with soil and stones with brick walls and the upper part covered with internally lined concrete tiles arranged to form a pitched roof. A little further on, other concrete walls, sectioned by erosion, were seen on the sea escarpment, two of which constitute the walls of an area with a mosaic floor of black and white tesserae, arranged to form of geometric patterns. An illegal excavation had revealed a small section where the black tiles arranged a circle.

Further ahead was the drainage channel, which perhaps contained pipes, covered with squared stones on the sides with a cover formed by scales. Further on there was a small section of a brick wall. Almost on the top of the escarpment, remains of tombs (cappuccina tombs) were seen, evidently from the late period as superimposed on the walls described above, unearthed and mainly destroyed by illegal excavators. In front of these remains, some concrete cores were visible at sea. They perhaps constituted the walls of another area or are to be understood as collapsed structures. Also on the seashore, there were the relicts of other structures consisting of concrete core and blocks. It would, therefore, be the only remnant that documented the existence of a maritime docking, evidently of very modest proportions, in correspondence with *Castrum Novum* (Gianfrotta 1972, 83).

The second group of relicts was in the land in front of the Alibrandi farmhouse. The intervention of the SAEM interrupted the construction of modern buildings. These relicts consisted of some rooms with mosaic floors with black and white tesserae, in *opus signinum*, and *opus spicatum*. They were at a depth of about 0,50-0,80 m. The walls of these rooms were built in various techniques. One was in reticulated stonework with the edging of parallel blocks at the corners; one in mixed stone and brickwork; others in uncertain stonework. Two wells of about 0,80 m in diameter at the entrance were brought to light too. Other structures including

walls in *opus incetrum* and *opus spicatum* emerged during the works for the construction of a sewer that runs parallel to the Via Aurelia, just inside the Alibrandi parcel. These works also affected the Punta di Capo Linaro and the area immediately close to the Torre Chiaruccia where no ancient remains were found. It confirmed the location of *Castrum Novum* in the land surrounding the Alibrandi farmhouse. In their garden, there was volcanic stone mill (0,85 x 0, 27 m; 0,80 x 0,84) and a large parallelepiped block of scale (1,47 x 0,80 x 0,36 m found (Gianfrotta 1972, 82).

In 1970 G. Colonna excavated the therms, so-called *balneum AC071_4* and its surroundings, constructed in the end 1st century BC and the first decades of the 2nd century AD. He discovered a room covered with a mosaic floor and with a tub, flanked by a canal, a tepidarium with traces of *suspensurae* in the *hypocaustum*, two *praefurnia*, a *caldarium* with terracotta tubules, inserted in the walls, and a *forica* with *opus spicatum* flooring (Nardi-Combesure – Vattier 2014; Nardi-Combesure 2015). In the same period, the villa so-called *Edificio quadrato AC071_2* was excavated. One archaeological research studied the relicts of the Roman building now situated under the private garden of the apartment house in Via Etruria (Arch. SAEM). The research of underwater structures, two fishponds **AC071_3 and 5** and harbour **AC071_6**, went on from 1970' with occasional interruptions. The harbour consisted of three jetties built between the end of the 5th and beginning of the 4th BC century. It was abandoned during war attacks of Syracusians.

International field research of the city started in 2010 (Desibio – Enei – Nardi Combesure – Poccardi – Sia– Levanto – Squaglia 2015). Since 2016, the exploration continues in cooperation with the Department of Archaeology, Faculty of Arts, the University of West Bohemia in Pilsen. The excavation focused primarily on structures excavated in 1970': *Balmeum AC071_4* and *Edificio quadrato AC071_2*. It brought new information about the planimetry of archaeological components. The location of the complex, open on the road, and its layout similar to that of a sizeable Pompeian-style *Atrium Domus*, could indicate a non-agricultural origin. A large sector of the building, in the north-west corner, was occupied by a small private spa equipped with at least one hot and cold tub, with refrained decoration and without marble coverings. The finds indicate the commercial activities related to fishing. The presence of a kitchen equipped with four furnaces and two pans formed in the 1st century AD is unusual. Possibly, it was a tavern with an attached shop for fish products and a small inn with spa for travellers on their way to and from Centumcellae. The building was constructed in the Roman Republican era. Its original form remains unknown. Some building materials were reused for the walls, including several square blocks of scale, black painted ceramics, and various coins dating from the 3rd-2nd

century BC. The presence of some ceramic fragments from the Etruscan era from the 6th century is also significant. It confirmed an earlier occupation phase, unrelated to the Republican one.

The archaeological remains indicate the occupation of the area of *Castrum Novum* that lasted for about five centuries between the Roman Republican and Imperial times. The ceramic and numismatic material found so far allowed to hypothesize that the primitive construction could occur in the second half of the 3rd century BC followed by the successive phases of life which appeared well documented, between the 1st century BC and the 2nd century AD. In light of the available data, the building was abandoned starting from the middle of the 3rd century AD until the first decades of the 4th century as indicated by the find of a child buried among the ruins of the spa, inside a late African type amphora.

In 2014, the research focused on the city centre, located in the private garden of Casale Alibrandi, where the centre of the city **AC071_1** was supposed. In archive SAEM there are notes by Arnando Fantozzi about relicts of Roman walls and mosaics. The georadar prospection confirmed this statement and revealed the foundations of a circular structure, city walls of exceptional thickness and smaller brick structures. The following excavations verified these facts (Enei 2013). As noted by Gianfrotta in 70', the centre of the city composed by the theatre, forum, portico, public therms, and was fortified by large city walls. There are relicts of city walls found in the preserved area of the city; so far, the southern (long 106 m) and eastern (long 35 m) part of the wall including the gate, has been exposed including the city gate. The wall is 2,5m thick on average and is constructed from massive stone blocks. The main street passes through the eastern gate and goes to the centre to the forum with portico. In the south part of the city, there is a public spa identified by two *prefurnia* and cistern deep 4 m, connected to the canal passing through the wall. There is also a building with a black and white mosaic floor. In the southwest part, there were ubication for soldiers and another private building with another smaller cistern and well deep 7 m behind the street and forum located near public theatre.

Modern research brought to the light numerous finds: mostly ceramic fragments, Bronze and Iron artefacts, luxury equipment, decorative coloured plasters and marble decorative elements (among them fragments of marble statues). Important finds are abundant coins illustrating the international contacts of the colony. It is supposed that the colony was abandoned in the 5th century AD (Enei – Nardi Combescure – Poccardi – Cicolani – Bagnoli – Boucard – Cador – Girolami – Vuono 2018; Enei – Preusz – Preusz 2020).

4.3 Commercial contacts of Castrum Novum

Numerous coins have been found during the previous excavation seasons on the *Castrum Novum* site. Their numismatic study brought essential information on dating and site attendance. In this part, the 605 coins were examined. They come both from the stratigraphic excavation and the sieving of the excavated material.

The map of mints (fig. 18) shows a network of contacts between *Castrum Novum* and the Mediterranean. One coin even originates from Carthage. In the newly founded Roman colony, the coins of Rome prevailed. The coins of Messina (Sicily) and of Sardinia demonstrate the connection of the Roman colony with regional trade in the Mediterranean. Tetras of Menaion (Sicily) appears alongside Roman republican coins during the 2nd century BC. Coins from Messina (Sicily), Kos (Greece) and Tyrus (Lebanon) appeared in the 1st century BC. A coin of the 1st century AD of the reign of Commagene (Armenia) was found in the abundance of imperial coins. Commagene is the most remote place of origin that we can find among the *Castrum Novum* coins. In the 2nd century, the coins of Rome dominated. The coins of Ticino (Northern Italy), Nice (Turkey) and Gallie (France) appeared in the 3rd century. Coins which were minted in Aquileia (Northern Italy), Arelate, Constantinople, Nicomedia, Siscia, Trevira (Germany) appeared in the 4th century. From the 5th century, all the coins were from Rome. In the 6th century, the only coin of Justin II had been found (Preusz – Preusz – Vuono 2020).

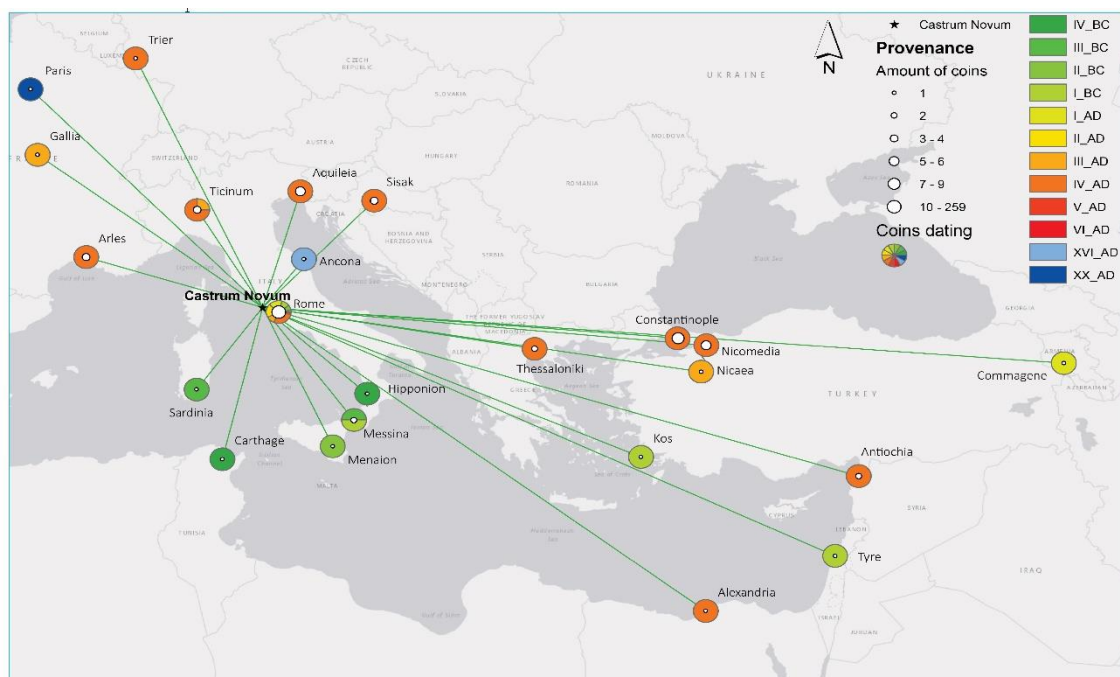


Fig. 18: The map shows the mints from which the coins found on *Castrum Novum* originated. The colour scale shows the centuries, the size of the symbol of their number.

5 Ager Castronovano

The research area partly copies the area investigated by P. A. Gianfrotta (1972). It is outlined by natural boundaries (Fosso del Marangone and Fosso Rio Fiume), which probably defined the *Ager Castronovano* in the Roman period as well. The same boundaries delimited the area of the postmediaeval of *Tenuta di Santa Marinella*. This transect was supposed to be sufficient for finding the answer of main thesis questions.

The area under investigation was the part of the broad geographical region around Rome, so-called *Suburbium* (Witcher 2006), archaeologically characterized by a distinctive pattern of settlement, extending to 60 km from Rome. The studied area covers 42 km². It lies in the territory of today's city of Santa Marinella in central Lazio region, on the west coast of central Italy (fig. 18). The area underwent a complex development and several times of change. These changes were a reaction to many stimuli, whether environmental or socio-cultural changes. The transformation of settlement activities and the use of the landscape reflected the radical changes.

5.1 Geomorphology

The area is bordered from the west by the Tyrrhenian coast and progresses inland to the slopes of Monti della Tolfa, of which the highest peak is Monte Urbano (627 m). Located 65 km NW of Rome on the southern slopes of the Tolfa Mountains, Santa Marinella is built on a gently sloping, E–W oriented range, which is cut by N–S oriented ephemeral streams that discharge into the Tyrrhenian Sea. Important watercourses are Marrangone and Rio Fiume that delimit the research area. Smaller streams stem from the slopes and bring fresh water from higher areas to the coast (fig. 19). The low to medium permeability turbiditic sandstones that outcrop along this belt belongs to the Late Cretaceous Pietraforteunit (Chiocchini et al. 1997).

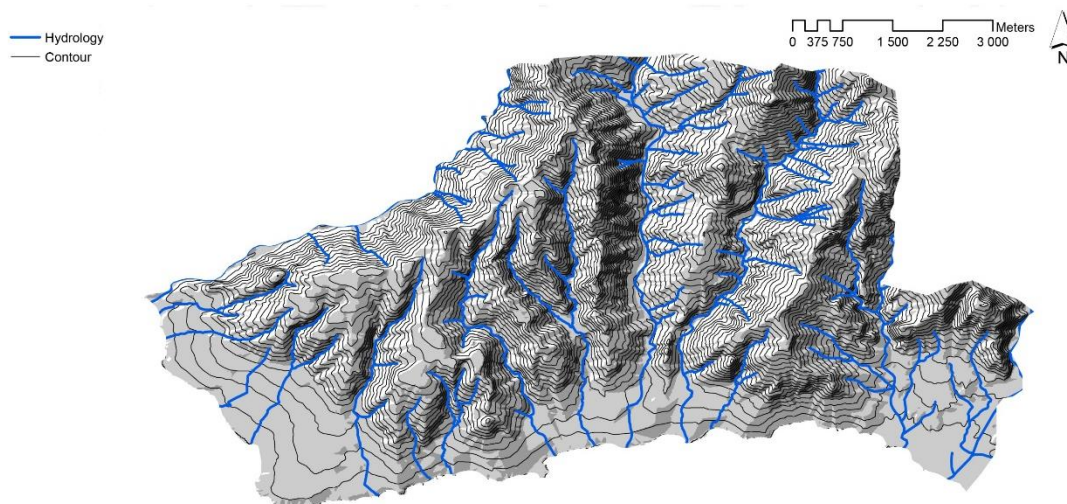


Fig. 19: Hydrological map of the Ager Castronovano.²⁰

The lithostratigraphic structure of the Tolfetano-Cerite region, in which the research area falls, consists of the following stratigraphic sequence:

Basal complex - these are very ancient maritime limestones dating back to the Triassic period (240-204 million years) and the Jurassic period (204-130 million years), which emerge in minimal areas between Tolfa and Ladispoli (Canna 2011).

Flysch complex - it can distinguish two distinct components of the Cretaceous age (130-65 million years) and Oligocene (34-23 million years): the first, lower, includes the flysch series of clayey-marly limestone and arenaceous limestone (such as limestones "Palombino" and the "Stone Village"), while the second component, superior, is represented by the clayey-arenaceous series of the "Pietraforte" (Canna 2011).

Eruptive formations - these formations derive from volcanic activities that, during the Pliocene (5-2,58 million years) and the Pleistocene (2,58-0,01 million of years), initially explosively manifest themselves with the formation of an ignimbrite blanket and subsequently effusively with the emission of very viscous lavas which tended to form a so-called dome and lava bumps. Quaternary deposits - Pleistocene deposits of variable granulometry, containing paleofauna, useful bio-chronological and paleoenvironmental indicators, as shown by the research conducted in the Macchia della Turchina area, north-east of Monte Riccio and those indicators related to the mammalian fauna of the Monte Riccio deposits, and more recently, of the Ficoncella (Canna 2011).

²⁰ http://geoportale.regione.lazio.it/geoserver_nsit/dbgt/wms?request=GetCapabilities

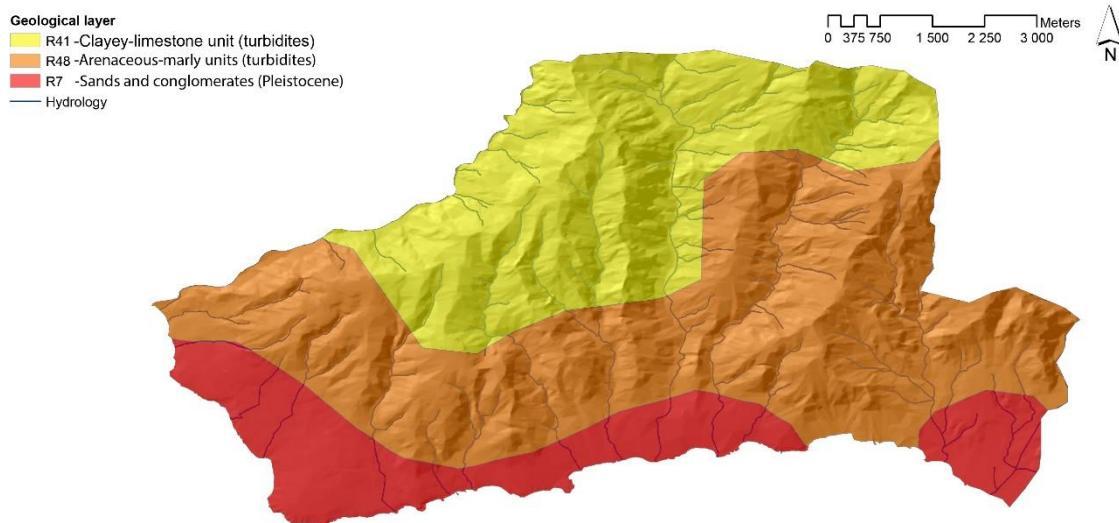


Fig. 20: Geological map of the Ager Castronovano.²¹

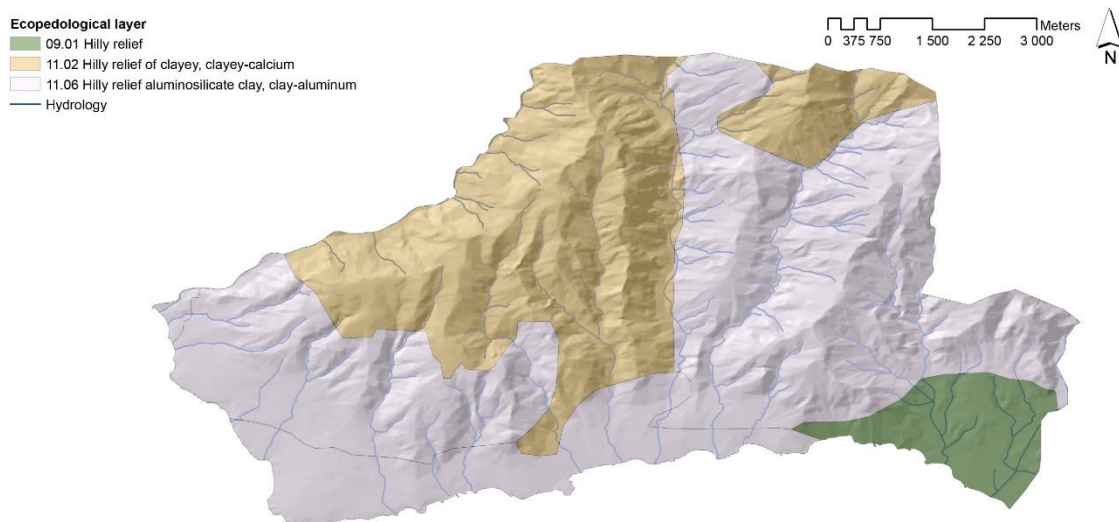


Fig. 21: Ecopedological map of the Ager Castronovano.²²

In the area, there are placed three Reference soil groups according to the pedological map (fig. 22, according to the World Reference Base for Soil Resources (WRB)).

The mixed clay no. 27 - Calcisols occur mostly in hilly landscapes, in dry and semi-dry areas. Natural vegetation is sparse and dominated by the shrubs and trees or grass. Significant is dryness and in places stoniness. When these soils are watered and fertilized, this type of soil can

²¹ http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/WMS_v1.3/Vettoriali/Carta_geologica.map available 20.10.2016

²² http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/WMS_v1.3/Vettoriali/Carta_ecopedologica.map available 20.10.2016

be highly productive for many types of crops. The hilly areas with these clays were used mainly for grazing cattle, sheep and goats. Calcarea Cambisol is found in a temperate climate zone, less common in subtropics. However, they occur in places of increased erosion. It is one of the most productive soils for agriculture. In Calcareous Regosol, there are lower quality clays used in the area for low-volume grazing.²³

The no. 45 - These are different types of luvisols, and this group is generally applicable to agriculture. In the Mediterranean region; e.g. in the case near Rome, there the hematite may cause the red colour of the luvisols. The group is further complemented by clacarcic cambisol.²³

The no. 47 - It is a combination of different types, which together have the potential for intensive agricultural use in dry areas, especially in the production of wheat or improved pasture for cattle.²³

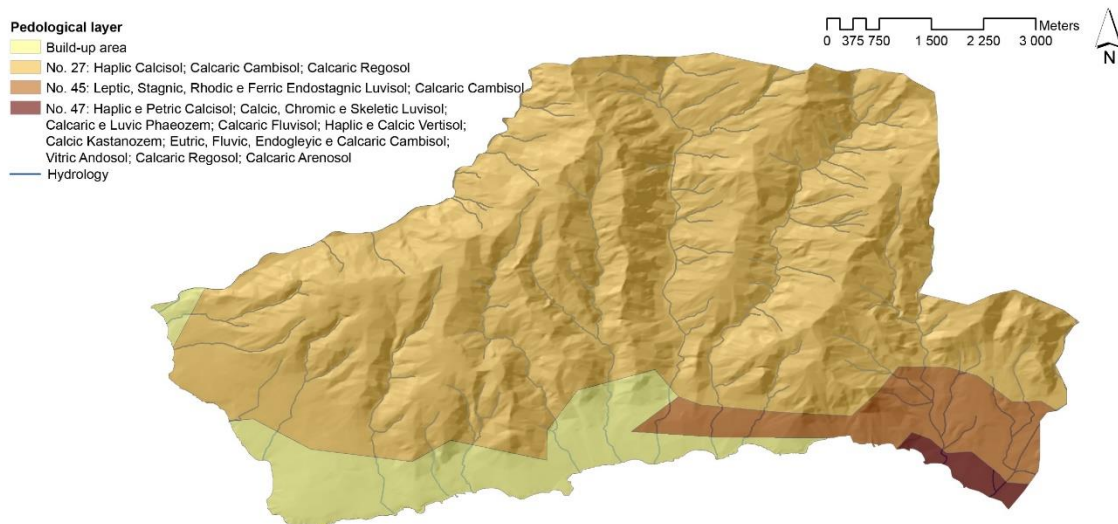


Fig. 22: Pedological map of the Ager Castronovano.²³

5.2 Sea level change

Sea level change is the sum of eustatic, glacial-hydro-isostatic and tectonic factors. Different kinds of sea-level markers exist: biological, sedimentological, geomorphological and archaeological. In particular, the use of the latter is more effective when archaeological remains can be directly related to the position of the ancient sea level, such as in fishponds, which were built with elements pertaining to tides (e.g. sluice gates). Some archaeological remains can be indirectly related to sea-level and can be used as sea level marker after an accurate reconstruction of their functionality and associated error (harbour structures, wells, hydraulic systems (Anzidei 2011,14; Rovere 2011, 89).

²³ <http://dati.lazio.it/geoserver/pedologia/wms?service=WMS&version=1.1.0&request=GetCapabilities> available 20.10.2016

A detailed study of sea-level change at the Pyrgi site can clarify the sea-level evolution in the area of *Castrum Novum*. The local archaeological findings indicate the presence of a human settlement in that area since the middle Neolithic, with evidence of human occupation in the Bronze and Iron Ages.

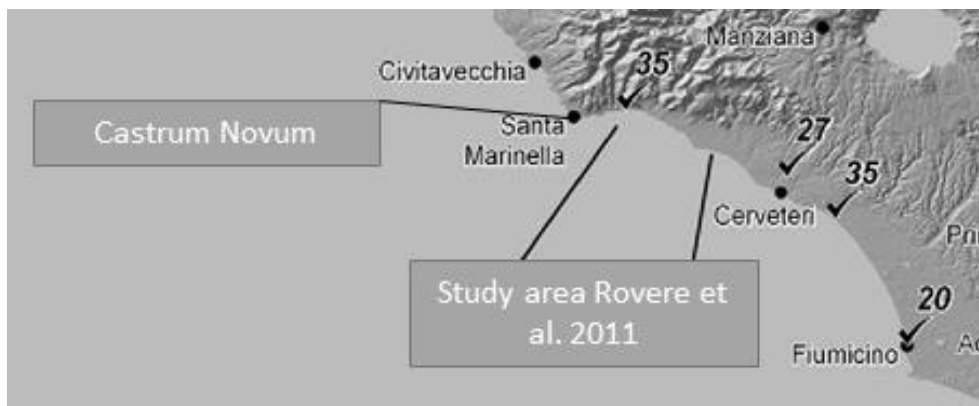


Fig. 23: Location of study area Rovere et al. 2011 and the position of *Castrum Novum*.

The archaeological markers comprised different Etruscan and Roman elements:

- Etruscan wells
- Etruscan fishponds
- Several architectural features indicating the ancient
- Roman harbour, with its foundations upon the ancient docks
- Roman sewer pipe and cistern
- Le Grottacce site consists of a Roman villa, directly in front of the villa are different remains connected with the sea: fishponds, remnants of a dock, and, seaward, a large breakwater with walkway.

The archaeological findings indicate the presence of a Neolithic (6500 - 7300 BP) in the place later occupied by the Etruscan Temples. The reconstruction of the coastal morphology at 7300 BP, the shoreline has been shifted to the depth indicated by the glacial-hydro-isostatic model for this age, i.e. 10 m below present sea level (Fig. 24 and 25). It shows that the shoreline in 7300 BP was approximately 500-1500 m seaward from present-day one. Direct surveys carried out in one of (presently submerged) islands identified a surface gently dipping offshore located at 9-12 m depth, interrupted at 12 m by a sub-vertical calcarenite cliff. The cliff foot is covered by rockfall deposits starting at 15-18 m depth and ending in fine sediments at 24-26 m. The planar surface identified has been interpreted as a stable shore platform, produced by sea erosion near the sea surface (Rovere et al. 2011, 86). To conclude the facts described above, the sea-level rose 10 m since the Neolithic period, approx. 2,5 m since Etruscan period and approx. 1,3 m since the Roman Imperial period.

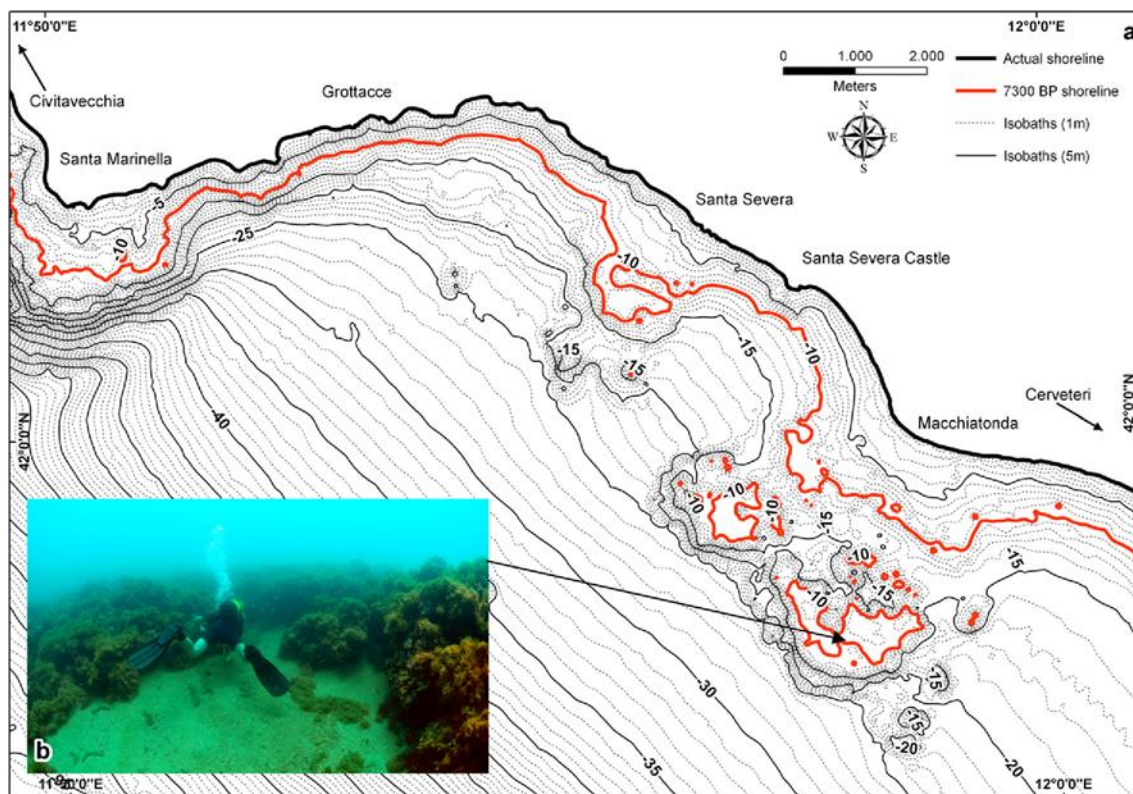


Fig. 24: The shoreline changes 7300 BP and today (from Rovere – Antonioli – Enei – Giorgi 2011, 85).

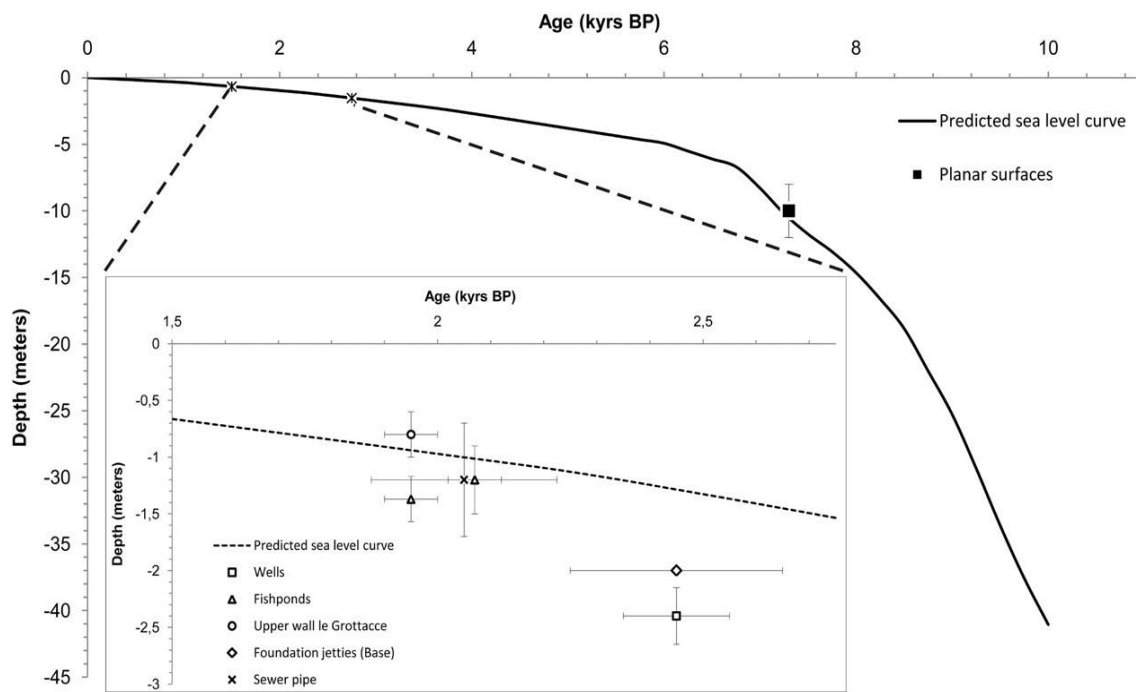


Fig. 25: The changes of sea-level from today to 10 000 BP with detail of studied markers (from Rovere – Antonioli – Enei – Giorgi 2011, 90).

5.3 Environmental context

It is essential to explore the environmental development due to the close ties to the surrounding landscape. The thesis describes the overview of the phenomena interacting with human and impacting the land-use of the investigated area. Environmental archaeology provides an essential insight into landscape changes (Walsh 1999). One of the most comprehensive studies had been conducted in southern Italy at Heraklea. The research revealed Bronze plates from the 4th - 3rd century BC that describes in detail the agricultural landscape and crops. Subsequent investigation of the near Pizzica-Pantanello site has provided a detailed picture that is comparable to the Heraklea. (More in Carter 1983; Costantini 1983). The predominant agricultural orientation has changed as well as the morphology of the area. Compared to written historical sources, palynological studies provided more objective information. So far, none has been successfully applied directly to the research area. In the past, several palynological analyses were being carried out in the *Castrum Novum* excavation. However, in the dry soil, no pollen has been preserved. One comprehensive study that combined the archaeological and palynological data of central Italy exists (Palmisano - Bevan - Shennan 2017). This study has doubted low level of agricultural activity in the Neolithic and Bronze Age shown by other archaeological research, noting the changes in forest composition and density. Pastoralism was a growing pattern of the late Neolithic and early the Bronze Age. Etruscan and early Roman human activities caused only slight nuances between the regions. The impact of Roman activities manifested itself across the region. The changes in the vegetation composition were caused both by the effects of human activity and by the climate change.

The Roman period had been bounded by the colder sections that preceded and followed it (according to Benvenuti et al. 2010 and Büntgen et al. 2016). There is also an evidence of the drier conditions from 5500 BP (Marchetto et al. 2008); on the other hand, there were in this area places with a permanent flood hazard, probably due to the anthropogenic interventions in the river systems (Benvenuti et al. 2010). Urbanization was leading to more intensive land use, but there were considerable local differences in its early stages (Stoddart 2016). The establishment of the first larger cities was accompanied by a decrement of wooded areas after 3000 BP when the land-bound food sources could be well stabilized for the first time. As it was already pointed out, these broad trends conceal significant local differences. In the context of primary rural settlement, in the Roman period, the area bears a primarily open landscape. The impact on the local landscape had been being felt much earlier in the third millennium BP in the southern region, in the context of long-established and intensive urban planning. In the Roman period, many of these effects were more generalized. Palynological studies record a decline in

the human activities in the early Middle Ages and a subsequent rise with the development of independent city-states during the Middle Ages and the Renaissance.

Other environmental studies from lake wells indicated the same trend, suggesting the prevalence of the open areas that were supporting crop cultivation during the Roman period. Their number had been decreased only with decrease in the population in the early Middle Ages (Potter 1979, 24). It suggested that most of the agricultural components did not shift from the primary crops to more profitable species such as vines and olives. Dendrological analyses of the wooden findings from wells of Pyrgi should accompany this data. The landscape was dominated by thick woods in which the mixed oak grove prevails (oaks, hornbeam, elm, maple, alder, poplars, willows) with white fir trees (due to the presence of "primitive" forests). Only in the middle of the 3rd century BC the vegetation tending to the Mediterranean climax of evergreen oaks associated with vines, olive trees, and lilacs, spread (Coccolini - Follieri 1980).

Sara Nardi-Combesure assumed the facts about agriculture and farming (2002, 35). According to her, in the late antiquity period, the wheat, olives, vines, durum wheat, barley, oats, millet, fava bean were the dominant crops cultivated in the area. From 9th to 11th centuries, small spelt, spelt, soft wheat, barley, and rye, wild rice, chickpea, lentil, broad bean, lupine were grown.

For the subsequent period, we are more dependent on the information from the historical sources. They referred to the significant change in economy and production in the 15th century. The alum production (see the chapter „Historical context“) and following the consumption of wood caused a strong wave of forestation and subsequent deforestation of the area (Nardi-Combesure 2002, 47).

Susanna Passigli attempted to reconstruct vegetation of the Post-Medieval period based on the historical cartography (fig. 26), despite the decreasing number of remaining sources. She noted that the Alexandrine Cadastre documented the territory of Santa Marinella as a region covered by two different environmental areas: the part towards the sea made up of Tumoleto. In essence, a series of coastal dunes that run on the beach and the internal part were covered by a thick forest. The Tumoleto, the outermost strip overlooking the sea with the characteristics of the dune and the low scrubs. The rivers that crossed it appeared on later reproductions of the cadastral cartography. The most apparent transformation compared to the IGM 1895, is the erosion of the coast; the coast had more pronounced protrusions in the 17th century (Passigli 2001, 138). The rental concession stipulated in 1808 for the Santa Marinella estate confirmed the restriction of the wood management set in 18th century: “provided that it cannot be cut but only when the wood has its right age (...) at least two hundred trees must be left (...) and after

the cut, the wood must be preserved for three consecutive years by goat and donkey cattle” (Nardi-Combesure 2002, 47).

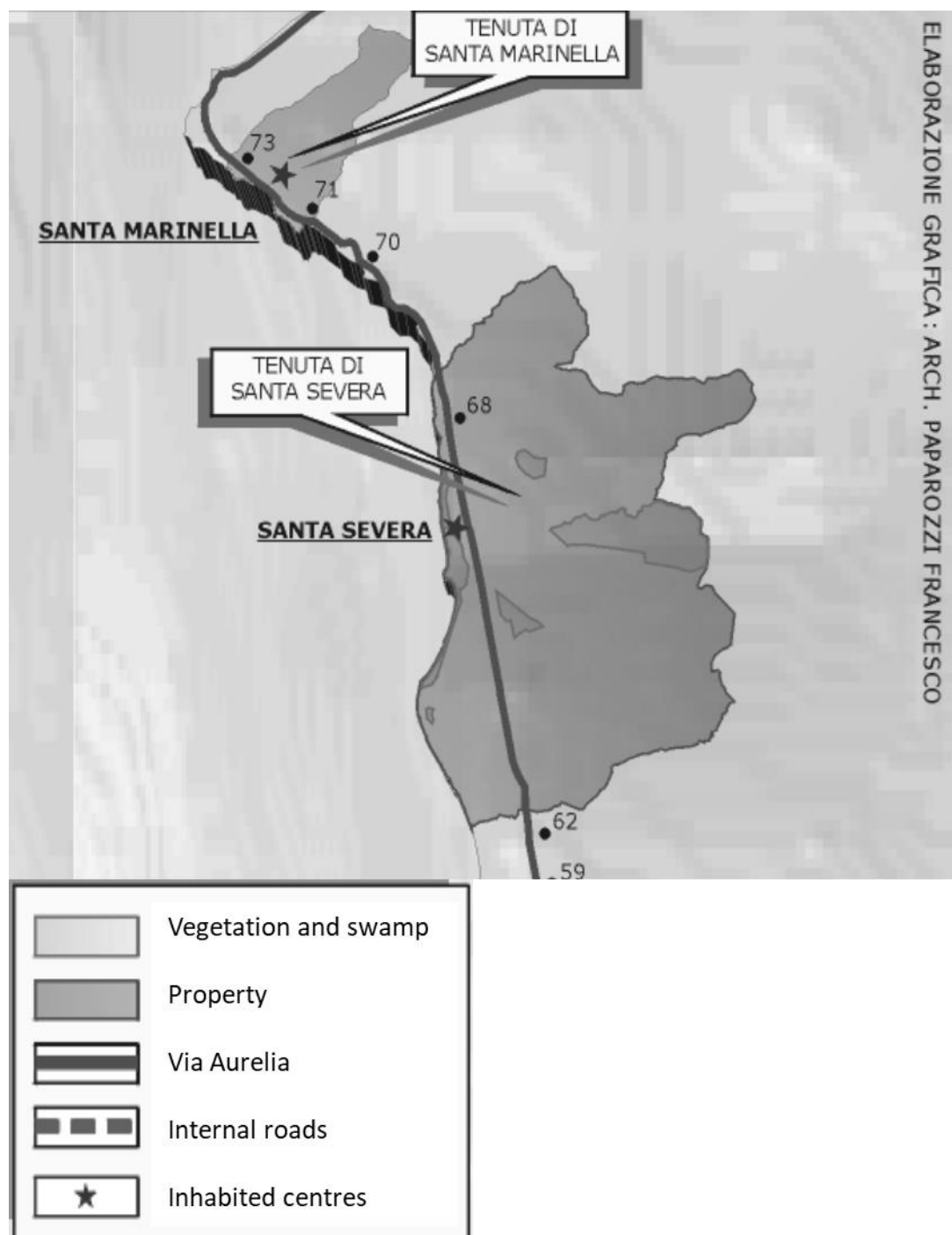


Fig. 26: The reconstruction of environmental conditions based on written sources. The map from Passigli 2001.

6 Catalogue

The following catalogue is an extract from a complex database and describes these items:

ID: During the data collection, every archaeological component was given a unique identification composed from alphanumerical signs: AC for Ager Castronovano and consecutive number series. In the case of the superposition of more archaeological components or in the case where one component changed its function, they were distinguished by the numerical suffix, e.g.:

AC043_1 - site type: Area of artefact scatters

AC043_2 - site type: settlement

Site type: Individual components were defined according to relevant archaeological publications (Adkins – Adkins, 2012; Enei 2011; Hölscher 2010; Neustupný 2010; Witcher 2006). From a typological point of view, archaeological components identified in the area under investigation, are classified in the following groups:

Housing:

Building: closely unidentified structure of modern dating.

Settlement: a settlement, locality or populated place is a community in which people live. The complexity of a settlement can range from a small number of dwellings grouped to the largest number of cities with surrounding urbanized areas. Settlements may include the hamlets, villages, towns and cities. A settlement conventionally includes its constructed facilities such as the roads, enclosures, field systems, boundary banks and ditches, ponds, manor houses, moats and churches.

Residential:

Castle: a type of fortified structure built during the Middle Ages predominantly by the nobility or royalty and by the military, usually it is considered the private fortified residence of a lord or noble. It is distinct from a not fortified palace or from a fortress, which was not always a residence for royalty or nobility; and from a fortified settlement, which was a public defence – though there are many similarities among these types of construction.

Castra: In the Roman Republic and the Roman Empire, the Latin word *castrum* was a building, or plot of land, used as a fortified military camp. A *castrum* was designed to house and protect the soldiers, their equipment and supplies. It had a unified ground plan composed of a wall, moats, barracks, streets, gates and a central square (forum) and other elements.

Oppidum: fortified settlement constructed on a distinct hill with natural defensive elements. It is a characteristic element for bronze, iron or Etruscan period.

Tower: construction designed to observe movement on land or water, connected to a complex system with multiple points visible to each other.

Production:

Farmstead: Economic complex consisting of a residential part, a part for animals and for agricultural tools, the production area and part intended for processing of raw materials and plants, surrounded by cultivated fields. They are founded in the mediaeval and Post-Medieval periods.

Villa: The publications distinguish several categories of villas according to their location, size, function and importance. Its precise size and composition varies among the regions and develops over time. Villa Rustica most often denoted a complex that replaced agricultural structures of the Etruscan period (Estate, Fattoria etc.) or was established *ex novo*. It has smaller dimensions. Villa Maritima referred to structures built along the coast, often associated with an economy based on marine resources. There were some efforts to describe the Republican villa as being modest, dissimilar, and smaller. The term Imperial Villa referres to large structures, imposing and often splendidly decorated, founded at the end of the Republic or during the beginning of the Imperial period.

Estate: For this thesis, the term referred to a smaller agricultural structure that was first established in the Etruscan period, but continued to be used up to the Republican period. The estates were succeeded by the *villae rustica* built on the same site in the Republican period.

Greenhouse: modern lightweight construction made of wood and foil or glass for growing plants, archaeologically manifested primarily on DTM, where it forms distinct rectangular terraces or platforms. Another indicator is significantly prosperous vegetation or relict plants.

Terraces: man-made or natural plateaus, constructed on sloping terrain, intended for growing crops or as a base for the other products or residential areas. Mostly they appear near Roman agrarian structures. They may be bounded by stone cladding. Relict plants, such as the remains of grown initially plants that went wild, may accompany them.

Water management:

Bathroom: the roman thermal complex; it has always been connected to the water supply and sewage system.

Cisterns: usually underground or semi-underground structure for collecting water, always connected to the water supply and sewerage system. Usually, it had rectangular form formed by walls covered by waterproof plasters.

Fountain: waterhole or watering place for animals built on a natural spring.

Fishpond: waterproof cement construction, located close to the coast for fish farming from the Roman period.

Well: A well is an excavation or structure created in the ground by digging, driving, or drilling to access water resources.

Sacral:

Church: the building used for Christian religious activities, particularly for Christian worship services.

Temple: a building reserved for religious or spiritual rituals and activities such as prayer and sacrifice.

Burial:

Tomb: single burial component.

Tombs: the group of more tombs, that could be a part of a larger not identified necropolis.

Necropolis: intentional accumulation of burials (graves or tombs) defined by a common denominator (e.g. territory, period or religion, cultural group).

Infrastructure:

Bridge: relicts of wooden or stone construction for crossing watercourse with the paved road.

Road: a thoroughfare, route, or way on land between two places that has been paved or otherwise improved to allow travel by foot or some form of conveyance.

Customhouse: Waypoint for levying toll or tax. Often a designated building with a barrier on a strategic position along with the major infrastructure.

Harbour: a place for mooring ships. The natural disposition of the coast was often complemented by various construction elements made of stone or water-resistant cement.

Mining area:

Quarry: the surface mining area for the clay or other natural material extraction.

Modern military object:

Machine gun nest: a defensive fighting position (DFP), a type of concrete earthwork constructed for military purposes during the Second World War.

Others:

Area of artefact scatters: an area of different dimensions with a comparatively dense surface scatters of pottery and building material. On these sites, there no identifiable constructing structures were found.

Separate finding: isolated archaeological finding out of broader archaeological context.

Unidentifiable structure: archaeological component of not definable origins or function.

Local Name: Local names derive from the regional technical map (Carta Tecnica Regionale Numerica, CTRN) scale 1:5000 and 1:10000.²⁴

Current state: Refers to the state of the site in the period of realization of the research (2017-2019). It divides into categories: coast, field, military area, modern construction, pasture, relicts, river, sea and vegetation.

Data source: Refers to the primary data sources that were an aerial photograph, archive SAEM, bibliography, crowdsourcing, DTM, IGM 1895, CTRN, reconnaissance.

Artefacts: Item describes the most important artefacts found on the site that are relevant for dating and determination. In the case of the site described in the bibliography, the dating and definition were taken from literature. Currently found artefacts were dated and described on the base of comparative literature (Enei 2001, Patusso 2018) and own experience.

Description: It includes the general description of the site, its morphology, historical context and another observation.

GPS: The position is determined by the coordination system WGS 1984 UTM zone 32.

Bibliography: It is a list of available literature related to the site.

Dating: In the case of the site described in the bibliography, the dating was taken from literature. In the case of newly identified sites, the dating was established according to the found artefacts or from the comparison of available data sources. The fragments of pottery artefacts were the most frequent source of dating knowledge. There are many publications on this issue. To the processing of the artefacts from *Ager Castronovano*, the literature about local analogous findings has been selected: Enei 2001, Patusso 2018.

Elevation in metres: Altitude derives from DEM TINITALY/01.

The accompanying pictures (fig. 60 - fig. 181) are in the attachment of the thesis.

²⁴ <http://cartografia.regione.lazio.it/erdas-iws/ogc/wms?>

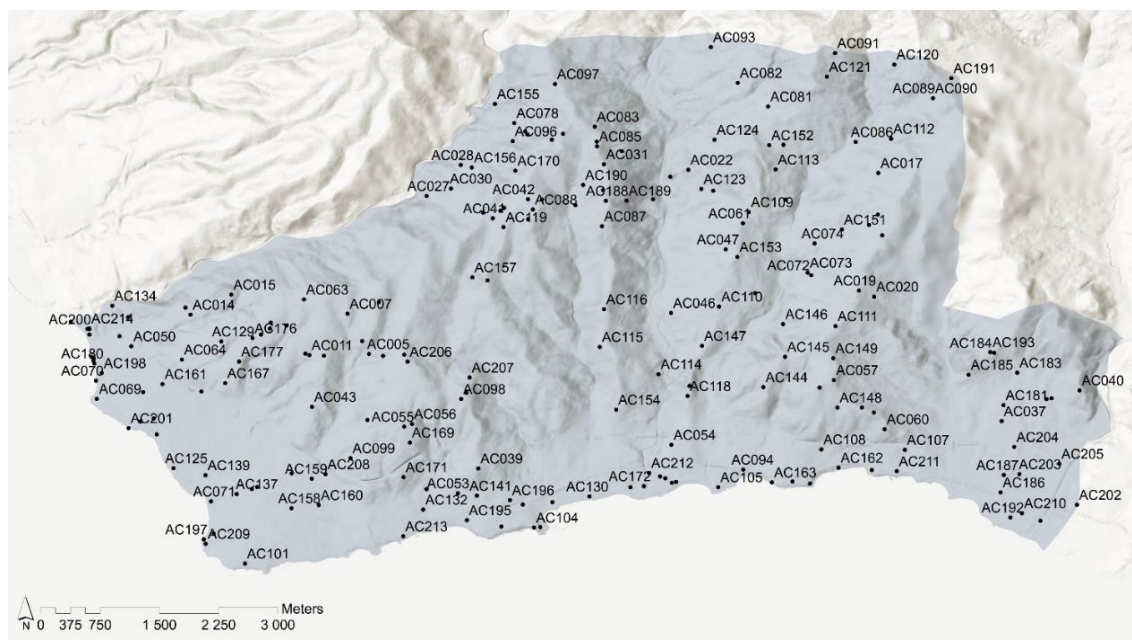


Fig. 27: The map of the research area with all archaeological components based on the research described above.

AC001_1

Site type: villa

Local Name: Casale Santa Maria Morgana

Current state: field

Data Source: reconnaissance

Artefacts: fragments of roof tiles, fragments of pottery, a piece of cement

Description: Findings from the Roman period indicated the pre-existence of Roman structure, most probably the villa. Its relicts disappeared during the following phases.

GPS: 42,0495358; 11,86246595

Bibliography: Albani 1783, 170-171; Stracci 2017, 81-88.

Dating: Roman Archaic and Republican and Imperial period

Elevation in metres: 140

AC001_2

Site type: church

Local Name: Casale Santa Maria Morgana

Current state: field

Data Source: reconnaissance

Artefacts: none

Description: Location of the Church of Santa Maria Morgana is based on the analysis of historical maps and their georeferencing to the current map. The map of forests belonging to the Odescalchi Castle in Santa Marinella depicted the church in 1666 (fig. 60C). The picture showed the position of the church under the letter L, in its vicinity, there were two other tower-like buildings. The map contained other remarkable details: the two hermitages in the forest north of the church and the source under the letter E, which could be identified with the Fontanile di Campo Rosso. A similar building composition without hermitages can then be seen on the map *Topografie geometrica dell'Agro Romano* from 1692 by G. B. Cingolani della Pergola. There is a composition of three buildings, the church on the left and two towers on the right. A detailed description of the parcels and forests belonging to the church can be found in the cadastre of Giuseppe Albani from 1783, with the title "Catasto delle tenute dell'Agro Romano formato per ordine di nostro Signore papa Pio VI da mons. Giuseppe Albani, prefetto dell'Annonea, sopra la relazione della visita fattane da periti agrimensori e dalla stessa Santità Sua con motu proprio approvato da servire di regolamento, per la coltivazione di ciascuna [sic] tenuta dell'Agro Romano. Si aggiunge il tenore dello stesso motu proprio, e dell'editto che in sequela n'è stato pubblicato". Santa Maria Morgana is explicitly mentioned here as a territorial component, as a part of the forest. The text from 1784 followed: "Quartto detto del Pian delle Vacche confinante coll'anzidetto Quarto del Ponton del Castrato co infrasoritta Macchia delle Cese, e con infraferitto Quarto di S. Maria Morgana... In 1785: "Quartto detto di S. Maria Morgana, o sia del Fontanile del Campo rosso confinante colle tenute di Prato Cipoloso, e Camporosso nel Territorio di Civitavecchia, coll'anzidetto Quarto del Pian delle Vacche, e colle infaseritte Spalette macchiose dele Vignace; Qual Quarto dovrà anche comprendere porzione cioè rubbia dieci dell'infrascritto Quartto dele Piane contiguo allo steso Quarto di S. Maria Morgana mediante il fosso: in tutto..." Follows: "Per Pascolare de Bovi Aratori, e comodo della Tenuta restala residual porzione di detto Quarto delle Piane none atto alla lavorazione e confinante coll'anzidetta porzione lavorativa, tolla Spiaggia del Mare, coi sudetti quarti del Ponton del Castrato, e Santa Maria Morgana, e colle sudette Tenute della Chiaruccia, e Camporosso nel Territorio del Civitavecchia" (Albani 1783, 170-171). These words said that Santa Maria Morgana was a wooded area adjacent to Macchia delle Cese, Fontanille di Campo Rosso and Ponton del Castrato. The position was characterized as a place with scattered finds of ancient pottery; it can be assumed that there was a Roman villa. The original church with nearby hermitages was not traced in the field. Recently, there is a modern building (the time of origin is between 1895 and 1950) (fig. 60B), which could absorb the original relics. Therefore, aerial photographs from the 50s show no anomaly. The DTM (fig. 60A) has a terrain anomaly that may have been caused by

the construction of a fence for cattle that no longer exists. In the field, there are more stone concentrations. Some stones are worked (fig. 60D) Also, the study of Junio Bugli locates the site to this position. Fig. E shows the current state of the field.

GPS: 42,0495358; 11,86246595

Bibliography: Albani 1783, 170-171; Stracci 2017, 81-88.

Dating: Middle ages period

Elevation in metres: 140

AC002

Site type: none

Local Name: Olmara

Current state: field

Data Source: reconnaissance

Artefacts: none

Description: O. Toti indicated a Roman villa. The site is partly built up by modern family houses. The accessible part is archaeologically negative. Historical aerial photographs or DTM show no anomalies.

GPS: 42,05388248; 11,85538801

Bibliography: Toti 1990,153.

Dating: undatable

Elevation in metres: 161

AC003

Site type: terraces

Local Name: Ponton del Castro

Current state: field

Data Source: reconnaissance

Artefacts: none

Description: On the DTM (fig. 61A), on the historical (fig. 61B) and contemporary images and in the terrain (fig. 61C) there are terrace-like formations. The site is a private garden/pasture. On the surface, there is no archaeological material visible; the state of none-cultivated terrain could cause it.

GPS: 42,05374474; 11,85298322

Bibliography: none

Dating: undatable

Elevation in metres: 145

AC004

Site type: terraces

Local Name: Perassea

Current state: pasture

Data Source: reconnaissance

Artefacts: none

Description: In terrain (fig. 65A), historical aerial images(fig. 62C), and DTM (fig. 62B) there are evident terrace-like formations. The site is in the pasture. On the surface, there is no archaeological material visible; the state of terrain could cause it.

GPS: 42,0554313; 11,85060831

Bibliography: none

Dating: undatable

Elevation in metres: 135

AC005

Site type: terraces

Local Name: Ponton del Castro

Current state: pasture

Data Source: reconnaissance

Artefacts: none

Description: On the western slope above Fosso Ponton del Castro, there is a terrace system showing the agricultural use of the locality in Roman times (fig. 62D). Surface collections did not yield any material, which may be due to long-term non-cultivation of the area and vegetation cover. Terraces are evident in history images, DTM (fig. 62B), and in the field.

GPS: 42,05397054; 11,85138595

Bibliography: none

Dating: undatable

Elevation in metres: 103

AC006_1

Site type: villa

Local Name: Perassea

Current state: pasture

Data Source: reconnaissance

Artefacts: roof teils fragments, pottery fragments

Description: Roman villa Rustica was discovered in 2019, during a reconnaissance of the field. The site is located on a promontory of a hill surrounded by two streams (fig. 63D). The steep slopes that fall from the villa to streams are divided into the terraces made up of large stones. At the site, there is possible to observe large fragments of roof tiles and the number of stones that are rolled out on site. The terrace system is evident in historical aerial photographs (fig. 63B), DTM (fig. 63A) and the field.

GPS: 42,05987792; 11,85249854

Bibliography: none

Dating: Roman Republican and Imperial period

Elevation in metres: 180

AC006_2

Site type: settlement

Local Name: Perassea

Current state: pasture

Data Source: reconnaissance

Artefacts: roof teils fragments, pottery fragments

Description: Finding from the Archaic period proved that the villa was built on the pre-existing settlement.

GPS: 42,05987792; 11,85249854

Bibliography: none

Dating: Archaic period

Elevation in metres: 180

AC007_1

Site type: villa

Local Name: Perassea

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of amphora Greco Italica, the fragment of marble (bath or sarcophagus), the fragment of Etruscan pottery

Description: The Roman villa Rustica was discovered in March 2019 during the reconnaissance of the ploughed field. A place with a large number of fragments of roof tiles and other material, fragments of building material and findings of pottery fragment were discovered. The location is situated on the western slope, a few meters below the top of the hill. The place provides

excellent views of the sea and the surrounding area. Two streams surround it. Fig. 64 A: DTM, fig. 64B orthophoto 2019, fig. 64C: current state of the field.

GPS: 42,05854632; 11,84893358

Bibliography: none

Dating: Roman Republican and probably Imperial period

Elevation in metres: 165

AC007_2

Site type: settlement

Local Name: Perassea

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of amphora Greco Italica, the fragment of marble (bath or sarcophagus), the fragment of Etruscan pottery

Description: Finding from the Archaic period proved that the villa was built on the pre-existing settlement.

GPS: 42,05854632; 11,84893358

Bibliography: none

Dating: Archaic period

Elevation in metres: 165

AC008_1

Site type: necropolis

Local Name: Guardiole

Current state: field

Data Source: reconnaissance

Artefacts: amphora handle, roof tile

Description: The necropolis was discovered in March 2019 during the surface reconnaissance of the ploughed field. A site with significantly different dark reddish clay was found. It was in the contrast to the surrounding yellow arable terrain. It located on the spot where the ploughing had long disturbed the layer of Etruscan burial components. During the reconnaissance, it was not possible to determine the exact number of tombs in this burial site and to analyze their formal properties in more detail. It can be assumed that at least three components were disrupted. The rest of the necropolis seemed intact. Together with the fragments of the roof tile and fragments of amphorae, fragments of modern glazed pottery were found. These fragments probably illustrate the use of the landscape, even in modern times. The site locates on an

agriculturally used site. Fig. 65A: DTM; fig. 65B: orthophoto, 2019; fig. 65C: stone concentration on the limit of a cultivated field; 65D: photogrammetry of the site, 2019.

GPS: 42,05377516; 11,84625098

Bibliography: none

Dating: Etruscan period

Elevation in metres: 140

AC008_2

Site type: separate finding

Local Name: Guardiole

Current state: field

Data Source: reconnaissance

Artefacts: Post-Medieval modern glazed pottery

Description: The fragments of Post-Medieval glazed pottery were found. These fragments probably illustrate the use of the landscape, even in modern times. The site locates on an agriculturally used site.

GPS: 42,05377516; 11,84625098

Bibliography: none

Dating: Post-Medieval period

Elevation in metres: 140

AC009_1

Site type: villa

Local Name: Guardiole

Current state: field

Data Source: reconnaissance

Artefacts: olla, Roman amphora

Description: About 170 m from AC008, a Roman villa Rustica was identified. The ploughing of the field revealed a place with a large number of fragments of roof tiles and fragments of pottery. Ploughing exposed and disturbed the rectangular stone structure that is visible on DTM (fig. 66A), recent orthophoto (fig. 66B) and in the terrain (fig. 66C). The regular agricultural activities disturb the site.

GPS: 42,053998; 11,84414

Bibliography: none

Dating: Roman Republican and probably Imperial period

Elevation in metres: 140

AC009_2

Site type: settlement

Local Name: Guardiole

Current state: field

Data Source: reconnaissance

Artefacts: olla, Roman amphora

Description: Finding from the Archaic period proved that the villa was built on the pre-existing settlement.

GPS: 42,053998; 11,84414

Bibliography: none

Dating: Archaic period

Elevation in metres: 140

AC010

Site type: oppidum

Local Name: Fosso Ponton Del Castro

Current state: vegetation - Machia

Data Source: reconnaissance

Artefacts: none

Description: The Ponton del Castrato settlement locates 2 km from the sea on the left side of the delta. At this site, there Denis observed the remains of a square wall interpreted as a perimeter of the ancient settlement and the remains of walls from blocks of Arenaria (stone). He recognized remnants of the gate in the remains of the walls. Abeken described the same construction, but he interpreted it as a monumental tomb of Traian or Hadrian. In 1840, many tombs of the same construction with the burial chambers and the ornate parents were dug in the vicinity. They were covered by a mound and encircled by a stone corridor about 50 cm wide. Even the corridor was lined with Arenaria stones. Today there are no remains in the area, neither Mengarelli nor Bastianelli had found them. Probably everything disappeared by agricultural activity during the last century. Near the Ponton del Castrato in 1940, Mengarelli found a bust in a late Archaic style, which probably formed the lid of a funeral urn, probably the work of sculptors from Cerveteri. The bust is now stored in Civitavecchia. In 2018 and 2019, during the reconnaissance, the relics of the fortifications were identified, consisting of large, dry-laid blocks, which would correspond to the building technology of that period. In the dense vegetation of Mediterranean macchia, there the stone structures and worked building blocks can be identified. Modern buildings and the asphalt roads that pass through apparently

absorbed part of Oppidum. Under the walls, there is a terrace with a natural spring of water. The site was associated with the Etruscan port of Le Guardiole, and preceded the Roman Castrum Novum. Fig. 67 A shows DTM of the site; fig. 67B and 67C: relicts of stone walls; fig. 67D: lateral view to the castra's wall.

GPS: 42,04645201; 11,85120145

Bibliography: Frau 1990, 10.

Dating: Etruscan period

Elevation in metres: 136

AC011

Site type: tomb

Local Name: Guardiole

Current state: field

Data Source: reconnaissance

Artefacts: none

Description: The stone tomb of a circular shape locates in an overgrown border strip, without any detailed examination of formal properties and dimensions. The question is if there are more tombs — it is probably part of a larger necropolis along with AC008. The agricultural activity destroyed the upper part of the tombs. In the terrain, there is a heeled stone ring bounding the original mound. Fig. 68A: DTM of site, 68B: current orthophoto, 68C: the stone ring of a tomb.

GPS: 42,05383; 11,844607

Bibliography: none

Dating: Etruscan period

Elevation in metres: 140

AC012_1

Site type: villa

Local Name: Fosso Cupo

Current state: field

Data Source: reconnaissance

Artefacts: fragments of Roman roof tiles, storage tanks (dolia)

Description: More precisely undatable Roman villa situated on the plateau above Fosso Cupo. The cumulation of roof tiles fragments and shards of larger pottery pots indicates its size. Its presence is also shown in the base map 1: 10000, which indicates the debris "ruderi". The villa located very close to the Etruscan necropolis. The area of the villa is intersected by the fences

consisting of piled stones. The enclosure is already recorded on IGM 1895. Fig. 69A: DTM of the site, 69B: Aerial photo from 50'; 69C: current state of the site.

GPS: 42,056174; 11,839086

Bibliography: none

Dating: Roman period

Elevation in metres: 139

AC012_2

Site type: settlement

Local Name: Fosso Cupo

Current state: field

Data Source: reconnaissance

Artefacts: fragments of Roman roof tiles, storage tanks (dolia)

Description: Findings from the pre-Roman period indicated the pre-existence of settlement.

GPS: 42,056174; 11,839086

Bibliography: none

Dating: Archaic period

Elevation in metres: 139

AC013_1

Site type: villa

Local Name: Macchia Del Semaforo

Current state: pasture

Data Source: reconnaissance/bibliography

Artefacts: mosaic, fragments of marble decoration, fragments of Vernice nera and Terra Sigillata Africana, kitchen pottery, fragments Etruscan roof tiles; pottery not spinning on a circle; fragments Amphora Dressel 1

Description: P. A. Gianfrotta already mentions the Roman villa. The site had been reviewed again in 2019 to verify the information and to refine the location of the villa complex. The large villa situated on the plateau west of the slopes of Castellina del Marangone. It was probably a large complex of buildings, which stretched throughout all the plateau. There are a large number of stones, building elements, roof tile fragments, marble pieces, pottery vessel fragments, mosaic stones is there. Gianfrotta also reported terra sigillata or the head of a marble column. Fig. 70 A: DTM of the site; 70B: the CTRN base map; 70C: Orthophoto recent from Google Earth; different visualization of DTM; 70E: recent photo from above.

GPS: 42,059241; 11,830491

Bibliography: Gianfrotta 1972, 134; Maffei – Massimo – Sergio 2011, 111.

Dating: Roman Republican and Imperial period

Elevation in metres: 60

AC013_2

Site type: settlement

Local Name: Macchia Del Semaforo

Current state: pasture

Data Source: reconnaissance/bibliography

Artefacts: fragments of Vernice nera, fragments Etruscan roof tiles; pottery not spinning on a circle;

Description: Finding from the Archaic period proved that the villa was built on the pre-existing settlement.

GPS: 42,059241; 11,830491

Bibliography: Gianfrotta 1972, 134; Maffei – Massimo – Sergio 2011, 111.

Dating: Bronze age, Etruscan period

Elevation in metres: 60

AC014

Site type: necropolis

Local Name: Macchia Del Semaforo

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of roof tiles, fragments of pottery

Description: This area extends on two hills that slope down towards the sea, separated from each other by the Fosso Cupo, with a north-east - south-west orientation. Various pit and chamber tombs were found in two very dense groups of burials identified by tumuli: one group is to the left of the road leading to the Semaforo of Fosso Cupo, the other one is near the Fosso Guardiole. Founded funeral equipment is datable to the 5th - 4th century BC. According to Bastianelli, it belonged to necropolis AC015_2. Fig. 71A: CTRN base map; 71B: fragment of stone lining element of the doors; 71C: current state of the site.

GPS: 42,058437; 11,831072

Bibliography: Bastianelli 1937, 466.

Dating: the Etruscan classical period

Elevation in metres: 77

AC015_1

Site type: oppidum

Local Name: Castellina

Current state: vegetation - Machia

Data Source: reconnaissance/bibliography

Artefacts: see literature for findings

Description: The archaeological excavation showed the continuity of settlement until the XIV century. The oldest layers of this settlement, situated on a remarkable hill above Fosso del Marangone, are dated as follows: 3 different stages between the 16th and 13th centuries BC: Middle Bronze II and III; Late Bronze Subappenin Bronze. Numerous findings of the bones of domestic animals originate from this period, which proved the marginal role of hunting activity. The youngest layers date back to the Etruscan Archaic, Hellenistic and Roman periods. It was an important centre between Tarquinia and Cere. The site has been studied systematically since 1911. S. Bastianelli conducted the first research; Friedhelm Prayon leads current research.

According to the research interpretations, Castellina had been an essential metallurgical centre since the 8th century BC and it was connected with a harbour that is supposed to be situated in Fosso Mignone. Fig. 72A: DTM of site, unfortunately, it does not show all area of the site; 72B: aerial photo from 1950; 72C: aerial photo from 1954; 72D: current photo from above.

GPS: 42,060725; 11,835721

Bibliography: Allegrezza 2016, 30; J. G. Aymerich, A. Domínguez-Arranz, 2011; Toti 1990, pp. 152; Bastianelli 1937, pp. 451-472 and 1942, pp. 283-294; and 1981, pp. 29-30; Aymerich - Domínguez-Arranz 2011; Toti 1990; Bastianelli 1981; 1937,451-472; 1942, 283-294; 1981, 29-30; Di Gennaro 1988, 78.; Barbaro 2010.

Dating: Bronze age, Iron age, Etruscan, Roman Republican and Imperial period, Middle ages period

Elevation in metres: 120

AC015_2

Site type: necropolis

Local Name: Castellina

Current state: pasture and macchia

Data Source: bibliography

Artefacts: see literature for findings

Description: Bastianelli studied a considerable area, circa 2800x1800m. He studied and reported 156 tombs, presupposing that lot of them had disappeared before. The necropolis extended

over the Boccella hills, Volpelle, Spinare and Semaforo. The destruction of the necropolis began already in Roman times by the construction of at least five Roman villas inside the necropolis area. However, in modern times, the multi-plough motorized machines destroyed many of them, especially those that emerged just 60 cm below the ground. There are two kinds of tombs: pit and chamber. The pit ones have walls and cover in stones; the pavement is natural bedrock. The slabs of rough local stone or dry-laid blocks created the walls with regular roofing. Chamber tombs are very numerous. They are usually placed in the centre of a circular mound with the crepitan lined with stone slabs to form a base other 40-60 centimetres. They consisted of one or two chambers lined with the large slabs with two central roofing systems: a pseudo-vault consisting of the slabs with progressively projecting front cut; gabled with inclined slabs supporting by contrast. A dromos accessed the funeral cells with an accentuated slope that started from the periphery of the mound. Dromos had no cover and was buried after each burial. The lack of soft rock in this area prevented the excavation of underground tombs (as in Tarquinia). The altars were built from dry-laid stones alongside the mounds, which were destroyed with time. The Dating of tombs is divided into 3 phases: First one from Orientalizing period from the half of 6th century BC; second one from the half of the 6th century to 5th BC; 3rd from 4th to 2nd century BC. Bastianelli included in this necropolis groups of tombs AC014, AC064, AC129, AC134, AC135, AC176, AC177. Fig. 73A: the plan of the necropolis according to Bastianelli, from Gianfrotta 1972, 138.

GPS: 42,060725; 11,835721

Bibliography: Frau 1990, 10; Gianfrotta 1972, 138

Dating: Etruscan period

Elevation in metres: 120

AC016

Site type: separate finding

Local Name: Fosso Cupo

Current state: field

Data Source: reconnaissance

Artefacts: aes rude, mollusc

Description: A separate finding of the aes rude and mollusc can provide the frequentation of near sites.

GPS: 42,05752; 11,840203

Bibliography: none

Dating: Etruscan Archaic period

Elevation in metres: 145

AC017_1

Site type: villa

Local Name: Poggio delle Fate

Current state: pasture

Data Source: reconnaissance

Artefacts: the fraction of the pottery from the Bronze age, fractions of the pottery (amphora), terra sigillata (lantern), Africana, vitreous mosaic (white, blue, grey, red).

Description: The location of the vast Roman villa complex was discovered in 2018. The villa is situated on the northwest slope below Monte Cupellaro (272 m) and south of Le Rughicce (202 m). As shown DTM of the site (fig. 74A), it surrounded the spring at an altitude of 207 meters above sea level. The erosion and rainwater revealed the masonry remains from the stones and the opus mixtum (fig. 74C, D, E). Fig. 74B: photogrammetry of site, 2019; 74F: a general overview.

GPS: 42,07456317; 11,9093396

Bibliography: none

Dating: Roman Imperial period

Elevation in metres: 220

AC017_2

Site type: settlement

Local Name: Poggio delle Fate

Current state: pasture

Data Source: reconnaissance

Artefacts: a fraction of the pottery from the Bronze age, fractions of the pottery (amphora), terra sigillata (lantern), Africana, vitreous mosaic (white, blue, grey, red).

Description: Finding from the Archaic period proved that the villa was built on the pre-existing settlement.

GPS: 42,07456317; 11,9093396

Bibliography: none

Dating: Bronze age, Etruscan period

Elevation in metres: 220

AC018

Site type: settlement

Local Name: Fosso Cupo

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of pottery with the plastic decoration, fragments of milk heating containers, storage jars, a large container of not turned clays, bone fragments, carbons

Description: The reconnaissance of Ager Castronovano in 2018 found, in the erosion groove on the northern slope of Monte Cupellar, the fragments from the Bronze Age. The site was re-checked in the next sessions. On the northern slope of Monte Cupellaro, there is significant erosion, what has been caused by waterlogging of slopes and significant runoff of soil. This phenomenon disrupts the middle Bronze Age cultural strata. It is evidenced by the findings of fragments of pottery, bones, carbons in the flushing layers within the erosion groove. At least two recessed objects appear to be disrupted on site. The erosion groove, up to 1 meter deep, was cleaned at the sites of identified objects, and the profiles were documented by the photogrammetry. Based on the information found, it is possible to conclude that there is a settlement in this area from the Bronze Age to the beginning of the Iron Age. Its exact scope can be better identified by the geophysical research and confirmed by the field research. Fig. 75A: DTM of the site; 75B: one of the erosion grooves; 75C: stratigraphy containing pottery fragments; 75D: photogrammetry of stratigraphy 2018.

A small collection of 43 bones was collected at the site. Its analysis revealed that one area of the adult human skull (neurocranium) and 42 animal bones or their fragments. The minimum number of individuals in the set is 8 (+2). From domestic animals, there were bones of cattle and pigs (*Bos Taurus*, *Sus*) and Red deer (*Cervus elaphus*).

GPS: 42,06864928; 11,9082795

Bibliography: none

Dating: Bronze age, Etruscan period

Elevation in metres: 220

AC019_1

Site type: villa

Local Name: Buche Di Brancaleone

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of dolium, Bronze age pottery, Roman roof tiles (one tile with an imprint of an animal's footprint), fragments of marble tiles, marble column, ornate carved pieces, mosaic stones, Vernice nera (embossed bottom), terra sigillata, fragments of pottery (amphoras, storage jars)

Description: Gianfrotta described the site as an area with an increased concentration of pottery fragments. On the site there one pottery shard from the Bronze Age was discovered. Villa Rustica was also identified. It stood on a terrace between the hills at a place called Buche di Brancaleone. The place is at an altitude of 153 meters above sea level. There are many stones, marble pieces, roof tile fragments, pottery fragments. Fig. 76 A Lidar data; 76B: current orthophoto 2019; 76C: an example of the stone structure in the ground.

GPS: 42,0611832; 11,90712802

Bibliography: Gianfrotta 1972, 38.

Dating: Roman Republican and Imperial period

Elevation in metres: 200

AC019_2

Site type: settlement

Local Name: Buche Di Brancaleone

Current state: pasture

Data Source: reconnaissance

Artefacts: Bronze age pottery, Vernice nera (embossed bottom),

Description: Finding from the Bronze age and Etruscan period proved that the villa was built on a pre-existing settlement.

GPS: 42,0611832; 11,90712802

Bibliography: Gianfrotta 1972, 38

Dating: Bronze age, Etruscan period

Elevation in metres: 200

AC020

Site type: Area of artefact scatters

Local Name: Buche Di Brancaleone

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of pottery

Description: On the southern slope of so-called "Buche di Branchaleone", there is significant erosion caused by waterlogging of slopes and significant runoff of the soil. This phenomenon disrupts the middle Bronze Age cultural strata and the whole site. Erosion grooves discovered fragments of the Middle Bronze Age pottery, stone dry-laid wall, animal, and human bones. This site has been continually destroyed, and it would need to be cleaned and further studied. Fig.

77A: Current orthophoto showing erosion grows; 77B: detail of groove; 77C: general overview of the site.

GPS: 42,060486; 11,908861

Bibliography: none

Dating: Bronze age

Elevation in metres: 180

AC021_1

Site type: castle

Local Name: Fosso Castelsecco

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of pottery (grey-fired pots, jugs, in one case glazed pot edge), glass fragments, admixture consists of two fragments of Etruscan pottery; fragments of Middle ages kitchen pottery; water tanks called Olla Aquaria

Description: The Middle ages castle was built on a hill in the middle of the valley of the Valle Marina, and it took its name "Castello di Vallis Marinae". The valley flows through the "Fosso di Castelsecco". Together, both streams made it difficult to access from the south and west. Probably, below the northern part of the hill, there was a strategic ford across the Fosso. It laid on the road linking the coast with the hinterland towards Tolfa Nuova. Some explorers merge the castle a fortified Etruscan location, "Castelsecco". Its name has also retained in the name of a watercourse. A thorough recon confirmed that the mentioned Etruscan fortress was located on a hill about 2,8 km south from the Middle ages castle.

On the other hand, it is located north of Poggio Alto (226 m). It is possible to rule out the connection between the Etruscan fortress and the Middle ages castle. However, it cannot be supposed out that Etruscans widely used the area of the future Middle ages castle. The findings of Etruscan tombs evidence it. The surroundings of the castle were frequented during the Roman period. At a distance of about 50 m from the castle there remains of a Roman villa Rustica were discovered (Gianfrotta 1972, 52).

Castle di Vallis Marinae is supposed to be founded in the period of the 12th to 13th century. Due to the geographical location, on the road from the coast to the inland, there it was linked to the settlement in Nova Tolfa (Tolfa Nuova). This spatial judgment is also confirmed by Middle ages written sources in which Valle Marina is mentioned as the property of Tolfa Nuova. The Valle di Marina Castle was administered by the nearby Prato Rotatore (Passigli 2000, 16). "Perpetuum honorificum et novum feudum castrum Tulphen's cum possessionibus Vallismarinae, castrum

Montis Castagni and Ferrarie cum omnibus and singuli fortilitiis, curtis, villis, territories atque districtibus, finibus, iurisdictionibus and pertinentiis suis, cum habitation." The small castle had controlled the valley probably until the second half of the 15th century when the long-term process of incorporating smaller fortifications into emerging large estates culminated. It probably became fatal for the castle in Vallis Marinae. Written sources spoke of the nobleman Avers, who had gained control of the abandoned castle in Tolfa Nuova in 1459. He had built new walls, created a new fortress, and built a new palace. From there, he undertook further conquests, especially the castle in Valle Marina, which had been being held by Francesco Orsini's son at that time. Viterbo's chronicler Nicolo della Tuscia described the situation: "mura e far fortezze e portocci assai calcina e pigliolla fella guardar per lui; e questo fu per aver la tenuta e il castello, qualità chiama Valle Marina: e questo modo la tolse al figlio di Francesco Orsini" (Della Tuccia, 265).

In 1461 the alunite deposits were discovered around Tolfa (a mineral formed by post-volcanic processes, chemical formula $M_2SO_4 \cdot M_3 2 (SO_4)_3 \cdot 24H_2O$). It brought restructuration of the local settlement: smaller castles deprived of their current guard function. The Centumcelle area focused on logging, which served as a fuel for mineral miners. Tolfa Vecchia got the property of the representatives of the pontificate. The area of Santa Severella, Farnesina, and probably Castellina concentrated on mining activities. It can be assumed that, shortly after 1461, the Valle Marinae Castle was abandoned and it become a good source of building material.

Until now, the relicts of masonry are visible. They rise to the surface in the former castle. These relicts were surveyed using a total station, and the acquired data became the basis for creating a ground plan of the castle. As it turned out, the essential part of the castle was a high tower, located in the northern part, at the highest point of the hill. From there, it was possible to control the long-distance road leading along the eastern slope of the castle hill, the access road to the castle gate, the narrow neck through the rock just below the tower, and another section of the commercial road to the ford through Fosso di Castelsecco. Preserved relicts show that the tower had a square ground plan. The north side of the tower was horizontal with the neck, as mentioned earlier. The width of the outer walls of the tower was two meters. A residential palace adjoined the tower. In the northern part of the palace, there use to be a small side gate. The remains of the lining are still visible.

The southern part of the castle complex was surrounded by a fortification wall that felt a part in the southern part. Without further field research, it cannot be confirmed that the scattered debris in the southern part of the castle grounds comes from other buildings, such as farm buildings or stables. A gate closes the entire castle complex on the east side, which was entered

from the north on the slope of the castle hill directly below the castle tower. A close analogy to the constructional appearance of the castle is probably Castel Cardinale near Viterbo, which, however, has a prismatic tower turned by a lip out of the castle. Fig. 78 A: DTM shows the strategic position of the site on the hill between two streams; B: aerial photo from 1954 shows unforested site; C, D: detail of walls relicts; E,G: analogical Castel Cardinale; F preliminary planimetry of site.

GPS: 42,07413169; 11,88568224

Bibliography: Gianfrotta 1972, 52; Nardi-Combesure 2002, 127; Passigli 2001, 16; Stracci 2014, 50-59; Tron 1982; Vallelonga 2012.

Dating: Etruscan and Middle Ages period

Elevation in metres: 70

AC021_2

Site type: oppidum

Local Name: Fosso Castelsecco

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of pottery (grey-fired pots, jugs, in one case glazed pot edge), glass fragments, admixture consists of two fragments of Etruscan pottery; fragments of Middle ages kitchen pottery; water tanks called Olla Aquaria

Description: Findings of Etruscan pottery proved pre-existing Etruscan settlement (oppidum) at this location. It is often confused with Castelsecco.

GPS: 42,07413169; 11,88568224

Bibliography: Gianfrotta 1972, 52; Nardi Combesure 2002, 127; Passigli 2000, 16; Stracci 2014, 50-59; Tron 1982; Vallelonga, F. 2012.

Dating: Etruscan period

Elevation in metres: 70

AC022

Site type: villa

Local Name: Fosso Castelsecco

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of pottery (common terracotta, Terra Sigilata) fragments of roof teils etc.

Description: P. A Gianfrotta published the site. A reconnaissance was carried out here in 2007 and 2019. Villa Rustica situated on a distinct terrace, northeast of the Vallis Marinae Castle.

Terrace of villas accentuated by the accumulation of stones and mature trees. There is a large number of artefacts on the site that float down the hillside into a lower-lying field. Fig. 79 A: DTM showing the extension of the site; B: current orthophoto 2019.

GPS: 42,07492933; 11,88771143

Bibliography: Gianfrotta 1972, 52.

Dating: Roman Republican and the beginning of the Imperial period

Elevation in metres: 125

AC023_1

Site type: oppidum

Local Name: Poggio Castelsecco

Current state: vegetation - Machia

Data Source: reconnaissance/bibliography

Artefacts: fragments of pottery, roof tile fragments, figurine, Bronze artefacts, coins, fragments of animal bones,

Description: Castelsecco hill is surrounded by the ancient road linking the settlements of Prato Rotatore and Poggio Alto with the coast. Ancient settlements evidence the age of the road. Possibly its usage had continued to the Middle ages (Gianfrotta 1972, 49). The hillock was already inhabited in the Iron Age (Toti 1990, 157-158, fig. 165). What the original fortified mansion looked like can be partially reconstructed based on aerial laser scanning and surface reconnaissance of terrain relics that have been preserved on the Castelsecco hill. Prospecting using geophysical methods or archaeological excavation may bring further refinement in the future. The fortified mansion was located on a strategic hill above Fosso Castelsecco. It used a steep natural slope on the southwest, and north sides to defend itself. On the eastern side there probably the access to the fort was placed. It can be assumed that there was built a wall reinforced by a dry moat. The question is the destiny of the site in the mediaeval period. Some sources put to it Middle ages fortification site. Castelsecco was slightly inland, without the direct view of the sea. Castelsecco was under the control of Tolfa Nuova, so maybe its task was to monitor the course of the Castelsecco ditch that led to it and not to monitor the coastal territories. The remains of the collapse of a building could be dated back to the Middle ages. On the place between the fortification and the coastline there the remains had emerged from the surveys, perhaps they are interpretable as the ruins of a sighting outpost. Maybe it was as such the only point of observation connected with Castel Vallis Marinae (AC021). The survey after the macchia fire did not discover datable findings from the Middle ages period. Bugli also identified tombs on the west slope of the hill and Roman villa on the top of the hill. A. Maffei described

Castel Secco like small Middle ages fortress dominating the pass for Tolfaccia. Fig. 80 A: Lidar data; B current orthophoto 2019; C the state of the site in 2019; D: modern road cut the site and discovered relevant archaeological strata rich for findings from the Etruscan period.

GPS: 42,05033594; 11,88785833

Bibliography: Cerasuolo 2012; Gianfrotta 1972, 49; Maffei 1986, 38; Stracci 2014, 50-59; Toti 1961, 1990a, 157-158; Bastianelli 1936, 447; Bugli 2011, 91, Vallelonga 200, Nardi-Combescure 2002, 127

Dating: probably Bronze age, Iron age, surly Etruscan and Roman Republican period

Elevation in metres: 75

AC023_2

Site type: villa

Local Name: Poggio Castelsecco

Current state: vegetation - Machia

Data Source: bibliography

Artefacts: fragments of pottery, roof tile fragments, figurine, Bronze artefacts, coins, fragments of animal bones,

Description: In the Roman period, the roman villa was build on the place of the previous Etruscan oppidum.

GPS: 42,05033594; 11,88785833

Bibliography: Bugli 2011, 91,

Dating: Roman Republican period

AC023_3

Site type: tower

Local Name: Poggio Castelsecco

Current state: vegetation - Machia

Data Source: reconnaissance/ bibliography

Artefacts: none

Description: In the literature, there are the mentions about the stone tower that served as the mean of the observation of roads and coast. After the macchia fire, it was possible to identify some stone construction. Until now, any finding from the mediaeval period has not been made.

Fig. 81 A-E the site after fire and stone structures.

GPS: 42,05033594; 11,88785833

Bibliography: Cerasuolo 2012; Gianfrotta 1972, 49; Maffei 1986, 38; Stracci 2014, 50-59; Toti 1961, 1990, 157-158.; Bastianelli 1936, 447; Bugli 2011, 91, Vallelonga 200, Nardi-Combescure 2002, 127.

Dating: Middle ages and Post-Medieval period

Elevation in metres: 75

AC024

Site type: fence

Local Name: Bocirca Di Lepre

Current state: pasture

Data Source: reconnaissance

Artefacts: none

Description: In 2018, an unknown object was identified on the LIDAR at the top of at the hill above Santa Maria Morgana. The structure had a regular floor plan with a partition to two rectangular parts, one of which is more extensive and one is smaller. It was interpreted as a probable remnant of a cattle fence. The walls reached a height of ca 50 cm. They were built of dry-laid stones.

Fig. 82 A: DTM; B: current orthophoto 2019.

GPS: 42,06929284; 11,86948629

Bibliography: none

Dating: Middle ages and Post-Medieval period

Elevation in metres: 240

AC025

Site type: Farmstead

Local Name: Bocirca Di Lepre

Current state: pasture

Data Source: reconnaissance

Artefacts: none

Description: Stracci interpreted the site as the Church of Santa Maria Morgana. AC001 corresponds more with the description and the location of the church with the nearby hermitages. Aerial photographs from 1950 also confirm the rustic character of the building, IGM1895 documented the enclosure by the fence of the building. Relict of the building has not the character of sacral structures of that period. Fig. 83 A: Aerial photo from 1950: relicts of AC025 and smaller AC026; B: current orthophoto 2019; C, D: relicts of stone structures AC025.

GPS: 42,07026842; 11,86632398

Bibliography: none

Dating: Middle ages and Post-Medieval period

Elevation in metres: 215

AC026

Site type: Farmstead- agricultural structure

Local Name: Bocirca Di Lepre

Current state: pasture

Data Source: reconnaissance

Artefacts: none

Description: It is an agricultural structure connected with AC025. Along stone walls, there are placed relicts of through for feeding animals. Fig. 83 A: Aerial photo from 1950: relicts of AC025 and smaller AC026; B: current orthophoto 2019; C, D: relicts of stone structures AC025.

GPS: 42,07059917; 11,86674753

Bibliography: none

Dating: Middle ages and Post-Medieval period

Elevation in metres: 215

AC027

Site type: villa/estate

Local Name: Poggio Pontoncino

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of roof tiles

Description: The increased accumulation of Roman tiles was found deep in the valley below Poggio Pontoncino, on the western slope of the terrace at an altitude was of about 90 meters, on the right side of the waterfalls of a nameless watercourse flowing from the left into the Marangone River. It cannot be ruled out that a smaller covered object stood at this place. Fig. 84 A: DTM of the site.

GPS: 42,07195; 11,857941

Bibliography: none

Dating: Etruscan classical and Roman period

Elevation in metres: 93

AC027

Site type: settlement

Local Name: Poggio Pontoncino

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of roof tiles

Description: Finding from the Bronze age and Etruscan period proved that the villa was built on the pre-existing settlement.

GPS: 42,07195; 11,857941

Bibliography: none

Dating: Etruscan classical period

Elevation in metres: 93

AC028

Site type: villa

Local Name: Fosso Marangone

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of Dressel 2/4; African pottery; pottery for cooking; 1 fragment of not turned clay; fragments of roof tiles, fragments of pottery (reservoir, bowl), ear amphora

Description: P. A. Gianfrotta had characterized the site as an area with an increased pottery concentration. More recent field survey in 2018 and 2019 confirmed that statement. Furthermore, the terrace on which the villa Rustica stood had been identified. Villa located on the northwest terrace below Prato Cipoloso above the valley of the river Marangone, at an altitude of about 130 m. In the vicinity, there is a fountain. Fig. 85 A: terraces on the DTM; B: fountain; C: current state of the site.

GPS: 42,075473; 11,861822

Bibliography: none

Dating: probably whole Roman period, surely from 1 BC to 1 AD

Elevation in metres: 130

AC029

Site type: villa

Local Name: Prato Cipoloso

Current state: pasture

Data Source: reconnaissance

Artefacts: dolium, fragments of roof tiles, coin and Bronze fragments of modern mechanization

Description: On the ridge between Poggio Pontoncino and Prato Cipoloso peaks, there is a terrace opening to the northwest. One Roman villa was palces there. Now the pasture is there,

and a stone fence surrounds the area. There is a large number of Roman pottery fragments and roof tiles on this palce. The recent waste (building materials, pottery, daily garbage, plastics) covers one part of the site. Already IGM 1895 captured the fencing that passes through the site. It probably enclosed the AC025. More terraces are visible in the surroundings. Fig. 86 A: shows the relief of treatments that are visible also on modern orthophoto from 2019 (fig. 86B).

GPS: 42,07006562; 11,86436311

Bibliography: none

Dating: Roman period, surly 1AD

Elevation in metres: 206

AC030

Site type: Farmstead

Local Name: Fosso Marangone

Current state: pasture

Data Source: reconnaissance

Artefacts: none

Description: The modern Farmstead was built between 1950 and 1954. At present, it seems to be abandoned permanently.

Fig. 87 A: Photogrammetry of the building; B: Current state of Farmstead; C: the position of building in the landscape.

GPS: 42,07279437; 11,86070504

Bibliography: none

Dating: modern

Elevation in metres: 149

AC031

Site type: separate finding

Local Name: Prato Cipoloso

Current state: pasture

Data Source: reconnaissance

Artefacts: horseshoe fragments and glazed Middle ages pottery

Description: Between two rocky peaks on the ridge of Prato Cipollo were discovered fragments of pottery, a fragment of roof tile, and horseshoe.

