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Date of secondary publication: 05.12.2024

Accepted Manuscript (Postprint), Bookpart

Persistent identifier: urn:nbn:de:bvb:473-irb-993863

Primary publication

Leusen, Martijn van; Neef, Wieke de; Sevink, Jan (2023): Developing a Systematic Approach to the Archaeological Study of Mountain Landscapes, in: Arnau Garcia-Molsosa (Ed.), Archaeology of Mountain Landscapes, Buffalo, NY: State University of New York Press, pp. 325–341, doi: 10.1515/9781438489896-018.

Chapter Seventeen

Developing a Systematic Approach to the Archaeological Study of Mountain Landscapes

The Raganello Basin Experience

Martijn van Leusen, Wieke de Neef, and Jan Sevink

Abstract *Between 2011 and 2014 the authors investigated in detail a selection of protohistoric surface scatters and their surroundings in the Maddalena upland basin (600–1,000 masl). Part of the Raganello River basin in the southern Apennines (northern Calabria region, Italy), this area had previously been archaeologically surveyed by the University of Groningen Institute of Archaeology between 2005 and 2008. The new and interdisciplinary investigations consisted of geophysical surveys and geoarchaeological and pedological studies. We here primarily use the work conducted at site RB73 to illustrate how depositional, postdepositional, and current land use processes result in the present expression of a surface scatter or "site" as recorded in the archaeological field survey, demonstrating that long-term slope processes in the flysch geology of typical Apennine upland valleys have a fundamental impact on the preservation and appearance of the archaeological record. We argue that confidence in our theoretical and practical understanding of this record remains unjustified in the absence of carefully designed, integrated geoarchaeological and geophysical work.*

Introduction

The Groningen Institute of Archaeology has been active in northern Calabria (Italy) since 1990, when excavations at the Iron Age hilltop sanctuary, settlement, and necropolis of Timpone Motta di Francavilla Marittima were begun under the direction of Prof. Marianne Kleibrink (Kleibrink 2006).[1] While these excavations have continued in later years under Prof. Peter Attema of the GIA, and lately under Dr. Jan Jacobsen of the Carlsberg Glyptotek in Copenhagen, systematic fieldwalking surveys of the surrounding landscape began in 2000. Directed by one of us (Van Leusen), these initially focused on the areas within 5 km of the excavation, covering the foothills on either side of the Raganello River. In 2005–2008 these surveys were extended as a formal stratified landscape sampling survey of the whole Raganello River basin in three transects crossing the river and covering the uplands and mountains (the third main landscape zone, the coastal plain, is unsuitable for surveying due to its thick overburden of Late Holocene sediments; Attema et al. 2010:100–103; Van Leusen 2015).

In geological terms, the Raganello basin is situated in the southern Apennines, which consist of Mesozoic and Cenozoic sedimentary rocks of the Ligurid and Sicilid sedimentary basins (Santoro et al. 2009). Due to continued regional uplift, the Raganello River, its tributaries, and other streams have extensively dissected the landscape, resulting in canyons, steep slopes, and screes. Middle to Late Quaternary marine deposits form the Sibaritide coastal plain and its inland extensions (Fuchs 1980), and the interplay between regional tectonic uplift and glacio-eustatic changes has resulted in a series of marine terraces reaching elevations of around 500 masl. The older and higher terraces are severely dissected and sometimes barely recognizable; they are loosely described as the "foothills" zone.

Over a period of fifteen years, teams from the GIA have conducted fieldwalking surveys in the Raganello basin as part of four successive research programs: the Regional Pathways to Complexity program (RPC, 1997–2001), the Raganello Archaeological Project (RAP, 2002–2005), the Hidden Landscapes Project (HLP, 2005–2010), and the Rural Life in Protohistoric Italy Project (RLP, 2010–2015). The results of the initial surveys in the foothill zone have been published as part of the comparative landscape studies of the Regional Pathways to Complexity Project (Attema et al. 2010). In the period 2005–2008 these surveys were extended as part of the HLP research program to cover two transects across the upper Raganello valley. While systematic intensive surveys were in practice largely limited to accessible agricultural fields within these transects, we also investigated less accessible locations. Already since the late 1990s the caving club Gruppo Speleologico "Sparviere" (GSS, directed by Antonio Larocca) assisted our teams by reporting, and then reinvestigating with us, remote locations where protohistoric pottery had been encountered. We regard this collaboration as extremely important to us because these sites tend to be located in the nonagricultural, and very often nearly inaccessible, parts of the uplands and mountains, and they therefore provide information complementary to that of our own surveys.

Since 2005, attention shifted to landscape formation processes and how they affect our ability to record archaeological remains. Feiken (2014; cf. Van Leusen and Feiken 2007) studied overall gradation (erosion and sedimentation) processes and slope profiles in the upper Raganello basin, and in the latest research program (the RLP, 2010–2015) we have focused on the natural and anthropogenic geomorphological processes happening within single landscape units and at the scale of individual sites (i.e., over distances of hundreds to tens of meters) in order to understand site formation and postdepositional processes and their effects on the detection of protohistoric artifact scatters. These processes are described and explained by Sevink et al. (2016).

The main objective of the RLP was the in-depth investigation of a representative sample of the 160 protohistoric surface scatters mapped in the earlier RAP/HLP surveys. After classifying these scatters according to their material assemblage and landscape zone (De Neef 2016:82–92), the RLP team investigated representative examples from six site classes by detailed archaeological resurveys, magnetic-based geophysical techniques, and geopedological surveys involving intensive manual coring. We used a combination of invasive and noninvasive approaches to investigate the selected sites: intensive fieldwalking surveys and geophysical surveys as noninvasive approaches, corings and test pits as invasive approaches. The latter were needed to compensate for the limitations of the former: even intensive fieldwalking survey often does not provide more than a very accurate map of undiagnostic sherds on the surface, and in few cases can geophysical anomalies be interpreted confidently without supporting evidence. In such cases corings and test pits can often provide information leading to an understanding of the stratigraphy on and around sites and of the causes of geophysical anomalies, as well as allow us to obtain good samples for dating, ecology, and the study of soils and archaeological materials. However, our aim was always to conduct the minimum amount of invasive research: if enough information about the character and current state of an archaeological site can be obtained by noninvasive means, then no further invasive study should be necessary.

