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GIS MAPPING OF THE ARCHAEOLOGICAL SITES IN THE MOLISE REGION (ITALY)

1. Introduction

The Molise Region is in the northern sector of southern Italy and it is spread from the Apennine chain to the Adriatic coast. This area experienced human presence since prehistoric times, as it is testified by its rich archaeological and architectural heritage (De Benedittis 1979; Coarelli, La Regina 1984)[1].

The oldest human presence in Molise is represented by the Upper Palaeolithic settlement of Isernia La Pineta, dated back at about 600.000 years BP (Coltorti *et al.* 1982, 2005 and references; Peretto 2013). The site represents a unique example in the history of the human frequentation in Europe for the presence of a considerable number of paleontological finds associated to lithic artefacts. Other more recent and relevant prehistoric sites have been also found in the municipalities of Pescopennataro (Rio Verde site), Carovilli (Piana S. Mauro and Fonte Curello sites), Rocchetta a Volturno (Grotta Reali site), Civitanova del Sannio (Morricone del Pesco site), Cerro al Volturno (Monte S. Croce site) and in the Biferno Valley (Barker 1995; Grimaldi 2005; Minelli, Peretto 2006; Rufo *et al.* 2010; Rufo 2011).

After prehistoric times, the most relevant archaeological findings can be chronologically dated to the Samnite Age (ranging from the V to the I century BC). In this period, several villages and about thirty Samnite fortifications were built, the latter being in correspondence to some of the highest topographic peaks of the Molise Region. These fortifications were built with the technique of *opera poligonalis* and were connected to each other through transhumance routes, the so called *tratturi* (AA.VV. 1980; Pellicano 2007; Meini, Di Felice, Petrella 2018; Minotti *et al.* 2018). The remains of Pietrabbondante (Fig. 1 A) (Capini, De Benedittis 2000; La Regina 2014), the small temples of Vastogirardi (Morel 1984; Pagano, Ceccarelli, D'Andrea 2005) and S. Giovanni in Galdo (Stek 2010), the fortifications of Terravecchia di Sepino (Matteini Chiari, Gaggiotti, De Benedettis 1984) and Monte Vairano (De Benedittis 1974, 1988, 2004) are amazing examples of the Samnites' culture.

The Samnite Age ceased with the arrive of the Romans, who dominated the entire region in the period between the I century BC and the V century AD.

[1] For this kind of study, the bibliographic research just took into account the most relevant and general papers and volumes published for each archaeological site, without considering the large amount of papers regarding local and specific investigations.

Roman findings are evenly widespread in Molise, and the city of *Saepinum* (Fig. 1 B) is considered the symbol of the history of Roman civilization. *Saepinum* was a Samnite commercial forum and service centre, then it became a Roman *municipium* and, later, it was transformed into a medieval and modern rural village (Gaggiotti, Matteini Chiari 1979; De Benedittis 1981; Ceglia 2015). Other examples of important Roman towns are *Aesernia* (Fig. 1 C) (Catalano, Paone, Terzani 2001; Terzani 2005; Stek *et al.* 2015; Amato *et al.* 2016), *Venafrum* (Capini 1990; Conventi 2004; Mataluna 2012), *Bovianum* (De Benedittis 1977; Amato *et al.* 2013 and references) and *Larinum* (De Tata 1990; Di Niro 1991; Caliò, Lepone, Lippolis 2011; Lippolis *et al.* 2015).

Medieval findings include, among all, the monastery of San Vincenzo al Volturno (Fig. 1 D) (Marazzi, Delogu 1996; Paone *et al.* 2004) and the necropolis of Campochiaro (Ceglia 1988, 2000 and references; Ceglia, Marchetta 2012), both testifying the early Medieval phase. The cathedrals of Trivento, Guardialfiera, Termoli and Larino and the castles of Civitacampomarano, Roccamandolfi, Cerro al Volturno, Termoli, Venafro, Gambatesa and Campobasso are also noteworthy evidences of Medieval Age, whose stories and transformations represent important pages of the Molise history (Marino, Carnevale, Pesino 2003; Di Rocco 2009).