GPS: 42,07555621; 11,87811919

Bibliography: none

Dating: Roman period, Middle Ages or Post-Medieval period

Elevation in metres: 250

AC032

Site type: separate finding

Local Name: Prato Cipoloso

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of Catino, a Roman kitchen pottery

Description: There on the south-western edge of the plateau in the Prato Cipoloso area at the height of 253,5 m above sea level, a fragment of the so-called Catino dated to the beginning of the Imperial period was discovered. This part of the slope is divided into the terraces, which are visible on the terrain, aerial photographs, and DTM.

GPS: 42,07153063; 11,87106468

Bibliography: none

Dating: Imperial period

Elevation in metres: 253

AC033

Site type: separate finding

Local Name: Prato Cipoloso

Current state: pasture

Data Source: reconnaissance

Artefacts: Etruscan roof tile

Description: Near the Fontanile di Valle Semplice, there the fragment of a roof tile was found on the western slope of the hill. It was in the vicinity of another locality with an increased concentration of pottery fragments, which illustrates the frequentation of the area through centuries.

GPS: 42,07089246; 11,87486409

Bibliography: none

Dating: Etruscan period

Elevation in metres: 182

AC034

Site type: separate finding

Local Name: Prato Cipoloso

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of Etruscan tiles, amphora Dressel 2 - 4, fragments Roman roof tiles

Description: Pottery fragments from the Roman period were discovered on the western slope of Prato Cipoloso. The findings confirm, like AC033, the use of the area in the Roman and Etruscan times.

GPS: 42,07836397; 11,87218957

Bibliography: none

Dating: Etruscan period and the Roman Imperial period

Elevation in metres: 260

AC035

Site type: settlement

Local Name: Piana Di San Lorenzo

Current state: field

Data Source: reconnaissance

Artefacts: Etruscan and Roman Republican roof tiles of 1st and 2nd phase, Dressel 1, 2-1 century BC, an Etruscan and Roman settlement,

Description: In the locality named Poggio San Lorenzo on a gentle slope at the trough of a nameless watercourse, the fragments of roof tiles and pottery vessels, from the Etruscan period and the Roman Republic, were discovered. It is an Etruscan settlement, followed by a Roman settlement. Due to its position, it could be an agricultural / production area or the estate. The location lies on a gentle slope that is rising from the Sea to Pian San Lorenzo. Fig. 88 A: The recent orthophoto of the area.

GPS: 42,048822; 11,928491

Bibliography: none

Dating: Etruscan period, Roman Republican and Imperial period

Elevation in metres: 40

AC036

Site type: Area of artefact scatters

Local Name: Piana Di San Lorenzo

Current state: field

Data Source: reconnaissance

Artefacts: flat tile and tile (Etruscan or Republican sandy mixture); pottery fragments

Description: The fragments of pottery from the Middle Bronze Age were found in the erosion groove on a gentle south-western slope, at a place called San Lorenzo during the reconnaissance in Ager Castronovano. On the southwest slope, there the erosion causes waterlogging of slopes.

Above the place of the finding, there is a nameless spring. Soil run-off takes away small fragments of the pottery from the Middle Bronze Age. Found fragments are probably sewage from a higher locality that could not be identified due to dense vegetation. Specific cultural layers and objects were not observed on the site. However, the DTM and recent orthophoto (fig. 88 A) show that the erosion groove stems at about 70 meters above sea level on the Monte Rosso hillside. It can be concluded that there is a settlement or burial area near the site.

GPS: 42,048927; 11,929056

Bibliography: none

Dating: Bronze age, surly Etruscan and Roman Republican period

Elevation in metres: 42

AC037_1

Site type: villa

Local Name: Piana Di San Lorenzo

Current state: field

Data Source: reconnaissance

Artefacts: clay tube, a large block of masonry from opus cementum

Description: Gianfrotta observed the area of archaeological findings in Piana di San Lorenzo. He supposed that it belonged to villa in the vicinity. During reconnaissance in 2018, it was considered as a villa. The lidar data for this area are not available for the moment. Historical or recent orthophoto do not record an anomaly. Fig. 89.

GPS: 42,046318; 11,923381

Bibliography: Gianfrotta 1972, 34.

Dating: Republican period

Elevation in metres: 30

AC037_2

Site type: settlement

Local Name: Piana Di San Lorenzo

Current state: field

Data Source: reconnaissance

Artefacts: pottery fragments

Description: Findings from the Roman period indicated the pre-existence of Roman structure, most probably the estate/ Fattoria. Its relicts disappeared during the following phases.

GPS: 42,046318; 11,923381

Bibliography: Gianfrotta 1972, 34.

Dating: Archaic Roman period

Elevation in metres: 30

AC038_1

Site type: villa

Local Name: Selciata

Current state: field

Data Source: bibliography/reconnaissance

Artefacts: Roman tile; Etruscan black patent cup base

Description: In 1972, Gianfrotta published information about the area with the fragments of Roman tiles and roof tiles, situated at the top of the hill. Fig. 90 A: DTM of the area; B: panoramic of surroundings; C the general overview.

GPS: 42,05014; 11,902655

Bibliography: Gianfrotta 1972, 37.

Dating: Etruscan classical and Roman period

Elevation in metres: 166

AC038_2

Site type: settlement

Local Name: Selciata

Current state: field

Data Source: reconnaissance/bibliography

Artefacts: undeterminable fragments unturned clay, wall fragment with Bronze age print,

Description: In 1972, Gianfrotta informed about an area with the fragments of Roman roof tiles and the bricks located at the top of the hill. There on the western terrain wave at an altitude of 160 m above the sea level, below the top of La Selcata, an increased concentration of fragments of the Middle Bronze Age pottery was discovered during the survey of Ager Castronovano. This location is an ideal position to control the Sea, the whole area of Santa Marinella, and Cerveteri. It is even possible to overlook Rome. The site is disturbed by the construction of a high voltage power line. The archive of SAEM is not accessible at the moment to check the archaeological reports about this modern construction.

GPS: 42,05014; 11,902655

Bibliography: none

Dating: Bronze and Iron age (Protovillanova and Villanova period)

Elevation in metres: 166

AC039_1

Site type: villa

Local Name: Poggio del Principe

Current state: field/modern construction

Data Source: reconnaissance/bibliography

Artefacts: fragments of pottery (Vernice nera, Vernice rossa and fragments of red-painted plaster), fragments of bricks and pieces of cement. In the vicinity, there the fraction of bucchero was found. Some of them may be a part of tombs equipment from the Etruscan or Republican period. In 2007, fragments of pottery and tiles were found.

Description: Di Gennaro identified a Roman villa at the top of the Poggio del Principe in 1977. The site was surveyed again in 2007. The construction of the television transmitter destroyed part of the site. In surrounding fields, there is still a high concentration of archaeological findings. Information about the excavation or preliminary survey from Archive SAEM is not available at the moment. Fig. 91 A: Complex view to the location of the site and its relation with surroundings: Punicum and villa Ulpiano.

GPS: 42,04092836; 11,863813

Bibliography: Di Gennaro 1978 (NZ) Arch. SAEM 1281.

Dating: Iron age, Etruscan and Roman (Republican and Imperial) period

Elevation in metres: 98

AC039_2

Site type: settlement

Local Name: Poggio del Principe

Current state: field/modern construction

Data Source: reconnaissance/bibliography

Artefacts: fragments of Vernice nera fraction of bucchero, some of them may be a part of the funeral equipment of tombs from the Etruscan or Republican period. In 2007, some fragments of pottery and tiles were found.

Description: Findings from Iron and Etruscan period have indicated the pre-existence of Roman structure, most probably the villa. Its relicts disappeared during the following phases.

GPS: 42,04092836; 11,863813

Bibliography: Di Gennaro 1978 (NZ) Arch. SAEM 1281.

Dating: Iron age, Etruscan and Roman (Republican and Imperial) period

Elevation in metres: 98

AC040

Site type: oppidum

Local Name: Piana Di San Lorenzo

Current state: vegetation - Machia

Data Source: reconnaissance

Artefacts: none

Description: The elevated position on an isolated hill meets all the prerequisites for a fortified site or hillfort (fig. 92 A). It has excellent visibility, drinking water availability, and natural fortification. This hypothesis about Etruscan oppidum cannot be verified due to the impenetrable vegetation, which is already evident in IGM 1895 or on the aerial photographs from the 1950s. In the accessible part of the hill, there the anthropogenic relicts are visible. Any dating element has not been found.

GPS: 42,049826; 11,932244

Bibliography: none

Dating: undatable

Elevation in metres: 98

AC041

Site type: tomb

Local Name: Bocirca Di Lepre

Current state: pasture

Data Source: reconnaissance

Artefacts: none

Description: The identified alone standing Etruscan underground tomb (Tomba ipogea) had been opened and robbed a long time ago. It was impossible to examine it more closely due to the filling by soil and the vegetation. Fig 93 A: The state of the tomb in 2018.

GPS: 42,06940483; 11,86546277

Bibliography: none

Dating: Etruscan orientalization period

Elevation in metres: 201

AC042

Site type: tomb

Local Name: Prato Cipoloso

Current state: pasture

Data Source: reconnaissance

Artefacts: none

Description: The identified alone standing Etruscan underground tomb (Tomba ipogea) was probably open and robbed a long time ago. It was not possible to examine it more closely because of filling by soil and the vegetation. Fig. 94 A and B: current state of the site.

GPS: 42,07157728; 11,86947454

Bibliography: none

Dating: Etruscan orientazion period

Elevation in metres: 250

AC043_1

Site type: Area of artefact scatters

Local Name: Guardiole

Current state: private garden

Data Source: reconnaissance

Artefacts: fragments of Roman pottery

Description: A. Maffei located in this position Roman Villa Rustica. In the literature exists an only part of Maffei's Archaeological map with very sporadic information about its content. The site locates in a private garden on an undeveloped plot there where an intensive agricultural activity has been performed right now. The DTM shows terraces, which could have arisen by advanced plotting. No anomalies in historical or current aerial photographs. Fig. 95 A: the terrace noted by Maffei like a Roman villa.

GPS: 42,047944; 11,844895

Bibliography: Maffei – Massimo – Sergio 2011, 246.

Dating: the Roman period

Elevation in metres: 103

AC043_2

Site type: settlement

Local Name: Guardiole

Current state: private garden

Data Source: reconnaissance

Artefacts: fragments of Etruscan pottery

Description: Findings from the Etruscan period proved the pre-existing settlement.

GPS: 42,047944; 11,844895

Bibliography: Maffei – Massimo – Sergio 2011, 246.

Dating: Etruscan classical

Elevation in metres: 103

AC044

Site type: Area of artefact scatters

Local Name: Guardiole

Current state: field

Data Source: reconnaissance

Artefacts: undefinable amphorae, the rim of late Etruscan or Republican olla, protohistoric material, fragments of bricks, of tiles, and various pottery

Description: DTM and the aerial images show no anomalies. The concentration of findings is probably related to AC063, which was located on the platform above the site. DTM shows (fig.96 A) a natural terrace on which the concentration of findings was located. It could be probably related to AC063, which was located on the platform above the site.

GPS: 42,057199; 11,841992

Bibliography: Gianfrotta 1972, 133.

Dating: Bronze age, Etruscan, Roman Republican period

Elevation in metres: 133

AC045

Site type: villa

Local Name: Monte Cupellaro

Current state: pasture

Data Source: reconnaissance/bibliography

Artefacts: bricks of opus spicatum (10 x 6,5 x 3,5 cm), white mosaic tiles, vessels, stone tiles for opus reticulatum structures, fragments of painted plaster (white and red), of marble slabs and a door jamb in white marble and various pottery fragments

Description: In the cultivated area of Monte Cupellaro, there are numerous artefact scatters and various remains of building materials scattered over a vast area. It suggests that a Roman Imperial villa was placed there. This villa consisted of a noble and a rustic part. The soil contains numerous bricks of opus spicatum (10 x 6,5 x 3,5 cm), white mosaic tiles, stone tiles for opus reticulatum structures, fragments of painted plaster (white and red), of marble slabs and a door jamb in white marble (0,98 m x 0,29 x 0,30). Modern orthophoto had captured the concentration of stones and cement in vegetation (fig.96 A). The pottery fragments are also abundant, among which is a cup rim of Terra Sigilata of Lamb.23-1 shape; a fragment of a rim and wall of thin-walled pottery cup decorated with flakes of a pine cone and various fragments of terracotta and walls of large storage jars (dolium).

GPS: 42,069828; 11,909285

Bibliography: Gianfrotta 1972, 38.

Dating: Roman period

Elevation in metres: 235

AC046

Site type: villa

Local Name: Ponton di Mare

Current state: field

Data Source: crowdsourcing

Artefacts: fragments of Roman roof tiles, bricks of opus spicatum, black marble, fragments of Terra Sigilata Africana, production A.

Description: Concertation of the fragments of building elements and pottery indicates the presence of a villa of smaller size or Estate on a natural terrace on the western slope about 90m from the current bed of Fosso del Castelsecco. Fig. 97 A: DTM documented natural platform above the stream. B: Low spring vegetation revealed the natural terrace.

GPS: 42,058638; 11,885755

Bibliography: none

Dating: Roman period

Elevation in metres: 60

AC047

Site type: villa

Local Name: Prato Rottatore

Current state: pasture

Data Source: crowdsourcing /bibliography

Artefacts: Imperial Roman tiles, walls of amphorae, lid holder, common pottery, ara torculum

Description: The villa located on the western slope below the one of the peaks (161,1 m) of the Prato Rotatore ridge, at an altitude of 150 m. An olive press had been found on the Prato Rotatore hill in 1986 (Pelagatti 1986). The agricultural activity brought away terrain relicts (fig. 98 A), current orthophoto (fig. B) and photo from the spring 2019 (fig. C) documented the current state of the site.

GPS: 42,065867; 11,891977

Bibliography: Pelagatti 1986.

Dating: Imperial period

Elevation in metres: 140

AC048

Site type: villa

Local Name: Prato Rottatore

Current state: pasture

Data Source: crowdsourcing/bibliography

Artefacts: fragments of Spanish amphorae, standard pottery broaches, pottery of thin walls, mosaic elements, opus spicatum, tiles, fragments of the plate from sigilata Italica, small Copa from Terra Sigilata Italica; lead water pipe

Description: At the southern slope of Poggio Alto, there is an area covered with the roof tiles, brick fragments, opus spicatum bricks (8,2 x 4 x 2,4 cm), fragments of marble slabs and numerous stones. There are also numerous fragments of standard terracotta and amphorae (walls) that cannot be classified, fragments of Arezzo's Terra Sigilata. A large dolium is still in situ. The site locates on a natural terrace above Fosso Sbardone (fig. 99 A). Most probably, it was villa Rustica with a production area. Now the vegetation covers the site (fig. B and C).

GPS: 42,071523; 11,898791

Bibliography: Gianfrotta 1972, 50.

Dating: Imperial period

Elevation in metres: 140

AC049

Site type: villa

Local Name: Prato Rottatore

Current state: pasture

Data Source: crowdsourcing

Artefacts: none

Description: The villa located on the eastern slope of Prato Rotatore, at an altitude of about 128 m, within easy reach of Fosso delle Bucche. DTM (fig. 100 A) shows the terrain structure suitable for the location of a Roman villa. In the cultivated field, there are numerous drifts of worked stones, which may come from an extinct building. Fig.100 B orthophoto 2019; C: current state of the site.

GPS: 42,06088368; 11,89533427

Bibliography: none

Dating: Roman period

Elevation in metres: 112

AC050

Site type: villa

Local Name: Volpelle

Current state: field

Data Source: crowdsourcing /bibliography

Artefacts: fragments of roof tiles, fragments of marble, fragments of pottery.

Description: The large villa was extended on several terraces near to the coast. Historical aerial images (fig. 101 B) and DTM (fig. A) indicates a branch of Via Aurelia leading to this construction. The villa has been explored archaeologically in the past, but no documentation is available. Only sporadically the planimetry composed by A. Maffei (fig. C) appeared in the bibliography. Now the terrain is being cultivated. Villa is in sight of the Etruscan necropolis AC135 (fig. D).

GPS: 42,0548422; 11,82433205

Bibliography: Maffei – Massimo – Sergio 2011, 246.

Dating: Roman period

Elevation in metres: 25

AC051

Site type: villa

Local Name: Chiaruccia

Current state: field

Data Source: crowdsourcing/bibliography

Artefacts: fragments of roof tiles, fragments of marble, fragments of pottery.

Description: The villa is located close to the modern buildings on an extensive plain at the height of about 10 m above the current Sea level. It is about 200 m far from the recent coast. The terrain shows visible concentrations of fragments of the original masonry eroded by ploughing. The accumulation of worked stones is visible. A. Maffei is supposed to excavate the site according to the bibliography. The documentation is not available. Fig. 102 A: DTM of site, B: Orthophoto from Google Earth 2010; C: the same from 2017; D: the same from 2019; E: planimetry of the site according to Maffei – Massimo – Sergio 2011.

GPS: 42,04661968; 11,82688019

Bibliography: Maffei – Massimo – Sergio 2011, 246.

Dating: Imperial period

Elevation in metres: 15

AC052

Site type: villa

Local Name: Piscina

Current state: field

Data Source: crowdsourcing

Artefacts: building stone, fragments Roof tiles

Description: In the proximity of AC159, which Gianfrotta had identified as an Area of artefact scatters, there is a Roman villa, on a natural plain in about 29 m above the current sea level. The villa was about 700 m far from Castrum Novum (AC071). Nowadays, there are several stone accumulations on the site that contain worked construction stones typical for the Roman architecture of this zone and period. Fig. 103 A: orthophoto, 2012.

GPS: 42,04038669; 11,84257868

Bibliography: none

Dating: Imperial period

Elevation in metres: 30

AC053

Site type: villa

Local Name: Via delle Colonie

Current state: field

Data Source: crowdsourcing/bibliography

Artefacts: none

Description: Villa was extended on the slope under Poggio del Principe opened to the sea. The modern street Via delle Colonie had passed along this site and was continuously damaged. Therefore it was conserved in 2015. More information about excavation from Archive SAEMhas not been available at the moment. Fig. 104 A: the state before intervention; B: the intervention in 2015; C: current state of the site, all from Google Earth; D: the detail of wall relict 2018.

GPS: 42,0381195; 11,86149468

Bibliography: e.g. SAEM 6/3/1985

Dating: Imperial period

Elevation in metres: 32

AC054

Site type: villa

Local Name: Via Castelsecco

Current state: garden

Data Source: crowdsourcing

Artefacts: fragments of pottery (kitchen pottery), fragments of plaster (light blue)

Description: The villa was located in a private garden. In its proximity was built the farming house, already IGM 1895 recorded it. In the 50s it was expanded and since 2015 is wholly abandoned. The building probably recycled material from a Roman villa. Fig. 105 A: orthophoto from 2012.

GPS: 42,04361968; 11,8857988

Bibliography: none

Dating: Imperial period

Elevation in metres: 27

Description: The structure is documented on aerial photos from 1950 (fig. A). Pictures from Google Earth document its gradual destruction. In the year 2019, it was completely covered by vegetation and destroyed down (fig. B).

GPS: 42,08468782; 11,8725447

Bibliography: none

Dating: modern period

Elevation in metres: 240

AC055

Site type: greenhouse

Local Name: Fosso Le Vignace

Current state: field

Data Source: reconnaissance

Artefacts: none

Description: DTM register one terrain anomaly. It is the adjustments for the construction of a greenhouse, which disappeared after 2010 (fig. 106 A). Currently, the growth symptoms: the appearance of overgrown plants and lush vegetation indicates it.

GPS: 42,04568777; 11,85538858

Bibliography: none

Dating: Imperial period

Elevation in metres: 143

AC056

Site type: villa

Local Name: Fosso Le Vignace

Current state: field

Data Source: reconnaissance

Artefacts: none

Description: The villa situated on a characteristic terrace about 200 x 150 m, lying about 130 m on the eastern slope slightly below its peak and surrounded by a natural spring. Below it flows the Fosso delle Vignacce. The site is intensively cultivated. In the field, there are apparent modifications for the construction of a greenhouse (AC055 ceased to exist in 2010). Her presence could be indicated by the growth symptoms observed in the 1950 picture, which detected an anomaly. Fig. 107 A: 1950; B: 1954; C: DTM.

GPS: 42,046015; 11,85627136

Bibliography: none

Dating: Imperial period

Elevation in metres: 145

AC057

Site type: Area of artefact scatters

Local Name: Selciata

Current state: field

Data Source: reconnaissance

Artefacts: fragments of Spanish amphorae; Terra Sigilata Africana; fragments of bricks and roof tiles

Description: This Area of artefact scatters is situated about 100 m from AC038 southerly. Founded fragments can come from this site.

GPS: 42,050992; 11,904288

Bibliography: Gianfrotta 1972, 38.

Dating: Imperial period

Elevation in metres: 173

AC058

Site type: Area of artefact scatters

Local Name: Selciata

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of roof tiles

Description: Fragments of building elements like brick and roof tiles are visible despite the vegetation in the noncultivated area. Sourly, it is the part of villa AC059.

GPS: 42,047864; 11,907476

Bibliography: none

Dating: Imperial period

Elevation in metres: 130

AC059

Site type: villa/estate

Local Name: Selciata

Current state: pasture

Data Source: reconnaissance

Artefacts: olive press, roof tile fragments, bricks, floor blocks, pottery fragments (amphorae); opus spicatum one element, shoulder of amphora three pieces not datable, an olla 1st century AC, Imperial period 1-2. AC

Description: The villa locates on a promontory above Fiume di Pontenuovo on the southwest ridge, which runs down the hill of La Selciata. Agricultural activities ploughed the part of the villa in the surrounding pasture (fig. 108 A). The more significant part locates in overgrown terrain, where relics of the walls are preserved (fig. C, D). An olive press with a stand for a lever system was discovered in the villa area (fig. B). On the slope between AC059 and AC060, the DTM shows four terraces (40x40 m).

GPS: 42,047303; 11,908837

Bibliography: none

Dating: Republican and Imperial period

Elevation in metres: 118

AC060

Site type: oppidum

Local Name: Selciata

Current state: pasture

Data Source: reconnaissance

Artefacts: none

Description: DTM shows a visible plateau of ideal parameters for the hillfort (fig. 109 B). Because of vegetation, it was not possible to survey closer the site (fig. A).

GPS: 42,045403; 11,910053

Bibliography: none

Dating: undatable

Elevation in metres: 95

AC061

Site type: Farmstead

Local Name: Casale Prato Rotatore

Current state: pasture

Data Source: reconnaissance

Artefacts: none

Description: Farmstead locates on the top of the hill Pratto Rotatore. It is registered on IGM 1895. Used building technic dates back the core of the structure to the XIII century. Later on, the structure includes modern modifications realized after 1954 and before 2002. The building seems to be abandoned from 2005. Fig. 110 A: orthophoto from 2012; B: current state of the site 2019.

GPS: 42,06884619; 11,89393885

Bibliography: none

Dating: Middle ages and Post-Medieval period

Elevation in metres: 150

AC062

Site type: villa

Local Name: Machia della Castrica

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of roof tiles, bricks, fragments of pottery (terra sigillata, Vernice nera), glass, pottery weights, admixtures are a fraction of early modern glazed pottery.

Description: Already P. A. Gianfrotta mentioned Villa Rustica. The site was re-explored in 2019. Below the eastern slope of Poggio Spolverino, above the Castelsecco stream, there is a pasture for cattle situated on a distinctive terrace, where villa Rustica used to stand. Fractions of artefacts from the Roman period lie on the pasture and in the surrounding area. On the DTM is the apparent terrace; the site is located about 100 m from the stream. Fig. 111 A: DTM; B: detail of wall relicts; C: orthophoto 2019.

GPS: 42,07157601; 11,88369743

Bibliography: Gianfrotta 1972, 52.

Dating: Roman period

Elevation in metres: 95

AC063

Site type: Area of artefact scatters

Local Name: Fosso Cupo

Current state: field

Data Source: reconnaissance

Artefacts: fragments of roof tiles

Description: IGM 1895 shows the accumulation of stones, apparently drifting masonry of defunct structure. During the survey in 2019, the concentration of fragments of Roman roof tiles and smaller stones were observed. Aerial images and DTM (fig. 112 A) show no anomaly.

GPS: 42,060166; 11,843981

Bibliography: none

Dating: Roman period

Elevation in metres: 168

AC064

Site type: necropolis

Local Name: Semaforo

Current state: field

Data Source: reconnaissance

Artefacts: roof tile fragments, pottery fragments (dolium)

Description: It is an area consisting of two hills sloping down to the sea, separated from each other by the Fosso Cupo, with a north-east - south-west orientation. Various pit and chamber tombs were found there, grouped into two very dense groups of burials identified by mounds: one group is to the left of the road leading to the Semaforo of Fosso Cupo, the other at the Guardiole ditch. The recovered funeral equipment can be dated to the 5-4 centuries BC. During reconnaissance, only roof tiles and pottery fragments were found. According to Bastianelli, it belonged to necropolis AC015_2. Fig. 113 A: orthophoto of one part of the area, 2019.

GPS: 42,053318; 11,830094

Bibliography: Gianfrotta, 1972, 140; Bastianelli 1937, 466.

Dating: Etruscan period of Orientalizing , Archaic and Classical period.

Elevation in metres: 64

AC065

Site type: villa

Local Name: Chiaruccia

Current state: field

Data Source: reconnaissance

Artefacts: pottery fragments, roof tiles, bricks, Terra Sigilata Chiara, terracotta, amphorae, fragments of oil lamps, fragments of large doliums, white mosaic tiles, bricks of opus spicatum (11 x 2,8 cm), cores of opus signinum, large squared sandstone blocks

Description: About 200 m north from the Punta della Vipera temple, there is a large area with artefact scatters, fragments of roof tiles, bricks, Terra Sigilata, terracotta, amphorae (stick handles and walls, two handles of oil lamps, the fragments of walls of large dolia.

Note the remains of beaten lime floors, white mosaic tiles, bricks of opus spicatum (11 x 2,8 cm), cores of opus signinum, large squared sandstone blocks, one with a central square hole (figs. 258-260). Fig. 114 A current state of the area.

GPS: 42,04962143; 11,82567962

Bibliography: Gianfrotta 1972, 119; Fantozzi, A. Arch. SAEM 62 15/apr/1993.

Dating: Roman period from 1st BC

Elevation in metres: 20

AC066_1

Site type: temple

Local Name: Punta della Vipera

Current state: field

Data Source: reconnaissance

Artefacts: clay heads and clay statuettes, some of which depict Minerva; the sacred well and the architectural terracottas remain; inscriptions; Punic, Roman-bell and Roman coins and more.

Description: The excavations connected with the Rome-Civitavecchia railway reconstruction revealed an Etruscan temple founded in the last decades of the 6th century BC. The site is called "Punta della Vipera". The south-west oriented temple (11,80 – 7,80 m), with an almost square cell, was probably prostyle with columns covered with luxurious stucco. The name of the divine, whose cult had a Chthonic character, is attested by some inscriptions on fragments of pottery. The temple remained alive until the 5th century when it was destroyed and rebuilt. From that period, the temenos (preserved for three sides), the bothros, the sacred well, and the architectural terracottas remain. The fragments of a long Etruscan inscription was found in the pit. The lead sheet containing sacral prescriptions is datable to the beginning of the 5th century BC. Numerous architectural terracottas including a large polychrome acroterion, and a large altar (2.47 m x 2.36 m) lined with nenfro (the tuff variety), placed in the front of the temple. The discovery of two more terracottas types corresponds to restructurations in 3th and 2nd century BC. The sanctuary was abandoned at the beginning of the following century. In the last decades

of the republic period, the rustic part of a large Roman villa was implanted in the south-east area of the temenos. The temple placed in an extra-urban position concerning the pagus of Castellina, to which it was undoubtedly connected, had the character of a real country sanctuary even though of considerable importance and richness, as evidenced by the numerous votive gifts unearthed. Among these particularly beautiful are some clay heads and clay statuettes, some of which depict Minerva to which the temple was consecrated. Punic, Roman-Campania and Roman coins; Attic pottery, and Vernice nera pottery from the Atelier des petites estampilles also come from the excavations of the sanctuary. Fig. 115 A: DTM of the area.

GPS: 42,046289; 11,825388

Bibliography: Comella 2001; Colonna 1985a; Colonna 1985b; Gianfrotta 1972, 118-121; Pallottino-Torelli 1966, 283-299; Stopponi 1979, 247-270; Stopponi 1985, 149-153; Tomassucci 2005, 237-243; Torelli 1965, 125; Torelli 1966, 284-333; Torelli 1967, 331-349; Torelli 1973, 650; Visoná 1993, 41-60.

Dating: Etruscan and Roman Republican period

Elevation in metres: 10

AC066_2

Site type: villa

Local Name: Punta della Vipera

Current state: field

Data Source: bibliography/reconnaissance

Artefacts: among other findings marked brick: DOMITI GEMINI (1st century AD)

Description: During the excavation of the Etruscan temple, one Roman villa was discovered. It was constructed above defunct sacral structure in 1st century BC and lived until the 2nd century AD. In addition to the lower part of a large sandstone torculum, some storing jars (dolium) were found. Among other things, various fragments of late Italic Terra Sigilata and some tiles stamped with unpublished stamps (for example, CN. GEMINI DOMESTICS, from the middle of the I century AD) come from the villa.

GPS: 42,046289; 11,825388

Bibliography: Gianfrotta 1972, 118-121; Torelli 1965, 125; idem 1966, 283; idem 1967, 331; Morel 1969, 59; Nardi-Combescure 2002, 147, Pallottino-Torelli 1966, 283-299.

Dating: Roman period

Elevation in metres: 10

AC067_1

Site type: villa

Local Name: Grottace

Current state: relicts

Data Source: bibliography/reconnaissance

Artefacts: various coins, fragments of Terra Sigilata Aretine ware, common pottery, various fragments of coloured plasters; decorative marble fragments; lead pipes; Opus reticulatum and opus signinum

Description: At the km 58.2 of the Aurelia, near Santa Marinella, on a small promontory, about 10 m above recent sea level, the remains of a large and luxurious Imperial maritime villa to which a vast semi-circular fishpond is connected is visible. The total area of the villa was about 200 x 80 m, while the excavated remains occupy about 120 x 40 m, as indicated by four cisterns located upstream of the state road, to the north of the currently visible ruins. The structures of the villa are based directly on the volcanic rock of which the promontory is formed.

The current remains refer almost all to underground accessory rooms, while the living quarters developed on an upper floor, taking advantage of better panoramic views. Fourteen cisterns communicating with each other, with a rectangular plan and covered with concrete vaults thrown on boards, of which many traces remain, are part of the excavated structures.

Archaeologists widely studied villa in last years. Le Grottacce site is located 2 km from the Santa Severa Castle and consists of a Roman villa built on the coast. Directly in front of the villa are different remains connected with the sea: fishponds, described in Lambeck et al. (2004), remnants of a dock, and, seaward, a large breakwater with a 1,60 m wide wall at the top, probably representing a walkway. The altitude of this walking surface was measured at 0.8 m. The age of these features has been set at 1950 BP. In the 3rd and 4th century, some room of villa was transformed in storage areas, and the villa changed its functionality to the agricultural centre with poorly practical usage. Fig. 116 A: orthophoto 2019, B: Archive SAEM: the planimetry of villa, fishponds and the harbour.

GPS: 42,03920845; 11,90156132

Bibliography: Gianfrotta 1972, 40; Lambeck et al. 2004; Nardi-Combescure 2002, 146.

Dating: Imperial period

Elevation in metres: 2

AC067_2

Site type: harbour

Local Name: Grottace

Current state: relicts

Data Source: bibliography/reconnaissance

Artefacts: none

Description: Roman villa use to have its harbour. Its relicts are still visible.

GPS: 42,03920845; 11,90156132

Bibliography: Gianfrotta 1972, 40; Lambeck et al. 2004, Nardi-Combescure 2002, 146.

Dating: Imperial period

Elevation in metres: 0

AC067_3

Site type: fishponds

Local Name: Grottace

Current state: relicts

Data Source: bibliography/reconnaissance

Artefacts: none

Description: Roman villa use to have its fishpond. Its relicts are still visible.

GPS: 42,03920845; 11,90156132

Bibliography: Gianfrotta 1972, 40; Lambeck et al. 2004; Nardi-Combescure 2002, 146. Dating:

Imperial period

Elevation in metres: 0

AC068_1

Site type: castle

Local Name: Odescalchi

Current state: preserved

Data Source: reconnaissance/bibliography

Artefacts: a very rich collection of decorative marble fragments, figures and columns; lead water pipe; numerous fragment of everyday and luxury pottery; coins, fragments of Bronze objects and more

Description: On the promontory of Santa Marinella, where the Odescalchi castle stands, a large and luxurious Roman villa extended. Today, only very few relicts remain.

This promontory is on the south-western side and rises 12 m above sea level. It is an excellent shelter for boats since ancient times.

Relicts of Roman structures were preserved on the entire surface of the promontory in the past. A significant part of the site disappeared under the construction of Oddescalchi Castel. The only

way to understand the whole complex is to study the numerous discoveries from previous periods.

The first discoveries were carried out by the Duchess of Sermoneta in 1838. These excavations led to the discovery of various environments that, located in the western part of the castle enclosure, as shown in their description, faced the coast and were arranged on two floors sloping down towards the sea. Fig. 117 A: Aerial photo, 1950: the original form of the cost with relicts of the Roman harbour; B: IGM 1895; C: the postcard from 1930 of Odescalchi castle; D current state of the site 2019.

GPS: 42,03426574; 11,87086009

Bibliography: Gianfrotta 1972, 54; Nardi-Combesure 2002, 147.

Dating: Roman period

Elevation in metres: 4

AC068_2

Site type: harbour

Local Name: Odescalchi

Current state: modern buildings

Data Source: reconnaissance/bibliography

Artefacts: none

Description: Since the Roman period, there is supposed to be a harbour.

GPS: 42,03426574; 11,87086009

Bibliography: Gianfrotta 1972, 54; Nardi-Combesure 2002, 147.

Dating: the Roman, Middle ages, the Post-Medieval and modern period

Elevation in metres: 0

AC068_3

Site type: church

Local Name: Odescalchi

Current state: preserved

Data Source: bibliography

Artefacts: none

Description: There was supposed to be the small church of Santa Maria, that later became the part of Odescalchi castle.

GPS: 42,03426574; 11,87086009

Bibliography: Passigli 2001, 108.

Dating: Middle ages, the Post-Medieval and modern period

Elevation in metres: 0

AC069_1

Site type: villa

Local Name: Punta della Vipera

Current state: modern buildings

Data Source: bibliography/reconnaissance

Artefacts: fragments of brick with bolus; marble columns and other decorative elements; coloured plasters; lead water pipe; fragments of Terra Sigiliata Chaia and Aretine ware, common pottery, fragments of mosaic etc.

Description: About 1500 m north from Castrum Novum, right on the Punta della Vipera, are some structures of a large villa. The luxury building constructed at the end of o 2nd or beginning of the 3rd century AD is now inserted in modern buildings. The vegetation symptoms showed the extension of the structure on the orthophoto from 1950 (fig. 118 A). Fig. B: current state of site and planimetry of the fishponds.

GPS: 42,048866; 11,820412

Bibliography: Gianfrotta 1972, 122.

Dating: Imperial period

Elevation in metres: 6

AC069_2

Site type: fishponds

Local Name: Punta della Vipera

Current state: sea

Data Source: bibliography/reconnaissance

Artefacts: see literature for findings

Description: On the site, the marble columns and capitals were found. The first nucleus of ruins remains in the basement of the current Villa Galliano, constructed in 1959. Other structures of the ancient villa are preserved in the garden of a neighbouring modern residence. In the sea, there is part of a fish pond that is still preserved in excellent condition.

GPS: 42,04879314; 11,81968034

Bibliography: Gianfrotta 1972, 122.

Dating: Imperial period

Elevation in metres: 0

AC070

Site type: settlement

Local Name: Punta della Vipera

Current state: coast

Data Source: reconnaissance

Artefacts: pottery fragments

Description: North, near the fish ponds of the Roman villa della Vipera, there is a high coastal profile disrupted by the sea. It is possible to observe in the length of several tens of meters the course of cultural layer and some the unidentifiable structures, which can be dated to the Middle Bronze Age, basing on the findings of pottery fragments. Fig. 119 A: the general view; B: detail of the strata; C: Photogrammetrical documentation of the coast, 2018.

GPS: 42,05093466; 11,82031566

Bibliography: none

Dating: Bronze and Iron age (Protovillanova ova and Villanova period)

Elevation in metres: 1,3

AC071_1

Site type: castra

Local Name: Casale Alibrandi

Current state: garden

Data Source: bibliography/excavation

Artefacts: See the chapter Archaeology of Castrum Novum

Description: See the chapter Archaeology of Castrum Novum.

GPS: 42,03718818; 11,83340176

Bibliography: Harris 1971; Gianfrotta 1972, 82; Enei 2013; Arch. SAEM 9375 15/ott/1982; etc.

Dating: Etruscan period, Roman Republican and Imperial period

Elevation in metres: 10

AC071_2

Site type: villa

Local Name: Guardiole

Current state: garden

Data Source: bibliography/excavation

Artefacts: See the chapter Archaeology of Castrum Novum

Description: See the chapter Archaeology of Castrum Novum

GPS: 42,039573; 11,831219

Bibliography: none

Dating: the Roman period

Elevation in metres: 2,9

AC071_3

Site type: fishponds

Local Name: Guardiole

Current state: garden

Data Source: bibliography

Artefacts: See the chapter Archaeology of Castrum Novum

Description: See the chapter Archaeology of Castrum Novum

GPS: 42,038906; 11,830021

Bibliography: none

Dating: the Roman period

Elevation in metres: 2,9

AC071_4

Site type: bathhouse

Local Name: Guardiole

Current state: garden

Data Source: bibliography

Artefacts: See the chapter Archaeology of Castrum Novum

Description: See the chapter Archaeology of Castrum Novum

GPS: 42,03900828; 11,83124046

Bibliography: Nardi Combescure 2015.

Dating: Republican period

Elevation in metres: 2,9

AC071_5

Site type: fishponds

Local Name: Guardiole

Current state: garden

Data Source: bibliography

Artefacts: See the chapter Archaeology of Castrum Novum

Description: See the chapter Archaeology of Castrum Novum

GPS: 42,03808624; 11,83102393

Bibliography: none

Dating: the Roman period

Elevation in metres: 2,9

AC071_6

Site type: harbour

Local Name: Guardiole

Current state: coast

Data Source: bibliography

Artefacts: See the chapter Archaeology of Castrum Novum

Description: See the chapter Archaeology of Castrum Novum

GPS: 42,03808624; 11,83102393

Bibliography: Frau 1990, 11.

Dating: Etruscan period

Elevation in metres: 0

AC072

Site type: separate finding

Local Name: Buche Di Brancaleone

Current state: pasture

Data Source: reconnaissance

Artefacts: Roman tiles, Roman amphorae, not determinable

Description: One separate finding near Villa AC073. Fig. 122.

GPS: 42,06292366; 11,90171689

Bibliography: none

Dating: Roman period

Elevation in metres: 124

AC073_1

Site type: villa

Local Name: Buche Di Brancaleone

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments Roman Catino, amphorae, the base of olla, cup, tiles;

Description: The villa locates on a terrace on the western slope of Monte Cupellaro, very close to the creek, which flows from the left into the Buche River and separates the Buche di Brancaleone from Monte Cupellaro. The structure is located at an altitude of about 114 m. In the terrain, there is a rectangular ground plan of the building. There are fragments of roof tiles,

fragments of pottery vessels and some fragment of prehistoric not turned pottery. Fig. 122 A: DTM showing the terrace; B: orthophoto 2019.

GPS: 42,06322705; 11,90130286

Bibliography: none

Dating: Roman Republican and Imperial period

Elevation in metres: 115

AC073_2

Site type: settlement

Local Name: Buche Di Brancaleone

Current state: pasture

Data Source: reconnaissance

Artefacts: prehistoric not turned pottery

Description: Findings of Bronze age pottery proved pre-existing settlement.

GPS: 42,06322705; 11,90130286

Bibliography: none

Dating: Bronze age

Elevation in metres: 115

AC074

Site type: villa

Local Name: Buche Di Brancaleone

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of Roman dolium, amphora handle, the handle of a Broca, roof tiles

Description: The villa occupied a terrace on the western slope between Buche di Brancaleone and Monte Cupellaro at an altitude of about 152 m. The villa area is covered with fragments of roof tiles, stones, and there are fragments of pottery containers. The villa is lined from the south by an extinct road that turns here. Fig. 123 A: the terrace of the villa.

GPS: 42,066544; 11,902087

Bibliography: none

Dating: probably Roman period, surly 1AD

Elevation in metres: 149

AC075

Site type: Farmstead

Local Name: Gardetta

Current state: pasture

Data Source: reconnaissance/IGM 1895

Artefacts: fragments of Post-Medieval roof tiles, brick.

Description: Nearby Fontaine called La Gardetta; there is a relict of Post-Medieval stone furnace belonging to abandoned Farmstead Casolare di Prato Cipoloso. Fig. 124 A: DTM of the site showing the relict of the fence and the terrace where the Farmstead extended; B: IGM 1895: the Farmstead, fountain, the fence and the road passing to the Farmstead.

GPS: 42,079299; 11,869146

Bibliography: none

Dating: Middle ages and Post-Medieval, modern period

Elevation in metres: 160

AC076

Site type: separate finding

Local Name: Prato Cipoloso

Current state: pasture

Data Source: reconnaissance

Artefacts: various Post-Medieval fragments

Description: In the past, several random isolated finds of Renaissance artefacts were made on the hilltops. It is possible that during the Renaissance, there was a path connecting Santa Marinella and Allumiere. Anomalies on the DTM show traces of the path. However, these correlate with the current unpaved path. IGM 1895 does not document such a path. Most likely, the found artefacts are lossy, and the real road went a different way as shown on fig. 125 A.

GPS: 42,079032; 11,873465

Bibliography: none

Dating: Post-Medieval

Elevation in metres: 263

AC077

Site type: villa

Local Name: Prato Cipoloso

Current state: pasture

Data Source: crowdsourcing

Artefacts: fragments of amphora Africana, roof tiles, none determinable fragments, fragments of dolium, cement

Description: Reconnaissance revealed a site with an increased concentration of archaeological findings. A large number of roof tiles, Roman cement, fragments of large dolium, and amphoras indicates the presence of a Roman villa or Estate, possibly built on the preexisting Etruscan settlement. Terrain terraces surround the site (fig. 126 A).

GPS: 42,072604; 11,878017

Bibliography: none

Dating: Roman period

Elevation in metres: 255

AC078

Site type: villa

Local Name: Fosso Marangone

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of amphorae Dressel 1; roof tiles,

Description: West of Fontanille la Gardetta at an altitude of ca 155 m is a large natural terras. On its western edge, there are relics of the late Republican villa dated to 1-2 century AD, as evidenced by the increased concentration of stones and roof tile fragments. It is nearby Fosso Marangone. The site is disturbed by modern unpaved roads. Villa lead on the western slope fig. 126 AC078.

GPS: 42,080249; 11,867911

Bibliography: none

Dating: Republican period, surly 2-1 AD

Elevation in metres: 160

AC079

Site type: road

Local Name: Prato Cipoloso

Current state: pasture

Data Source: reconnaissance

Artefacts: unknown

Description: The current unpaved road damages the surface. Its various branches create an anomaly on the DTM (fig. 127 A) and in the field. Around this road, some separate unknown findings were found. Roud is from the 20th century.

GPS: 42,07813; 11,877291

Bibliography: none

Dating: modern period

Elevation in metres: 263

AC080

Site type: villa

Local Name: Poggio Alto

Current state: pasture

Data Source: reconnaissance

Artefacts: roof tile fragments, pottery fragments (amphora bottom), marble fragments; bricks of opus spicatum (cm 8,2 x 4 x 2,4), numerous fragments of standard terracotta and amphorae that cannot be classified. A fragment of terra sigillata Aretine ware; a large dolium; pice of Bronze, none dated coins.

Description: In his publication, P. A. Gianfrotta mentioned a small place with fragments of brick and terracotta in the north of the Poggio Alto. Nothing like this was found in the place he indicated on his map. A few meters east of this point, there was discovered a position that can be described as a Roman villa. In reality, the villa locates on a distinct terrace, above the bend of a small watercourse that springs here. Near the spring, there is a rectangular brick building, which can be considered a relic of an extinct villa. In the immediate vicinity, there is a large number of pottery fragments and roof tiles on the surface.

GPS: 42,077778; 11,898539

Bibliography: Gianfrotta 1972, 50.

Dating: Imperial period

Elevation in metres: 177

AC081

Site type: fountain

Local Name: Campo Piombino

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of pottery from the Bronze Age

Description: The fountain locates in place of the ancient stream of water. Therefore, numerous pottery fragments from the Bronze Age surround it.

GPS: 42,08211807; 11,89679707

Bibliography: none

Dating: Bronze age, Post-Medieval and modern period

Elevation in metres: 199

AC082_1

Site type: villa

Local Name: Macchia La Freddara/ dell' Ebreo

Current state: pasture

Data Source: reconnaissance

Artefacts: roof tiles, marble column base, marble tiles, mosaics, pottery fragments (reservoirs, amphoras), amorphous lead pieces, lead block, Bronze slice, Iron shaping steel

Description: The villa sprawls along the hillside — pieces of masonry evidence its perimeter. Besides, there are a large number of pottery fragments and roof tiles on the surface. Even a fragment of marble collum was found. Water runoff and erosion severely erode the site. The DTM (fig. 128 A) and the orthophoto from Google Earth 2010 (fig. 128 B) shows a rectangular wall structure and its dimension. Between Roman Imperial findings, there are also fragments from the Etruscan period. Fig. 129 C, D, E, details of walls relicts.

GPS: 42,084819; 11,893344

Bibliography: none

Dating: probably Etruscan and Republican period, the Imperial period

Elevation in metres: 180

AC082_2

Site type: settlement

Local Name: Macchia La Freddara/ dell' Ebreo

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of pottery

Description: Findings from the Etruscan period proved the pre-existing settlement.

GPS: 42,084819; 11,893344

Bibliography: none

Dating: probably Etruscan period

Elevation in metres: 180

AC083

Site type: Area of artefact scatters

Local Name: Prato Cipoloso

Current state: pasture

Data Source: crowdsourcing

Artefacts:

Description: In the past, several random isolated finds were made on the hilltops. Possibly, there was a path connecting Santa Marinella and Allumiere or Tolfa. Anomalies on the DTM show traces of the path. However, these correlate with the current unpaved path. IGM 1895 does not document such a path. Most likely, the found artefacts are lossy, and the real road went a different way. However, the character of the site might correspond to the location of the villa. It is necessary to use other methods (geordar etc.)

GPS: 42,07983711; 11,87706468

Bibliography: none

Dating: the Roman period

Elevation in metres: 263

AC084

Site type: Area of artefact scatters

Local Name: Prato Cipoloso

Current state: pasture

Data Source: crowdsourcing

Artefacts:

Description: In the past, several random isolated finds were made on the natural terrain terrace extending on the eastern slope around a water spring. Possibly, there was a Roman villa or Estate. The character of the site and found artefacts might correspond to the location for the villa. It is necessary to use other methods (geordar, etc.). The slope is divided into terraces.

GPS: 42,0770491; 11,8801195

Bibliography: none

Dating: Roman period

Elevation in metres: 220

AC085

Site type: Area of artefact scatters

Local Name: Prato Cipoloso

Current state: pasture

Data Source: crowdsourcing

Artefacts:

Description: On the natural terrace circa 40x70m, circa 150 m from the stream on the western slope, several random isolated finds were made in the past. Probably, there was a Roman villa or Estate. The character of the site and found artefacts might correspond to the location for the villa. It is necessary to use other methods (geordar, etc.).

GPS: 42,07759774; 11,87732192

Bibliography: none

Dating: Roman period

Elevation in metres: 264

AC086

Site type: Area of artefact scatters

Local Name: Fosso Sbardone

Current state: vegetation - Machia

Data Source: crowdsourcing

Artefacts:

Description: The Area of artefact scatters was identified approx. 90 m from the Fosso Sbardone on a peak of the hill about 15 m wide recently covered by dense macchia. IGM 1895 indicates one road above this site, that is still in use; and one structure fig. 131 A,B..

GPS: 42,0781; 11,90677

Bibliography: none

Dating: Roman period

Elevation in metres: 160

AC087

Site type: villa

Local Name: Prato Cipoloso

Current state: pasture

Data Source: crowdsourcing

Artefacts:

Description: The reconnaissance indicated a large Area of artefact scatters (roof tiles, amphoras, etc.) dense vegetation covers one part of the area, cultivated field the second. In the field are numerous concentrations of stones becoming from destructed structures. That is the reason why the site is considered a Roman villa. The site is cut by road existing before 1895 and Post-Medieval fences. Fig. 132 A: DTM of the site.

GPS: 42,06850697; 11,87789295

Bibliography: none

Dating: Roman period, surly Imperial

Elevation in metres: 211

AC088

Site type: Area of artefact scatters

Local Name: Prato Cipoloso

Current state: pasture

Data Source: crowdsourcing

Artefacts:

Description: This Area of artefact scatters situates between other sites with signs of frequentation in various periods. Admittedly, it is in connections with AC032 and AC042. Fig. 133

A: DTM of the site.

GPS: 42,07041326; 11,87002435

Bibliography: none

Dating: Roman period

Elevation in metres: 243

AC089

Site type: Area of artefact scatters

Local Name: Doganella

Current state: pasture

Data Source: crowdsourcing

Artefacts: fragments of pottery (kitchen pottery), a fraction of lead

Description: Area of artefact scatters located on natural terraces about 250 m a.s.l.

GPS: 42,08307209; 11,91555856

Bibliography: none

Dating: Roman period

Elevation in metres: 255

AC090_1 and AC090_2

Site type: Area of artefact scatters

Local Name: Tenuta Casale

Current state: pasture

Data Source: crowdsourcing

Artefacts: amphorae, Vernice nera

Description: An Area of artefact craters surrounds the stone construction of the Etruscan tomb scatters containing Vernice nera, and amphorae and located circa 160 m from Roman villa AC 121. The tomb lays on the top of the hill in a 300 m a.s.l. Fig. 134 A: the DTM of the area; B: detail of the tomb.

GPS: 42,08307209; 11,91555856

Bibliography: none

Dating: Etruscan classical and Hellenistic period

Elevation in metres: 312

AC091

Site type: Area of artefact scatters

Local Name: Macchia La Freddara

Current state: pasture

Data Source: crowdsourcing

Artefacts: fragments of Roman roof tiles,

Description: The Area of artefact scatters Covers one terraces on eastern slope in a 300 m a.s.l., it is about 350m from AC121. The whole slope that goes down to Fosso Sbardone is articulated to terraces.

GPS: 42,08820937; 11,90442056

Bibliography: none

Dating: Roman period

Elevation in metres: 300

AC092

Site type: Area of artefact scatters

Local Name: Macchia La Freddara

Current state: pasture

Data Source: crowdsourcing

Artefacts: fragments of amphora Africana, roof tiles, none determinable fragments,

Description: Area of artefact scatters locates on natural terrasse above Fosso Freddara in about 180 m a.s.l. There are relicts of massive stone structure preserved in the ground (fig. 135 A, B).

GPS: 42,10124451; 11,8997575

Bibliography: none

Dating: the Roman period

Elevation in metres: 175

AC093

Site type: Area of artefact scatters

Local Name: Macchia La Freddara

Current state: pasture

Data Source: crowdsourcing

Artefacts: roof teils fragments

Description: In the surroundings of this Area of artefact scatters, there are extinct field systems and several bundles of roads; about 500m far lays villa AC082. Also here there are regular concentrations of stones.

GPS: 42,08889155; 11,89029056

Bibliography: none

Dating: Roman period

Elevation in metres: 190

AC094

Site type: bridge

Local Name: Marangone

Current state: river

Data Source: bibliography

Artefacts: unknown

Description: The ancient bridge was located next to the current bridge (the axis was shifted about 20 ° towards the sea). In 1981 part of its construction was unveiled. It was built partly from stones and partly from wooden poles. A marble renaissance column 1,5 m high and 0,35 m in diameter was discovered in the past. It had the inscription "TRIBUNALE DELLE STRADE", the name of the institution responsible for repairs. Km 58,9. Fig. A: Arch. SAEM; B: the state of the bridge in 2017, foto B.Fantozzi.

GPS: 42,040805; 11,893967

Bibliography: Nastasi 1990, 194.

Dating: Roman periodMiddle Ages and Post-Medieval period

Elevation in metres: 5

AC095

Site type: Farmstead

Local Name: Gardetta

Current state: pasture

Data Source: IGM1895

Artefacts: fragments of Post-Medieval roof tiles, bricks

Description: IGM 1895 indicates Casolare di Prato Cipoloso, the agricultural Farmstead surrounded by the stone fence. The structure was abandoned and disappeared before 1950. On aerial photos from that year, there are no traces. Only the furnace (AC075) and the stone fence

(AC095_2) are preserved in situ. Nowadays, the site has the name of the Fontanile la Gardetta, most probably reconstructed after II.WW.

GPS: 42,078954; 11,86940212

Bibliography: none

Dating: Middle ages and Post-Medieval, modern period

Elevation in metres: 175

AC096

Site type: fence

Local Name: Prato Cipoloso

Current state: pasture

Data Source: IGM1895

Artefacts: none

Description: The IGM 1895, in comparison with aerial photos (as historical as modern) and recent maps, reveals the system of abandoned roads. They become useless after the changes of land-use that followed the changes in human lifestyle after the IIWW. See the map — more GPS positions.

GPS: 42,078188; 11,867736

Bibliography: none

Dating: Middle ages and Post-Medieval, modern period

Elevation in metres: 160

AC097

Site type: Farmstead

Local Name: Casale del Guardiano

Current state: pasture

Data Source: IGM1895

Artefacts: fragments of Post-Medieval roof tiles, bricks

Description: The structure is documented on aerial photos from 1950 (fig. 136 A). Pictures from Google Earth document its gradual destruction. In the year 2019, it was completely covered by vegetation and destroyed down (fig. B).

GPS: 42,08468782; 11,8725447

Bibliography: none

Dating: modern period

Elevation in metres: 240

AC098

Site type: building

Local Name: Santa Maria Morgana

Current state: private garden

Data Source: 1950_70

Artefacts: none

Description: It is possible to identify one building in the photographs from 50'. Currently, there is a run-up area for heavy equipment.

GPS: 42,04884218; 11,86186315

Bibliography: none

Dating: modern period

Elevation in metres: 149

AC099

Site type: separate finding

Local Name: Poggio Bella Vista

Current state: vegetation - Machia

Data Source: crowdsourcing

Artefacts: large marble block

Description: After the macchia fire, a marble block could be observed, with no date or inscription.

GPS: 42,04211509; 11,8492729

Bibliography: none

Dating: undatable

Elevation in metres: 75

AC100

Site type: villa

Local Name: Punton di Mare

Current state: parking/beach

Data Source: bibliography

Artefacts: various fragments of common terracotta, Terra Sigilata Aretine ware including a patera bottom with a stamp MARC (Marcius?).

Description: In the locality of Punton di Mare, not far from the G. Bonizzi Institute, there was a Roman villa of the Imperial age. Until the 70s remains of walls and mosaic floors were visible on the site, today fragments of bricks, mosaic tiles, and stone blocks for structures in opus incertum

or reticulatum can be found. From the area of this villa come various fragments of standard terracotta, Aretine ware's Terra Sigilata including a patera bottom with a stamp MARC (Marcus?).

GPS: 42,056814; 11,819342

Bibliography: Gianfrotta 1972, 49.

Dating: Imperial period

Elevation in metres: 4,4

AC101

Site type: villa

Local Name: Capo Linaro

Current state: modern buildings

Data Source: bibliography

Artefacts: none

Description: In 1955 during the works for the construction of a modern villa, located at the beach of Capo Linaro in Santa Marinella, some "Roman walls" were found belonging to a villa. No traces are visible today.

GPS: 42,030107; 11,837263

Bibliography: Gianfrotta 1972, 85; Arch. Vg. Santa Marinella n. 331 (1960).

Dating: Roman period

Elevation in metres: 7

AC102

Site type: villa

Local Name: Chiaraccia

Current state: field

Data Source: bibliography

Artefacts: dolium, common pottery fragments

Description: Immediately behind the railway, in correspondence of Castrum Novum, some artefact scatters were found in 1971 between the ground disturbed by construction. Among them, there was a fragment of the rim of a dolium in reddish clay (meters 0.58 x, 18 x 0.18) imprinted with a rectangular stamp in two lines: L. Torius Pilaro (sic) / Hilarus Rubri fecit.

GPS: 42,0388267; 11,8386448

Bibliography: Gianfrotta 1972, 97.

Dating: the Roman period

Elevation in metres: 23

AC103

Site type: villa

Local Name: Chiaraccia

Current state: highway

Data Source: bibliography

Artefacts: silver coins

Description: During the construction of motorway (Civitavecchia – Rome), some structures of a villa were found at 66 km of the Via Aurelia in the Fosso Cupo locality. It seems that there was also found a treasure of silver coins (about a hundred), which, however, went missing.

GPS: 42,04970118; 11,83231154

Bibliography: Gianfrotta 1972, 118; Arch. VG, Santa Marinella, n. 4012; Maffei – Massimo – Sergio 2011, 111.

Dating: Roman period

Elevation in metres: 40

AC104

Site type: villa

Local Name: Ulpiano

Current state: relicts

Data Source: bibliography

Artefacts: a very rich collection of decorative marble fragments, figures and columns; lead water pipe; numerous fragment of everyday and luxury pottery; coins, fragments of Bronze objects etc.

Description: On the promontory of Santa Marinella, where the Odescalchi castle stands, a large and luxurious Roman villa located. It was equipped with a port and facilities for fish farming (fish ponds), acquired perhaps at the beginning of the 3rd century AD by the prominent jurist Ulpian. Its ruins have been studied during numerous excavations carried out on since 1838 — Duchess of Sermoneta leaded fist session. There was the cryptoporticus, porches open to the sea, and spas with precious mosaics and statues now scattered in museums and private collections. Among the findings are reminiscent of the mosaic of Orpheus, Meleager, and statues of Dionysus and Pan, lead pipes (fistulae) with the inscription “Cn. Domiti Ulpiani Years” and, more recently, the statues of Apollo and Athena Parthenos, which decorated the gardens of the villa. Today only very few relicts remain. The construction of the modern harbour in the 70s destroyed the ancient port.

This promontory rises 12 m above current sea level and has a south-western orientation. Since ancient time, it is an excellent shelter for boats. Relicts of Roman structures located on the entire surface of the promontory. In most of its territory is later built castle. The numerous discoveries were made in various periods were made in the area of the Roman villa. In the 3rd and 4th century, some rooms of villa were transformed in storage areas, and the villa changed its functionality to the agricultural centre with

GPS: 42,03420983; 11,87016191

Bibliography: Gianfrotta 1972, 54; Nadri 2002, 31.

Dating: Imperial period

Elevation in metres: 10

AC105

Site type: villa

Local Name: Maravigna

Current state: modern buildings

Data Source: bibliography

Artefacts: Roman marble capitals

Description: In Villa Maravigna, on a small promontory, there was located Villa Maritima. Nowadays, it is not possible to trace its shreds of evidence because of modern buildings. In the past, remains of masonry and mosaic floor tiles have been seen.

Gianfrotta described a column capital in grey marble kept nearby modern villa (fig. 80) resting on a column base of the same material (alt. 0,28 m, diam. 0, 80), and part of the trunk of column (alt. 1.40 m, diam. 0.45) (fig. 81). The capital is identical, both in size (alt. M. 0,60, diam. 0,80), both in a type of marble and in craft, to two others in the Odescalchi castle and one in the Magini villa in Santa Marinella.

GPS: 42,03880338; 11,89111896

Bibliography: Gianfrotta 1972, 47.

Dating: Imperial period

Elevation in metres: 2

AC106

Site type: villa

Local Name: Lessona

Current state: modern buildings

Data Source: bibliography

Artefacts: fragments of decorative elements (marble, mosaic, opus signinum, opus spicatum, marble columns etc), fragments of various pottery

Description: In correspondence with km 57,6 of the Via Aurelia, on a small promontory, there was a sizeable Imperial Villa Maritima. The area was in a panoramic position. Numerous remains of ancient buildings were visible. All the examined structures laid directly on the rock. Some walls continued clearly towards the inside of the promontory, where a large part of the villa developed.

Among the soil of the coastal escarpment, in truth very scarce, we have noticed numerous fragments of tiles and bricks, of slabs of cladding in white marble, in porphyry, ancient yellow and serpentine, of red, black, white plasters with black, red over-painting, green and blue. The pottery is very scarce and was present only with some fragments of standard terracotta and walls of none-classifiable amphorae.

The modern villa covers the promontory, in its garden was part of a marble ionic column.

GPS: 42,040755; 11,9086

Bibliography: Gianfrotta 1972, 35.

Dating: Imperial period

Elevation in metres: 5

AC107

Site type: villa

Local Name: Quartaccia

Current state: field

Data Source: bibliography

Artefacts: Terra Sigilata Aretine ware, fragments of roof tiles and bricks

Description: In Quartaccia, immediately behind the Autostrada per Civitavecchia, there is a vast area of fragments of bricks, roof tiles, tiles, Terra Sigilata Aretine ware and common terracotta.

Numerous carved stones perhaps made up the wall structures. Fig. A.

GPS: 42,04305631; 11,91235672

Bibliography: Gianfrotta 1972, 35.

Dating: Imperial period

Elevation in metres: 30

AC108

Site type: villa

Local Name: Selciata

Current state: field

Data Source: bibliography

Artefacts: stone mill, fragments of roof tiles and standard terracotta

Description: Immediately behind the motorway to Civitavecchia is a small area of fragments, roof tiles, and standard terracotta. Numerous stones can be seen that preserve traces of lime, and, during the works for the construction of the highway, a large stone mill was found. Fig. 138 A.

GPS: 42,043102; 11,902854

Bibliography: Gianfrotta 1972, 37.

Dating: Roman period

Elevation in metres: 26

AC109

Site type: Farmstead

Local Name: Prato Rottatore

Current state: field

Data Source: reconnaissance/aerial photography

Artefacts: none

Description: Farmstead locates on the hill Pratto Rotatore. It is registered on IGM 1895. It is possible to date the core of structure to XIII century according to building technic. The building seems to be abandoned from 2005. Fig. 137 A.

GPS: 42,07010731; 11,89459558

Bibliography: none

Dating: postmediaeval

Elevation in metres: 146

AC110

Site type: villa

Local Name: Ponton di Mare

Current state: private garden

Data Source: bibliography

Artefacts: fragments of pottery, terra sigillata Aretine ware, lantern

Description: In the area of Puntton di Mare, near to Istituto G. Bonizzi, there is a site interpreted as a Roman villa from the Imperial period. Gianfrotta said that there were remains of masonry, mosaics, and then there were fragments of brick, mosaic cubes, building stone. There were fragments of pottery in place: Terra sigillata Aretine ware, the fractions of a lantern. Nowadays, the site is in a private garden.

GPS: 42,05935283; 11,89122816

Bibliography: Gianfrotta 1972, 49.

Dating: Imperial period

Elevation in metres: 112

AC111

Site type: villa

Local Name: Selciata

Current state: private garden

Data Source: bibliography

Artefacts: roof tiles, of standard terracotta, of Vernice nera pottery of the pre-aretine ware type, of Terra Sigilata Aretine ware, opus spicatum etc.

Description: Between Selciata and Buche di Brancaleone, on a small plateau is a vast area dotted with fragments of tiles and roof tiles, of standard terracotta, of Vernice nera pottery of the pre-aretine ware type, of Terra Sigilata Aretine ware, including a fragment of background with some letters of a stamp The stamp [...] RNCR [...] is from M. Perennius Crescens, whose production can be dated to the first half of the 1st century AD. There are numerous floor bricks in opus spicatum (10 x 6 x 1.7 cm) and white and black mosaic tiles, as well as rosy clay vessels. Gianfrotta described, at the centre of the plateau, remained some large blocks of stone emerging from the ground and appear to be the lower part of a wall structure. In the vicinity, there were various fragments of white and red plasters, some slabs of whitish stone, and a fragment of the upper part of a torculum of cm 65 x 34 x 27.

GPS: 42,057138; 11,904469

Bibliography: Gianfrotta 1972, 38.

Dating: surly Republican, probably Imperial period

Elevation in metres: 204

AC112

Site type: villa

Local Name: Rughicce

Current state: vegetation - Machia

Data Source: bibliography

Artefacts: Opus Spicatum bricks, square bricks, coloured plasters. Vernice nera, Terra Sigilata Aretine ware and indeterminate fragments

Description: About 50 m south of the Fountain of Cicugnola is an area of fragments. Illegal excavations revealed several brick and stone structures in a large building. In the field, there are

numerous fragments of Opus Spicatum bricks, square bricks, coloured plasters, pottery fragments including Vernice nera, Terra Sigilata Aretine ware, and indeterminate fractions. One unpaved road used to pass this area. Nowadays, it is abandoned and covered by vegetation. Despite the dense vegetation, it is still possible to observe a large number of fragments. Fig. A shows the terraces on which the site was.

GPS: 42,078464; 11,9107988

Bibliography: Gianfrotta 1972, 38

Dating: early Republican, probably Imperial period

Elevation in metres: 201

AC113

Site type: villa

Local Name: Poggio Alto

Current state: pasture

Data Source: bibliography

Artefacts: Terra Sigilata Aretine ware, fragments of roof tiles and bricks, dolium

Description: At the southern slopes of Poggio Alto, there is an area covered with fragments of roof tiles, brick fragments, opus spicatum bricks (8,2 x 4 x 2,4 cm), fragments of marble slabs and numerous stones. There are also numerous fragments of standard terracotta and amphorae (walls) that cannot be classified. A fragment of Arezzo's Terra Sigilata and a large dolium is still preserved. The area is continuously damaged by cultivation. On the DTM (fig. A), the accumulations of building stones are visible.

GPS: 42,074953; 11,897666

Bibliography: Gianfrotta 1972, 38

Dating: Imperial period

Elevation in metres: 180

AC114

Site type: villa

Local Name: Fornacetta

Current state: vegetation - Machia

Data Source: bibliography

Artefacts: roof tiles, bricks of opus spicatum, cement structures split and, fragments of coloured plaster, Vernice nera, terra sigillata Aretine ware and common terracotta.

Description: In Fornacetta, near the Poggio di Castelsecco, it is a vast area of fragments. There are various bricks, roof tiles, bricks of opus spicatum, cement structures split and fragments of

coloured plaster, Vernice nera, terra sigillata Aretine ware, and standard terracotta. The site extended on the natural terrace (fig. A).

GPS: 42,05166948; 11,88433158

Bibliography: Gianfrotta 1972, 52.

Dating: surly Republican, probably Imperial period

Elevation in metres: 40

AC115

Site type: villa

Local Name: Fornacetta

Current state: garden, macchia

Data Source: crowdsourcing

Artefacts: fragments of roof tiles, bricks and tiles; fragments of none determinable amphorae

Description: Dense vegetation covers this site, which lies at about 130 m a.s.l. until the 1950s. Now there is a modern building, and the terrain is used agriculturally. In the past, an increased amount of archaeological material, indicating the presence of a Roman villa, was observed. On the aerial photo from 2003 (fig. D), a rectangular shape drawn by traces of mortar in topsoil appeared after deep ploughing (probably). Fig. 139 A: DTM; B: aerial photo from 1954; C: orthophoto 2012.

GPS: 42,05475974; 11,87764546

Bibliography: none

Dating: Roman period

Elevation in metres: 115

AC116

Site type: villa

Local Name: Poggio Spolverino

Current state: pasture

Data Source: crowdsourcing

Artefacts: fragments of roof tiles, bricks and tiles; fragments of not determinable amphorae, worked quartz, opus spicatum etc.

Description: On the Poggio Spoleverino, between Fosso Castelsecco and Vale Semplice, there is a terrace covered with plenty of archaeological material dating back to Roman times. The terrace locates at an elevation about 160 m and offers views to t the surrounding villas. Fig. 140 A: DTM of the top of the hill; B: aerial photo 1954.

GPS: 42,05905649; 11,87812981

Bibliography: none

Dating: Roman period

Elevation in metres: 160

AC117

Site type: villa

Local Name: Fosso Elcetina

Current state: modern buildings

Data Source: crowdsourcing

Artefacts: none

Description: At the top of the hill between Fosso Elcetina and Santa Maria Morgana lies a plateau at about 160 m a.s.l. In the past, before the construction of modern houses, an increased concentration of archaeological material was observed. It could be a Roman villa, which could be located here according to the prediction model. The presence of AC157 identified by Gianfrotta is also indicative of its fact. DTM shows modern modifications of terrain. Aerial photo from 1954 shows the state of the site of that period (fig. 141 A).

GPS: 42,06233906; 11,86487184

Bibliography: none

Dating: Roman period

Elevation in metres: 182

AC118

Site type: pit

Local Name: Poggio di Castelsecco

Current state: private garden

Data Source: crowdsourcing

Artefacts: none

Description: After the macchia fire in 2017, an Etruscan well went to the light. It is the part of sizeable Etruscan oppidum Castelsecco together with other archaeological components.

GPS: 42,04918322; 11,88763114

Bibliography: none

Dating: Imperial period

Elevation in metres: 65

AC119

Site type: separate finding

Local Name: Poggio Pontoncino

Current state: pasture

Data Source: crowdsourcing

Artefacts: fragments Etruscan amphorae

Description: About 150 m from the tomb of AC041, at the top of the hill, several fragments of slag amphorae were collected.

GPS: 42,06841084; 11,86668474

Bibliography: none

Dating: Etruscan period

Elevation in metres: 210

AC120

Site type: villa/estate

Local Name: Fosso Sbardone

Current state: vegetation - Machia

Data Source: crowdsourcing

Artefacts: fragments Roman tiles, stone building elements, dolia, ara torculum

Description: On the western slope of Fosso Sbardone, there is a vast area with a high concentration of stone and brick building elements (fig. 142 B-H), relics of the stone press, and large dolia. The slope is divided by terraces (fig. A). It was probably a production area. The site is surrounded by natural springs and is located right above the stream.

GPS: 42,0869225; 11,91115515

Bibliography: none

Dating: Roman period

Elevation in metres: 250

AC121

Site type: villa/estate

Local Name: Tenuta Casale

Current state: pasture

Data Source: crowdsourcing

Artefacts: ara torculum, fragments Roman roof tiles, dolia

Description: The site locates on the eastern slope above Fosso Sabrdone (fig. 143 A), approximately on the same level as the AC120. In situ, there are the remains of the press (fig. B), fragments of structural elements, and large tanks (dolia).

GPS: 42,0855235; 11,90349389

Bibliography: none

Dating: Roman period

Elevation in metres: 278

AC122

Site type: separate finding

Local Name: Poggio Alto

Current state: pasture

Data Source: crowdsourcing

Artefacts: coin

Description: A separate undetermined coin was found on the slope near other localities.

GPS: 42,07254; 11,89055

Bibliography: none

Dating: Roman period

Elevation in metres: 120

AC123

Site type: separate finding

Local Name: Poggio Alto

Current state: pasture

Data Source: crowdsourcing

Artefacts: coin and belt fitting

Description: A separate undetermined coin and belt fitting were found on the slope near other localities.

GPS: 42,07274; 11,889205

Bibliography: none

Dating: Roman period

Elevation in metres: 109

AC124

Site type: separate finding

Local Name: Campo Piombino

Current state: pasture

Data Source: crowdsourcing

Artefacts: coin

Description: An undetectable Roman coin was found on a slope near other localities.

GPS: 42,07835; 11,8907

Bibliography: none

Dating: Roman period

Elevation in metres: 130

AC125

Site type: tombs

Local Name: Santa Marinella

Current state: modern buildings

Data Source: bibliography

Artefacts: none

Description: At Km 65,1 of the Aurelia, between this and the railway, six or seven Roman burials were not found. Some of them were "alla cappuccina"; others were formed from broken dolia and laid on the corpse (fig. 251).

Numerous clay fragments are placed on a wall not far from these finds in a modern cottage (fig. 252). These are mostly fragments of amphorae from the stretch of sea in front."

GPS: 42,040968; 11,829136

Bibliography: Gianfrotta 1972, 117.

Dating: Roman period

Elevation in metres: 3

AC126_1

Site type: tombs

Local Name: Santa Marinella

Current state: modern buildings

Data Source: crowdsourcing

Artefacts: unknown

Description: At the km 58,400 of Via Aurelia were discovered Roman tombs. The Archival records of SAEM for this area are none available at the moment.

GPS: 42,03944336; 11,89956805

Bibliography: none

Dating: Roman period

Elevation in metres: 10

AC126_2

Site type: road

Local Name: Santa Marinella

Current state: modern buildings

Data Source: crowdsourcing

Artefacts: none

Description: The relicts of ancient Via Aurelia (so-called basoli) were discovered at the km 58,400 of Via Aurelia. The Archival records of SAEM for this area are none available at the moment. Fig. 144 A: Aerial photo 1954 with varied colours; B historical orthophoto from Gianfrotta 1972; C: the aerial photo 1950. All documenting relicts of Via Aurelia. Fig. 145: D, E: Via Aurelia from Gianfrotta 1972. Fig. 146 F: construction of Via Aurelia from Gianfrotta 1972; G: reconstruction of Via Aurelia and Via Aurelia Vetus.

GPS: 42,03944336; 11,89956805

Bibliography: none

Dating: Roman period

Elevation in metres: 10

AC127

Site type: road

Local Name: Santa Marinella

Current state: modern buildings

Data Source: bibliography

Artefacts: none

Description: Relicts of Via Aurelia Antica

GPS: 42,044814; 11,827233

Bibliography: Gianfrotta 1972, 22; Recchia 2001.

Dating: the Roman period

Elevation in metres: 15

AC128

Site type: bridge

Local Name: Fosso Castelsecco, Ponte di Apollo

Current state: wetlands

Data Source: bibliography

Artefacts: stone Stella

Description: A stone Stella (2,3 x 0,91 x 0,47 m) was found at 59,7 km (fig. 147 B). It reminded the reparation of the bridge across Fosso del Castelsecco. Letters of the writing are 7 cm. The cracks in inscriptions with subsequent corrections of the lower part show two different periods of writing. The slight difference in the structure of the marble and the great historical difference in the language form of Latin underline that fact. Stella is dated to 206 AD. That is the year in which Settimio Severo and Caracalla (Marco Aurelio Antonio) took over the fourteenth and ninth

rule of tribunals (*tribunicia potestas*), which was in contradiction with the title *Britannico* owned by Caracalla from 210 AD and with the title of *Partico*, which they did not receive before 214 AD, in the year of the military expedition to the east against the Persians. The Fosso del Castelsecco was spanned in its entirety by the Apollo Bridge. The relics of the Apollon bridge are still visible. The bridge was about 200 meters long and consisted of 3 arches with the embankment (fig. 147 A). The wide arches allowed a strong stream of water to flow into the sea. The position of the bridge reveals that the river flowed through a different route than today. Construction of the bridge began in the time of the late Empire and was regularly maintained and repaired. Unfortunately, apart from the date on the *Stella*, there are no known dates of other modifications. Currently, they are visible about 4 meters from the ramp to the bridge. The embankment was covered by a road made of large flat volcanic stones, so-called *basoli*. On both sides of the bridge were about 10 cm wide canals for draining the rainwater. The bridge had protective railings (45 cm wide and 90 cm high). Nothing but the drainage channels have been preserved. The pillars of the bridge were exposed to a strong stream of the river, so two walls of stone and mortar 20 meters long were spilt. The columns, built of small blocks that were connected by mortar, were 2,5 m high and 5,2 m wide. The only preserved pillar documents restoration and repair work. Bricks were inserted between the blocks in some parts. A piece of a Roman column can be seen in the railing. On the pillar are also visible two supports that directed the flow of water around. The roadway was typically 5.45 m wide and lay on a 1 m deep embankment of pebbles, sand and mortar. Towards S. Marinella, there is an embankment that equalizes the difference between the level of the bridge and the street. It consisted of two walls that were 50 cm thick. Only about 12 m from the original 100 m of length is preserved. In the last part of the bridge, there are two smaller arches. They are 2 m high and 3 m wide. It is not clear about their purpose. Perhaps they served as a pedestrian underpass.

Further, at 60,1 km, there is a terrace of large lava stones, which formed the base and support for this last section of the bridge. It is 6 m wide and 11 m long. It formed a link between the end of the bridge and the terrain. The *Via Aurelia* was 20 m from the current road behind the bridge.

GPS: 42,038808; 11,881125

Bibliography: Bastianelli 1958; De Rossi et. al. 1968, 56; Gianfrotta 1972, 52; Nastasi 1990, 186-188; Arch. SAEM Civitavecchia 1082 3/ago./1954.

Dating: Roman period

Elevation in metres: 2

AC129

Site type: tomb

Local Name: Fosso Cupo

Current state: field

Data Source: CTRN

Artefacts: none

Description: CTRN base map evidenced Etruscan Tomb. The survey identified the only lot of stone cumulation in the field. Probably, one or more of these cumulations used to be the tomb, later excavated of rubbish. According to Bastianelli, it belonged to necropolis AC015_2.

GPS: 42,05539188; 11,83457339

Bibliography: none

Dating: probably Etruscan period

Elevation in metres: 110

AC130

Site type: bridge

Local Name: Fosso di Valle Semplice

Current state: modern buildings

Data Source: bibliography/reconnaissance

Artefacts: none

Description: Only one arch of rectangular stone blocks of large dimensions connected by Iron rafters is preserved until today. Large blocks of 7 m length and a piece of construction that supported the road are still attached to the bridge. The arch of the bridge was 4.35 m high and 4.10 m long. The preserved width of the bridge is 6.66 m, which means that the road was more extensive than 5.5 m. The top of the bridge located above the present Via Aurelia. It follows that it was slightly raised (arched). It was probably built in the 2nd century BC. The keystone (in the middle) is perfectly preserved, and its size is 95 x 60 x 52 cm. Km 60,4. The relict is in a private garden. Fig. 148 A: the state of the bridge in 2019.

GPS: 42,037745; 11,876463

Bibliography: Bastianelli 1958, 57; De Rossi et al. 1968, 56; Lugli 1957, 356; Gianfrotta 1972, 52; Nastasi 1990, 189; Arch. SAEM Civitavecchia 1082 3/ago./1954.

Dating: Roman period

Elevation in metres: 4

AC131

Site type: bridge

Local Name: Fosso Santa Maria Morgana

Current state: modern buildings

Data Source: bibliography

Artefacts: none

Description: Relicts of another bridge were located about 400 m west of the bridge over the Fosso di Valle Semplice. The bridge is dated to the 2nd century BC. This bridge is also made up of large blocks of stone. It is the same construction as the previous bridges. The top of this bridge is 2 m above the present Via Aurelia. The arch of the bridge is 3.8 m above the riverbed and 6.5 m long. Stones that are part of the arch are between 50 and 80 cm wide. The hopper between the walls and the railing is destroyed. Only on the side towards the Odeschalchi Castle, there is a part of the wall 2.5 m high and 2 m long. It is from rectangular blocks of stone.

Some blocks preserved in a private garden adjacent to the bridge. The axis of the bridge points to the castle, as mentioned above, that use to be the centre of the extinct Roman colony Punicum. In 1910, a piece of a paved path was discovered near the castle. It is considered the ancient Via Aurelia. So far, it seems that between Apollo's bridge and the bridge over Fosso delle S. Maria Morgana, there was only one route. On the other hand, in the direction of Punicum (Odeschalchi Castle), Via Aurelia is most likely branched in two directions, Via Aurelia Vetus (old) and Via Aurelia nova (new). Km 60,7. Fig. 149 A: current state of the site.

GPS: 42,03709959; 11,87224746

Bibliography: Bastianelli 1958, 57; De Rossi et al. 1968, 56; Lagna 1963, 43; Lugli 1957, 356; Gianfrotta 1972, 52; Nastasi 1990, 189.

Dating: Roman period

Elevation in metres: 10

AC132

Site type: bridge

Local Name: Fosso di Vignace

Current state: modern buildings

Data Source: bibliography

Artefacts: none

Description: The construction of the bridge dates back to the 3rd century BC. It was restored in 1963. It has a similar construction to other bridges. The blocks of stone are ca 100 x 60 x 50 cm. It was the smallest of the bridges. There is the only arch preserved, which is 3,2 m above the

moat and 4,5 m long. The width of the road probably reached 5 m. The keystone of the arch is 51 x 60 x 42 cm. Fig. 150 A: the bridge in 2019.

GPS: 42,036249; 11,857554

Bibliography: Alegna 1963, 44; Nastasi 1990, 189.

Dating: Roman period

Elevation in metres: 15

AC133

Site type: bridge

Local Name: Marangone

Current state: sea

Data Source: bibliography

Artefacts: unknown

Description: There are relicts of the Roman bridge. Fig. 151 A and B.

GPS: 42,057648; 11,817462

Bibliography: Nardi-Combesure 2002, 134.

Dating: Roman period

Elevation in metres: 0

AC134

Site type: necropolis

Local Name: Fosso Marangone

Current state: field

Data Source: bibliography

Artefacts: see the literature for findings

Description: The Castellina del Marangone was until the 7th century BC under the influence of Tarquinia. Later it came from under the cultural influence of Caere. Findings of bucchero and red slipware evidenced it. In the 8th century BC, the tombs were mostly inside clay holes located near the settlement. From the 7th century BC, there is a radical change. Newly, the tombs accumulate in groups in the greater distance from settlements. They consist of burial chambers with more funerals beds. Strong social diversification is evident among them. At least four of the mounds are monumental and have a diameter of 50 m. These tombs are relatively distant from each other but are visible from the settlement. They extend both to the sea and the hills. Unfortunately, the mounds were significantly damaged in the past. On the contrary, from Cerveteri, Tarquinia, and Veii tombs, carved in tuff, these were constructed of stones. Rings around barrows, walls of chambers, the stone lining of tombs and the burial beds were built of

sandstone. Monumental tombs from the of Orientalizing period were very damaged already in the time of Bastianelli. Their funeral equipment was missing. Only some were intact so that Bastianelli could study them. For example, n. 77 "dei Dolii". Here is an interesting detail typical for the tombs in Caere. To the plinth of the tomb is attached another square structure, which Bastianelli called the altar (ara). Probably a ramp or altar was used for funeral ceremonies. The tomb had a diameter of 21 m. It is one of the smallest monumental mounds in the area, especially compared to the mound at Torre del Marangone with a diameter of about 40 m. Some of them were dated to the second half of the 6th century BC. Another necropolis located near Punta della Vipera, at 66.8 km Via Aurelia. It was researched in 1988 and 1994. Erosion of the coast destroyed most of them. One of the tombs was dated to the end of the 7th and early 6th century BC. There was again found an altar, which indicates the relationship of the necropolis with the cultural circle of Caere. A statue of local production was discovered in one of the tombs in Castellina. A clear proof of international contacts is the finding of a balsamarian that comes from Cyprus. It is decorated in Egyptian style. It was probably a commodity traded by the Phoenicians. It was discovered in 1913 in one of the tombs in the Cava delle Volpelle. Most of the tomb findings were stored in the museum in Civitavecchia, where they were destroyed during the bombing during World War II. On the aerial photos from 2002 (fig. 152 A), it is possible to observe vegetation synthons showing an annular foundation of 2 mounds. Necropolis was partially absorbed by the construction of modern communications and is permanently destroyed by agricultural activity. According to Bastianelli, it belonged to necropolis AC015_2.

GPS: 42,05945; 11,822162

Bibliography: Bastianelli 1936, 452; Bastianelli 1937, 451; Gianfrotta 1972, 140; Prayon 2016, 68-76; Toti, 1961, 130; 1990, 152-162.

Dating: Etruscan and probably Roman Republican period

Elevation in metres: 8

AC135_1

Site type: necropolis

Local Name: Volpelle

Current state: field

Data Source: bibliography

Artefacts: pottery, metal artefacts etc.

Description: The necropolis locates on the hillside near Castellina and reaches the coast. It has been destroyed since Roman times when a villa Rustica was established on its territory. Some tombs were examined during the construction of the Rome - Civitavecchia highway. In the

Alberobello rest area, there is possible to see the reconstruction of the tombs under investigation. Some of the tombs come from 8th-7th centuries BC, most of them are from the 6th BC. According to Bastianelli, it belonged to necropolis AC015_2. Capuani mentioned the settlement from the Mesolithic period. Fig. 153 A, B, C: the documentation of one of the excavated tombs.

GPS: 42,055989; 11,823

Bibliography: Capuani 1981, 29-50.

Not. Scavi 1967, vol. 21, pag. 55 e sgg.

Dating: Etruscan period

Elevation in metres: 16

AC135_2

Site type: settlement

Local Name: Volpelle

Current state: field

Data Source: bibliography

Artefacts: unknown

Description: Capuani mentioned the settlement from the Mesolithic period.

GPS: 42,055989; 11,823

Bibliography: Capuani 1981, 29-50.

Not. Scavi 1967, vol. 21, pag. 55 e sgg.

Dating: mesolithic

Elevation in metres: 16

AC136

Site type: temple

Local Name: Santa Marinella

Current state: field/coast

Data Source: bibliography

Artefacts: numerous tiles, some fragments of Attic, pottery and architectural terracottas etc.

Description: In the strip of land between current Via Aurelia and the sea (fig. 154 A), immediately south of the mouth of the Marangone stream, an Etruscan temple was identified. The sanctuary perhaps was still alive even in Roman times in the 2nd and 1st century BC. Barbaranelli found on the sea slope other blocks arranged in double rows, numerous tiles, some fragments of Attic, Etruscan pottery and architectural terracottas "representing galloping horse chariots, manes in the wind, led by warriors with helmets, lances, and shields." This small sanctuary is undoubtedly

to be related to the Etruscan pagus of Castellina, which is just a kilometre away. Similarly to the temple of Punta della Vipera, it was placed near the ancient Aurelia, of which until a few years ago, some sizeable square sandstone blocks were visible on the seashore.

GPS: 42,053454; 11,82006

Bibliography: Gianfrotta 1972, 118-121; Barbaranelli, 1958-59, 219-224.

Dating: Etruscan and Roman Republican period

Elevation in metres: 5

AC137

Site type: tombs

Local Name: Casale Alibrandi

Current state: modern buildings

Data Source: bibliography

Artefacts: none

Description: In the area behind the Alibrandi farmhouse, towards the Rome-Civitavecchia railway, some tombs (alla cappuccina) were found in June 1970. Graves without artefacts were placed at the edge of the town of Castrum Novum, perhaps near the ancient Via Aurelia.

GPS: 42,03803496; 11,83633528

Bibliography: Gianfrotta 1972, 122.

Dating: Imperial period

Elevation in metres: 14

AC138

Site type: cisterns

Local Name: Fosso delle Guardiole

Current state: modern buildings

Data Source: bibliography

Artefacts: unknown

Description: On the left of the Fosso delle Guardiole, about 20 m from the railway line, was a group of three cisterns placed at a short distance from each other. They are truncated cone-shaped, with a square mouth of 0,60 m and reach a depth of 5-6 meters (figs. 205-207).

Two of them, the most preserved, have been studied by the Superintendency of Southern Etruria. Various fragments of Renaissance pottery and some travertine blocks of the same period were found. These blocks most probably constituted the covering of the parapet. Deeper, an aquifer has been encountered. This, in fact, suggests wells rather than cisterns. The interior also

appears to be from the Renaissance period, judging by the type of bricks, but it could, however, be a later adaptation of an ancient system.

GPS: 42,038599; 11,838047

Bibliography: Gianfrtotta 1972, 97.

Dating: Roman period, Post-Medieval period

Elevation in metres: 14

AC139

Site type: villa

Local Name: Chiaraccia

Current state: modern buildings

Data Source: bibliography

Artefacts: pottery fragments, roof tile, etc.

Description: Along the course of the Fosso delle Guardiole, about a hundred meters from the railway line, it is possible to see a small stretch of an uncertain stone wall on the left bank of the ditch with an almost parallel course (fig. 209). The wall, often about 0,60 m, it is preserved for a height of about 1,20 m and must perhaps be part of a villa, or of another building, placed in an immediately suburban position concerning Castrum Novum. A short distance from this wall, among the landfill of some modern buildings, many tiles, flake blocks, fragments of walls of amphorae, and large dolium were visible.

GPS: 42,040162; 11,832783

Bibliography: Gianfrtotta 1972, 98.

Dating: Roman period

Elevation in metres: 10

AC140

Site type: necropolis

Local Name: Vignace

Current state: modern buildings

Data Source: bibliography

Artefacts: A small dark blue glass paste amphorae decorated with yellow-orange horizontal bands (8 cm high), clearly imported, and a silver plate (fig. 177) (29 x 15 x mm 1) which decorated a wooden object, on which two satyrs lying opposite each other are depicted; amphorae, etc.

Description: Its location, right on the course of the Fosso delle Guardiole, indicates that in ancient times the ditch had to follow a different path than the current one.

GPS: 42,038578; 11,857914

Bibliography: Gianfrtotta 1972, 82.

Dating: Etruscan period of Orientalizing , Archaic and Classical period.

Elevation in metres: 25

AC141

Site type: road

Local Name: Santa Marinella

Current state: field

Data Source: bibliography

Artefacts: none

Description: In 1953, about 200 m from the Santa Marinella station, a stretch of about 15 m of a paved road (basolata) went to the light. Almost certainly it is the ancient Via Aurelia. Mengarelli saw another stretch of this route in 1910 paved with large polygons of local sandstone, about 1500 m west of the Santa Marinella railway station.