The particular landscape unit of interest here is the "upland undulating sloping land" (UUSL) of the Maddalena basin, which is confined between two limestone dominated ranges and is a geomorphologically active landscape with various slope processes including mass movements. Its geology is dominated by loamy marls with yellowish brown to orange yellow soils, depending on the extent of soil development. The fine texture of the dense marls inhibits its percolation of water, so groundwater exudes in the contact zone between the more permeable limestone and the marl. The instability of the marls leads to an irregular topography with common landslides and mudflows. The marls hold intercalated bands of harder rock including shale, phyllite, and rarely iron-rich quartzitic sandstone, and there are incidental outcrops of ophiolite. Sometimes huge boulders and blocks of limestone debris deriving from the nearby limestone ranges also protect the marl against erosion, thus standing out as ridges and producing a very irregular relief. Bands of more erosion resistant rock locally result in relatively flat areas with similar less eroded soils and with accumulation of colluvium. Soil depth is primarily related to the amount of colluvial material deposited on top of a more or less eroded soil in the bedrock. In particular the western limestone range is bordered by large debris slopes and fans that extend into the marl uplands and are composed of poorly sorted and very coarse limestone debris. We will return to these debris slopes later on.

We will first discuss in detail the case of site RB73, which was one of the surface scatters randomly selected to represent the UUSL landscape type. We will then "zoom out" to include other sites in this sample, and conclude with lessons learned and implications for regional settlement and land use models.

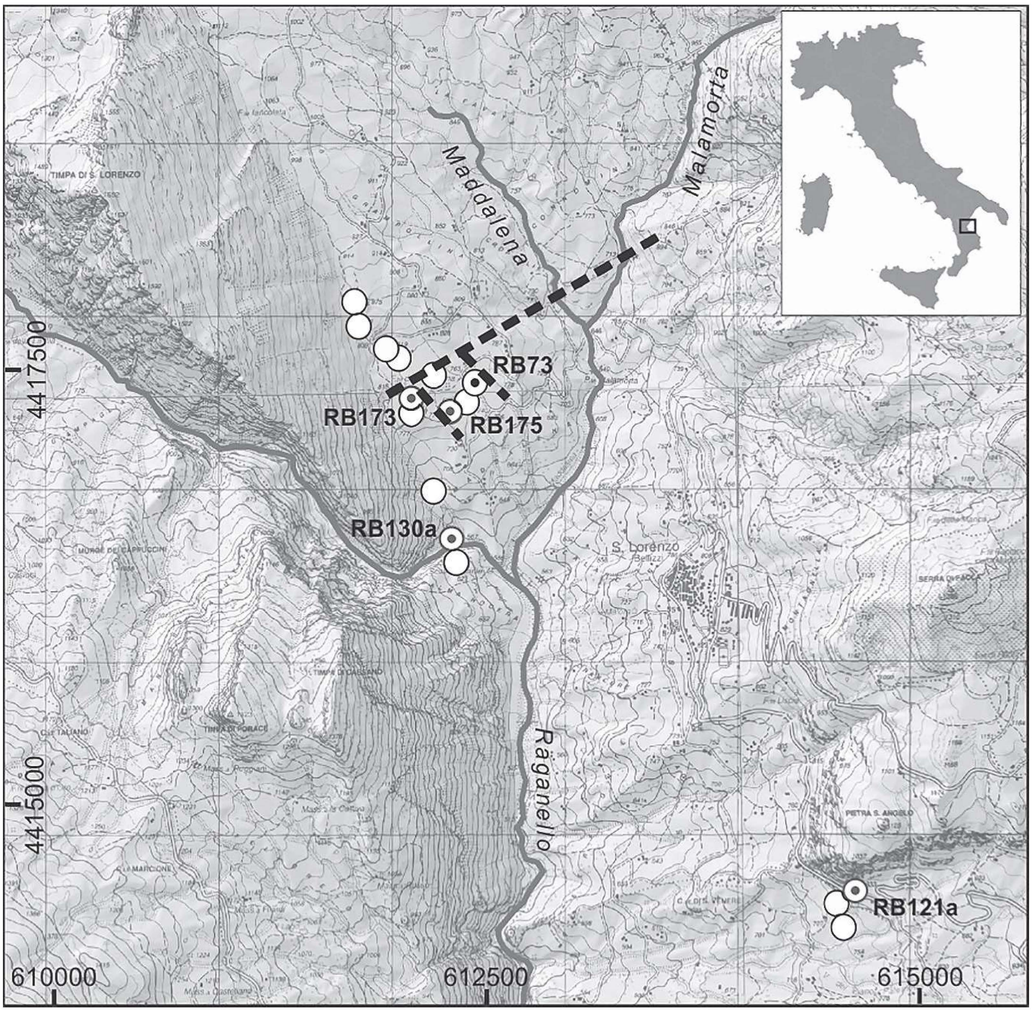

Figure 17.1. Topography and morphology of the Maddalena basin, with locations of coring transects and (selected) protohistoric sites.

The Case of Site RB73

To demonstrate the effects of this active landscape on archaeological detectability, as well as the learning curve the team had to undergo, we turn to site RB73. This is a small concentration of protohistoric handmade pottery recorded during a systematic fieldwalking survey in 2005 on a local flat in a tilled field, just above an agricultural terrace bank (Figure 17.2). Following total collection, the scatter assemblage consisted of 27 poorly preserved sherds, totaling 265 g, which we were not able to date more precisely than "protohistoric" (the term we use to indicate the Bronze and Iron Ages in Italy). Dispersed off-site material was recorded in other parts of the field, including pottery from historical phases.

