# The Potenza Valley Survey: Preliminary Report of Field Campaign 2000

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ABSTRACT

This article presents a new survey programme in the Central-Italian valley of the Potenza, initiated by researchers from Ghent University. The aims and methods of this long term project are briefly summarised, so are the results of the first field campaigns of May and September 2000. The potential of the large survey region is now fully evaluated and the project stands at the threshold of useful contributions to the protohistory and early history of Central-Italy. The intensity of fieldwalking techniques, the use of active remote sensing, the geo-archaeological approach and the association with parallel historical research in the area, all guarantee that this PVS-project can play a role in the current debate among archaeologists concerning long term evolutions of landscapes and ancient settlement systems in Adriatic and Apennine Italy.

## THE PVS-PROJECT

### *Objectives*

In January 2000 the Department of Archaeology at Ghent University[1] initiated a new survey project in Italy. Under the heading '*The Potenza Valley Survey. From Acculturation to Social Complexity in Antiquity: A Regional Geo-Archaeological and Historical Approach*' at least 4 years of archaeological fieldwork, geomorphologic analyses and historical and toponymic research are projected. The surveys include full coverage aerial photography and systematic archaeological fieldwalking in a regionally well-defined area. This area of ca. 400 km$^2$ is limited to the Potenza valley, a broad river valley linking the Apennine hills to the Adriatic coastline south of Ancona in the central part of the Marche region.

Although the global impact of Roman colonialism in the region is a central objective, it is of primary importance to measure long-term evolutions and changes. Therefore, the ascent of the Iron Age Piceni culture (9th century BC) in the region has been chosen as a flexible starting point and the transformation of the classical society in early medieval times as a non-abrupt end of the study period. On the regional scale an attempt will be made to reconstruct the human occupation and landscape history of the Potenza area during the first millennium before and after the beginning of our era. The questionnaire involved will try to measure the evolution of social complexity within the studied communities and evaluate all tangible phenomena of acculturation. Special attention will be paid to evolutions towards the possible centralisation of settlements and via early forms of urbanisation, but also in the growing organisation of the landscape (a network of roads, normative land division, structuring of rural exploitation and territories, centralisation of cemeteries and sanctuaries, good exploitation of natural resources, etc.). The later disintegration and change of these processes will also be analysed and explained on a spatial basis. Precisely this long-term view on landscape change and occupation history will allow to place the developments of late antique society (general decline and short upheavals) in a sufficiently broad perspective. On a higher supra-regional scale correlation of the developments in the region must then be sought with the global history of protohistoric, classical and early medieval Italy. But although the survey strategy was designed to answer questions about the protohistoric and early historic periods in particular, other periods are not ignored, and it is intended that the analysis of the survey will range across the whole period of human settlement.

This geo-archaeological and historical analysis has also some methodological objectives. These concern a/o the further development of interdisciplinary geo-archaeological survey methods (including the use of satellite imagery and active aerial photography) and

[1] The project is directed by Prof. Frank Vermeulen and the principal archaeological investigators on the Belgian side include Miss Catharina Boullart and Mr. Patrick Monsieur (Department of Archaeology, Ghent University, Belgium). For the geomorphological aspects close collaboration is obtained with Prof. Morgan De Dapper and Dr. Beata De Vliegher (Department of Geography, Ghent University). On the Italian side the archaeological department at the University of Macerata (Dr. Umberto Moscatelli) has collaborated intensely in the first campaign. Other Italian institutions, such as the Soprintendenza delle Marche and the University of Camerino, actively support the programme.

the refinement of integrated historical-archaeological GIS-work. The Potenza region can thus be regarded as a test-case for the development of methods for landscape research within a well-defined archaeological and chronological framework.

*Study area*

The regional scale of the project is limited to the Potenza valley (*Fig. 1*). The river rises in the central part of the Umbria-Marche Apennine mountains, near the Monte Pennino (1571m). This mountainous interior was subjected to complex orogenic phenomena of subsidence and settling which over the centuries led to the formation of clefts and faults, and the landscape now has a great variety of forms with longitudinal and transverse valleys of alluvial origin in the Apennine range (*Fig. 2*). One of these is the Potenza valley, which like many parallel valleys crosses the Central Italian region Marche from the west-south-west to the east-north-east, in the direction of the generally flat Adriatic coastline. Due to the proximity of the Apennines to the sea, the conformation of the river valleys and the irregular rainfall, the flow of rivers like the Potenza is rather short and of a torrential nature, catchment basins are underdeveloped and the rivers are not navigable. Over its ca. 80 km long course the Potenza corridor crosses first a mountainous Apennine sector with peaks around 1500m. This sector is divided in almost north-south oriented calcareous ridges (Umbria-Marche ridge and Marche ridge) and an intermediate basin[2]. Near Pioraco, the river runs through a narrow gorge and enters this intermediate basin to shape a much broader valley. After crossing the calcareous eastern ridge, the Potenza valley widens up towards the sea, traversing the wide and fertile Apennine foothill area, bordered by intricate systems of fluvial terraces. Some 15 km north of the river mouth, itself situated in the middle of the flat sand coast, lies the Monte Conero (572 m), an isolated massif rising on the Adriatic coast, composed of calcareous rock, marl and sandstone. The massif is steep and rocky towards the sea but slopes smoothly inland. In ancient times it was covered with thick woods, in perfect harmony with the vegetation and fauna of both Apennines and coast. The mount and its protected natural harbours constituted an important focus of attraction for Greek merchants and settlers, who between the 6th and the 4th centuries BC much frequented the local *emporia* of Numana and Ancona. This stimulated the Potenza river valley to become one of the most important commercial routes of the Central Italian protohistoric period, partly linking the Adriatic sphere to the Thyrrenian centres in Etruria, Latium and Campania. Not so much the Potenza river itself, but its valley remained an important corridor for political, economic and cultural contacts between both sides of the peninsula. From the 3rd century BC onwards Roman influence passed through it, using a southern branch of the famous Via Flaminia, with a spin off from the main branch at the Apennine site of Nocera Umbra, leading through the Potenza valley towards the port of Ancona. During late Republican and Imperial times several Roman towns developed in or near the valley floor, such as *Potentia* at the river mouth, *Ricina*, *Trea*, *Septempeda* and *Prolaqueum*. During the turmoil of the end of the Roman West, the location of the region was again of importance, as it lay within the military contact zones of both Longobards and Byzantines, within the then still flourishing Adriatic sphere.