GPS: 42,03782934; 11,86365373

Bibliography: Gianfrtotta 1972, 82.

Dating: Roman period

Elevation in metres: 30

AC142

Site type: tombs

Local Name: Santa Marinella

Current state: modern buildings

Data Source: bibliography

Artefacts: a lantern, a worked bone and a Bronze coin of Ostilia Severa; a large marble fragment of the Corinthian capital

Description: In 1962 so-called tombs "alla cappucina" were excavated in S. Marinella in Via L. Odescalchi n, 3-7. In the same year, another similar burial was found, and a large fragment of Corinthian capital marble was also nearby. There are more notes about other tombs nearby.

GPS: 42,03683262; 11,86888414

Bibliography: Gianfrtotta 1972, 53.

Dating: Imperial period

Elevation in metres: 16

AC143

Site type: castra

Local Name: Santa Marinella

Current state: modern buildings/private garden

Data Source: bibliography

Artefacts: see the literature for findings

Description: The Tabela Peutingeriana situates the Puicum on the promontory of Santa Marinella, where the Odescalchi Castel stands. It was the settlement of Etruscan origin founded on a secure landing place, protected from the winds and the sea.

The name Punicum could reflect the attendance of this stretch of coastline from the Punic people. More appropriately, it derived from the Latin name of pomegranate (malum Punicum). In ancient times, such natural elements were often used as a topographic reference point. In the Roman period, the large and luxurious villa substituted this settlement. It was equipped with a port and facilities for fish farming (fish ponds), acquired perhaps at the beginning of the 3rd century AD by the prominent jurist Ulpian. The construction of the modern harbour in the 70s destroyed the ancient port.

GPS: 42,034328; 11,866441

Bibliography: Gianfrotta 1972, 81; Dennis 1848, 249; Mommsen 1881, 127; Pareti 1958, 239; Niessen 1902, 346.

Dating: Etruscan period of Orientalizing, Archaic and classical period; Roman Republican and Imperial period

Elevation in metres: 14

AC144

Site type: Area of artefact scatters

Local Name: Selciata

Current state: private garden

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks

Description: Gianfrotta described the small area of rare fragments of bricks and roof tiles that more recently disappeared under modern houses and gardens. Modern terrain modifications influence DTM. Fig. 155 A: aerial photo from 1954; B: current state of the site.

GPS: 42,050184; 11,896258

Bibliography: Gianfrotta 1972, 40.

Dating: Roman period

Elevation in metres: 120

AC145

Site type: Area of artefact scatters

Local Name: Selciata

Current state: private garden

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks and other pottery indefinable fragments

Description: Nowadays, it is not possible to verify the Gianfrottas observation of the not large area of fragments of roof tiles, Roman bricks, and other pottery indefinable fragments — because of modern building and terrain modifications. Fig. 156 A: aerial photo from 1954; B: orthophoto 2012.

GPS: 42,05364; 11,89873

Bibliography: Gianfrotta 1972, 40.

Dating: Roman period

Elevation in metres: 160

AC146

Site type: Area of artefact scatters

Local Name: Buche Di Brancaleone

Current state: pasture

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks and other pottery indefinable fragments

Description: none large area of fragments of roof tiles and Roman bricks and other pottery indefinable fragments.

GPS: 42,057362; 11,898509

Bibliography: Gianfrotta 1972, 40.

Dating: Roman period

Elevation in metres: 90

AC147

Site type: Area of artefact scatters

Local Name: Via Ancelle della Visitazione

Current state: pasture

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks and other pottery indefinable fragments

Description: Small area of rare and minute fragments of bricks and tiles. DTM does not show anomalies. A Post-Medieval of modern road damaged the site. Fig. A: aerial photo from 1954.

GPS: 42,054884; 11,889278

Bibliography: Gianfrotta 1972, 49.

Dating: Roman period

Elevation in metres: 65

AC148

Site type: Area of artefact scatters

Local Name: Selciata

Current state: pasture

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks

Description: This small Area of artefact scatters can be connected with the AC059 and AC058.

GPS: 42,047866; 11,904692

Bibliography: Gianfrotta 1972, 37.

Dating: Roman period

Elevation in metres: 120

AC149

Site type: Area of artefact scatters

Local Name: Selciata

Current state: modern buildings/private garden

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks and other pottery indefinable fragments of Terra Sigilatta Aretine ware

Description: A small Area of artefact scatters, of bricks, of tiles, of standard terracotta. One small fragment of Terra Sigilata Aretine ware was found, it could come from activities in the Roman period. A private garden covers part of the area that was very frequented in Roman time.

GPS: 42,053475; 11,904204

Bibliography: Gianfrotta 1972, 38.

Dating: Republican and Roman period, surly 1BC-1AD

Elevation in metres: 176

AC150

Site type: Area of artefact scatters

Local Name: Monte Cupellaro

Current state: pasture

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks and other pottery indefinable fragments

Description: The not large area of fragments of roof tiles, Roman bricks, and other pottery indefinable fragments locates some meters down from Monte Cupellaro. Due to long-term agricultural use, there are no traces of archaeological structures. Fragments are still present here. Nearby are the Imperial Villa and the Bronze Age site. Fig. 158 A: DTM of the area.

GPS: 42,067477; 11,909792

Bibliography: Gianfrotta 1972, 38.

Dating: Roman period

Elevation in metres: 230

AC151

Site type: Area of artefact scatters

Local Name: Monte Cupellaro

Current state: vegetation - Machia/ Stockyard

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks and other pottery indefinable fragments

Description: The not large area of fragments of roof tiles, Roman bricks, and other pottery indefinable fragments locates some meters down from Monte Cupellaro. Due to long-term agricultural use, there are no traces of archaeological structures. Fragments are still present here. Nearby are the Imperial Villa and the Bronze Age site. Fig. 158 A: DTM of the area.

GPS: 42,06813; 11,905197

Bibliography: Gianfrotta 1972, 40.

Dating: Roman period

Elevation in metres: 160

AC152

Site type: Area of artefact scatters

Local Name: Poggio Alto

Current state: pasture

Data Source: bibliography

Artefacts: bricks and terracotta

Description: In the area of Poggio Alto, there is the zone with fragments of roof tiles, Roman bricks, and other pottery indefinable fragments. It may be material related to Villa AC081 or AC074. Fig. A: DTM of the area.

GPS: 42,077732; 11,89693

Bibliography: Gianfrotta 1972, 50.

Dating: Roman period

Elevation in metres: 180

AC153

Site type: production area

Local Name: Prato Rottatore

Current state: pasture

Data Source: bibliography

Artefacts: ara torculum, mosaics

Description: Right before the Prato Rotatore Farmstead, the lower part of a massive sandstone circular torculum (diam. 2,58 m), with a circular recess that opens into a small canal near the edge (fig. B) was found.

In 1843 two mosaics were found, they belonged to the Roman villa (AC047), located in Prato Rotatore. One of them is preserved in the Albertini Collection (Torre in Pietra - Rome) and bears the signature, in Greek and Latin letters, of the Neilodoros mosaicist. In black and white tesserae (2,82 x 2,41 m), it depicts a boxing scene in the central rectangular field, around it is a border with Nilotic scenes. It is datable to the end of the 2nd – 3rd century AD.

Traces of the other mosaic have been lost. It was polychrome and divided into squares with a central scene of the triumph of Bacchus. DTM shows a system of terraces (fig. A).

GPS: 42,06501315; 11,89329692

Bibliography: Gianfrotta 1972, 52.

Dating: Roman period

Elevation in metres: 161

AC154

Site type: Area of artefact scatters

Local Name: Fornacetta

Current state: private garden

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks and other pottery indefinable fragments

Description: Gianfrotta described an Area of artefact scatters in this site. Recently, it is located in a private garden, and it is not possible to examine the situation — aerial photos from 50' show terraces of the villa (fig. A).

GPS: 42,047629; 11,879502

Bibliography: Gianfrotta 1972, 52.

Dating: Roman period

Elevation in metres: 60

AC155

Site type: Area of artefact scatters

Local Name: Prato Cipoloso

Current state: pasture

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks and other pottery indefinable fragments

Description: The site is nearby Fosso Marangone on the terrace below the sharp terrain edge and right beside the fountain (fig.A).

GPS: 42,08242038; 11,86570583

Bibliography: Gianfrotta 1972, 85; Arch. Vg. Santa Marinella n. 331 (1960).

Dating: Roman period

Elevation in metres: 103,7

AC156

Site type: Area of artefact scatters

Local Name: Prato Cipoloso

Current state: pasture

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks and other pottery indefinable fragments

Description: In the area of Prato Cipoloso, there are two small areas of minute fragments of bricks and tiles. The site is nearby Fosso Marangone river in the terrace on the river bend below the sharp terrain edge, about 100 m from villa AC028 (fig. A).

GPS: 42,075187; 11,863084

Bibliography: Gianfrotta 1972, 85.

Dating: Roman period

Elevation in metres: 145

AC157

Site type: Area of artefact scatters

Local Name: Poggio Pontoncino

Current state: pasture/garden

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks and other pottery indefinable fragments

Description: Area of the artefact scatters may be related to villa AC117, located on the same hill as AC157. The hill is disturbed by modern buildings (fig. A).

GPS: 42,06269; 11,863142

Bibliography: Gianfrotta 1972, 84.

Dating: Roman period

Elevation in metres: 175

AC158

Site type: separate finding

Local Name: Santa Marinella

Current state: modern buildings

Data Source: bibliography

Artefacts: The bust of a young man in marble

Description: The bust of a young man in marble was found in via Oberdan 42, Santa Marinella. The upper part of the torso remains; the nose is chipped. The state of preservation and the numerous traces of chisel make one doubt the authenticity. However, it could be an unfinished work, datable possibly to the first century AD.

GPS: 42,03640777; 11,84256111

Bibliography: Gianfrotta 1972, 84.

Dating: Imperial period

Elevation in metres: 22

AC159

Site type: Area of artefact scatters

Local Name: Santa Marinella

Current state: modern buildings

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks and other pottery indefinable fragments, fragments of Vernice near.

Description: Bastianelli identified an area of fragments and structures of stone walls in this position. Nowadays it is covered by modern buildings.

GPS: 42,039766; 11,844865

Bibliography: Gianfrotta 1972, 84.

Dating: Etruscan period and Republican period (4-1 BC)

Elevation in metres: 30

AC160

Site type: Area of artefact scatters

Local Name: Piscina

Current state: modern buildings

Data Source: bibliography

Artefacts: fragments of roof tiles and Roman bricks and other pottery indefinable fragments, fragments of Vernice nera,

Description: Bastianelli located an area of fragments and structures of stone walls. Nowadays it is covered by modern buildings.

GPS: 42,036761; 11,845657

Bibliography: Gianfrotta 1972, 84.

Dating: Etruscan period and Republican period (4-1 BC)

Elevation in metres: 20

AC161

Site type: Area of artefact scatters

Local Name: Fosso Cupo

Current state: modern buildings

Data Source: bibliography

Artefacts: fragments of pottery Vernice nera

Description: In the Fosso Cupo locality, there is a restricted Area of artefact scatters, perhaps sporadic, including some of the black-painted pottery. Probably, they may be the remains of funeral equipment of some tomb that was nearby.

GPS: 42,050535; 11,827883

Bibliography: Gianfrotta 1972, 119.

Dating: Etruscan period and Republican period (4-1 BC)

Elevation in metres: 30

AC162

Site type: settlement

Local Name: Quartaccia

Current state: coast

Data Source: bibliography

Artefacts: fragments of Villanova pottery

Description: Some anthropic layers were visible at the end of the 1950s, along the embankment to the sea, the materials relating to a few fragments, were mainly attributable to the reddish impart, probably of the Iron age. The stratifications contain Villanovian pottery fragments decorated with smooth cords, printed with fingerprints or with geometric motifs.

GPS: 42,041015; 11,904816

Bibliography: Gianfrotta 1972, 12.

Dating: Bronze and Iron age (Protovillanova ova and Villanova period)

Elevation in metres: 5

AC163

Site type: settlement

Local Name: Selciata

Current state: coast

Data Source: bibliography

Artefacts: fragments od Villanova pottery

Description: The settlement was identified thanks to stratigraphy in the escarpment of the sea; corresponding to the 58,6 km of the Via Aurelia. The dark layers related to the settlement were visible, with pottery and fragments of animal bones referring to the final Bronze period. He distinguished two different points of an outcrop of the material. The stratifications contain Villanovian pottery fragments decorated with smooth cords, printed with fingerprints or with geometric motifs.

GPS: 42,039352; 11,897231

Bibliography: Belardelli 2007, 49; Gianfrotta 1972, 12; Barbaranelli 1958-59, 219-224.

Dating: Bronze and Iron age (Protovillanova and Villanova period)

Elevation in metres: 2

AC164

Site type: tombs

Local Name: Fosso Castelsecco

Current state: modern buildings

Data Source: Archive SAEM

Artefacts: fragment of an amphora with an inscription.

Description: In 1991, A. Fantozzi identified two Etruscan tombs "alla cappucina", damaged by dredged works. There were only a few remains of human bones in the graves and no charity (except Bronze nails). At the tomb was a fragment of an amphora with an inscription. Fig. A: the planimetry from 1991 (arch. SAEM).

GPS: 42,039805; 11,885104

Bibliography: Fantozzi, A. Arch. SAEM 12, 6/ferb/1991.

Dating: Etruscan period

Elevation in metres: 8

AC165

Site type: settlement

Local Name: Volpelle

Current state: field/modern road

Data Source: bibliography

Artefacts: stone industry

Description: The accidental finding made by S.Bastianelli during terrain reconnaissance. The oldest settlement of the area is evidenced by the findings of the stone industry from Lower (1 600 000/1 300 000-120 000 BP) and Middle (120 000 - 35 000 BP) Paleolithic. Capuani described the presence of two types of stone industry findings: the Mousterian and the High Paleolithic.

The area covered about 20 ha. Fig. A: stone industry, Capuani 2001

GPS: 42,05815458; 11,82397948

Bibliography: Capuani 1981, 18; Maffei – Massimo – Sergio 2011, 60.

Dating: Palaeolithic

Elevation in metres: 20

AC167

Site type: villa

Local Name: Semaforo

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of pottery and other construction elements

Description: A sizeable Imperial villa may be part of AC103. DTM shows regular terracing in the terrain. The villa situates in the area of Etruscan necropolis del Semaforo.

GPS: 42,05065; 11,83501667

Bibliography: none

Dating: Imperial period

Elevation in metres: 75

AC168

Site type: greenhouse

Local Name: Semaforo

Current state: field

Data Source: reconnaissance

Artefacts: none

Description: There was possible to identify not natural terracing on DTM. Aerial photos show abandoned greenhouses.

GPS: 42,05685747; 11,84009875

Bibliography: none

Dating: modern period

Elevation in metres: 145

AC169_1

Site type: settlement

Local Name: Vignace

Current state: vegetation - Machia

Data Source: bibliography/reconnaissance

Artefacts: pottery fragments

Description: The residues of settlements from the Bronze and Iron Age are documented on the top of the hill above Fosso Vignace, nearby highway. The elevated position (fig. 162 A) provides a bright location with good access to water and views of the mainland and the sea. Above cultural layers from the Bronze and Iron Ages, there are residues of a Roman villa.

GPS: 42,0438739; 11,85602648

Bibliography: Belardelli 2007, 49; Gianfrotta 1973, 12; Di Gennaro 1988, 78.

Dating: Bronze and Iron age (Protovillanova ova and Villanova period)

Elevation in metres: 118

AC169_2

Site type: villa

Local Name: Vignace

Current state: vegetation - Machia

Data Source: reconnaissance

Artefacts: fragments of pottery

Description: The residues of settlements from the Bronze and Iron Age are documented on the top of the hill above Fosso Vignace, nearby highway. The elevated position (fig. 162 A) provides a bright location with good access to water and views of the mainland and the sea. Above cultural layers from the Bronze and Iron Ages, there are residues of a Roman villa.

GPS: 42,0438739; 11,85602648

Bibliography: none

Dating: Roman period

Elevation in metres: 118

AC170

Site type: villa

Local Name: Prato Cipoloso

Current state: pasture

Data Source: reconnaissance

Artefacts: fragments of pottery and other construction elements

Description: During reconnaissance organized by GATC, the relicts of the Roman villa were identified. The surface collections carried out in 2019 show the presence of relics of a Roman villa, located on the western slope. The terrace just below the top of the hill provided a clear leeward position with good access to water and views of the mainland and the sea. Fig. 163 A: DTM of the area.

GPS: 42,07482701; 11,86803591

Bibliography: none

Dating: Roman period

Elevation in metres: 220

AC171

Site type: separate finding

Local Name: Campo Sportivo

Current state: pasture

Data Source: reconnaissance

Artefacts: relicts of walls

Description: Uninterpretable relict of Roman walls were identified by GATC.

GPS: 42,03994363; 11,85531506

Bibliography: none

Dating: Roman period

Elevation in metres: 70

AC172

Site type: building

Local Name: Santa Marinella

Current state: wetlands

Data Source: aerial photograph

Artefacts: none

Description: The modern building was destructed by flood in 1981.

GPS: 42,0389222; 11,88265828

Bibliography: none

Dating: modern period

Elevation in metres: 2

AC173

Site type: pit

Local Name: Santa Marinella

Current state: modern buildings

Data Source: bibliography

Artefacts: fragments of a column, fragments of plasters, the head of an and various modern fragments, a slab of funerary marble

Description: At Km 59,6 of the Via Aurelia, near the Fosso di Castelsecco, in a private garden, some ancient marble fragments were set in a well: fragments of the column, the head of a little statue and various modern fragments. There is also a slab of marble (51 x 27,5 x 3,5 cm) engraved with a funerary inscription. The text is as follows: D. M. / Q (uinto). Vedio / Serene fecit / Vedia Ianuaria / mater filio / pientissimo / vix (it) an (nos) IIX / m (enses) V.

GPS: 42,04002826; 11,88451147

Bibliography: Gianfrotta 1972, 48.

Dating: Roman period

Elevation in metres: 5

AC174

Site type: Area of artefact scatters

Local Name: Santa Marinella

Current state: private garden

Data Source: bibliography

Artefacts: unknown

Description: Here, Bastianelli observed an increased concentration of fragments of Vernice nera and remains of masonry from dry-laid stones. The area is already fully built up since a period of Gianfrotta.

GPS: 42,03930245; 11,885864

Bibliography: non

Dating: Etruscan period and Republican period (4-1 BC)

Elevation in metres: 5

AC175

Site type: Area of artefact scatters

Local Name: Santa Marinella

Current state: modern buildings

Data Source: bibliography

Artefacts: unknown

Description: Here, Bastianelli observed an increased concentration of fragments of Vernice nera and remains of masonry from dry-laid stones. The area is already fully built up since the period of Gianfrotta, and its observation cannot be verified.

GPS: 42,03940212; 11,88633414

Bibliography: Gianfrotta 1972, 105.

Dating: Etruscan period and Republican period (4-1 BC)

Elevation in metres: 5

AC176

Site type: tombs

Local Name: Semaforo

Current state: pasture

Data Source: reconnaissance/bibliography

Artefacts: unknown

Description: Etruscan tombs, part of the necropolis of Semaforo (fig. 164 A). According to Bastianelli, it belonged to necropolis AC015_2.

GPS: 42,05576354; 11,83812232

Bibliography: Bastianelli 1988, 9.

Dating: an Etruscan period of Orientalizing and Archaic one

Elevation in metres: 139

AC177

Site type: tombs

Local Name: Semaforo

Current state: pasture

Data Source: reconnaissance/bibliography

Artefacts: unknown

Description: Etruscan tombs, part of the necropolis of Semaforo. According to Bastianelli, it belonged to necropolis AC015_2.

GPS: 42,05309855; 11,83659946

Bibliography: Bastianelli 1988, 9.

Dating: the Etruscan period of Orientalizing and Archaic one

Elevation in metres: 110

AC178

Site type: settlement

Local Name: Marangone

Current state: coast

Data Source: reconnaissance/bibliography

Artefacts: unknown

Description: The coastal profile is disturbed by the sea. There is visible the cultural layer, datable to the Bronze or Iron age. A few meters long and about 50 cm below the current surface, pottery fragments and carbons, and other archaeological material protrude in the profile. It is the coastal settlements of the Late Bronze Age, and the Early Iron Age studied in 1994. Fig. 165 A: studied area in 1994; B and C: current state of the site in 2019.

GPS: 42,053626; 11,819843

Bibliography: Di Gennaro 1992; Trucco- Di Gennaro- d'Ercol 1995.

Dating: Bronze and Iron age

Elevation in metres: 4

AC179

Site type: settlement

Local Name: Marangone

Current state: coast

Data Source: reconnaissance/bibliography

Artefacts: unknown

Description: The coastal profile is disturbed by the sea. There is visible the cultural layer, datable to the Bronz or Iron age. A few meters long and about 50 cm below the current surface, pottery fragments and carbons protrude in the profile. It is the coastal settlements of the Late Bronze Age, and the Early Iron Age studied in 1994. Fig. A: studied area in 1994; B and C: current state of the site in 2019.

GPS: 42,05320106; 11,82002441

Bibliography: Di Gennaro, F. 1992, Trucco- Di Gennaro- d'Ercol 1995.

Dating: Bronze and Iron age

Elevation in metres: 4

AC180

Site type: machine gun nest

Local Name: Marangone

Current state: coast

Data Source: reconnaissance

Artefacts: unknown

Description: The part of the coastal fortifications of II.WW. Fig. 166.

GPS: 42,052886; 11,820131

Bibliography: none

Dating: modern period

Elevation in metres: 2

AC181_1

Site type: villa

Local Name: Piana Di San Lorenzo

Current state: field

Data Source: reconnaissance/bibliography

Artefacts: A large area of clay fragments: standard terracotta and Terracotta comune e terra sigillata Aretine ware. Scattered on the ground are many bricks of opus spicatum, blocks of squared stone, fragments of opus signinum and lime. With the recent ploughing and having brought to light the base of a large grindstone of the almost circular form (1,62 x 1,80 x 0,28). Ola from the Archaic period, Archaic tiles.

Description: Gianfrotta published the villa. The site was rechecked in 2019. Villa Rustica locates in a flat terrace in the field in Pian di San Lorenzo. Its relics are regularly disrupted by ploughing. According to findings from the surface collection, the villa was built in the Archaic al period. Fragments of opus spicatum, roof tiles, fragments of amphorae and dolium are visible on the ploughed field. It is a Roman villa. In the accumulation of stones in the middle of the field, the treated building blocks are visible. Fig. 167 A: orthophoto, 2012.

GPS: 42,048143; 11,923582

Bibliography: Gianfrotta 1972, 32.

Dating: Roman Republican period

Elevation in metres: 38

AC181_2

Site type: settlement

Local Name: Piana Di San Lorenzo

Current state: field

Data Source: reconnaissance/bibliography

Artefacts: Ola from the Archaic period, first phase Archaic tiles.

Description: Findings from the Archaic period proved the pre-existing settlement.

GPS: 42,048143; 11,923582

Bibliography: Gianfrotta 1972, 32.

Dating: the Etruscan period of Orientalizing and Archaic period

Elevation in metres: 38

AC182_1

Site type: villa/estate

Local Name: Poggio San Lorenzo

Current state: field

Data Source: reconnaissance

Artefacts: Fragments of amphorae and roof tiles

Description: The vast slight declivity that rises from the coast offers a good view of the coast to the Pyrgi. At the height of 45 m a.s.l. is an area with an increased concentration of archaeological material. Fragments of amphorae and roof tiles from the Republic or Etruscan period prevail.

Fig. 167 A: orthophoto, 2012.

GPS: 42,0488052; 11,92438115

Bibliography: none

Dating: probably Etruscan period, surly Roman Republican period

Elevation in metres: 41

AC182_2

Site type: settlement

Local Name: Poggio San Lorenzo

Current state: field

Data Source: reconnaissance

Artefacts: Fragments of amphorae and roof tiles

Description: Findings from the Etruscan period proved the pre-existing settlement.

GPS: 42,0488052; 11,92438115

Bibliography: none

Dating: probably Etruscan period, surly Roman Republican period

Elevation in metres: 41

AC183

Site type: villa

Local Name: Poggio San Lorenzo

Current state: field

Data Source: reconnaissance

Artefacts: fragments of roof tiles, amphora fragments, opus spicatum, white mosaic, and marble block

Description: Vast area with a high concentration of archaeological material, which extends on the terrace of about 60 m a.s.l. indicates the presence of a large villa (fig. 168 A). In the terrain used as pasture and currently uncultivated, there are roof tiles, amphora fragments, opus spicatum, white mosaic, and one marble block (approx. 50x30x20 cm, fig. B). The position of the villa offers an excellent view of the surroundings and to the sea. In literature (e.g. Gianfrott 1972, or Bugli 2011), the place is referred to cult (church, oratorio). So far made reconnaissance does not confirm this claim.

GPS: 42,051828; 11,925153

Bibliography: none

Dating: Roman period

Elevation in metres: 60

AC184

Site type: villa

Local Name: Poggio San Lorenzo

Current state: vegetation - Machia

Data Source: reconnaissance

Artefacts: fragments of roof tiles, amphora fragments, Roman pottery etc.

Description: Dense vegetation covers a bigger part of the slopes of Poggio San Lorenzo. At 118 m a.s.l. spreads the platform. Relics of masonry, pottery fragments, and other archaeological material can be observed on the slopes around and this plateau (fig. 169 A, B). The place where the Roman villa used to be was later occupied by a Middle ages church, which gave its name to this area.

GPS: 42,054085; 11,922519

Bibliography: none

Dating: Roman period

Elevation in metres: 118

AC185

Site type: villa

Local Name: Poggio San Lorenzo

Current state: vegetation - Machia

Data Source: reconnaissance/bibliography

Artefacts: standard terracotta, fragments of amphorae, roof tiles

Description: Gianfrotta identified the site as an Area of artefact scatters. During the prospecting of 2019, there were identified relics of masonry, a large amount of archaeological material from the Roman period (fig. 170 B). Therefore, the site can be considered a villa. Ancient relict olive trees also point to this fact (fig. A).

GPS: 42,051597; 11,919618

Bibliography: Gianfrotta 1972, 33.

Dating: Roman period

Elevation in metres: 56

AC186_1

Site type: villa

Local Name: Casello

Current state: field

Data Source: reconnaissance/bibliography

Artefacts: worked marble, worked tuff, dolium, fragments roof tiles, standard terracotta, Terra Sigilata, Vernice nera

Description: At a level of 56.2 km of Via Aurelia, just behind the railway embankment, is a vast area with a high concentration of archaeological finds. Gianfrotta describes the plundering of the site by illegal excavations. They revealed the remains of mortar masonry, worked marble, worked tuff, dolium, fragments roof tiles, typical terracotta. Nowadays, even if a small part of this site is protected, there is a lot of archaeological material pull on the surface by regular agricultural activities. Bugli dates it back to pre-Roman till Imperial period and gives to this site also a function of Estate (fig. 171 A: Google Earth 2010; B: current state of the site 2019).

GPS: 42,03820925; 11,92325006

Bibliography: Gianfrotta 1972, 35; Bugli 2011, 91.

Dating: surly Roman Republican and Imperial period

Elevation in metres: 5

AC186_2

Site type: settlement

Local Name: Casello

Current state: field

Data Source: reconnaissance/bibliography

Artefacts: worked tuff, Vernice nera

Description: Findings from the Etruscan period proved the pre-existing settlement.

GPS: 42,03820925; 11,92325006

Bibliography: Gianfrotta 1972, 35; Bugli 2011, 91.

Dating: probably Etruscan period

Elevation in metres: 5

AC187_1

Site type: villa

Local Name: Fosso di Pontenuovo

Current state: field

Data Source: reconnaissance/bibliography

Artefacts: roof tiles, fragments of amphora, Vernice nera, standard terracotta, Bronze coin, Terra Sigilata.

Description: Gianfrotta identified Roman villa in the ploughed field at the 56,5 km of Via Aurelia. At present, a tiny part of the entire field is protected from ploughing. In the rest of the field, there are very concentrated archaeological fragments, and the remains of the villa can be identified in the vegetation. (fig. 171 A: Google Earth 2010; B: current state of the site 2019).

GPS: 42,040198; 11,923624

Bibliography: Gianfrotta 1972, 34.

Dating: Roman period

Elevation in metres: 13

AC187_2

Site type: villa

Local Name: Fosso di Pontenuovo

Current state: field

Data Source: reconnaissance/bibliography

Artefacts: roof tiles, fragments of amphorae, Vernice nera

Description: Findings from the Etruscan period proved the pre-existing settlement.

GPS: 42,040198; 11,923624

Bibliography: Gianfrotta 1972, 34.

Dating: the Etruscan classical period

Elevation in metres: 13

AC188

Site type: road

Local Name: Spolverino

Current state: pasture

Data Source: IGM1895/reconnaissance

Artefacts: none

Description: This part of road registered on yet on IGM 1895 was abandoned before 1950 and replaced by a different way coming from the north (fig. 172 A: relicts of the road on DTM; B: current state of vegetation that covered site).

GPS: 42,071389; 11,878331

Bibliography: none

Dating: modern period

Elevation in metres: 242

AC189

Site type: road

Local Name: Spolverino

Current state: pasture

Data Source: DTM/reconnaissance

Artefacts: none

Description: DTM shows anomalies interpreted like an abandoned road. Probably it is the modern road used temporarily. Road in none registered on aerial photographs from 1950. It existed between 1954 and 2002. Fig. 172 A: relicts of the road on DTM; B: current state of vegetation that covered site.

GPS: 42,071413; 11,880676

Bibliography: none

Dating: modern period

Elevation in metres: 200

AC190

Site type: quarry

Local Name: Prato Cipoloso

Current state: pasture

Data Source: DTM/reconnaissance

Artefacts: none

Description: There are two relicts of clay quarry on the DTM and aerial photos from 1950 (fig. 173 A). Fig. B: DTM of the area.

GPS: 42,07319368; 11,8757427

Bibliography: none

Dating: updatable

Elevation in metres: 207

AC191

Site type: customhouse

Local Name: Doganella

Current state: pasture

Data Source: CTRN

Artefacts: none

Description: The Local Name: indicates a small customs office. There are historical paths and watering places. Possibly, there was a customs or toll booth in the past.

GPS: 42,08535161; 11,91765022

Bibliography: none

Dating: updatable

Elevation in metres: 260

AC192

Site type: villa

Local Name: Colonia Pio X

Current state: private garden

Data Source: bibliography

Artefacts: none

Description: At 56 km Via Aurelia towards the sea, relicts of Roman masonry were seen in the past. Now the location is in a private garden. Even Gianfrotta no longer observed any such relicts

GPS: 42,0353589; 11,92437332

Bibliography: Gianfrotta 1972, 33.

Dating: Roman period

Elevation in metres: 2

AC193

Site type: church

Local Name: Poggio di San Lorenzo

Current state: vegetation - Machia

Data Source: bibliography

Artefacts: none

Description: There is supposed to be relicts of abandoned church San Lorenzo. Gianfrotta located it closer to Fontanile di San Lorenzo. During reconnaissance in 2019, there were no relicts visible in the area indicated by him. Only relicts were observed on the highest terrace of the hill. Such a location would correspond with the place of the church. After the transformation from simple fund management into a political-administrative body between the 7th and 8th centuries, the popes acquired all state assets in the territory of the Papal States. Pope Leo IV, in a document from 854, granted to the monastery of San Martino the assets of the monastery of San Sebastiano in the territory of the diocese of Centumcellae, between them was also the church of San Lorenzo and the oratory of San Lorenzo. It is the last document that mentioned the Massa Liciniana, probably due to the Saracen raids that depopulated the Lazio coast north of Rome.

The territory of the current Santa Severa Nord was then part of the Feud of Carcari. The fiefdom of Carcari consisted of a fortress with an adjoining settlement where more than a hundred people lived. It established on salt consumption, on great importance in the Papal State of which it was a part. Various historical documents mention that it bordered to the south by Feud of Santa Severa and the east with the Feudo del Sasso. The name Carcari is referable to the exploitation of calcareous material in the place where calcite predominates. This mineral was used in the ancient "carcare" - the kilns for the production of lime. Carcari was mentioned for the first time in 1066 in a document concerning the donation of the church of S. Lorenzo to the Abbey of Farfa by Count Raniero, son of Sassone, and his wife Stefania to redeem their souls. The area used to have the toponyms Carcari according to the owners. A. Maffei proposed the position close to the Fosso Eri or Chiesaccia (evidenced on the map 1:10.000 of Estate of Santa Severa in the period of Pio in the Istituto di S.Spirito). Nearby the Fontaine S.Lorenzo there was a fragment of Middle ages stone wall visible in 80'. Some documents mentioned even Castel of Carcari. Its position is also unclear. Fig. 174 A: Position of mediaeval structures, Maffei 1986.

GPS: 42,05417353; 11,92207698

Bibliography: Gianfrotta 1972, 33; Maffei 1986, 33.

Dating: Middle ages period

Elevation in metres: 115

AC194

Site type: bridge

Local Name: Fosso Rio Fiume

Current state: modern construction

Data Source: bibliography

Artefacts: none

Description: In 1913, Anziano could still observe the relics of the construction of the stone bridge that dates back to the Roman era. Gianfrotta already stated in 1972 that the reconstruction of Via Aurelia covered the last traces of this bridge. At present, the river bed is paved, and no archaeological components can be observed. The bridge has been continuously modified since the Roman period over a long time until today's form.

GPS: 42,03497462; 11,92778666

Bibliography: Anziani 1913, 185; Gianfrotta 1972, 34.

Dating: Roman, Middle ages, Post-Medieval and Modern period

Elevation in metres: 7

AC195

Site type: villa

Local Name: Santa Marinella

Current state: garden

Data Source: bibliography

Artefacts: unknown

Description: Junio Bugli identified Villa Rustica at this point. He dated it from pre-Roman period to Republican period.

GPS: 42,03504481; 11,86251489

Bibliography: Bugli 2011, 91.

Dating: Roman Republican period

Elevation in metres: 17

AC196

Site type: aqueduct

Local Name: Via IV Novembre 12

Current state: modern construction

Data Source: Archive SAEM

Artefacts: none

Description: In archive SAEM there are notes about relicts of Roman bridge and aqueduct written by Arnando Fantozzi. Fig. 175 A: the section of the aqueduct; B: the location; both according to Fantozzi, Arch. SAEM.

GPS: 42,03732963; 11,86741581

Bibliography: Fantozzi Arch. SAEM 5628 29/set/1977.

Dating: Roman period

Elevation in metres:20

AC197

Site type: unidentifiable structure

Local Name: Chiaruccia

Current state: coast

Data Source: Archiv SAEM

Artefacts: fragments of pottery

Description: F. Di Gennaro identified settlement structure from Middle Bronze Age datable to BM 1-2 and Early Iron Age. Fig. 176 A: Bronze age settlements, Di Gennaro 1992.

GPS: 42,032861; 11,83257098

Bibliography: Belardelli et al 2007, 46; Di Gennaro 1988, 78; Di Genaro 1992; Morreti, Arch. SAEM MBAC-SBA-EM N.8882 del 27/09/2010.

Dating: Bronze and Iron (Protovillanova) age

Elevation in metres: 2

AC198

Site type: unidentifiable structure/ drainage

Local Name: Volpelle, Via Perugia

Current state: garden

Data Source: Archive SAEM

Artefacts: fragments of pottery

Description: In the SAEM archive is a finding report of preliminary archaeological research, which revealed two linear structure of stone construction, interpreted as anti-flood measures from the Roman era. Fig. 177 A: the position of the structure; B: the structure in situ; both Arch. SAEM.

GPS: 42,051797; 11,820965

Bibliography: Possenti, Arch. SAEM 3387 34.19.07/19.27; 12/apr/2012.

Dating: Roman period

Elevation in metres: 5

AC199

Site type: aqueduct

Local Name: Chiaruccia

Current state: parking

Data Source: Archive SAEM

Artefacts: none

Description: Archive SAEM - Inhabitants of Zona Alibrandi località Chiaruccia and members of Archaeological group asked SAEM to control the construction of communal parking in 1994. In holes made by excavator, there were relicts of Roman aqueduct. There is more information about the process available at the moment.

GPS: 42,033546; 11,833696

Bibliography: Arch. SAEM 6738 22/giu/1994.

Dating: Roman period

Elevation in metres: 10

AC200

Site type: tombs

Local Name: Marangone

Current state: beach

Data Source: Archive SAEM

Artefacts: none

Description: In the SAEM archive, there is a notice of the discovery of an undated tomb near other tombs, previously dug by O.Toti. The tomb located on the coast on the left side of Via Aurelia. Fig. 178 A: The planimetry of tomb 1, Archive SAEM.

GPS: 42,05677105; 11,81955717

Bibliography: Arch. SAEM no protocol number.

Dating: updatable

Elevation in metres: 5

AC201

Site type: tombs

Local Name: Due Fratte

Current state: modern buildings

Data Source: Archive SAEM

Artefacts: none

Description: In the Archive SAEM, there are notes about the observation of Arnando Fantozzi of illegal excavations of two Etruscan tombs "a cassetta" constructed from local stone "arenaia". There were no artefacts left. The position is approximate. In research rapport, there is no exact position.

GPS: 42,04552096; 11,82401866

Bibliography: Fantozzi, A. Arch. SAEM 29, 16/ferb/1989.

Dating: the Etruscan period of Orientalizing and Archaic one

Elevation in metres: 2

AC202_1

Site type: necropolis

Local Name: Smerdarolo

Current state: garden

Data Source: bibliography

Artefacts: see literature for findings

Description: During excavation, a phase of frequentation from the sixth century was found — this finding located inside the original rooms of the Imperial villa that were rebuilt. The location is known as the villa of Casale Smerdarolo. It located outside the research area, taking into account the current line of stream Fosso Rio Fiume. There also tombs from the late Roman period were found. Fig. 179 A: the planimetry of the site, from Gazzetti, Zafferero 1990.

GPS: 42,0367917; 11,93193821

Bibliography: Bugli 2011, 91; Gianfrotta 1972, 34; Felici et al. 1990; Vitali Rosati et al. 1992; Nardi 1993, 503; Nardi-Combescure 2002, 146., Vallelonga 2012, 176.

Dating: Roman Imperial and Middle ages period

Elevation in metres: 13

AC202_2

Site type: villa

Local Name: Smerdarolo

Current state: garden

Data Source: bibliography

Artefacts: see literature for findings

Description: The excavation revealed a Roman villa.

GPS: 42,0367917; 11,93193821

Bibliography: Bugli 2011, 91; Gianfrotta 1972, 34; Felici et al. 1990; Vitali Rosati et al. 1992; Nardi 1993, 503; Nardi Combescure 2002, 146., Vallelonga 2012, 176.

Dating: Roman Imperial and Middle ages period

Elevation in metres: 13

AC202_3

Site type: Farmstead

Local Name: Smerdarolo

Current state: garden

Data Source: bibliography

Artefacts: see literature for findings

Description: The Farmstead was constructed in the area where the Roman Imperial villa extended.

GPS: 42,0367917; 11,93193821

Bibliography: Bugli 2011, 91; Gianfrotta 1972, 34; Felici et al. 1990; Vitali Rosati et al. 1992; Nardi 1993, 503; Nardi Combescure 2002, 146; Vallelonga 2012, 176.

Dating: Roman Imperial and Middle ages period

Elevation in metres: 13

AC203

Site type: villa

Local Name: Piana Di San Lorenzo

Current state: pasture

Data Source: bibliography

Artefacts: unknown

Description: Junio Bugli identified the Villa Rustica from pre-Roman period to Republican period.

GPS: 42,04028581; 11,92540307

Bibliography: Bugli 2011, 91.

Dating: Roman Republican period

Elevation in metres: 8

AC204

Site type: villa

Local Name: Piana Di San Lorenzo

Current state: pasture

Data Source: bibliography

Artefacts: unknown

Description: Junio Bugli identified the Villa Rustica from pre-Roman period to Republican period.

GPS: 42,04338463; 11,92481429

Bibliography: Bugli 2011, 91.

Dating: Roman Republican period

Elevation in metres: 20

AC205

Site type: villa

Local Name: Piana Di San Lorenzo

Current state: pasture

Data Source: bibliography

Artefacts: unknown

Description: Junio Bugli identified the Villa Rustica from pre-Roman period to Republican period.

GPS: 42,04146336; 11,92992735

Bibliography: Bugli 2011, 91.

Dating: Roman Republican period

Elevation in metres: 10

AC206

Site type: villa/estate

Local Name: Olmara

Current state: garden

Data Source: bibliography

Artefacts: unknown

Description: Junio Bugli identified Villa and Estate. He supposed it lived from Republican to Imperial period. Recently, it not was possible to verify his statement because of a private garden on the site.

GPS: 42,0530965; 11,85576985

Bibliography: Bugli 2011, 91.

Dating: Roman period

Elevation in metres: 170

AC207

Site type: villa

Local Name: Santa Maria Morgana

Current state: field

Data Source: bibliography

Artefacts: unknown

Description: Junio Bugli identified the Villa Rustica, he supposed Dating to the Republican period.

GPS: 42,05128811; 11,86283209

Bibliography: Bugli 2011, 91.

Dating: Roman Republican period

Elevation in metres: 120

AC208

Site type: villa

Local Name: Ponton del Castro

Current state: field

Data Source: crowdsourcing

Artefacts: unknown

Description: There is supposed to be a Roman villa. In literature are no mentions, data from Archive SAEM are not available for the moment.

GPS: 42,040277; 11,846425

Bibliography: none

Dating: Roman period

Elevation in metres: 25

AC209

Site type: tower

Local Name: Torre Chiarucia

Current state: military area

Data Source: bibliography

Artefacts: unknown

Description: It was built in the 16th century for the control of ships movement. It was part of the defensive system. Since 1930 there was G.Marconi's radio station. The original tower was blown up by the Germans on 1 February 1944. The ruins that are still clearly visible today. There is the military meteorological and radar station, that is why it is not possible to visit o document it. Fig. 180 A: The Alinary photo, around 1900.

GPS: 42,032358; 11,832798

Bibliography: Nibby 1837.

Dating: Post-Medieval

Elevation in metres: 5

AC210

Site type: road

Local Name: Fosso Rio Fiume

Current state: modern construction

Data Source: bibliography

Artefacts: unknown

Description: Relicts of paved road leading to the Poggio Smerdarolo and Piana San Lorenzo were identified here. Probably, this branch of Via Aurelia was in usage until the Middle ages time.

GPS: 42,03584; 11,925678

Bibliography: Gianfrotta 1972, 33.

Dating: Roman andMiddle Ages period

Elevation in metres: 5,6

AC211

Site type: road

Local Name: Quartaccia

Current state: modern construction

Data Source: bibliography

Artefacts: unknown

Description: Relicts of paved road leading to Selciata and Tolfa at km 57,3.

GPS: 42,040625; 11,911439

Bibliography: Gianfrotta 1972, 37.

Dating: Roman andMiddle Ages period

Elevation in metres: 5

AC212

Site type: road

Local Name: Fosso Castelsecco

Current state: modern construction

Data Source: bibliography

Artefacts: unknown

Description: Relicts of paved road leading to Castelsecco and Viterbo. Along with it, other branches were leading to settlements there, km 59,8.

GPS: 42,040423; 11,883255

Bibliography: Gianfrotta 1972, 10.

Dating: Roman andMiddle Ages period

Elevation in metres: 6

AC213

Site type: bridge

Local Name: Vignace

Current state: modern construction

Data Source: bibliography

Artefacts: unknown

Description: In 1910, one Roman bridge passing ancient Fosso delle Vignace was restored at the km 62,3. Fig. 181: the bridge on the documentation of SAEM.

GPS: 42,033217; 11,855273

Bibliography: Gianfrotta 1972, 82.

Dating: Roman and Middle Ages period

Elevation in metres: 5

AC214

Site type: road

Local Name: Marangone

Current state: modern construction

Data Source: bibliography

Artefacts: unknown

Description: At the level of Torre Marangone, there was one branch of secondary road system connecting Aurelia with settlements located inland, km 67.

GPS: 42,05688; 11,819542

Bibliography: Gianfrotta 1972, 146.

Dating: Roman and Middle Ages period

Elevation in metres: 4

Elevation in metres: 312

7 Archaeological dataset interpretations

The assessment resulted in a list of 214 archaeological sites subdivided into 256 archaeological components (fig. 28). Out of these, 154 archaeological components²⁵ have been published and documented by SAEM. There were no mentions in the literature of the remaining 102 components²⁶; therefore, I consider them newly identified. 246 components I could assign a dating; only ten was undatable.

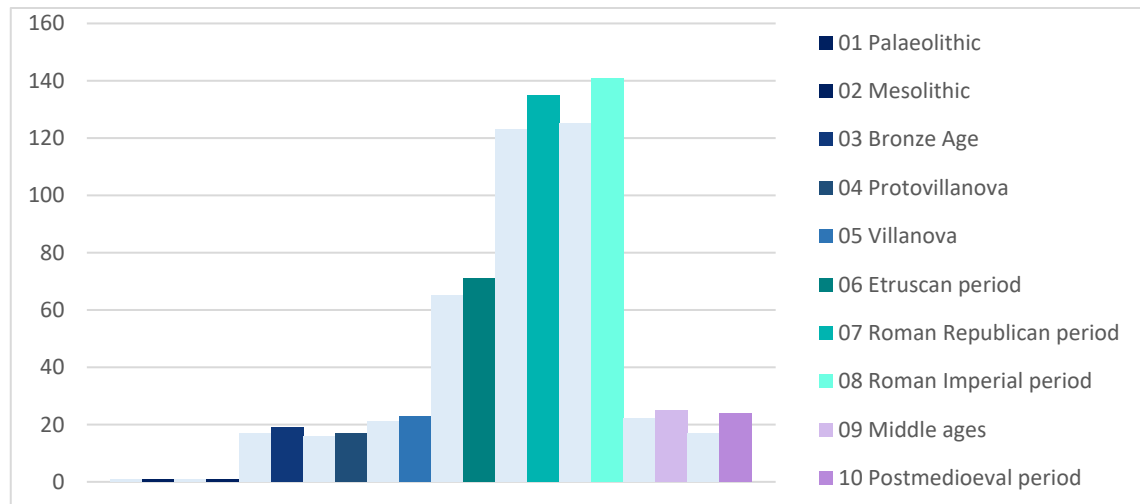


Fig. 28: The count of analysable components for the period and the number of all archaeological components for the period.

The catalogue includes a detailed description with a list of the most important artefacts, the dating and GPS coordinates for all of them. From the chronological point of view, components were divided into 11 groups. For the creation of settlement models, 236

²⁵ Published components: AC001_1, AC001_2, AC010, AC013_1, AC013_2, AC014, AC015_1, AC015_2, AC019_1, AC019_2, AC021_1, AC021_2, AC022, AC023_1, AC023_2, AC023_2, AC037_1, AC037_2, AC038_1, AC038_2, AC039_1, AC039_2, AC043_1, AC043_2, AC044, AC045, AC047, AC048, AC050, AC051, AC053, AC057, AC061, AC062, AC064, AC065, AC066_1, AC066_2, AC067_1, AC067_2, AC067_3, AC068_1, AC068_2, AC068_3, AC068_4, AC069_1, AC069_2, AC070, AC071_1, AC071_2, AC071_3, AC071_4, AC071_5, AC071_6, AC080, AC094, AC100, AC101, AC102, AC103, AC104, AC105, AC106, AC107, AC108, AC110, AC111, AC112, AC113, AC114, AC125, AC126_1, AC126_2, AC127, AC128, AC129, AC130, AC131, AC132, AC133, AC134, AC135_1, AC135_2, AC136, AC137, AC138, AC139, AC140, AC141, AC142, AC143, AC144, AC145, AC146, AC147, AC148, AC149, AC150, AC151, AC152, AC153, AC154, AC155, AC156, AC157, AC158, AC159, AC160, AC161, AC162, AC163, AC164, AC165, AC166, AC169_1, AC173, AC174, AC175, AC176, AC177, AC178, AC179, AC181_1, AC181_2, AC185, AC186_1, AC186_2, AC187_1, AC187_2, AC192, AC193, AC194, AC195, AC196, AC197, AC198, AC199, AC200, AC201, AC202_1, AC202_2, AC202_3, AC203, AC204, AC205, AC206, AC207, AC209, AC210, AC211, AC212, AC213, AC214.

²⁶ Components with no mentions in the literature: AC003, AC004, AC005, AC006_1, AC006_2, AC007_1, AC007_2, AC008_1, AC008_2, AC009_1, AC009_2, AC011, AC012, AC012, AC016, AC017_1, AC017_2, AC018, AC020, AC024, AC025, AC026, AC027_1, AC027_2, AC028, AC029, AC030, AC031, AC032, AC033, AC034, AC035, AC036, AC040, AC041, AC042, AC046, AC049, AC052, AC054, AC055, AC056, AC058, AC059, AC060, AC063, AC072, AC073_1, AC073_2, AC074, AC075, AC076, AC077, AC078, AC079, AC081, AC082_1, AC082_2, AC083, AC084, AC085, AC086, AC087, AC088, AC089, AC090_1, AC091, AC092, AC093, AC095, AC096, AC097, AC098, AC099, AC109, AC115, AC116, AC117, AC118, AC119, AC120, AC121, AC122, AC123, AC124, AC167, AC168, AC169_2, AC170, AC171, AC172, AC180, AC182_1, AC182_2, AC183, AC184, AC188, AC189, AC190, AC191, AC208, AC215.

archaeological components were relevant and analysable. Each of them was counted as a separate item for each chronological category in which it existed. The components composed of multiple archaeological components (for example, *Castrum Novum* AC071_1-6) were counted as a unique item for each chronological group.

The examination of the primer data sources offers insight into their worth (fig. 29). The essential source, for the area of the *Ager Castronovano*, was the bibliography that brought the list of 147 components. All these components were verified by other methods in order to deepen their knowledge. The second most valuable data source was the field survey that has led to the identification of 139 components. The 50 components identified by reconnaissance overlapped with already published sites. The 35 components were identified through the crowdsourcing, from which seven had been already published, and 28 were identified newly. The weakest data sources were the analyses of historical aerial photos from 1950 and 1954 and of the contemporary aerial photos together with analyses of CTRN. The same happened with seven components identified through crowd sourcing and one component from CTRN. The various data sources are available for the researched area. The most important one is still reconnaissance. Others, like crowd sourcing, historical map analysis, historical or modern aerial photos analysis or DTM analysis are the important critical verification methods. The used tools correspond to the conditions of the realization of the research. It was limited, e.g. by the financial availability of the methods or the period of the recognition. It excluded the use of geophysical methods or aerial archaeology. Another limit was the access to the Archive SAEM that was not accessible in the period of the realization.

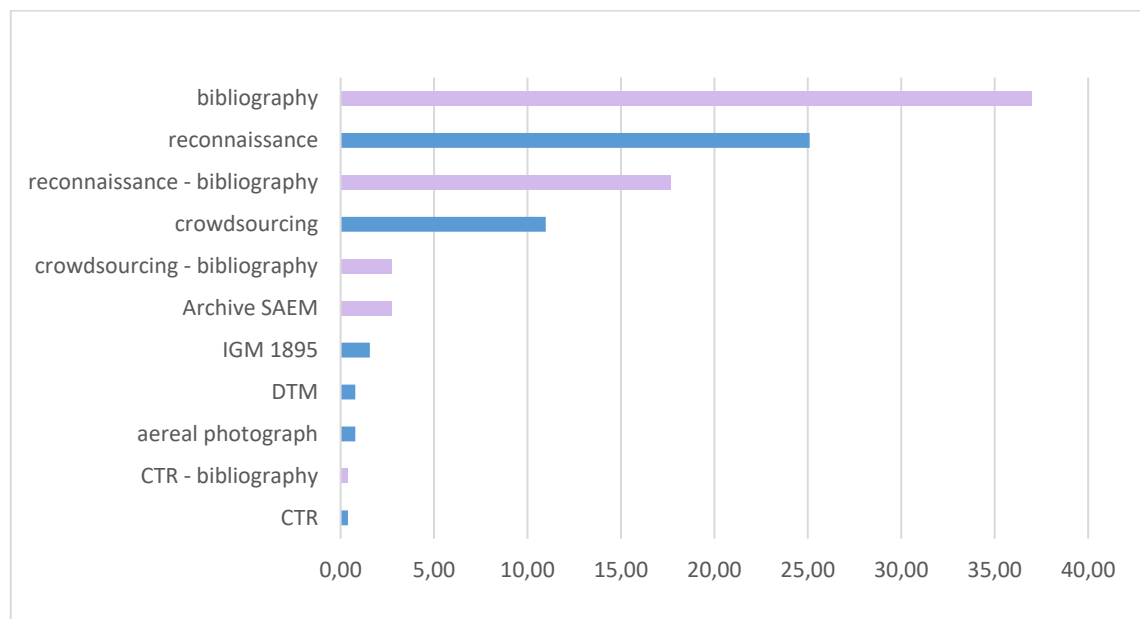


Fig.29: The percentages show the profitability of primary data sources.

7.1 Settlement components - character and development

The following synthesis characterises the development of archaeological components. It summarizes detailed descriptions given in the catalogue. The fig. 38 shows the overview of components types.

7.1.1 Housing components

Settlement: From the definition, the settlement is a locality or populated place in which people live. The complexity of a settlement can range from a small number of dwellings grouped to the largest of cities with surrounding urbanized areas. Settlements may include hamlets, villages, towns and cities. A settlement conventionally includes its constructed facilities such as roads, enclosures, field systems, boundary banks and ditches, ponds, manor houses, moats and churches. In the *Ager Castronovano*, there are 27 settlements dated to Palaeolithic²⁷, Mesolithic²⁸, Bronze²⁹ and Iron³⁰ Age, Etruscan³¹ and Roman³² period. Most of them had been identified through literature or surface surveys. They are usually manifested by increased concentration of fragments on the surface. Observing the changes caused by natural influences is an effective method of study. Natural erosion on the slopes and the formation of significant erosion grooves on steep slopes, as well as coastal erosion caused by sea-level rise, have revealed most of the settlements in the researched area. None of them was excavated; therefore, there is no closer information about their composition or planimetry.

7.1.2 Residential components

Oppidum³³: The term describes the fortified settlement constructed on a distinct hill with natural defensive elements that were a specific component of the Bronze, Iron Age or Etruscan settlement structure. For the Etruscan period, there is the term *Pagus* also. The Latin term came from the Roman administrative vocabulary. It meant a rural territorial circumscription (i.e. outside the city limits), of pre-Roman and then Roman origin, centred on places of local pagan worship first and then Christian (OLD 2012, 1283). The prediction model identified two oppida **AC040** and **AC060**, but the dense vegetation has not allowed verifying this hypothesis. Three oppida in the researched area are known from the literature. The **AC010** Ponton del Castrato. In 2018 and 2019, during the survey, the relics of the fortifications were identified, consisting of

²⁷ AC165.

²⁸ AC135.

²⁹ AC013, AC017, AC018, AC019, AC038, AC070, AC162, AC163, AC178, AC179, AC073, AC169

³⁰ Protovillanovan period: AC013, AC017, AC018, AC038, AC039, AC070, AC071, AC162, AC163, AC169, AC178, AC179; Villanovan period: AC013, AC017, AC018, AC035, AC038, AC039, AC070, AC071, AC162, AC163, AC169

³¹ AC006, AC007, AC009, AC013, AC017, AC018, AC019, AC021, AC027, AC035, AC037, AC039, AC043, AC071, AC082, AC143, AC162, AC163, AC181.

³² Roman Republican period: AC013, AC035, AC039, Roman Imperial period: AC013, AC015, AC035, AC039.

³³ AC010, AC023, AC040, AC060, AC015.

large, dry-laid blocks, which correspond to building technology of that period. In the dense vegetation of Mediterranean *macchia*, stone structures and worked building blocks can be identified. Modern buildings and asphalt roads that pass through apparently absorbed part of *Castra*. Under the walls, there is a terrace with a natural spring on the site. **AC023** The hillock was already inhabited in the Iron Age (Toti 1990a, 157-158). They used a steep natural slope to defend itself. It can be assumed that there was a wall reinforced by a dry moat (Gianfrotta 1972, 49). Only site **AC015** Castellina del Marangone is the object of the systematic archaeological excavation. During the archaeological excavation, a city wall dating back to the 7th century BC was discovered. A wall consisting of a foundation base, built-in boulder with exposed face blocks facing downstream with internal re-filling of earth and stones. The typical Etruscan house had a rectangular layout divided into more rooms. The building had a stone foundation and mud bricks walls. Burnt tiles covered the roof. The courtyard with a paved surface surrounded it. Several recessed cisterns of various sizes were identified in the area of the oppidum, providing a source of water, which was supplied to them by a system of runoff channels. Some of the buildings had traces of the metalworking, textile production etc. In the oppidum, area were identified two buildings of square layout, dating from the 6th century. Burnt tiles covered the roofs, and terracotta reliefs adorned the facade. It was a political-administrative or sacral building. Constructional changes occurred around five centuries BC. The main road intersecting the oppidum area along with the water channel have been preserved. Two more paved paths were constructed. It may be a testament to the urban system (*strigas*), which was developed in later periods. Archaeological evidence also suggests the presence of an Etruscan temple, which has not yet been discovered (Prayon 2016). Both oppida ceased to exist within 3rd centuries BC after the Roman conquest. This event is evidenced by the findings of lead Roman cartridges, called *giande missili*, found in the area of both oppida.

Castrum³⁴: In the Roman Republic and the Roman Empire, the Latin word *castrum* was a structure, or plot of land, used as a fortified military camp. A *castrum* was designed to house and protect the soldiers, their equipment and supplies. It had a unified ground plan composed of a wall, moats, barracks, streets, gates and a central square (forum) and other elements. In the *Ager Castronovano*, they were founded in the 3rd century BC with progressive Romanization to maintain control of the newly acquired territory. In addition to the fortified core, there was also an economic background with the civil population, providing supplies. In the researched area, there two *castra* had been identified - **AC071** *Castrum Novum* and **AC143** *Punicum*. The first inhabitants were poor Romans, who were given modest land here. The area soon became

³⁴ AC071, AC143.

lucrative and attractive. Luxurious Villas Marittima replaced both castra. The only source of knowledge about **AC143** is a historical map of Tabula Peutingeriana. On the contrary, **AC071** is the subject of systemic archaeological research.

Castle³⁵: The type of fortified structure built during the Middle Ages predominantly by the nobility or royalty and by military orders, usually it considers being the private fortified residence of a lord or noble. This is distinct from a not fortified palace or from a fortress, which was not always a residence for royalty or nobility; and from a fortified settlement, which was a public defence – though there are many similarities among these types of construction. In the researched area, there were two castles identified. First one, **AC068** has never been abandoned. It has undergone a complex development and is still owned by the Odescalchi family. It is located right on the coast in the Capo Linaro area. It was accompanied by the harbour that disappeared under the modern construction. The second one, **AC021**, is entirely defunct. It was built on a hill in the middle of the valley of the Valle Marina, and took its name, Castello di Vallis Marinae. It was probably founded in the 12th to 13th centuries and became dilapidated in the second half of the 15th century. Until now, the relicts of masonry are visible on the spot. The acquired data allowed me to understand the plan of the castle. The essential part was a high tower, located in the northern part, at the highest point of the hill. It was possible to control the long-distance road leading along the eastern slope of the castle hill, the access road to the castle gate, the narrow neck through the rock just below the tower, and another section of the commercial road to the ford through Fosso di Castelsecco from there. Preserved relics show that the tower had a square ground plan. The north side of the tower was horizontal with the neck, as mentioned earlier. The width of the outer walls of the tower was two meters. A residential palace adjoined the tower. In the northern part of the palace, there use to be a small side gate. The remains of the lining are still visible. The southern part of the castle complex was surrounded by a fortification wall that fell apart in the southern part. Without further field research, it cannot be confirmed that the scattered debris in the southern part of the castle grounds comes from other buildings, such as farm buildings or stables. A gate closes the entire castle complex on the east side; it was entered from the north on the slope of the castle hill directly below the castle tower. A close analogy to the constructional appearance of the castle is probably Castel Cardinale near Viterbo.

³⁵ AC021, AC068.

Tower³⁶: In the researched area, there were two of this site type constructed in the Middle Age and the Post-Medieval period. The construction was designed to observe movement on land or water. It was the part of the complex system with multiple points visible to each other. The towers in *Ager Castronovano* were constructed for the same purposes. **AC023** is known mainly from the literature that described “stone tower serving for observation of roads and coast”. After macchia fire in 2017, it was possible to identify relicts of the stone construction of the rectangular layout high about 50 cm. No findings from the Middle Ages were made. **AC209** was constructed in the Post-Medieval period on the coast on the peninsula called Capo Linaro. It was destroyed during bombardment The Second World War. Its relicts are preserved, but not accessible due to their location in the military area.

Building³⁷: The research revealed two closely unidentified structure of modern dating. They were identified through the historical and contemporary aerial photo analyses.

7.1.3 Production components

Estate³⁸: For this thesis, the term referred to a smaller agricultural structure that was established in the Etruscan period. The publications also use the terms *Fattoria*. The research revealed 16 estates in the area. They located on the anthropogenic or natural terraces. Six of them continued to be used up to the Republican period. The field survey identified all of them. The estates were succeeded by the *Villae Rustica* built on the same sites in the Republican period. Two were known from the literature but have never been excavated. The main archaeological indicators of this site type were comparatively dense surface scatters of pottery and building material. They include both Etruscan both Republican material.

Villa³⁹: There are two main categories of villas: Republican and Imperial villas, according to the period of the foundation. There were efforts to describe the *Republican Villa* as being modest, dissimilar, and smaller (*Ager Castronovano* included 61 of them). On the contrary, the term

³⁶ Middle Ages: AC023; Post-Medieval period: AC023, AC209.

³⁷ AC098, AC172.

³⁸ Estates founded in the Etruscan period: AC001, AC012, AC022, AC038, AC045, AC046, AC049, AC062, AC185, AC186, AC187, AC195, AC203, AC204, AC205; with occupation in the Roman Republican period: AC027, AC159, AC160, AC161, AC174, AC175.

³⁹ The Roman Republican Villas: AC001, AC006, AC007, AC009, AC012, AC013, AC019, AC022, AC028, AC029, AC037, AC038, AC045, AC046, AC049, AC050, AC062, AC065, AC066, AC068, AC071, AC073, AC074, AC077, AC078, AC082, AC087, AC101, AC102, AC103, AC106, AC107, AC108, AC111, AC112, AC113, AC114, AC115, AC116, AC117, AC121, AC139, AC169, AC170, AC181, AC183, AC184, AC185, AC186, AC187, AC192, AC195, AC203, AC204, AC205, AC207, AC208, AC120, AC121, AC182, AC206; The villas with occupation in the Roman Imperial period: AC001, AC006, AC007, AC009, AC012, AC013, AC017, AC019, AC022, AC023, AC028, AC029, AC038, AC045, AC046, AC047, AC048, AC049, AC050, AC051, AC052, AC053, AC054, AC056, AC062, AC065, AC066, AC067, AC068, AC069, AC071, AC073, AC074, AC077, AC080, AC082, AC087, AC100, AC101, AC102, AC103, AC104, AC105, AC106, AC107, AC108, AC110, AC111, AC112, AC113, AC114, AC115, AC116, AC117, AC139, AC167, AC169, AC170, AC183, AC184, AC185, AC186, AC187, AC192, AC208, AC027, AC059, AC120, AC121, AC206.

Imperial Villa refers to large, splendidly decorated villas, founded at the end of the Republic or the beginning of the Imperial period (*Ager Castronovano* included 70 of them). From the study area, the following villas can be compared: **AC067** Grottacce had an area of over 6000 m², while the **AC050** villa had an area of 1357 m². It is therefore clear that the individual villas differed from each other. Villa delle Guardiole **AC071_2** had at least 529 m², and **AC051** had 1177 m². The publications distinguish several more categories of villas according to their location, size, function and importance. Its precise size and composition varies between regions and develops over time. *Villa Rustica* most often denoted a complex that replaced agricultural structures of the Etruscan period (Estate, Fattoria etc.) or was established *ex novo*. During the middle and late Republic periods, the term *Villa Rustica* meant to describe the agricultural structure with the residential part. From the 2nd century BC, the term villa also referred to country houses, where the wealthy Romans resorted to resting. The differences between these functions were blurred as the villa changed owners. It is not possible to identify these differences by non-destructive methods. The spectacular architecture and luxurious equipment was the primary difference between the villa and the original agricultural estate. The greatest boom of villas came in the imperial period. They were the product of a prosperous farming, and their operation has been maintained from a thriving economy.

Another type is the *Villa Suburbana*, which was located on the outskirts of towns; and the *Villa Maritima*. It referred to structures built along the coast, often associated with an economy based on marine resources (Adkins – Adkins 2012, 162; Goodchild 2007, 56; Witcher 2006). The layout of the villas varied depending on the terrain configuration, owner's tastes and builder's abilities. In general, villa consisted of contained these parts: *atrium* – formal entrance hall; *ala* – two parts opening from the atrium; *cubiculum* – small room or bedroom; *culina* – kitchen; *exedra* – garden room; *peristylum* – colonnaded garden; *taberna* – shop; *tablinum* – reception or meeting room; *triclinium* – dining room; *vestibulum* – entrance hall (Adkins – Adkins 2012, 163). The thesis works with several, mostly archaeologically unexplored components that were not possible to distinguish in details. Only a small part of the set was excavated: **AC039**, **AC050**, **AC051**, **AC069**, **AC053**, **AC066**, **AC067**, **AC068**, **AC071_2**, **AC103**, **AC105** and **AC202** (fig. 30). For the other villas, the main archaeological indicators were comparatively dense surface finds of pottery and building material. The ceramic evidence included both imported and locally-produced terra sigillata, thin-walled wares, and, common terracottas. Building materials included roof tiles, *opus signinum*, *opus caementicium*, *opus reticulatum* and *opus spicatum* bricks. Plasters are (or at least, was in the years following initial deep ploughing) common and often painted; marble wall-veneers and pieces of stope or glass mosaic and tesserae are also

widely diffused. Another indicator is the human-made system of terraces, built to facilitate the cultivation of plants in hilly terrain. They can be recognised on the DTM or aerial photos.

The findings of *ara torculum* or the millstones on the site **AC045**, **AC047**, **AC057** (area of material scatters), **AC059**, **AC066**, **AC108**, **AC110**, **AC111**, **AC112**, **AC120**, **AC121**, **AC147**, **AC149**, **AC153** and **AC181** confirmed that the site also had the agricultural character. Relicts of the fishponds **AC068**, **AC069** and **AC071_3** and **AC071_5** verified the economy based on the maritime sources.

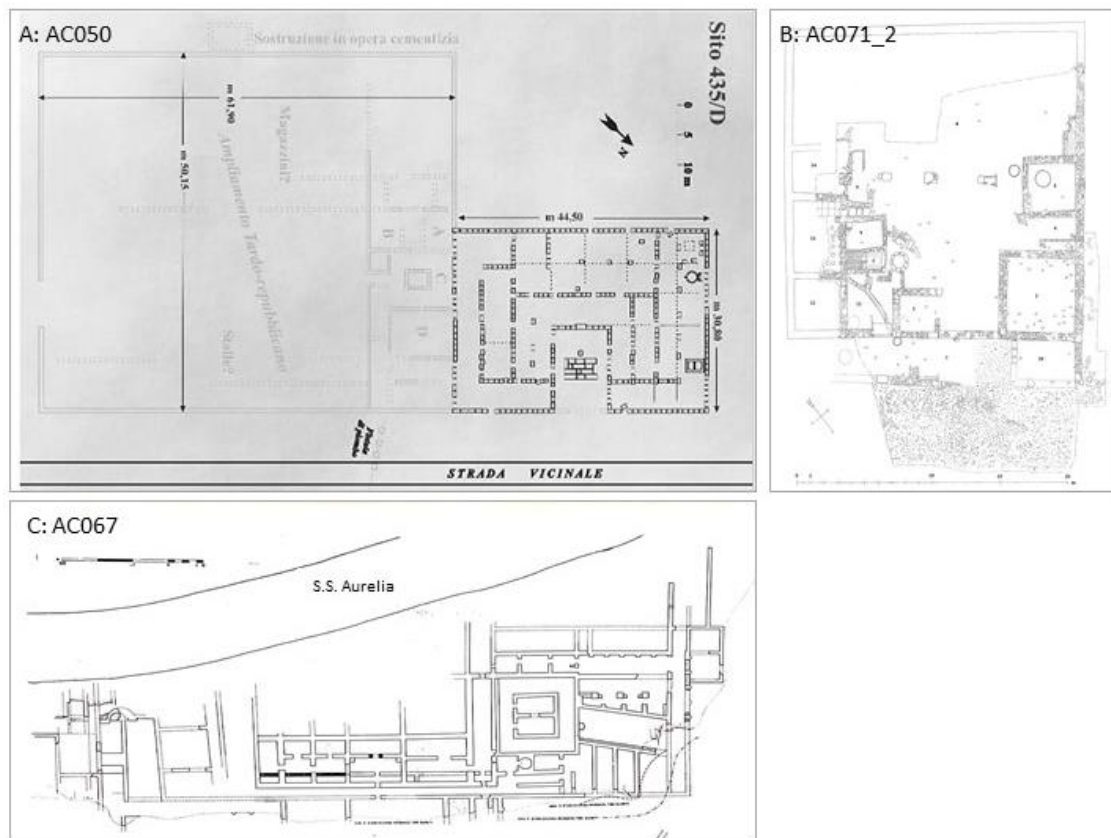


Fig. 30: The planimetry of roman villas from Ager Castonovano. A: the Republican and the Imperial phase of AC050 (according to Maffei, A. from Allegrazza 2016); B: the planimetry of the Roman villa AC071_2 (Enei 2013); C: the planimetry of the Imperial villa AC067 (from Gianfrotta 1972).

Terrace⁴⁰: Human-made or natural plateaus, constructed on sloping terrain, intended for growing crops or as a base for other products or residential areas. Mostly appear near Roman agrarian structures. Stone cladding may bound them. Relict plants, such as the remains of cultivated plants that went wild, may accompany them.

Farmstead⁴¹: They were founded in the Mediaeval and Post-Medieval period. The economic complex consisted of a residential part, a part for animals and for agricultural tools, the

⁴⁰ Probably Roman period: AC003, AC004, AC005.

⁴¹ Middle Ages: AC025, AC061, AC075, AC095, AC109, AC202; The Post-Medieval: AC025, AC061, AC075, AC095, AC097, AC109, AC202.

production area and part intended for processing raw materials and plants, surrounded by cultivated fields. This type of site is one of the few well preserved in the area of research. In all seven cases, there are relict of watering places, fences for animals and other parts. The stone walls that enclosed the individual plots are preserved in the landscape to this day. They reach a height of about 50 cm, measure hundreds of meters and intersect each other.

Greenhouse⁴²: Modern lightweight construction made of wood and foil or glass for growing plants archaeologically manifested primarily on DTM, where it forms distinct rectangular terraces or platforms. Another indicator is significantly richer vegetation or relict plants.

7.1.4 Water management components

Bathroom⁴³: The roman thermal complex was constructed in the Republican or Imperial period. It composed of an *apodyterium* (a room for undressing before entering the baths proper, it was a spacious chamber, with stone seats along three sides of the wall), *frigidarium* (a large cold pool usually located on the northern side of the baths), *tepidarium* (the warm bathroom heated by a hypocaust or underfloor heating system constant radiant heat from the walls and floor), *caldarium* (a room with a hot plunge bath), *sudatorium* (a vaulted sweating-room), *piscine* (swimming pools) and *palaestra* (room for exercising). It has always been connected to the water supply and sewerage system (Adkins – Adkins 2012, 384). In the area of *Ager Castronovano*, there were two thermal complexes discovered and excavated. Both were located in the area of the *Castrum Novum*. First was indicated **AC071_4** and located the second located inside the centre of the colony **AC071_1** (fig. 31).

Cistern⁴⁴: The underground or semi-underground structure for collecting water, it was in all cases connected to the water supply and sewage system. From the archaeological point of view, its size and construction varied. Usually, it had rectangular form formed by walls covered by waterproof plasters. One or more arches formed a ceiling. In the researched area, there were more cisterns identified. The **AC138** was constructed in the Roman roman period. In the Post-Medieval period, it turned to usage. Also, there were three cisterns identified in the area of *Castrum Novum*. Two were connected to the roman baths. The existence of one was connected to the roman villa identified inside the Roman colony.

Fountain: waterhole or watering place for animals built on a natural spring. Mostly stone or masonry structures, with a spring of water and tanks to contain it. It usually had a rectangular form.

⁴² Modern period: AC055, AC168.

⁴³ Roman period: AC071_1, AC071_4.

⁴⁴ AC138, AC071_1, AC071_4.

Fishpond⁴⁵: The waterproof cement constructions were located close to the coast for fish farming from the Roman period. There were lead and cement partitions inside the tanks. All parts were connected to a channel system guaranteeing the circulation of clear water following the tides. The fishponds were connected with villa Maritima **AC067**, **AC069** and **AC071** (fig. 32).

Well⁴⁶: A well was an excavation or structure created in the ground by digging, driving, or drilling to access water resources.

Aqueduct: It provided the water distribution to the settlement (Wilson 1994). In the *Ager Castronovano*, there are relicts of the aqueduct at Castrum Novum **AC071_1**. The wastewater from the bathhouse and probably other water management facilities (fountains) were led through the canal through the wall out into the moat. The second relict of the aqueduct **AC196** was by Arnando Fantozzi.

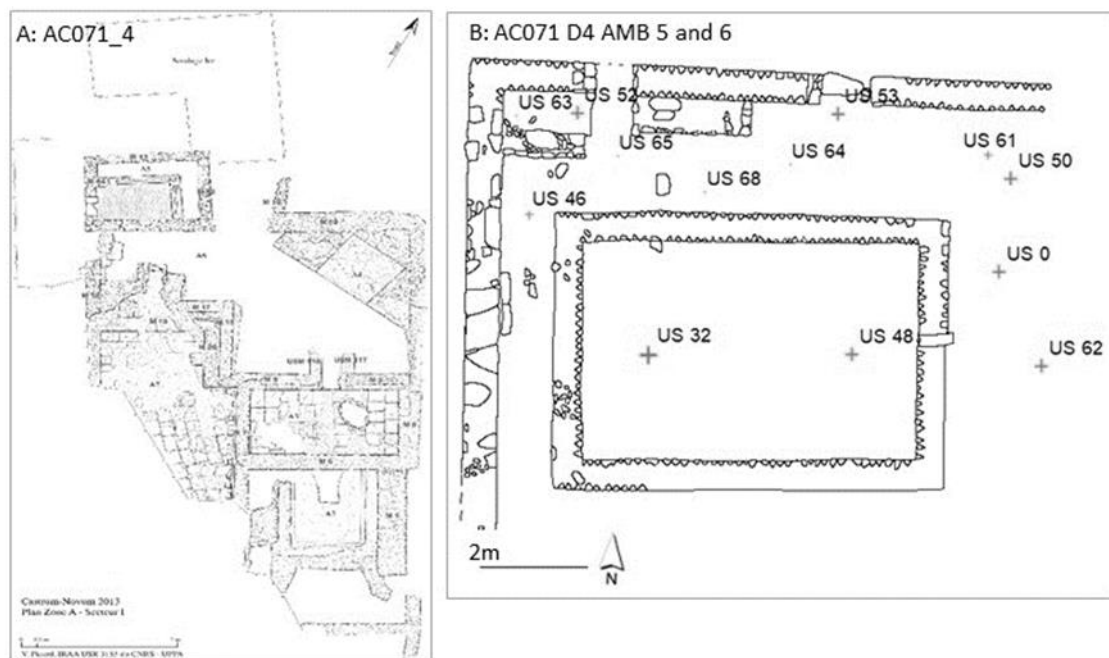


Fig. 31: The planimetry of two bathhouses discovered in Castrum Novum site. A: AC071_4 (from Nrdi-Combescuri 2015); B: planimetry of the cistern and the prefurniums discovered in the centre of the colony (from Preusz – Preusz - Vuono 2019).

⁴⁵ Roman period: AC067, AV069, AC071_3, AC071_5.

⁴⁶ Roman Republican period: AC173; Roman Imperial period: AC118.

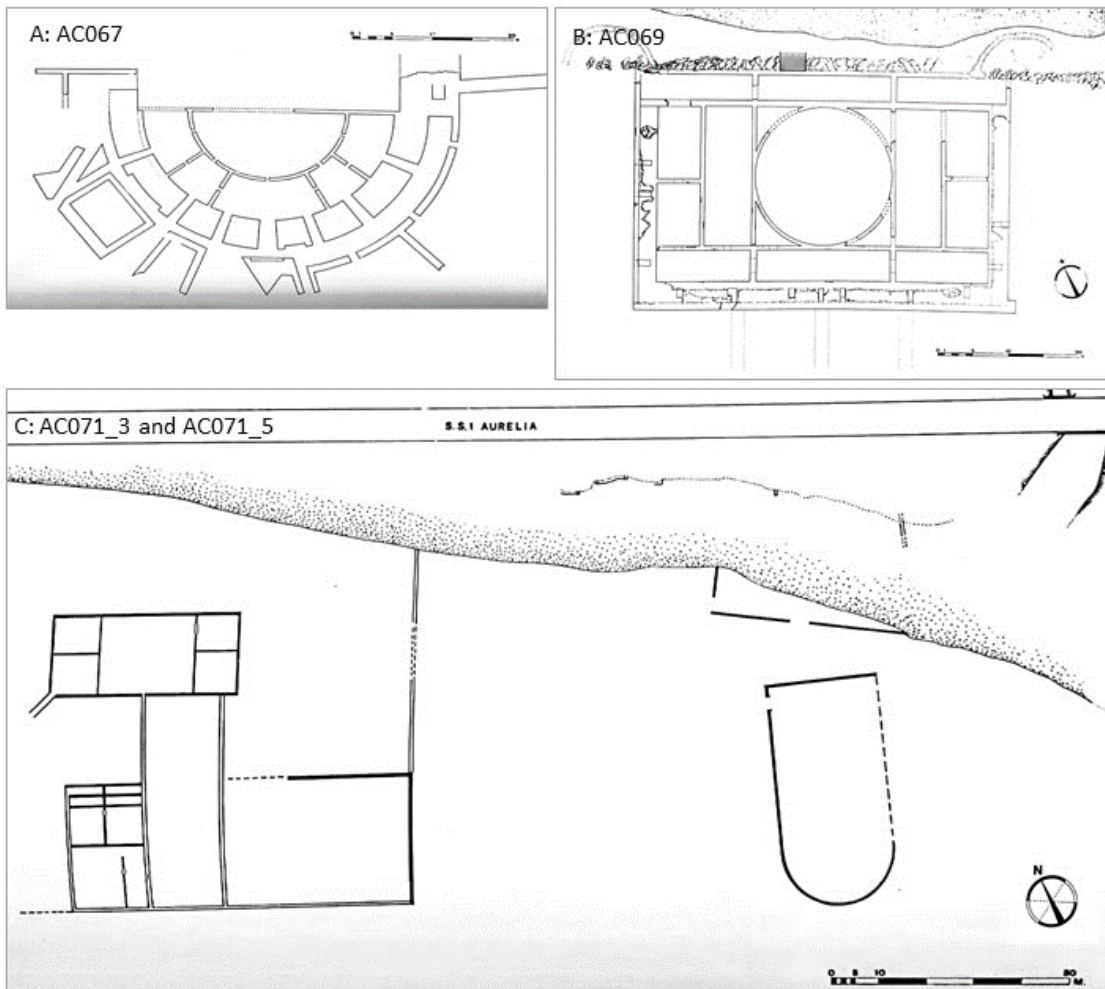


Fig. 32: The planimetry of the fishponds in Ager Castronovano. A: the fishpond AC067 (from Gianfrotta 1972); B: AC069 (from Gianfrotta 1972); C: the fishponds from Castrum Novum AC071_3 and AC071_5 (from Gianfrotta 1972).

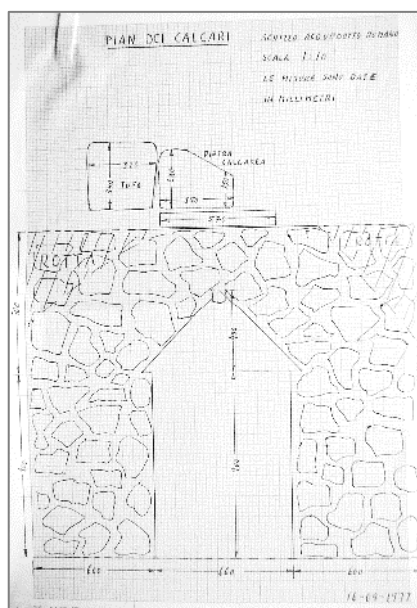


Fig.33: The components providing the water management: Acqueduct AC196 (from Archive of Flavio Enei).

7.1.5 Sacral components

Temple⁴⁷: The term indicates the building reserved for religious or spiritual rituals and activities such as prayer and sacrifice. In the researched area, there were two temples excavated. **AC066** (fig. 34) was discovered during the construction of the Rome-Civitavecchia railway. It was founded in the last decades of the 6th century BC. The south-west oriented temple with an almost square cell was probably prostyle with columns covered with luxurious plasters. The name of the divinity, whose cult had a Chthonic character, is attested by some inscriptions on fragments of pottery. The temple remained functional until the 5th century when it was destroyed and rebuilt. The terracotta artefacts discovered in the site corresponded to restructurations in 3th and 2nd century BC. The sanctuary was abandoned at the beginning of the 1st century BC. In the last decades of the Republic period, the Imperial Roman Villa covered the area (Gianfrotta 1972, 118; Trapani 2016). The temple **AC136** was located in the strip of land between current Via Aurelia and the sea, immediately south of the mouth of the Marangone stream. The temple was founded as an Etruscan sanctuary. Perhaps, in the 2nd and 1st century BC, it has been converted to the Roman religion. Other temples are supposed to be on the Castellina del Marangone oppidum **AC015** (the Etruscan one) and the *Castrum Novum* site **AC071** (the Roman one). There are indirect ²indices, but they haven't been discovered yet (Prayion 2016, 42; Enei 2013).

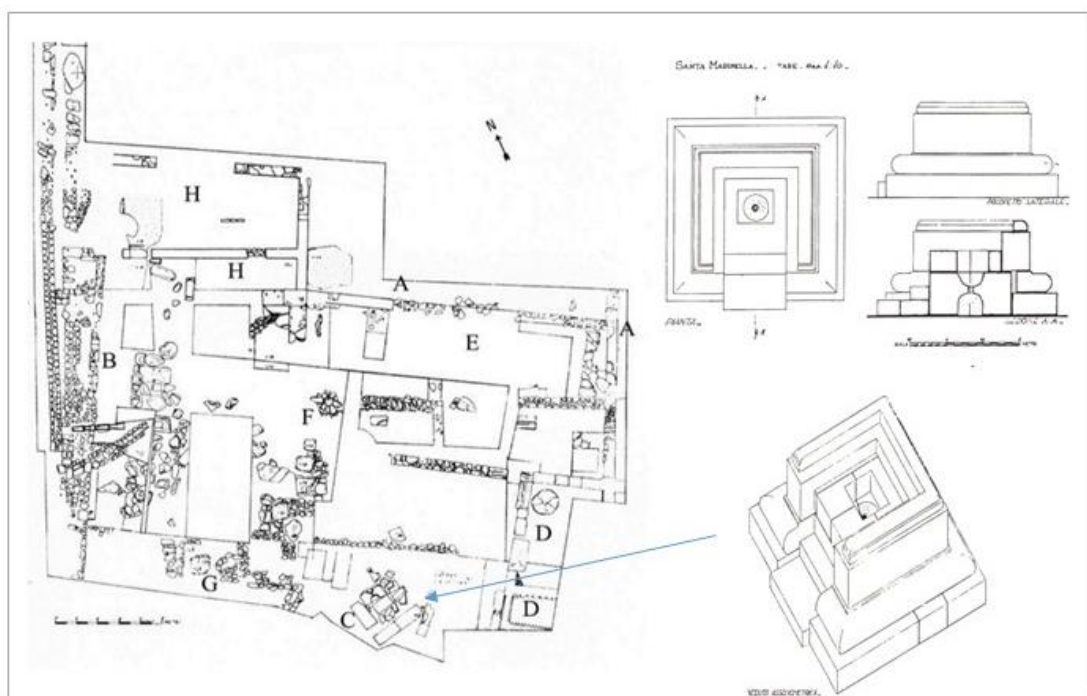


Fig. 34: The planimetry of the Etruscan temple AC066 (from Gianfrotta 1972 and Trapani 2012).

⁴⁷ AC066_1, AC136

Church⁴⁸: The building is used for Christian religious activities, particularly for Christian worship services. According to non-direct pieces of evidence, there are three places of worship in the landscape, namely Santa Maria Morgana, San Lorenzo and San Silvestro. All churches were located on the tops of the dominant hills. However, neither one has been able to be identified or investigated in detail. The most known component was identified in Castellina del Marangone, where the church of San Silvestro probably stood. The presence of the church seems to confirm the finding of a Christian burial ground. The ruins of the Church of Santa Maria Morgana are depicted on the historical map. Apparently, some authors identified them mistakenly with the remains of a rural house. The church originally stood on a hill.

7.1.6 Burial components

Necropolis and tombs⁴⁹: The most information about burial habitat in the *Ager Castronovano* came from the researches of S. Bastianelli. He focused on the Etruscan necropolises and tombs (fig. 35). A lot of components described by him have meanwhile disappeared. In the area under investigation, there were components from the Etruscan archaic period to the Roman Imperial period.

The main question is the compactness of funeral areas components in the Etruscan this period. There have been five separate tombs, three groups of tombs and seven necropolises. The classification of the tombs into necropolises is problematic from the point of publications. Some authors, like Gianfrotta, separate them from each other. Bastianelli ranked all the identified Etruscan tombs in the area under investigation into a single necropolis belonging to Castellina del Marangone.

Well tombs: The incineration was characteristic burial habit in the 8th century BC. The cremation consisted in the complete combustion of the corpse; the ashes were then collected in an urn subsequently buried into the ground. These tombs usually consisted of a well two meters deep where the urn with ashes of the deceased was placed.

Ditch tombs were created to bury bodies from 8th to 5th century BC. When the tomb was created in the normal ground, the rectangular tombs were confined using various materials such as pebbles, stone slabs, tiles etc. Inside and outside the pit, there would be placed several ritual objects and funerary ornaments.

Tumulus tombs: From the 7th century BC, the deads were inhumated in the tombs consisting of burial chambers with more funerals beds. The tombs became reproductions of the Etruscan

⁴⁸Middle Ages: AC001, AC015, AC068, AC193, Post-Medieval: AC068.

⁴⁹ Protovillanova: AC008, AC134, AC011, AC129; Villanova: AC008, AC134, AC011, AC129; Etruscan: AC215, AC011, AC041, AC042, AC129, AC176, AC177, AC201, AC015, AC008, AC014, AC064, AC134, AC135, AC140; Roman Republican: AC134, AC126, AC215; AC202, AC125, AC126, AC137, AC142, AC164.

houses, and various, precious funerary ornaments accompanied the deceased. Initially, the tombs were covered by simple slabs of rock reproducing the steeply pitched roof of a house. Usually, a path or a staircase leading to a shared entrance to access the burial rooms was created. The Tumulus have a diameter that may reach forty meters; internally, multiple rooms can be reached through a shared path. There were at least four monumental tumuli of diameter about 50 m mound; other tumuli had a diameter about 20 m. They were located both close to the sea and in the hills. The upper part was constructed of stones. Rings around barrows, walls of chambers, the stone lining of tombs and the burial beds were built of sandstone. To the plinth of the tomb, another square structure was attached. Bastianelli interpreted it like the altar (*ara*). Probably a ramp or altar was used for funeral ceremonies. Some of them were dated to the second half of the 6th century BC. Necropolis was partially absorbed by the construction of modern communications and is continuously destroyed by agricultural activity.

Cappuccina tombs: On the beginning of the Imperial Age, the Cappuccina Tombs were characteristic. The name came from their shape, which resembled a cap or roof. It covered the body of the deceased with slabs of stone placed at the sides of the corpse and joined at the top. The soil would cover everything, including particularly a poor funerary furnishing that highlighted the use of this type of tombs by the poor social class.

Christian cemetery⁵⁰: Christian cemeteries are a promising research area. The research of Castrum Novum could bring new information about the burials in the Middle Ages. There, several graves were identified inside the city walls. Another Middle Ages cemetery was found in Castellina del Marangone. The graveyard was probably used from the 12th to the 15th century. Near the Church San Silvestro, graves were discovered in two cumulations containing approximately 50 individuals each. There were two phases of burial activity. The first, when the skeletons were oriented north-west to a depth of 1,4 to 1,65 meters. In the second phase, the north-east oriented skeletons were buried between 1 and 1,4 meters deep. Mostly men were buried there, and there were fewer women or children.

⁵⁰ AC071_1, AC015; AC202.