In the last years, both the Superintendency for the Archaeological Heritage of the Molise Region and different national and international academic teams carried out numerous archaeological excavations and explorations in the entire Molise Region. As a result, some archaeological contexts can now rely on a rich literature and updated results, whereas other areas still require a detailed overall analysis and, especially, a systematic study. Moreover, many archaeological materials derived from emergency excavations during either public or private works are unstudied. In addition, there is a lack of an organic and complete "reading" of all the known data and the concrete need to acquire additional information on areas that have never been investigated to date. In order to standardize and store the myriad of archaeological data from the Molise Region, from 2013 until present, a fruitful collaboration between the University of Molise, the Regional Directorate of Cultural Heritage of Molise and the Administrative Division of Molise has led to undertake significant actions of intervention for the knowledge and the preservation of the ancient landscape, according to the following workflow:

– Census of all known archaeological findings of the Molise Region through bibliographic analysis.
– Implementation, for the first time, of a detailed and updated archaeological database.
– Integration of this database into a geographical information system by using the software ArcMap 10.1 to apply spatial analysis techniques and to derive thematic maps.

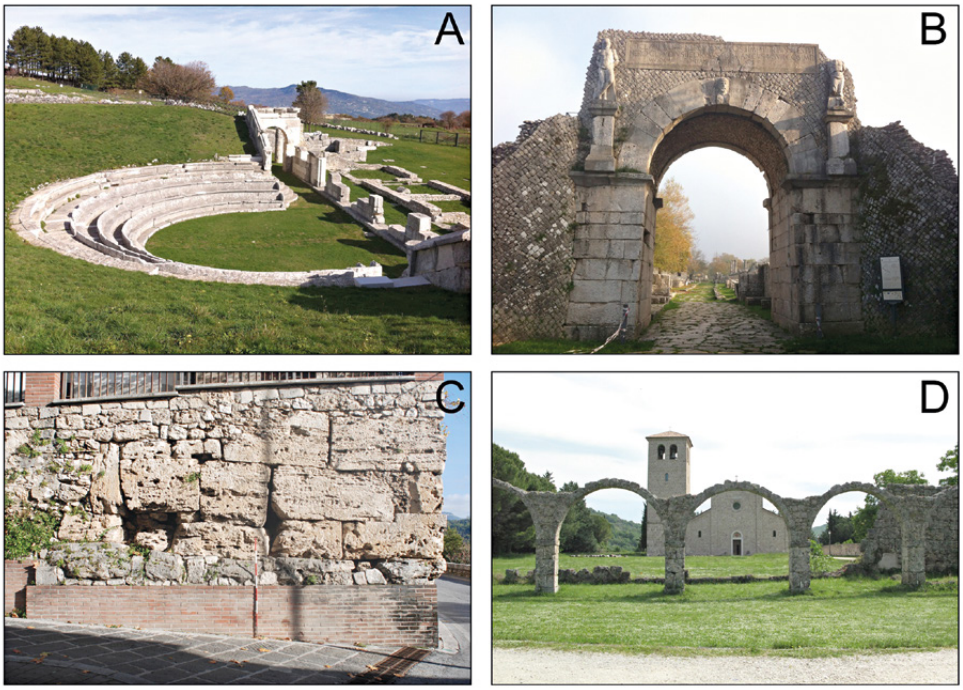

Fig. 1 – Some of the most relevant archaeological sites in the Molise Region. A) Remains of Pietrabbondante; B) The Roman town of *Sepinum*; C) Roman walls of *Aesernia*; D) Monastery of San Vincenzo al Volturno.

– Generation of an updated computerized map of the archaeological evidences of the study area as a product useful for the promotion of the archaeological heritage and a tool for more suitable urban planning and project designs.

2. Material and methods

The work has been based on separate phases of investigation that include the collection of archaeological data, the collection of topographic data, the GIS database creation, and the GIS spatial analysis.

2.1 *Collection of archaeological data*

The collection of a large amount of data about archaeological sites within the Molise Region has been carried out through a two steps research. In a first phase of investigation, published detail scale archaeological researches carried out by both local public authorities and single scientists have been analysed. The archaeological maps realized in the municipalities of Venafro (Quilici,

Quilici Gigli 2011), Riccia, Oratino, Castropignano (De Benedittis 2008), Bonefro, Casacalenda, Castellino del Biferno, Colletorto, Montelongo, Montorio dei Frentani, Morrone del Sannio, Provvidenti, Ripabottoni, Rotello, S. Croce di Magliano, S. Giuliano di Puglia, Ururi (Di Niro, Santone, Santoro 2010), Isernia (Stek *et al.* 2015; Amato *et al.* 2016), Belmonte del Sannio, Agnone, Capracotta, Vastogirardi, San Pietro Avellana (Sardella 2011) and Trivento (Santorelli 2013) are good examples of exhaustive known data related to detail scale archaeological surveys. The monographs of the hill-forts of the Samnites (Oakley 1995) and of the Palaeolithic sites in Molise (Grimaldi 2005) gave also important overviews on the distribution of archaeological sites during specific time span. The Atlas of Cultural Emergencies of Molise (Zilli 2010), edited by University of Molise, has been also analysed; the latter represents, up to now, the unique attempt to take a census of archaeological sites in the Molise Region, resulting in the collection of 228 sites (124 classical sites, 73 industrial archaeological remnants, 31 sites belonging to various categories).