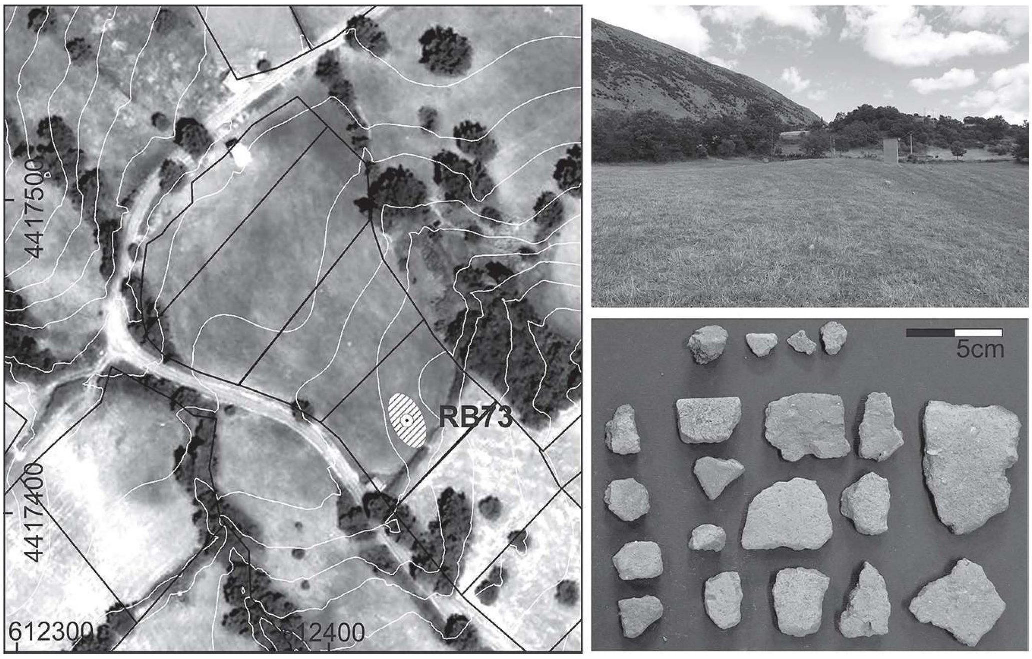

Figure 17.2. Protohistoric scatter RB73 after the initial survey in 2005—field photo, survey map, assemblage photo.

Following the inclusion of RB73 in our sample of sites to be investigated in greater detail, in spring 2013 Sevink and MSc student Michael den Haan performed a detailed geopedological transect study, during which they noted an unnatural landform ("mound") requiring further investigation. This study showed that the depth and complexity of the archaeological stratigraphy vary sharply across the field, with clear and deep archaeological layers in some locations including near the mound. In one of these corings, moreover, they found an intercalated thin tephra layer that, in view of the general dating of the pottery scatter, was first thought to be the Avellino pumice dating from around 2 ka BC. However, subsequent radiocarbon dating of charcoal collected from this coring would show that the tephra must have originated from the Vesuvian eruption of AD 79 (Sevink et al. 2016), which had never been recorded so far south on land.

In the same campaign of spring 2013, our team member Kayt Armstrong conducted a magnetic gradiometry survey using a Bartington Grad601 dual sensor array recording at 0.125 m point distance, and a magnetic susceptibility survey to detect MS contrasts at the soil surface (Figure 17.3; these and other results of the geophysical studies conducted by the RLP are being prepared for publication by Armstrong and Van Leusen [forthcoming] but have been partly published in De Neef 2016, De Neef et al. 2017, and De Neef et al. 2018). The gradiometer data do not show any constructed features but they do show a sinuous anomaly, running from top to bottom across the field. The initial interpretation of this anomaly was that it might be due to the local variation in bedrock geology that is to be expected in a flysch geology, or that it might be a filled gully.

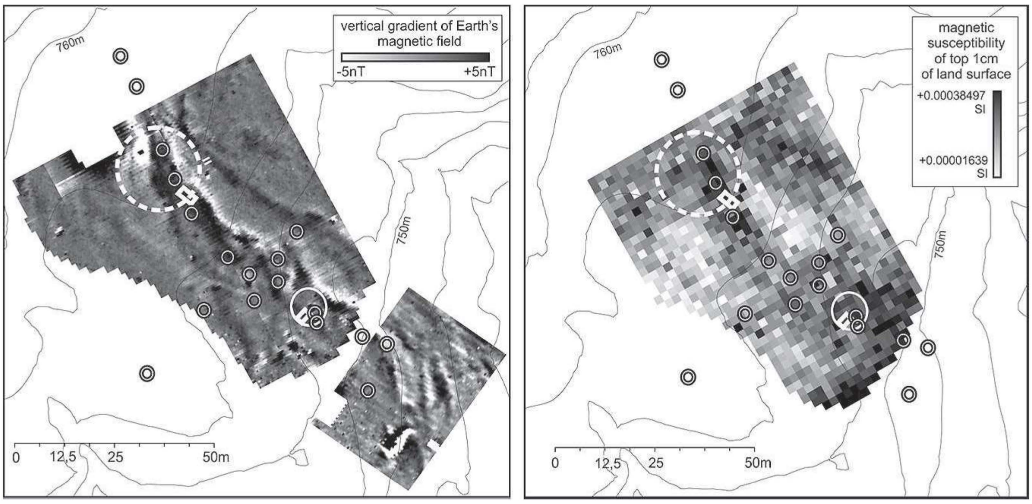

Figure 17.3. Results of the magnetic gradiometer and magnetic susceptibility surveys conducted in 2013, after De Neef et al. 2017, fig. 11. Locations of scatter, mound, and corings indicated.