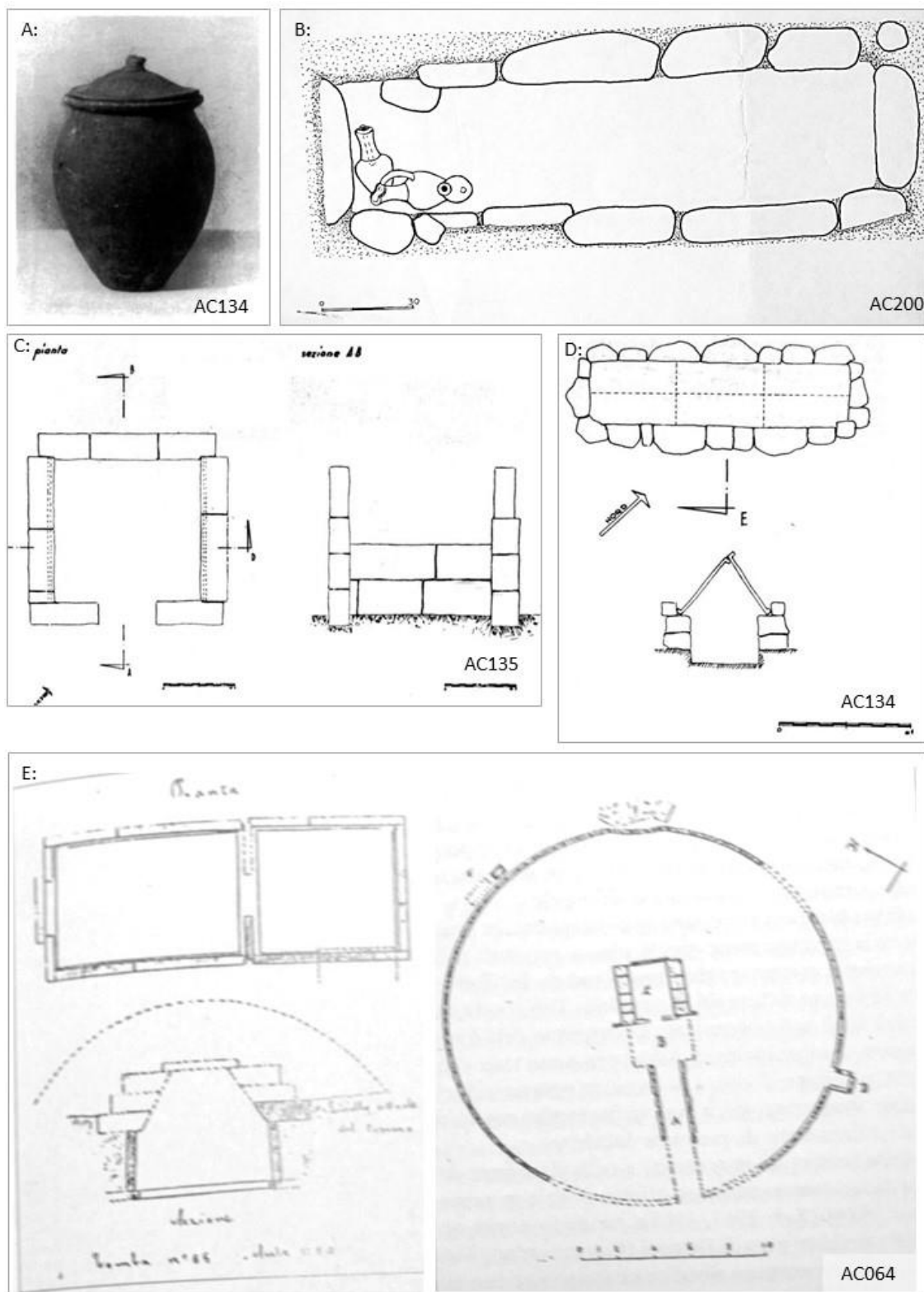


Fig. 35A: The urn from the well tomb AC134 (from Toti 1961); B: undatable ditch tomb AC200 (from the SAEM Archive); C: the ditch tomb AC134 (from Toti 1961); D: the cappuccina tombs AC134 (from Toti 1961); E: the tumulus tomb AC064 (from Maffei – Nastasi 2008, 155).

7.1.7 Infrastructure

Road⁵¹: In the 3rd century BC, the road Via Aurelia has been built, going from Rome to the north-west. It has been the part of the romanization of the conquered Tyrrhenian coast. The origin of the name is uncertain. Its namesake could be Aurelius Cotta, a censor in 241 BC, or Aurelius, who held the post of consul around 200 BC. The road connected the new Roman military forts on the west coast and contributed to the final surrender of the Etruscans. Its construction became a sign of stabilization of the settlement structure and a prerequisite for strengthening of the military power in the area. At the same time, it became a link along which food, raw materials, commercial commodities and people could be transported. Via Aurelia has become the artery of the Roman economy, and the military and political administration. Such a vital road has been the focus of attention of many archaeologists (Bastianelli 1954, Week 1988; Gianfrotta 1972; Nastasi 1990) or by historical cartographers (Bugli 2011) who seek to document it in detail and protect its surviving parts. In my research area, there are relicts of Roman bridges preserved. On the southwest of the territory, there are relicts of the bridge **AC194**, that went over the Fosso Rio Smerdarolo (55,8 km), **AC094** (55,9 km), **AC128** (60,1 km) over the Fosso Castelsecco, **AC130** (60,6 km) over the Fosso Vale Semplice, **AC131** (60,8 km) over Fosso Santa Maria Morgana, **AC0132** and **AC2013**, probably both went over the current Fosso Vignacce, **AC133** (67,2 km) close to the Fosso Marangone (Nastasi 1990, 186-190, Gianfrotta 1972).

Via Aurelia was divided into two branches, one running along the coast and the second along the foothills. This division allowed the better movement around *Punicum*. Both roads were 6 m wide and stacked with stones (*basoli*). Other sections of Aurelia were identified alongside the cement plant (Alegna 1962, 44), other relicts of the road were found enclosed by blocks of broken stone at a distance of about 1500 meters from the train station (Gianfrotta 1972, 82). This last section went directly to the bridge over the Fosso delle Vignacce AC132 for 62.3 km, which was built in the 3rd century BC (located about 100 meters from the railway). The age of the bridges and the similarity of the roads show that one branch ran along the coast and served numerous seaside villas. The inland branch, on the other hand, was more direct and faster, from which the lines led to the villas in the hills. Behind the Capo Linaro it proceeded to *Castrum Novum*. Nastasi believes that *Castrum Novum* was connected to both branches of *Via Aurelia* (fig. 36). Most likely, even after the fall of the Roman Empire, the whole Middle Ages, Post-Medieval and Modern era, *Via Aurelia* was still the main link between the coast of the northern part of the Apennine Peninsula and Rome.

⁵¹ Roman Republican: AC126, AC127, AC141, AC210, AC211, AC212, AC214; Roman Imperial: AC126, AC127, AC141, AC210, AC211, AC212; Middle Ages: AC210, AC211, AC212, AC214; Post-Medieval: AC188; Modern: AC079, AC188, AC189.

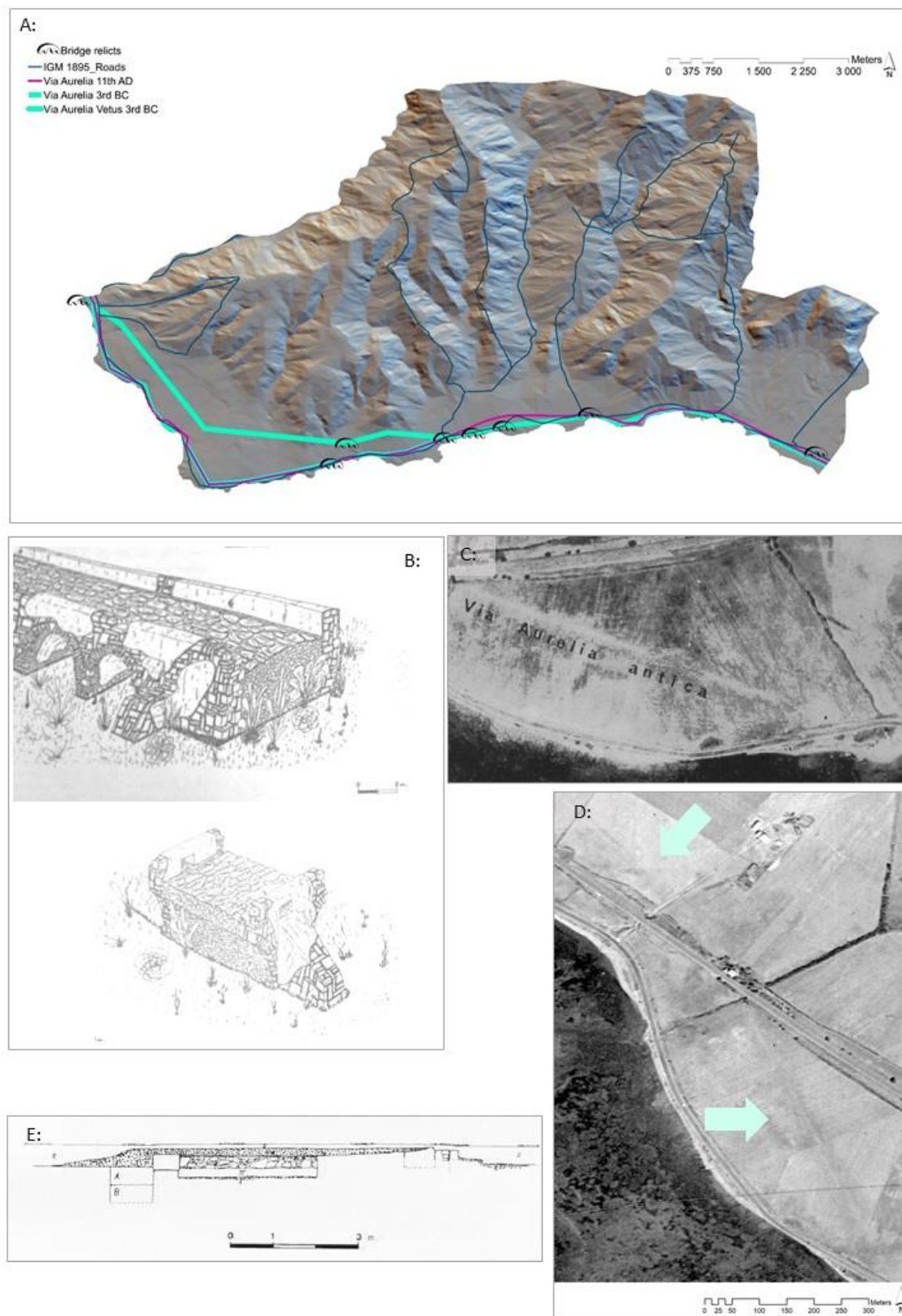


Fig. 36 A: The viability of Ager Castronovano. The map includes archaeologically or historically proved roads. The net of secondary roads complemented the viability; B: The bridge over Fosso del Marangone AC133 (from Maffei - Nastasi 2008, 188); C: the Via Aurelia (from Gianfrotta 1972, 109); D: the Via Aurelia on the historical aerial photo 1954; E: the construction of Via Aurelia (from Gianfrotta 1972, 109).

Harbour⁵²: The natural disposition on the coast was often complemented by various construction elements made of stone or water-resistant cement. It could be assumed that protected ports were built in the vicinity of the castra. Like the Pyrgi Castro, the ports at Punicum and Castrum Novum were established. At Castrum Novum, the harbour was protected by Capo Linaro (Frau 1990).

Customhouse⁵³: Waypoint for levying toll or tax. Often a designated building with a barrier on a strategic position along with the major infrastructure.

7.1.8 Mining components

Quarry⁵⁴: the surface mining area for obtaining the clay or other natural material.

7.1.9 Modern military object

Machine gun nest⁵⁵: a defensive fighting position (DFP), a type of concrete earthwork constructed for military purposes during the Second World War.

7.1.10 Others

Area of artefact scatters⁵⁶: an area of different dimensions with a comparatively dense surface scatters of pottery and building material. The ceramic evidence included bronze, Iron Age or Etruscan material. For the Roman period, it included both imported and locally-produced terra sigillata, thin-walled wares, and other kinds of common terracottas. It indicates previous human activities performed at the site. It can arise from the concentration of, e.g. brought ceramic goods or the extinction and taxonomical processes of unidentified structures. On these sites, no identifiable constructing structures were found.

Separate finding⁵⁷: isolated archaeological finding out of broader archaeological context.

Unidentifiable structure⁵⁸: archaeological component of not definable origins or function.

The development of the settlement structure and its density can be better understood by observing the number of components per 1 square kilometre. During the Bronze Age, there were 0,40 archaeological components per 1 km², a slight decrease in the early Iron Age abated to 0,38 components per 1 km². The density culminated in the Roman Imperial period with 2,98

⁵² Etruscan: AC071_6; Imperial: imperial period; AC068_2 lived roman, middle ages, postmedieval and modern period.

⁵³ Undatable: AC191.

⁵⁴ Undatable: AC190.

⁵⁵ AC180.

⁵⁶ Bronze Age: AC020, AC036, AC044; Etruscan: AC036, AC044, AC090_1, AC159, AC160, AC161, AC174, AC175; Roman Republican: AC036, AC043, AC044, AC063, AC083, AC084, AC085, AC086, AC088, AC089, AC091, AC092, AC093, AC144, AC145, AC146, AC147, AC148, AC149, AC150, AC151, AC152, AC154, AC155, AC156, AC157, AC159, AC160, AC161, AC174, AC175; Roman Imperial: AC057, AC058.

⁵⁷ AC008_2, AC016, AC031, AC032, AC033, AC034, AC072, AC076, AC099, AC119, AC122, AC123, AC124, AC158, AC171.

⁵⁸ AC166, AC197, AC198.

components per 1 km². The Middle Ages period returned to the density of components in the late Iron Age (0,52 component per 1 km²) and shrank even more in the Post-Mediaeval period (0,40 component per 1 km²). In the modern period, 21% of the researched area covered by modern constructions.

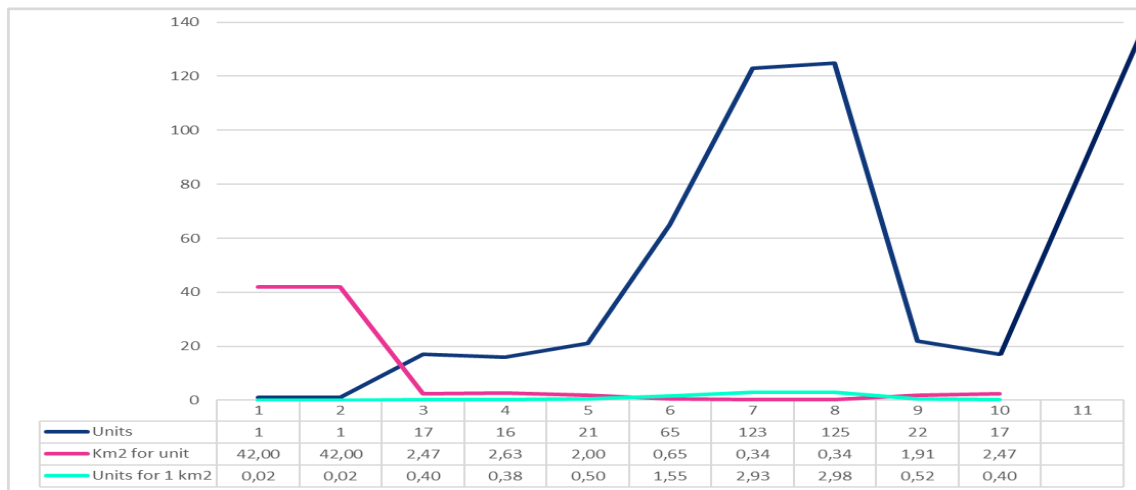


Fig. 37: Development of settlement intensity in the studied area. 01 Palaeolithic; 02 Mesolithic; 03 Bronze Age; 04 Protovillanova; 05 Villanova; 06 Etruscan period; 07 Roman Republican period; 08 Roman Imperial period; 09 Middle ages; 10 Postmediaeval period; 11 Modern period (modern constructions cover 21 % of the area).

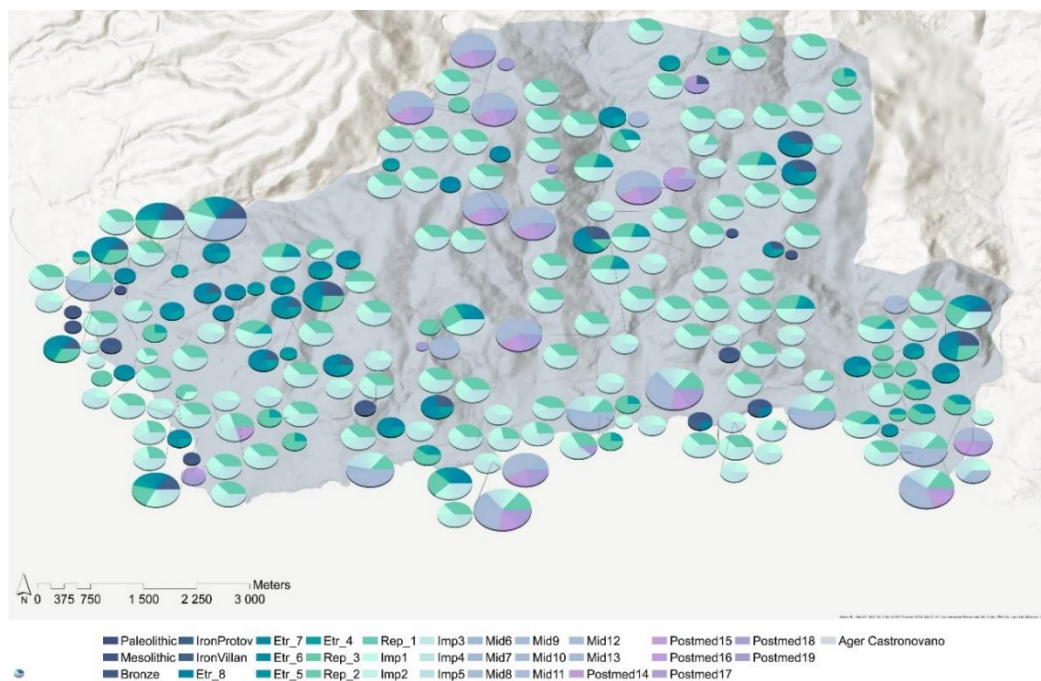


Fig. 38: The schematic map demonstrates the continuity of individual components. Colours divide sites to chronological groups: Paleolithic, Mesolithic, Bronze Age, Iron (Protovillanova and Villanova) Age; Etruscan 8-4 century BC, Roman Republican period 3-1 century BC, Roman Imperial period 1-5 century AD, Middle Age 6-13 century AD and Post-Mediaeval period 14-19 century AD. The size of symbols manifests the life expectancy of a single component.

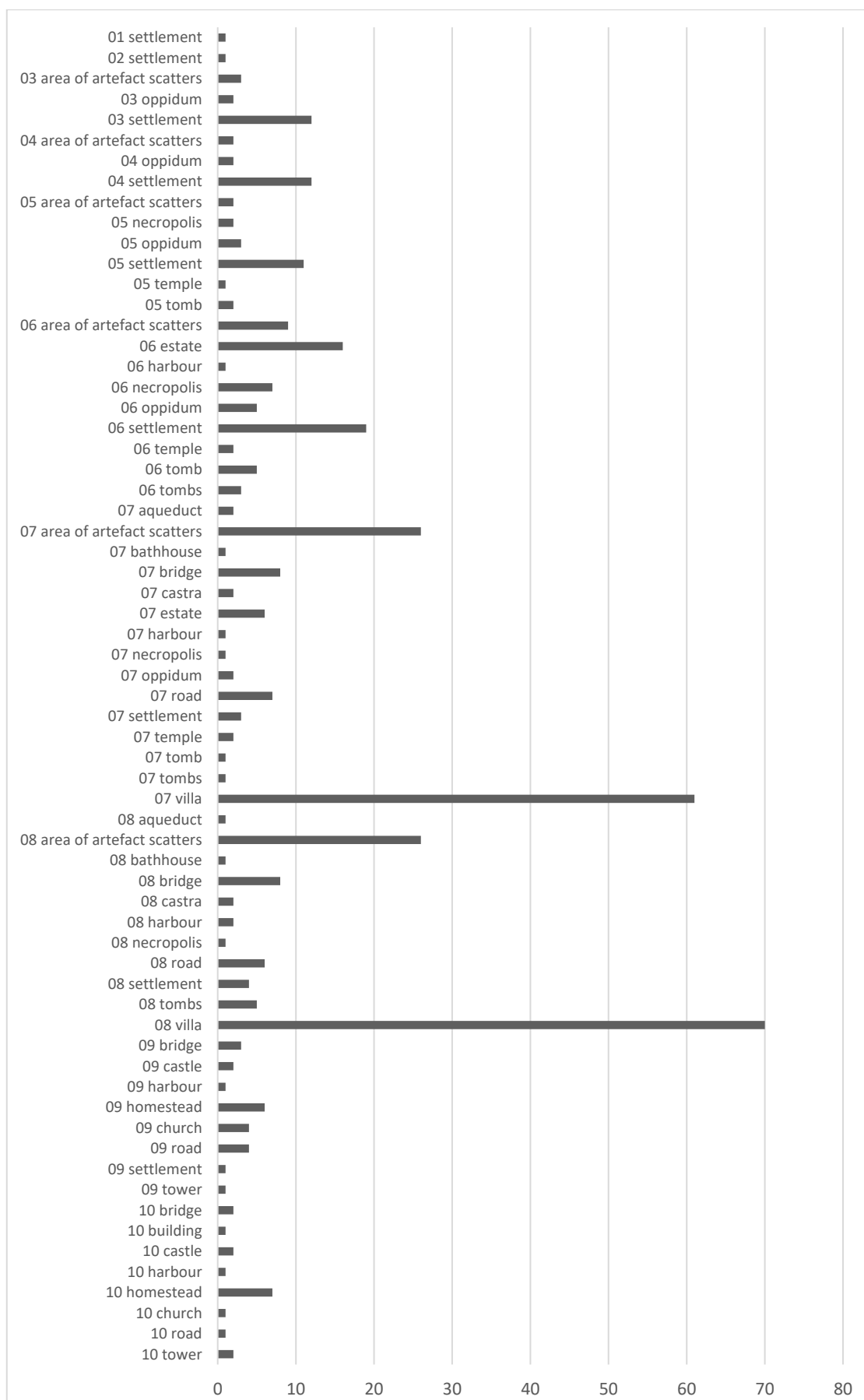


Fig. 39: The table shows a list of types of archaeological components in individual periods and their number.

7.2 Ecosystem of the Ager Castronovano

Looking back through the research history concerning settlement and landscape in general, the main theoretical innovations are found in our concepts of human-environment interaction. Modern concepts of human ecosystems also refer to the role of information. However, in analysing environmental behaviour, we learn about the crucial role played by an individual's perception of their environment. Most often, it is determined by ideology, religion, or social factors, such as prestige or social behaviour. System models from human ecology, which are well established in processual archaeology, provide one potential approach to understanding processes of settlement change. However, like post-processual archaeologists, we need to consider social aspects and the subjective perception of the environment by past societies (Shreg 2014, 85). The archaeological components discovered in *Ager Castronovano* were inserted into the environmental context to create a model based on this perspective. For the reconstruction of the ecosystem in *Ager Castronovano* in the long term perspective, the agricultural potential was examined, concerning the criteria of potential prerequisites and determination. There are environmental and cultural factors to be considered.

7.2.1 Environmental factors

Altitude: In *Ager Castronovano*, it ranges from 0 to 300 meters above sea level. The average height of the area is around 93 meters above sea level. This low value is an ideal prerequisite for the cultivation of primary crops, wheat (upper limit is between 1000 and 1200 meters above sea level). The Palaeolithic and the Mesolithic components were located in lowland areas with the altitude around 20m. The Bronze Age components extended from the coastline to 200 m. Bronze Age components were located from the coast up to a height of 200 m. Their average height was 93 m. The Iron Age components occupied the same positions as the Bronze Age. The average altitude is 82 m. Etruscan settlements were also roughly in the same areas as the Bronze Age settlers. The highest elevation was at 230 m, and the average height was 88 m. In the Roman Republic, the components reached the height of to a height of 280 m. The average height was 92 m. The components from the Imperial period moved even further, up to 290 m. The average height was 98 m. Middle Ages settlements moved to medium-high altitudes. Although the highest placed components were only 220 m, the average height of the entire settlement is 115 m. Modern settlements occupy roughly the same position.

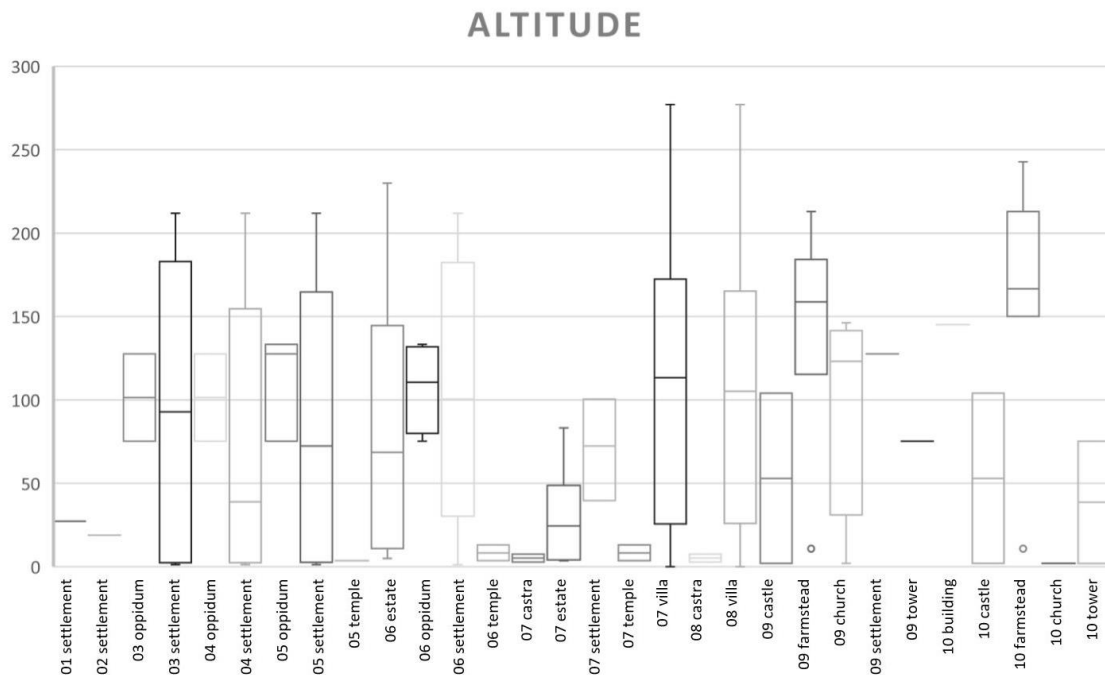


Fig. 40: The box-and-whisker plot shows the minimum, maximum, median of the altitude, and the most significant concentration for all analytical components. 01 = Paleolithic, 02 = Mesolithic, 03 = Bronze Age, 04 = Protovillanovian and 05 = Villanovian Age, 06 = Etruscan period, 07 = Roman Republican period, 08 = Roman Imperial period, 09 = Middle age, 10 = Post-Medieval period.

Slope: The slope significantly affects both residential and agricultural human activities. It should be kept in mind that the current terrain may be different, so the following calculation is the hypothetical model. The slope over 50° is not suitable for the settlement activities. The flat terrain is more suitable for ploughing, which is characteristic of the Roman period. An alternative in sloping terrain was the construction of terraces. Steep slopes, on the other hand, had their distinct advantages, often have been used for planting of the trees or cattle breeding.

Palaeolithic and Mesolithic components were found on gentle slopes up to 6° . In the Bronze Age, they occupied positions up to 18° , but most were between 10° and 14° . In the Iron Age, the components stretched from planes to gentle slopes up to 18° . In the Etruscan period, even the steepest 47° slopes were populated. The most significant number of components were located in the middle of this range. Roman builders did not avoid steep slopes. However, most components occupied the range of 2° to 14° . The Middle Ages and Post-Medieval component occupied the same range from 2° to 14° .

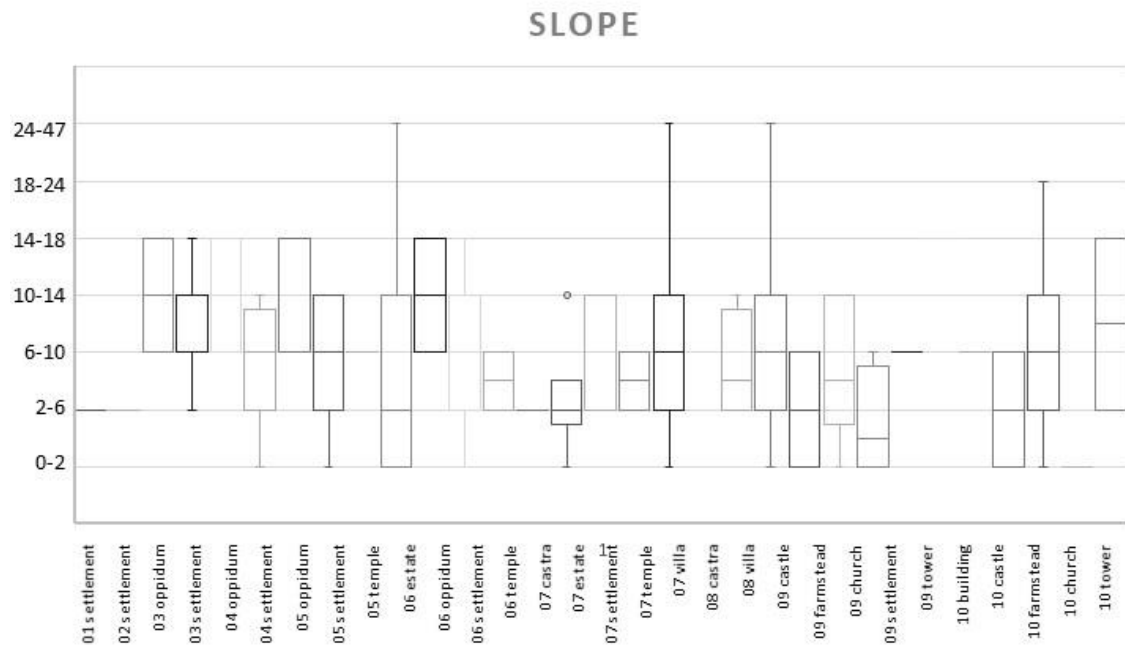


Fig. 41: The box-and-whisker plot shows the minimum, maximum, median of the slope band and the most significant concentration for all analytical components. The scale is in degrees. 01 = Paleolithic, 02 = Mesolithic, 03 = Bronze Age, 04 = Protovillanovian and 05 = Villanovian Age, 06 = Etruscan period, 07 = Roman Republican period, 08 = Roman Imperial period, 09 = Middle age, 10 = Post-Medieval period.

Aspect (slope orientation): For cultivation, the aspect is an essential factor, as crops differ from each other in terms of sunlight, wind direction and rainfall. The south-facing slopes had a better harvest in the Roman period than the northern slopes. Sunlight was shining longer on the southern slopes, while the soil in which the crops grew was hotter. The winds could also harm crop growth, with stronger winds heading for the northern slopes, and according to Plinius the Elder, neither trees should be planted, nor cattle should be sent to pasture there. The Roman agrarian structures avoided the north side and the top plateaus. The archaeological data set has shown the preferences for the slopes facing west, southwest, south, southeast or east during all periods. Exceptionally, a few of the components were also found on northeastern or even northern slopes. There was only a small number of Republican villas located in these extreme conditions. All of them ceased to exist at the end of the Republican period. In the later period, one Middle Ages castle was oriented towards the northwest.

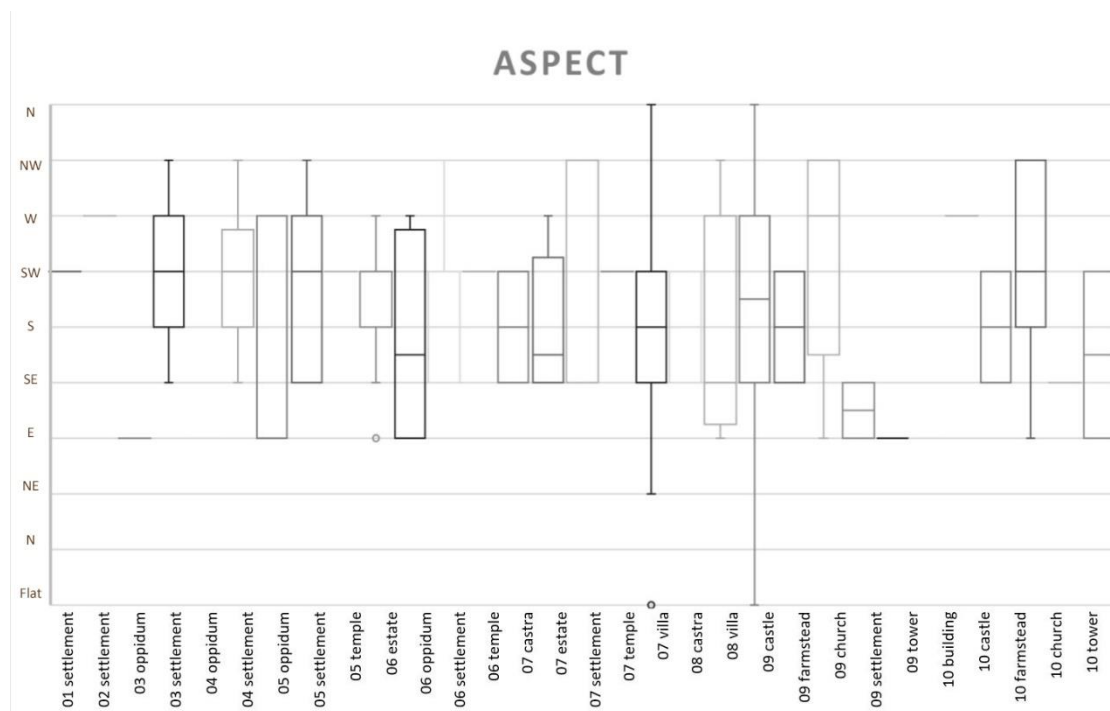


Fig. 42: The box-and-whisker plot shows the minimum, maximum, median of the aspect (direction of slope) and the most significant concentration for all analytical components. 01 = Paleolithic, 02 = Mesolithic, 03 = Bronze Age, 04 = Protovillanova and 05 = Villanova Age, 06 = Etruscan period, 07 = Roman Republican period, 08 = Roman Imperial period, 09 = Middle age, 10 = Post-Medieval period.

Geology: Settlement and economic activities have been conditioned by local geology in the past. The soils on conglomerates are always rocky and not suitable for agriculture. The analogous studies discovered that the Roman sites were mostly linked to volcanic igneous rocks, 80% less used sand and 3% alluvial deposits (Goodchilde 2007, 147). In the *Ager Castronovano*, there are three types of geological layers. The most of components were located on the R48-Arenaceous-marly units (turbidites) and the R41-Clayey-limestone unit (turbidites); less were located on the R7-Sands and conglomerates (Pleistocene).

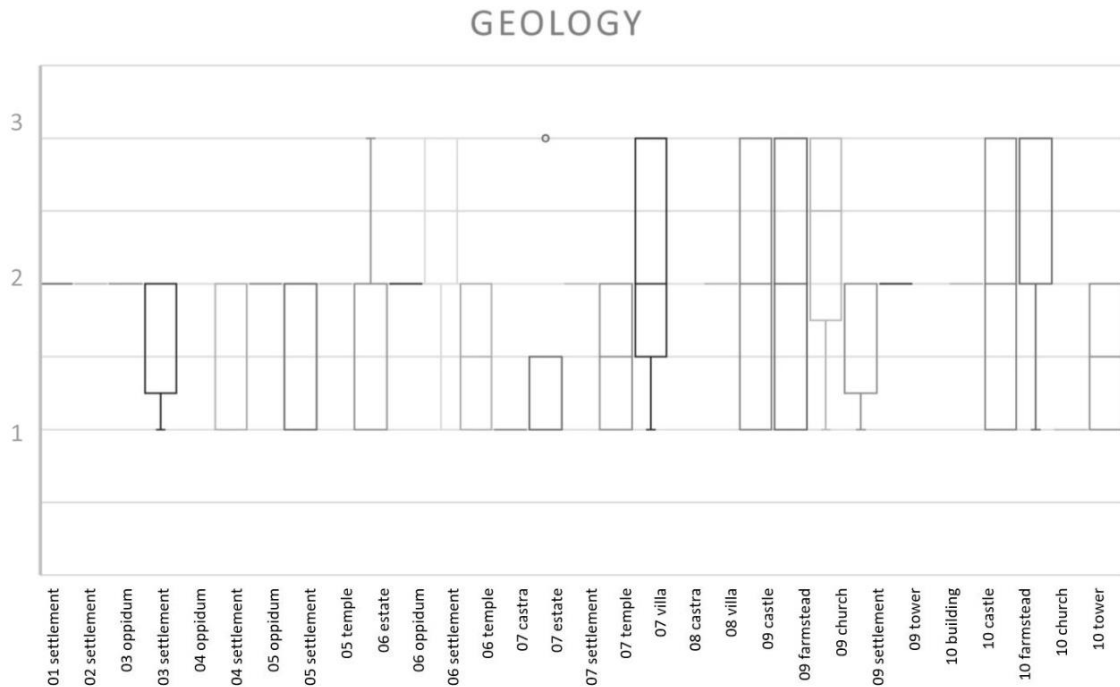


Fig. 43: The box-and-whisker plot shows the minimum, maximum, median of the geological categories (1: R41-Clayey-limestone unit (turbidites); 2: R48-Arenaceous-marly units (turbidites); 3: R7-Sands and conglomerates (Pleistocene)) and the most significant concentration for all analytical components. 01 = Paleolithic, 02 = Mesolithic, 03 = Bronze Age, 04 = Protovillanovian and 05 = Villanovian Age, 06 = Etruscan period, 07 = Roman Republican period, 08 = Roman Imperial period, 09 = Middle age, 10 = Post-Medieval period.

Ecopedology and Pedology: On the ecopedological map, there are three types of layers. They are particularly characteristic for the hilly and mountainous landscapes of central Italy. *Ager Castronovano* is characterized by hilly reliefs, which were either clay or clay. Only in a smaller area along the rivers, there is the occurrence of smaller fluvial and alluvial sediments, which were highly fertile, but their processing could be problematic. From this, it can be concluded that these were areas mainly used for grazing. The quality of soils, especially the determination of the degree of their agricultural potential, was assessed.

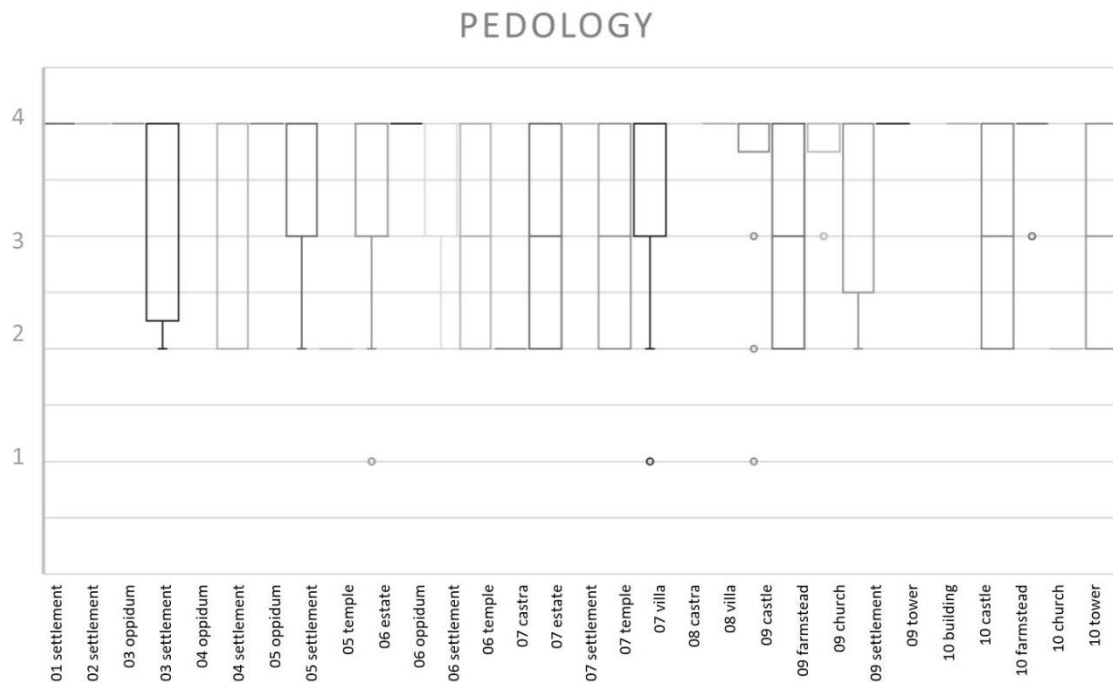


Fig. 44: The box-and-whisker plot shows the minimum, maximum, median of the pedological categories (1: none identified; 2: No. 27: Haplic Calcisol; Calcaric Cambisol; Calcaric Regosol; 3: No. 45: Leptic, Stagnic, Rhodic e Ferric Endostagnic Luvisol; Calcaric Cambisol; 4: No. 47: Haplic e Petric Calcisol; Calcic, Chromic e Skeletic Luvisol; Calcaric e Luvic Phaeozem; Calcaric Fluvisol; Haplic e Calcic Vertisol; Calcic Kastanozem; Eutric, Fluvic, Endogleyic e Calcaric Cambisol; Vitric Andosol; Calcaric Regosol; Calcaric Arenosol) and the most significant concentration for all analytical components. 01 = Paleolithic, 02 = Mesolithic, 03 = Bronze Age, 04 = Protovillanovian and 05 = Villanovian Age, 06 = Etruscan period, 07 = Roman Republican period, 08 = Roman Imperial period, 09 = Middle age, 10 = Postmediaeval period.

Distance from water: Water resources were a prerequisite for life. Easy access to abundant water resources such as rivers, streams and springs was essential. The area of Ager Castronovano was rich in rainfall, so there was no need for irrigation. The artificial water management in the area was restricted solely to aqueducts directed to cities. The cisterns and the groundwater wells were constructed in the area. The development of the watercourses in the landscape surrounded by hills seems to be stable, except for the deltas. The GIS analyses called Multiple ring buffer zone along the streams, and springs calculated the distance from the watercourse. There is a dense water network in the area. Therefore, the average distance from the watercourse is about 200 m. The average distance of the Palaeolithic and Mesolithic sites was 150 m. Bronze Age components were around 160 m from the water. In the Iron Age, the average distance was 190 m. There was the same average distance in the Etruscan period too. Components from the time of the Roman Republic moved more away from the watercourses. The average distance was 230m. During the Roman Empire, the average distance increased further to 236 m. Technical and architectural elements such as cisterns, water supply, aqueduct

and wells made this move possible. The relicts of the aqueduct were found 400 m from the watercourse. In the Middle Ages, the average distance was also 220 m. The Post-Medieval settlement structure has moved even further away — average 260 m from the watercourse. The prerequisite for this distance was the construction of watering places or wells around the natural springs.

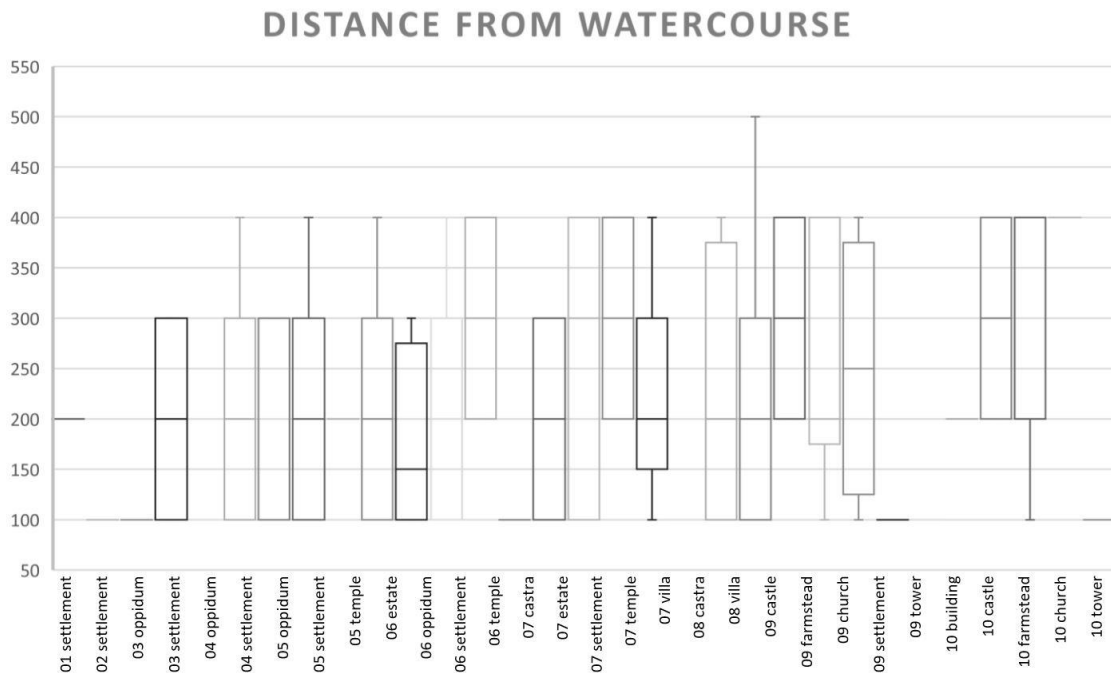


Fig. 45: The box-and-whisker plot shows the minimum, maximum, median of the distance from the watercourse and the most significant concentration for all analytical components. 01 = Paleolithic, 02 = Mesolithic, 03 = Bronze Age, 04 = Protovillanovian and 05 = Villanovian Age, 06 = Etruscan period, 07 = Roman Republican period, 08 = Roman Imperial period, 09 = Middle age, 10 = Post-Medieval period.

Distance from the shoreline: The Palaeolithic and Mesolithic components have been located within 500 m of the coast. The most distant components from the Bronze Age have reached as far as 3 750 m from the shoreline with the average distance 1 500 m. The components from the Iron Age have reached the same maximum distance of 3 750 m, while the average distance has been 1 200 m. Components from the Etruscan period have reached up to 4 000 m inland – with an average distance of all components have been 1 650 m. The most distant components from the Roman period have reached up to 5 500 m inland. The average distance is 2 050 m, and there is no difference between the Republic and the Imperial period. The Middle Ages components have moved further away from the coast. The furthest have reached up to 4 750 m inland, with an average of 2 400 m. The Post-Medieval components have retreated further inland. The most distant has been up to 5 250 m from the coast with the average around 2 500 m from the coast.



Fig. 46: The box-and-whisker plot shows the minimum, maximum, median of the distance from the shoreline and the most significant concentration for all analytical components. 01 = Paleolithic, 02 = Mesolithic, 03 = Bronze Age, 04 = Protovillanova and 05 = Villanova Age, 06 = Etruscan period, 07 = Roman Republican period, 08 = Roman Imperial period, 09 = Middle age, 10 = Post-Medieval period.

Environmental factors and values	
Altitude band	Factor value
0-100	0,4
100-200	0,3
200-300	0,2
300-400	0,1
Slope	Factor value
1: <20° straight and mild terrain slope	0,5
2: 20-40° slight terrain	0,3
3: 40-60° critical slope of the terrain	0,2
4: >60° inappropriate incline of the terrain	0
Aspect	Factor value
1: South slope	0,5
2: Western or eastern slope	0,3
3: North slope	0,1
Geological layer	Factor value
1: R41-Clayey-limestone unit (turbidites)	0,4
2: R48-Arenaceous-marly units (turbidites)	0,4
3: R7-Sands and conglomerates (Pleistocene)	0,2
Ecopedological layer	Factor value
1: 09.01 Hilly relief	0,6
2: 11.02 Hilly relief of clayey, clayey-calcium	0,4
3: 11.06 Hilly relief aluminosilicate clay, clay-aluminum	
Soil	Factor value
1: none identified	0
2: No. 27: Haplic Calcisol; Calcaric Cambisol; Calcaric Regosol	0,2
3: No. 45: Leptic, Stagnic, Rhodic e Ferric Endostagnic Luvisol; Calcaric Cambisol	0,3
4: No. 47: Haplic e Petric Calcisol; Calcic, Chromic e Skeletic Luvisol; Calcaric e Luvic Phaeozem; Calcaric Fluvisol; Haplic e Calcic Vertisol; Calcic Kastanozem; Eutric, Fluvic, Endogleyic e Calcaric Cambisol; Vitric Andosol; Calcaric Regosol; Calcaric Arenosol	0,5
Distance from watercourse	Factor value
0-200 meters	0,4
200-400 meters	0,3
400-600 meters	0,2
500-1000 meters	0,1

Fig. 47: The value of the environmental factors.

7.2.2 Cultural factors

Distance from the main road: The distance from the main road was another aspect to be considered. The proximity of the road was an advantage for both residential and economic activities. This factor was calculated where the data made it possible: for the Roman period and the Middle Ages.

Distance from central places: The close connection to the consumption environment of the central places was significant for all production structures. The most important were the cities/colonies or oppidum. Cities, on the other hand, provided the rural population with goods they did not produce themselves. The analogue analyses showed that the settlements or villas were located within 10 km from the centres. This factor was calculated for components, for which it was relevant.

Cultural factors and values	
Distance from Via Aurelia	Factor value
0-1 km	0,4
1-2 km	0,3
2-3 km	0,2
3-4 km	0,1
Distance from central places	Factor value
0-3 km	0,4
3-5 km	0,3
5-7 km	0,2
7-10 km	0,1

Fig. 48: The value of the cultural factors.

Concluding the knowledge about the environment and the ecosystem, the natural conditions in most of the area were very favourable for the natural growth of rich vegetation and cultivation. Altitude did not exceed 300 m, slopes mostly oriented to the north-west, west, southwest, south to south-east with a maximum slope of 47 ° were covered by fertile soils. The conclusion of the impact of the cultural factors is the part of the interpretation of cultural landscape changes 7.3.

7.3 Formation of the cultural landscape and changing settlement pattern

7.3.1 Palaeolithic, Mesolithic and Neolithic periods

In the area under the investigation, there was only one Palaeolithic site **AC165** identified. It consisted of the isolated cumulation of the lithic instruments, dating back to Lower (1 600 000/1 300 000-120 000 BP) and Middle (120 000 - 35 000 BP) Paleolithic (Capuani 1981, 20). The researches of analogue sites (i.a. Palidoro) indicated that in this period marked by a colder climate, interspersed with more temperate phases, the subsistence of the Epigravittian population was based on hunting and gathering. The vast grasslands that covered the volcanic plains, furrowed by humid and sheltered valleys, rich in vegetation, populated by deer and wild boar, offered the right conditions. The most common species were *Cervus elephus*, *Bos primigenius*, *Equus hydruntinus* and *caballus*, *Capreolus capreolus*. In the early stages of the Holocene, there was a notable reduction in these animals, linked to climatic variations, which forced human groups to make greater use of marine resources (molluscs, crustaceans, fish) and smaller animals (Capuani 1981, 23). The site **AC135** was dated back to Mesolithic. Both sites were located in the north-west part of the area, near to the Fosso Marangone in the lowland area of Volpelle (Capuani 1981, 29-50).

The significant changes characterized the Neolithic period (6th-4th millennium BC): a production system was based on agriculture and, consequently, the domestication of different animal species (Maffei – Massimo – Sergio 2011, 61). Sites from these periods are absent in the area of *Ager Castronovano*. The closest sites were the Sasso di Furbara, Luni sul Mignone, Ripa Maiale and Le Macine. The closest sites from the Eneolithic period were identified in Tufarelle and the immersed part of Pyrgi (Frau 1990, 3). At seven meters deep below the current sea level, 300 m in front of the Roman castrum of Pyrgi, on the right side of the delta of a paleo-river bed, B. Frau has identified a large cave environment with an open vault and partially collapsed. This sanctuary, hypogeum and workshop were dated between the Eneolithic period and the Middle Bronze Age. The exceptional finding coincides with other discovery made in 1988, of two more two sunken houses located on the second side of the paleo-river bed. All this allowed hypothesizing a presence of the settlement in prehistoric times, dating back at least a thousand years before the Etruscan Pyrgi (Frau 1990, 4).

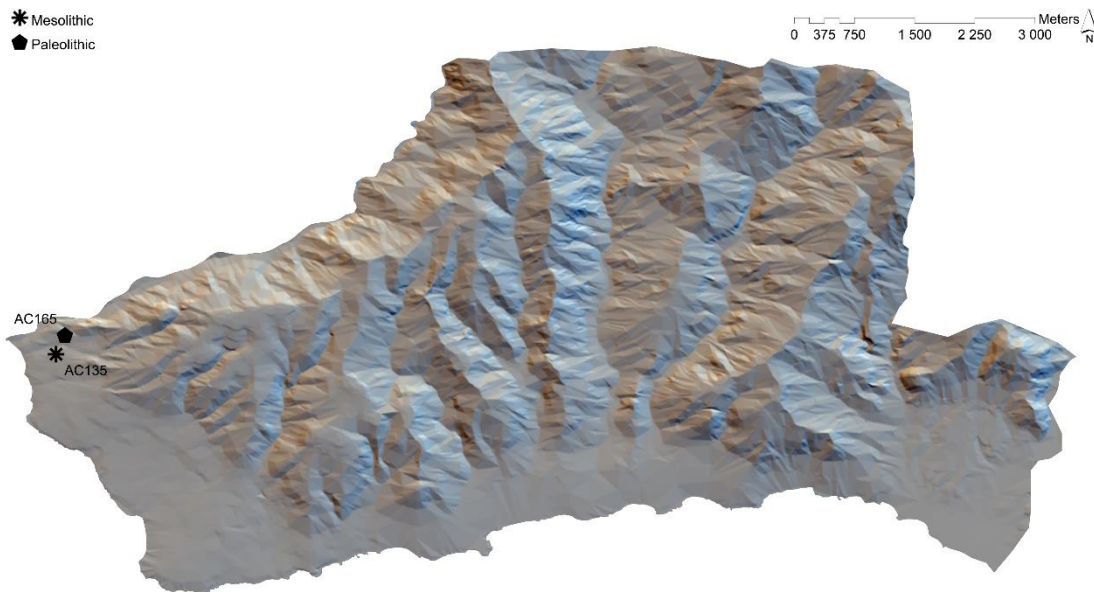


Fig. 49: Distribution of archaeological components in the area under investigation in Palaeolithic and Mesolithic period.

7.3.2 Bronze Age

During the Middle Bronze Age, also the communities in central and southern Italy are found to have shared architecture, funerary customs and material culture, which are typified as the Apenninic culture. The previous studies noted the preference of the coastline for settlements in this period. Capuani suggested that the abandonment of coastal positions in late periods of Bronze Age was motivated by enemy attacks from the sea and consequent movement to the inland parts. The research of the Luni site gives an analogy from the archaeobotanical and archeozoological point of view. The findings (of bones of cattle, sheep, pigs, and deer, wild boars together with seeds of wheat, barley, broad beans) have included an agricultural-pastoral framework with the aid of hunting and harvesting (Capuani 1981, 25). During the recent Bronze Age, the Apenninic civilization took on a new form. The period called sub-Apennine showed a clear and direct connection with the previous culture, keeping its characteristics, such as the almost total absence of decorative motifs on pottery products, and straight cylinder zoomorphic decoration of appendices (Capuani 1981, 25).

The knowledge of the extent and form of settlements from the Bronze Age in the *Ager Castronovano* is only beginning; however, based on current knowledge, it was possible to predict inhabited areas of this period. The Kernel density analysis showed that the sites concentrated along the Marangone River, from Castellina del Marangone to the coast. The second more significant concentration was located on a ridge stretching north of The Selciatta. It can be assumed that this hill was an essential area in the Bronze Age, from which it was

possible to control the narrow corridor stretching along the sea while looking down into the fertile plain extending along the sea to the south. The evidence of the occupation was identified both on the hills, both on the coast, where the agricultural and fishing settlements were located. The map of the agricultural potential showed the possible link of the Bronze Age settlements to the wooded sides of the hills.

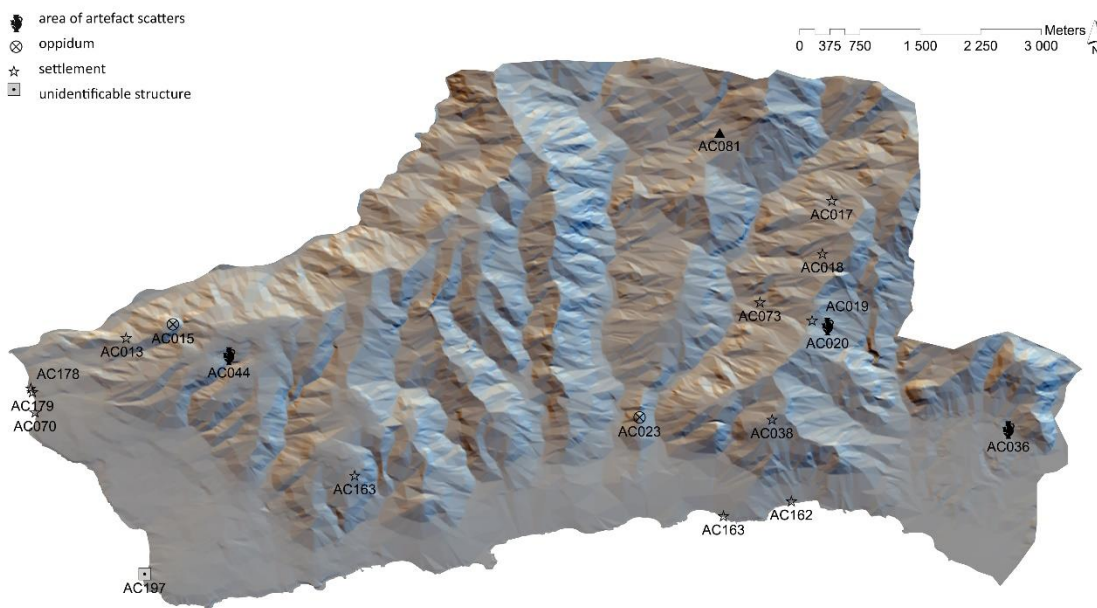


Fig. 50A: Distribution of archaeological components in the area under investigation in Bronze Age.

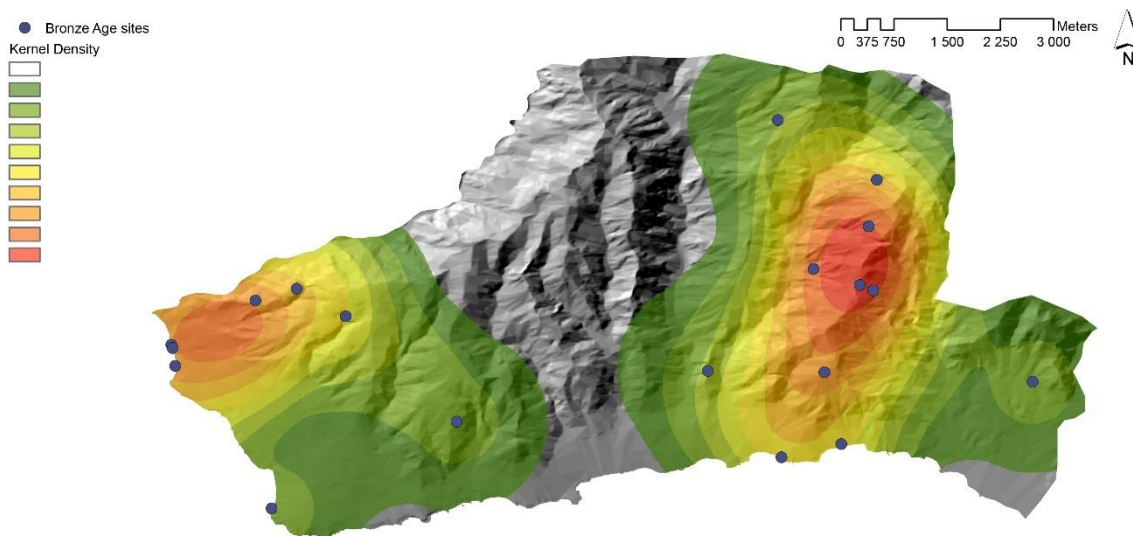


Fig. 50B: The Kernel Density analyses of the components from the Bronze Age.

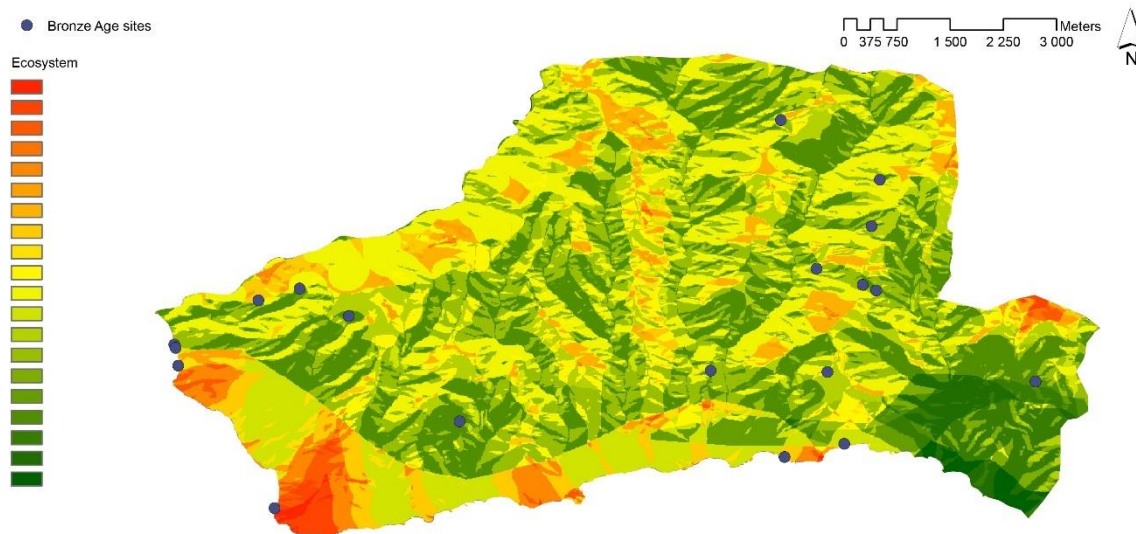


Fig. 50C: Bronze Age components in the context of the ecosystem map.



Fig. 50D: Bronze Age components in the context areas suitable for cereals and olives growing.

7.3.3 Iron Age

In the Iron Age, the growing tendency of settlement continued with fewer fluctuations at the end of the Bronze Age and the beginning of the Protovillanova culture. People in the researched area adopted a different burial practice, which consists of cremating the dead and burying the ashes inside the biconical-shaped vases, decorated with bundles of freehand grooves, associated with false-string impressions. This is referred to as Protovillanova culture. The inhabited areas concentrated on tops of the major hills of the mountain area located around the mining basin. Their settlements were often found on the top of the hills and protected by

stone walls. The local cultural aspect is generally indicated as *Allumiere facies*. The pottery associated with the inhabitants of this area stands out within the broader ProtoVillanova culture in the liveliness of the decorative, plastic and applied technique. This is associated with a level of wealth obtained from the extracting and trading of the minerals and metals in the area (Capuani 1981, 27). Later on, in the territory of Tuscany and northern Lazio, patterns and habits referring to the Villanova culture could be identified. The main patterns were the incinerated sepultures with the double-cone shaped urns. The Villanovans were initially devoted to agriculture and farming, with a simplified social order. Later, specialized artisanal activities such as metallurgy and pottery production produced wealth, which caused social stratification. In some publications, The Villanova is called The Etruscan period of origins and the Villanova culture is considered as ancestral to the Etruscan civilization (Pallotino 1985). Most Villanovan settlements continued to be occupied into the Younger Etruscan period. From known sites, the settlements consisted of small surface houses of rectangular shape with post-construction and wattle-and-daub walls. Some shelters incorporated large pottery jars for food storage sunk into their floors and used rock-cut drains to channel rainwater to communal reservoirs. They had the high-quality skills for metalwork. Some graves (in the literature often referred to as men's graves) contained weapons, armour, while others included weaving tools, some switched or mixed these. During the Villanovan period, inhabitants traded with other states from the Mediterranean, such as the Greeks, and people from the Balkans, and Sardinia. Trade brought about advancement in metallurgy, and Greek presence influenced Villanovan pottery (Colonna 2000, Bartoloni 2012).

The settlement network of the Villanova period was based on two fortifications, **AC015** Castellina del Marangone and **AC023** Castelsecco. There was undoubtedly a large settlement cluster around the first fortified settlement. It stretched along the ridge to Poggio del Principe. At the same time, it extended to the coast from the Marangone River to Capo Linaro. Another area of the occupation was identified around the Selciatta, where the previous settlement was. All sites concentrated mainly in the hilly landscape. There were only a few sites documented in the lowlands and on the coast. It can be assumed that settlements accumulated at the edges of fertile fields, probably near to forests and pastures.

The relation between the settlement and the necropolis in this period is evident in the data. As shown on the examples: necropolis **AC134** versus settlement **AC013**; and necropolis **AC008** versus the oppidum **AC010**. In both documented cases, the necropolis were separated from the settlement by a natural barrier (a valley of a river). This phenomenon was characteristic of Villanova and Etruscan burial rites.

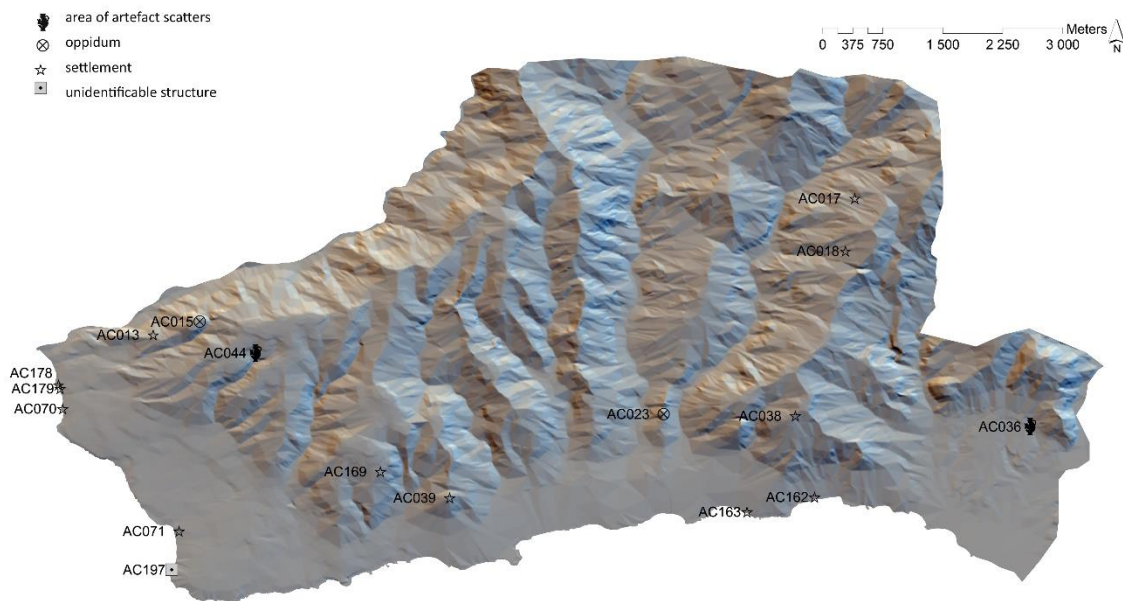


Fig. 51A: Distribution of archaeological components in the area under investigation in Iron Age (Protovillanova).

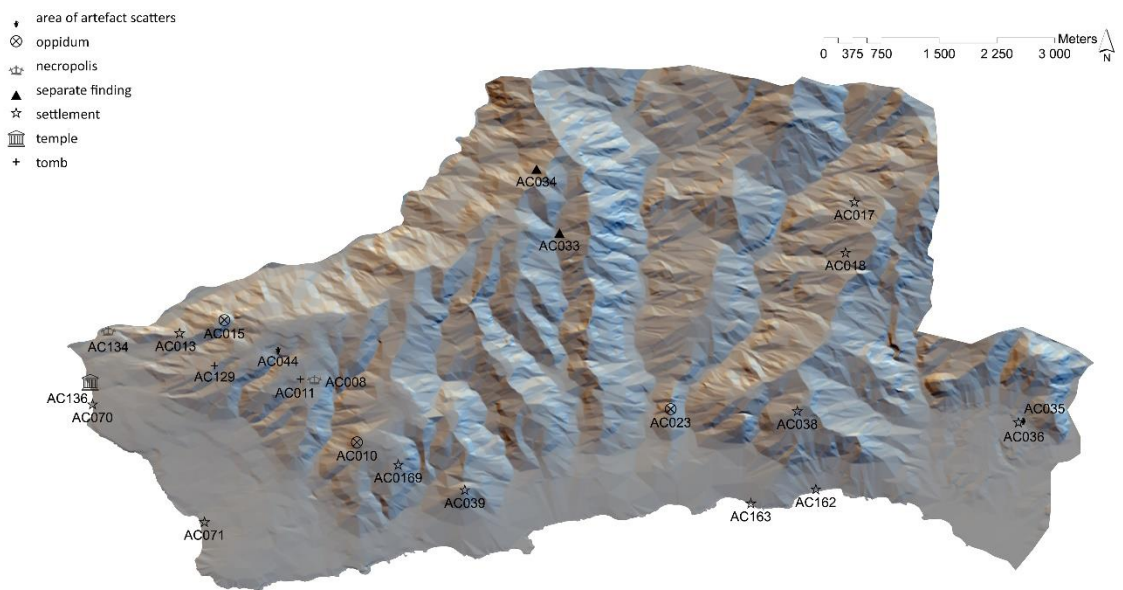


Fig. 51B: Distribution of archaeological components in the area under investigation in Iron Age (Villanova).

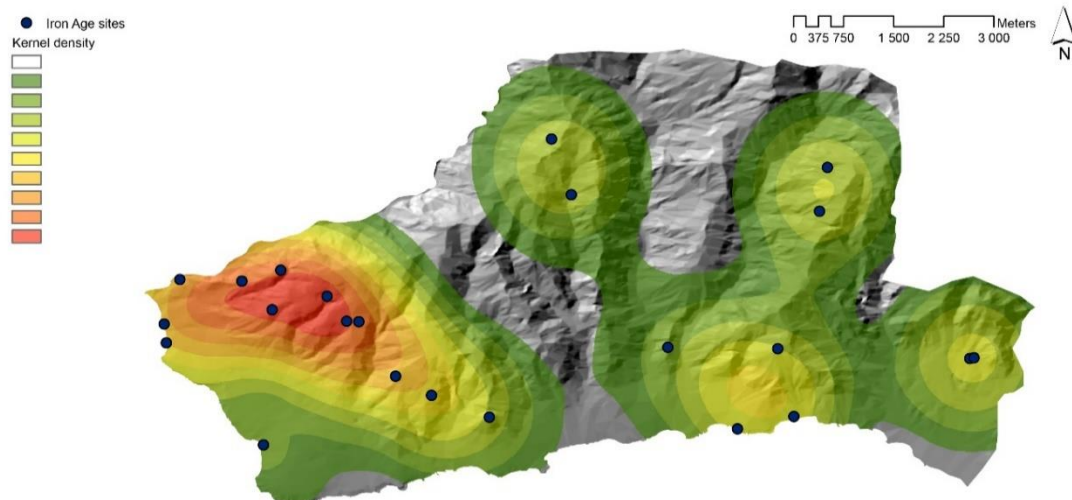


Fig. 51C: The Kernel density of the Iron Age components.

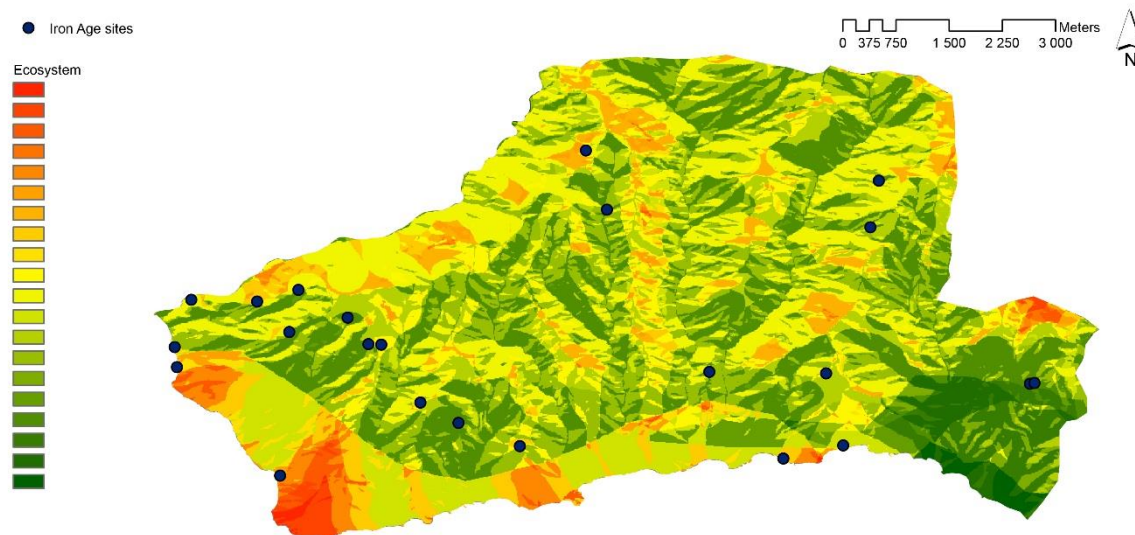


Fig. 51D: Iron Age components in the context of the ecosystem map.

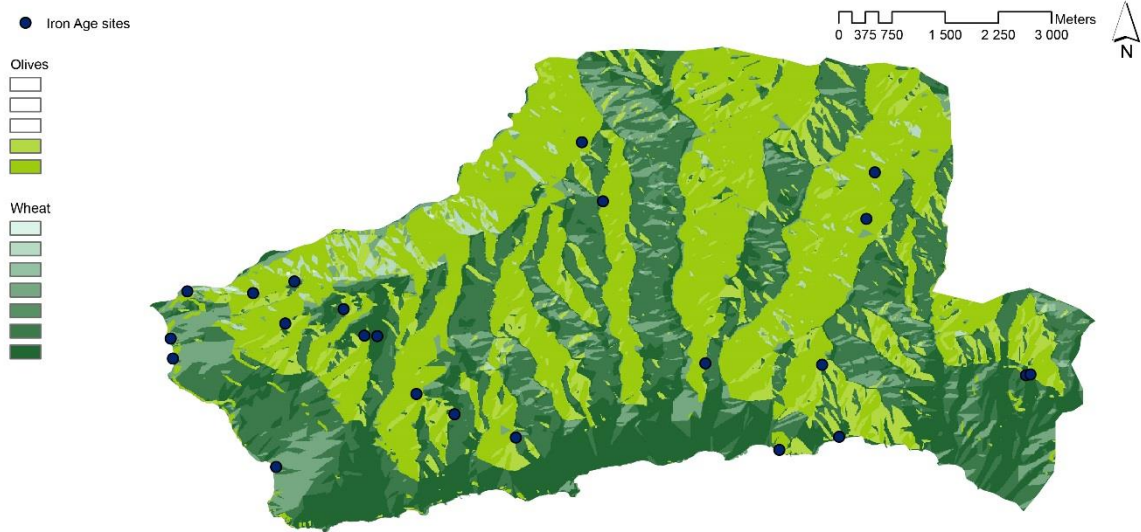


Fig. 51E: The Iron Age components in the context areas suitable for cereals and olives growing.

7.3.4 Etruscan period

The Etruscan settlements structure composed from primary components (towns, larger settlement and amenities set within an agricultural hinterland that differed from the village physically, economically, and politically). The secondary components (villages and smaller towns), which focused mainly on agriculture, accompanied them. These settlements had their origin in the Iron Age and developed into more nucleated settlements during the Orientalizing period. In the second half of the 7th century BC, a dense network of medium-sized settlements concentrated around the main settlements (De Vita 2017, 20). The establishment of centralized settlements was related to the elite's efforts to control the strategic resources of raw materials. People already settled such sites in the Bronze Age or early Iron Age. It demonstrated a systematic reoccupation of strategic positions and restoration of memory to legitimize ownership in the territory. The Ceri site from the neighbouring *Ager Ceretanus* area is an excellent example of this (Enei 2001). The typology of sites varies substantially; there was no single or uniformed process in the differentiation of sites. Based on the abundant archaeological remnants, a picture shows a landscape endowed with meaning as a physical expression of cosmology and social order. The emerging agricultural landscape was a dimension of cognitive perception of space, which entered to the decision-making process and was complemented by other symbols, such as power and territorial control. Great tumuli built in this period at a distance from the main centre fitted perfectly in such a scheme (Zifferero 1991, Zifferero 2002). The so-called Monumental tumuli surrounding large and smaller centres were erected in the 4th century BC. The tombs of moderate dimensions grouped. These monuments were all built at

clearly visible positions. There was no difference between necropolis of the primary and secondary centres, only those of the elites distinguished themselves. In southern Etruria, the tumuli appeared at a distance of 3,5 – 4 km from the city. It can be assumed that they delimit the territory belonging to the city, forming its hinterland (Zifferero 1991, 117).

The medium and small settlements complemented the hierarchized settlement network. Close to these settlements, cult places could be found. Apart from sacred spaces, these were probably also the seats of local authorities, directly linked to the ruling group. New, improved land cultivation practices emerged in agriculture. Crop-rotation replaced irrigation and increased yields. The introduction of tillage was connected to the physical boundary of arable land. For the first time, the landscape took the form of a geometric breakdown that divided it into equal parts. During this period, the landscape became an organized space with its signs and borders. The measurement of the area depended on the need for institutionalization. The institute of ownership was a prerequisite for the development of a hierarchical system in which land ownership became the main form of property accumulation. The Etruscan economy distinguished between the right to cultivate and the right to own land. The regular segmentation of rural space, as evidenced by an extensive network of estates, reflected the allocation of land use rights to the middle classes in response to the social segmentation process. On the contrary, agricultural infrastructures were the result of planning that developed regardless of ownership forms.

The 6th-5th century BC on the Apennine peninsula was a period of profound structural changes: from the consolidation of the city as a driving force of political and economic dynamism to the regular segmentation and subsequent social stratification of communities, to the development of complex and elaborate settlement organizations. Socio-cultural, economic, and production mutations, which took place at different rates and with regional differences, led to a nationwide transformation. For the first time, space became artificially structured. One can speak of the invention of the agricultural landscape (De Vita 2017, 25). At the economic level, it is a system of central points that based their income on agricultural land, possessing economic monopolies, taxing business, and administering justice. In other words, it was the same model as the one applied by Romans (Viglietti 2011). Etruria was known in the Roman period as an area of intensive cereal production. In the 5th century, it was one of the grain suppliers that helped alleviate the shortage in Rome (Goodchild 2007, 49). The prevailing agricultural orientation has changed in the same way as the morphology of the landscape.

The settlement network of the Etruscans in the *Ager Castronovano* followed the tendencies observed in the Iron Age. In the landscape, there were at least two fortified hillforts,

oppidum. **AC015** Castellina del Marangone was the largest, **AC023** Castelsecco was the second one. Other settlements were concentrated in the eastern part of the territory. On the coast, there were harbours. Two temples **AC066** and **AC136** were constructed in the strip along the sea southerly of **AC015**.

7.3.4.1 *Landscapes of city-states*

The Etruscan archaeological components in the *Ager Castronovano* were concentrated mainly in the southwest and southeast parts of the territory. Two significant city-states, outside the surveyed area, could have affected this division: Tarquinia from the north-west, Cerveteri from the south-east. The fact that the territory border buffer zone between two important Etruscan urban centres, where their interests overlapped, would explain the thinning concentration of settlements inward. According to Thiessen's polygon, the ideal boundaries of Tarquinia and Cerveteri influences was near or along Fosso di Castelsecco, crossing Prato Rotatore and following the Fosso Sbordone. In this buffer zone, the concentration of sites was the thinnest. All funeral and religious units were concentrated in the north-west angle of the area (in part under Tarquinia influence). In the Cerveteri part, there are no funeral sites. They concentrated out of research area in Pian Sultano.

The Etruscans applied a model of extra-urban places, which defined the territory of the city-states and the surrounding the sacred landscape to manifest the extent of the power of centres, as poleis of mainland Greece or Magna Graecia did. It gave rise to rural cult sites that visually and ideologically marked the territory of the community. They placed the temples at the margins of their territory (Stek 2014, 91). In this optic, the temple of Punta della Vipera **AC066** could mark boundaries of the territory and refer to the political affiliation. Cerveteri had central temples located in Pyrgi, which showed the influence of Punic cult (Astarte). The central temple of the Tarquinia was in Graviscae, dedicated to a Greek-oriented cult. The findings of votive terracottas in **AC066** have explained the relationship with the surrounding city-states. The figurines of Classical Greek inspiration and anthropic votive heads from the 4th century were the product of the workshops in Cerveteri. Therefore, the boundary between Tarquinia and Cerveteri was not the Fosso Castelsecco, as the Thiessen polygons suggested, but the Fosso Marangone on the west border of *Ager Castronovano*.

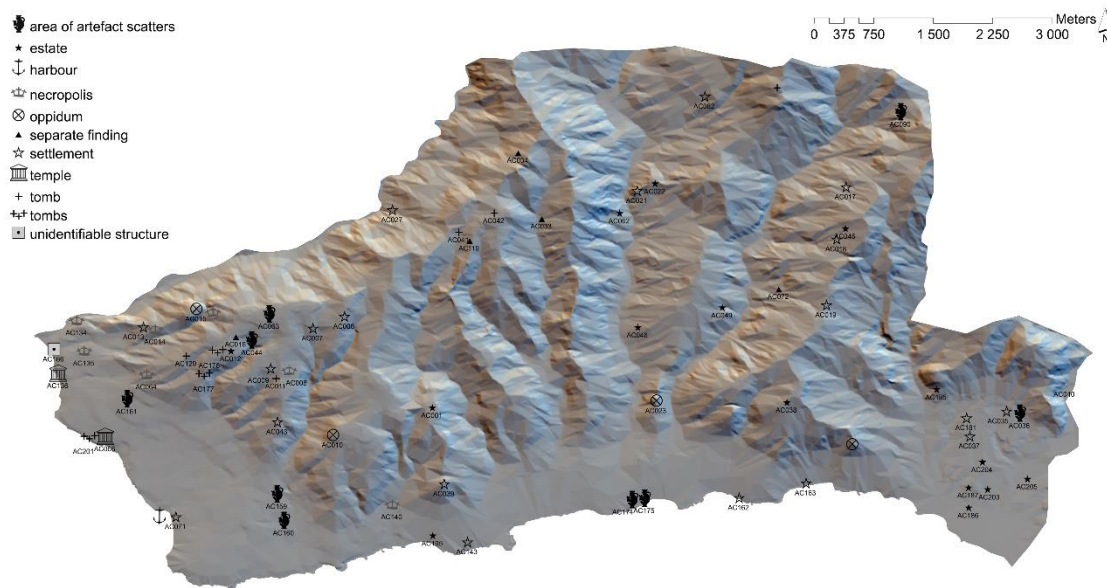


Fig. 52A: Distribution of archaeological components in the area under investigation in the Etruscan period.

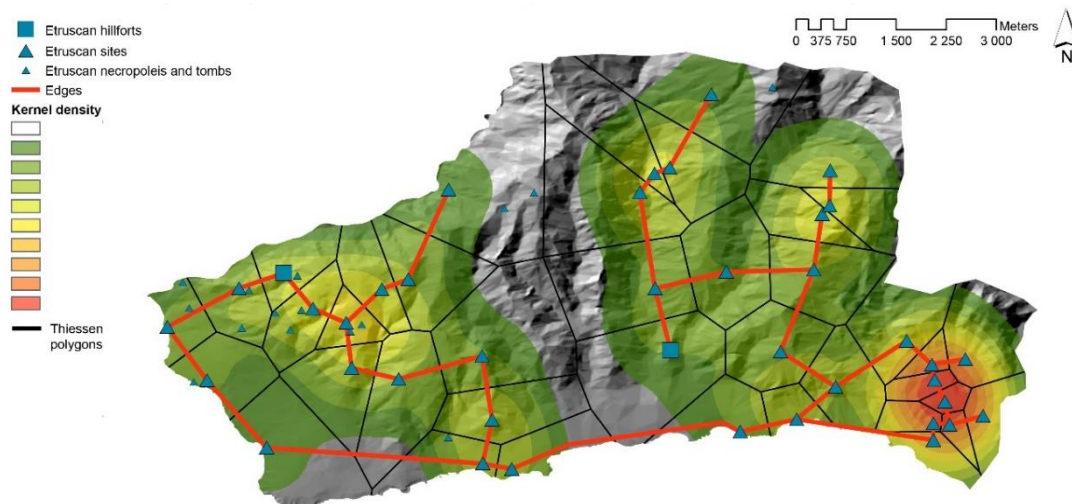


Fig. 52B: The Kernel density of the Etruscan component. The components created the nodes that are connected by the net of the edges.

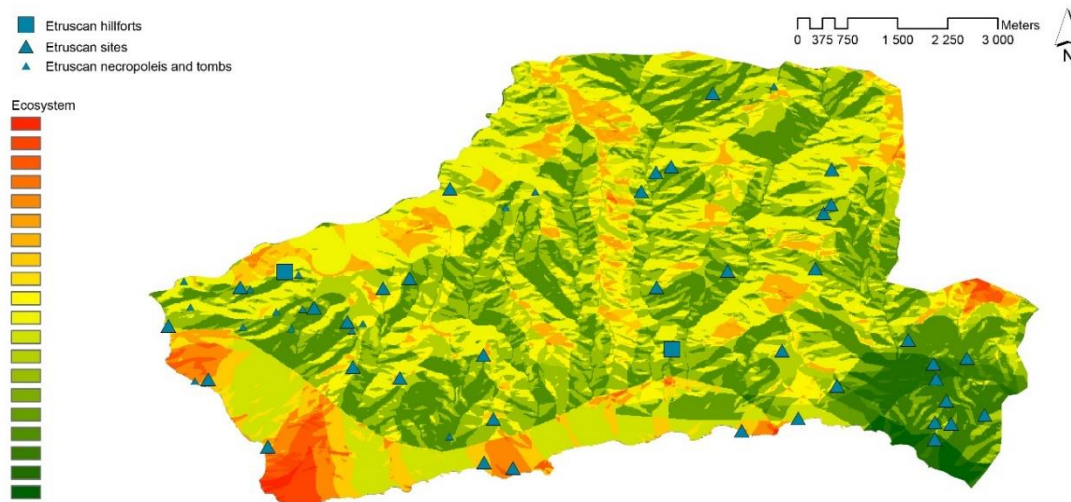


Fig. 52C: The Etruscan components on the ecosystem map.

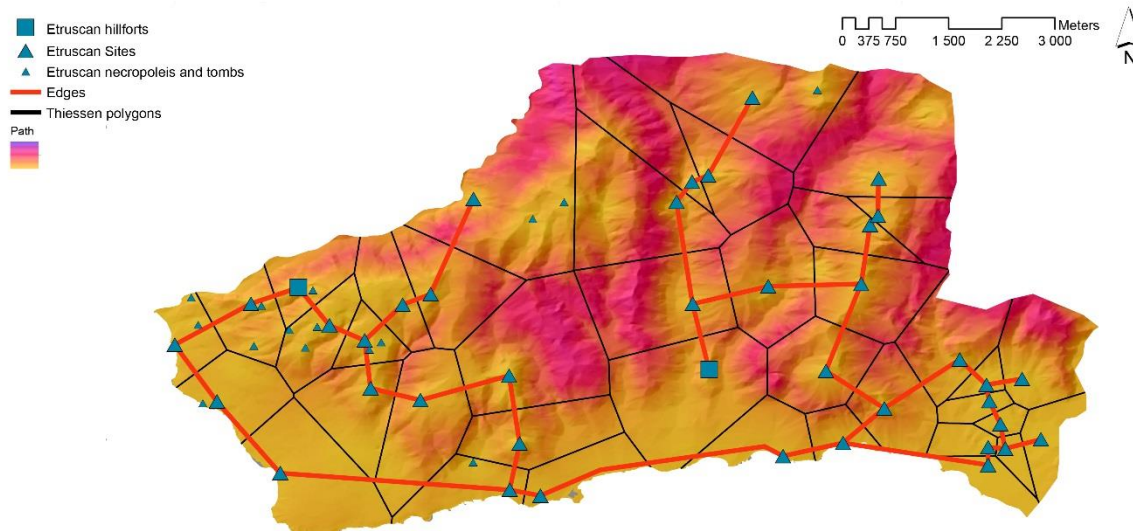


Fig. 52D: The map of the path costs and settlement network.