Climatologic conditions, such as temperature, winds, intensity and distribution of precipitations, vary considerably throughout the Potenza valley region, depending on the lie of the mountains, exposure to air currents and the marked differences in altitude of the coastal belt and inland mountains and between valley floors and the peaks. Along the coast the climate is mainly maritime with a limited temperature range and little rainfall; towards the interior, the temperature range increases as do precipitations, reaching as much as 2.000 mm/year in some limited mountainous areas. Snow is frequent in winter, mostly inland, while the rainiest seasons are generally spring and autumn.

Positive elements for the study of acculturation in a region as the Potenza valley are a/o the geographic unity, the presence of a river with sea mouth, the passage of important Roman roads, the attested presence of Roman colonies and towns, the vicinity of an old Greek *emporion*, indications for Roman centuriation and villa systems and the important but ill-known pre-Roman occupation of the Piceni. Geo-archaeological assets are the micro-diversity of the landscape, good cartographic material, good visibility for survey and information from earlier work in the area. Historically important are the good old-toponymic info and the available early written sources and maps.

*Strategy*

Preparation for a geo-archaeological project as this includes a first global analysis of the landscape as historical territory in view of its chronological evolution and geomorphologic differentiation. This means getting a grip of the character and evolution

[2] Bisci & Dramis, 1992.

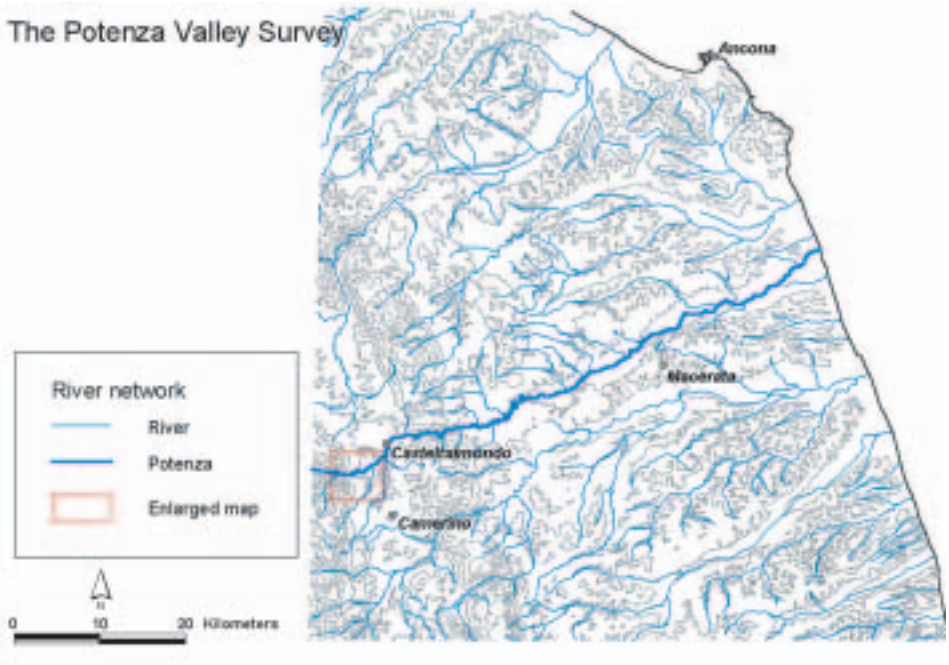



*Fig. 1. General location of the 2000 survey area.*

*Fig. 2. General view of the upper Potenza valley near Fiuminata.*

of the natural environment and the types of landscape and micro-landscape involved, analysing the potential of soils and natural sources for human use in the considered past. Basic problems of hydrography and coastal change as well as the general outline of occupation history known from written sources and earlier archaeological research should be assessed. This includes dealing with the research biases inherent in regional archaeological data, including data from rescue excavations, survey, archives and literature.

The main research phase aims at a new and detailed archaeological evaluation of human evolution within the changing landscape from the early Iron age to the early Medieval period, with attention to earlier and later periods of settlement history. This means deployment of the full battery of techniques available to archaeological landscape research in the total area, as well as in well-chosen sample zones evenly distributed over the Potenza valley and nearby hills. The techniques used here include: systematic fieldwalking, active aerial photography from a low-flying aircraft, regressive study of cartographic material and vertical aerial photographs, study of satellite imagery, research of toponymic and selected historic written information. Where necessary existing archaeological collections and finds will be studied. All geographically linked information will be assembled and analysed, together with results of geomorphologic research, in a Geographic Information System (GIS) specifically developed for this project. It is possible that a second phase of fieldwork will also include some small-scale excavations.
While most of these research activities concern the whole valley, from source to mouth and in width limited by the watersheds of parallel river valleys, the *intensive* field surveys are only being carried out in 3 or 4 large sample zones. They are transects of some 9 to 15 km$^2$ each, systematically spaced at regular intervals across the ca. 80 km long region. They cover all the main landscape types of the region and represent in particular the upper, middle and lower valley. They are chosen on geographical grounds, but also on the basis of cultural-historical features, such as the vicinity of Roman towns (for which they acted as hinterland) or of known protohistoric centres, such as hillsites with important élite cemeteries. One of the strengths of this kind of intensive field survey is its ability to shed light on long-term changes in settlement pattern and land use.

Finally the regional results from the Potenza area should be directly confronted with results from systematic survey work elsewhere in Central Italy and beyond, such as recent or on-going intensive surveys in Tuscany, Umbria, Molise, Lazio, Etruria and the Marche.[3]

## ACTIVE AERIAL PHOTOGRAPHY

### *Methods*

In this early stage of the project we are still assembling all kinds of data for different types of remote sensing procedures. These concern, amongst others, satellite data and vertical aerial photographs for geomorphologic mapping and additional geo-archaeological detection and site-analysis. Different excellent series of vertical aerial photographs of the Potenza area, made by the I.G.M.I. and other institutes and firms,[4] as well as the satellite data (e.g. from Thematic Mapper and Soyouz) will be studied in digital format within a GIS environment. Results from such analyses will be presented in a later communication.

It is a major aim of the PVS-project to supplement this remote sensing material, made available through different sources, by new images from the air with a more direct archaeological impact. Therefore, the programme comprises a regular series of flights above the whole region to take aerial photographs from low altitude. The photographic detection of sites and off-site phenomena from a low flying aircraft has already proven to be quite successful in many areas and the know-how developed at the Department of Archaeology of Ghent University and obtained during almost 20 years of intensive flying and photographing in Western Belgium,[5] guarantees some success with this method.