To understand these rather puzzling results, in autumn 2013 we opened two 4 x 2 m test pits. The first pit was excavated on the southern slope of the mound, next to the coring with the Pompeii tephra; the second was excavated at the location of the protohistoric surface scatter. Results were surprising (Figure 17.4:C, D). Pit 1 showed a deep tilting stratigraphy, with strata dating at least from the Bronze Age to the Roman period. Near the top of the section are two layers dated by pottery to the Hellenistic-Roman Imperial period (De Neef 2016:417; De Neef et al. 2018:168), with an intercalated thin layer of volcanic tephra. What little pottery of these periods had been recorded in the 2005 survey had at that time been ignored as general "background noise," but new observations of roof tile and building stone on the surface now suggested a substantial Classical site must have been close by. The lower, still tilting layers contained animal bones and pottery generically datable to the Metal Ages. Pit 2 showed a tilting stratigraphy including several protohistoric archaeological deposits interpreted as occupation layers. This explains the presence of the surface scatter as a locally plowed-out outcropping of one of these layers: the archaeological material in these layers consists of poorly preserved handmade pottery, similar to that found in the surface scatter. As we did not reach sterile soil or rock in the 2013 season, pit 2 was reopened and deepened to 1.8 m—the maximum reach of our small mechanical excavator—in 2014. Throughout the section anthropogenic layers were documented, and charcoal from the bottom of the pit was dated to the Early Bronze Age; even earlier but unexplored deposits may well be present.

Using the combined results of their geopedological studies in 2013, Sevink and Den Haan drew up a hypothetical reconstruction of the stratigraphy of the field, in which the presence of the original scatter RB73 was explained as deriving from mixed colluvial and

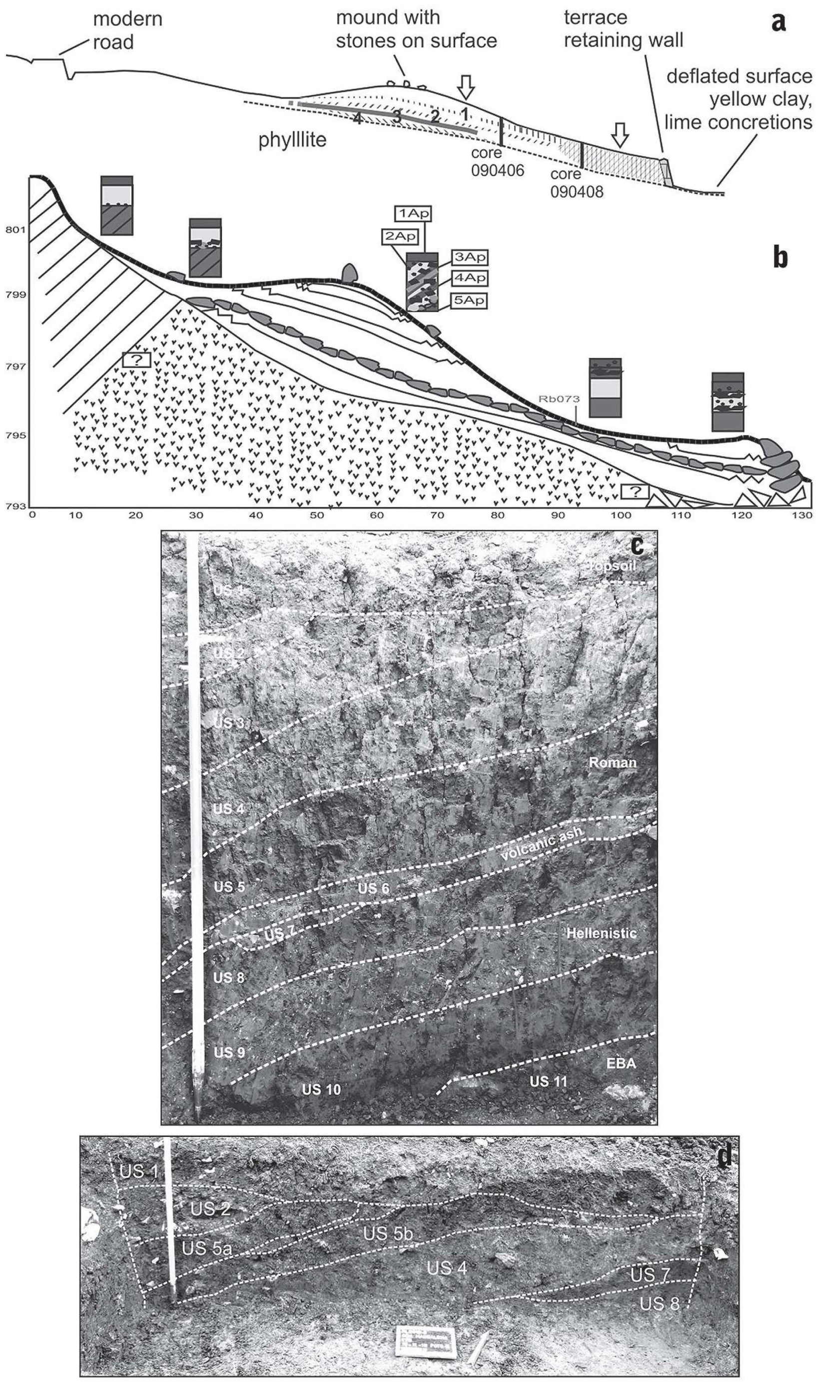

Figure 17.4. Section drawings across the mound and lower terrace bank based on our understanding of the situation in late 2013 (A, B). A: interpretation by De Neef, original drawing; B: interpretation after Sevink et al. 2016, fig. 39. Locations of 2013/2014 test pits indicated by block arrows. Sections of the two test pits showing tilted stratigraphy (C, D). After De Neef 2016, figs. A80 and A82.

anthropogenic deposits downslope of the "mound" (Figure 17.4:B; Sevink et al. 2016:53–56). De Neef arrived at a similar reconstruction (Figure 17.4:A) but showed the archaeological strata as not confined to the "mound." Clearly, the issue of how the mound itself was formed and how it might relate to the filled depression or gully running through the field (as suggested by the tilting layers, the varying depth-to-C of the corings, and the geomagnetic results) was still unresolved. Moreover, there was still no proof in the form of systematic corings for the interpretation of the anomaly as a depression or gully. Therefore, in 2015, Sevink and MA student Nikolaas Noorda conducted a detailed geopedological survey, involving about sixty corings and bringing the total to about eighty-five corings. At the same time, De Neef also conducted a new and higher resolution gradiometer survey of the whole field, using more sensitive Foerster sensors and an interval of only 5 cm between readings (De Neef et al. 2017:167 and fig. 7). Recently, a full multidisciplinary paper on the site was published (Sevink et al. 2020). An overview of the major results is presented here:

1) The new magnetometry resulted in a clearer and more complete image of the sinuous anomaly, resolving some vague features of the 2013 dataset into positive circular anomalies of a size and strength that indicate that they may be pits dug during the later phases of gully infill.