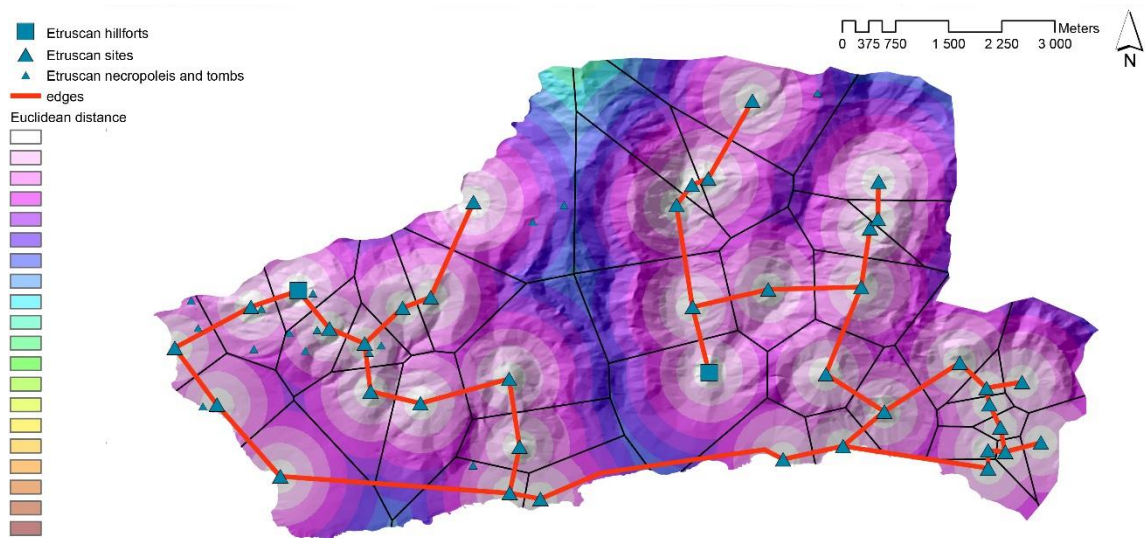


Fig. 52E: The Thiessen's polygons in combination with Euclidean distance and the Etruscan settlement.

7.3.4.2 Roman expansion into Etruscan territories

Ancient authors such as Strabo described Etruscan attacks against the Romans from the 4th century BC. Already in 384 BC, the army of Dionysius from Syracuse plundered the coast of the Caere and destroyed the temples in Pyrgi and Punta della Vipera **AC066**. Shortly after that, a new enemy, Rome, began to attack/destroy Etruria. In 295 BC, Caere was conquered. Since 352 BC, there was a peace between Rome and Tarquinia, which was extended in 308 for 40 years. Both Etruscan city-states were destroyed in the first half of the 3rd century BC. The protracted conflict ended around the middle of the 3rd century BC. During this military campaign, the footholds in the area were also destroyed. The finds of lead projectiles, so called *giande missili* discovered both in the Etruscan fortified sites **AC015** Castellina del Marangone and **AC023** Castelsecco, both in the Roman colony **AC071** *Castrum Novum* prove it. The landscape also reflected these changes caused by the transformation of political, institutional, and administrative situation, resulting from the taking over of the territory by the Romans. They established the colonies to ensure control above the conquered areas (Salmon 1969) and to defend the coast in the First Punic War. The successive deduction⁵⁹ of Roman colonies such as *Castrum Novum* (264 BC), *Alsium* (247 BC) or *Fregenae* (245 BC) illustrated the progress of Romanization (Enei – Haack – Nardi Combescure – Poccardi 2011, 62). The layout of military strategic points in the landscape was not accidental. The Roman footholds were constructed in

⁵⁹ In Roman history, the term deduction (in Latin: *deductio*) indicates the foundation of a Roman colony and the sending of Roman colonists to settle the conquered area (according to the expression *deducere coloniam*). The colony could be deducted like Roman or Latin.

contrast to the Etruscan fortifications or essential sites. Hypothetically, the task of *Castrum Novum* was primarily to control the area stretching from Capo Linaro to the Fosso Marangone (the former territory of Castellina del Marangone). The second colony Punicum was supposed to control the area from Capo Linaro to the east (former territory controlled probably from Poggio del Principe). The Roman villas located along the coast Grottacce and Lessona below The Selciata took over the control of the coastline that has been the territory of Castelsecco.

The war was not only waged by weapons but also by the ideologically. So, the recently established colonies, in addition to military functions, also formed religious and administrative centres. Again, the scheme of extra-urban cult sites appeared on the border. The placement of temples corresponded to the conquered territory. A settlement that identified with the ideology of the sanctuary was concentrated in the surrounding. Probably, for this reason, the Romans reconstructed the temple AC066 on Punta della Vipera. The findings of votive figures in the sanctuary from the 3rd to 2nd century BC proved this hypothesis. They were produced in Tarquinia, Caere-Vignaccia and Rome. The source of the type known as *capite velato*, as practised in Roman ritual (Comella 2001).

In *Ager Ceretanus*, Vulci or Tuscania, and *Ager Castronovano*, it was possible to observe the apparent disrespect for traditional cult places. Agricultural land and production structures have overlaid the Etruscan necropolis. It may be due to a lack of cultivated land and increasing consumption, or symbolic expression of overturning the habits of the indigenous inhabitants.

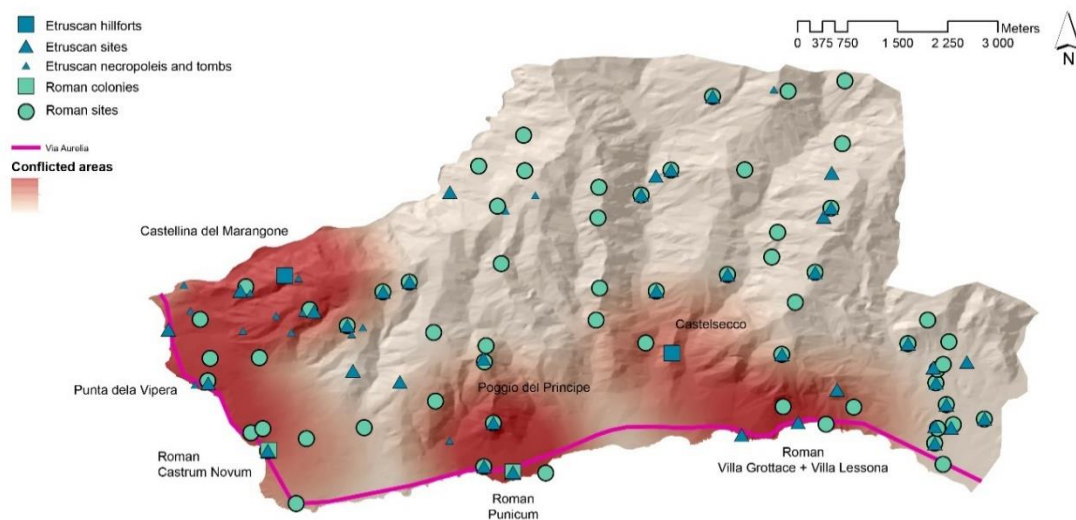


Fig. 53: The confrontation of the Etruscan and Roman central places and settlement.

7.3.4.3 Roman colonization

The Romans established the urban model on the powerful central place (colony), which took the form of an urban centre (oppidum) with political, commercial and religious components (*forum, capitolium*), and its economic background with an emphasis on food production (*ager*). So there was a clearly defined city and its clearly defined hinterland. All this, in addition to the economic background, continued to rely on military power and a religious cult (Pelgrom 2008; 2012; 2013; 2014)

My study of the development of the *Ager Castronovano* has started with the topography of the urban centre *Castrum Novum*. An essential prerequisite was the understanding that the colony consisted not only of the components inside the city-wall but also of the whole community of colonists living in a specific area. This comprehensive view can give better insight into the physical structure and socio-political organization of the colonial community. The difference between scattered pre-Roman settlements, strict Roman urbanism and the urban landscape is evident. The topography pattern clearly shows that Etruscans and Romans are two different types of communities. The Etruscan settlement structure created a so-called “leopard-skin” pattern. The Roman community, on the other hand, respected the Latin Right building rules, which fixed the regular structure (Stek 2014, 90). One of Cato's passages could also explain the intensive transformation of the landscape. It first obliged the owner to deal with the planting of crops and their productivity; only later, with the construction of the villa. The apparent reference to the transformative and conservative capacity of the structure and *instrumentum* of the villa was implicit in this concept of proportionality (Allegrezza 2016).

7.3.5 Roman Republican period

In the late Republic period and the early Imperial period, agriculture formed the backbone of the Roman economy. 80-90% of the population was engaged in agricultural activities (to compare, in the late Imperial period, this percentage dropped to 70%) (Hopkins 1978, 6; Evans 1981, 428). Although rural life was not at the forefront of the interest of ancient authors, some written sources described its functioning, for example, Plutarch's *Life of Tiberius Gracchus* (Perrin 1921), or Plinius the Elder (Rackham 1950) or Appian (White 1979). Pliny, the Younger described the model of peripheral villas controlling the large *fundus* through the work of slaves and peasants (Radice 1969). The inhabitants probably retreated to habitats from the pre-Roman period. There is also an agricultural manual of Cato the Elder (Ash 1936). In combination with archaeological sources, it is possible to determine descriptive factors for the size of agrarian components or yield levels.

The development of the Roman agricultural economy can be divided into two phases, separated by two milestones. The first was the period of Gracchi brothers. The second came in the Imperial period.

The Gracchi brothers, who lived in the years 133 – 122 BC tried to push through land reforms, dividing the land of great owners among the plebs. In this period, Rome experienced expansion and numerous military campaigns. Free peasants made up the majority of conscripts. Multiple military losses reduced the rural population, and the survivors found their farms neglected and ravaged by war. The deployment of slaves did not avert the situation either. It was necessary to aggregate farms into more significant components capable of managing surplus. A side effect was the gradual liquidation of smaller farmers unable to compete in the market (Goodchild 2007, 28; De Neeve 1984). Modern studies attributed the dramatic interpretations of the period during and after the Punic Wars to the traditional historiography's mainstream of the 2nd century BC. For example, K. D. White (1967, 62-65,73) or Dyson (1992, 33) described the conditions for a rapid recovery of society and economy: the establishment of new colonies or the settlement of poor people. Not all the male population was taken to war; on the contrary, boys too young for war grew up and were able to start their own families (Rosenstein 2004, 9-10). Archaeological data obtained during modern researches also contradict the traditional view. They described the Roman landscape as a highly diversified space (Goodchild 2007, 28).

In the *Ager Castronovano*, rural sites were the focal points of economics. The densest settlement cluster was established on the eastern edge of the territory, east of Selciatta Hill. From there, the establishment of other villas and factories continued inland. Another centre of colonization was *Punicum*, whose hinterland occupied the area around Poggio del Principe. The third concentration covered the area north of *Castrum Novum* towards Fosso Marangone. Inland, more or less intense concentrations of other rural sites gradually developed. More significant cluster covered the western slope of the ridge stretching from Selciatta. The areas in the central and northern parts of the surveyed area were gradually built over too.

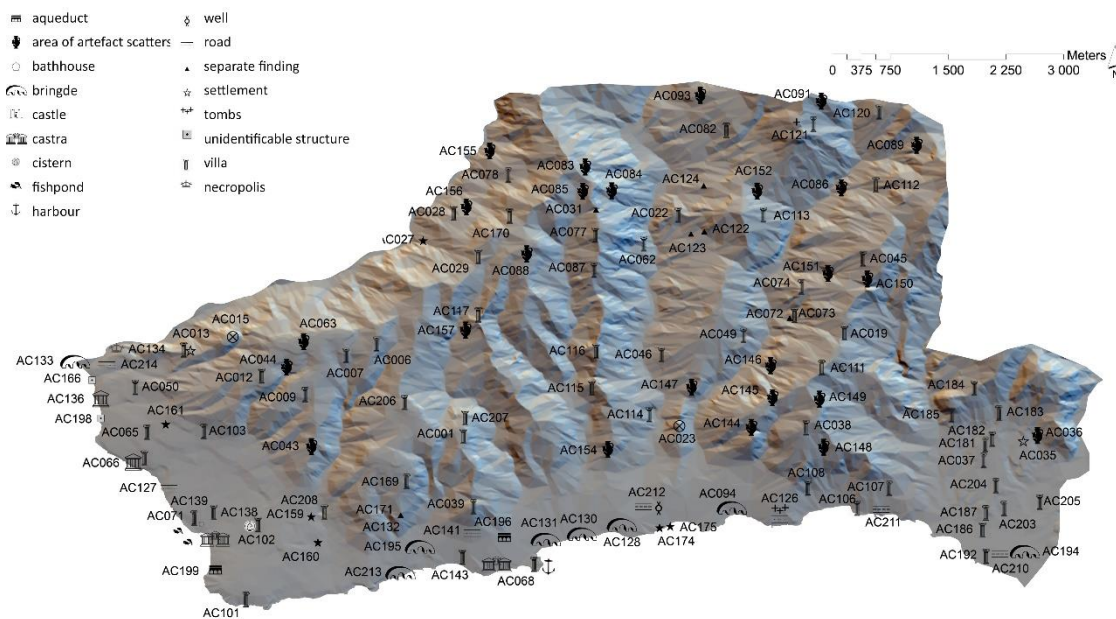


Fig. 54A: Distribution of archaeological components in the Roman Republican period.

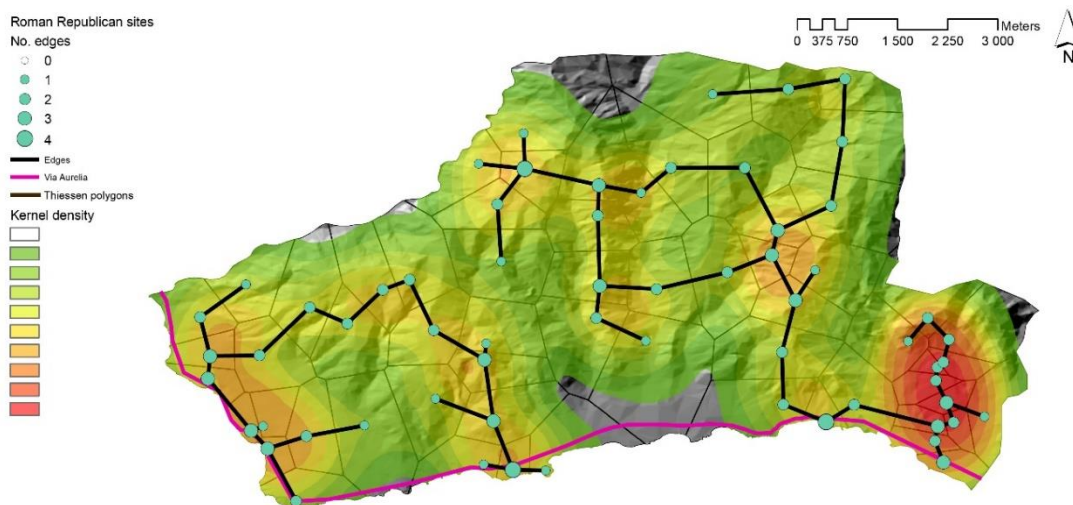


Fig. 54B: The Kernel density of the Roman Republican components.

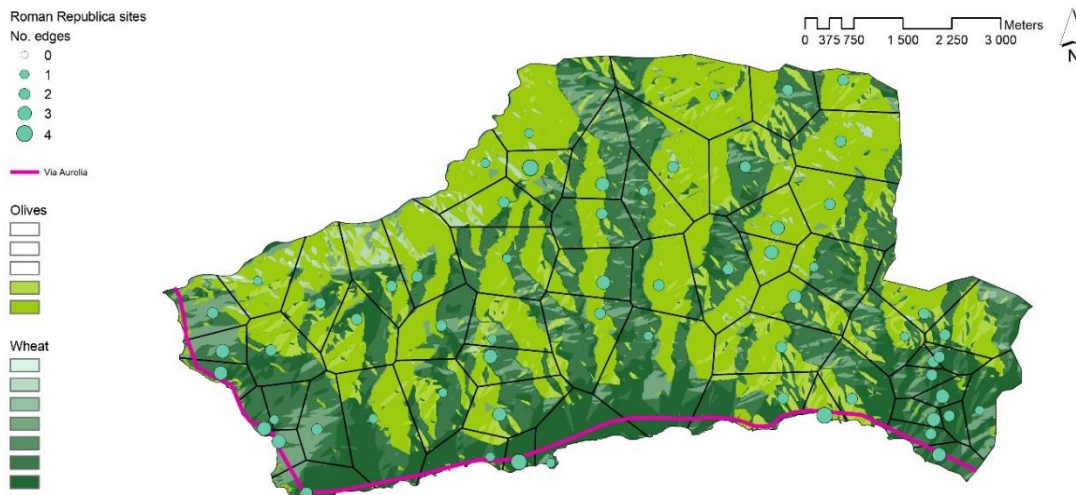


Fig. 54C: The components from the Roman Republican period in the context areas suitable for cereals and olives growing.

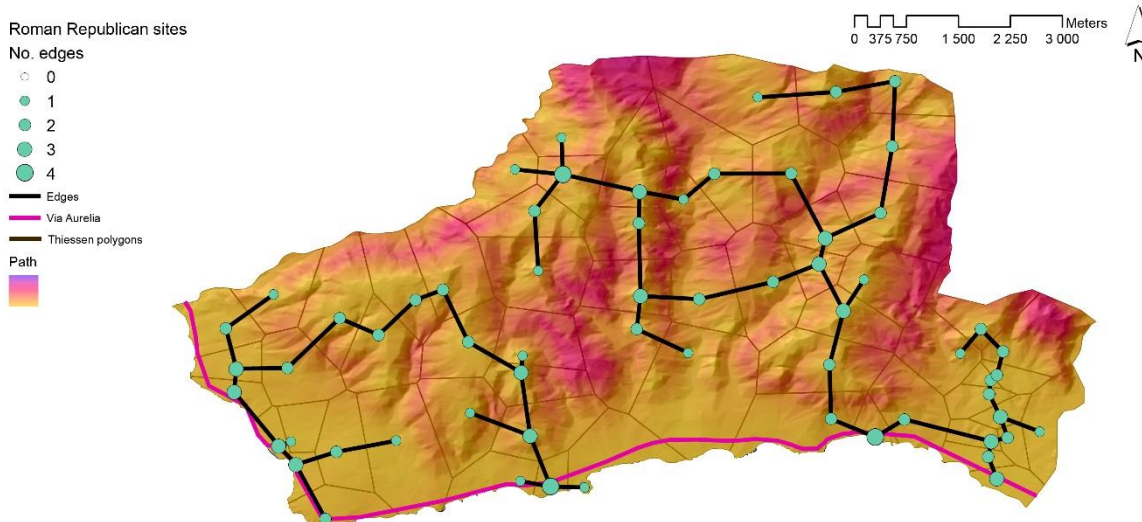


Fig.54D: The Path costs and the settlement network of the Roman Republican components.

An extensive residential network was established in *Ager Castronovano* and covered most of the territory. Thiessen polygons and Euclidean distance calculation described the size of individual rural sites. Both analyzes help to understand the size of the land under cultivation. Each may have an individual error. Thiessen polygons may sometimes appear too large, which may partially correct the ideal circles around the points; the ideal circle, on the other hand, maybe too small, so the Thiessen polygon corrects the minimum). Both analyzes show that the concentration of rural sites in the eastern part of the territory and north of *Castrum Novum* was significantly higher. On the contrary, the most extensive areas were located around the edges of the territory and in the northern part. In these peripheral areas, a larger villa or even a

latifundium could be expected. The small peasants had 12,5 hectares at their disposal. They probably had another source of livelihoods, such as grazing or fishing. In *Suburbium*, wealthier landowners owned around 60 hectares (240 iugera). The Latifundia stretched over 100 hectares. These areas largely corresponded to the possibilities of ploughing. A pair of oxen managed to plough 25 hectares, two pairs of oxen managed 50 hectares. The most impoverished peasants who owned 12 hectares either had no animals or hired them. The model showed that the area was divided into plots unsymmetrically, and there were differences. In the lowlands near the colonies, there were located slightly smaller plots. Larger plots occupied the hilly part of the territory.

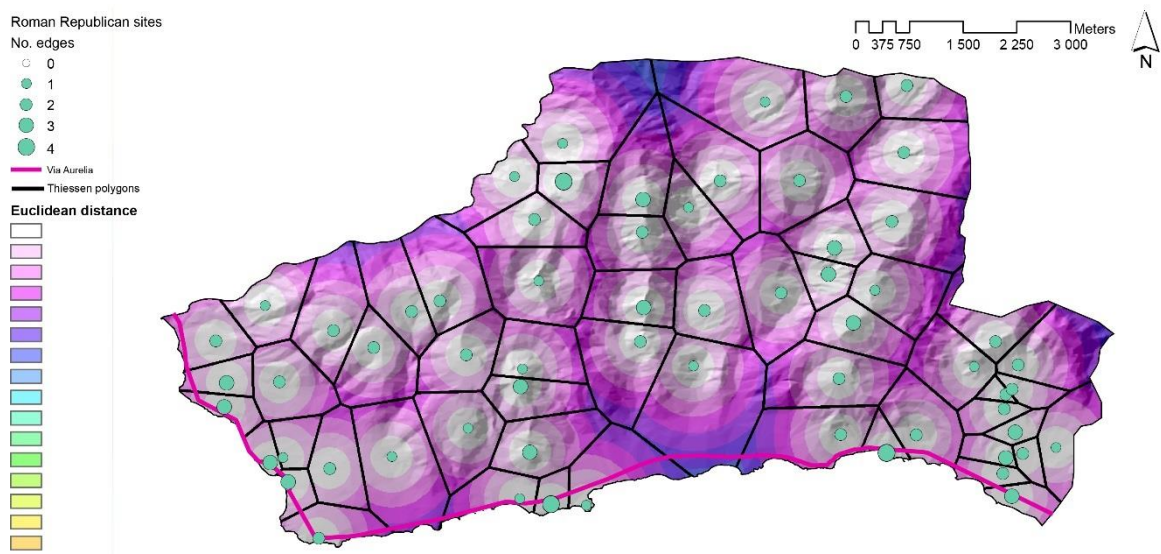


Fig. 54E: The Thiessen's polygons in combination with Euclidean distance and the Etruscan settlement.

According to another map, it can be concluded that the majority of rural sites, that were located along the coast in the Republican period were focused on the production of grain. On the contrary, those in the hilly countryside probably had a combined production based mainly on the production of grain combined with trees planting. The slopes were used to grow fruit trees, olives and wine and, in addition to the grazing.

7.3.6 Roman Imperial period

The second important milestone in Roman economic development was the 1st century AD. In essence, the crisis was dominating the society (attributed to the processes that started in the 2nd century BC). Even earlier, the Domitian's wine edict from 92 AD abolished numerous vineyards in the provinces and prohibited the establishment of new vineyards throughout the Empire. The Domitian government tried to solve the disproportionate level of production of wine and grain. Classical authors such as Pliny the Younger and Columella criticized the state of

the economy. They attributed it to the emancipation of the Roman provinces, the inefficiency of provincial imports into Rome, the elites turning away from traditional values, and the poor organization of slave labour. Recently, these claims were re-assessed by modern scholars. Patterson (1987, 115, 118, 120) attributed ancient averment to a series of smaller local crises rather than a widespread trend. Field research supported this hypothesis (Ikeguchi 2000). Material sources showed a high variation between regions. Ikeguchi and Goodchild described that the crisis in this period probably affected mainly the villas producing wine and oil. The crisis as such could not be stopped but has been overcome by regional responses and measures, including a shift from slavery to the tenure of land or a change from agriculture to pastoralism. The studied area could make a profit from close contact with Rome and its massive purchasing power (Bugli 2011, 82). Other studies explained the significant discrepancy increase in wine production and the stagnation of the grain one (Garnsey 1988, 191). Others referred to the theory of economic decline and the collapse of small-scale agriculture as a cliché in Roman historiography (Garnsey – Saller 1987, 59-61, 76). Jongman (2003, 111) showed on his model that the area needed to cover wine consumption accounted for a small proportion of the available agricultural land. According to him, the notion of agricultural decline presented by written and epigraphic sources is therefore unfounded. He wrote that if such a shift from cereals to viticulture were real, "it would leave Italy both deadly hungry and dangerously drunk." Morley (1996, 10-11) brought in another sceptical view; he described the susceptibility of Roman agriculture to stagnation and the crisis in opposition to more dynamic and prosperous provinces as a modern prejudice. He stressed that there was little evidence to support the idea of nationwide problems (Garnsey 1988).

Furthermore, starting from the first two centuries AD, the landscape of the villas was well structured and did not undergo significant changes. A hierarchy of settlements belonging to large villas often equipped with *pars rustica* maintained. The original Republican settlement network remained the fundamental pillar, but there were several changes in the landscape. The most significant shift occurred in the eastern part of the *Ager Castronovano*, where previously dense settlement cluster has disappeared, and the new centre formed in the coastal area under the Selciatta hill. The map fig. X shows a slight concentration of settlements also in other stripes lining the coast. However, modern constructions limit the understanding of the coastal settlement structure. Despite this, it can be stated that an entirely new element was implemented: the large imperial seaside villas, which often had their fishponds: **AC067**, **AC068** and **AC069**. Other extensive villas also appeared more inland e.i. **AC017**, or **AC082**.

Also, the Roman colonies were rebuilt, as evidenced by the archaeological research of *Castrum Novum*. The number of inland villas increased in comparison to the Republic. Either networking was completed at this time, or some imperial villas overlapped previous developmental phases.

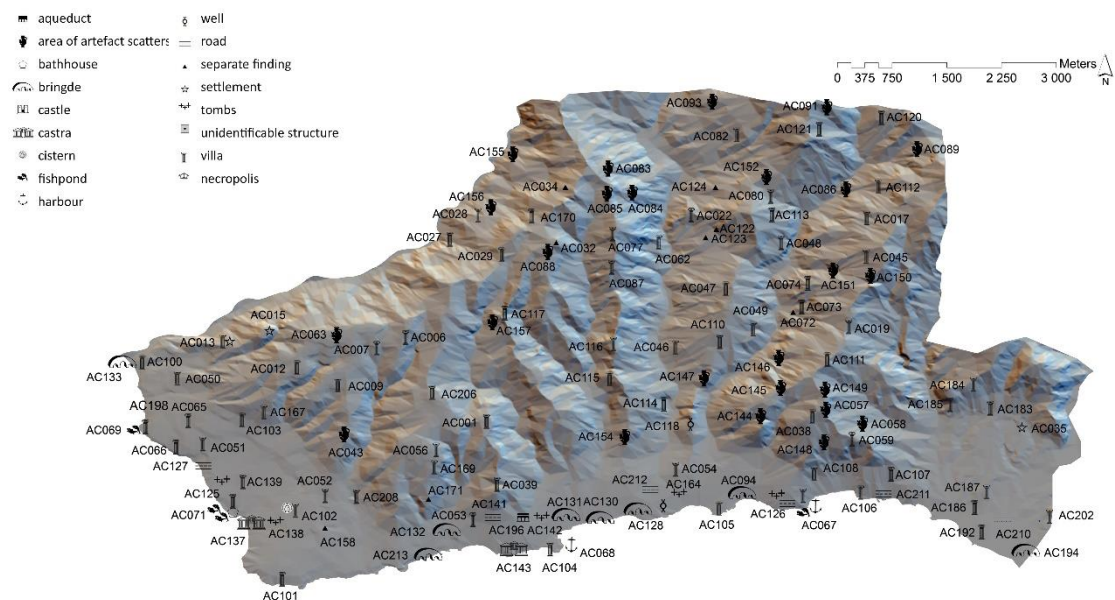


Fig. 55A: Distribution of archaeological components in the area under investigation in the Roman Imperial period.

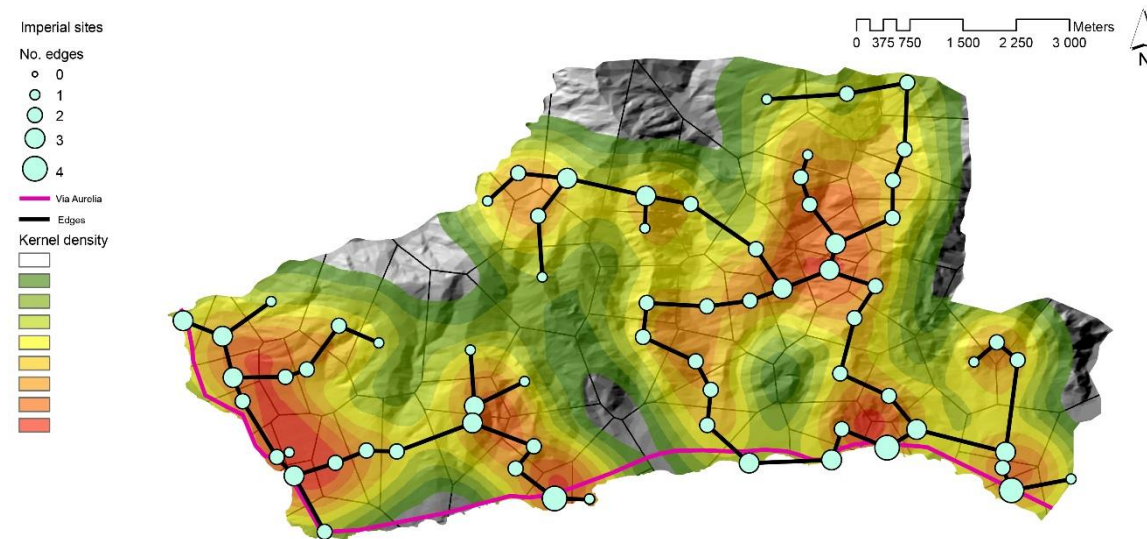


Fig. 55B: The Kernel density of the components from the Roman Imperial period.

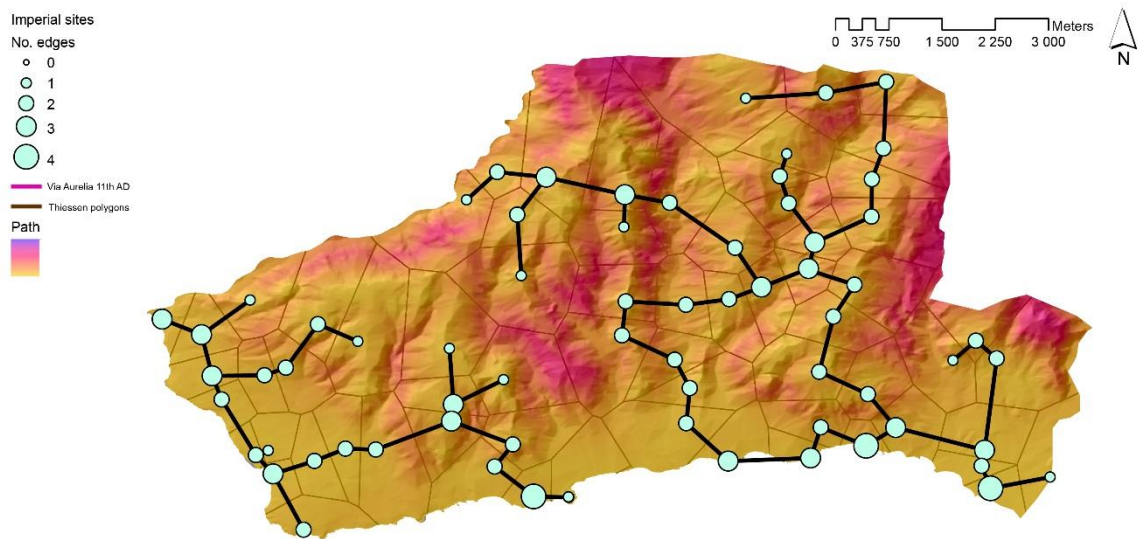


Fig. 55C: The map of the Path costs and the Roman Imperial settlement.

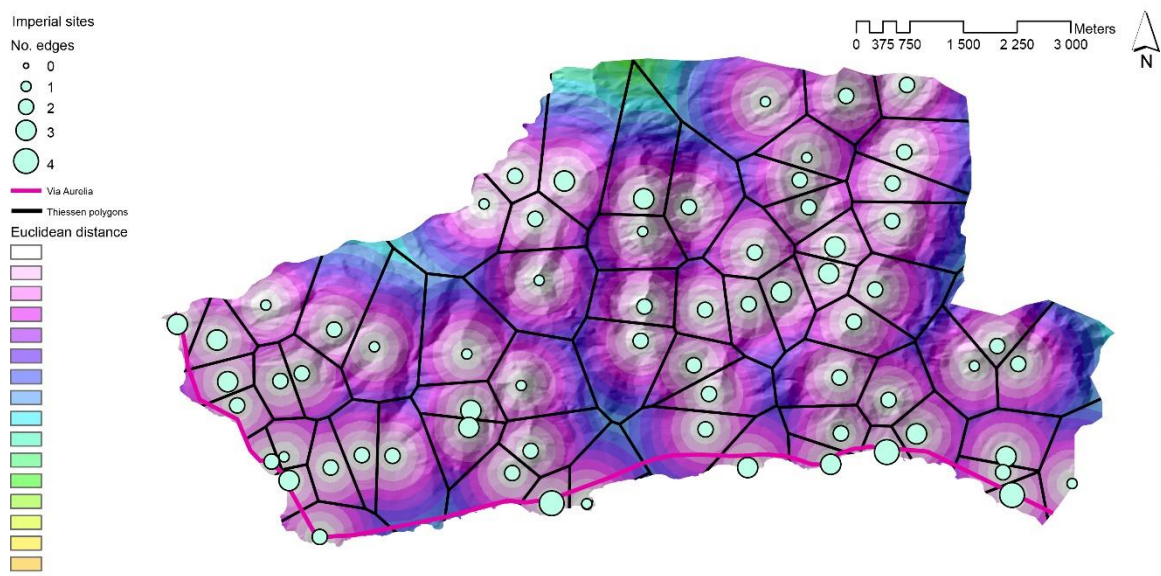


Fig: 55D: The Thiessen's polygons in combination with Euclidean distance and the Roman Imperial settlement.

7.3.6.1 Production of principal crops in the Roman period

Wheat production: The prerequisites for the grain planting have been flat and slightly sloping terrains. *Triticum dicoccum*, *Triticum spelta*, *Triticum monococcum*, *Triticum durum*, *Triticum aestivum* or *vulgare*, *Triticum compactum* were typical of central Italy (Spurr 1986, 10-17). For these species, the plains and slightly steep southern and eastern slopes have been worthier. Based on these assumptions, a map of the ideal distribution of grain production has been

created. It clearly shows that the grain planting has concentrated more on the coast. Marginally, the grain could be produced de facto throughout the territory.

Olive production: The olives were grown preferably on sloping terrain, so the cultivation limits were between 8 ° and 50 °. The west orientation of orchards was recommended. The less recommended was the north and the south orientation. The east orientation was only rare. The words of Cato confirmed it: "... land that is suitable for olive planting is that which faces the west..." (Goodchild 2007, 40). The soils rich in calcium, slightly less sandy soils were suitable for the cultivation of olive trees. These assumptions were taken into account in the olive-growing map (fig. X). It shows that olive trees could be grown in most of the hilly area, ideally the western slopes of long hills. Worse conditions for growing olives were along the coast. There the agriculture has been focused more on the production of grain. The prediction of olive groves can be correlated with the findings of olive presses. Most of them were found along the western slope of The Selciata. It seems that this area has been focused on olive production. The increased occurrence of olive trees also explains why this area was characterized by a long-term increased concentration of human settlements, at least from the Bronze Age until the late Imperial period (fig. 56).



Fig. 56: Distribution of millstones and quern-stones in Ager Castronovano.

7.3.6.2 *The decline of Roman Imperial villas*

The administrative reform of Diocletian (284 – 305 AD) divided the cadres of the Italian territory into 12 dioceses. *Ager Castronovano* fell into that of *Tuscia et Umbria*. The general situation changed, starting from the 3rd century AD. A numerically significant contraction of the presence of small scattered settlements appeared, and the system of villas resisted in difficulty. This sector of Lazio's Tuscia is an area where, thanks to its proximity to the city of Rome, Christianity penetrated quite early, even if diffusion is characterized as a gradual process, which did not involve, especially in rural areas, the sudden disappearance of pagan practices. The official recognition of the Church accelerated the evolution of the episcopate administration, experimenting with structures and institutions deriving from the administrative structure of the late Empire. This process took place in often profoundly changed contexts, with an essential role of cities as poles of aggregation of vast territories. The dioceses were the centres of the ecclesiastical organization of the territory and appeared, at the same time, fundamental for the bureaucratic organization (Pastura 2017, 17). From the 4th century AD, a phase of irreversible abandonment began and culminated in the 5th century with the crisis of the *latifundia* system, parallel to significant political and military upheavals, as well as with the departure of the ruling elites from Rome to Constantinople from the 4th century AD (Enei 2001, 75-76; Tartara 1999, 40; Bugli 2011, 80). Between the 3rd and the beginning of the 4th century AD, the documentation relating to the administrative centres of the territory in Roman times completely disappeared (Pastura 2017, 17). On the threshold of the fifth century with the Gothic invasion of Alarich (408-410 AD) and the collapse of the Roman Empire in 476 AD, the territory underwent significant changes. The structure of dioceses remained unchanged until the fall of the Western Roman Empire and the subsequent settlement of Odoacer and the Ostrogoths.

7.3.7 Middle Ages

In contrast to the process of the romanization of *Ager Castronovano* that is well known and documented, the dynamics and settlement structure of the Middle Ages period were uncertain for long decads. The rapid change occurred with the fall of the Roman Empire. Even a lucrative position of the area on a major route leading to the capital did not prevent a significant depopulation. In contrary to the theory of total abandonment, the research provided evidence about the significant change in the function and appearance of the landscape. It remained occupied, although the activities were significantly reduced. Ancient structures lost their function and were abandoned. In answer to actual needs, new elements appeared in the landscape. Two castles **AC021** and **AC068** and one observation tower **AC023** were founded. They ensured security and controlled the traffic on Via Aurelia between Civitavecchia and Rome; on

the sea and the secondary roads linking the coast and inland. Agricultural activities concentrated in the system of the farmsteads. The three churches became a prominent landmark of the area for a period of the Middle Ages, located in elevated, clearly visible places. Rutilius Claudius Namatianus presented the area of *Castrum Novum*, too subjectively, as the landscape in an evident state of degradation and dangerous. Looking at the area in a broader spatial context, the coincidence between written sources and archaeological data for the sites of *Alsium*, *Pyrgi*, *Castrum Novum*, *Gravisciae* and *Centumcellae* is surprising. In fact, he was an eyewitness to the state of abandonment of the area. However, as the case studies from the surrounding areas shown, the settlement development has taken a separate path in each region (Nardi-Squalia 2011,6; Nardi Combescure 2002, 29).

In the 5th century, the ancient centres broke up into smaller clusters. Some of them were the background for the Middle Ages settlements formed later on. Fiocchi Nicolai supposed that during the Greco-Gothic war or the Langobard invasion, in the 5th century, inhabitants abandoned flat and seaside positions (Fiocchi 1999, 454-458; 2003; 2007). In the surrounding areas of *Ager Castronovano*, there are numerous 5th and 6th-century sites identified by archaeological excavations: the *villa alsiensis* of Palo, the villa of San Nicola, those of Vaccina and San Martino and the *statio Ad Turres*. Finds of Terra Sigilata Africana type D in all these sites demonstrated the continuity of trade between Africa and the port of Civitavecchia and the life of these sites (Passigli 2001, 100). Concerning the hinterland of Alsium (Palo), Flavio Enei described the complete absence of artefacts from the 6th century in comparison to the settling continuity of the port and the ancient centre of Ad Turres to prove abandonment of the distant centres from the Via Aurelia and coast. He hypothesized a concentration of more intense land use in restricted areas (Enei 2001, 93). According to Bugli (2011), this statement does not take into account some known sites, as Castellina del Marangone **AC015**, which were placed at a certain distance from the main road.

According to Sara Nardi Combescure, in the territory between Santa Severa and Civitavecchia, there was a specific settlement cluster transformed and centralized in numerically lower but perhaps more extensive settlements (Nardi Combescure 2002, 81). The emblematic feature is the fact that some sites most likely hosted Gothic communities as early as the fifth century: these were the cases of *Ad Turres* (Cosentino 2001, 43), *Centumcellae* (Nardi Combescure 2002, 141) and *Vaccareccia* (Gazzetti – Zifferero 1990, 445). These hypotheses pointed out that a landscape was still productive and functional within the trade network. The long-distance trade was maintained, as proved by the pottery imports from the East found in the form of small wine amphorae from the Syrian-Palestinian area along the coast (Sonno –

Anelli 2012). Another fact to mention is the presence of land-based structures and the close port of Centumcellae (today Civitavecchia). Testimonies about the Arab invasions of the 9th century testified to the continuity of port in Centumcelle function.

The apparent degradation of many coastal centres is not attributable only to hydrogeological changes or war. The changes in the economical production of the 5th century influenced it too. The changes consist of diminishing of long-distance maritime trade and evolution of local of the system production of southern Etruria as shown Patrizia Tartara (1999), Flavio Enei (2001), and Sara Nardi Combescure (2002).

The difficulty of interpretation of the data lies in the early Middle Ages settlement dynamics. The coastal centres always provided traces of the continuity. In addition to the years of the Gothic War, they experienced the Lombard attacks in 568. At this moment, the border between the territory of Rome and the Lombard dukes was established. It went along the valley of the river Mignone in the years of the reign of Agilulfo (591-615). Astolfo aimed to conquer the city of Civitavecchia but also to gain control of the *Via Aurelia* and secondary roads and the ports that can be identified as *Pyrgi* (Santa Severa) and *Alsium* (Palo). This attested the importance of the *Via Aurelia* as a – still-functioning - route to Rome. It also demonstrates that, despite localized abandonment, port sites still retained significant importance for marine traffic (Bugli 2011, 86).

Furthermore, in the light of the latest archaeological discoveries, Santa Severa provided the image of an active centre developed around the cult of the local martyr. It is therefore difficult to imagine that the territory around the coastal centres was depopulated. In the context of further territorial development, the aggregative cores had a primary function. In *Ager Castronovano* it was the oratory of San Lorenzo **AC193**, existing already before its first mention in 854 AD. It was located along the road connecting the *Via Aurelia* to the Apennine hinterland, on a site that allowed for its function of territorial control as well as the concentration of resources.

During this period, the reorganization of production spread in the area of Duchy of Rome, that *Ager Castronovano* was the part.⁶⁰ In archaeology, among other things, it manifested itself in a new type of pottery produced in new centres. So-called *Domuscultae* existed from the 8th to 10th century. It was the main centre of *Curtis* surrounded by various productive components. They constituted a transition phase between the dissolution of the Roman

⁶⁰ *Ducatus Romanus* The duchy was founded by the conquest of Emperor Justinian I in 533 AD. In 751, the Exarchate of Ravenna fell to the Lombards under King Aistulf. Rome, under Pope Stephen III, attempted diplomatic negotiations with Aistulf. King Pippin III the Short defeated the Lombards by/in? 756 and granted the lands of the Duchy of Rome as well as the former Lombard possessions to the Papacy in what is referred to as the Donation of Pippin, marking the beginning of the Papal State. <https://www.britannica.com/event/Donation-of-Pippin>.

landscape of scattered farms and the formation of fortified early Middle Ages villages, which happened in the internal areas of the region. As the example of Domuscultia Capracorum showed, they were established on the territory of large Roman villas (Nardi Combescure 2002, 34). The economy was based on the cultivation of wheat, olives, vines, barley, oats, millet, fava bean, later in the 9th-11th centuries of small spelt, spelt, soft wheat, barley, and rye, wild rice, chickpea, lentil, broad bean, lupine; and farming of pork, mutton and beef.

The 9th century was a particularly difficult time due to the continuous Saracen threat to the area. Civitavecchia was sacked in 813. Its port, insufficient to be defended, was partially abandoned, when Pope Leo IV, to remedy the dangerous situation, founded the Leopoli-Cencellenel inland in 854. Another mention supporting the theory of continuous use of *Via Aurelia* appeared in 876: “...*eaque opportuni tate barbaros ille cito, ex Africa cum ingenti classe in Italiam delatos, Centumcellis applicuisse, urbemque, quae nunc Civitas vetus appellatur, ut quidam volunt, delesse; atque inde Romam moventes, urbem ipsam cepisse, quod quidem vero dissonum est. De Centumcellis non negaverim*” An epistle of John VIII (872-882) spoke of the passage of the Saracens to attack Rome using *Via Aurelia* (Bugli 2011, 87). The *Via Aurelia* maintained the role of the primary route between Rome and the coastal centres north even in the 10th century, according to written sources (Bugli 2011, 87).

The withdrawal of the Saracens and the multiplication of new political powers with their economic interests have generated a new growth in the territory, the landscape now being dominated by fortified sites, which flanked those already existing linked to the urban centres of Civitavecchia and Santa Severa. The archaeological excavation has shown the vitality of the centre of Santa Severa probably throughout the early Middle Ages period (Enei 2007). It is the case of Castellaccio, *Castrum Carcari*, and Castelsecco, which grew up on the elevated position near the *Via Aurelia* to control the traffic between coast and inland, from the end of the 10th to the 13th century AD. These centres were located within 4 km from the coast along the secondary road and in the proximity of a stream, like the Castellina del Marangone **AC015**, where the archaeological excavation showed the continuity of settlement until the 14th century (Gran Aymerich - Prayon 1996, 1103-1120). Just Castelsecco **AC023** was situated slightly inland, without the direct view of the sea. Maybe because being under the control of Tolfa Nuova, its task was to monitor the course of the Castelsecco ditch and not the coastal territories. The relicts dating back to the Middle Ages identified between the fortification and the coastline are interpretable as the sighting outpost. The question of the real function of Castelsecco **AC023** in the Middle Ages period remains open. There are two hypotheses according to them it was the fortified site or was it only watchtower linked to Castel Vallis Marinae **AC021**.

In any case, the phenomenon of encastellation in the area of *Ager Castronovano* was not as remarkable as in the hilly and mountainous areas dominated by the fortified settlements (De Minicis 2003; 2011). The geomorphological ground had not favoured it. The late Middle Ages landscape was occupied not only by dominant elements such as fortifications, centres of worship such as San Lorenzo **AC193** or Santa Maria Morgana **AC001** and households. There were also small houses, sheds, stables and workshops. Their traces are archaeologically imperceptible. Subsequent abandonment of the area due to the extension of swamps is highly questionable. As J. Bugli's study of written sources showed, there is no historical evidence of such a phenomenon. Some documents described the irrigation of the coastal area along the *Via Aurelia* at different times. However, all referred to other territories (Bugli 2011, 88; Passigli 2001, 109). The area of *Ager Castronovano*, lying along one stretch of the *Via Aurelia* with smaller coastal centres, maintained the function of the sea gate to Rome even after the fall of the Western Roman Empire. The high credibility of sources and the active traveller's presence in comparison with *via Cassia* (Bugli 2011) made the hypothesis about the change of the function of the area rather than being abandoned probably. Also, Carlo Citter highlighted a substantial continuity of use of the territories and settlements along the *Aurelia* during the early occupation of the hills in the first half of the 8th century. In that time, it had already been part of the *Tuscia Langobardorum* for some time (Citter 1993).

This new political dependency needed the creation of a secondary road system passing through the river valleys. Among the itineraries for pilgrims, the one drawn up by the Arab geographer Edrisi in 1154 AD, indicated the multiple possibilities to reach Rome. He distinguished between land and sea: in the second case, he arrived from Pisa to Civitavecchia, the last stretch he followed *via Aurelia*, touching the centre of Santa Severa - commercial port in between Rome and Genoa (Passigli 2001, 108). The coastal towers replaced the ancient port centres. The towers were intended to protect a port or a settlement behind. They filled the space between fortified castles and of the coastal *Via Aurelia* after the 11th century (Passigli 2001, 109).

Via Aurelia has been mentioned in papal travelogues and other sources as a significant route between Rome and Civitavecchia from the 12th century onwards (Passigli 2001, 110). It remained in function through the Middle Ages and was included in the network of the great public roads of the time. (Patitucci-Uggeri 2002, 24). Despite the conflicts between local nobles, some centres, like Tolfa Nuova, remained autonomous. They controlled the routes from the coast to the inland (Vallelonga 2012, 201). The decline of a Norman-Albertesque dominion affected settlement structure in the studied area. It caused the depopulation of smaller urban

centres in the second half of the 14th century. They transformed into households (*casale*), the vast land components intended for cereal growing and livestock. The Middle Ages fortified structures became shelters for tools and agricultural products. The rural function of these structures implied the use of *Via Aurelia* for the transport (Vallelonga 2012, 201).

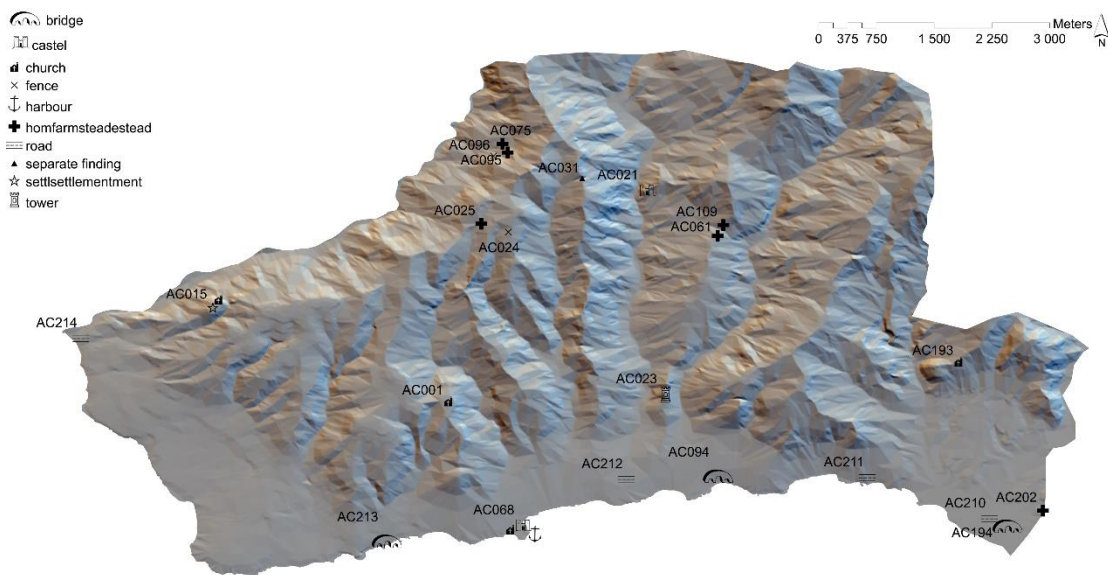


Fig. 57A: Distribution of archaeological components in the area under investigation in the Middle ages.

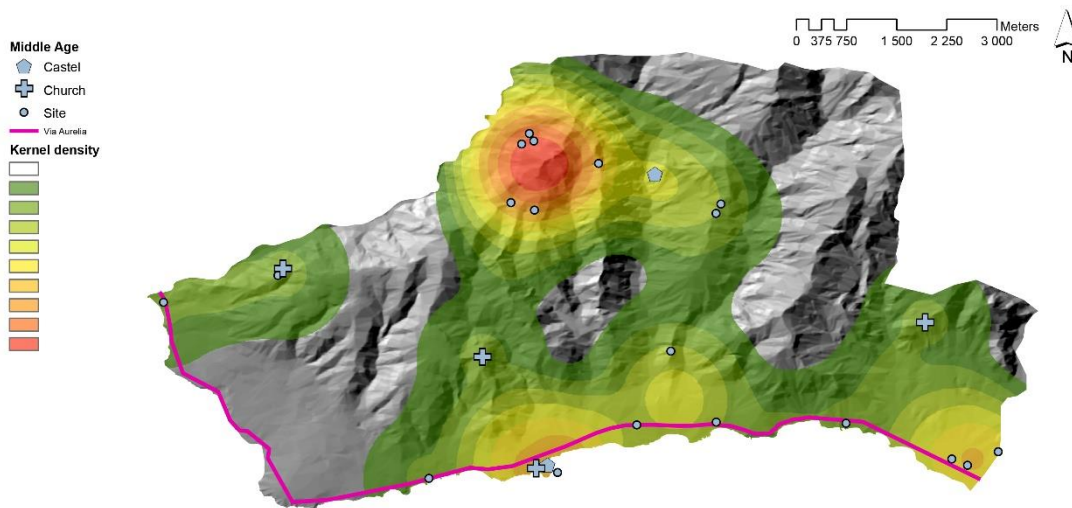


Fig: 57B: The Kernel density of the Middle Ages settlement.

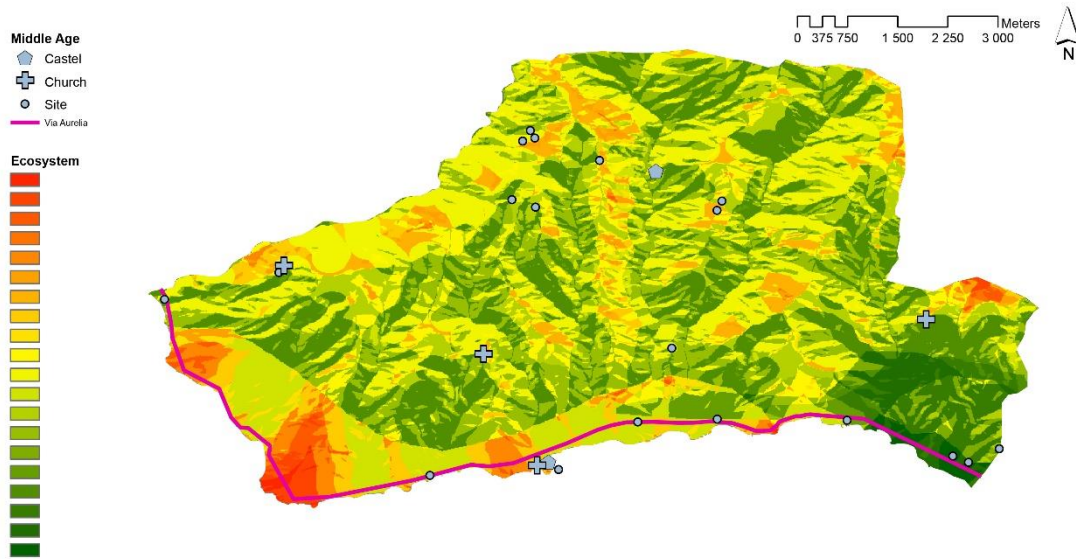


Fig. 57C: The Middle Ages settlement on the map of the ecosystem.

7.3.8 Post-Medieval period

Some researchers put the end of the Middle Ages period to the transfer of the Pope and his court to Avignon (1309-1376). It was the moment when rich aristocrats could look around freely without oppressive planking of the out view by Christian ideology (De Vincentiis 2013). This partial secular freedom quickly seeped into all branches of human life, art and architecture in particular. The Renaissance could come. Another weakening of the Pope's power was caused by the outbreak of Black Death that in the 14th century ravaged Europe and central Italy. The fact that one of the first cities, where it spread, was Marseille (close to the Avignon) became for the inhabitants of Apennine peninsula the proof of the Pope's wrong decision (De Vincentiis 2013). For our area, it is important that the travels between Avignon and Rome went through Civitavecchia (Passigli 2001, 110).

The Middle Ages castles as structures became an instrument in local vying for supremacy between the lords of domains that formed in this area of Lazio during the 14th-15th centuries. In this regard, the story of Everso d 'Anguillara and his occupation of Tolfa Nova seems exemplary. In 1459 the nobleman took control of the castle, apparently abandoned, and rebuilt its walls which were demolished again by the Orsinis in 1471. The chronicler, Niccolò della Tuccia, testified to the attempt to revive the castle by Everso, which helped both the repopulation of the site and the reactivation of its defensive structures (Vallelonga 2012, 201). The area achieved sudden importance with the discovery of deposits of alunite by Giovanni da Castro in 1461. Alum was an essential mordant in the textile industry, which was the pillar branch of the economy up to the late Middle Ages and Early Modern periods. It substituted previous

supplies from the East, imported through Venice from the sources now controlled by the Ottoman Turks. The Papacy officially owned the mining rights, but Pope Pius II placed the management in the hands of the Medici. This move ensured the regular monetary income for the Papacy. The profound transformation of the economy now linked to mining-affected last castles in the area and forced them to change in function. Tolfa Nuova was entirely destroyed. The territory of Cencelle transformed into a functional estate supplying the mining area with wood, and the castle of Tolfa Vecchia came under the direct authority of the Pope. The settlement of Santa Severella in the Farnesiana area and Castellina sul Marangone **AC015** were revived (Vallelonga 2012, 202). Agostino Chigi founded the city Allumiere for mineworkers and their families. During the 15th century, the forested area was enlarged to supply the mining activities with wood. The grasslands of Ager Castronovano were converted into the woodland area (Nardi-Combescure 2002, 53).

The 16th century was the century of restorations of *Via Aurelia* that was intensively used by popes for their travels. Also, the area of Santa Marinella and Santa Severa became popular for their leisure activities, such as hunting (Passigli 2001, 128).

The Alexandrine Cadastre divided the territory of Santa Marinella Estate into two parts with a different environmental characteristic. The coastal part was made up of Tumoleto. It was the series of coastal dunes that ran on the beach to the left and right of the delta. The internal part consisted of the thick forest—the only remaining small cultivated areas and meadows were located near the fort and the road. On the coast, there runs the road that came from Rome to Civitavecchia over two bridges. The cadastre also contained information about ruins of the church **AC001** Santa Maria Morgana. The intense exploitation of local forests by alunite mining had a negative impact on the landscape in the sense of intensive deforestation. In 1737, an agronomist was appointed to resolve the situation by substantially reducing felling (Nardi-Combescure 2002, 53). The agricultural activities remained concentrated in farmsteads. There were seven farms identified in the studied area. This concept of agricultural landscape survived until the 1950s. In the final phases of the Post-Medieval period, the density of settlements, roads and agricultural use again increased to the level recorded on the IGM 1895 map (fig. 58D).

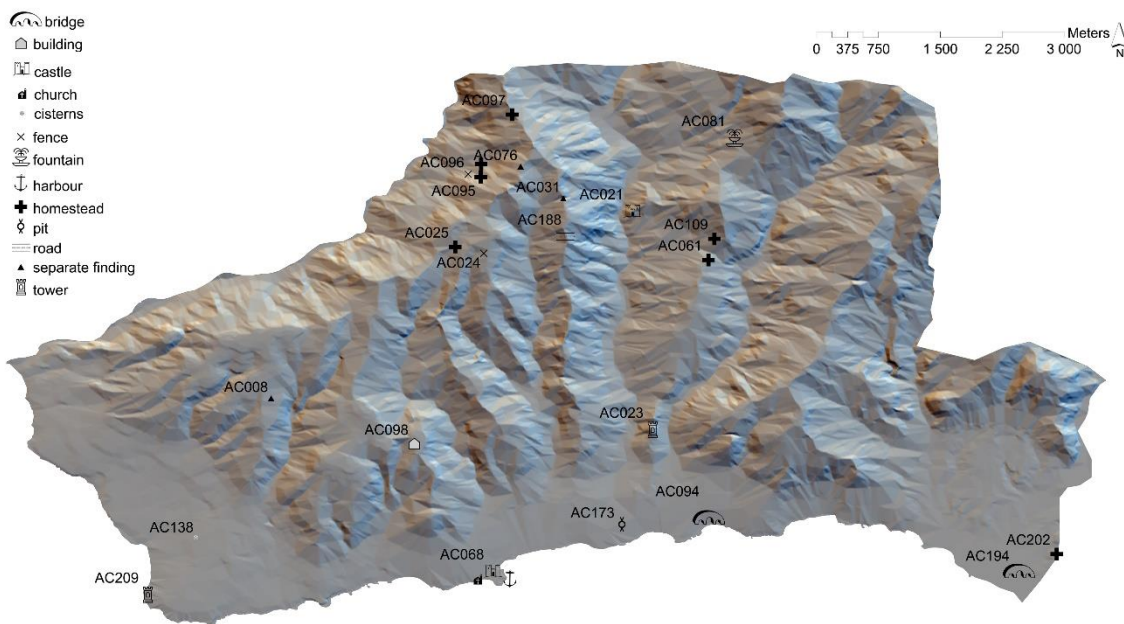


Fig. 58A: Distribution of archaeological components in the area under investigation on the beginning of the Postmediaeval period.

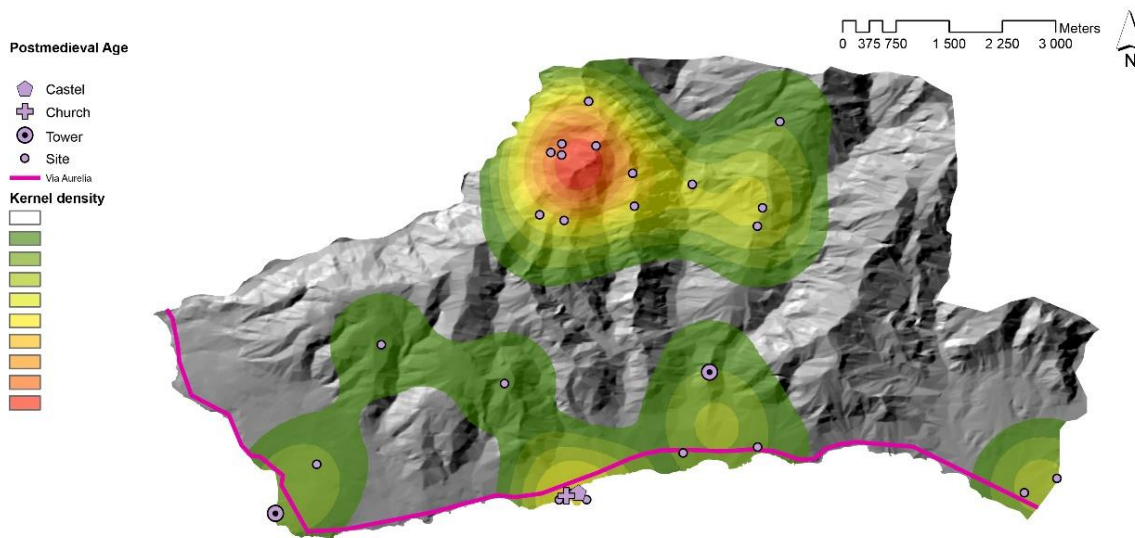


Fig. 58B: The Kernel density of the Postmediaeval settlement.

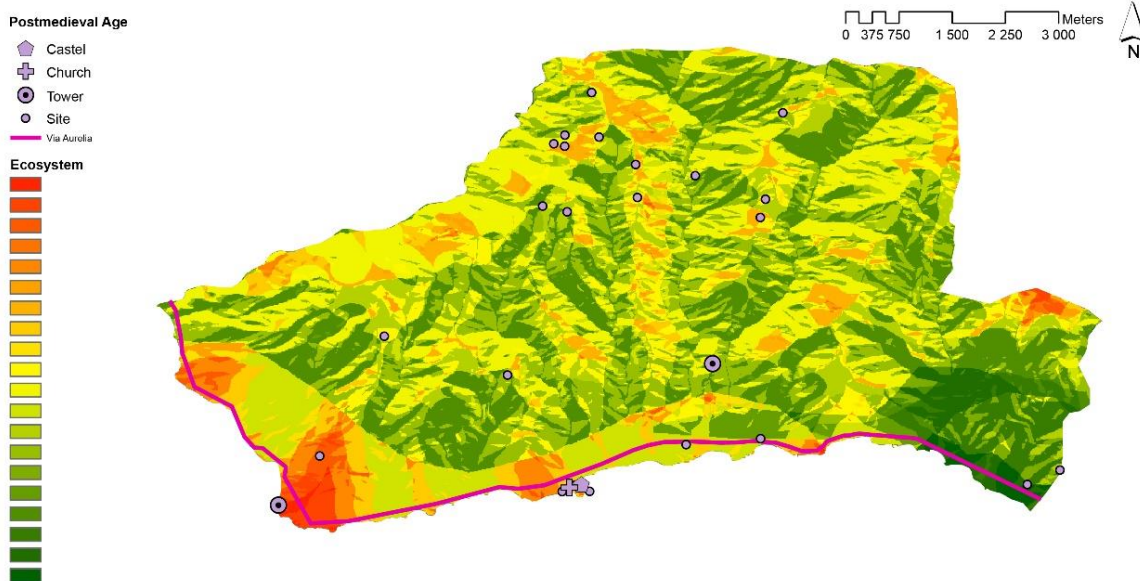


Fig. 58C: The Post-Medieval components on the map of the ecosystem.

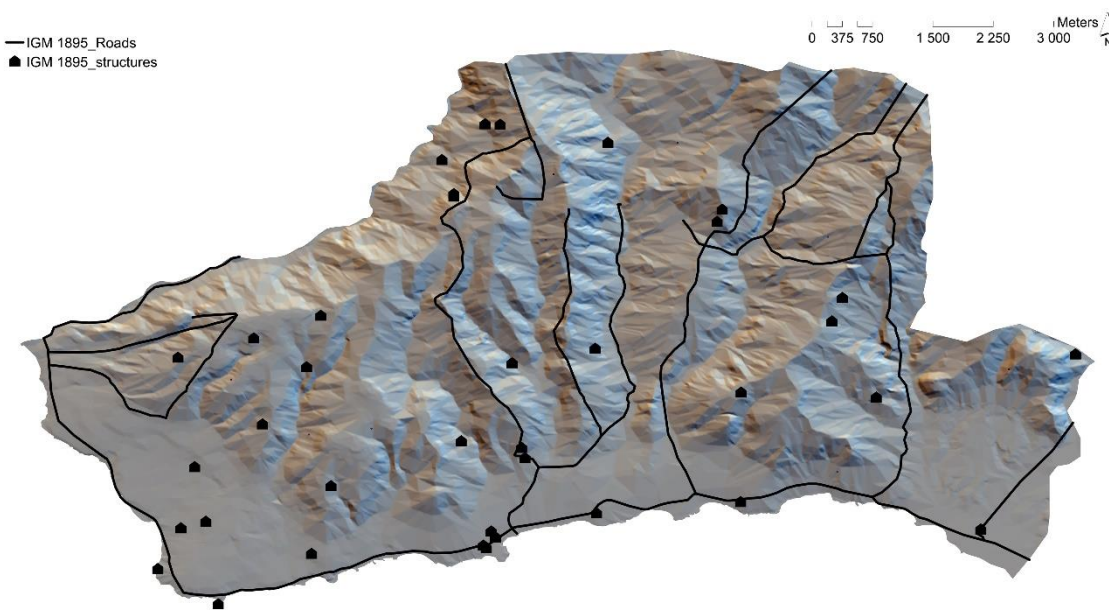


Fig. 58D: The IGM 1895 documented the density of settlements structures on the end of the Postmediaeval period.

7.3.9 Modern period

The number of agricultural structures in the area increased again at the beginning of the 20th century. The majority of roads used from the Middle Ages and probably from even earlier periods were paved. This slow increase of the land-use culminated after the Second World War. During WWII, the area of Santa Marinella suffered from military activities by both parties. Along the coast, there are relicts of a military defensive system (nests for machine gun) preserved.

Civitavecchia and its surrounding were bombarded many times. The slopes above the coast still hide a large amount of ammunition or fragments thereof. Inside the Torre Chiaruccia, there was Marcony's radio station and military basin with radar. In 1944 it was blown up by German soldiers (Spinelli 2014).

Central Italy was left heavily damaged after WWII. It was necessary to support the economy by forcing in the industry and at the same time, reconstruct residential houses for citizens, who lost them during the war. A change of lifestyle went along with these steps with agriculture lagging behind in the new economic system. People working in factories or offices needed recreational places for resting and having fun. Cultivated fields along the coastline disappeared under the constructions of modern seaside resorts and brand new cities (Ladispoli, Santa Severa, Santa Marinella Tarquinia Lido, and so far).

At present, the entire area is widely occupied. The modern constructions cover 9 km² (21%) of the studied area, especially along the shoreline and went up to the hillside. The more distant parts are used intensively for agricultural and pastoral activities. The coastal area is used for residential activities.

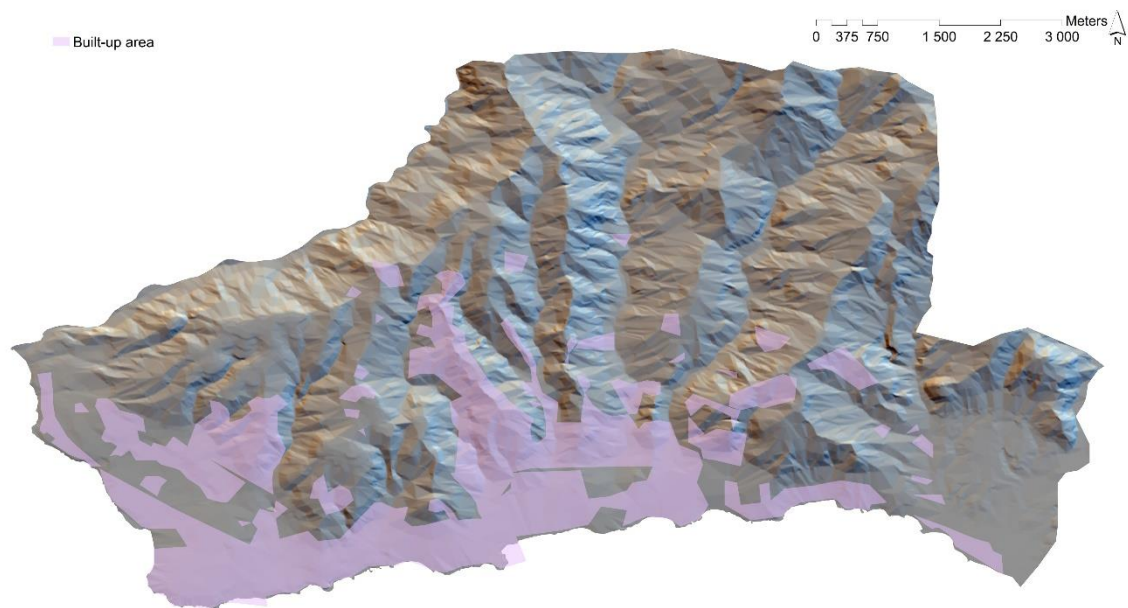


Fig. 59: Areas covered by modern constructions in 2019.

8 Conclusion

The first aim of my PhD thesis is to find the most suitable methodology among the modern technologies and tools (e.g. airborne laser scanning, photogrammetry, geographic information system, multicriterial analyses etc.) which will lead to comprehensive diachronic analyses to achieve a better understanding of the landscape transformations in the long term perspective, from the prehistory to the modern period, looking chiefly into the impact of humans on the environment and their mutual interaction. The fundamental prerequisite was the understanding that the colony did not emerge in the void, and its life processes did not only take place inside the city walls. The colony formed its centre and economic hinterland that extended around. In order to understand all the transformations of the *Ager Castronovano* cultural landscape, I had to look at the territory in a long term perspective and read all the traces of human activity that have been preserved there. It gave rise to the main questions of my thesis:

What are the most suitable data sources for the Ager Castronovano, and what is their informative value?

What is the archaeological potential of the landscape there, and what components does it hide?

What are the differences in the settlement structure of particular periods and what factors influenced its appearance?

Was there any correlation between landscape transformations and historical events?

Methods of the non-destructive Landscape Archeology helped to find some answers to these question formulated in 2.1. After performing a literary and archival search, I compiled a basic list of archaeological sites and components that were located in the researched area.

I have verified these sites through other methods such as historical map analysis, historical and current aerial photos analyses, LiDAR data analyses and crowdsourcing. It deepened our knowledge about already known sites, but it also led to the identification of new sites and components. Their verification in the field followed. At the same time, field prospection led to the identification of other new components that were back-tested in the literature and by other methods. The chosen methodology revealed the further archaeological potential of the area. It contained 256 archaeological components (6 components per 1 km²). Out of them 102 have not been published, or there was no mention of them in the literature. All archaeological components were put into the chronological and spatial contexts. The comprehensive and complex archaeological dataset was created and could be subjected to further spatial analyses (Thiessen polygons, Path distance, Visibility, Point and Kernel density, Multicriterial analyses). The data were listed in the catalogue that includes a detailed description with a list of the most

important artefacts, the dating, GPS coordinates and relevant bibliography. There were components from the prehistory to the modern period. From the point of functionality view, there were 31 typological categories: Housing, Residential, Production, Water management, Sacral, Burial, Infrastructure and Modern military objects.

Concluding the knowledge about the environment and the ecosystem, the natural conditions in most of the area were very favourable for the natural growth of vegetation and agricultural cultivation. Altitude did not exceed 300 m, slopes mostly oriented to the north-west, west, southwest, south to south-east with a maximum slope of 47 ° were covered by fertile soils. Temperatures rarely fall below 0 ° C and airflow brings enough rainfall. The whole area is also interwoven with a dense hydrological net.

Regarding the cultural landscape formation and changing settlement pattern, the area, by its very geomorphological nature, has always been on the border of various influences and interests. There is only sparse evidence of inhabitation in the Paleolithic and Mesolithic period. In the Neolithic, humans seemed to prefer the area of the then coast, which is now completely flooded due to raising of sea level. Since the Bronze Age, settlement structure has an increasing tendency for several centuries with a few small wobbles. The settlement network of the Etruscans in the *Ager Castronovano* followed the tendencies observed in the Iron Age. Since the foundation of first Etruscan city-states in the 6th-5th century BC, the area formed the boundary between two city-states Tarquinia (Jovino – Treré 1997) and Cerveteri (Enei 2001). This period brought the new phenomena to the landscape: its segmentation springing from the social stratification of communities and the ownership of the land. For the first time, space became artificially structured, and it is possible to speak of the invention of the agricultural landscape. Settlement structure could be described as a “leopard-skin” pattern that extended around the central places located on the top of the hills in a certain distance from the coast.

In the 3rd century BC, the area was romanized. The landscape also reflected these changes caused by the transformation of political, institutional, and administrative situation, resulting from the taking over of the territory by the Romans. They established the colonies to ensure control above the conquered areas and to defend the coast in the First Punic War. The layout of military strategic points in the landscape was not accidental. The Roman footholds were constructed in contrast to the Etruscan fortifications or essential sites. New central places were founded in the lowland along the shoreline. Hypothetically, the task of *Castrum Novum* was primarily to control the area stretching from Capo Linaro to the Fosso Marangone. With a stabilized situation, the area started to profit from its strategic position on the Via Aurelia and close to the sea. It became the desired area of the Roman elites, the density of settlement

culminated, and the dense net of villas covered the landscape. *Ager Castronovano* became the border of so-called *Suburbium* (Witcher 2006, 100), a region in direct contact with Rome, but a 60 km from its centre. As the spatial analyzes of the central places showed, at that time, the study area probably included the *Ager* belonging to *Castrum Novum* (bounded by the Fosso Marangone and Capo Linaro), to *Punicum* and one, probably belonging to Pyrgi. The Rio Fiume river delimited this.

The decline of the Roman Imperium in the 5th century AD meant a dramatic transformation of the settlement structure. The system of large Roman *latifundia* was unsustainable and collapsed. The Middle Ages movement to the areas of natural defence and the population decline (caused, among other things, by the plague) characteristic of this period in other areas affected *Ager Castronovano* too. The centres of the settlement concentrated in the larger and richer port areas, such as Civitavecchia or Santa Severa; major inland religious centres such as Tolfa; or mining centres such as Allumiere. However, there is no sign of total abandonment and depopulation. A road connecting Rome with essential centres in the north-west coast intersected the territory and brought lively traffic to the area. Besides, in the whole area, the agriculture, grazing and hunting were practised throughout the Middle Ages, Post-Medieval and the Modern Ages. Dense settlement returned to the area after World War II and continues up to today.

The development of the settlement structure and its density can be better understood by observing the number of components per 1 square kilometre. During the Bronze Age, there were 0,40 archaeological components per 1 km², a slight decrease in the early Iron Age abated to 0,38 components per 1 km². The density culminated in the Roman Imperial period with 2,98 components per 1 km². The mediaeval period returned to the density of components in the late Iron Age (0,52 component per 1 km²) and shrank even more in the post-mediaeval period (0,40 component per 1 km²). In the modern period, 21% of the researched area covered by modern constructions.

In conclusion, it should also be noted that the output dataset is complex and compendious, but still limited. It offers a good preliminary preview to the archaeological potential of *Ager Castronovano*. In future continuation of the research, it would be helpful to involve other methods of survey, like geophysical methods, high-resolution LiDAR, or even archaeological excavation in selected areas. The assembled archaeological dataset is the cornerstone for further research and analyses. Another possibility for further development of the research could be the evaluation of the research area within a broader spatial context and comparison with the

neighbouring areas (*Ager Tarquinorum*, *Pyrgensis* and *Ager Ceretanus*) or going more in-depth in one of the outlined topics.

9 Summary

My thesis attempts to suggest the suitable methodology for a diachronic analysis of the landscape development and transformation of *Ager Castronovano* (Lazio, central Italy). Combining a wide range of sources, it reconstructs settlement and the rural landscape development, revealing the continuity or discontinuity of occupation, and identifies the main processes of change, and correlation with historical events. The thesis took into account previously published data and enriched the archaeological dataset with own empiric research. It produced the cultural landscape model, identified so far unknown sites, and evaluated the determining factors behind settlement formation and landscape development.

The methodology here presented brought to the light the archaeological data set, including the 256 components divided into 11 chronological categories from the prehistory to the modern period and 31 typological categories according to the functionality of components. The results revealed the high archaeological potential of the landscape of *Ager Castronovano*, illuminated its diachronic development as well as the human activities, conditions and tendencies that influenced it. Finally, the resulting dataset can be mined for information in further research, for example, that involving other sophisticated modern methods of survey.

10 Sommario

La mia tesi di dottorato tenta di suggerire la metodologia adatta per un'analisi diacronica dello sviluppo e della trasformazione del paesaggio di *Ager Castronovano* (Lazio, Italia centrale). Combinando una vasta gamma di fonti, ricostruisce la struttura d'insediamento e lo sviluppo del paesaggio rurale, rivelando la continuità o la discontinuità dell'occupazione e identifica i principali processi di cambiamento e in una correlazione con eventi storici. La tesi ha tenuto conto dei dati precedentemente pubblicati e ha arricchito il set di dati archeologici con la propria ricerca empirica. Ha prodotto il modello di paesaggio culturale, identificato siti finora sconosciuti e valutato i fattori determinanti dietro la formazione degli insediamenti e lo sviluppo del paesaggio.

La metodologia qui presentata ha portato alla luce il set di dati archeologici, inclusi i 256 componenti suddivisi in 11 categorie cronologiche dalla preistoria al periodo moderno e 31 categorie tipologiche in base alla funzionalità dei componenti. I risultati hanno rivelato l'alto potenziale archeologico del paesaggio di *Ager Castronovano*, ne hanno illuminato lo sviluppo diacronico, nonché le attività, le condizioni e le tendenze umane che lo hanno influenzato. Infine,

il set di dati risultante può essere estratto per informazioni in ulteriori ricerche, ad esempio, che coinvolgono altri moderni metodi di indagine sofisticati.

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Západočeská univerzita v Plzni

Fakulta filozofická

Disertační práce

**Application of modern methods in landscape
archaeology – case study Ager Castronovano**

Dott.ssa Klára Preusz

Přílohy

Plzeň 2020

**University of West Bohemia in Pilsen
Faculty of Philosophy**

Doctoral thesis

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Attachments

Pilsen 2020

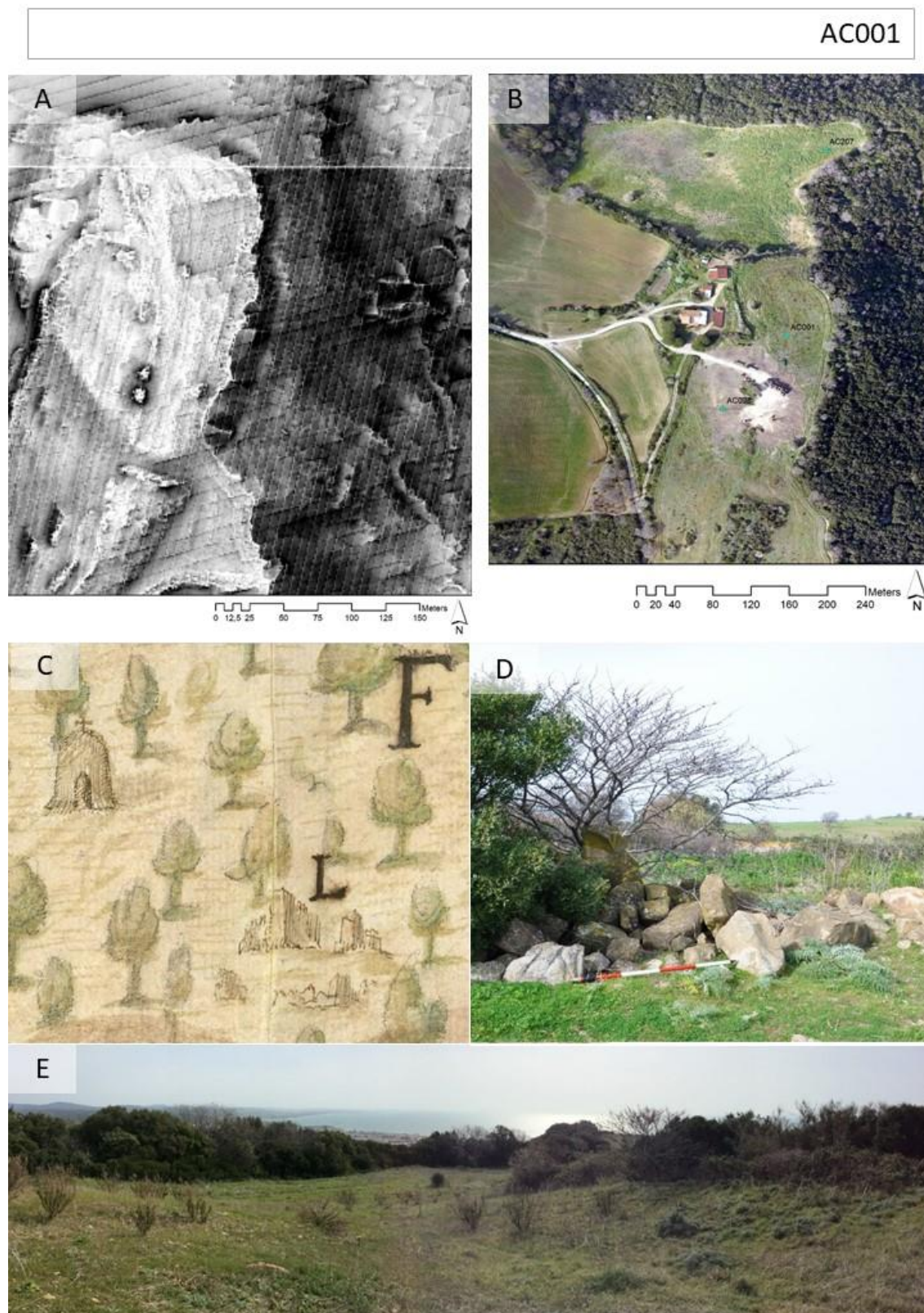


Fig. 60: A: DTM of the site, B: orthophoto 2019, C: Measurement and plan of the estate of S. Marinella, land surveyor Mario Gentile ASR, S. Spirito, b. 1481, loose leaflet of S. Marinella, n.1, April 6, 1634, D: cumulation of the stones, E: the site 2019.

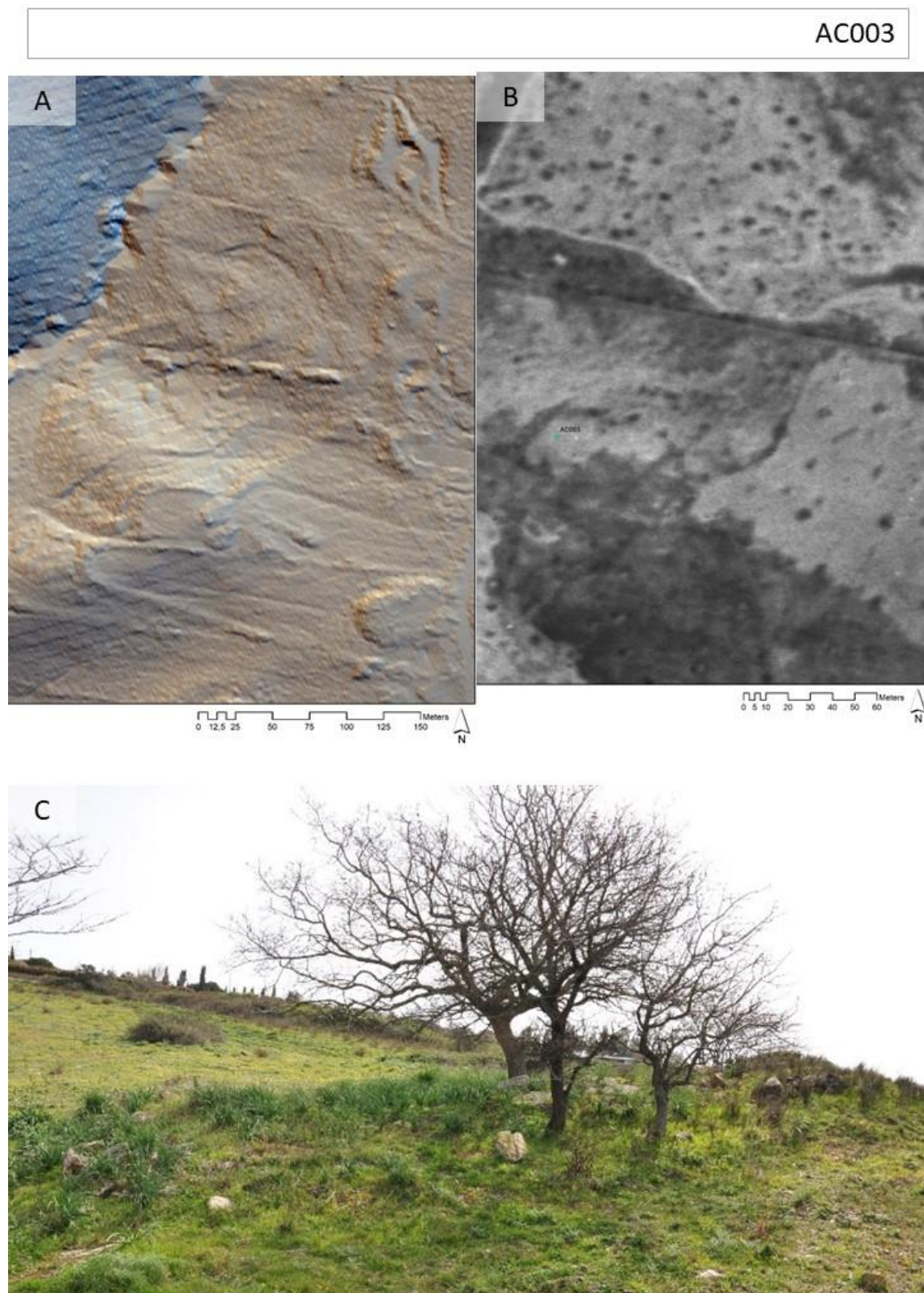


Fig. 61: On the DTM (A), on the historical (B) and contemporary images and in the terrain (C) there are terrace-like formations.

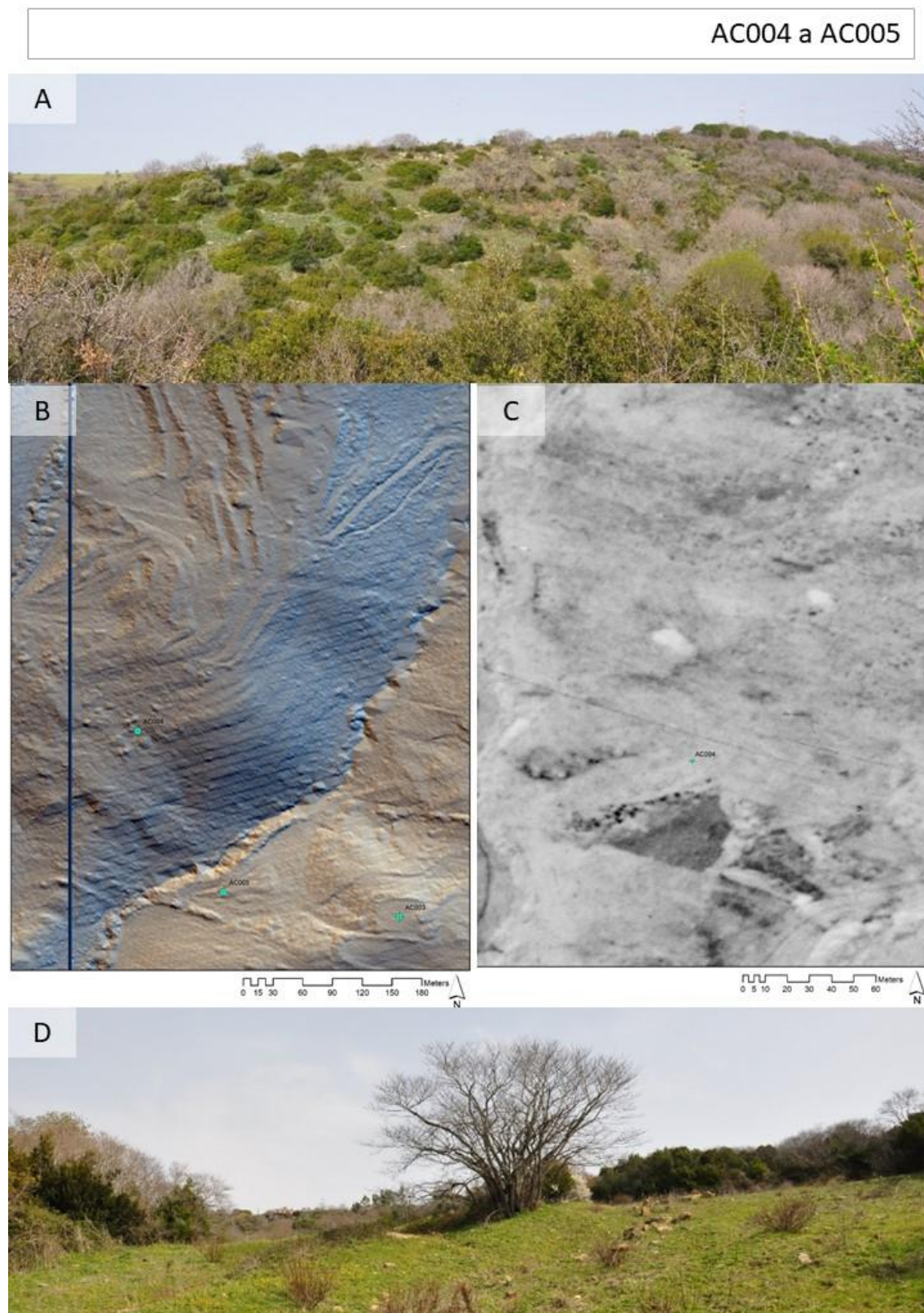


Fig. 62 A: The site AC004 in 2019, B DTM of AC004 and AC005, C: historical aerial photo, D: the site AC005 in 2019.