The combination of all the previously mentioned researches led us to gather, in 2015, an unprecedented collection of archaeological data in the frame of the project "Conoscere per Competere" supported by the Administrative Division of Molise. This project resulted in the collection of 905 archaeological sites in the entire region. In addition, 977 archaeological data collected by Barker (1995) in the Biferno valley have been also added to our database. As a result, 1882 archaeological sites have been collected during this first step of the research.

In a second phase of investigation, the archives of the Archaeological Superintendence have been analysed thanks to the collaboration with the Regional Directorate of Cultural Heritage of Molise. Consequently, new and inedited data from archaeological impact assessment reports (related to public or private works) and database regarding excavations, finds, monuments and historical buildings have been acquired. The combination of these two consecutive phases of investigation led us to collect 3111 archaeological sites within the entire Molise Region.

2.2 *Collection of topographic data*

The collection of topographic data includes topographic maps both at scale 1:5000 (Technical Map of the Molise Region) and 1:25.000 (I.G.M. topographic maps) made available by the technical offices of the Molise Region. In addition, a 40 m DTM of the Molise Region has been used.

2.3 *GIS database creation*

All the collected archaeological sites have been listed in a point shapefile through the software ArcGIS 10.1 and then plotted on the previously

mentioned topographic maps and on the 40 m Molise DTM. The point shapefile, named "archaeological sites", includes several fields that have been introduced to provide a complete and accurate description of every single site. Moreover, fields have been named as follows (field type is in parentheses):

– *Code* (string, length 10) that includes three letters derived from the name of the municipality where the site is located followed by a progressive number;
– *Province* (string, length 20), which is the administrative Province (either Isernia or Campobasso) where archaeological sites fall within;
– *Municipality* (string, length 50), the name of the municipality where the site is located;
– *Locality* (string, length 50) and *Address* (string, length 50), that provide further information about site location;
– *Reference system* (string, length 20), that is the reference system used to geolocate archaeological sites (UTM-WGS84);
– *Z coord* (double, precision 0, scale 0), that is the elevation above sea level of every site;
– *Point X* (double, precision 0, scale 0) and *Point Y* (double, precision 0, scale 0) that represent longitude and latitude of the plotted sites respectively;
– *Cartography* (string, length 20) that is the type of topographic map used to locate the archaeological site (either 1:5000 or 1:25.000 scale topographic maps);
– *Number cart.* (string, length 20) that is the number of the used topographic map;
– *Georeferencing method* (string, length 50), a brief description of the method used to locate every archaeological site, either by web research, satellite images, topographic maps, field work or aerial photos;
– *Georeference quality* (string, length 20), which includes three possibilities, approximate, good and certain, based on how much reliable the site location is;
– *Research method* (string, length 50), the research method used to recognize every single site, including web research, bibliographic research and field work;
– *Description* (string, length 254), a first, brief description of the archaeological sites, which have been subdivided in 19 classes;
– *Definition* (string, length 254) a brief, more detailed description of the sites;
– *Description_1* to *Description_5* (string, length 254), five fields used to provide a very complete and detailed description of every archaeological site;
– *Age_1* (string, length 254), a precise age of every site;
– *Age_2* (string, length 254), ages grouped in the 11 age ranges proposed by Barker (1995): Palaeolithic (older than 4500 BC), Neolithic (4500 BC-3000 BC), Eneolithic (3000 BC-2000 BC), Bronze Age (2000 BC-1000 BC), Iron Age (1000 BC-500 BC), Samnite Age (500 BC-80 BC), Roman Age (80 BC-600 BC), Medieval Age (600 AD-1500 AD), Post-medieval Age (1500 AD-1800 AD), Recent Age (1800 AD-present).

– *References* (string, length 254), both paper and web references where every single archaeological site has been derived from.

2.4 *GIS spatial analysis*

All the 3111 listed archaeological sites have been then analysed in a GIS software to derive information about their spatial distribution. Moreover, in order to quantify the areal distribution of the mapped sites, we performed a density analysis trough the "Kernel Density" method of ArcGIS 10.1 by setting the following parameters (unit measure is m): output cell size = 284 (which is the default value); search radius = 1000; area units = square kilometres; output values as = densities; method = planar.

Then, site distribution during different ages has been analysed by grouping all the archaeological sites in the age classes listed in the *Age_2* field of the "archaeological site" shapefile. Archaeological sites grouped for age have been then plotted on the 40 m Molise DTM.