2) Depth to hard rock of the combined set of new and earlier corings was found to correlate quite well with the new geophysical data: a branching sinuous depression runs down the field, reaching up to about 4 m depth and filled with anthropogenic deposits, and an anthropogenic cover of more limited thickness is present throughout the study area.

3) The massive archaeological deposits consist of a series of occupation layers containing abundant pottery, bone, and charcoal, dating back to at least the Chalcolithic/EBA as shown by 14C datings of charcoal in its lower strata.

4) The upper strata date from the Late Imperial Roman period and contain a distinct tephra layer from the Pompeii eruption. In lower, presumably early second millennium BC strata, volcanic material was encountered that based on its isotopic composition and radiocarbon age could be identified as tephra from the Vesuvian AP2 eruption (ca. 1700 cal yr BP).

The dating evidence at RB73 now indicates that the site has been occupied, possibly with interruptions, from at least the Late Copper Age to the Early Imperial period. Debris (pottery, bones, charcoal) from nearby habitations, mixed with soil, over time filled a deep natural gully with sloping layers and outside this gully covered the original land surface—thus contributing to the general pottery "background noise" recorded in the 2005 survey. The gully must have remained in existence, at least in part, until the latest occupation phase since even the upper, Roman layers clearly tilt down toward the center of the gully. For the earlier (prehistoric) occupation phases at least we now think that the availability of a reliable year-round source of water, originating from the springs at the boundary between the limestone ranges and the marls, was what attracted settlers to this and similar locations in the upland. Modern parallels demonstrate the continued importance of such places for “irrigated gardening” and local food provision in the study area (Figure 17.5, inset). Small basins are constructed to collect and store the water, and wells may have been dug to reach the water table in the driest season. Given the sharpness of the round positive anomalies identified in 2015, these must date from the latest use phases, by which time most of the

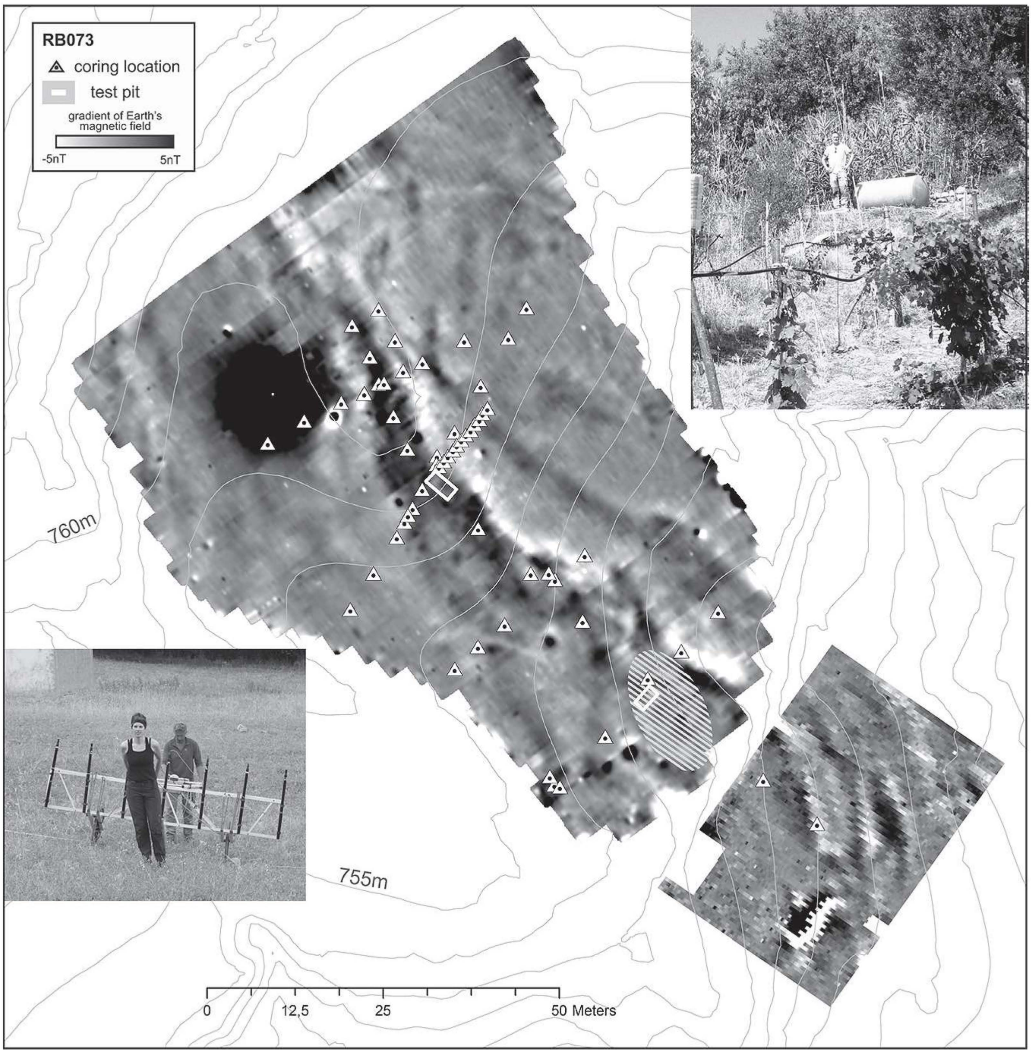

Figure 17.5. Additional gradiometer and coring data collected in 2015 indicate the presence of an erosional gully, in existence since at least the EBA and still not completely filled by settlement debris in the Early Imperial period. Inset (*top right*): A modern parallel to the protohistoric situation at RB73 is shown here, with spring water buffered in the basin at the top of the slope used to irrigate garden crops in the foreground.

gully had been filled in; it is probable that they represent wells but this can only be confirmed by further coring or excavation.