In a first phase the whole Potenza valley will be photographed, with regular flights in different seasons. Much of the data obtained in this way will support the geomorphologic and landscape studies in the area. Especially specific analyses, such as of erosion phenomena, the precise location of river terraces, ancient and modern water sources, fluviatile movements through time and changes in land use, will be much helped with the introduction of these detailed and flexible views from above. Their impact on the presence and spread of archaeological features will no doubt be clearer.

The second phase of active aerial photography is aimed at the detection of previously unknown

[3] See e.g. Witcher 1999, Barker 1995, Attema et *alii* 1998, Pasquinucci/Menchelli 1999, di Gennaro 2000 and Moscatelli 1997.
[4] Use will be made of, a/o, the R.A.F. photographs and of the excellent post-war pictures of the *volo base* (Moscatelli 1988, p.7). We wish to thank Prof. Giuliano Rodolfi for the acquisition of the latter photographs of the investigated area.
[5] See: Bourgeois et al. 2001. Much of this work in Belgium is achieved by pilot-photographer Mr. Jacques Semey, who also participates in the PVS-project.

archaeological features in the crops, ploughed fields and other surface coverage. Such results will be pursued by very regular flights in the whole Potenza region and especially in the 3 or 4 transects chosen for intensive fieldwalking campaigns. In all areas, whether only extensively or also intensively fieldwalked, the potential archaeological indications from the air are to be checked on the ground. This will, as much as possible, be done in the same general period (week or month) of their first detection from the air.
Special attention will also be given to the areas of known archaeological sites in the valley, in particular the sites of the Roman towns and their immediate hinterland, some of which are fortunately almost completely devoid of later constructions (e.g. *Potentia*, *Ricina*, *Septempeda*).

Aerial photography has been proven to be a valuable tool in archaeological survey. In particular simple large-scale photography from a small aircraft is useful, as photographs can be made easily in the most appropriate season, weather and light conditions.[6] In general our survey method is traditional: most flights are executed in spring, summer or early fall, the observation altitude is about 1000 feet, while many oblique photographs are made at some 300-500 feet, using standard reflex cameras (24x36 mm) for slides and colour prints with normal films. Important however is the idea that rather small areas will be controlled several times a year, which makes it possible to organize a real follow up. We are convinced that this follow up of limited areas, such as the chosen transects, is an important element in a full comprehension of the archaeological structures present in the soil; indeed, one encounters many examples of truly remarkable 'evolutions' of archaeological sites due to totally different detection opportunities over different moments, seasons or years.

All aerial photographs will be stored in the Geographic Information System of the project. A GIS fundamentally links geometric data and non-spatial attribute data, allowing new ways of powerful data exploration, querying and analysis. Oblique aerial photographs have complex geometric distortions and can not be mapped automatically in an easy way. Digital image processing and remote sensing and GIS-software offer new possibilities.[7] Procedures for scanning, warping and geo-referencing the photographic images will be used to fully integrate the aerial data in the spatial analysis and interpretation of the sites.

*First results*

During the first year of the project several flights were organized in the months of May and September 2000.[8] Besides general reconnaissance and landscape coverage of the whole Potenza valley these flights aimed respectively at an evaluation of the potential for detection of archaeological features in the crops (crop marks) and in ploughed fields (soil marks). Both types of fields produced very promising results. A follow up of detected traces on the ground in the whole territory, as well as further flights in different climatic and seasonal conditions are awaited before the technique and its biases can be fully assessed. In particular its confrontation with the results of intensive survey should be relevant.

The dataset of possible archaeological structures present in the now assembled collection of some 800 oblique aerial photographs is most diverse. The total number of processed sites in the inventory where possible field structures (such as lines, patches and dots) appear, reaches about 100 units. Although many have now been checked in the field, or coincide with areas within our first transect of intensive fieldwalking (see further) it still remains impossible to attach a chronological value to many of the structures without further field checks or even excavations. Still, in almost 30% of all cases checked on the ground a first chronological indication is available.

Especially the many *soil marks* observed in the ploughed fields of the area of intensive fieldwalking near Camerino (see further) coincide well with concentrations of settlement debris on the surface (*Fig. 3*). A majority of these belong to the more visible Roman period, but also sites of Stone, Bronze or Iron age were sometimes neatly visible from the sky. Some of these darker brownish patches in the ploughed soil, probably the result of ploughed up occupation layers and zones with locally more organic substance in the upper layers, appear near areas of obvious surface erosion. A detailed GIS-analysis of these many soil marks, directly to be confronted with the observed spread of artefact concentrations, is awaited before this phenomenon can be correctly interpreted.

The potential for observing *cropmarks* in this still very agrarian area seems also good, although to check this only flights in the springtime were organised. The flights during the month of May 2000 covered the whole region of the Potenza valley, but some more attention was given to the area of the river

[6] See e.g. Agache 1962, Scollar 1965, Wilson 1975, Dassié 1978.
[7] Antrop/Wiedemann 2001.
[8] Due to climatological circumstances the total number of flight hours was limited to 8 hours.

*Fig. 3. Aerial view on soilmarks (darkbrown areas) of Bronze Age and Roman settlements in the narrow upper valley.*

*Fig. 4. Circular cropmarks near Passo di Treia could indicate the presence of Piceni burials.*

*Fig. 5. General view of the fieldwalking area of 2000 with on left, between the mountains, the Pioraco gorge.*

mouth. At present, in this very early state of the project, it seems that the technique of oblique aerial photographs is very useful here for the detection and analysis of protohistoric and Roman settlements, ancient field systems, Roman roads and probably also Iron Age cemeteries. Among the newly detected settlements which need further checking in the fields, we can mention the presence of at least 3 sites with villa-like features, all located near the Roman town of *Potentia*, not far from the Adriatic shoreline and a major protohistoric site on a promontory north of the river mouth. New elements of the topography (urban street pattern, city walls) were discovered in several Roman towns, especially *Ricina* and *Potentia*. Elements of the Roman road system in the valley were also discovered, such as parts of the Via Flaminia branch near Pioraco in the upper valley and a not yet known road leaving the city of *Potentia* at its southern gate.
Several sites in the middle and lower valley could point at the presence of as yet undiscovered Iron age cemeteries. The latter have good visibility ratings due to the presence in some of them of ditches enclosing (élite) graves. A particular clear example of at least 3 adjoining circular crop marks found near the centre of Passo di Treia (*Fig. 4*), a part of the Potenza valley where Piceni graves and settlements were formerly identified,[9] will be investigated in detail during the 2001 field campaign.