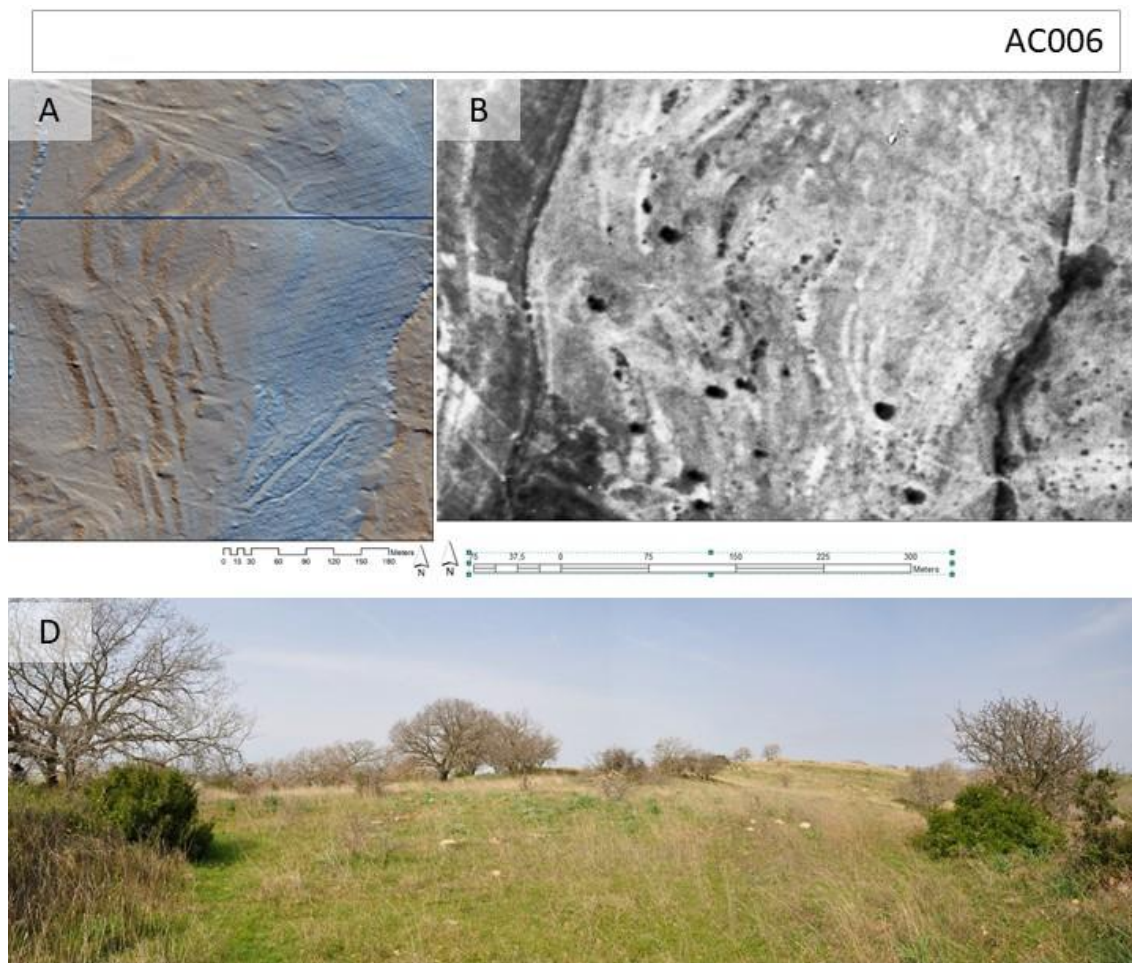


Fig. 63 A: the DTM of the site, B: historical aerial photo 1954, D: the site in 2019.

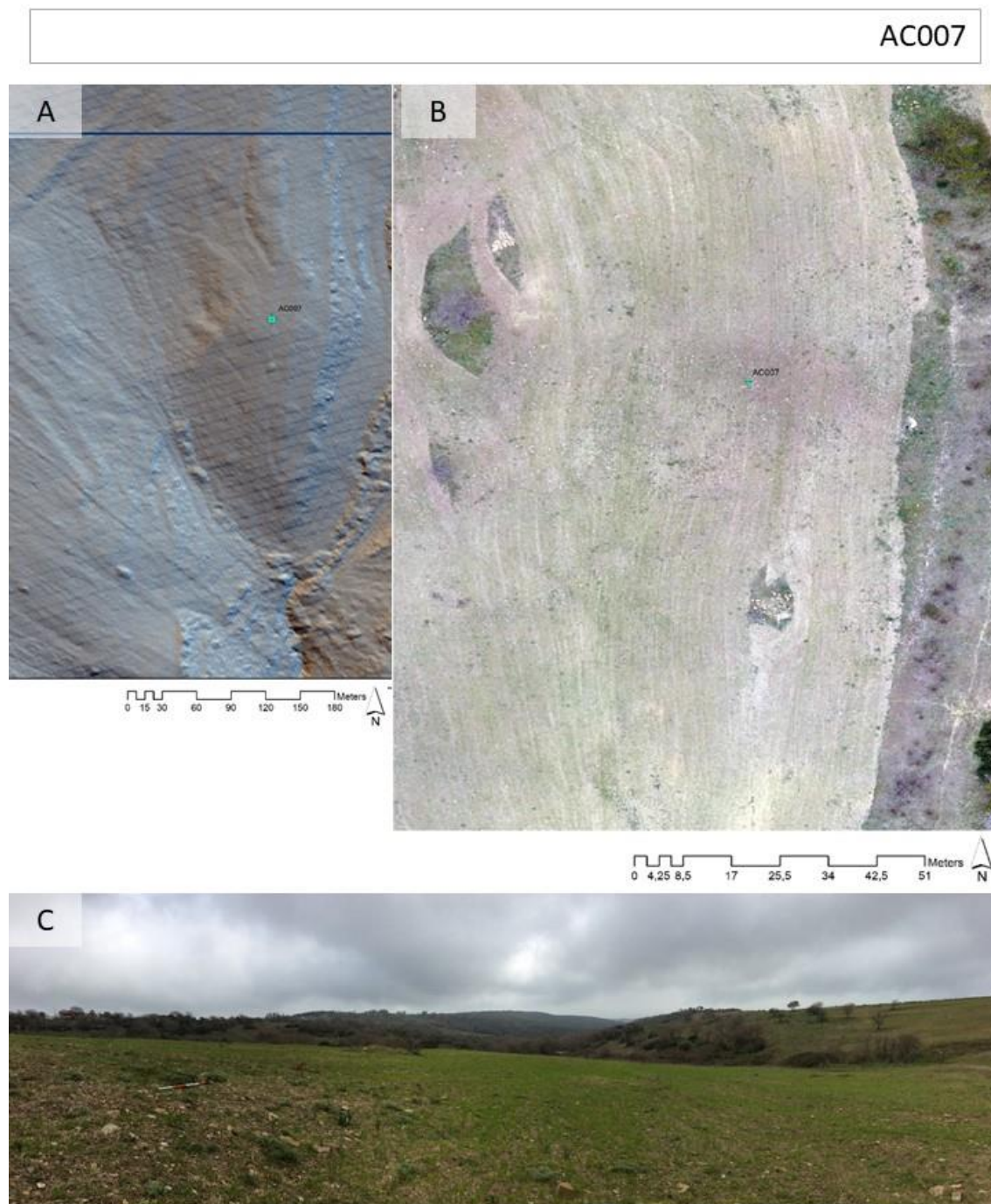


Fig. 64 A: DTM, B orthophoto 2019, C: current state of the site.

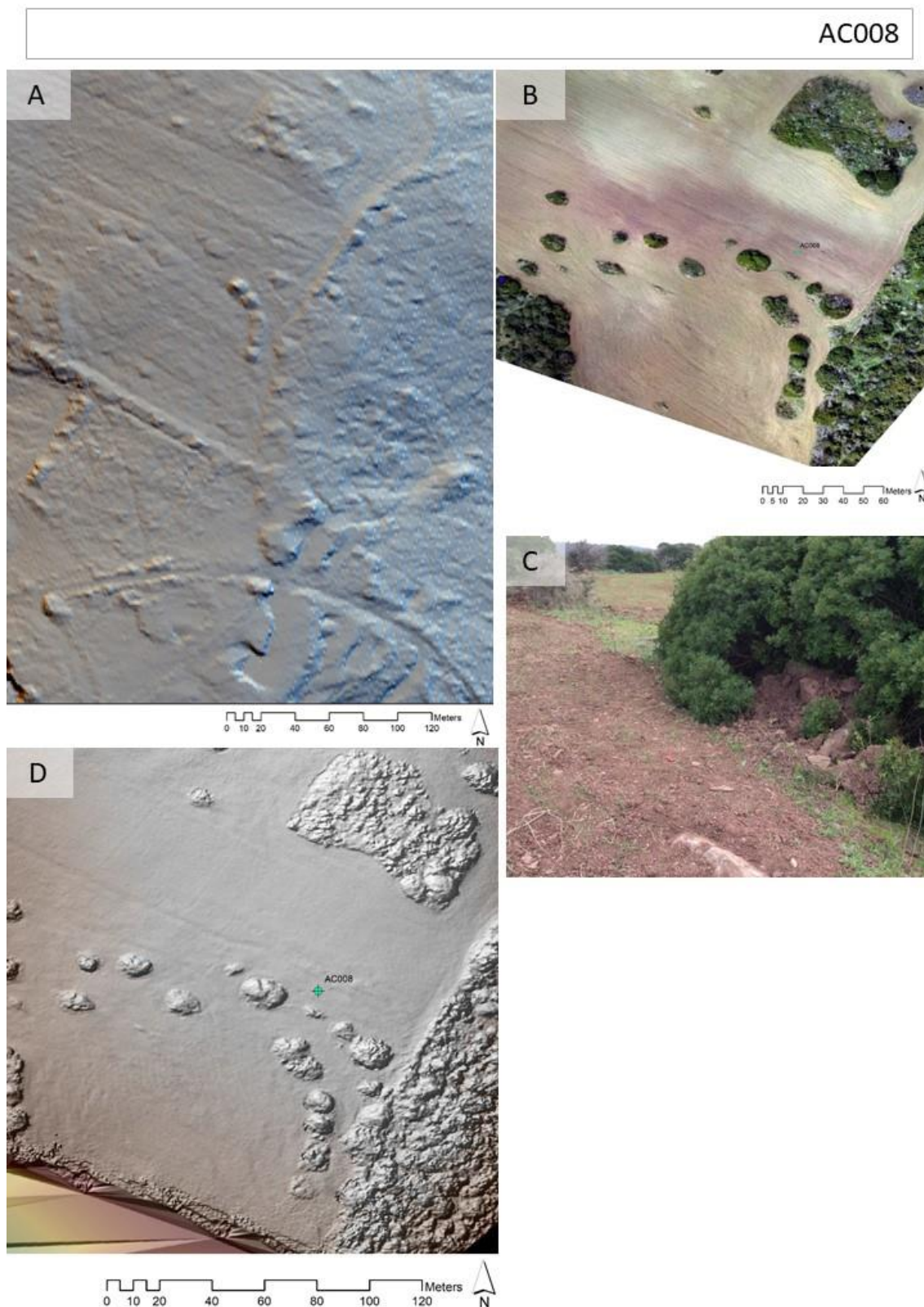


Fig. 65 A: DTM, fig. B orthophoto 2019, fig. C: current state of the field, D: the photogrammetry of the site 2019.

AC009

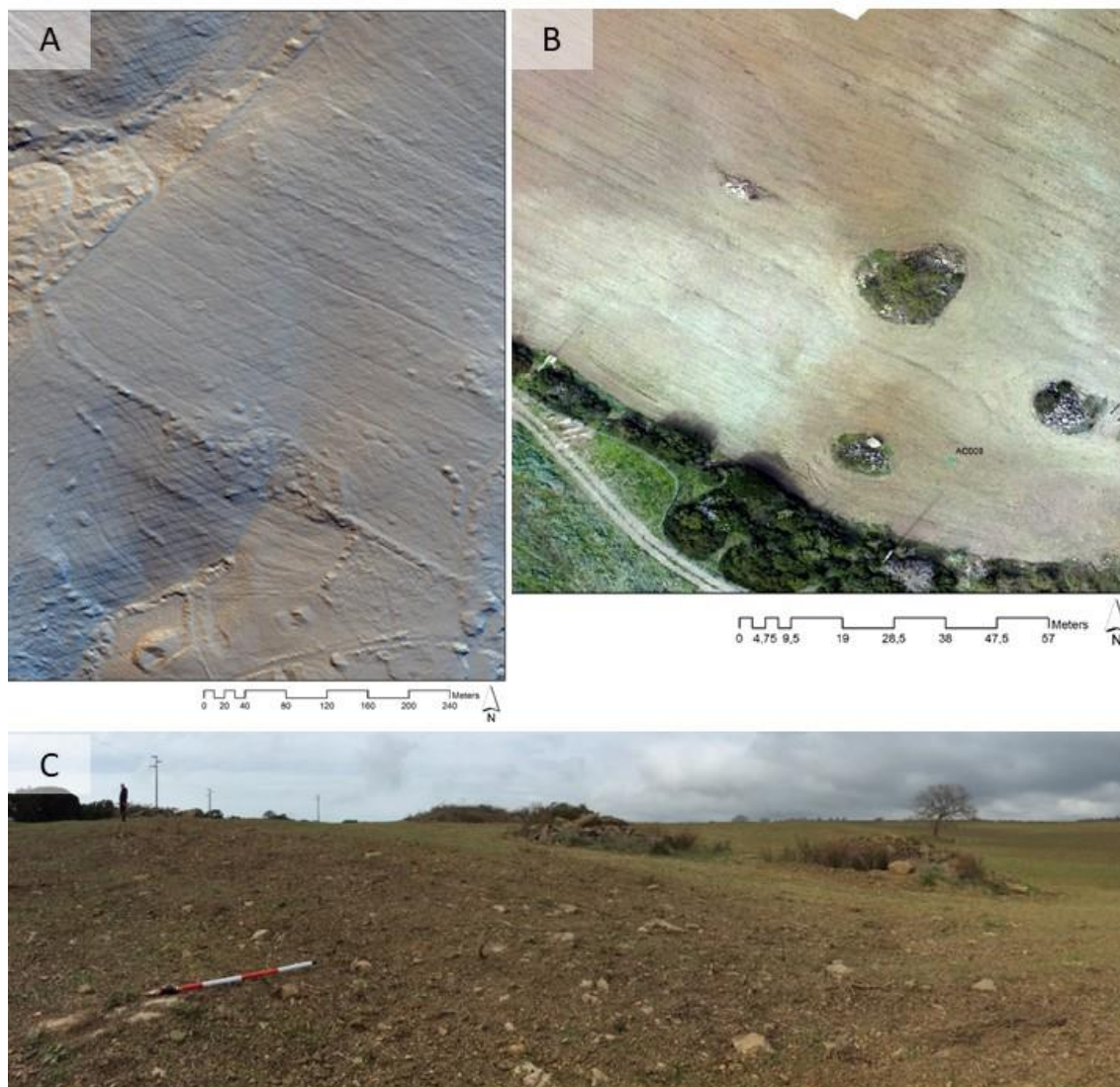


Fig. 66 A: DTM of the site, B: orthophoto of the site 2019, the state of the site in 2019.

AC010

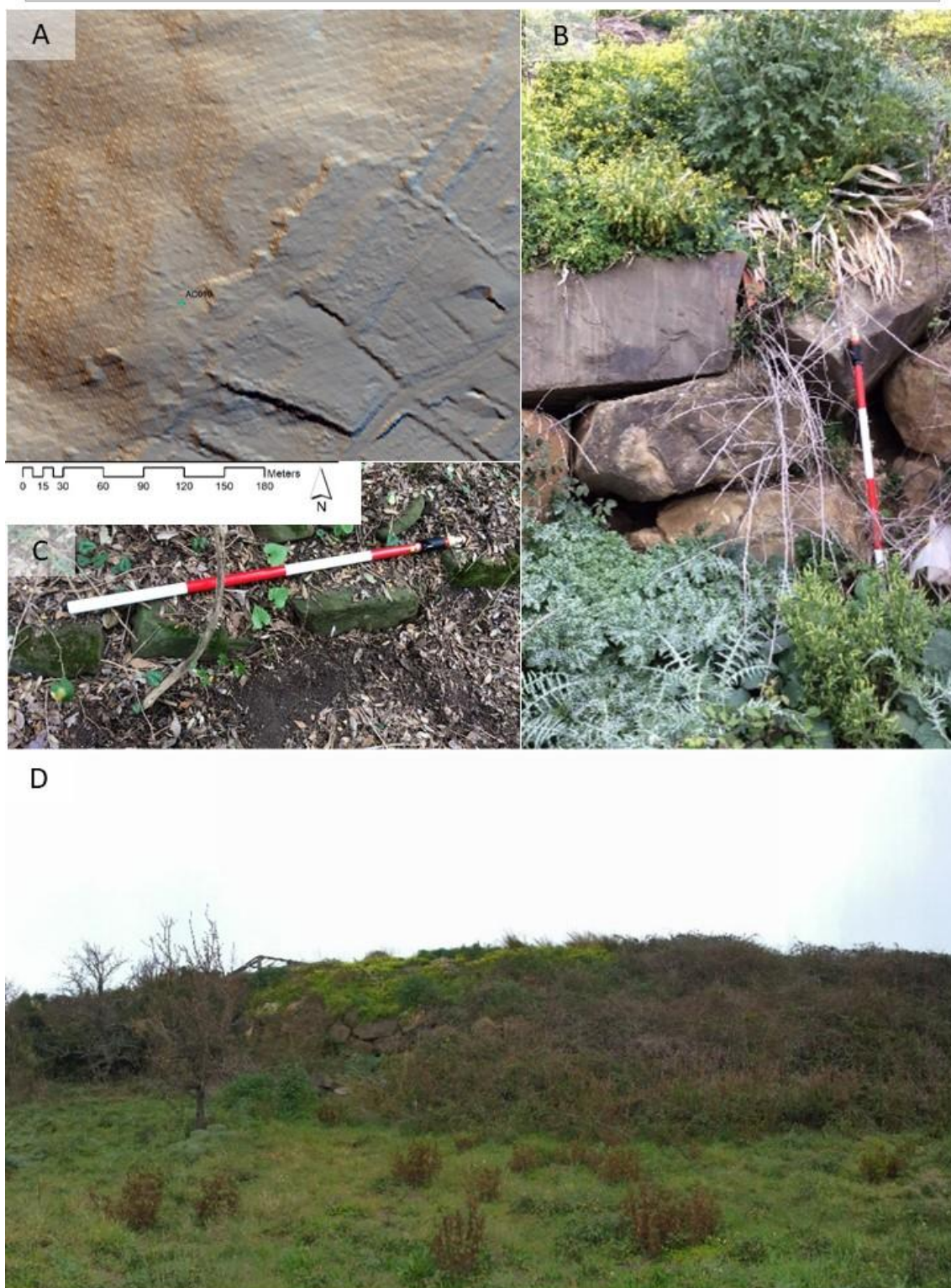


Fig. 67 A: shows DTM of the site; B and C. relicts of stone walls; fig. D. lateral view to the castra's wall.

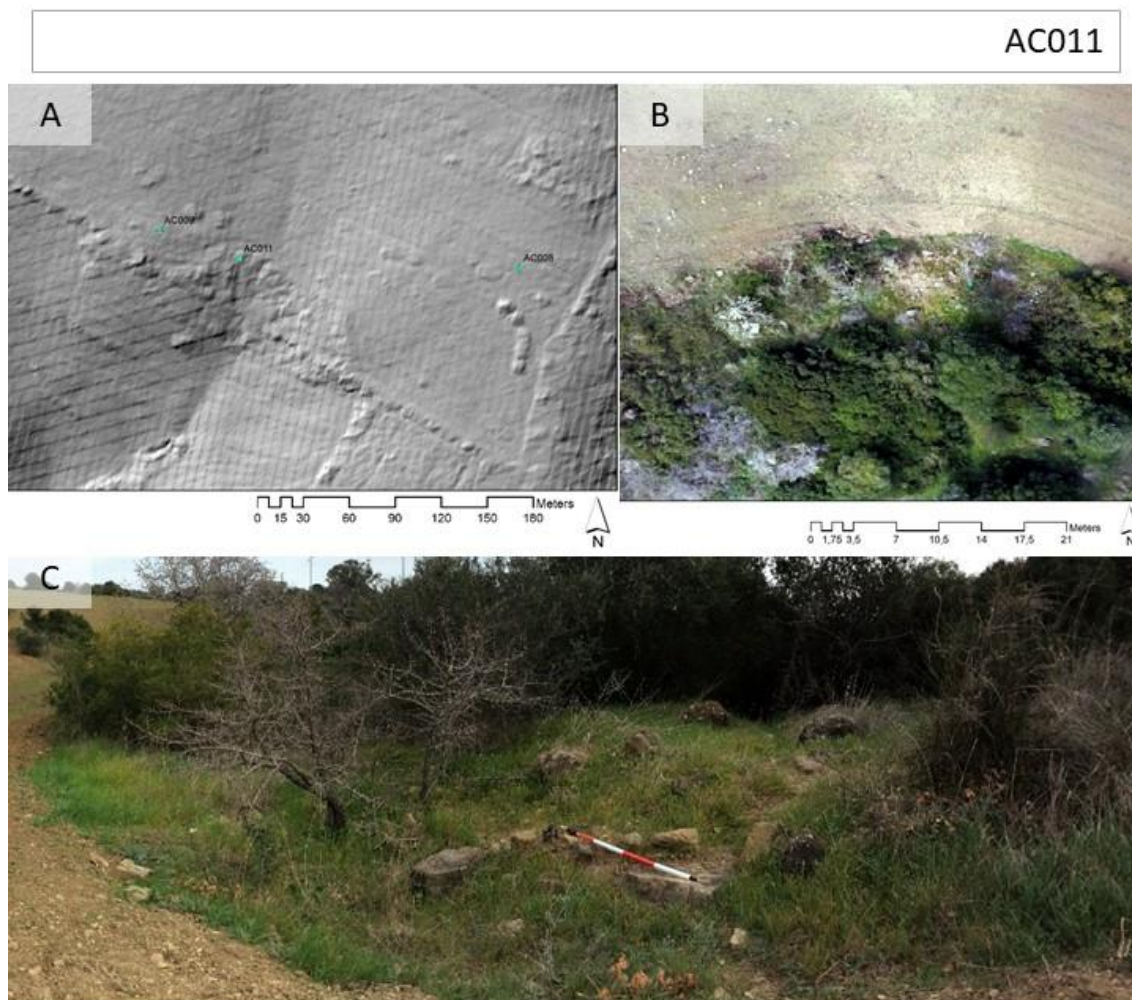


Fig. 68 A: DTM of site, B: current orthophoto, C: the stone ring of a tomb.

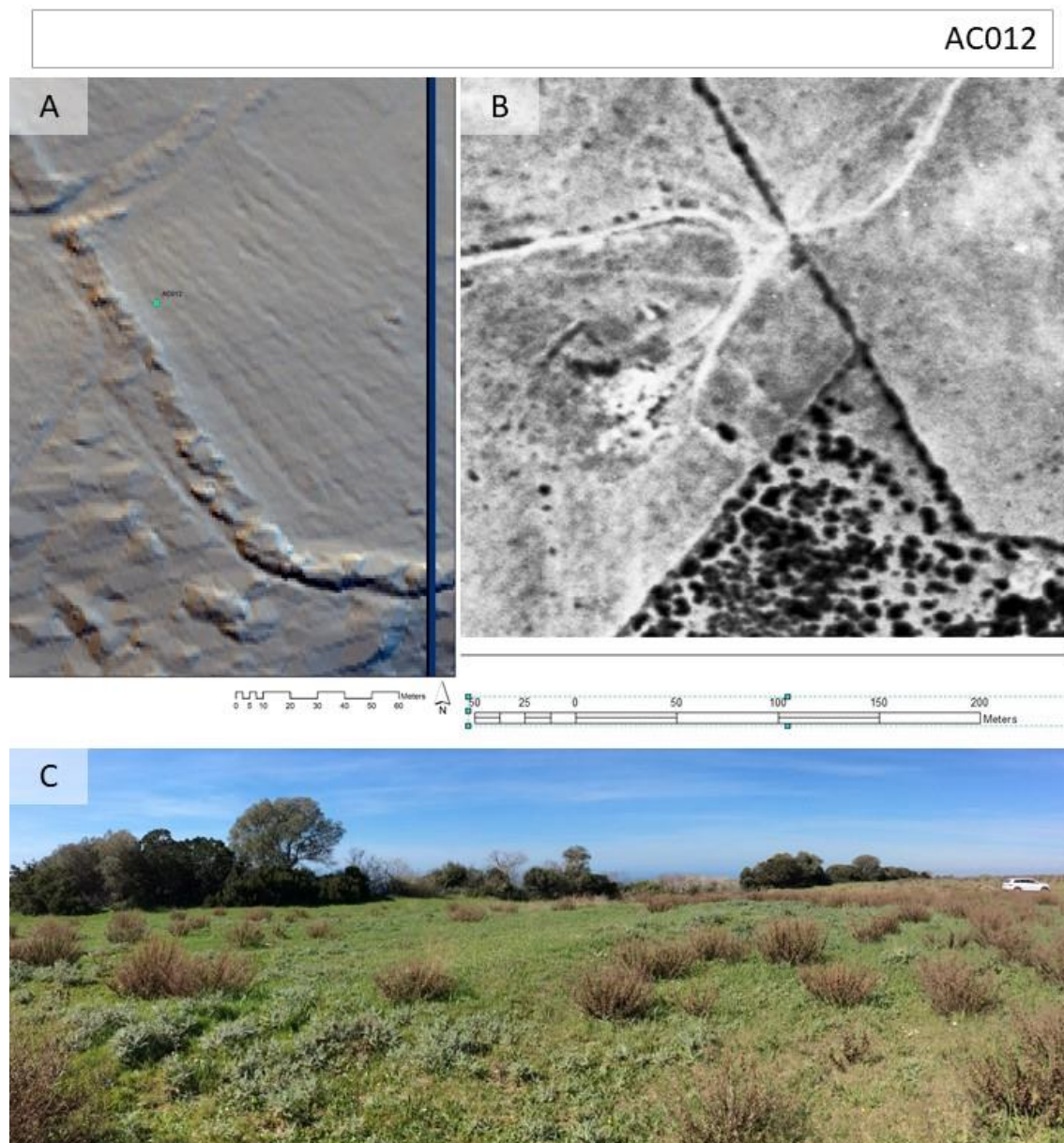


Fig. 69 A: DTM of the site, B: Aerial photo from 50'; C: current state of the site.

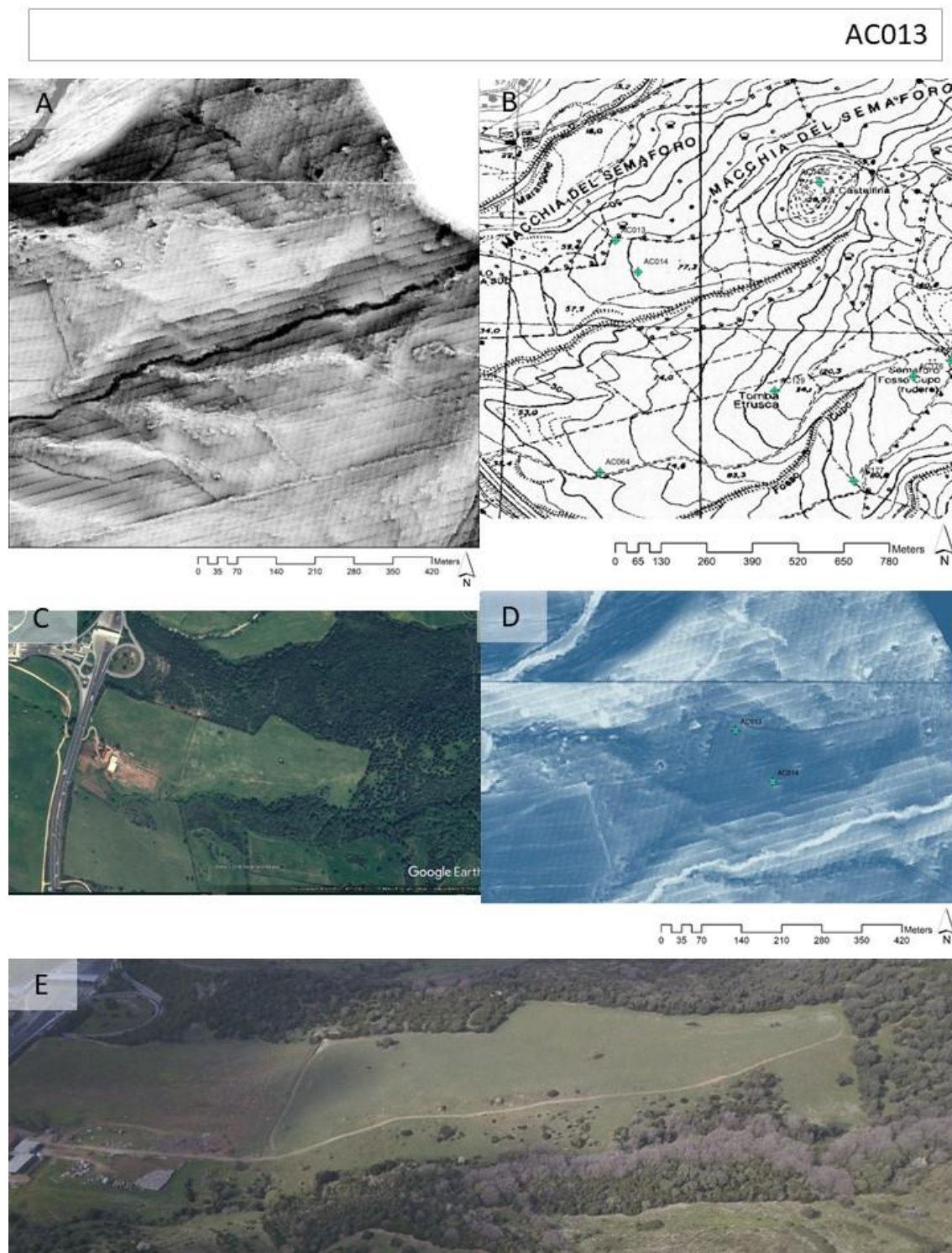


Fig. 70 A: DTM of the site; B: the IGM base map; C: Orthophoto 2019 from the Google Earth; different visualization of DTM; E: recent photo from above.



Fig. 71 A: IGM base map; B: fragment of stone lining element of the doors; C: current state of the site.

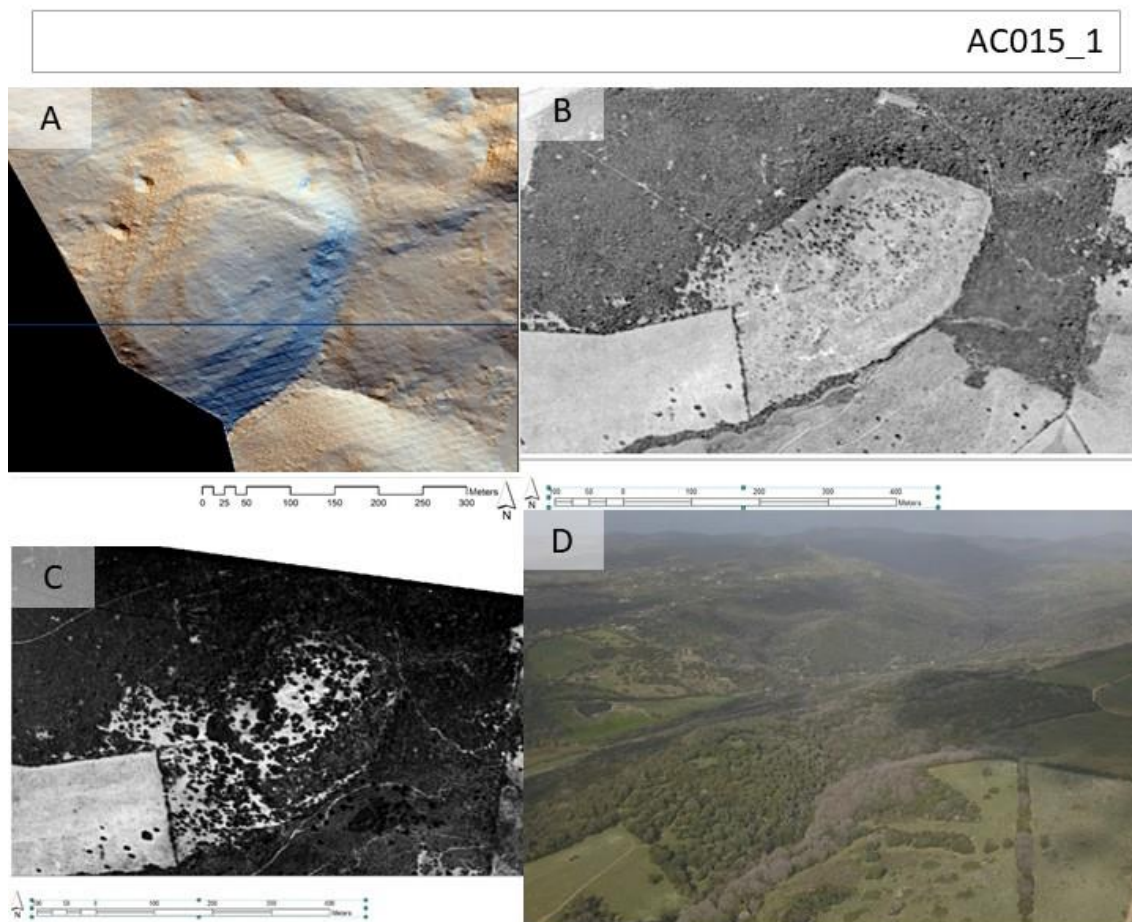


Fig. 72 A: DTM of site, unfortunately, it does not show all area of the site; B: aerial photo from 1950; C: aerial photo from 1954; D: current photo from above.

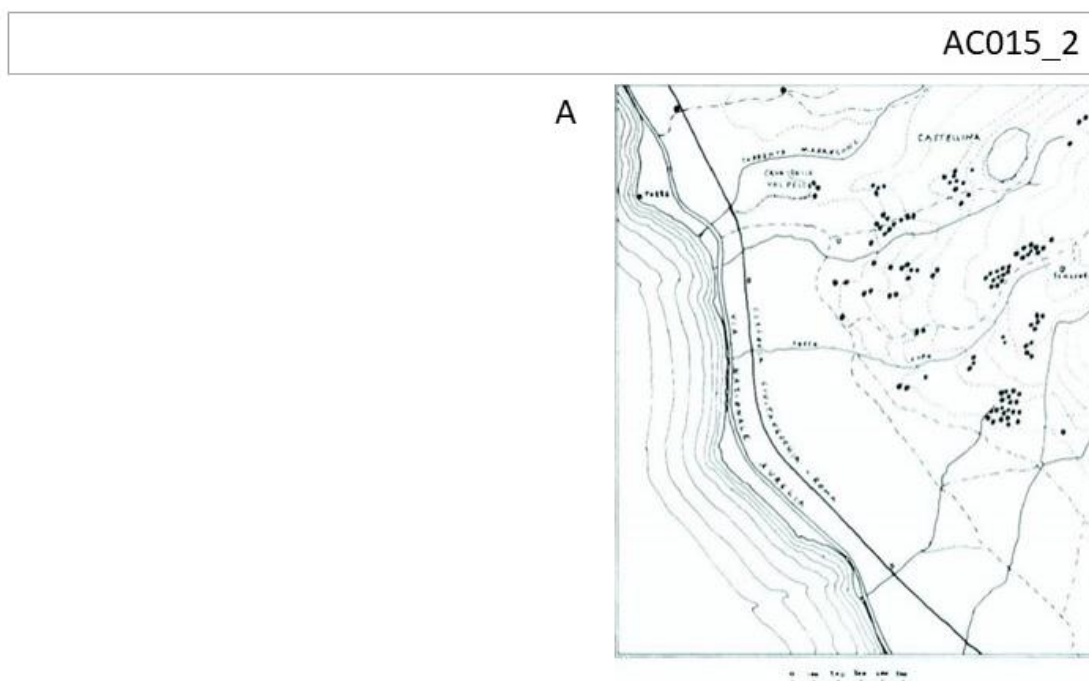


Fig. 73 A: the plan of the necropolis according to Bastianelli, from Gianfrotta 1972, 138.

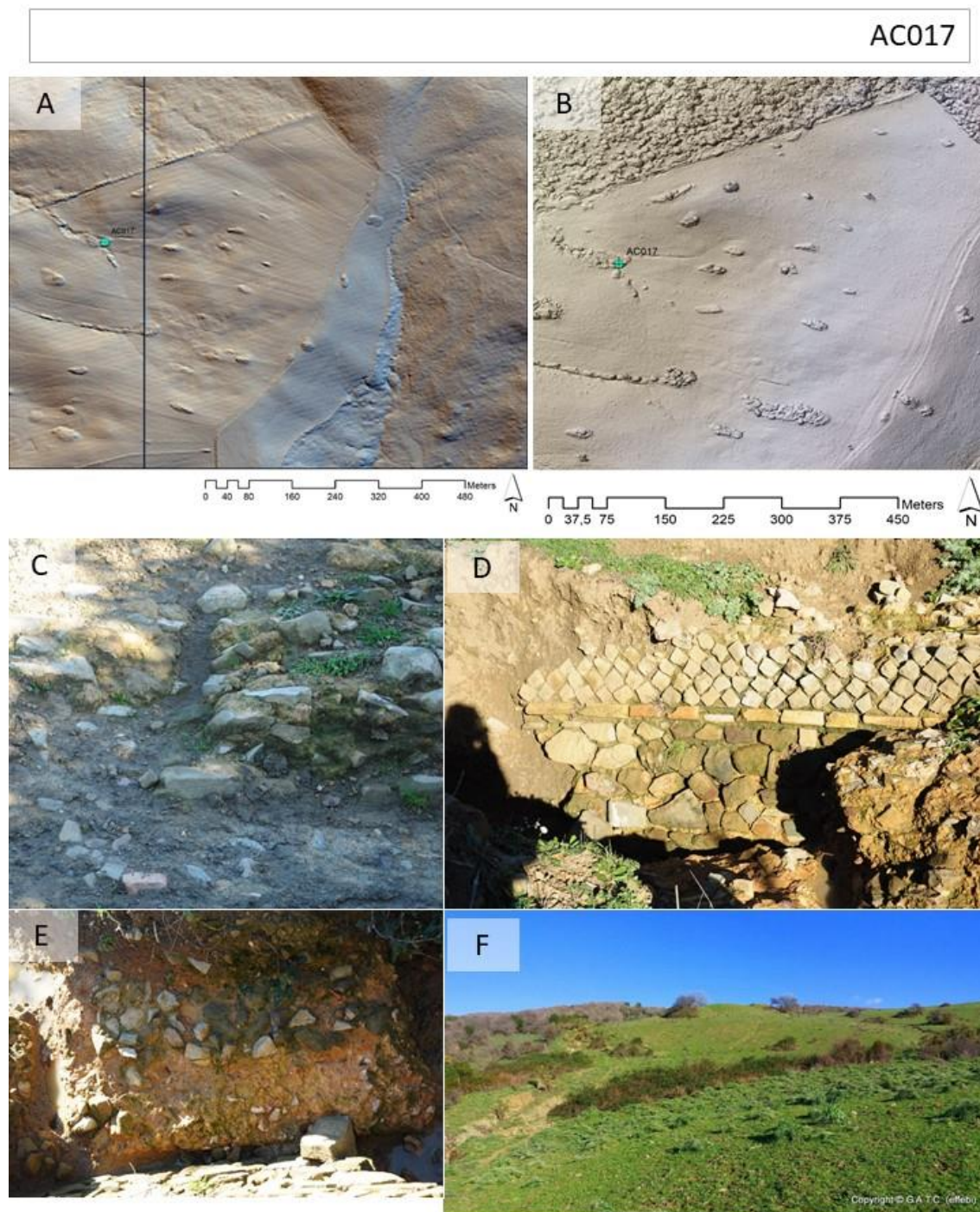


Fig. 74 A: DTM of the site; B: photogrammetry of the site; C,D,E: opus mixtum F: a general overview, 2018 (from the archive of Bruno Fantozzi).



Fig. 75 A: DTM of the site; B: one of the erosion grooves; C: stratigraphy containing pottery fragments (from the archive of Bruno Fantozzi); D: photogrammetry of stratigraphy 2018.

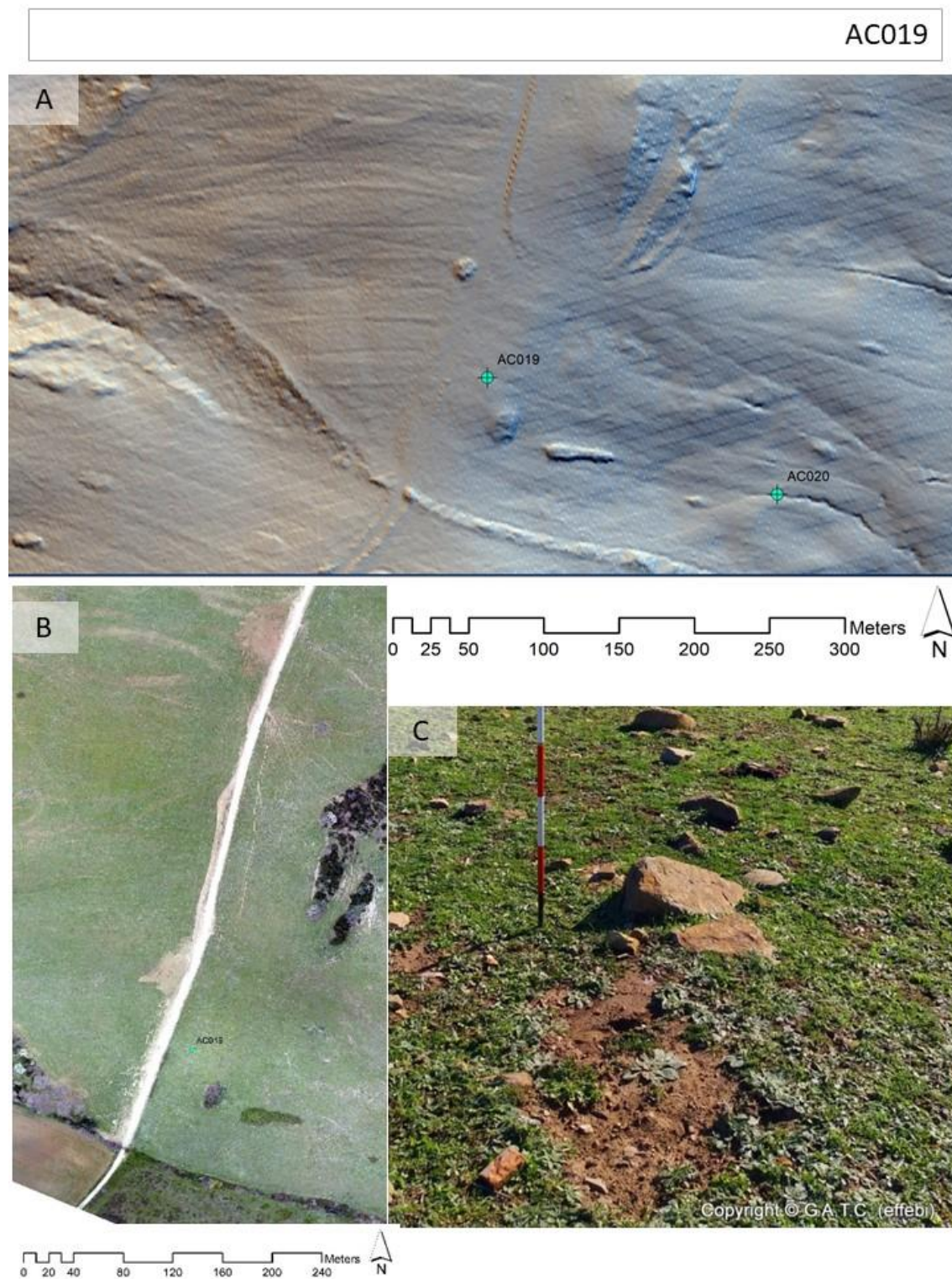


Fig. 76 A: DEM of the area; B: current orthophoto 2019; C: an example of the stone structure in the ground (from the archive of Bruno Fantozzi).

AC020

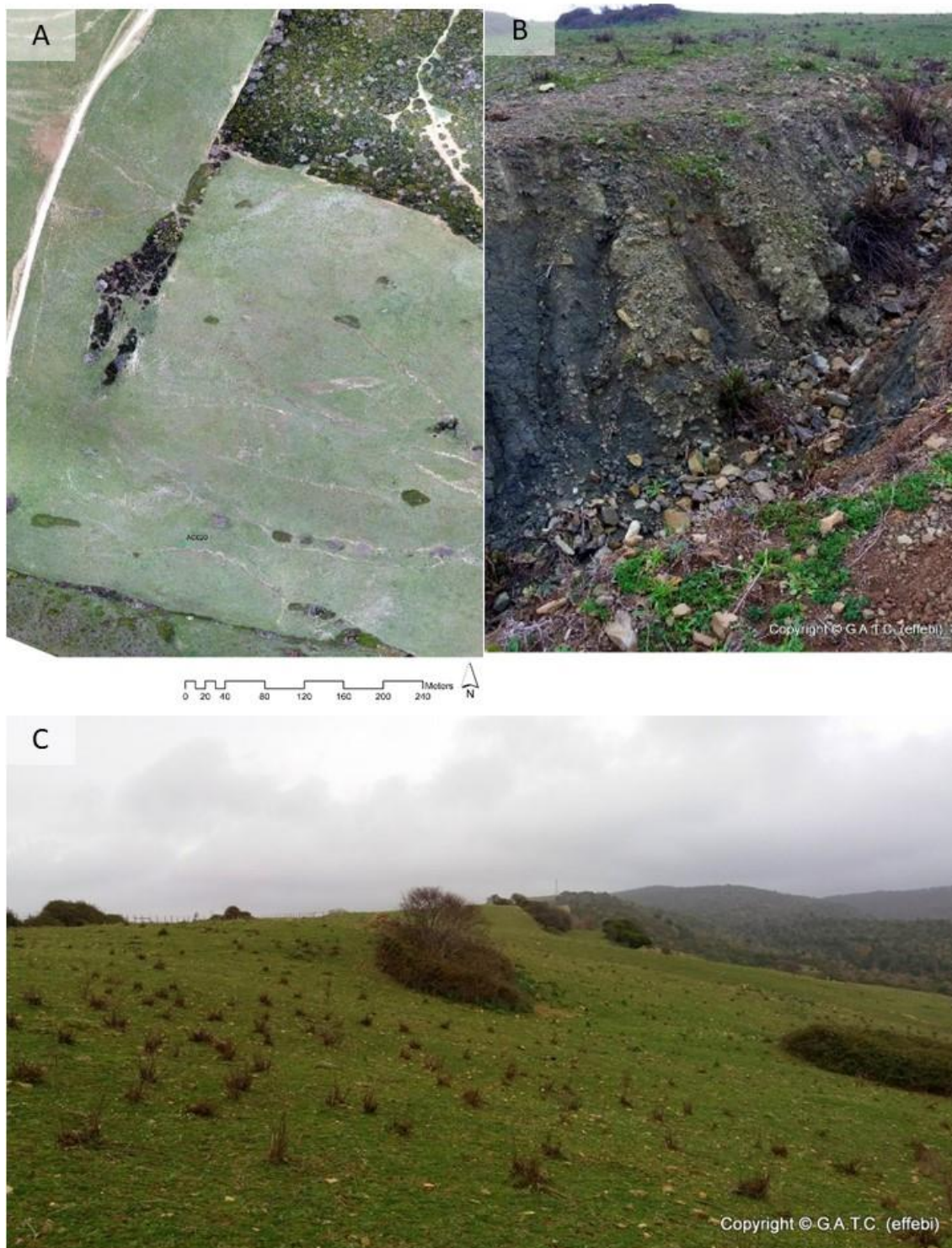


Fig. 77 A: Current orthophoto showing erosion grooves; B: detail of groove; C: general overview of the site (archive of Bruno Fantozzi).

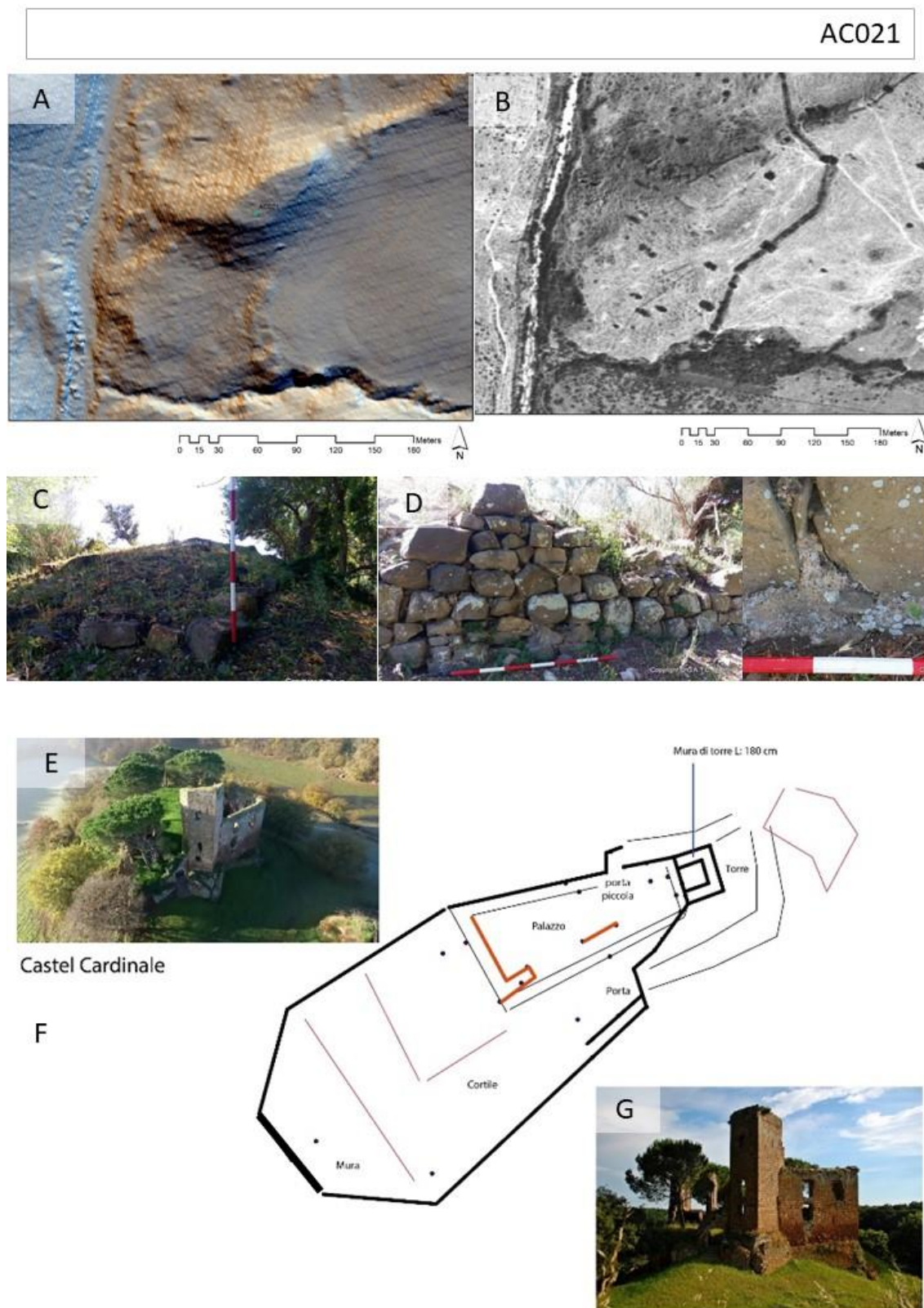


Fig. 78 A: DTM shows the strategic position of the site on the hill between two streams; B: aerial photo from 1954 shows unforested site; C, D: detail of walls relicts (from the archive of Bruno Fantozzi); E, G: analogical Castel Cardinale; F preliminary planimetry of site.

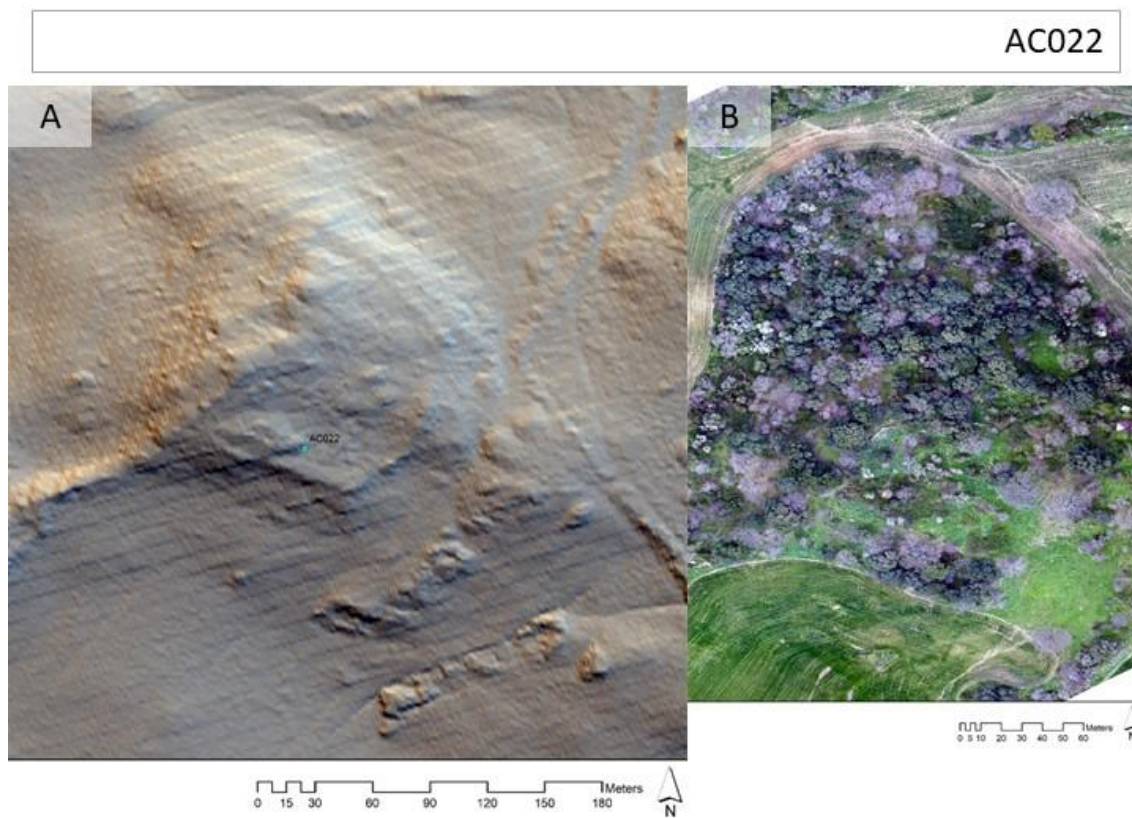


Fig. 79: A: DTM showing the extension of the site; B: current orthophoto 2019.

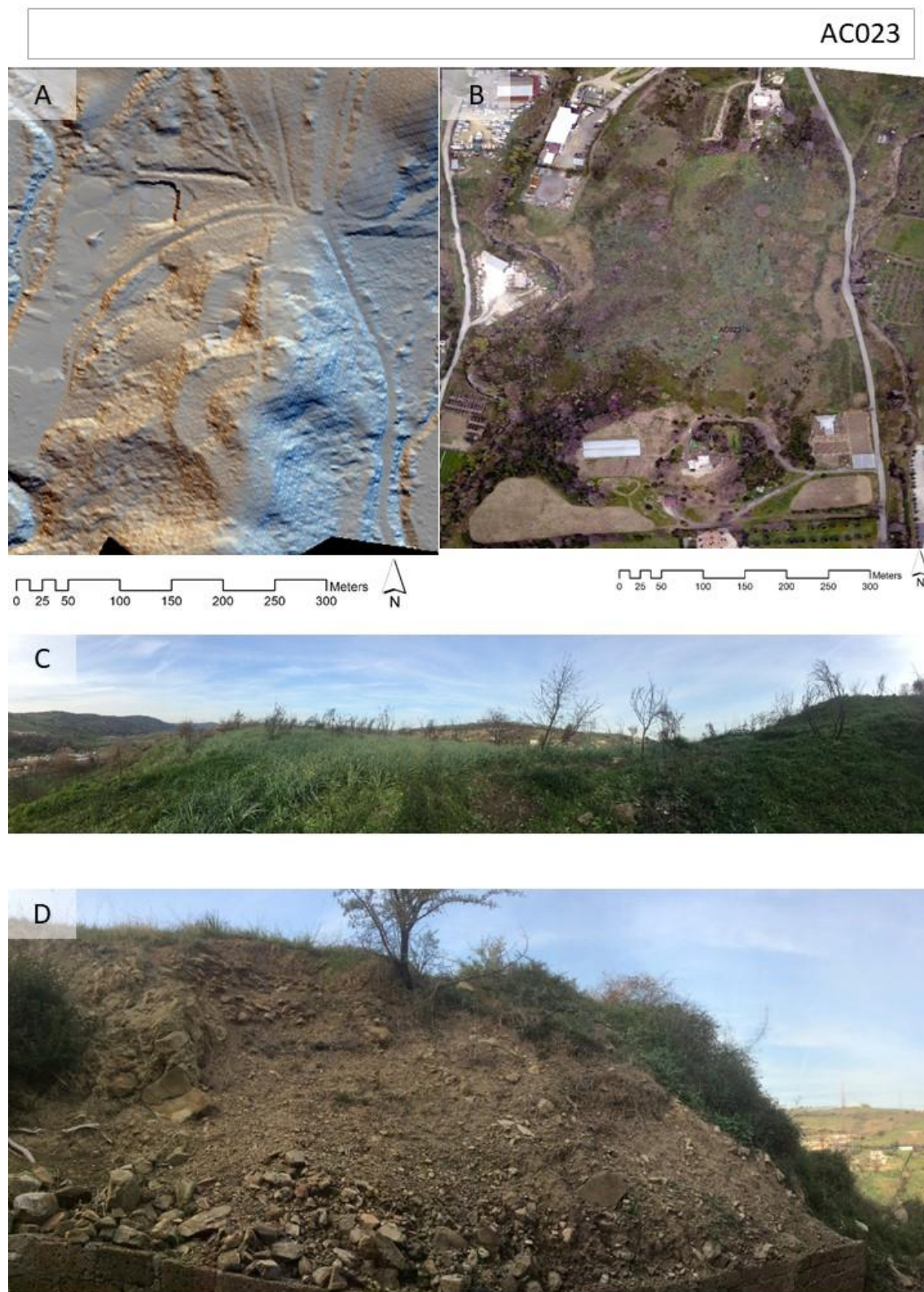


Fig. 80 A: Lidar data; B current orthophoto 2019; C the state of the site in 2019; D: modern road cut the site and discovered relevant archaeological strata rich for findings from the Etruscan period.



Fig. 81 A-E the site after fire and stone structures (Archive of Bruno Fantozzi).

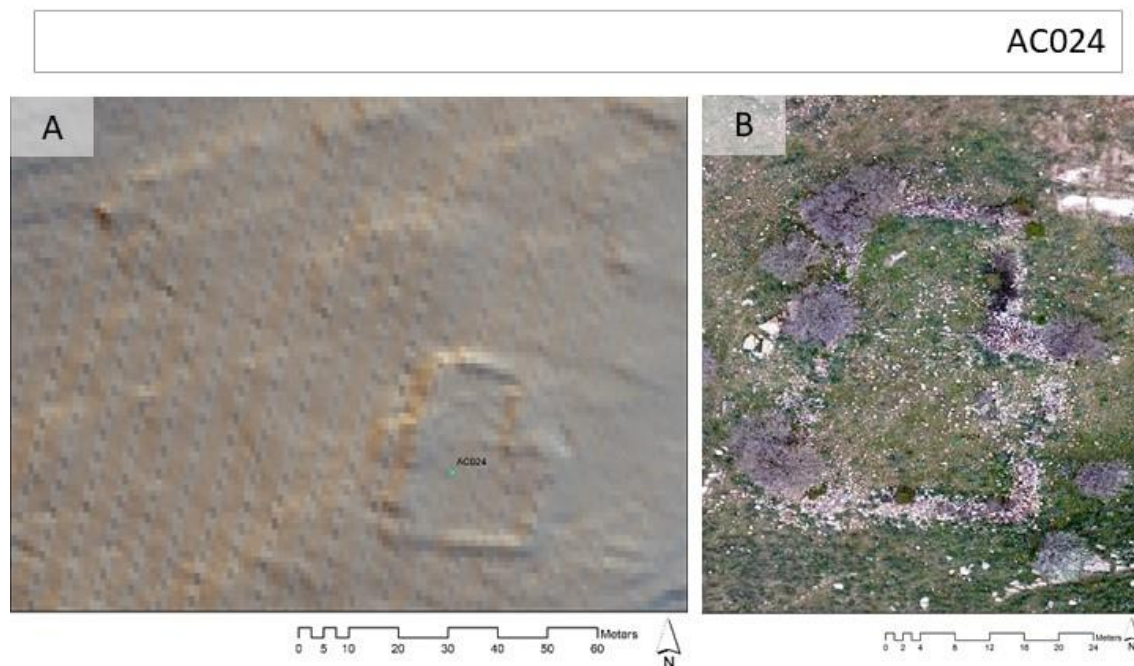


Fig. 82 A: DTM; B: current orthophoto 2019.

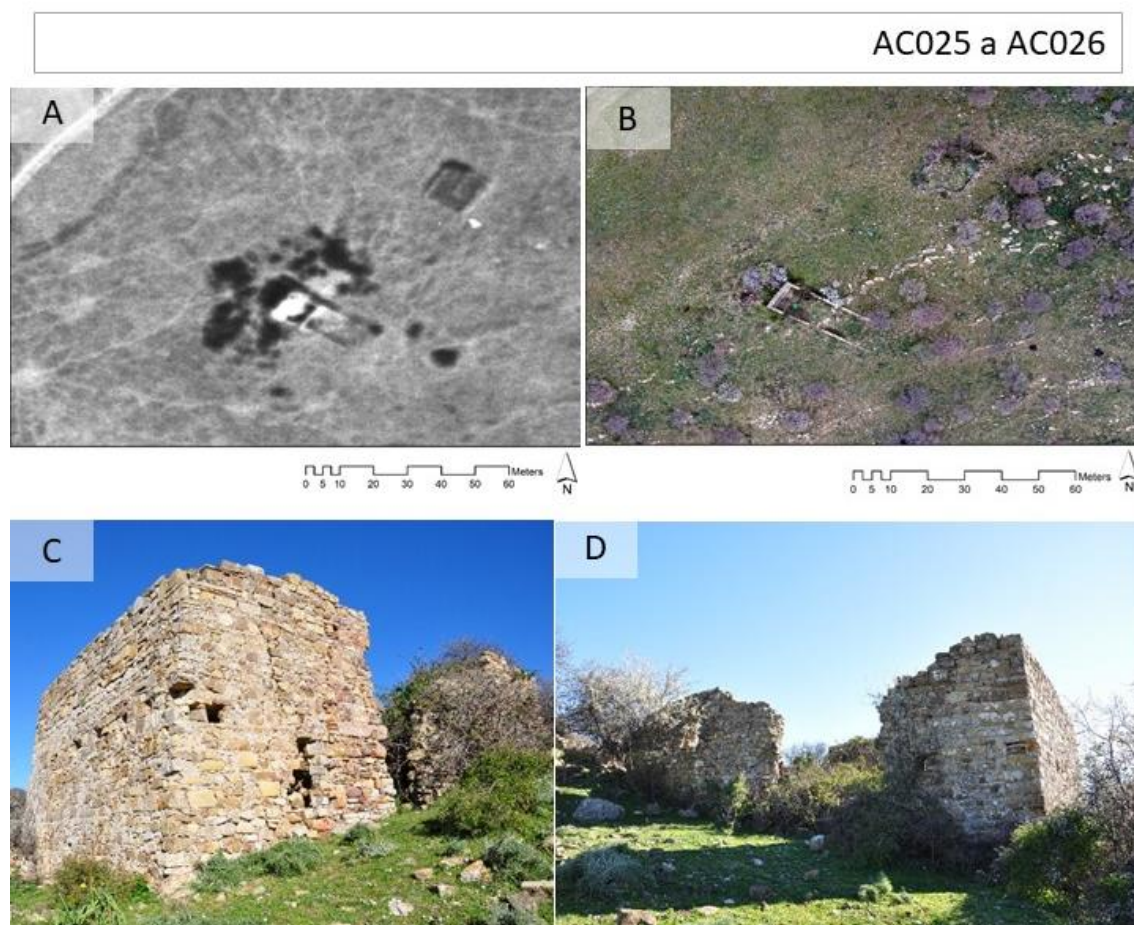


Fig. 83 A: Aerial photo from 1950: relicts of AC025 and smaller AC026; B: current orthophoto 2019; C, D: relicts of stone structures AC025.

AC027

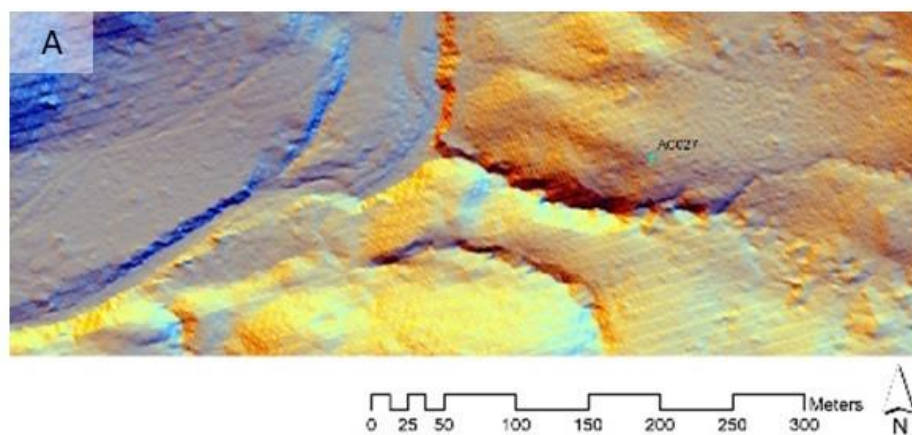


Fig. 84 A: DTM of the site.

AC028



Fig. 85: A: terraces on the DTM; B: fountain; C: current state of the site.

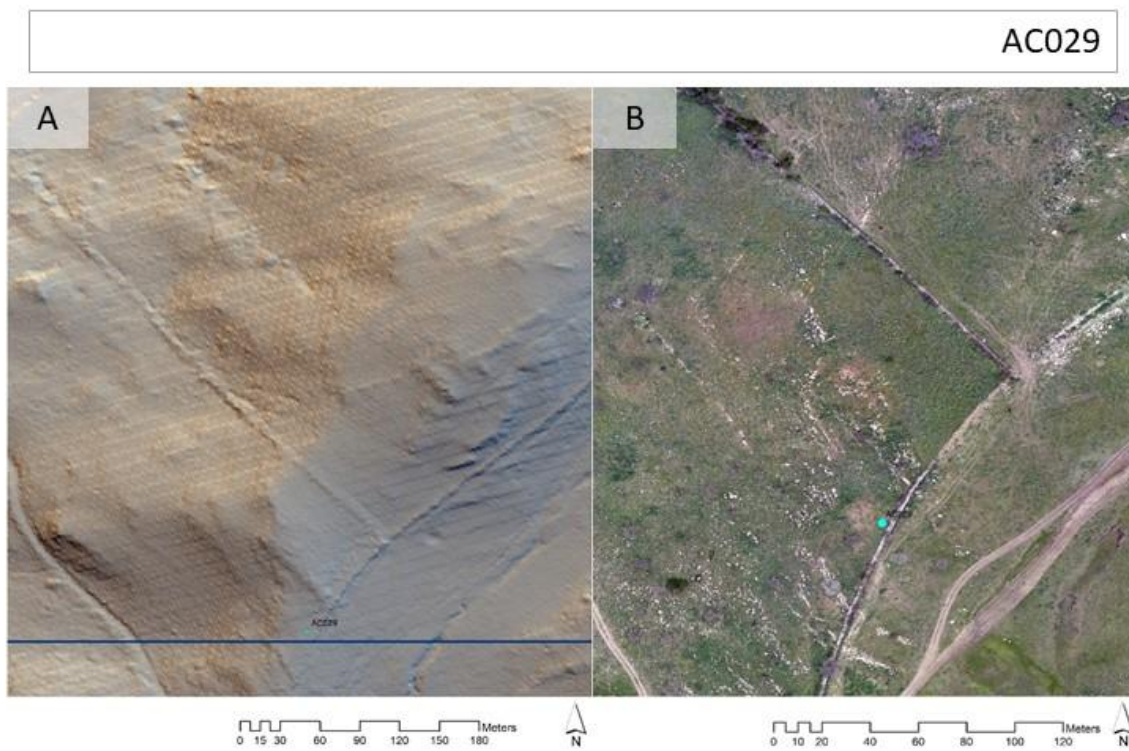


Fig. 86 A: shows the relief of treatments that are visible also on modern orthophoto from 2019 (B).

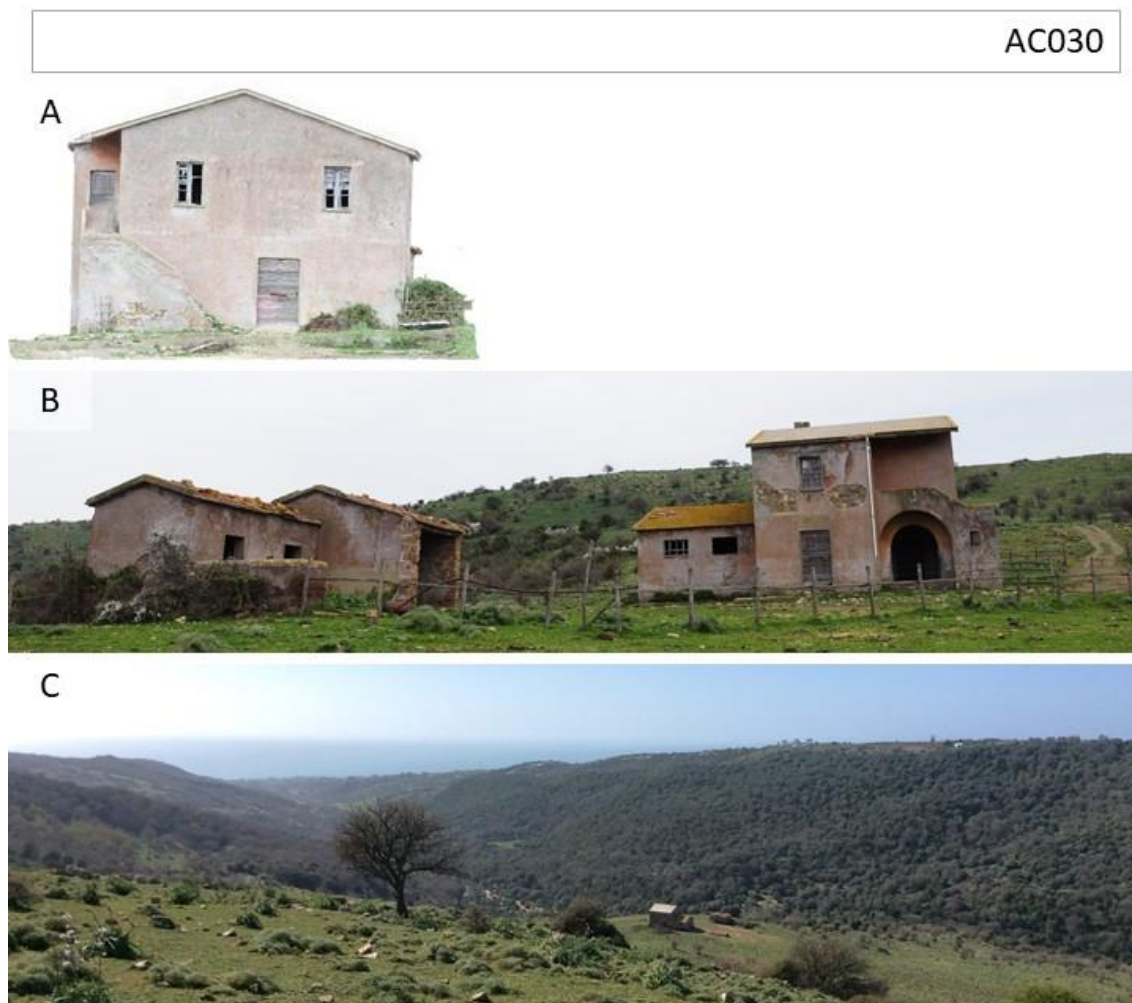


Fig. 87 A: Photogrammetry of the building; B: Current state of homestead; C: the position of building in the landscape.

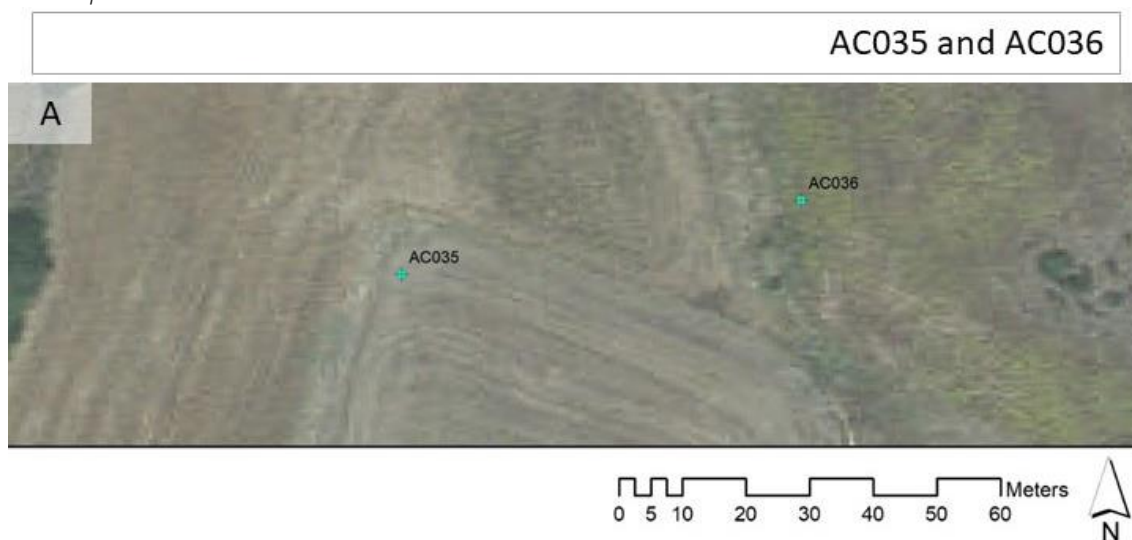


Fig. 88: Orthophoto of the sites AC035 and AC036 2012.

AC037



Fig. 89: The state of the site 2018.

AC038



Fig. 90 A: DTM of the area; B: panoramic of surroundings; C the general overview.

AC039



Fig. 91 A: Complex view to the location of the site and its relation with surroundings: Punicum and villa Ulpiano.

AC040



Fig. 92 A: the site AC040 situated on the top of the hill; B: relicts of stone structures in vegetation.

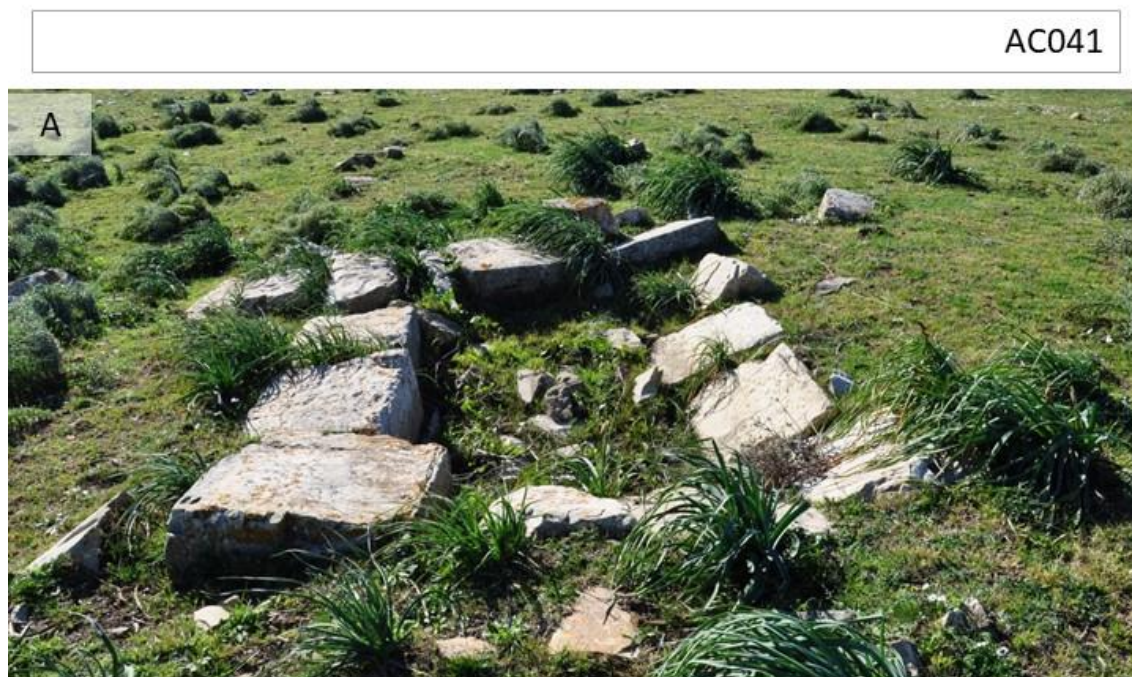


Fig. 93: The site AC041 in 2018.

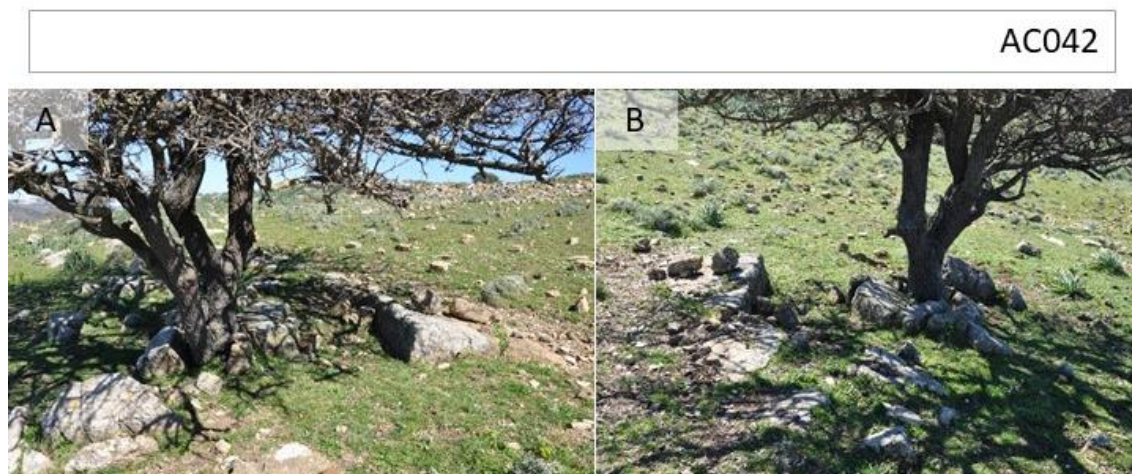


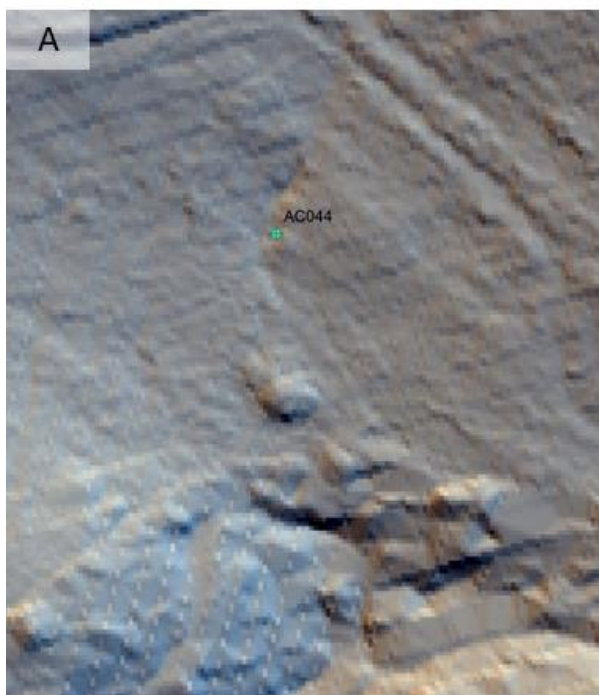
Fig. 94 A and B: the site AC042 in 2018.

AC043



Fig. 95 A: the terrace noted by Maffei like a Roman villa.

AC044



AC045

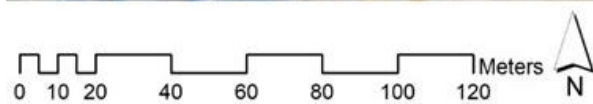
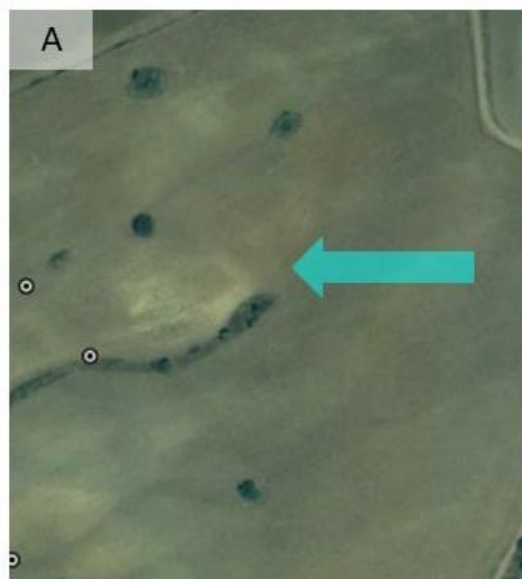


Fig. 96: AC044 the DTM of the site; AC045 orthophoto of the site.

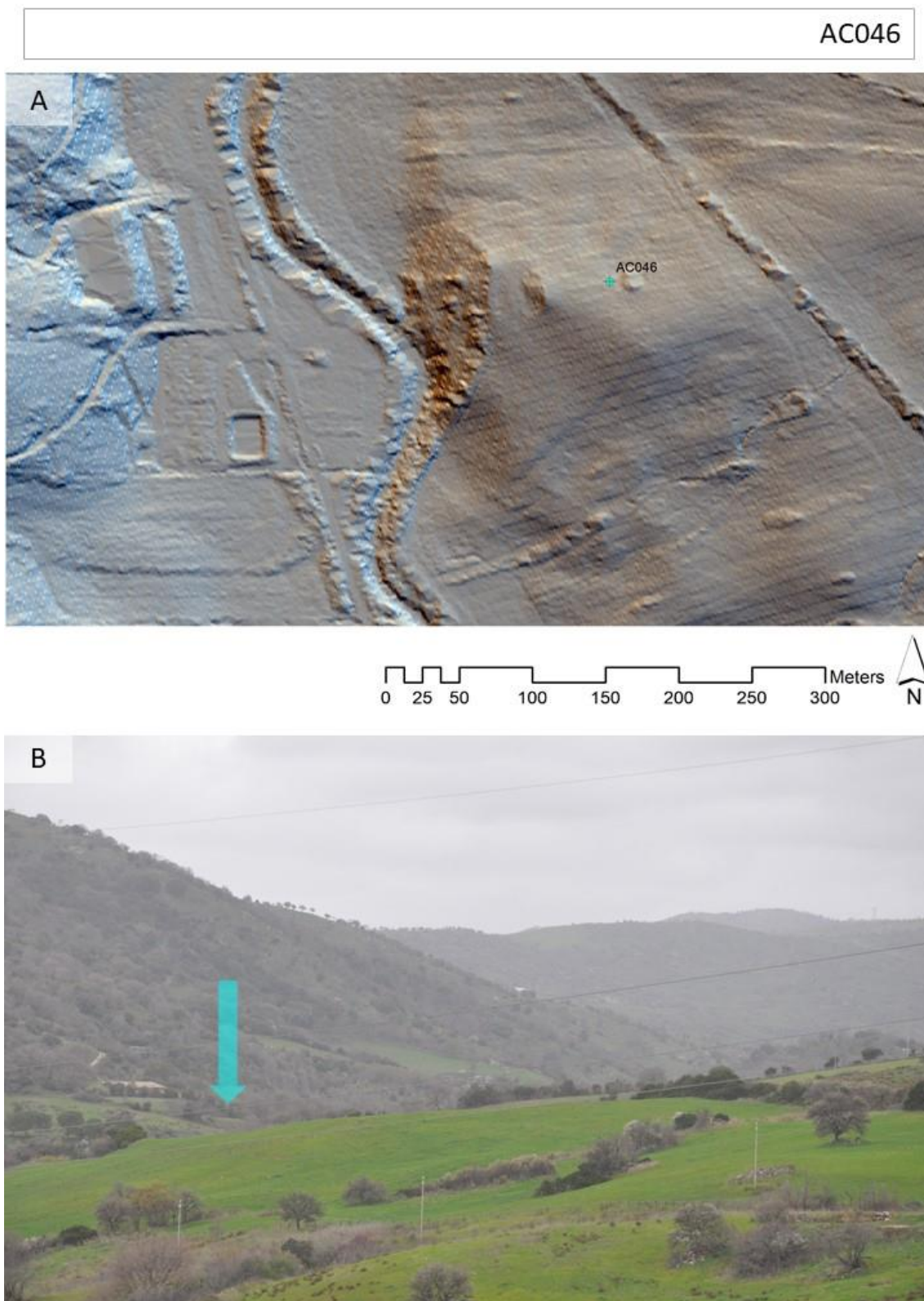


Fig. 97 A: DTM documented natural platform above the stream. B: Low spring vegetation revealed the natural terrace.

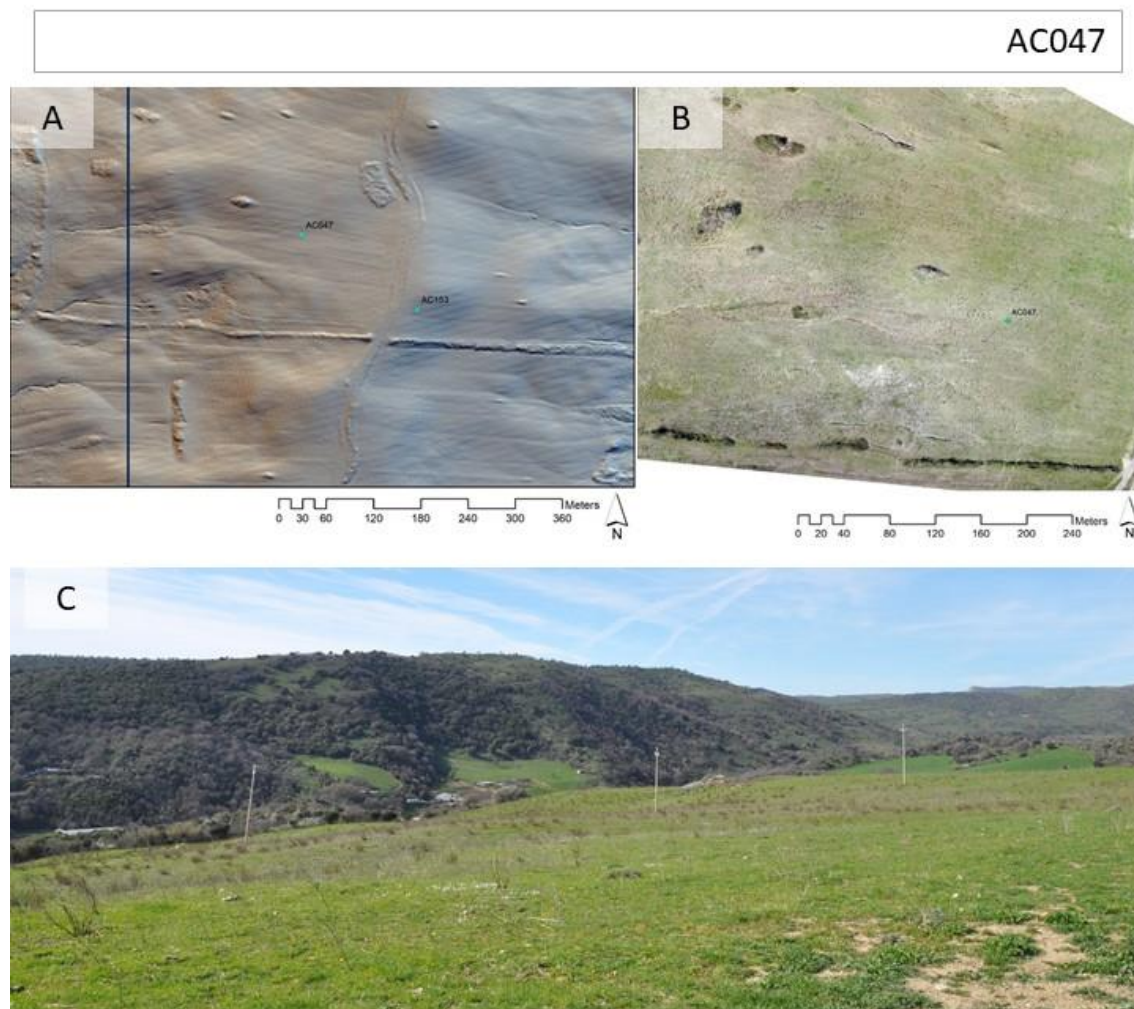


Fig. 98 A: DTM of the site; B: orthophoto 2019; C general view 2019.