As mentioned before, geological processes in this landscape generate springs at locations where groundwater is forced to the surface, but over centuries and millennia these also lead, in combination with human land management activities, to modifications of its morphology and drainage network. The current topography and morphology suggest, in fact, that another spring-fed stream may have run through the same field until relatively recently and was only diverted when, in the 1950s, some of the mule paths were converted to tarmac roads.

Broader Context: Other Sampled Sites in the Uplands

What does the case of site RB73 tell us about the preservation and detection of archaeological remains in relation to the more general physical geographical description of the upland undulating sloping land (UUSL)? RB73 demonstrates to us that the presence, size, finds density, and modern setting of small undiagnostic protohistoric pottery scatters in this landscape type in no way indicate the presence of a deep and complex long-duration archaeological stratigraphy. Depositional and postdepositional histories have conspired to hide the late prehistoric landscape from us. How many other undiagnostic scatters would, on more intensive scrutiny, turn out to be only the tip of such an iceberg?

Our random site sample from the UUSL contained two more such scatters: RB173 and RB175, both provisionally dated to Middle Bronze Age 1–2 on the basis of the pottery fabrics (pers. comm. F. Ippolito, Jan. 18, 2019). At site RB173, which within an area of a little over 1 ha contains at least five identifiable pottery scatters, previous intensive manual coring had already revealed the presence of archaeologically relevant deposits (Feiken 2014:136–139). Since even with additional corings we were not able to construct convincing profiles out of this dataset (De Neef et al. 2018), we can only explain the extreme variability between the corings as reflecting a situation similar to that at site RB73, with cracks and gullies in the natural bedrock filled with deposits from nearby habitations (Sevink et al. 2016:53). At site RB175, our manual coring detected archaeological layers at depths between 1 to 2 m, some 20 m away from the original surface scatter (see Figure 17.6:A). As with RB73, this archaeological deposit was preserved in this location by later aggradation behind a drystone terrace wall, which put it beyond the reach of the modern plow, but also beyond that of our gradiometer sensors. The same archaeological deposits appear to be present much more superficially just downslope of that same terrace wall, where the lack of aggradation (and probably some plow erosion) had failed to produce a protective layer (Sevink et al. 2016:50–51).

Taken together, these cases strongly suggest that slope processes are the dominant factor in determining how much of the protohistoric landscape in the UUSL is presented to our eyes and instruments. Surface scatters are meaningful in the sense that they indicate locations where more extensive archaeological deposits are brought to the surface by natural