A third type of marks, *shadow marks*, particularly associated with earthworks and human adaptations of the relief, were encountered in a limited number of areas. Such traces seem to occur especially in the mountainous landscapes, which need further attention in future flights. Very spectacular were the shadow traces of a protohistoric ritual (?) and settlement site, known from earlier discoveries[10] on the Monte Primo, near Camerino. Although the main surface features of this important site were traced during earlier work, a flight in September 2000 was very useful. It assembled data for the further detailed mapping of this monumental site and brought to light several new features.

## FIELD CAMPAIGN IN THE CAMERINO AREA

### *Microregion*

The main area investigated during the September 2000 campaign is situated in the upper Potenza Valley in the region in between the actual centres of Pioraco in the west, Castelraimondo in the east and Camerino in the south (*Fig. 5*). The area covers some territory of these three municipalities. It defines an area of about 9 km$^2$ and consists mainly (more than 80%) of agricultural land, used for wheat-growing and other crops with only small areas of grassland, some scattered vineyards and mostly small holdings. The steep edges of many of the gullies in this area

[9] See: Sgubini Moretti 1977 and Naso 1999.
[10] Bonomi Ponzi 1992.

*Fig. 6. Line-walking on a field near Pioraco. The lighter patches in the ploughed zone indicate the presence of gravel.*

are left to brush maquis vegetation, with only tiny pockets of trees. The higher scarps of the hills, with their mixed wooded vegetation cover lie mostly outside our prospection area. Several perennial springs emerge more or less at the 400m contour interval and bring water to the slopes. They feed torrents that eventually end in the Potenza river, which crosses our area centrally from west to east. Present-day human occupation is essentially restricted to several small villages and hamlets (e.g. Seppio, Mecciano, Mergnano, Brondoleto,...) and other modern disturbance confined to a stone quarry and a small, but fast developing industrial area near the Potenza river.

This area was not arbitrarily chosen. From the Potenza source westwards, it shows the first real broadening of the valley after the narrow Pioraco gorge, where the river leaves the mountainous Umbria-Marche Apennine ridge and enters an intermediate basin. It is still a very hilly landscape, but here the Potenza valley offers for the first time enough arable land for widespread human settlement since prehistoric times. Due to its position in the intermediate basin the area is situated on the crossroads of two intramontane corridors. The first is the Potenza valley which is directed west-east and which links the Apennine Mountains with the Adriatic coast. The second gives passage from the Colfiorito area in the south to the Esino valley northwards. They cross each other southwest from Castelraimondo.[11] Both corridors played an important role in the (proto-)history of this region.[12]

Immediately outside the main survey area we also investigated extensively two smaller zones: a small valley area in Fiuminata situated about 9 km west of Pioraco[13] and the top of the Monte Primo to check some of the archaeological structures known from literature[14] and made visible on our aerial photographs.

*Archaeological field methods*

The area chosen for intensive fieldwalking was subdivided into independently walked 'fields', defined by modern field boundaries or topographic breaks, and characterised by homogeneous (mostly good) surface visibility and land use. The field survey method used during this campaign is based on intensive line walking by a team of 5 to 12 persons. Hereby we used an interval of 15 meters in between walkers (*Fig. 6*). The collected items for each line are bagged separately, provided with the year, the field number as well as the line number. Whenever the number of pottery, found on a line, changes importantly, the

[11] Biocco 1997, 308.
[12] Bonomi Ponzi 1992.
[13] This zone was investigated at the special request of the mayor of Fiuminata, Claudio Mazzalupi, archaeologist and host of the 'Agriturismo La Castagna' where the whole crew was accommodated.
We wish to thank Mr. Mazzalupi for the excellent stay, for the local scientific information which he provided and for the acquisition of a depot at Fiuminata in order to be able to stock the archaeological finds of this campaign in a proper way.
[14] Bonomi Ponzi 1992.

beginning and the end of this so-called concentration is marked in the field with small flags. In these concentration zones nothing is to be collected immediately. When the whole field has been walked, the team returns to the marked concentrations and executes a detailed random search.
A total of some 50 sites were defined on the basis of comparatively higher surface artefact density or by the presence of certain anomalies. The material of each concentration is collected in bags labelled with the year and the concentration number. In the middle of each concentration the exact position is measured by means of handheld GPS (Global Positioning System) instruments. Important isolated finds, such as identifiable prehistoric artefacts, are also located in this way.

For each field a form is filled (form A) with data on the field's conditions, such as topography, land use, visibility, weather condition, soiltype, etc. For each concentration we mark information about its density, the concentration extend, etc. Furthermore, a description and a first opinion about the general date and the function of the site or isolated find is added. As these standardized fieldforms have now proven to be adequate they will be used again during the following campaigns.

Site density is expressed in terms of low, medium and high. Thereby, 'low' means at most 10 artefacts/$m^2$, a medium site density contains between 11 and 19 artefacts/$m^2$ and a high site density means that at least 20 artefacts were found in one $m^2$. Also the offsite density is taken into account: it is measured in a straight line pick up of 50 meters long. At most 5 artefacts means the offsite density is low, between 6 and 14 artefacts stands for a medium offsite density and a high offsite density requires at least 15 artefacts. These categories were applied on fields with good visibility, which means on the majority (about 95%) of the total surveyed area of this campaign.

Precise localisation and site mapping was achieved for all sites, with the help of GPS technology, modern cadastral maps (1/2.000) and IGM topographic maps (1/25.000). Additional drawings of other surface structures and some sections were also made. The location of all sites and special finds is automatically digitised (using ArcGIS) and the artefact databases joined to the GIS using provenience ID.

*The processing of archaeological material*

All potential chronologically diagnostic artefacts, all feature sherds (rims, bases, handles), all prehistoric pottery, and all lithics were collected during the routine field survey and bagged as a group according to field number. They were immediately processed and only partially studied during this field campaign. Although the artefacts have been classified by ware, and in many cases by shape, more work needs to be done on the pottery typologies to improve the dating. This is being kept for a study season at the end of the project. The analyses offered here are, therefore, only provisional and they will no doubt need to be modified as work progresses.

This information on the artefacts per field is first noted on another form (B), developed for this project.[15] As the September 2000 campaign was the very first to be achieved in the Potenza region, this form will need further adjustments in the future. All diagnostic material will be described and analysed in a very detailed way in a third form C, which is in full development and will be ready for the next campaign, during which also the material of the September 2000 campaign will be further analysed. All artefact data are imported in an originally elaborated database, structured in Microsoft Access. This makes it very easy to find at once the detailed description of a particular sherd, together with the information about the concentration in which it has been found, as well as information about the field conditions at the moment of discovery.