AC048

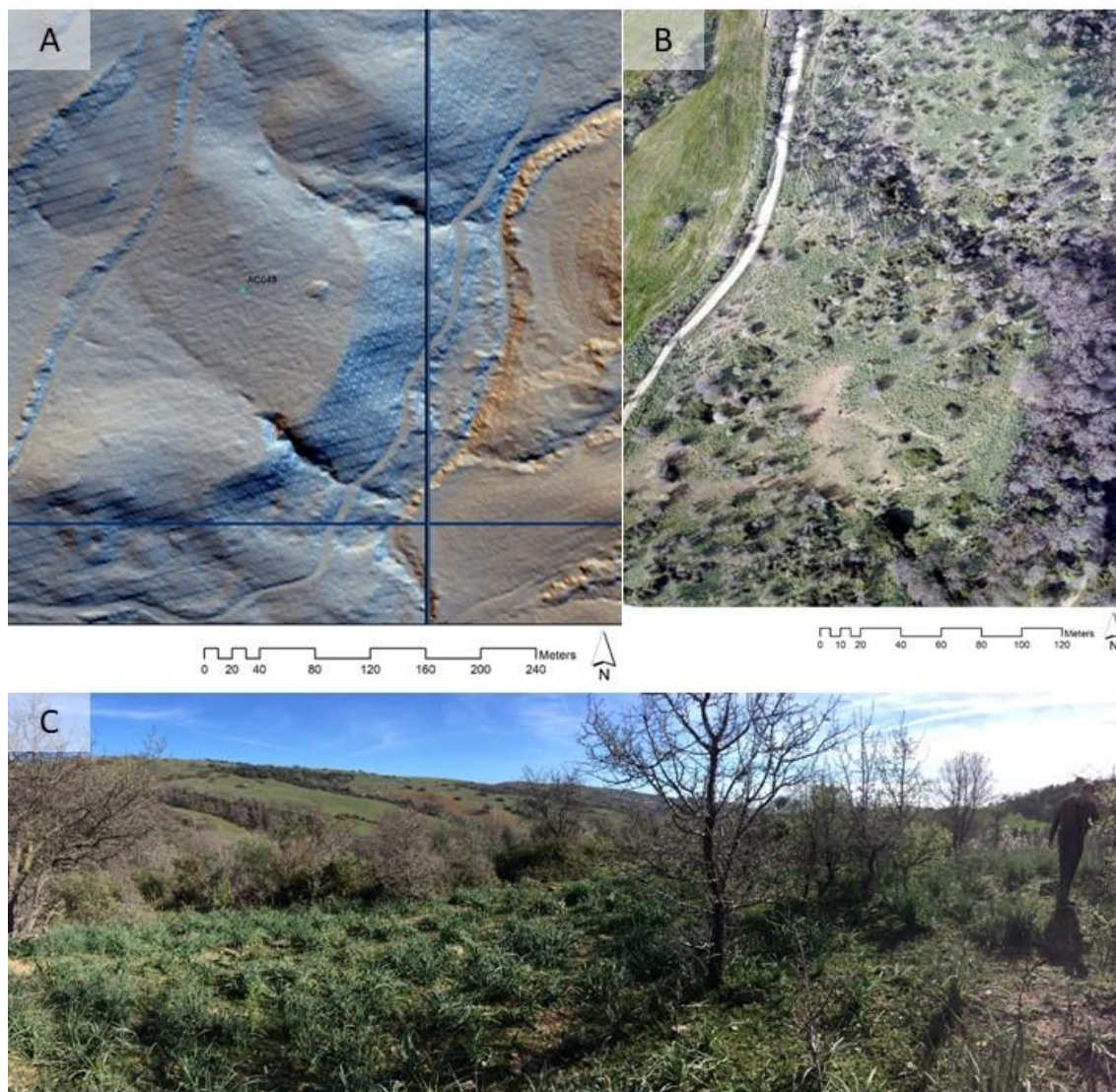


Fig. 99 A: the DTM of the site; B: orthophoto 2019; the state of the site in 2018.

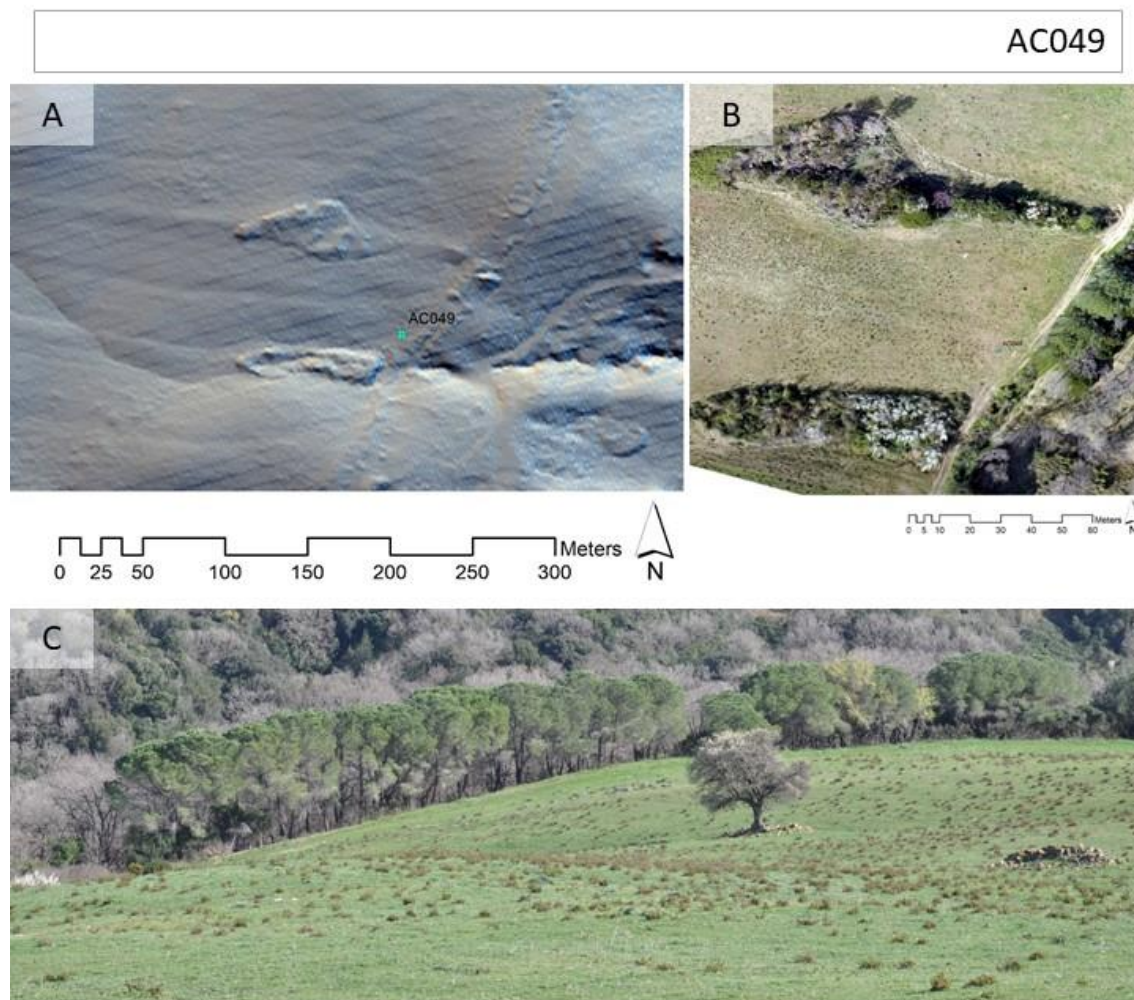


Fig. 100 A: the DTM; B orthophoto 2019; C: current state of the site.

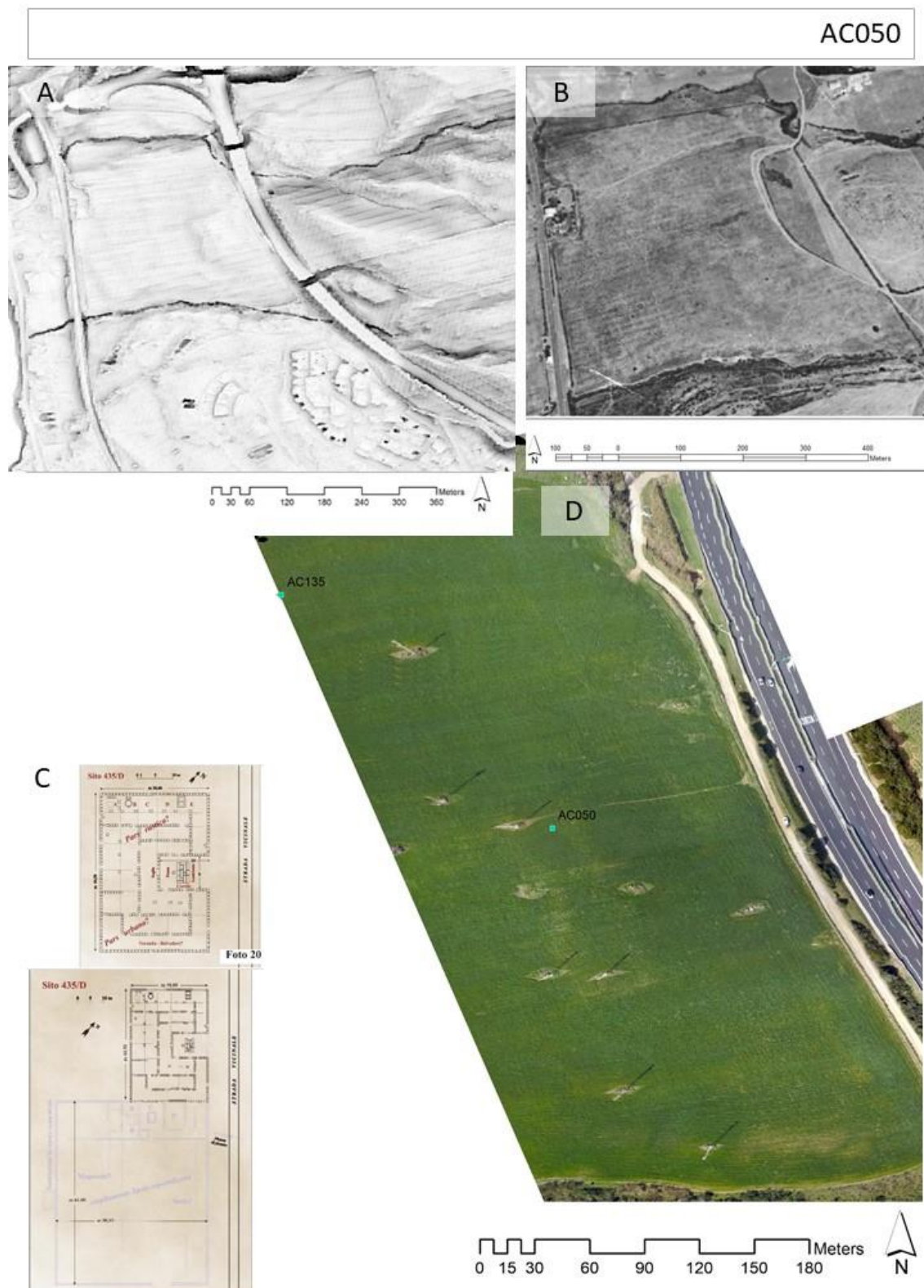


Fig. 101 A: DTM of the site; B: historical orthophoto 1950; C the planimetry of site according to A. Maffei (from Allegrezza); D: the orthophoto of the site with a different colour of the vegetation in place of the villa in 2019.

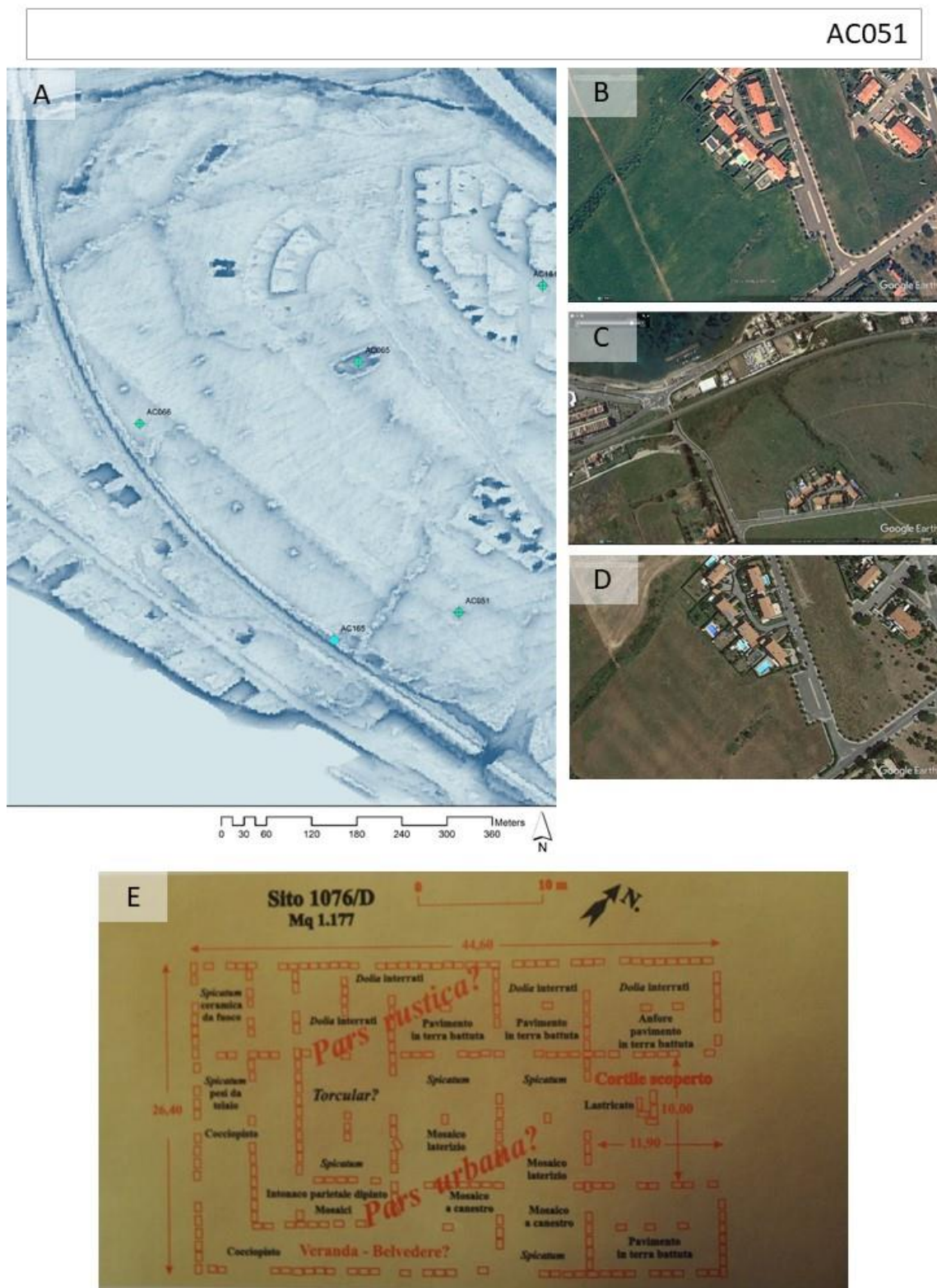


Fig. 102 A: DTM of site, B: Orthophoto from Google Earth 2010; C: the same from 2017; D: the same from 2019; E: planimetry of the site according to Maffei 2012.



Fig. 103: the orthophoto of the site AC052.

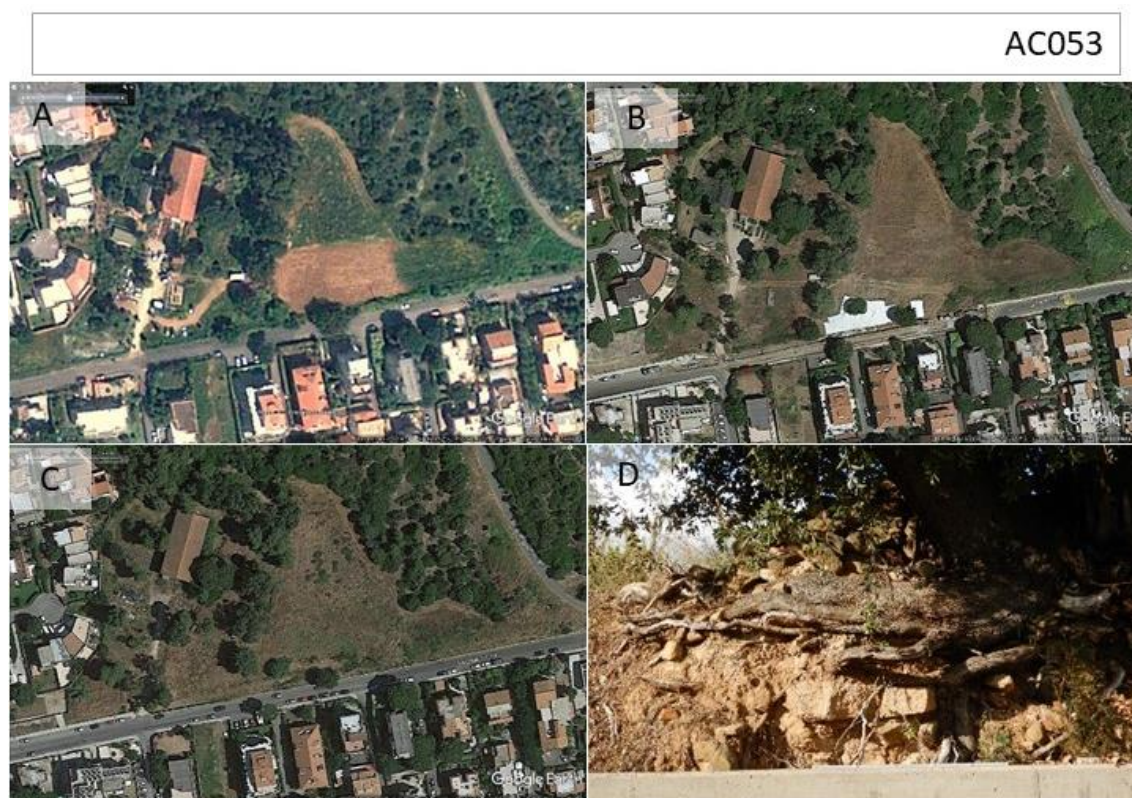


Fig. 104 A: the state before intervention; B: the intervention in 2015; C: current state of the site, all from Google Earth; D: the detail of wall relic 2018.

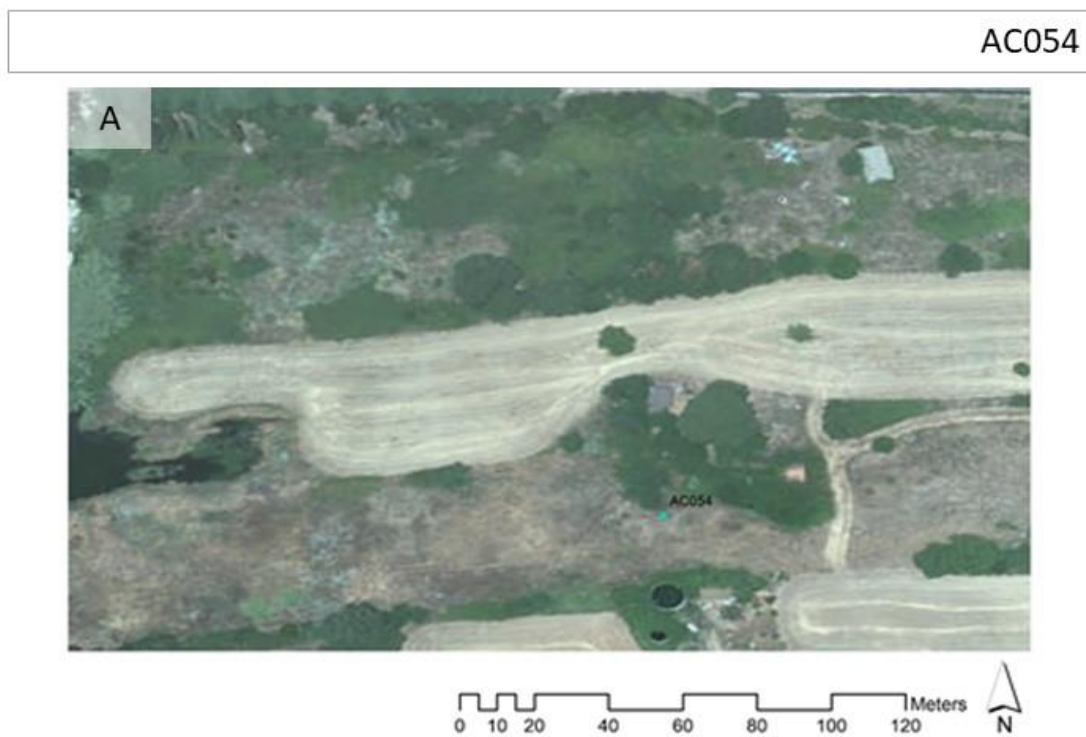


Fig. 105 A: orthophoto from 2012.



Fig. 106 A: the orthophoto from 2012.

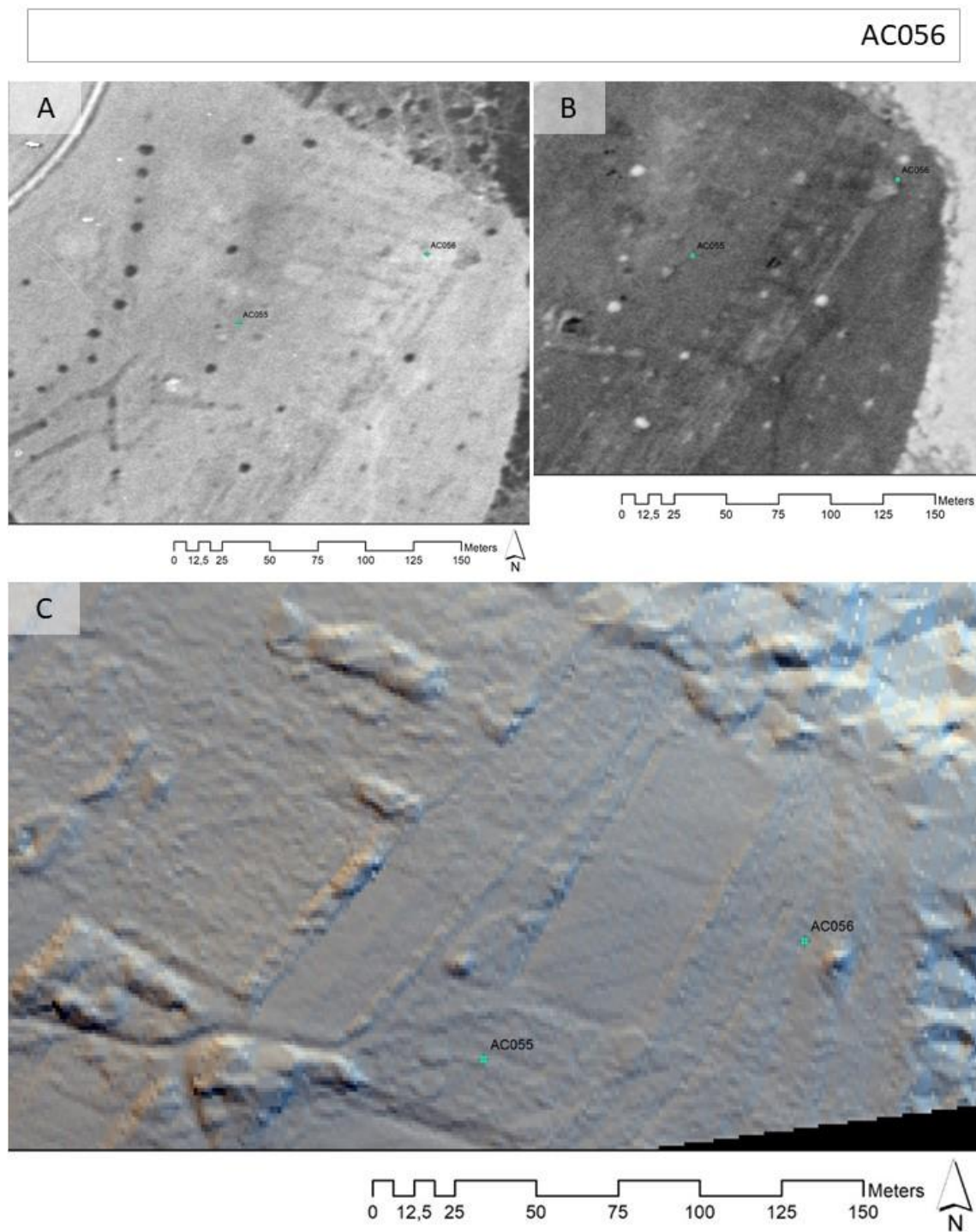


Fig. 107 A: 1950; B: 1954; C: DTM.

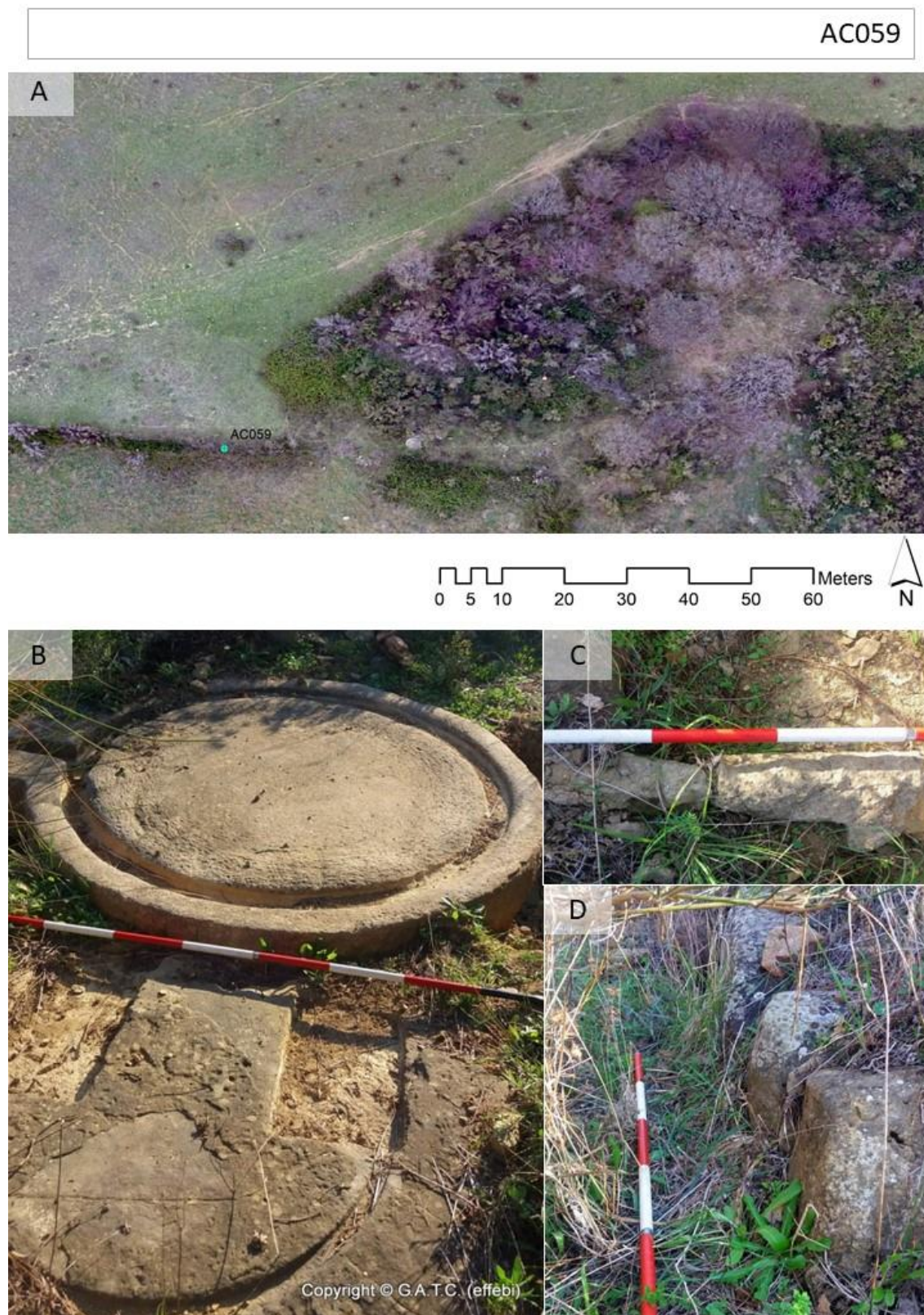


Fig. 108 A: Ortohopphoto of the site 2019; B: the Ara torculum; C, D: stone structures (from the archive of Bruno Fantozzi).

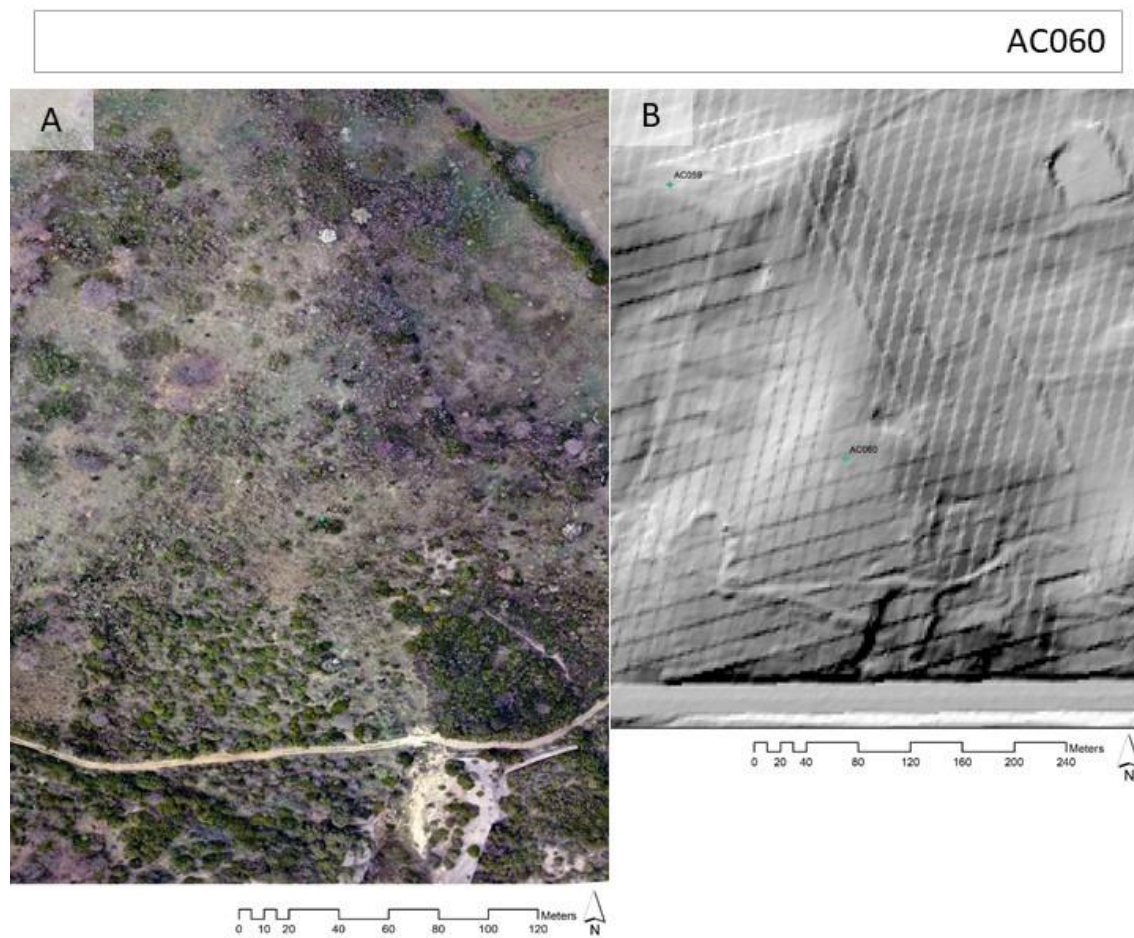


Fig. 109 A: The state of the site 2019; B: the DTM of the site.

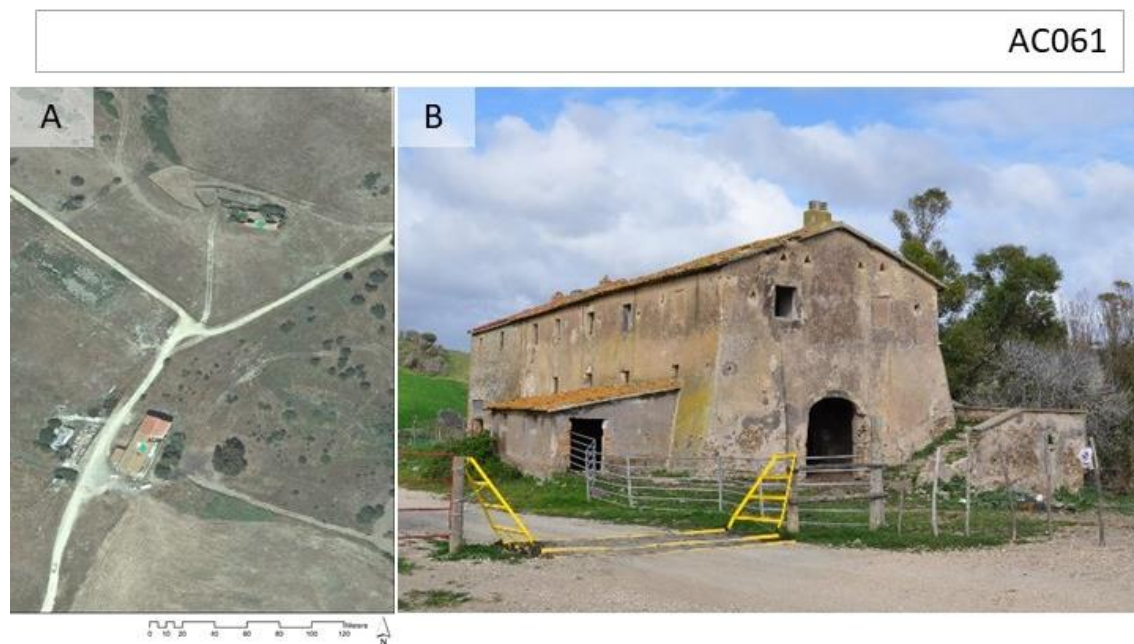


Fig. 110 A: orthophoto from 2012; B: current state of the site 2019.

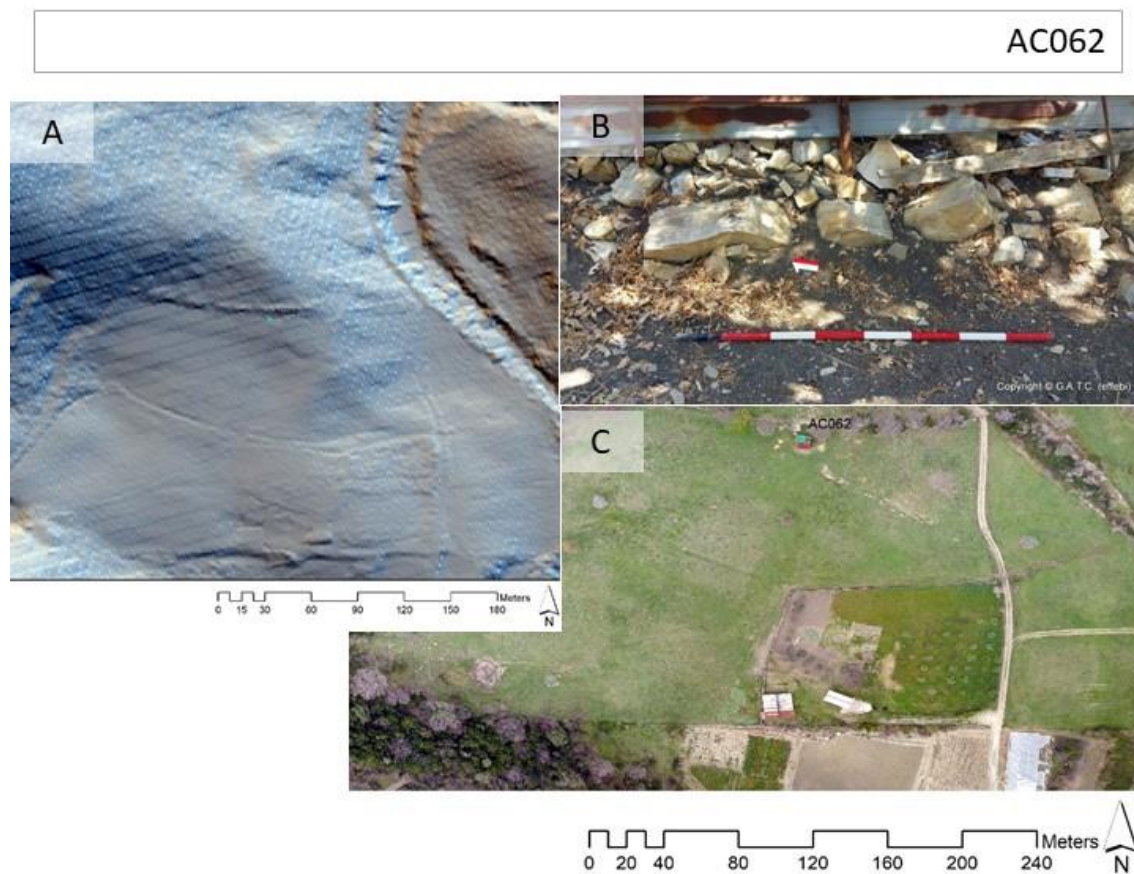


Fig. 111 A: DTM; B: detail of wall relicts (from the archive of Bruno Fantozzi); C: orthophoto 2019.

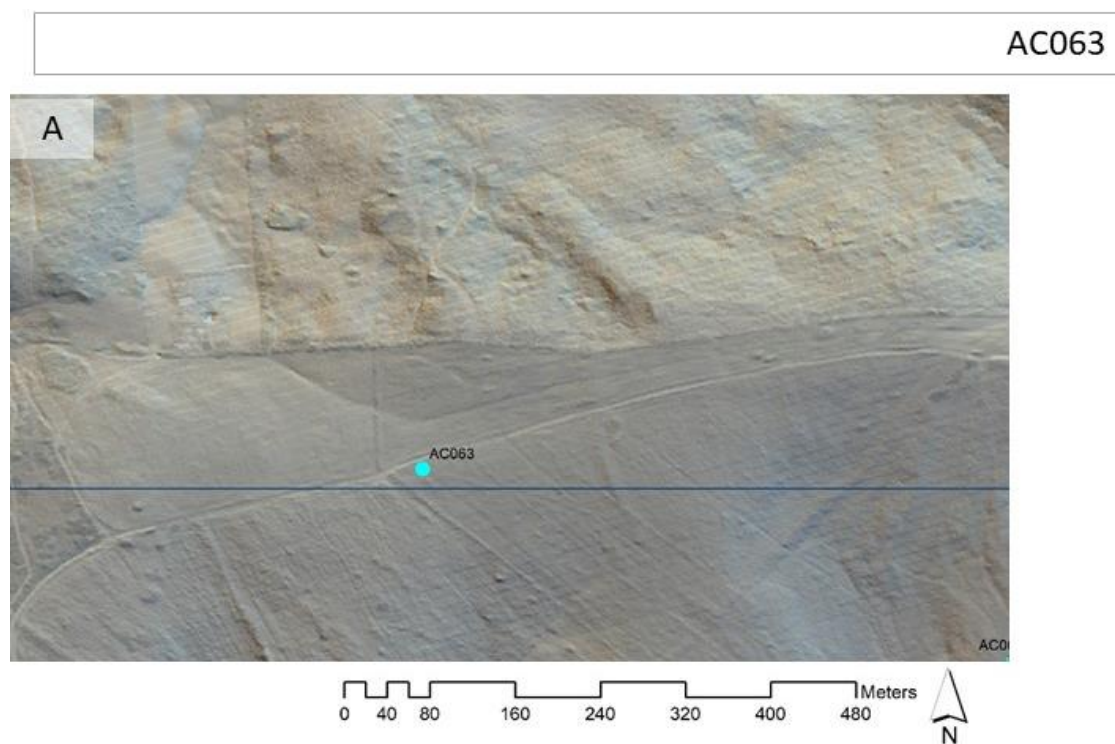


Fig. 112: The DTM of the site.



Fig. 113 A: orthophoto of one part of the area, 2019.



Fig. 114 A: current state of the area.



Fig. 115 A: DTM of the area.

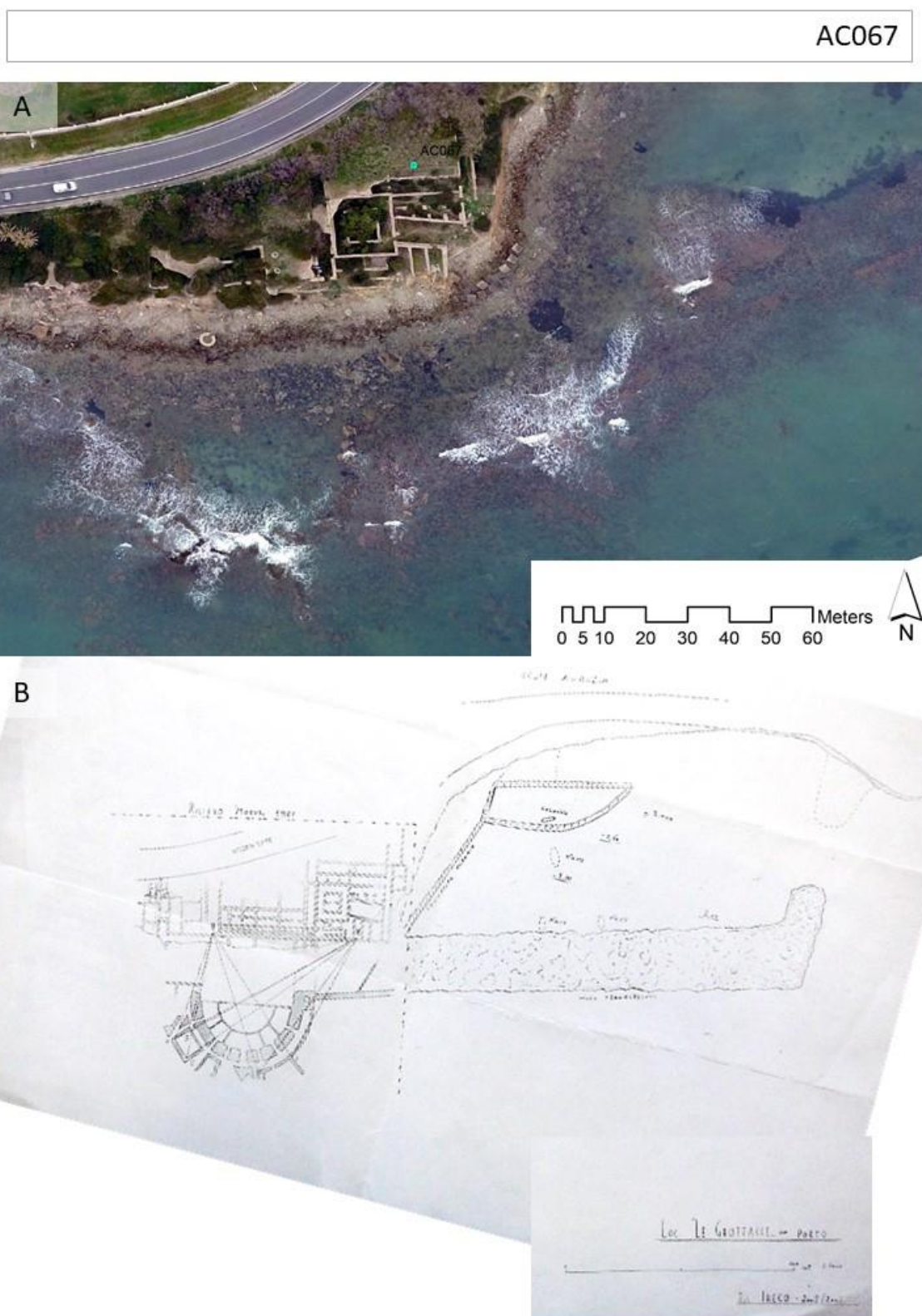


Fig. 116 A: orthophoto 2019, B: Archive SAEM: the planimetry of villa, fishponds and the harbour (from archive of Flavio Enei).

AC068

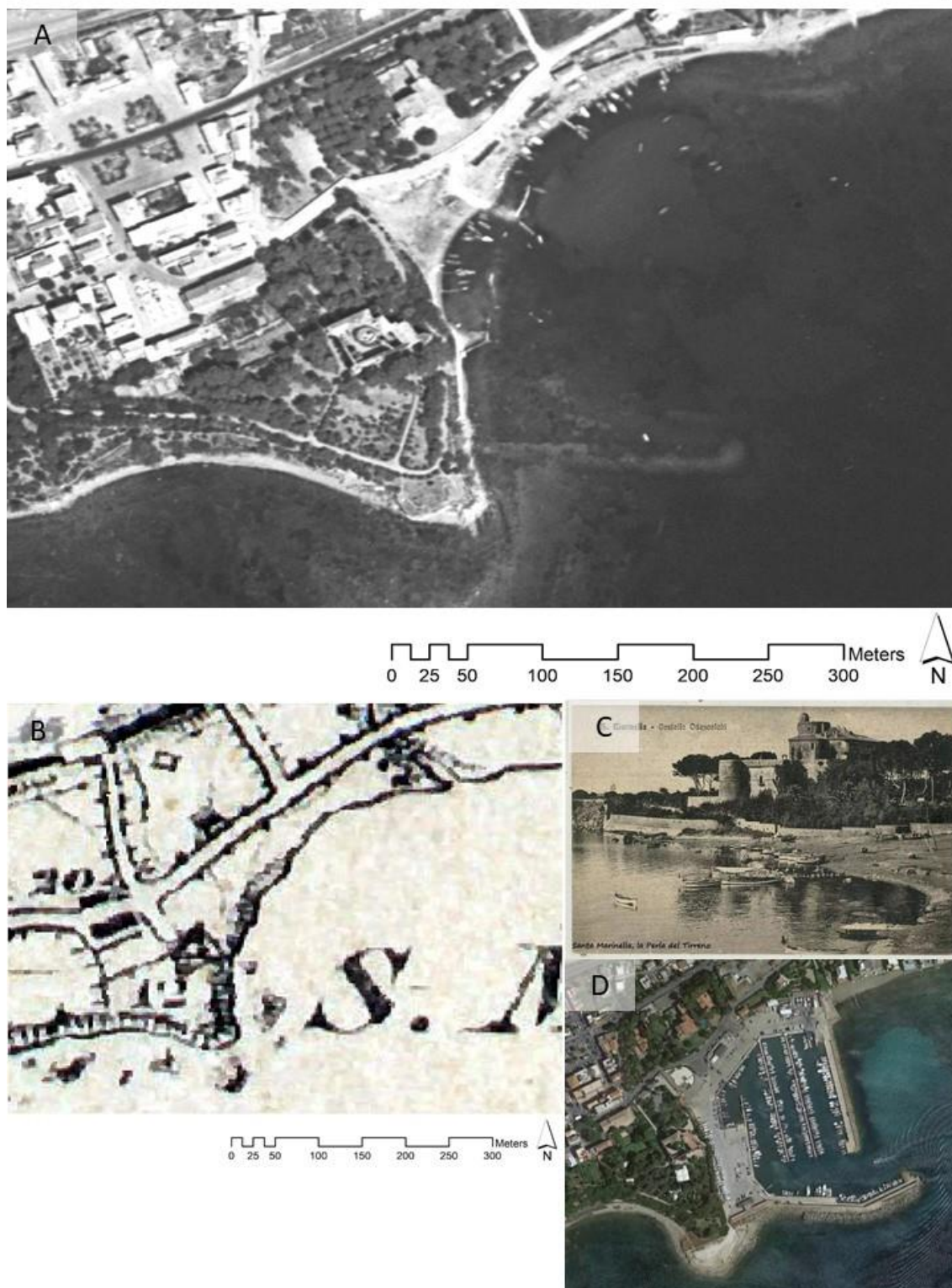


Fig. 117 A: Aerial photo, 1950: the original form of the cost with relicts of the Roman harbour; B: IGM 1895; C: the postcard from 1930 of Odescalchi castle; D current state of the site 2019.

AC069



Fig. 118 A: Aerial photo from 1950; B: the orthophoto 2018 of the fishponds.



Fig. 119 A: the general view; B: detail of the strata; C: Photogrammetrical documentation of the cost, 2018.

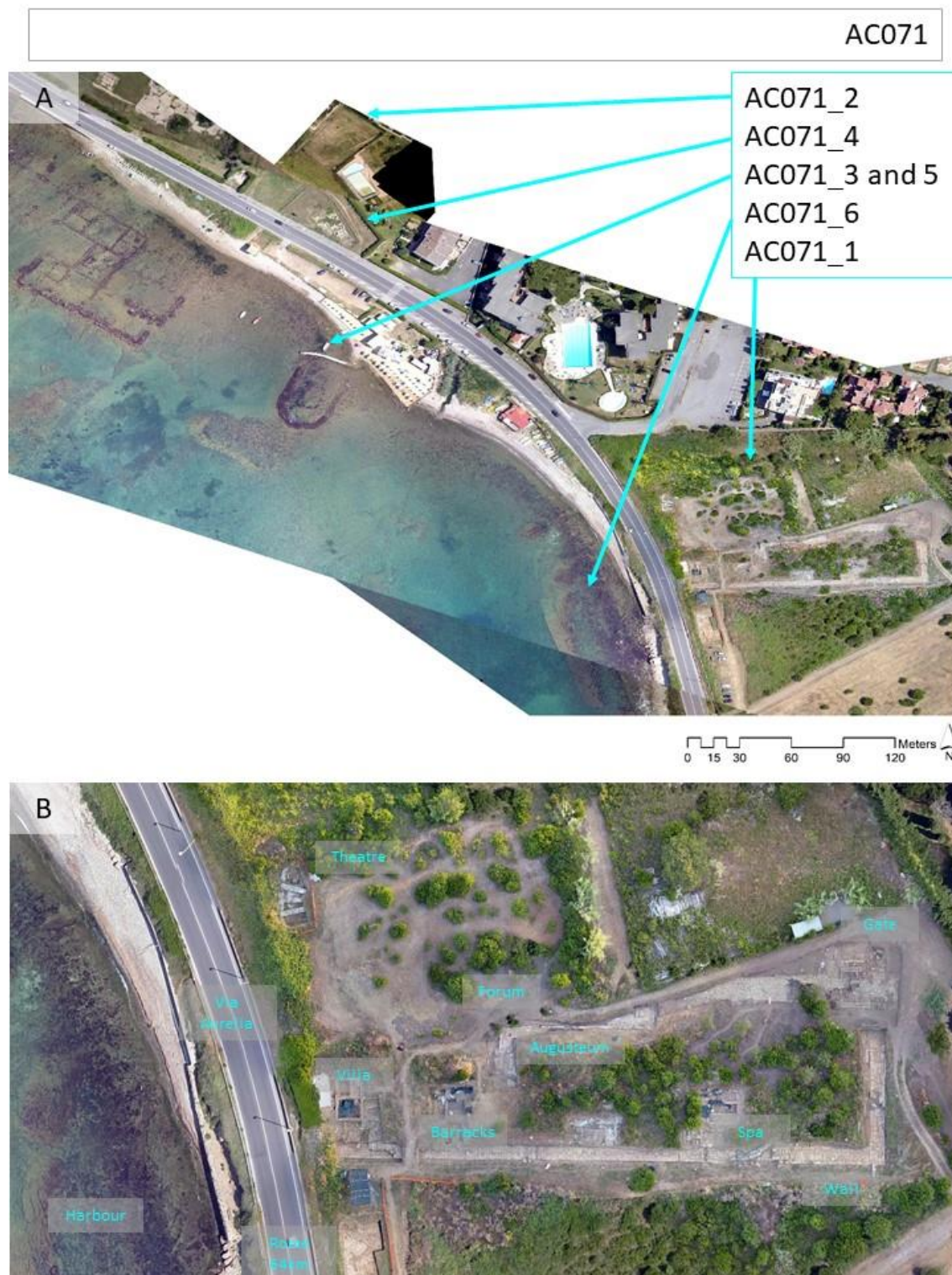


Fig. 120 A: The orthophoto 2019 of all excavated components; B: the topography of the site (Enei – Preusz – Preusz 2020).

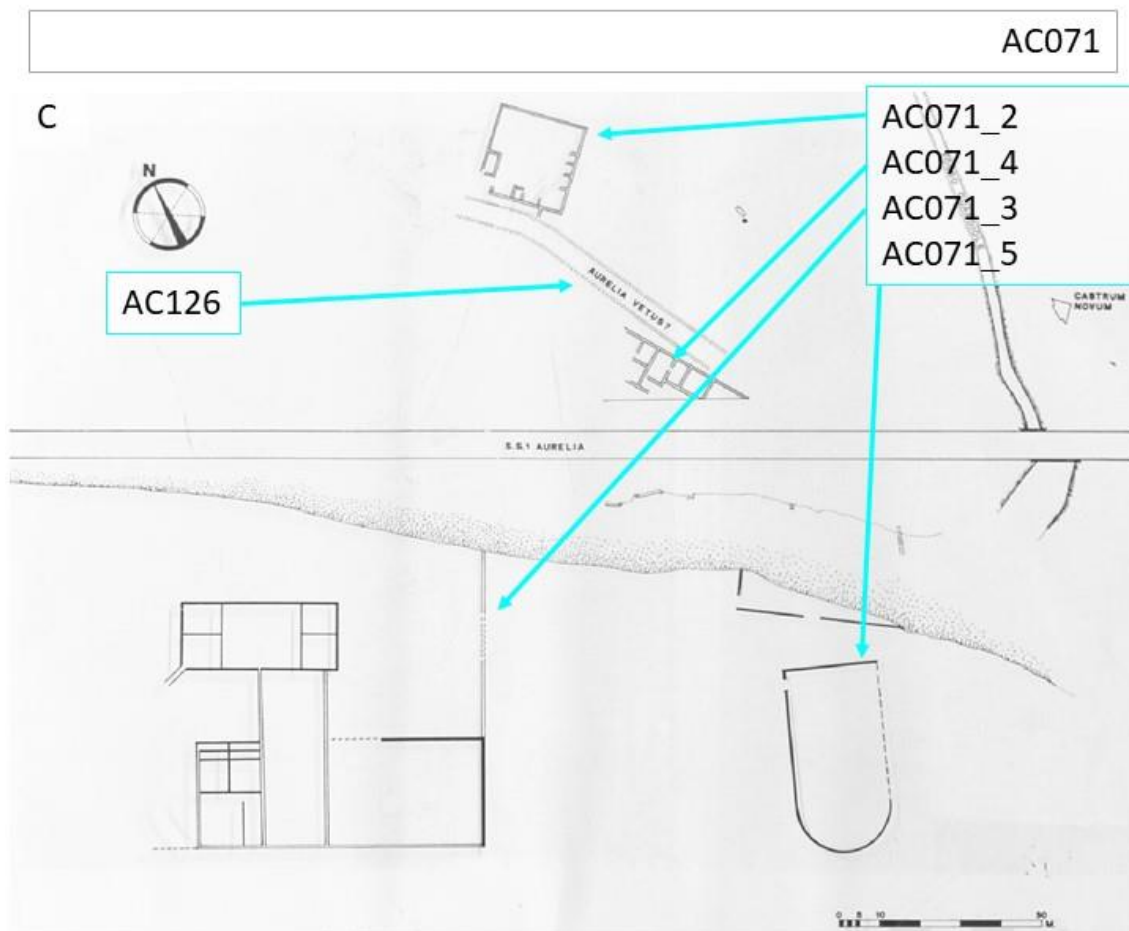


Fig. 121 C: the planimetry of the site from Gianfrotta 1972.

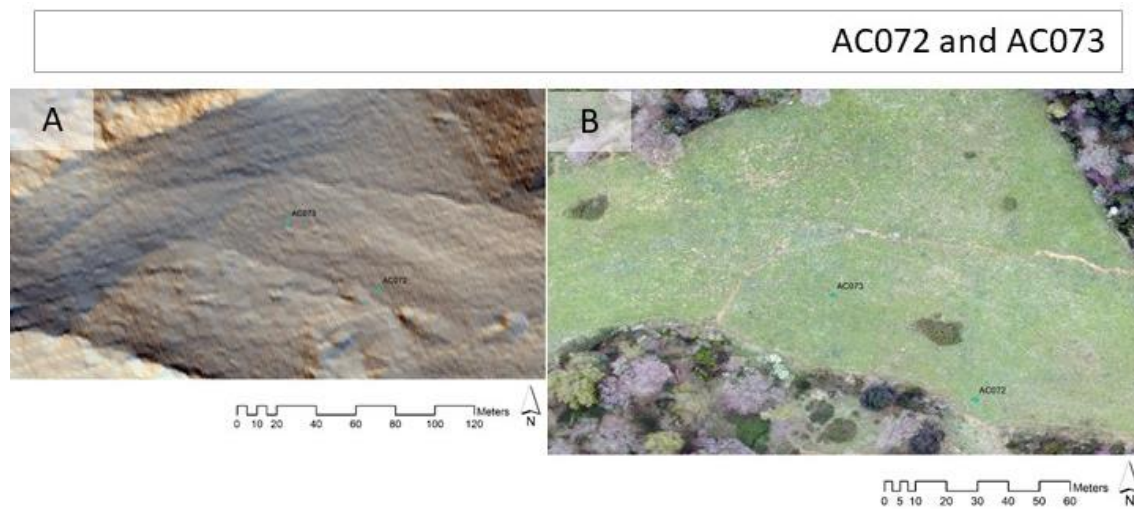


Fig. 122 A: DTM showing the terrace; B: orthophoto 2019.

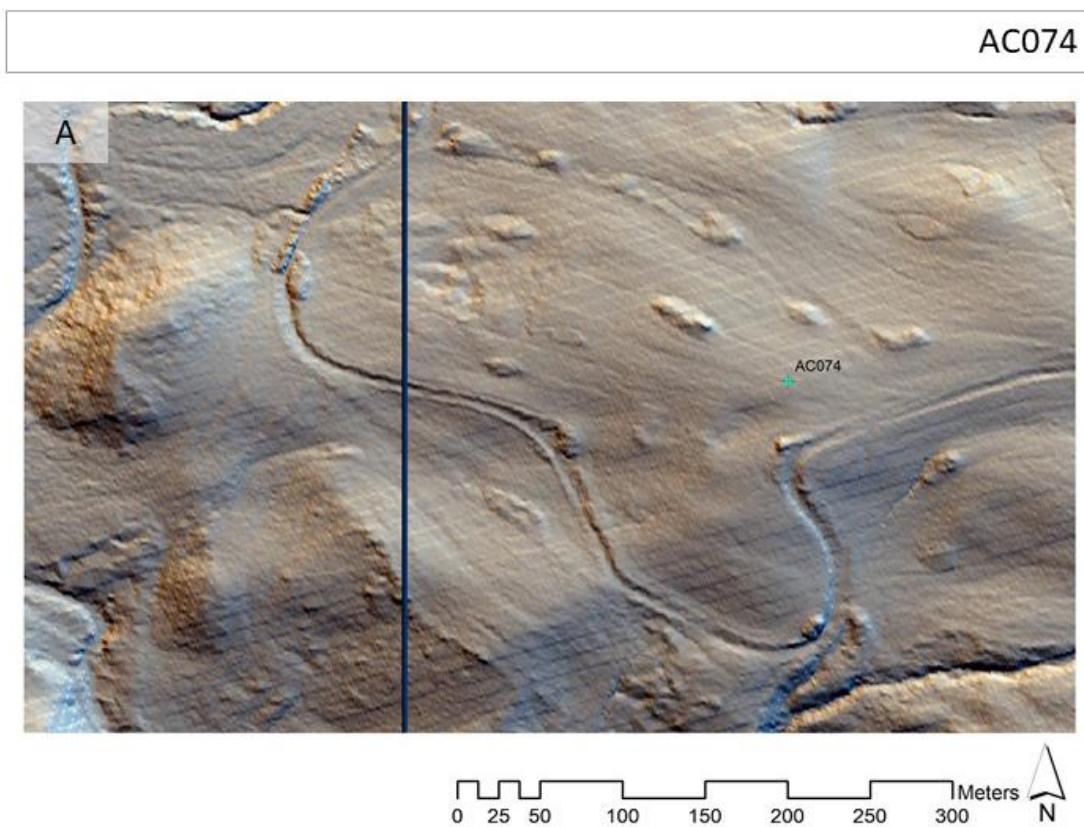


Fig. 123 A: the terrace of the villa on the DTM. The undatable sunken lane crosses the site.

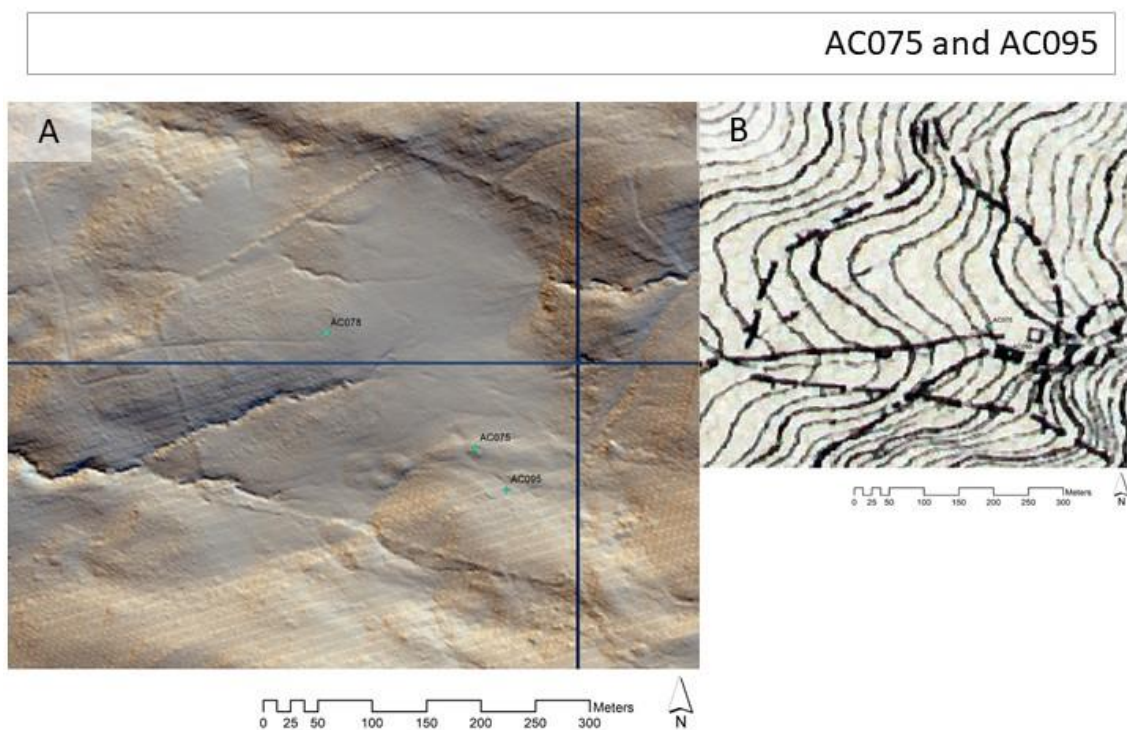


Fig. 124 A: DTM of the site showing the relict of the fence and the terrace where the homestead extended;
B: IGM 1895: the homestead, fountain, the fence and the road passing to the homestead.

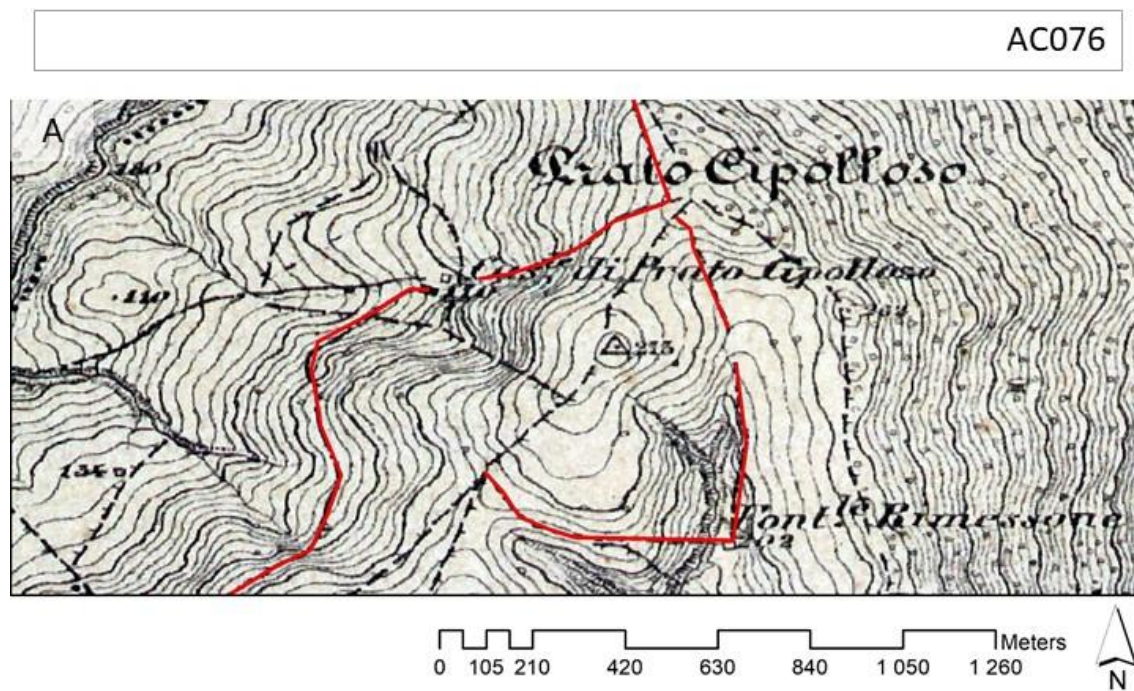


Fig. 125: IGM 1895 and the abandoned road.

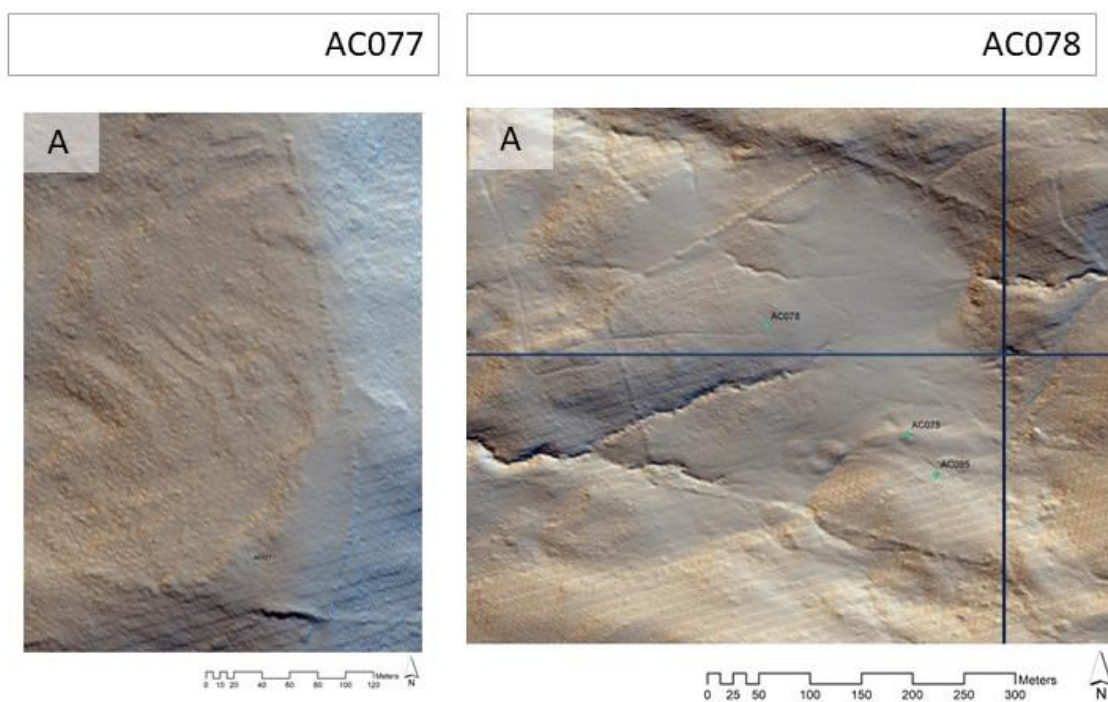


Fig. 126 A: Terrain terraces surround the site AC077; AC078: superposition of sites.

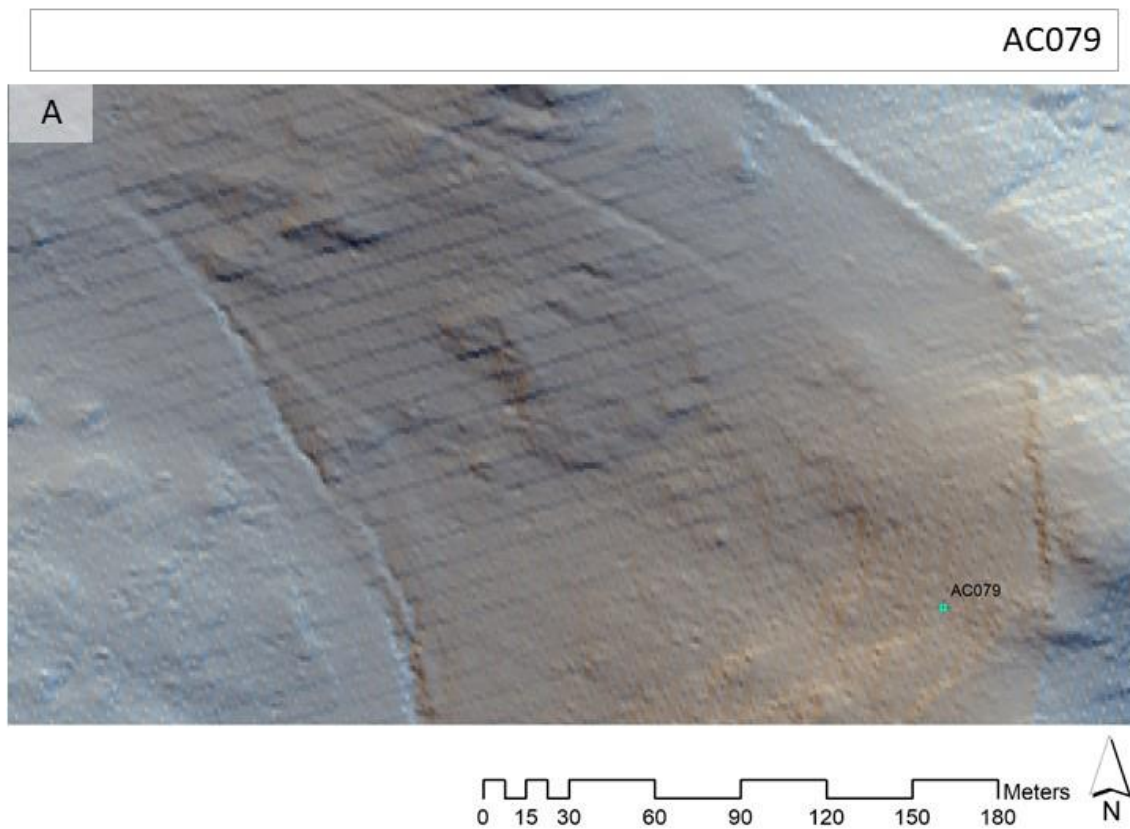


Fig. 127 A: relicts of abandoned road on the DTM.

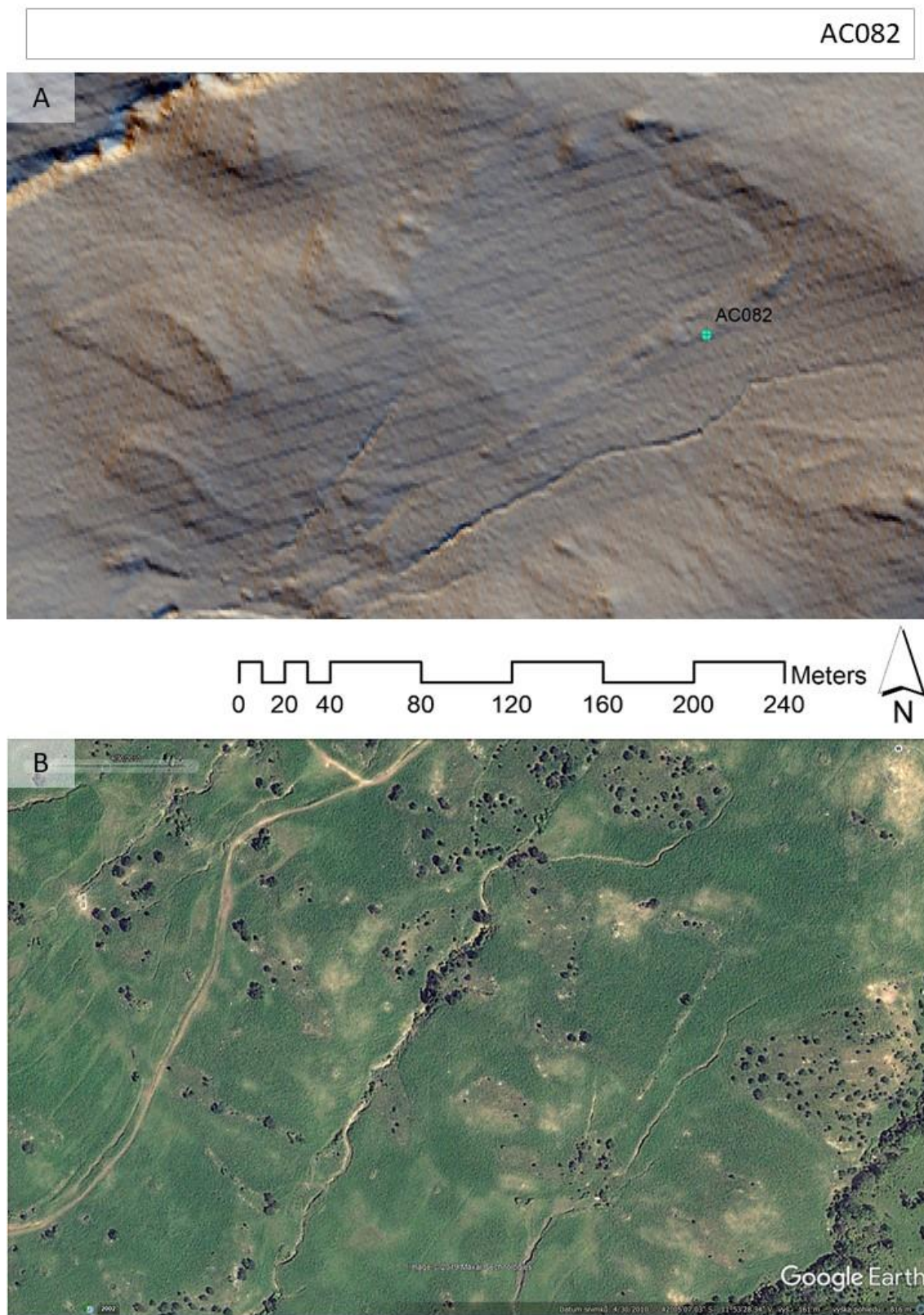


Fig. 128 A: the DTM; B the orthophoto from Google Earth 2010.

AC082



Fig. 129 C, D, E, details of walls relicts (from the archive of Bruno Fantozzi).

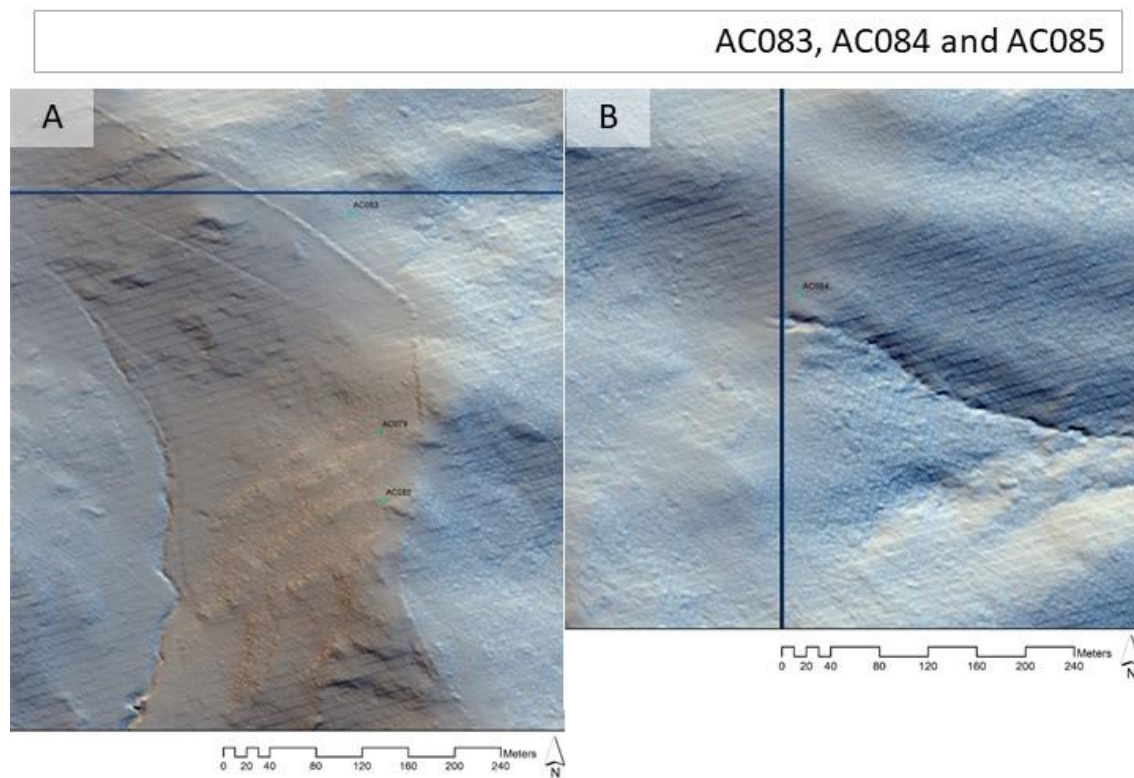


Fig. 130 A and B: the areas of fictile relicts.

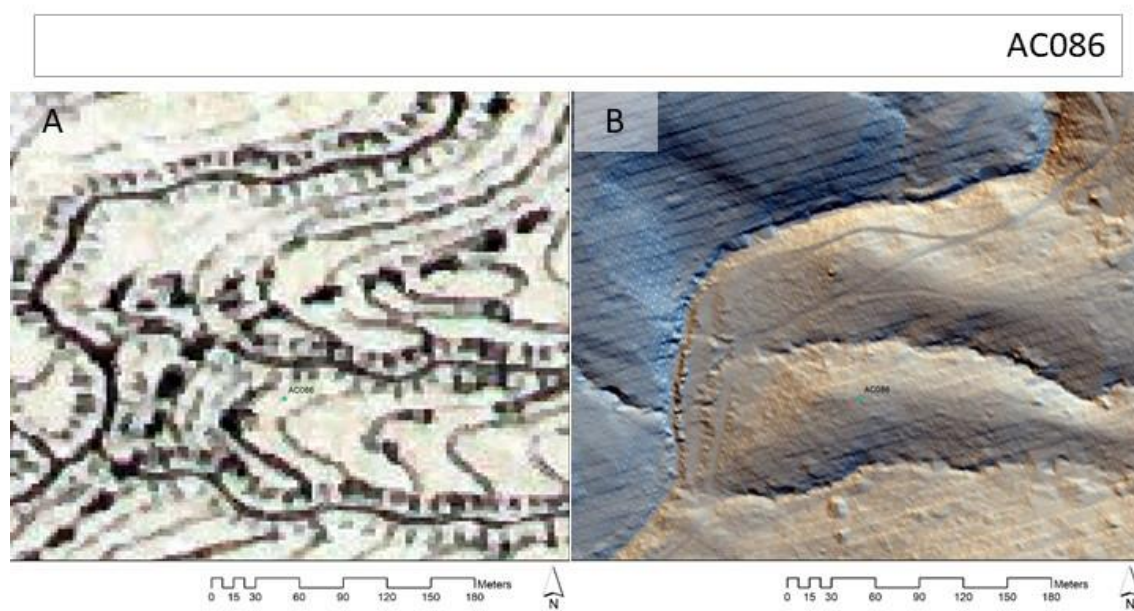


Fig. 131 A: IGM 1895 indicates one road above this site, that is still in use; and one structure; B the DTM.

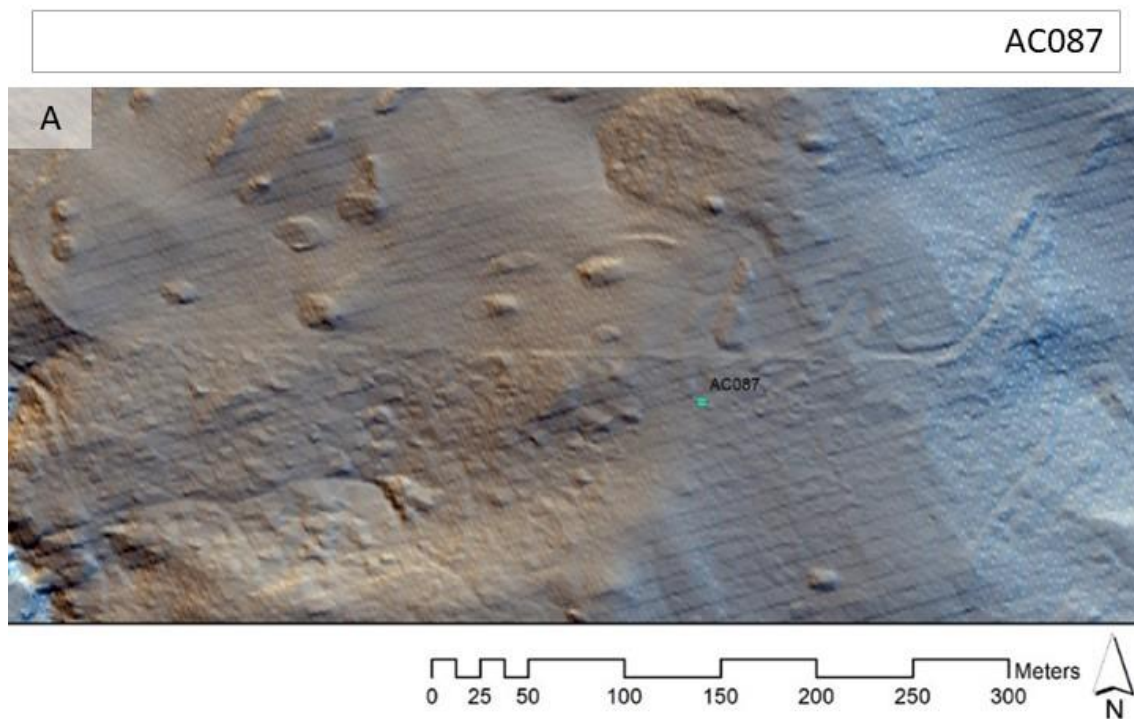


Fig. 132 A: DTM of the site

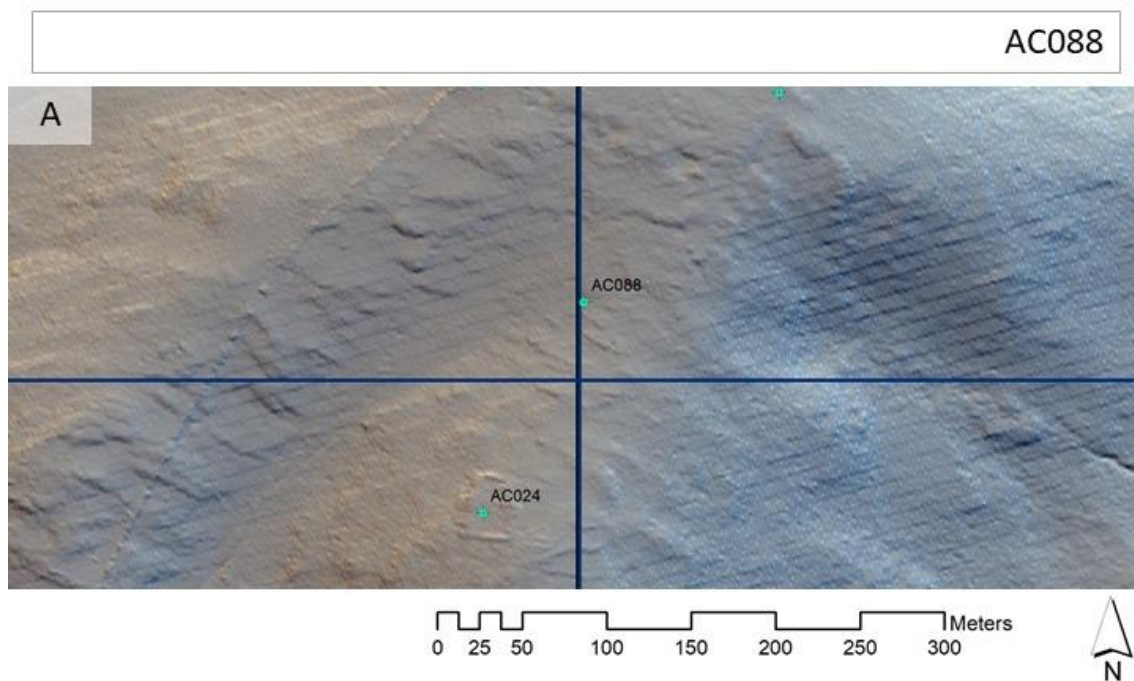


Fig. 133 A: DTM of the site.

AC090_1 and AC090_2

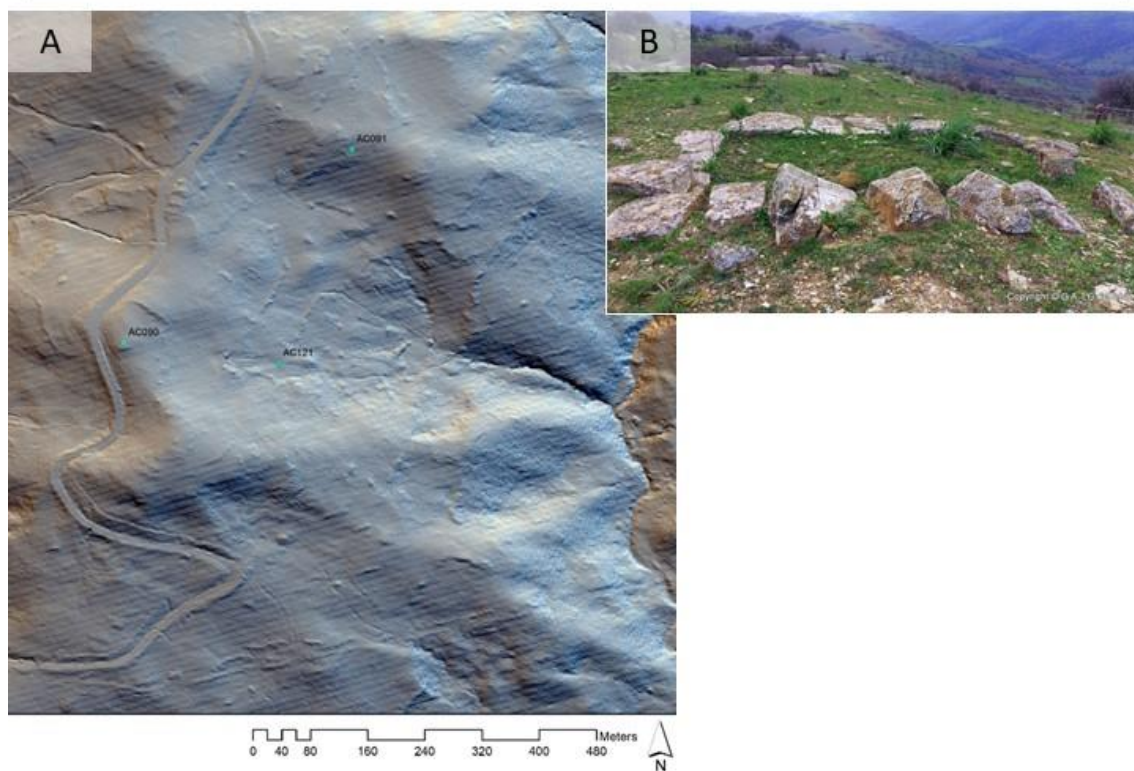


Fig. 134 A: the DTM of the area; B: detail of the tomb (from the archive of Bruno Fantozzi).