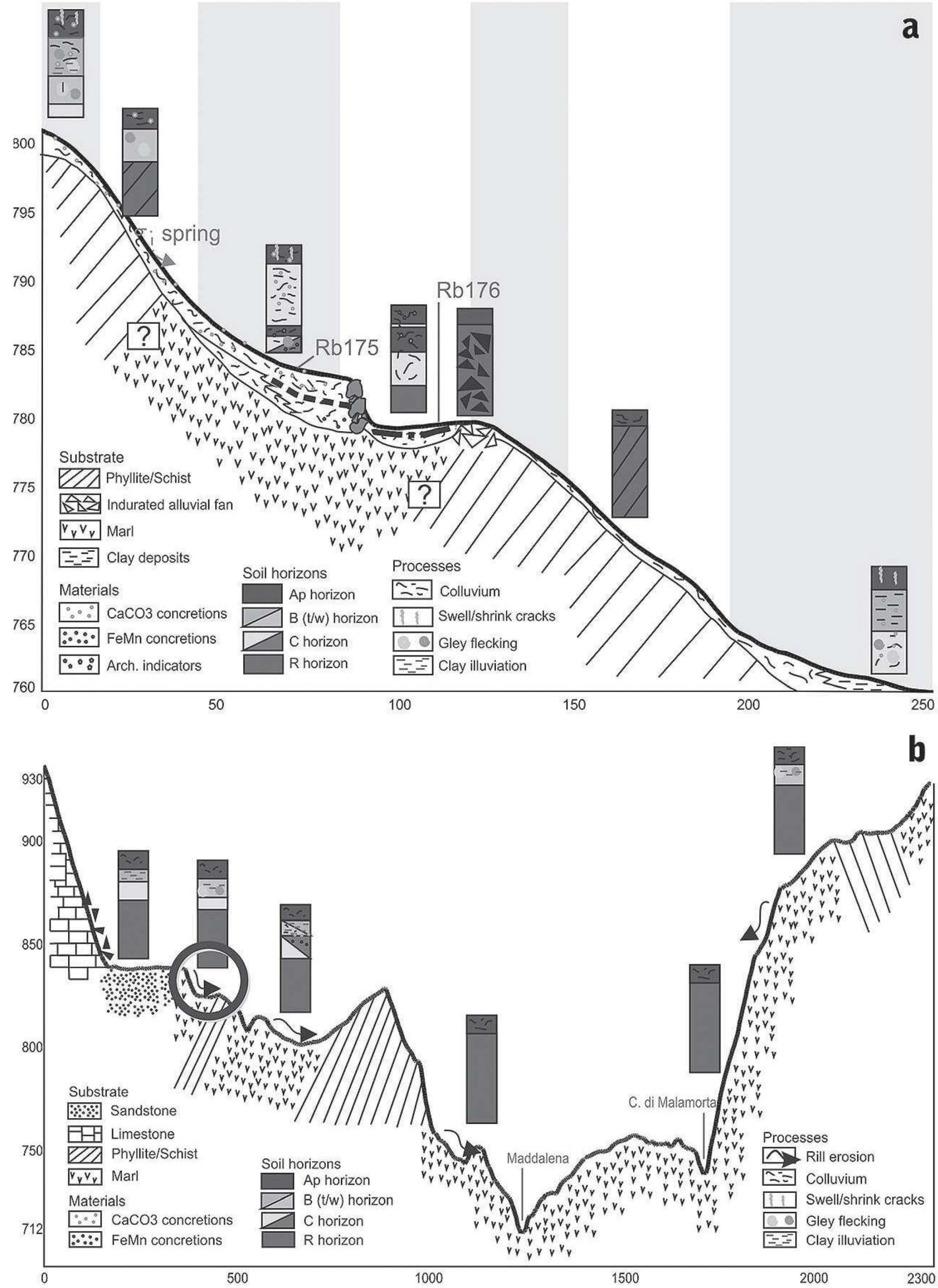

Figure 17.6. Cross section showing slope processes and soils around site RB175 (A). Landscape-scale coring transect through the Maddalena upland, showing diverse composition of flysch basin fills, resulting in different relief and soils (B). Source Sevink et al. 2016, figs. 32–34.

and anthropogenic processes, but they cannot be equated to individual "sites" in the sense of habitations without further supporting evidence. The overall diverse geological composition of the flysch basin fills in this landscape, documented in a landscape-scale coring transect (Figure 17.6:B), is expressed in variations in the relief, soils, and vegetation. Stands of oak, a valuable source of pig fodder, are limited to outcrops of sandstone; farms and other significant constructions are located on the more resistant phyllite outcrops.

Another significant landscape type of the uplands is formed by the limestone debris slopes and cones that form at the foot of the major massifs. Often considered unpromising, or even dangerous due to continuing rock falls, we included this landscape type in our surveys and recorded many protohistoric scatters in them. We investigated two of those, RB121a and RB130a, as part of our random site sample. Here we found that neither magnetometer survey nor coring was able to provide useful assistance: the terrain strewn with rock does not allow the collection of continuous geophysical data over any substantial distance, and corings, despite many attempts, never penetrate more than 0.5 m before hitting a rock. We were therefore greatly surprised that a test pit sunk at RB130a showed the presence of a 1.40 m deep archaeological stratigraphy, consisting of three distinct MBA occupation phases with some later (probably Byzantine) disturbance (De Neef 2016:124–125). Similar deep stratigraphies were later attested at RB121a as well, with finds indicating that occupation began already in the Neolithic (De Neef et al. 2018).

The gradation history of this landscape type is very different from that of the UUSL: aggradation is mostly in the form of episodic rock falls since very little fine sediment derives from the overlying limestones, and localized erosion derives exclusively from disturbance by goat tracks and human activities such as gravel extraction and road construction. We believe early settlers were attracted to this landscape type because with no substantial forest growth it was relatively accessible, well drained, in a superior topographic position with respect to the surrounding landscape, and, in winter, heated by the nearby massive limestone. We may imagine a small, possibly seasonal, settlement in both locations, each with several huts constructed on artificially leveled plots around the foot of the debris slope. The fine lime-rich sediment between the rocks, deriving from the overlying slopes, inhibits bacterial degradation of wastes, so in addition to being undisturbed by recent agricultural degradation these sites offer a superior perspective for paleoecological study. However seemingly unpromising, poor and weathered surface pottery scatters must therefore in many cases indicate substantial well-preserved settlement evidence.

Discussion

The examples discussed previously demonstrate how the gradational history of whole landscape units, and its effect on the archaeological record, can be assessed in a systematic manner. The results of our in-depth study, based on a random sample of surface sites, allow us to conclude with confidence that the small undiagnostic pottery scatters recorded in large numbers by standard modern systematic fieldwalking surveys are just the "tip of the iceberg." Site RB73 turned out to harbor a deep stratigraphy, including periods (Chalcolithic–EBA) for which no open-air upland sites were previously known in the study area. The original scatter RB73 can now be recognized for what it is: the plowed-up "top" of one of the tilting fills of a gully whose presence in the modern landscape had been completely obliterated. The unpromising landscape unit of debris slopes turned out to hide some of the earliest, and very well-preserved, habitations in the whole of the Raganello watershed basin. A picture of late prehistoric Apennine upland settlement is therefore beginning to emerge, in which certain landscape niches (south/east facing limestone debris slopes for warmth/shelter/control; reliable summer water sources for vegetable plots) are preferred.

From a methodological point of view it may be noted that for the research described here a truly multidisciplinary approach is needed, because no single prospection method is foolproof, and a geologist's understanding of the scales and rates at which geomorphological processes occur must be married to an archaeologist's understanding of cultural deposits and activities. Multidisciplinary research, however, requires significant and sustained effort from all specialists involved—not just to communicate effectively about mental models, questions, and interpretations but also to be prepared to question those same models and interpretations if they conflict with those of others, and/or with the evidence.

Besides the "conflict of disciplinary loyalty" encountered by multidisciplinary research teams, another conflict of loyalty arises when socioeconomic models long established in the archaeological community are challenged by new evidence. Long tradition, reinforced by the Italian system of academic "schools," has tended to fossilize the protohistoric settlement system models constructed since the 1970s by the Italian protohistorian Renato Peroni (Peroni and Trucco 1994) for Metal Age south Italy. Peroni's model for developments in the Final Bronze Age in the Sibaritide, for example, in which a significant reduction in the number of tribal territories takes place by the end of the Recent Bronze Age (Figure 17.7), was based on general theoretical models supplemented by what limited field data were available in the late 1980s. Part of his argument was that large storage vessels (so-called dolia) are only to be found in a few central places, where they attest to the redistribution functions of these tribal central places. At the time, however, knowledge of the settlement distribution in the region was severely limited and biased by the selective study of "suitable" hilltop locations in the foothill zone. Essentially no data were available for the uplands and mountains, where the effort to locate sites would have been much greater, or for the coastal plain, where the evidence lies inaccessible beneath several meters of later sediments.