*Geomorphologic work*

The geomorphologic work in this project is firmly interlinked with the archaeological questionnaire. It includes the processing and analysis of all relevant cartographic material and general remote sensing data, many field observations on the surface (with the use of coring and in sections) and in particular makes full use of the results of our aerial survey work. During the first fieldwork campaign Prof. M. De Dapper and his team have restricted their field analyses to testing the potential of specific geo-archaeological approaches in the upper-Potenza area, such as:
* the correlation of prehistoric sites with the occurrence of gravel terraces,
* the location of protohistoric settlements near former source areas and aquifers,
* the impact of processes of erosion on the interpretation of surface phenomena.

A forthcoming full report of their findings in the 2000 field campaign will also include observations made during the next campaign in 2001, as well as

[15] We sincerely thank our colleagues Helen Patterson and Rob Witcher from the British School at Rome for providing us with information on form types used in the Tiber Valley Project.

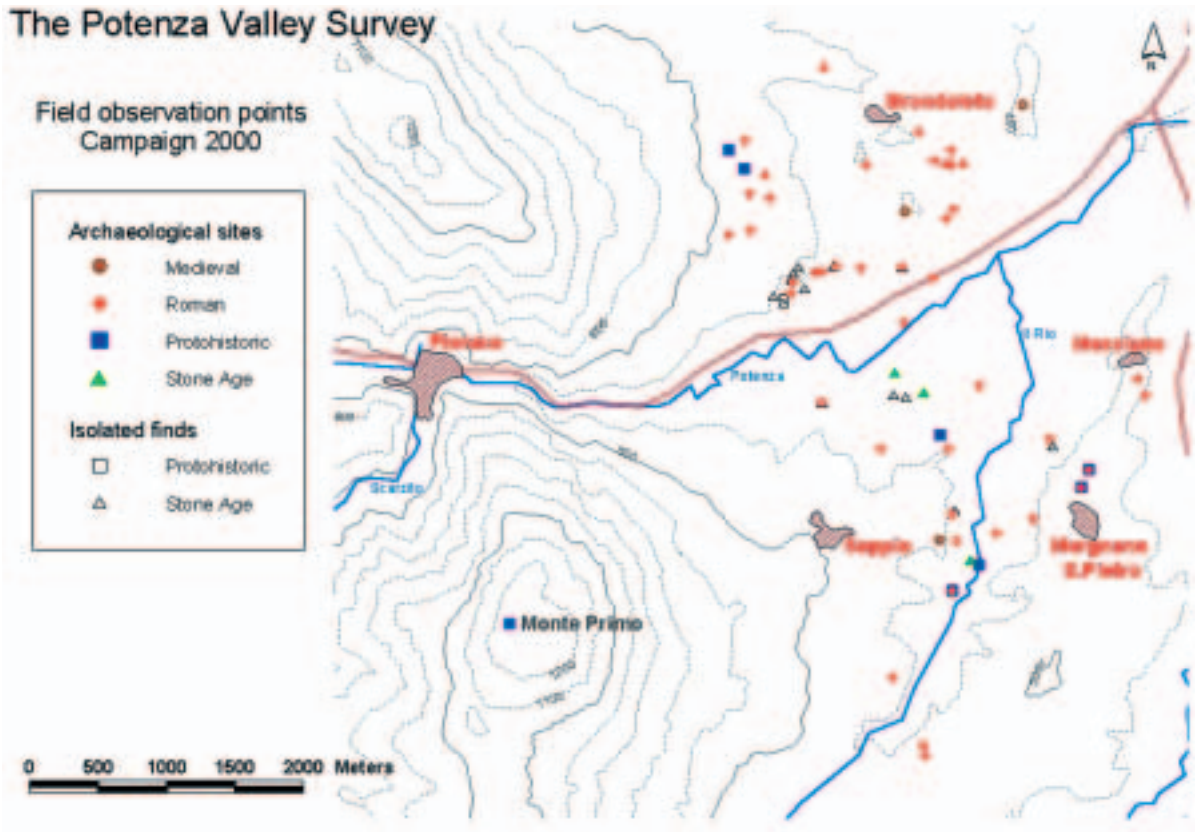



*Fig. 7. Summarized results of the fieldwalking campaign in September 2000.*

the details about the elaboration of the Geographic Information System developed for this project.

*Summary of the archaeological findings (Fig. 7)*

* *Stone Age*

The prehistoric sites recorded during this campaign are generally represented by lithics, primarily flint, only in three cases found in very distinct concentrations. Two of them lie close to each other on a gravel terrace immediately south of the Potenza River, while the third site is also located in an area with a stream (Il Rio) nearby.
Most prehistoric finds, some 35 flint artefacts and a handful of possible Neolithic potsherds, lay more or less isolated, most often in locations north of the Potenza River, in the lowest area near the river.

The oldest lithics were isolated: e.g. a Middle-Palaeolithic (Mousterian) triangular point (*Fig. 8*),[16] and a Palaeolithic hand-axe. Furthermore we have inventoried several scrapers, lames, blades, arrow-heads, cores and chips,[17] generally of Palaeolithic or Neolithic date. They attest of a widespread human presence in the area over long periods.

The most convincing prehistoric site was found close to the southern edge of the Potenza River. The concentration consists of artefacts and lots of pieces of flint-working activities, including a core, mostly in reddish-brown flint. A late Neolithic date is probable for this high density site, but more precise chronometry is still awaited. Several more or less isolated arrow-heads in brownish flint and a smaller concentration of lithics found nearby could be connected to this site. The location of the site is remarkable. The concentration of artefacts corresponds with a somewhat low-lying oval zone (about 50 cm long and 30 m wide) of darker grey earth situated exactly where the colluvium is the thinnest and where the underlying gravel terrace almost surfaces. This site-location is not arbitrary as the raw material for the production of flint tools is available here at half a meter depth

[16] Identification by Dott.ssa. M. Silvestrini (Soprintendenza Archeologica delle Marche).
[17] The lithic material is not yet studied in detail. A specialist report will comprise the material from several campaigns.