AC092

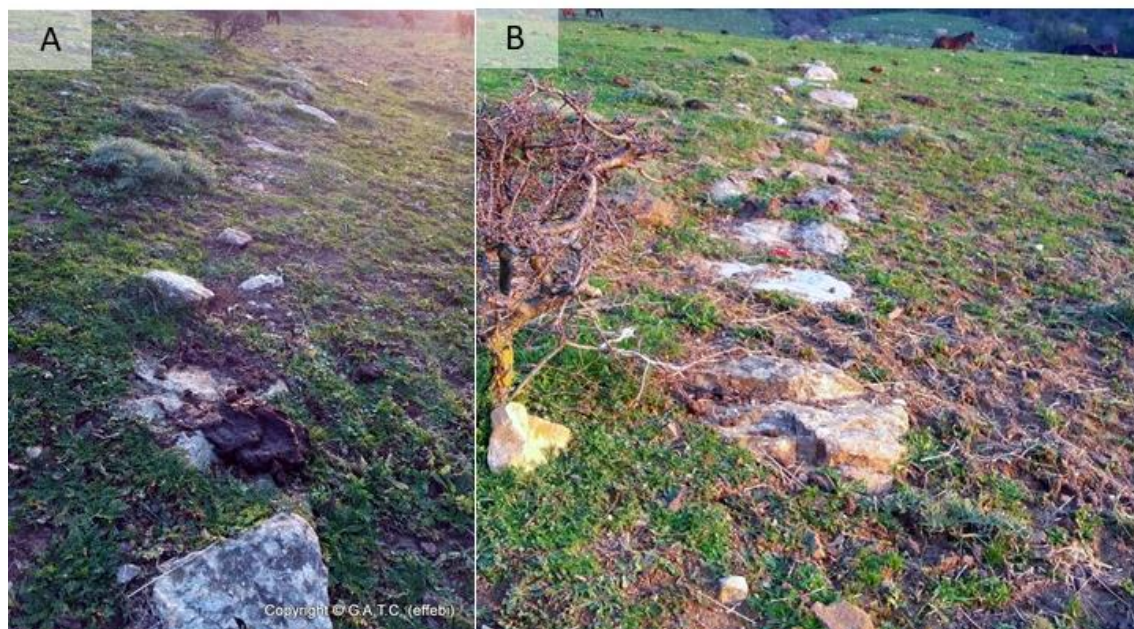


Fig. 135: relicts of the stone structures (from the archive of Bruno Fantozzi).

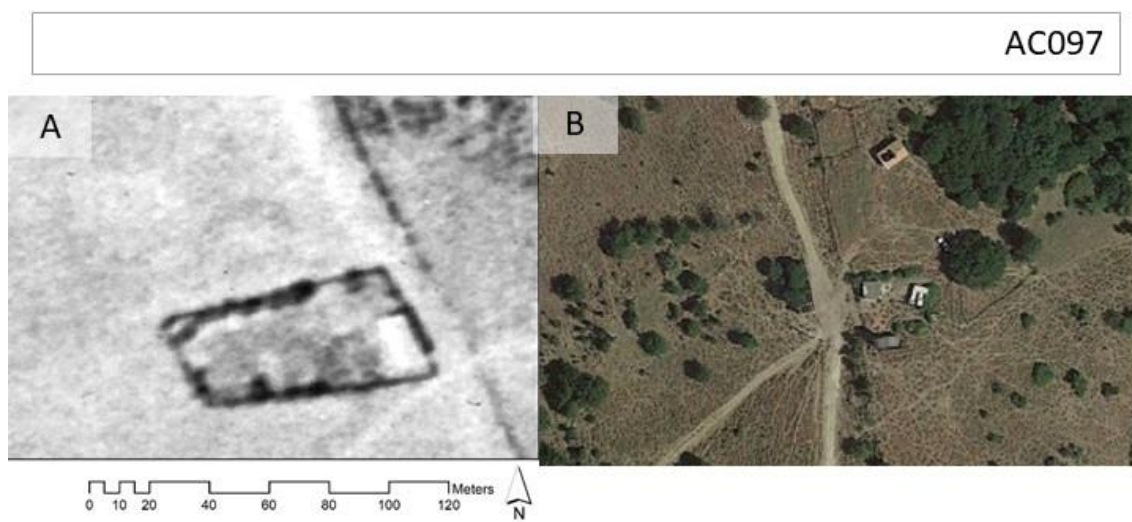


Fig. 136 A: The structure is documented on aerial photos from 1950; B: Orthophoto Google Earth 2019.

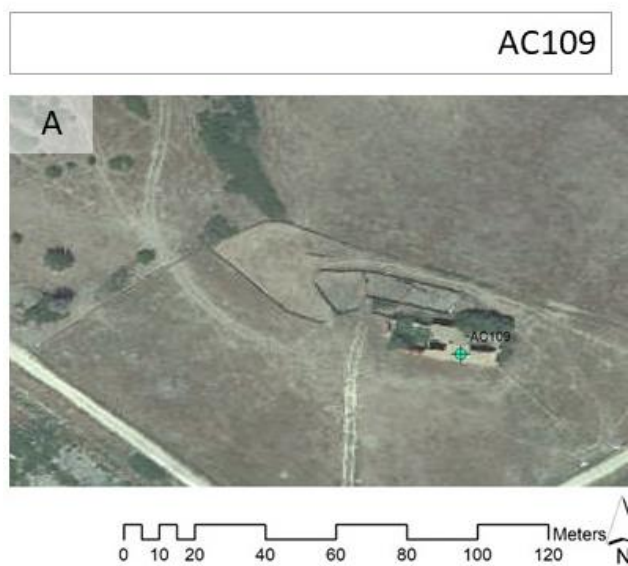


Fig. 137: Orthophoto 2012.

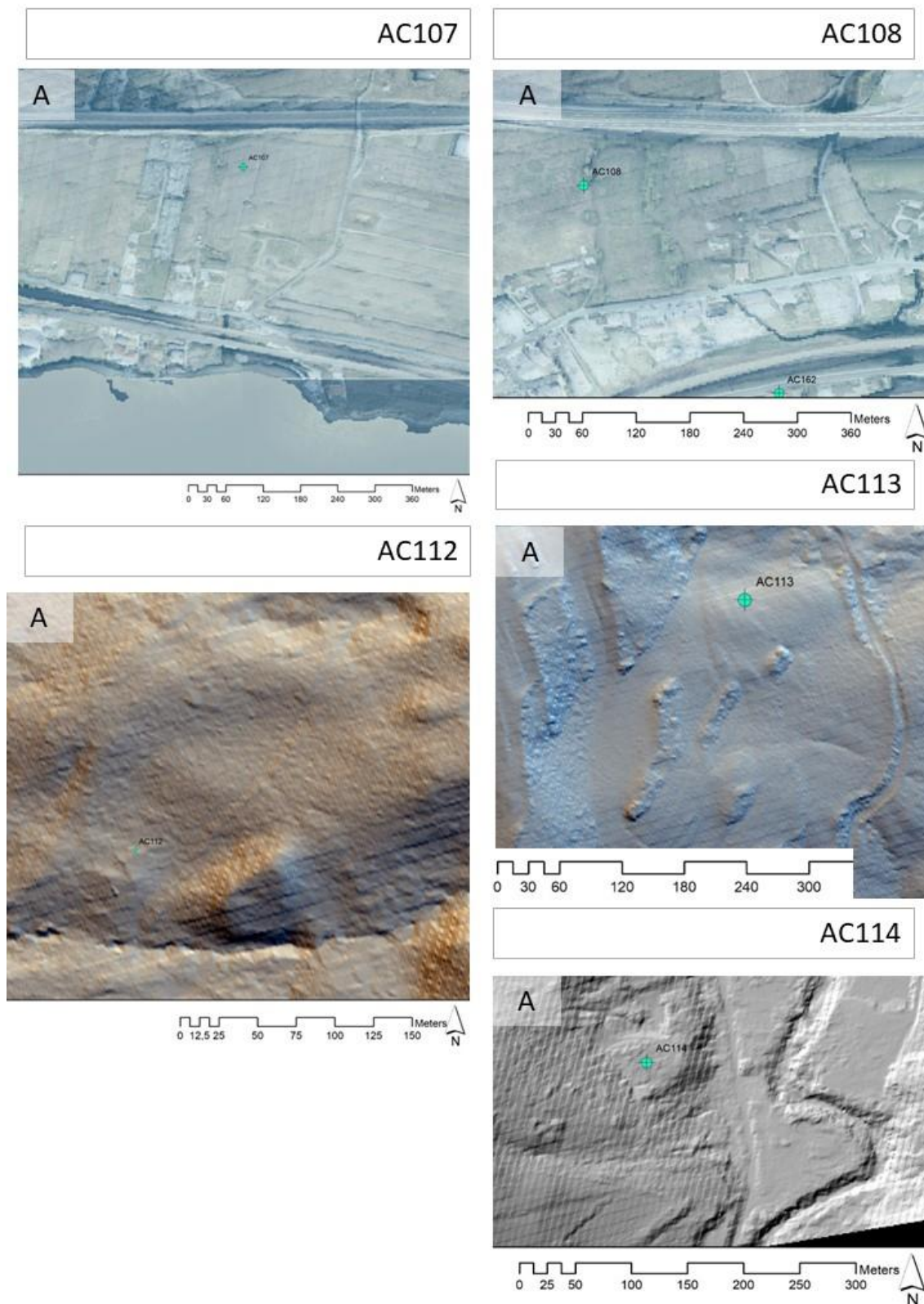


Fig. 138: AC107: DTM of the site; AC108 DTM of the site; AC112: DTM of the site; AC113: DTM of the site; AC114: DTM of the site.

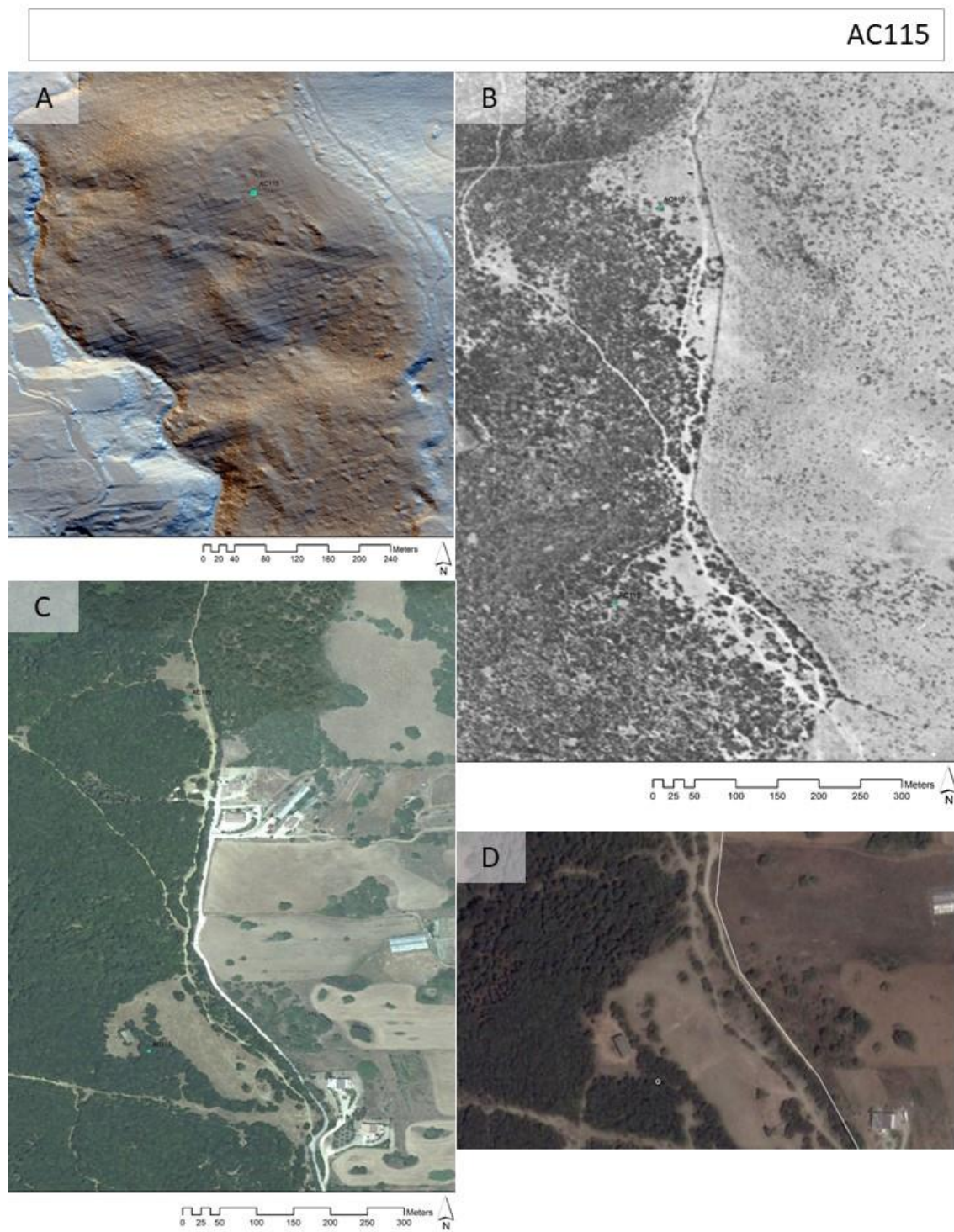


Fig. 139 A: DTM; B: aerial photo from 1954; C: orthophoto 2012; D: orthophoto 2010.

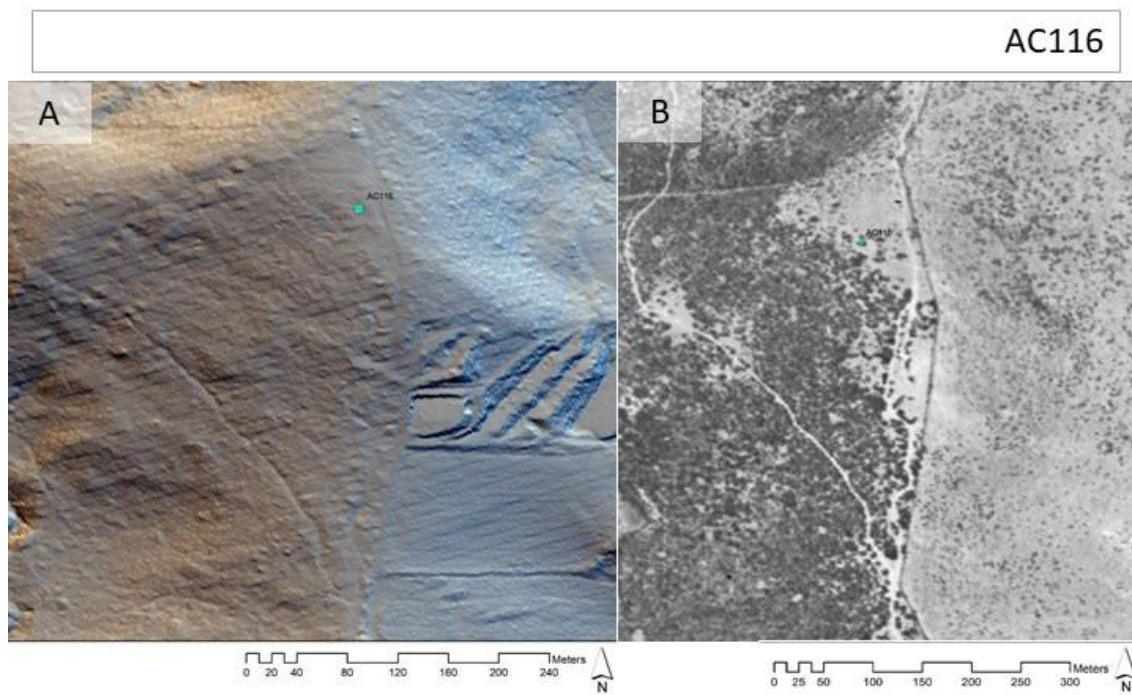


Fig. 140 A : DTM of the top of the hill; B: aerial photo 1954.

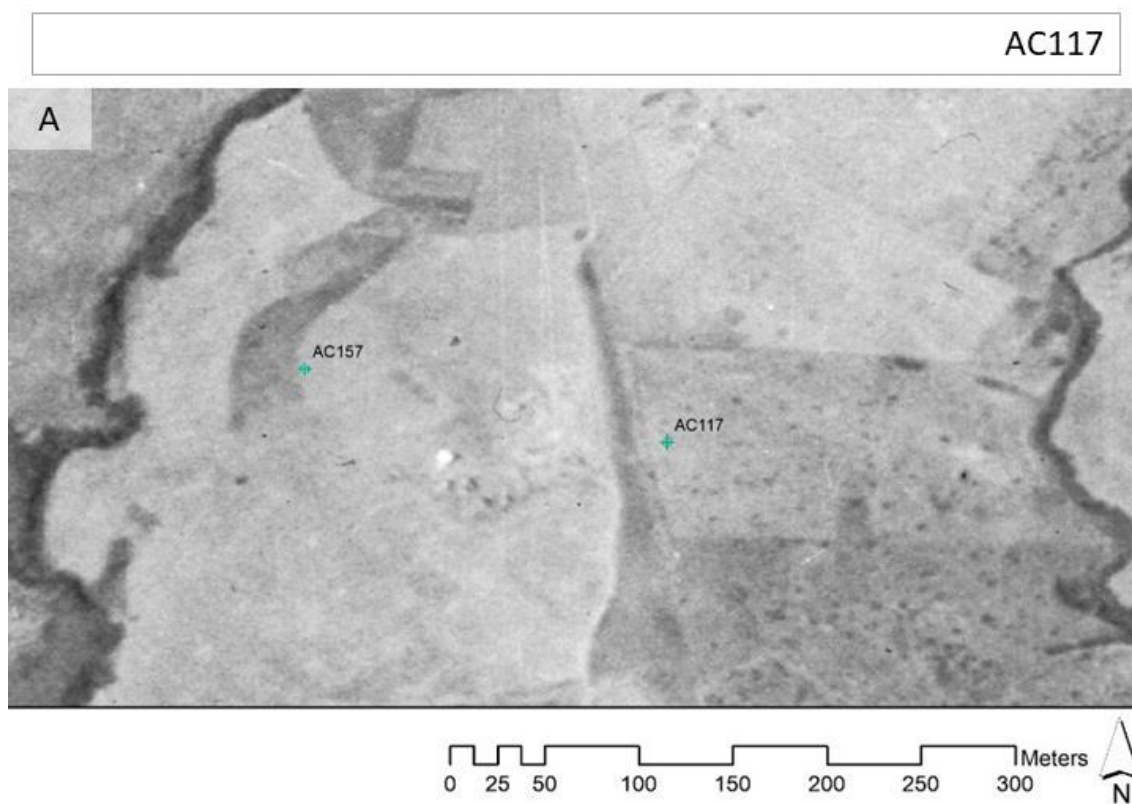


Fig. 141 A: Aerial photo 1954.

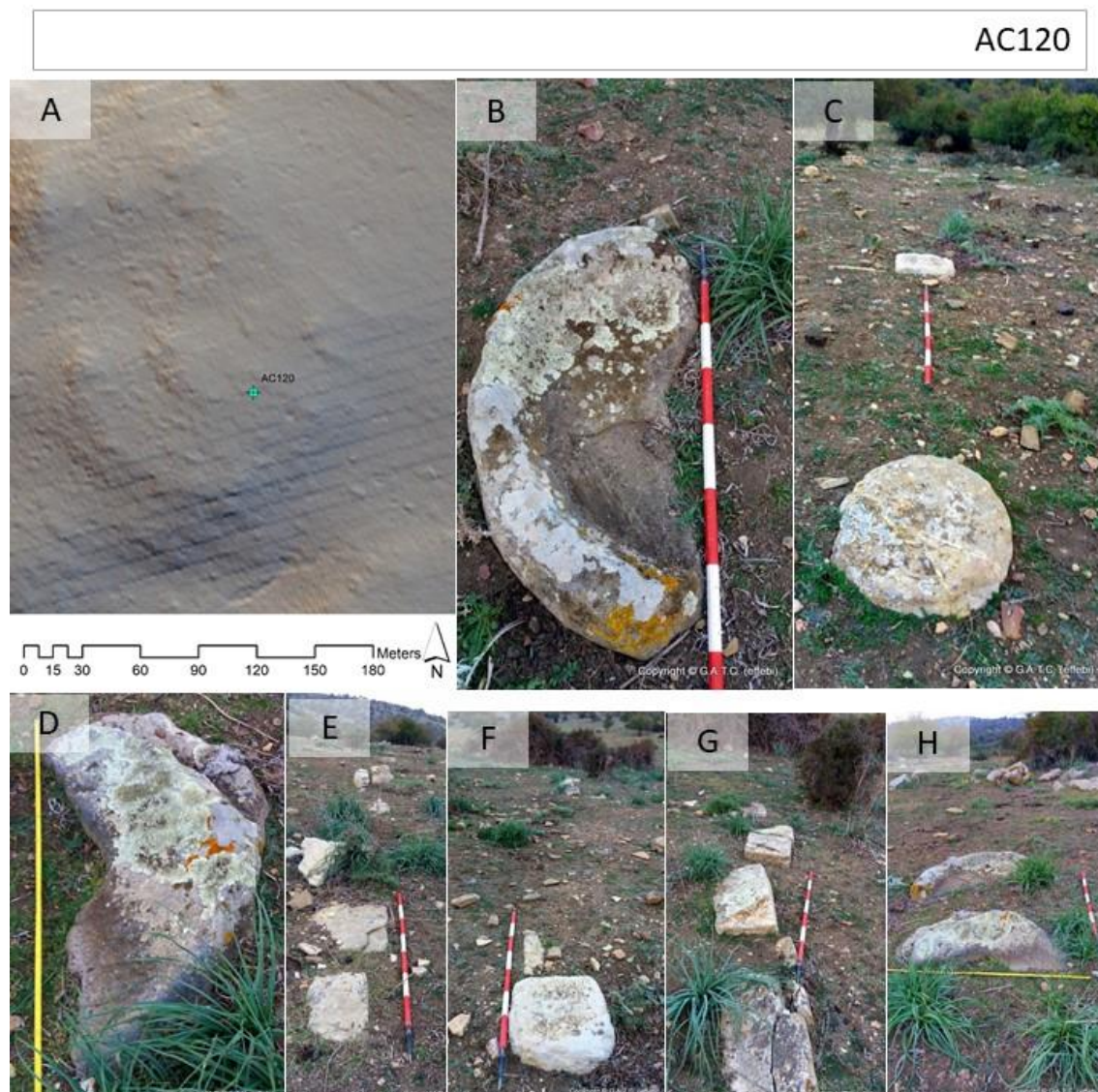


Fig. 142 A: the DTM of the site; B-H relicts of stone constructions (from the archive of Bruno Fantozzi).

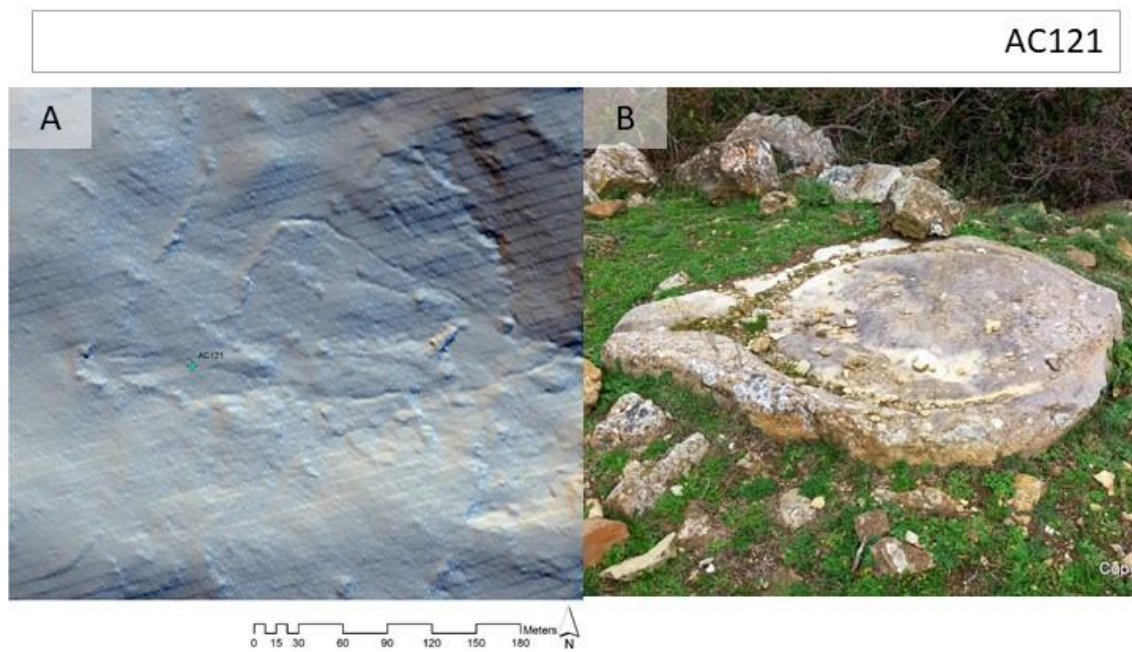


Fig. 143 A: the DTM of the area; B: the Ara Torculum (from the archive of Bruno Fantozzi).

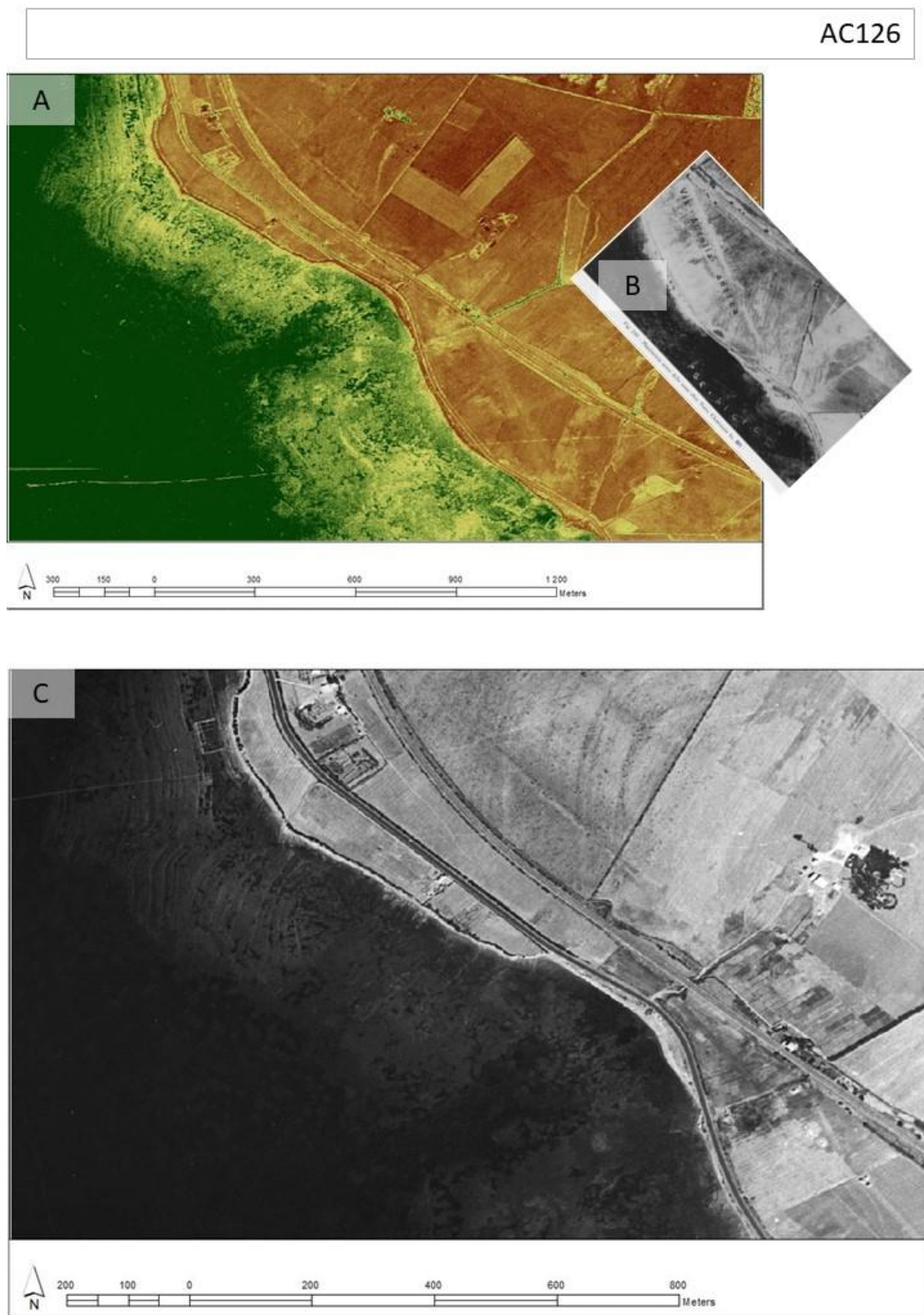
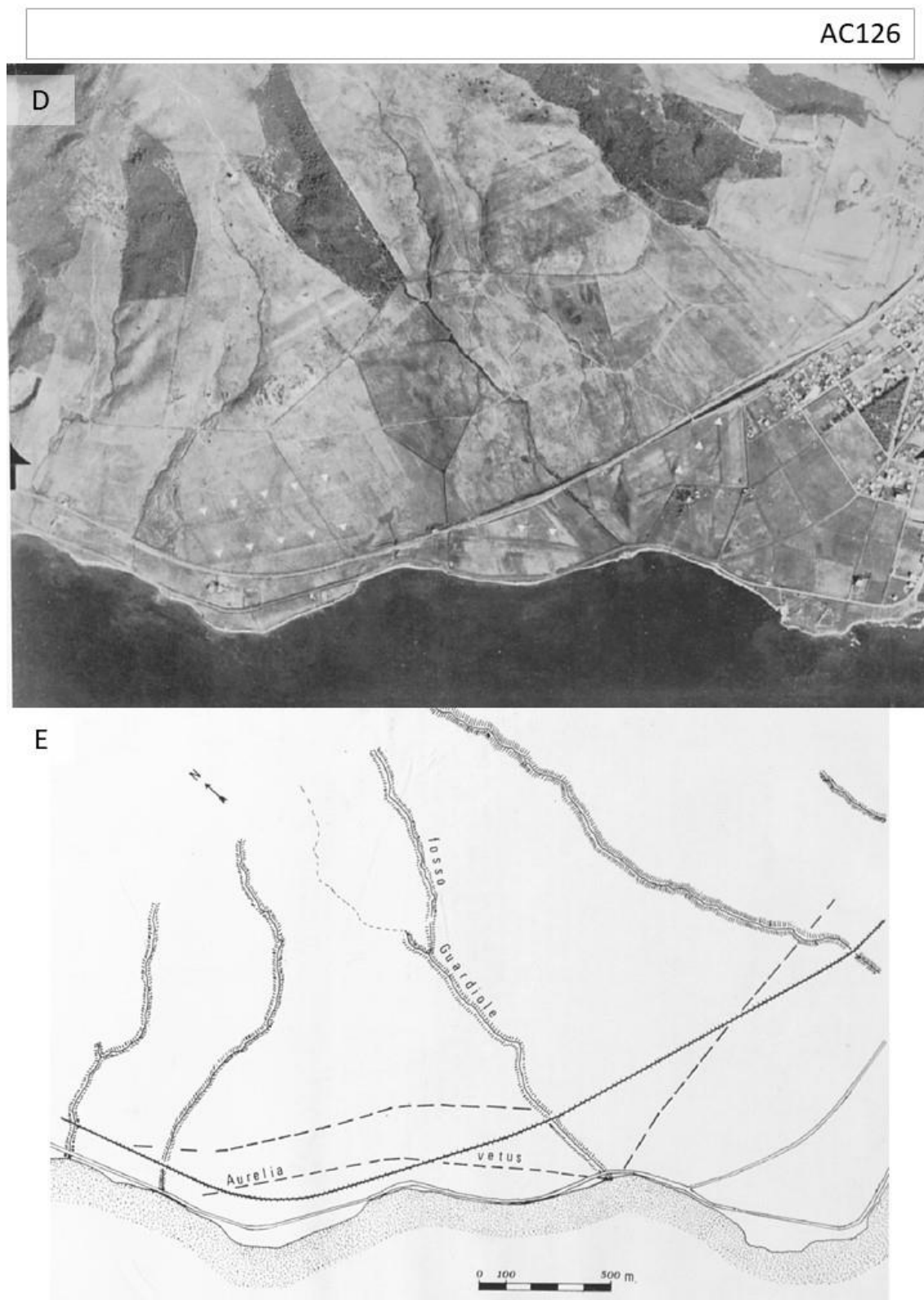


Fig. 144 A: Aerial photo 1954 with varied colours; B historical orthophoto from Gianfrotta 1972; C: the aerial photo 1950. Alla with documenting relicts of Via Aurelia.



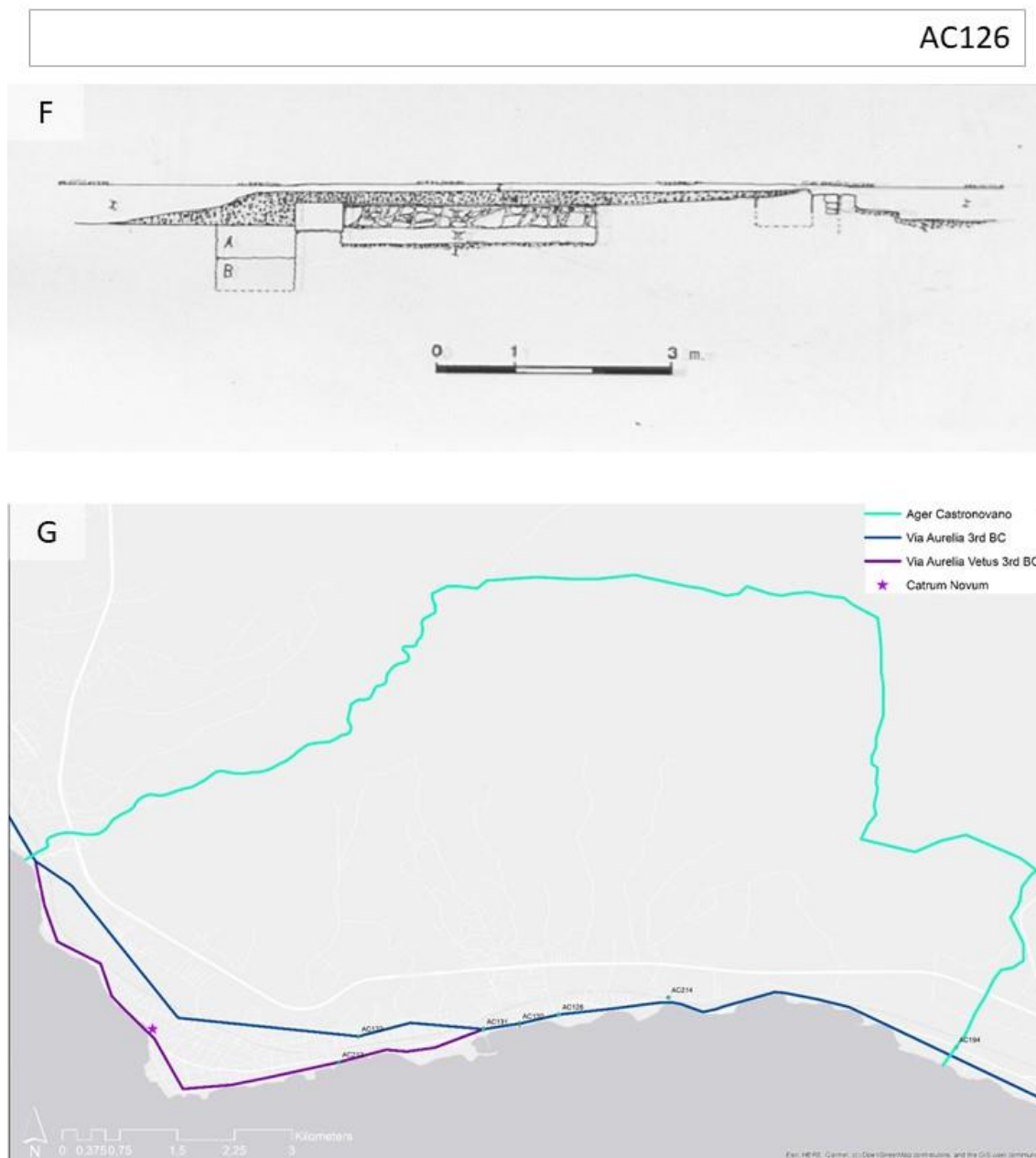


Fig. 146 F: construction of Via Aurelia from Gianfrotta 1972; G: reconstruction of Via Aurelia and Via Aurelia Vetus.



Fig. 147 A: relicts of the bridge AC128 in 2019; B: photogrammetry of the stone Stella.



Fig. 148 A: the state of the bridge in 2019.

AC131

A



Fig. 149 A: current state of the site.

AC132

A



Fig. 150 A: the bridge in 2019.

AC133



Fig. 151 A and B: the state of relicts in 2020.

AC134

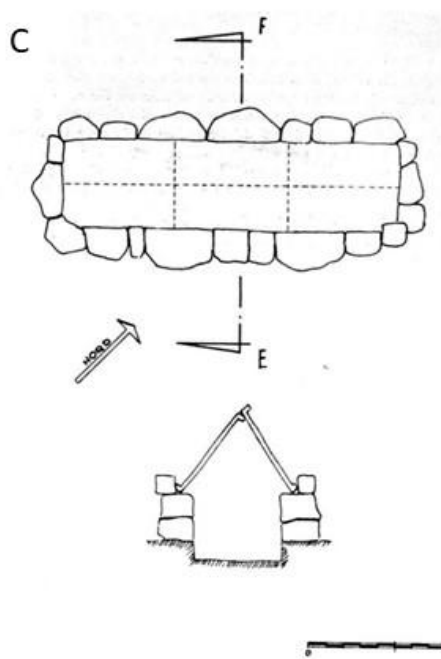


Fig. 7. - Marangone - Tomba n° 3. Pianta e sezione E-F.



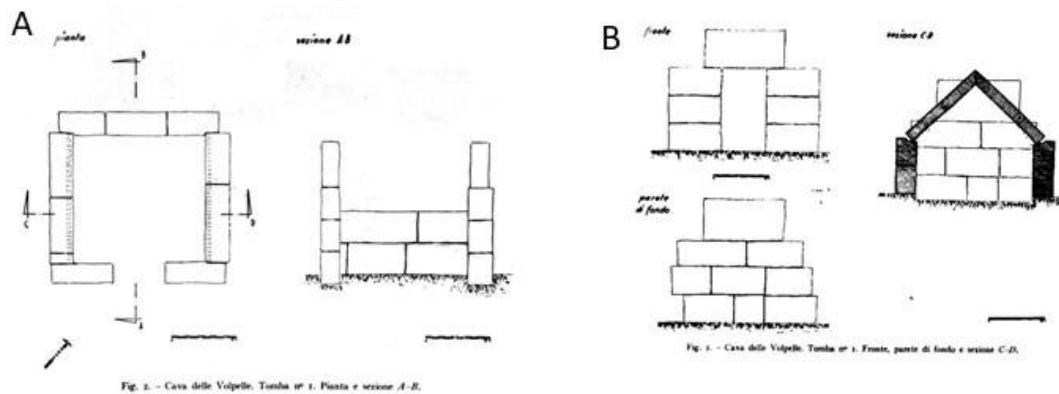
g. 5. - Marangone - Tomba n° 2, a cremazione, di epoca tarda.



Fig. 8. - Marangone - Tomba n° 3. Due sinachosi e kylix.

Fig. 152 A: the site on the orthophoto from 2012; B, C, D, E: the field documentation of one of the recovered tombs (Archive SAEM, from the archive of Flavio Enei).

AC135



REGIONE VII.

— 129 —

S. MARINELLA.

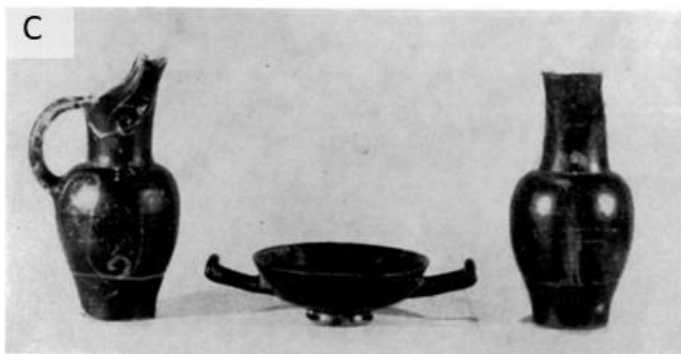


Fig. 153 A, B, C: the documentation of one of the excavated tombs (from the archive of Flavio Enei).

AC136



Fig. 154 A: the site in 2020.

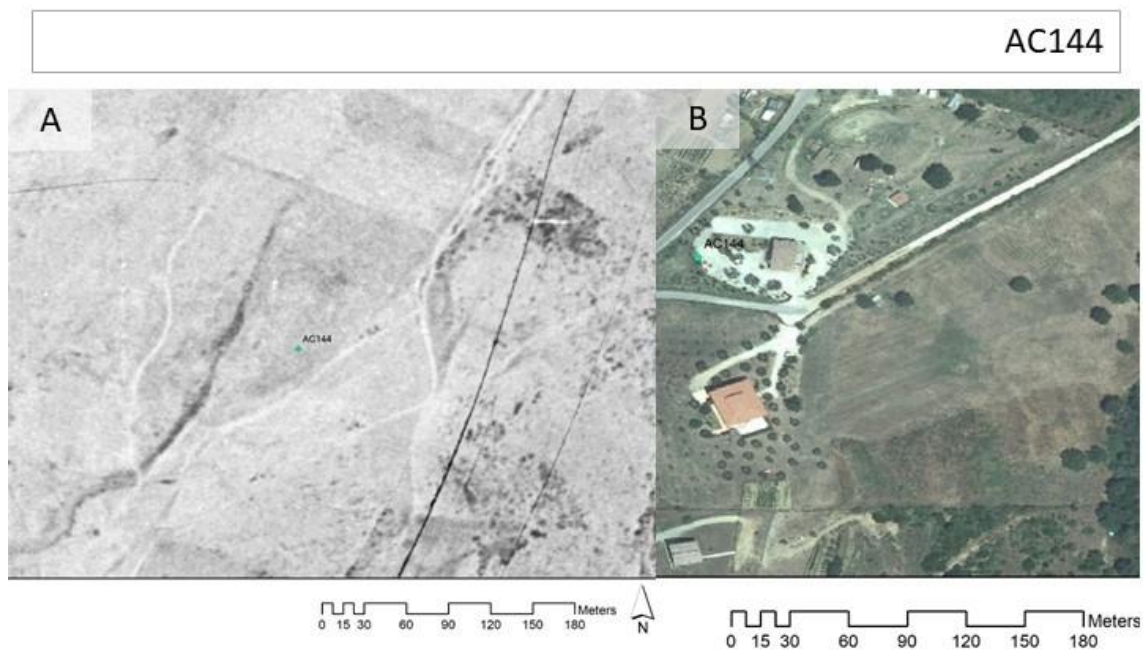


Fig. 155 A: aerial photo from 1954; B: current state of the site.

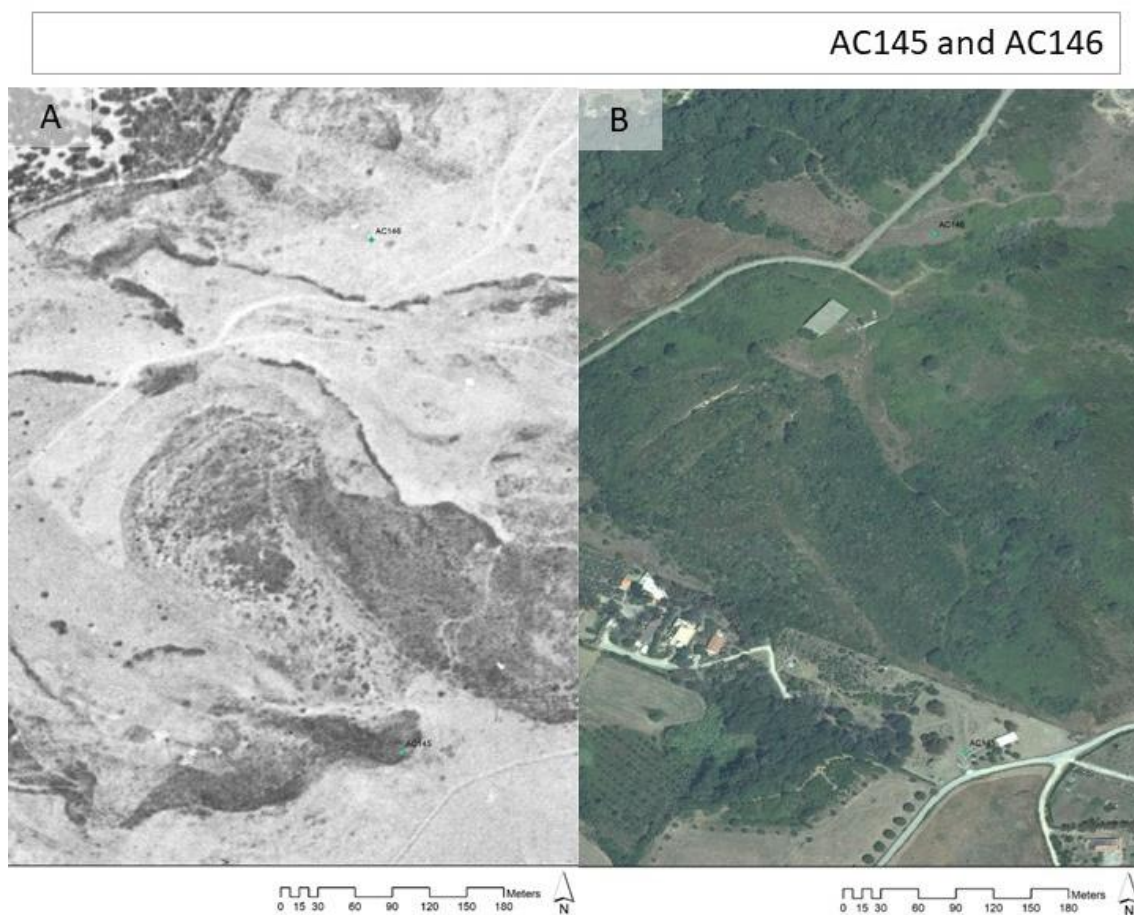


Fig. 156 A: aerial photo from 1954; B: orthophoto 2012.

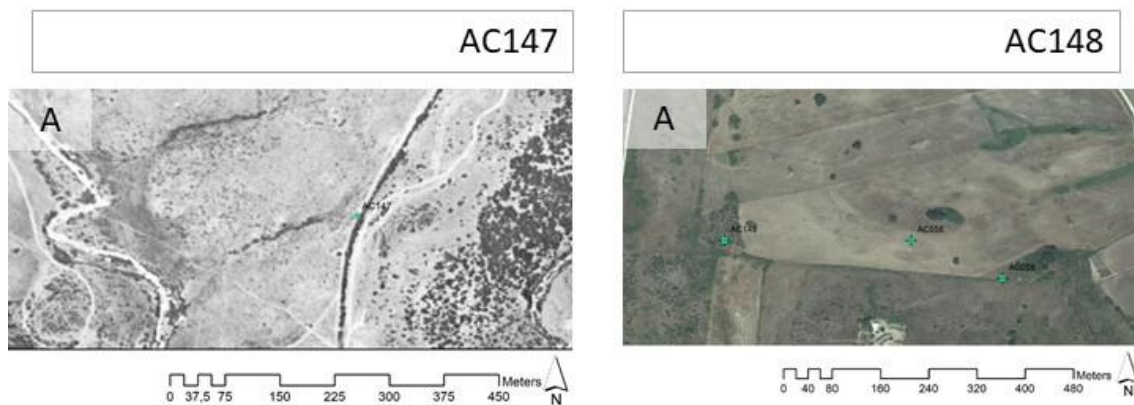


Fig. 157 AC147: the aerial photo from 1954; AC148 the orthophoto 2012.

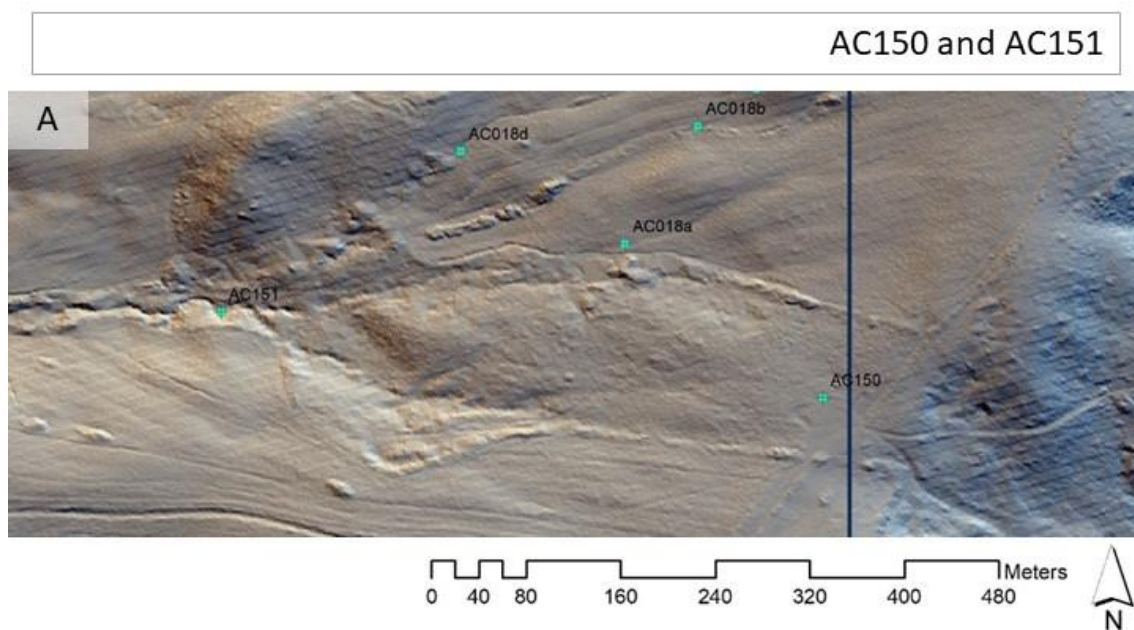


Fig. 158 A: the DTM of the area.

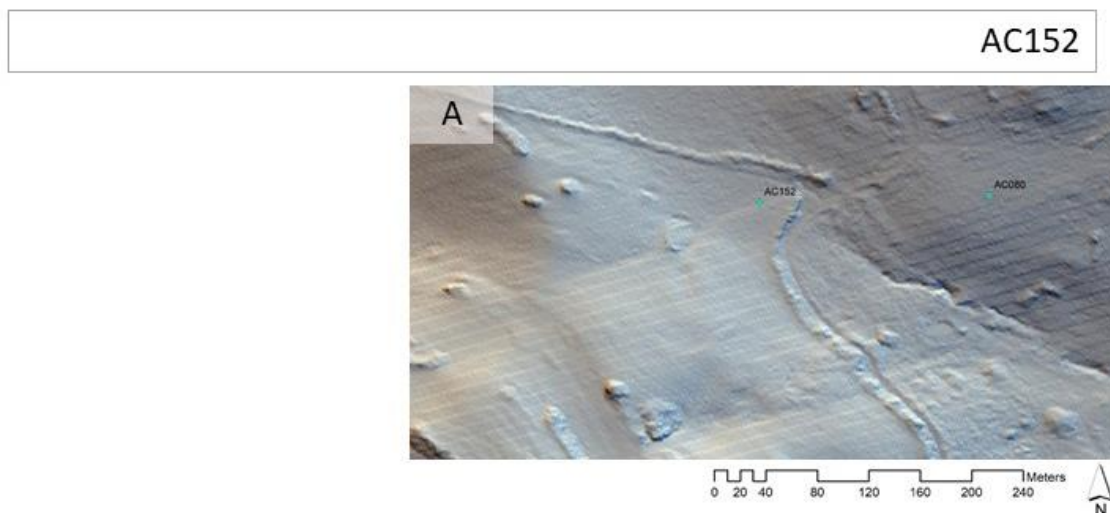


Fig. 159: the DTM of the site AC152.

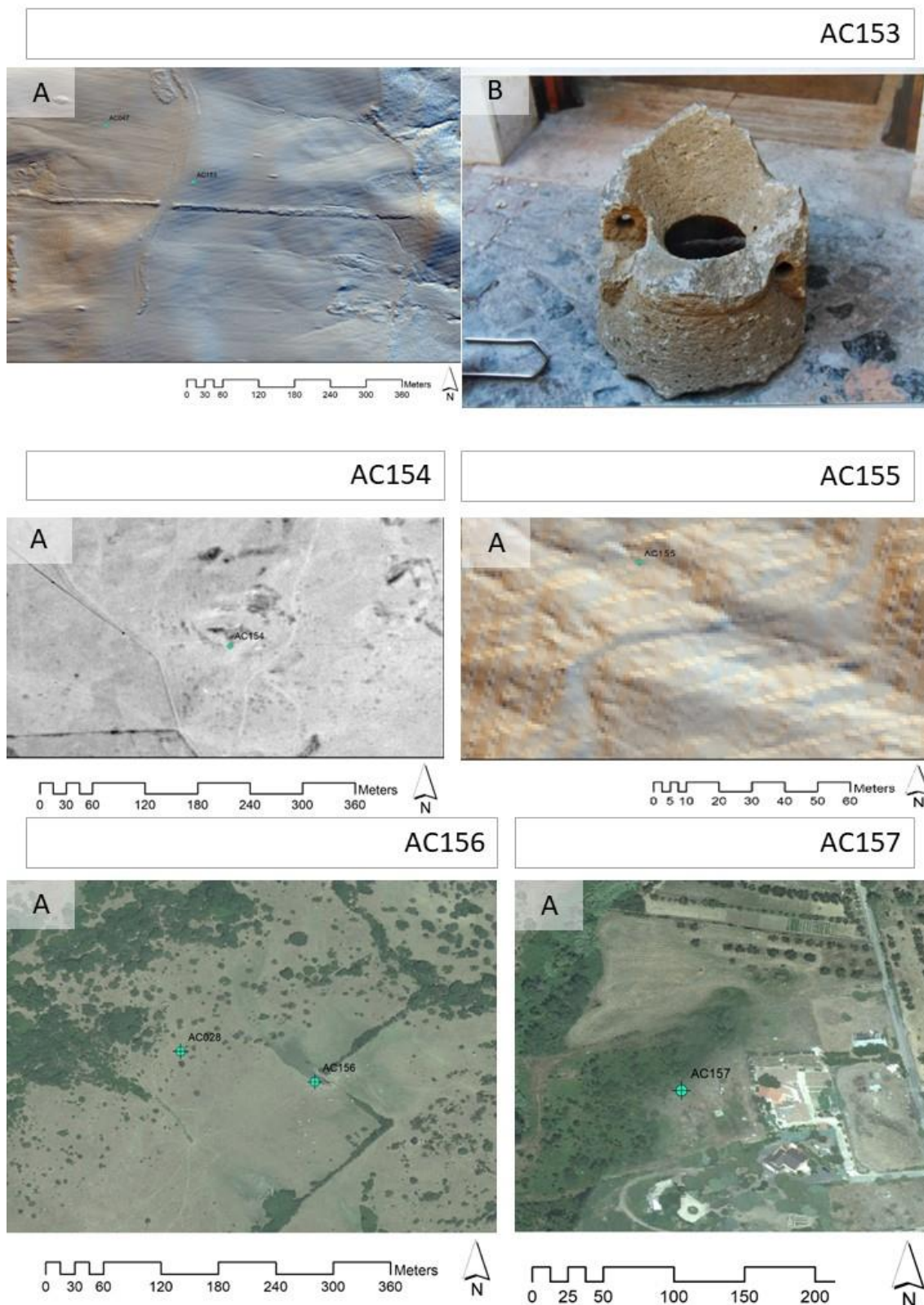
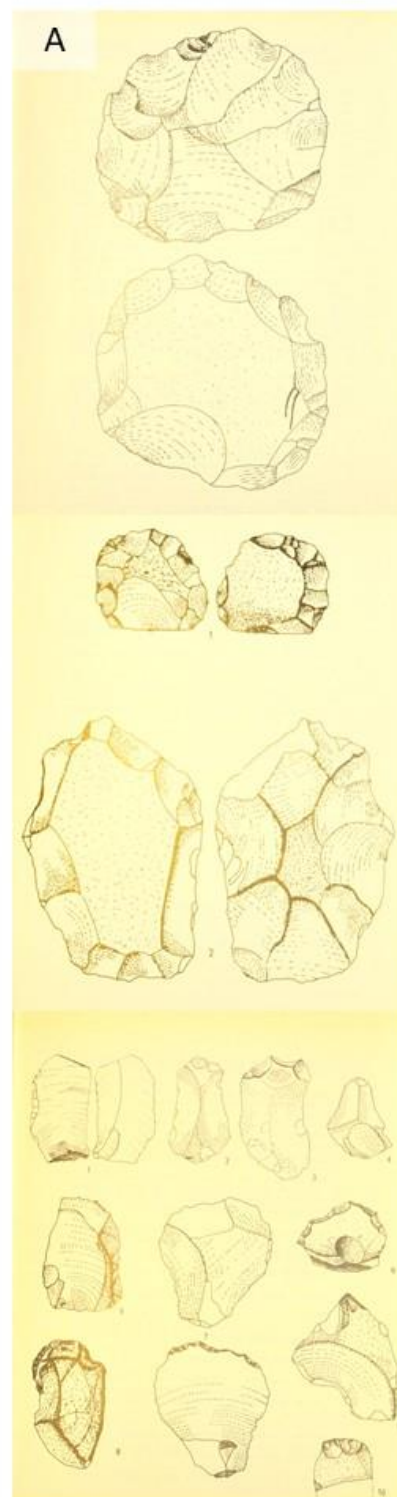


Fig. 160 AC153 A: The DTM of the site; B the relict of the olive press; AC154: aerial photo 1950; AC155: the DTM of the site; AC156: the orthophoto 2012; AC157: the orthophoto 2012.

AC164



AC165



AC166



Fig. 161 AC164: the position of the site (archive SAEM, from the archive of Flavio Enei); AC165.: the artefacts recovered on the site (from Capuani 1981); AC166 the stratigraphy in shoreline 2019.

AC169

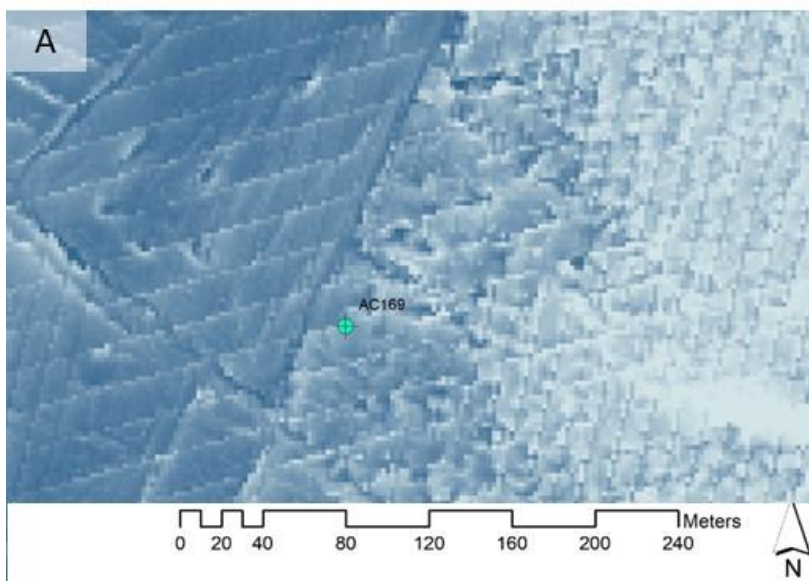


Fig. 162: the DTM of the site.

AC170

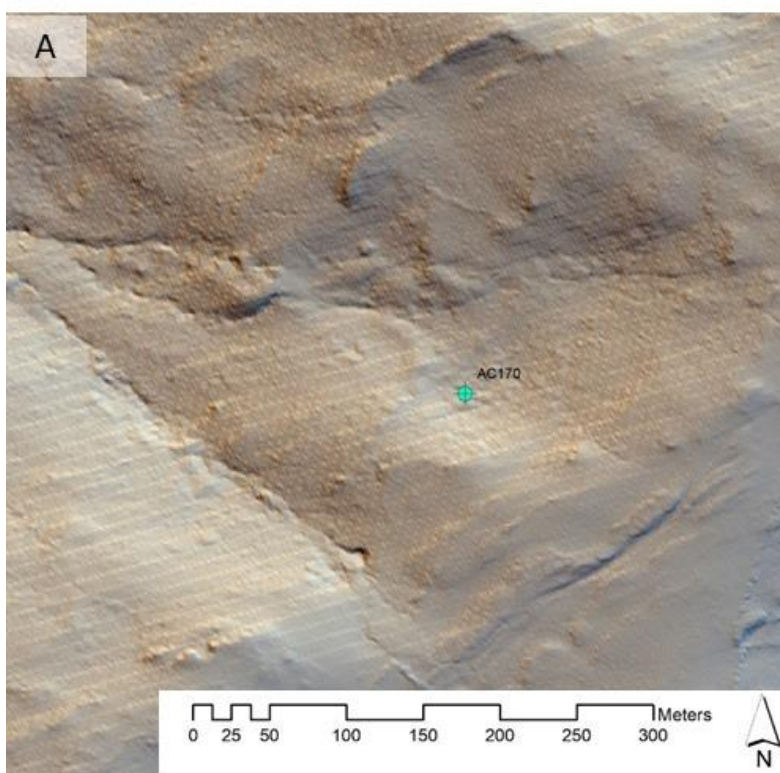


Fig. 163: the DTM of the site.

AC176

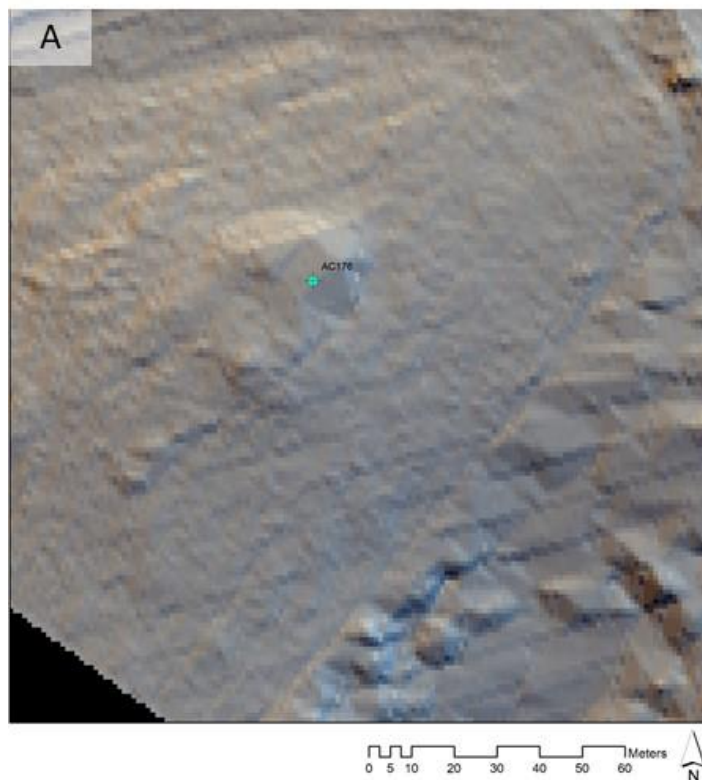


Fig. 164: the DTM of the Etruscan tomb.

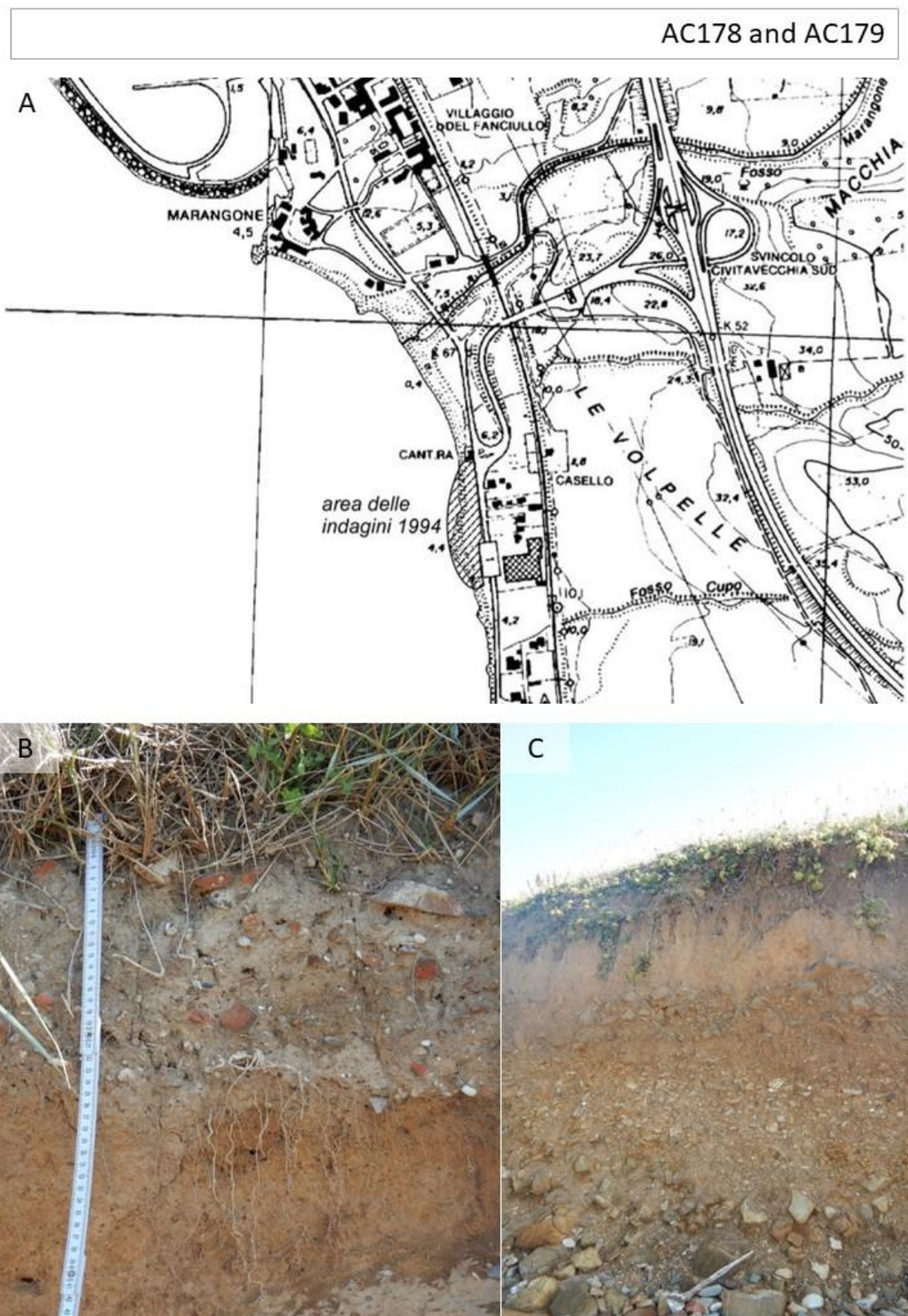


Fig. 165 A: studied area in 1994; B and C: current state of the site in 2019.

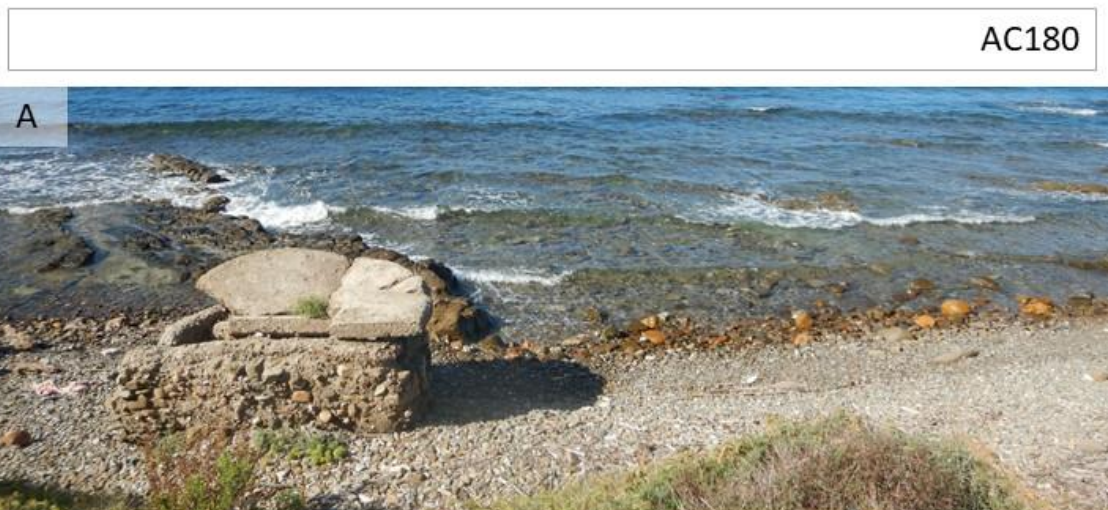


Fig. 166: relicts of the defensive element from II. WW fortification.

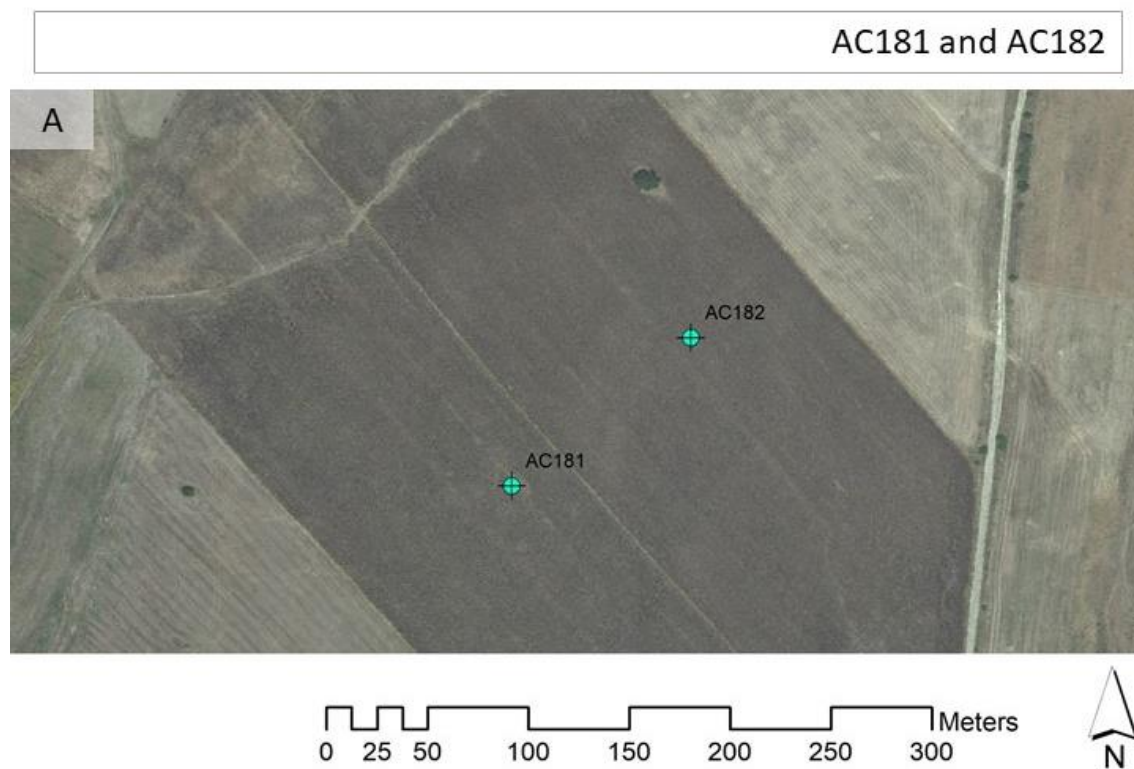


Fig. 167 A: orthophoto, 2012.



Fig. 168 A and B: the state of the site in 2019.



Fig. 169 A and B: the state of the site in 2018.

AC185



Fig. 170 A: The relict olive tree; B: the wall structures preserved on the site.

AC186 and AC187



Fig. 171 A: Google Earth 2010; B: current state of the site 2019.

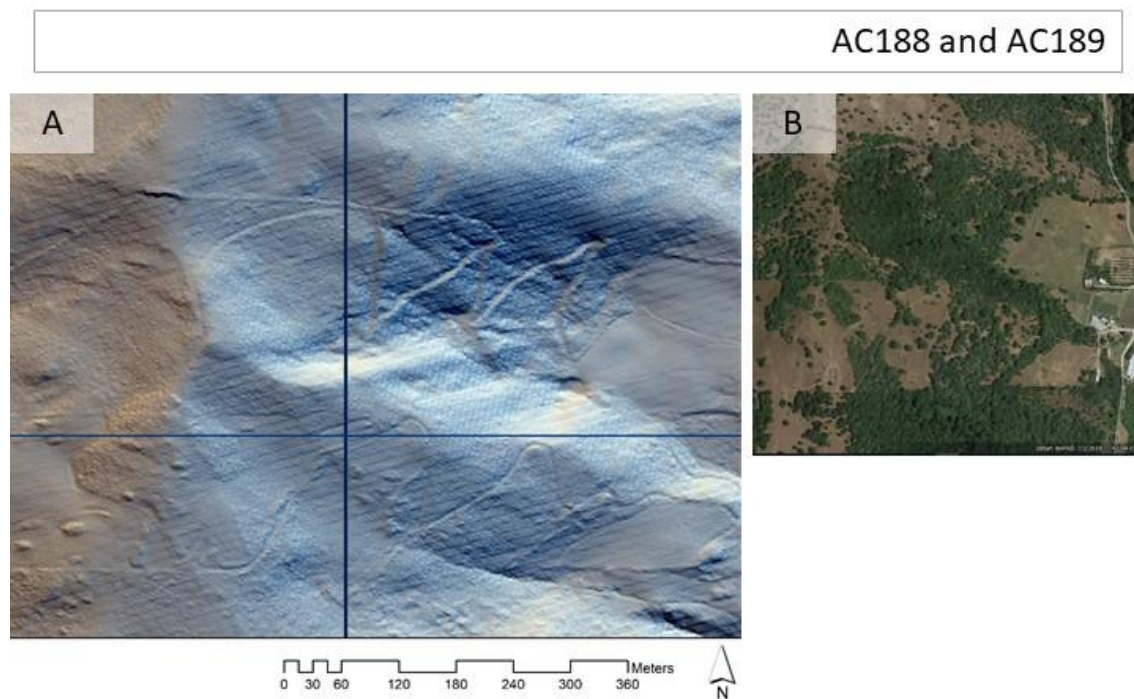


Fig. 172 A: relicts of the road on DTM; B: current state of vegetation that covered site.

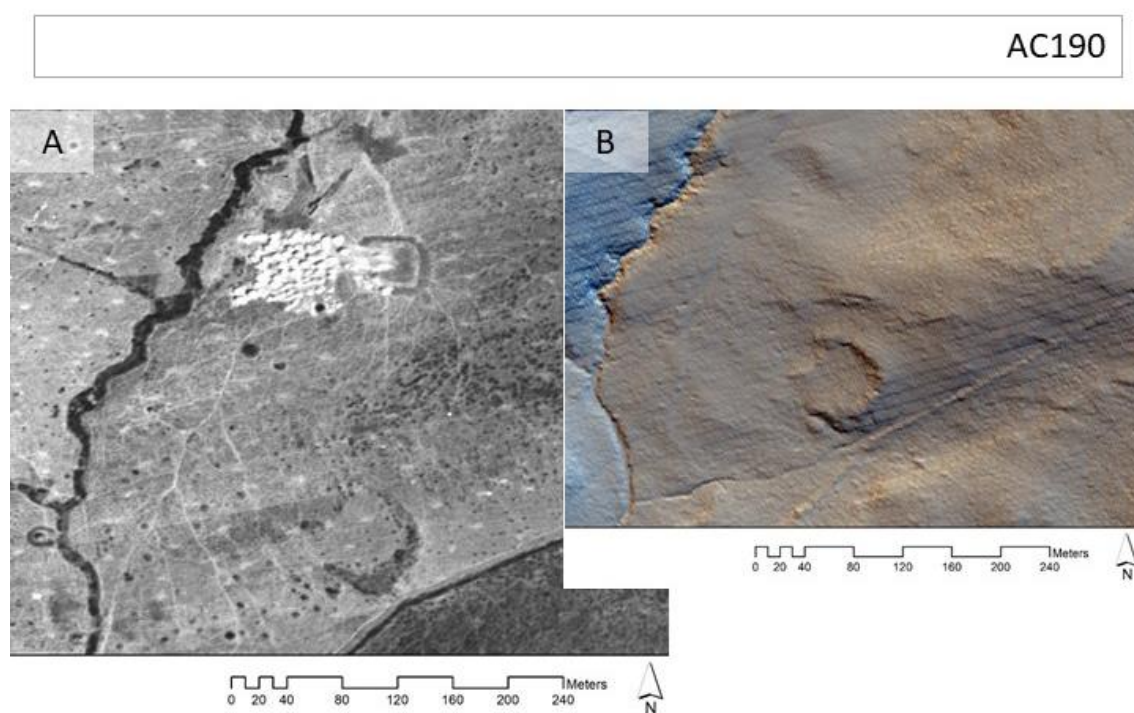


Fig. 173 A: aerial photos from 1950; B: DTM of the area.

AC193

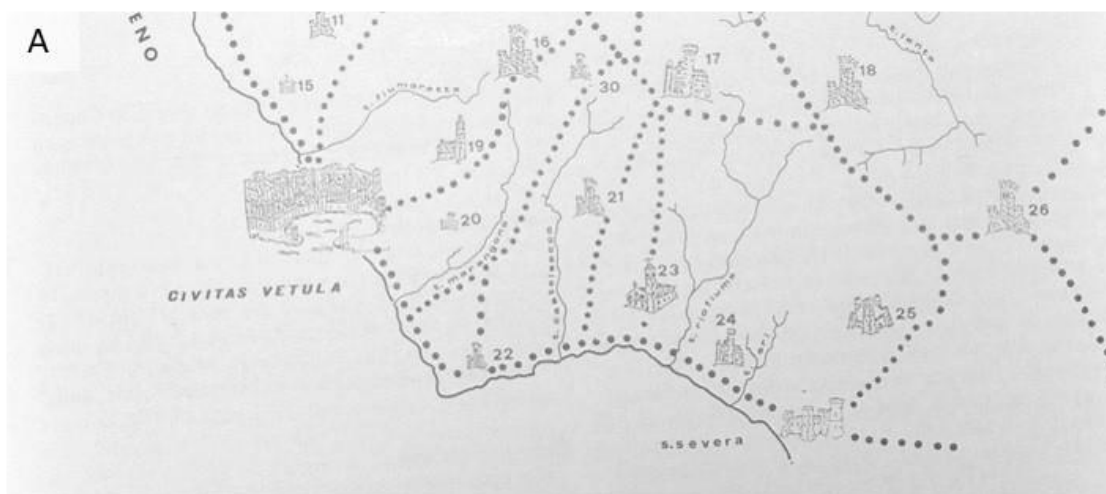


Fig. 174 A: Position of mediaeval structures, Maffei 1986.

AC196

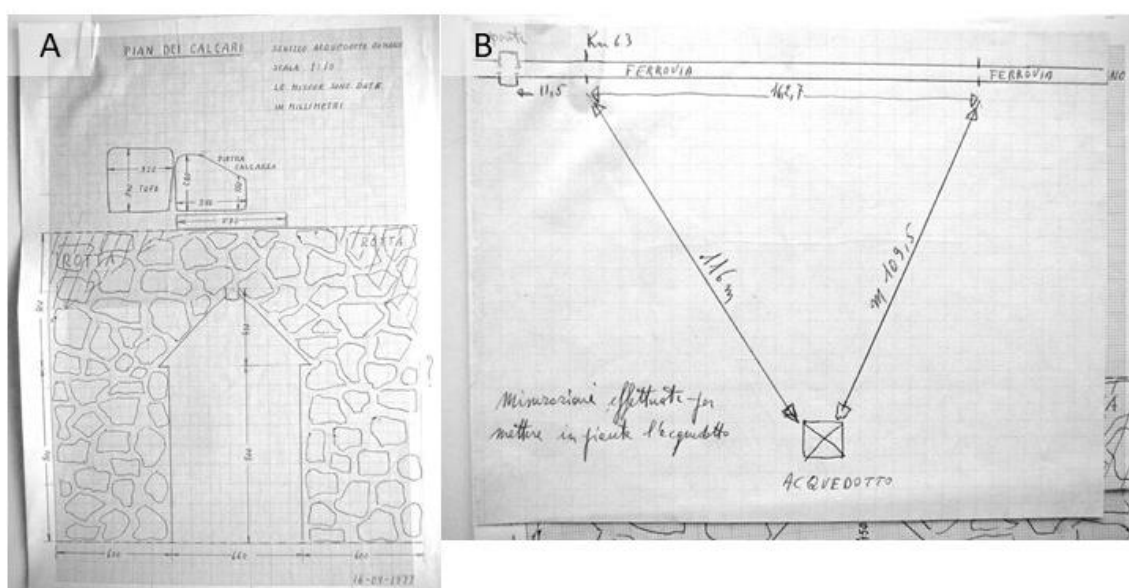


Fig. 175 A: the section of the aqueduct; B: the location; both according to Fantozzi, Arch. SAEM.

AC197

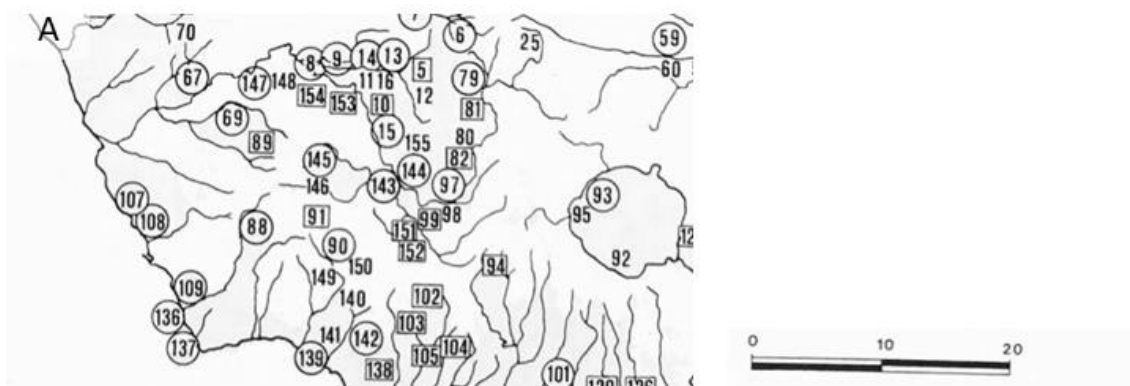


Fig. 176 A: Bronze age settlements, Di Gennaro 1992.

AC198

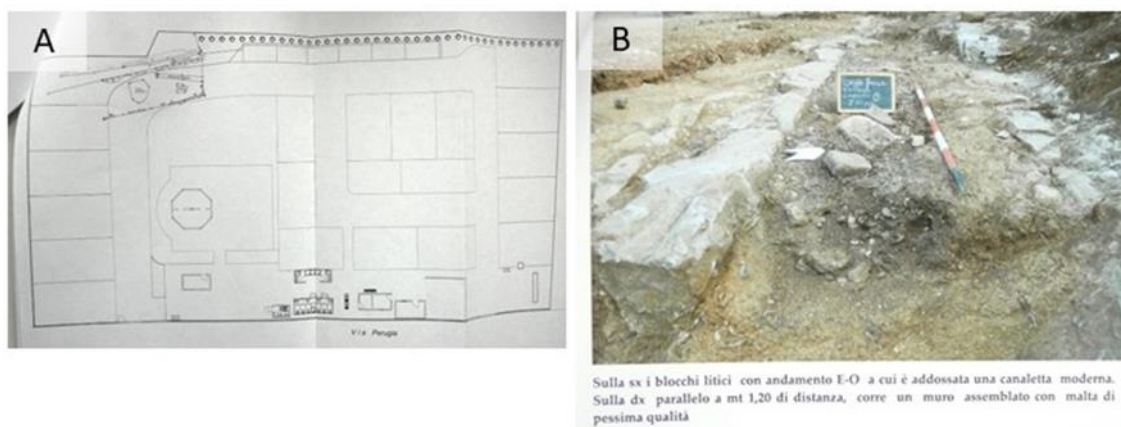


Fig. 177 A: the position of the structure; B: the structure in situ; both Arch. SAEM.

AC200

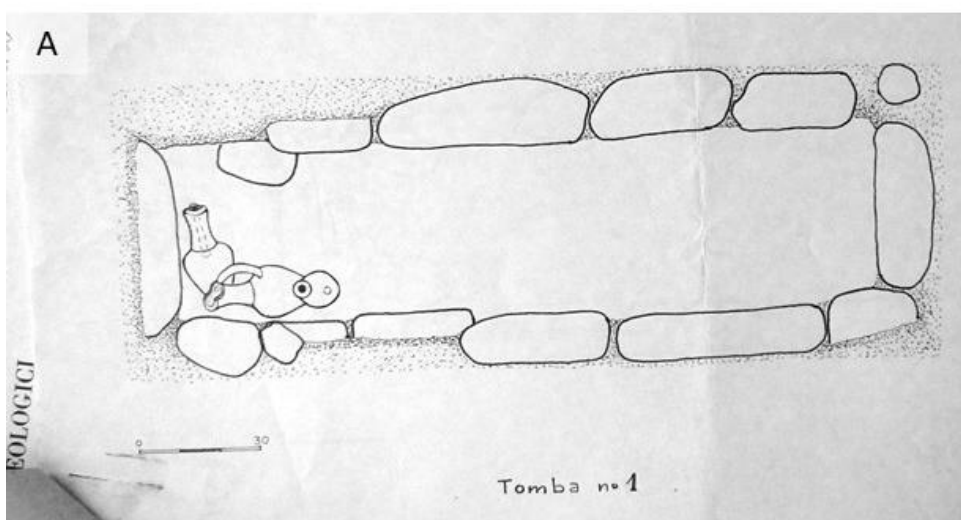


Fig. 178 A: The planimetry of tomb 1, Archive SAEM.

AC202

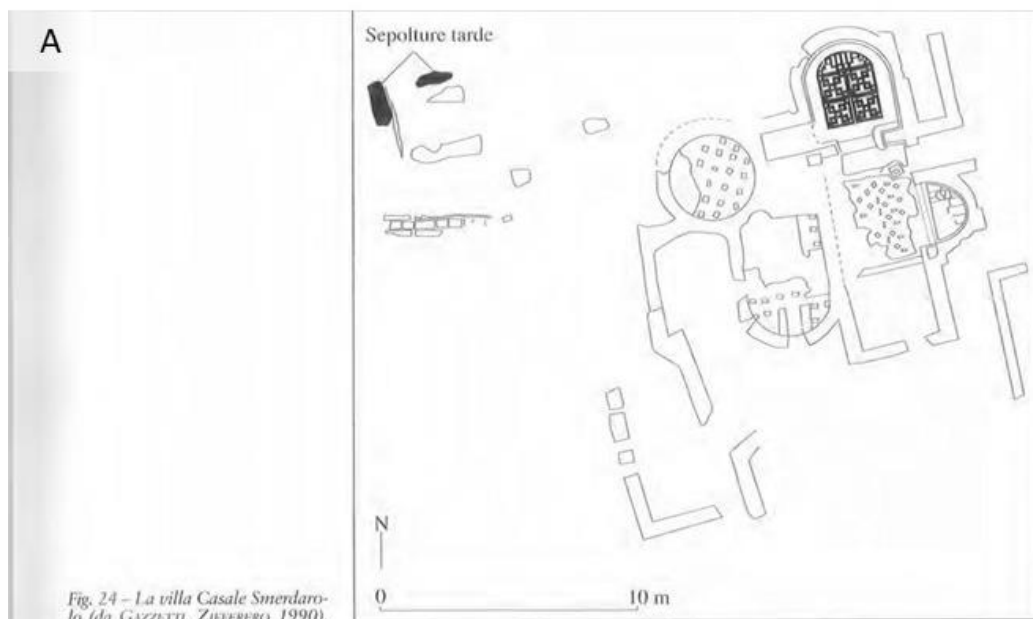


Fig. 179 A: the planimetry of the site, from Gazzetti, Zafferero 1990 and Nardi 2002.

AC209



Fig. 180 A: The Alinary Photo Atelier, around 1900.

AC213



Fig. 181: the bridge on the documentation of SAEM.