In Peroni's model the uplands and mountains are regarded as of marginal significance only, and given the state of evidence at the time this might have been true if the bulk of the population/political power really resided in the foothills or in the lowland; but since only confirmatory evidence was ever sought for this model the possibility of refutation remained unexplored. Our research now indicates that the archaeological record of the uplands and mountains has been severely underestimated, so new and alternative settlement and land use models for late prehistory and early protohistory should at least allow for the possibility that uplands and mountains were not peripheral parts of the human landscape (a possibility further explored by Ippolito 2016 and by the recent Pollino Archaeological Landscape Project: Attema et al. 2019; De Neef et al. 2021). Although at this point we can do no more than

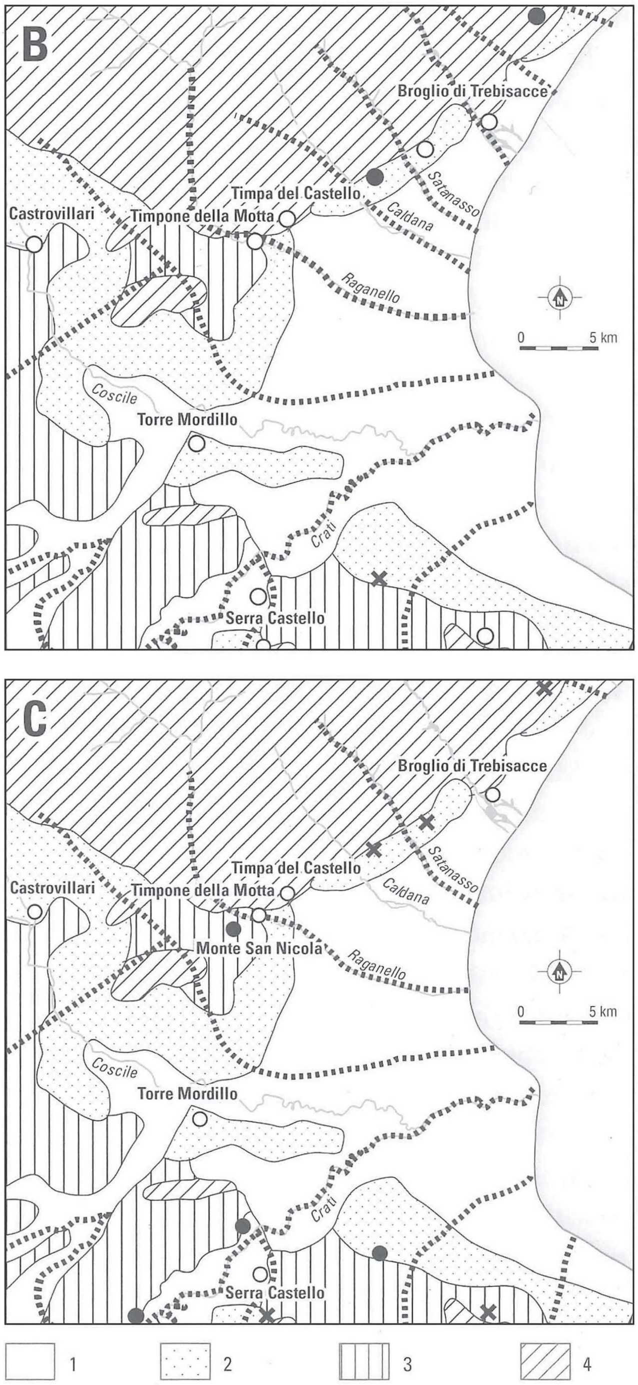

Figure 17.7. Peroni's models for the Recent and Final Bronze Age settlement in the Sibaritide (after Peroni and Trucco 1994, figs. 229 and 232). A significant reduction in the number of tribal territories takes place in the northern half of the area by the end of the Recent Bronze Age. Closed circle: new site; open circle: site continuing from previous period; cross: abandoned site.

speculate, we believe it is worthwhile to build location models in which the accessibility and natural resources of the landscape in the Mid-Holocene play a major role. While we believe that Peroni himself would have had no problem abandoning any model or theory if the evidence were against it, the fact that more than one generation of Italian archaeologists has been raised on his unopposed models has caused them to assume an air of infallibility. The simple fact that, in addition to the hilltops in the foothill zone identified as central places by Peroni himself, nearly all the other available hilltops in our study area have now been proved to hold significant archaeological sites strongly argues for the revision of his model and for a renewed focus on pre- and protohistoric land use and settlement in the uplands and mountains.

A final issue to be addressed here is the implications of our research for sustainable heritage management and tourism in the region. In mountainous areas such as ours, the pressures of agriculture and construction tend to be much less than in coastal plains and river valleys, so these threats to the archaeological record are generally less urgent and overwhelming to heritage managers. In the absence of any monumental archaeological remains, however, heritage managers and local authorities are struggling to make any significant use of archaeology in cultural tourism. We believe, however, that there are good possibilities to develop sustainable heritage tourism by combining natural and cultural heritage resources in one package: tourist trails (both day trips and multistage hiking trails) could be designed to make use of the stunning natural beauty, plant and animal life, and visible remains of preindustrial lifeways such as threshing floors and drove roads, while at the same time informing about the invisible historical and archaeological dimensions of the landscape.

Acknowledgments

The Hidden Landscapes and Rural Life research programs were fully funded by the Netherlands National Foundation for Scientific Research NWO (grant nos. 276-61-002 and 360-61-010). Permissions for invasive fieldwork were arranged with the Soprintendenza per i beni archeologici della Calabria and individual landowners, with the kind help of the mayors and municipal staff of the *comuni* of Civita, Cerchiara di Calabria, San Lorenzo Bellizzi, and Francavilla Marittima.

Note

1. During production of this volume, relevant results and discussions have also been published elsewhere (De Neef et al. 2018; Sevink et al. 2020; Van Leusen and De Neef 2018). These publications extend and reinforce the arguments put forth here.

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