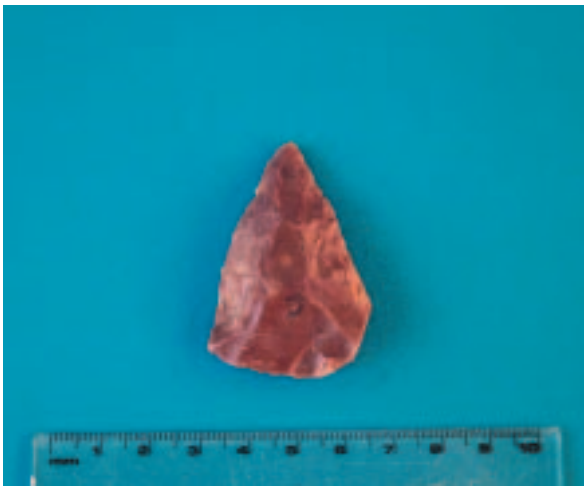


*Fig. 8. Mousterian point found north of the Potenza river.*

*Fig. 9. A protohistoric settlement was revealed by clearly visible traces of ploughed up pits.*

only. This certainly attracted the early settlers as much as the vicinity of the Potenza river.

Unfortunately the gravel terraces in this region today are still subject to intensive exploitation for building materials. This prehistoric site, which lies at the very edge of the modern gravel quarry, is obviously disturbed by it and so parts of the site were already destroyed at the moment of discovery. The threat to this site was immediately reported to the competent authorities.[18]

* *Bronze and Iron Age*

The artefact sites found in the main survey area of the September 2000 campaign which we classified as protohistoric can at present not be dated very precisely. The generally thick, dark-reddish very coarse pottery wares (impasto) and sometimes also smoother and thinner greyish sherds found here are generally not very diagnostic and not suited for further distinctions in Bronze or Iron age phases. Furthermore, it is still difficult to evaluate precisely what exactly is the status of these small protohistoric sites and pottery scatters within our survey record. Earlier Italian surveys[19] and also excellent recent work in Greece[20] already made clear that the protohistoric equivalent of a small historic farmstead with hundreds of sherds collectable today on the surface will be represented by a handful of sherds only in a normal surface collection.

A total of 9 small concentrations of such protohistoric pottery, possibly representing small (wandering?) settlements, were found north and south of the river, generally at some distance from the Potenza. Interestingly they are often located near the edge of almost theatre-shaped depressions, which the geomorphologists identified as former water sources, i.e. natural springs. One of these sites, on the territory of Pioraco, was also located near the confluence of two torrents. The concentration of artefacts coincides here with large spots of dark grey soil spread over a small area, not more than 15x10m large (*Fig. 9*). These spots, possibly remains of ploughed up pits, are not more than 1.5 m diameter wide. They have an irregular shape and contain fragments of protohistoric pottery and associated unburned bone fragments. The bones belong to pig, cow-like animals and sheep or goat.[21] The preponderance of medium-sized animals leads to the conclusion that this is indeed a settlement area with some pastoral activity. Some pottery evidence suggests a Late Bronze/ Early Iron Age date.

Also in the small survey area upstream, on Fiuminata territory, we located a very distinct protohistoric site. It was found in the middle of a long field parallel to the road to Rome, at some 70 meters from the left bank of the Potenza. It was clearly visible, also from the air (*Fig. 3*), by a dark greyish brown soil with which the potsherds are associated. Most pieces of pottery are found on the northern edge of this field, where the surface lies some 30 to 50 cm higher than the surrounding area. This site seems to represent a small type of permanent settlement in a part of the narrow valley of the Potenza where just enough land is available for small scale agricultural and pastoral activities.

[18] This file is now being handled by Dott.ssa. M. Silvestrini.
[19] Di Gennaro/Stoddart 1982.
[20] Bintliff 1998.
[21] Identification by archaeo-zoologist Prof. A. Gautier (Ghent University).

*Fig. 10. Aerial view of the protohistoric structures on the Monte Primo.*

Our short visit to the top of the Monte Primo, outside the intensive survey zone, was intended to confirm the existence here of the very important protohistoric site, known in literature as a Bronze Age sanctuary and a seasonal settlement area,[22] and possibly make additional observations based on our aerial photographs. The Monte Primo site covers about one hectare and lies between altitudes of 1285 and 1300 meters. It is accessible from the south and east side of the mountain. Both approaches fuse into a single pathway, delineated by natural rocks on one side and by artificial rampants and ditches on the other. The total area is divided into four enclosures (*Fig. 10*). The outer circumvallation was probably built to protect the entrance to the real settlement area. A second rampant is interrupted at the north edge of the mountain: it is a rocky and very steep area, so an artificial defence there was of no use. At a distance of about 10 meters, parallel with this second defensive wall, a third one is built. Finally also the very top of the Monte Primo is demarcated.[23] We recorded that the almost flattened top with steep slopes is surrounded by 3 concentric circles with a preserved height of about 2 m. In between them there is an alley of about 2 m. wide.

In 1970 the Soprintendenza delle Marche did some small-scale excavation work at the very top of this site. They revealed archaeological remains, datable to the Late Bronze Age as well as some Iron Age finds. Also some bronze objects, in schematic human form, are mentioned in the report.[24] Unfortunately these kind of artefacts also attracted illegal diggers to the mountain. When we visited this area we spotted indeed a recently dug pit at the north-east edge of the top. The pit is rectangular, about 1.5 x 1 meter. Between pieces of limestone and black dislodged earth tombaroli left pieces of Bronze Age potsherds and some fragments of animal bone (essentially sheep-goat, pig and cattle), burned as well as unburned pieces.

The topographic position of the Monte Primo and the character of the finds lead scholars, as Bonomi Ponzi[25] and Lollini, to the conclusion that we deal here with a cult place, originally situated on the very top of the Monte Primo. The selection of this place for a sanctuary-like destination is not arbitrary. The Monte Primo dominates the crucial passage of the Potenza-river valley and is an excellent spot to observe bird migration, a very important activity in protohistoric Italic culture. It seems

[22] Bonomi Ponzi 1992, 208-210.
[23] Bonomi Ponzi 1992, 208.
[24] Bonomi Ponzi 1992, 208.
[25] Bonomi Ponzi 1992, 210.

*Fig. 11. Extensive soil marks of a Roman settlement area near Seppio.*

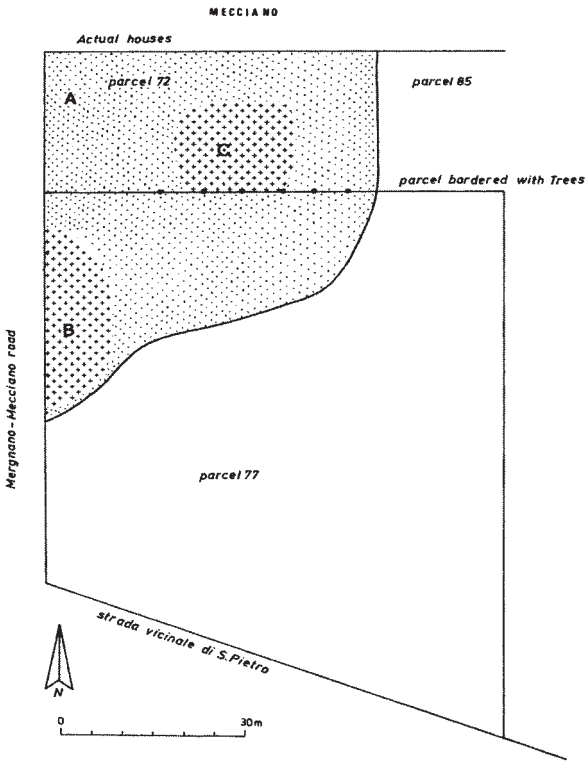
very likely that it was also the place of seasonal settlement activity in the transition phases of the Bronze and Iron Ages. The attraction of the summer grazing grounds for pastoral activities, as well as its control function by an emerging élite of society, are both particular assets in this respect.

* *Roman period*

The September field campaign yielded up to 42 Roman settlement sites in the main prospection area only, which is an explosive increase of the almost nonexisting number of Roman settlements in the area known from regional inventories before our surveys.[26] These Roman sites are scattered all over the landscape. In some cases it is clear that different concentrations on the same or adjoining large fields belong together. We then could distinguish a main settlement area where household pottery, common building materials (tile, brick, local stone) and in some cases even more luxurious products, such as glass, marble or *tesserae*, were found. In the immediate neighbourhood fine line-walking then revealed often one or more smaller surface concentrations, which mainly consisted of Roman building materials and should thus be interpreted as secondary buildings. Regrouping of the artefact concentrations of this period still leaves us with some 30 newly discovered Roman sites. Although in some cases a distinct date in late Republican, Early or Late Imperial phases can be proposed, further pottery research is awaited before chronological groupings and counts per period are possible. Only then will it be possible to study phenomena such as: continuity or discontinuity of occupation with other periods, shifts in settlement location within the Roman period, detailed comparison of site sizes, etc.

Although small elements of luxury material (see above) were distinguished, and some fine pottery such as terra sigillata or black glazed wares, is present on most of these sites, it is unlikely that we have recorded the presence of large villa complexes. Most, if not all sites should probably be interpreted as more or less isolated, fairly simple farmsteads, widely scattered over the landscape (*Fig. 11*). Their position seems influenced by topographical features, such as the presence of plateaux or easy slopes with excellent views towards the river, good possibilities for agricultural land use, the nearness of water sources and the relation to the Via Flaminia or other roads. On-going preparations for spatial analysis of this site distribution within a GIS-environment will have to determine what were the main factors involved in choosing these sites.
This evidence for a preponderance of simple farmsteads does however not mean that richer villa-settlements were completely absent from this mountainous region. Such sites could indeed in post-Roman times have evolved into medieval villages, some of which might still exist today and hide the ancient villa sites. Several place names still present in the area today, such as those terminating with *-ano* and *-iano*, may be reminiscent of Roman settlement. It is, therefore, important to note that we found Roman settlement structures, including some luxury material, at the very edge of the small village of Mecciano (*Fig. 12*). No doubt this site, with its excellent location on a hilly plateau overlooking the Potenza stream, might be of much greater size and importance than most of the other Roman settlements we recorded, but now lies partly underneath the present-day village buildings.

[26] Mercando 1979.




*Fig, 12. Simplified plan of a Roman artefact concentration near Mecciano.*

The part of this Roman settlement which we could investigate shows a very dense, wide and well delineated concentration near the top of the south-east oriented slope of the Mecciano plateau. It consists of large numbers of Roman pottery sherds and building material, such as tegulae and dense scatters of stone material. Within the general concentration (A) we observe the existence of at least two zones of buildings *in situ*. Zone B, which probably represents a large building with a north-south orientation, has lots of *tegulae* and pottery. Zone C, in the centre of the main concentration, reveals much stone material such as large limestone pebbles and some big blocks of sandstone. They mark a building of some 15x12 m. with a more or less east-west orientation.

A second settlement site with a villa-like appearance was recorded on a flat to gently sloping part of the generally west-east oriented slope at the foot of the Castel Santa Maria mountain, north of the Pioraco-gorge. Here we found a very large (100x60 m.), also quite well delineated and very dense concentration of Roman artefacts. The concentration zone has an irregular shape, probably the result of different areas of buildings. To the east the whole concentration area is well delineated by a talus of about 4 meters high. This talus, in which we discovered an enormous block of limestone, could be reminiscent of the original terrace wall of the settlement. To the north and south the delineation is less marked due to the dispersion of the finds as a result of ploughing and erosion downwards the slopes. The western edges are, however, also quite sharp. Within the major concentration different features can be distinguished (*Fig. 13*). Zone A, the most dense area, consists of many fragments of building stones such as limestone blocks, several big blocks of sandstone and some limestone conglomerates. Part of this stone material shows obvious traces of working. Furthermore, this zone contains many fragments of *tegulae* and *imbrices* and a good number of pottery sherds, some of which belong to fine wares (terra sigillata, Campanian). Within this more or less L-shaped area, which might represent two buildings, some lines of stones suggest the *in situ* location of walls. Zone B on the plan marks the general extent of the living area and contains less building materials and pottery. Locally small cores of tile seem to indicate the presence of secondary buildings. To the west of this zone a small unploughed area full of big stones could mark the presence of remaining wall structures, but as large limestone blocks occur here naturally, this feature could also have a natural explanation.

It is possible that the site hierarchy of the area counts even more sites other than simple farmsteads. The presence of a huge, well-worked, white marble block, which we found at the edge of one of the surveyed fields north of the Potenza river, as well as earlier accidental finds in the municipalities of Brondoleto and Seano,[27] might suggest the existence of more villa-type settlement structures in this area, or even of some public monument(s) or building structures, such as a sanctuary.

* *Early Middle Ages*

The early medieval period as such is a problematic issue in survey studies in Italy and beyond.
Several waves of invasions and the imposing of heavy taxes contributed to a decline of rural life in Late Antiquity. Even allowing for problems of dating in the later 5th and 6th centuries,[28] the archaeological evidence of several regional studies[29] point

[27] Biocco 1997, 308.
[28] Sagui 1998.
[29] Such as: Arthur 1991, Barker 1995, Migliario 1995, Moreland 1987, Paroli 1997, Potter 1979.

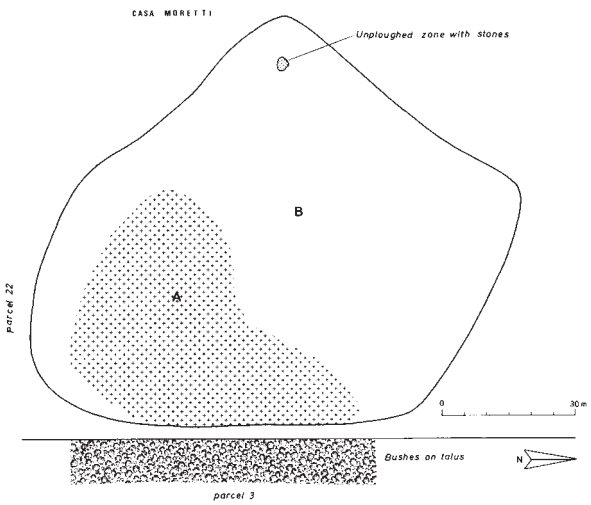



*Fig. 13. Simplified plan of a Roman artefact concentration on the eastern slopes of the Monte Castel S. Maria.*

to a rural site abandonment in Northern and Central-Italy. As in other regions of Italy, where intensive survey looked at the rural landscape in more detail, strong changes in occupation pattern and density are also known in the Marche region.[30] Our first field-walking campaign in the Camerino area confirms this general picture. After a firm reduction of sites during late Roman times[31] a much sharper decline of sites is visible from the later 5th century onwards.

According to our limited results, with only a handful of probable medieval sites located and even small numbers of isolated well-dated medieval pottery found, the location on small hilltops might not be unusual for settlements in this period. All three spots indicated on the distribution map that seem to contain a medieval pottery concentration, are located on a certain altitude in the landscape. All these locations need to be investigated further to determine their specific history and date. It must be stressed that the medieval and late medieval surface material was particularly scarce in both field and site collections, in comparison with Roman and post-medieval material.

Detailed mapping of settlement-toponyms, regressive cartographic research and the use of monastery records will be helpful in retracing rural occupation in Late Roman and Early medieval times, and describing the evolution from a widely dispersed to a more condensed settlement pattern, consisting of small hamlets and villages.[32] The Potenza survey could then contribute to the debate concerning the post-Roman landscape in Italy: a transition from classical antiquity to the Middle Ages characterised by the development of nucleated hilltop villages, a process known as *incastellamento*.[33] Some recent surveys[34] suggested that the roots of this process, traditionally placed between the 9th and 11th centuries, are much older, and that they may even go back to 5th-7th c. AD developments.

## CONCLUSIONS

It must be clear from the above presentation of the project and of some results during the 2000 campaigns that we cannot yet present to the reader far reaching conclusions about the early settlement history in parts of the Potenza valley. Much work still has to be done, especially linked with the precise dating of the archaeological finds observed through fieldwalking and aerial photography. Some trends, especially concerning the upper valley, the area of our first field campaign, are however already visible. Rigid climatologic conditions and the presence of an immense forest have prevented that during the Palaeolithic period the upper valley of the Potenza corridor was more than occasionally visited by small groups of hunter-gatherers. Still, as the corridor of this river, especially deep and narrow near the Pioraco-gorge, was also ideally located for the interception of migrating animals, hunting activities are attested at least from the Middle-Palaeolithic period onwards.

The first permanent sites of farmers in the upper valley, during the late Stone Age, were it seems generally of small size. At least some of them are bound to readily available flint on the gravel terraces near the Potenza or on some higher hill crests and had a stable character.

The settlement pattern of the later Bronze Age and Iron Age could have been dual, with on one side the large defended hilltop site of the Monte Primo dominating a society based on pastoral activities (transhumance) and forestry. From this high hilltop plateau, where security and probably common religious activities were major factors, parts of the surrounding countryside were certainly cultivated. This resulted in a second part of the scheme, with a range of very small valley and lower hillslope sites, intimately bound to

[30] Alfieri 1981, Profumo 1998.
[31] We must await detailed study of the pottery to assess which percentage of Mid-Roman sites persists after the 3rd century crisis.
[32] Moscatelli 1993, idem 1995.
[33] Cambi et al. 1994, Feller 1994, Galié 1991, Giuntella 1994.
[34] Barker 1995, Wickham 1989.

water supplies, such as the Potenza river and ancient natural springs. The latter abound especially close to the 400m. contour. The move into unprotected sites in the open countryside at a time that was still dangerous could be a consequence of the population expansion since the late Bronze Age and into the Iron Age. This no doubt provoked fast developments on an ideological and political level.

By the beginning of the Roman period (3rd century B.C.) rural settlement and land exploitation had expanded beyond the settlements on the higher slopes of the valley onto the better drained soils of the river alluvium and low hillslopes bordering the Potenza basin. A preference for the northern side of the Potenza valley, on hillslopes with a southern or western orientation seems obvious. The dense Roman settlement shows a picture of small to large, be it not very luxurious rural farms. Some of them, especially on flat hilltop locations, were possibly of the villa type. The comparatively dense carpet of Roman sherds between the 350 and 450 m. altitude would seem partially to correspond to the most intensively cultivated part of the Roman landscape. The presence of many settlements in this area, especially in locations on the margin between the well-watered soils of the basin floor (pasture?) and the land on the lower slopes of the surrounding hills (cultivation?), is remarkable. It is not clear yet whether this density coincides with a more or less rigid pattern of local division of land and domains. Beside this pattern in the valley, the Roman exploitation of the mountains probably occurred mainly through the agency of shepherds, stock-watchers and foresters, whose traces in the archaeological record are notoriously elusive.[35]

The late antique and early medieval phases show an evident fall in the site rosters, which however seems less evident in the largest category of settlements. Several larger mid-Imperial sites show signs of continuity in the 4th and 5th century A.D. Further work should evaluate whether such a late blossom of several sites could be connected with the historic revival of the Adriatic sphere in Late Antiquity. The medieval settlement, however, looks fairly thin within our transect, but this view may be obstructed by the existence of strong settlement continuity within the limits of the present-day villages, hamlets and some well located large farms.

The Potenza Valley Survey has already produced data that demand a major reappraisal of different notions about the human exploitation of the region in the past. This will be even more apparent once the chronology of the new sites is further developed, geo-archaeological analyses finalised, remote sensing information fully processed and also lower parts of the valley surveyed. The baselines for future work in the area are now fully traced.

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[35] Coccia/Mattingly 1996.

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