Furthermore, site elevation (expressed in meters above sea level) respect the site age has been examined to verify a possible trend in sites distribution through time. In this case, we have selected all archaeological sites with the same age and exported them in a new point shapefile. We have then created a box-plot graph through the "create graph" option within the table of attribute, using site elevation as the value field.

Finally, the archaeological sites spatial distribution and its relationship with some natural (rivers) and man-made (*tratturi*) features of the landscape has been investigated. We created two polyline shapefiles for both the features and we applied a buffer of 1000 m to both the "river" and the "*tratturi*" shapefile. We have then clipped the "archaeological site" shapefile with this buffer and we have extracted all the sites located within 1000 m from both the river and the *tratturi* features.

3. Results

The spatial distribution of all the 3111 mapped archaeological sites of the Molise Region is reported in Fig. 2. Moreover, archaeological sites have been plotted on a 40 m DTM of the Molise Region together with a polyline shapefile that includes the borders of all the municipalities of the Molise Region. Sites distribution enhances the occurrence of three main clusters located, respectively, in the north-eastern, central and south-western sectors of the region. The north-eastern cluster is NE-SW oriented and corresponds with the Biferno river valley, being located between the municipalities of Petrella Tifernina and Lucito, to the SW, and Termoli and Campomarino to the NE. The central cluster is roughly N-S oriented, being limited by the municipality of Castropignano and Torella del Sannio to the N and of Bojano, San Polo

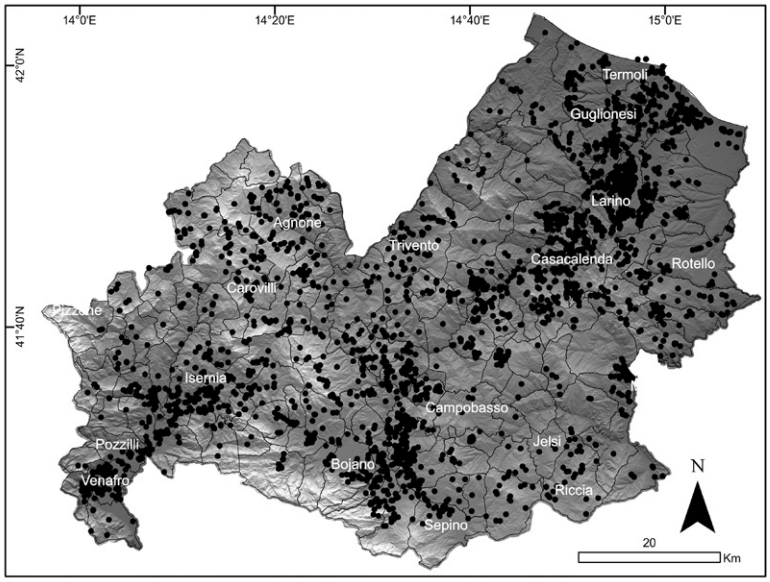

Fig. 2 – Spatial distribution of the mapped archaeological sites, plotted on a 40 m DTM of the Molise Region. Black dots indicate the archaeological sites whereas black lines indicate the borders of all the municipalities of the Molise Region.

Matese and Campochiaro to the S. The SW cluster is NE-SW oriented and it is limited by the town of Isernia to the NE and the municipality of Venafro to the SW.

Among the entire Molise Region, the Larino municipality has the largest number of archaeological sites within its territory, with 277 mapped sites (Fig. 3a). It is followed by Casacalenda (186 sites, Fig. 3b), Isernia (167 sites, Fig. 4a), Guglionesi (162 sites, Fig. 4b), Trivento (106 sites, Fig. 5a) and Campomarino (102 sites, Fig. 5b), that are the only municipalities with more than 100 archaeological sites.

Other municipalities with a relevant number of archaeological sites are Venafro (98 sites), Agnone (66 sites), Termoli (65 sites), Castropignano (61 sites), Baranello (53 sites), Macchia Valfortore (49 sites), Colle D'Anchise and Guardialfiera (46 sites), Vinchiaturo (44 sites), Morrone del Sannio (43 sites), San Martino in Pensilis (38 sites), Petrella Tifernina (36 sites), Colli al Volturno and Oratino (35 sites), and Bojano and Pietrabbondante (30 sites). The remaining municipalities have a few archaeological sites never exceeding 30. It is worthy to note that Campobasso, that is the administrative centre of the Molise Region and the most populated town of the entire region (49320 inhabitants), is characterized by the occurrence of only 6 archaeological sites.

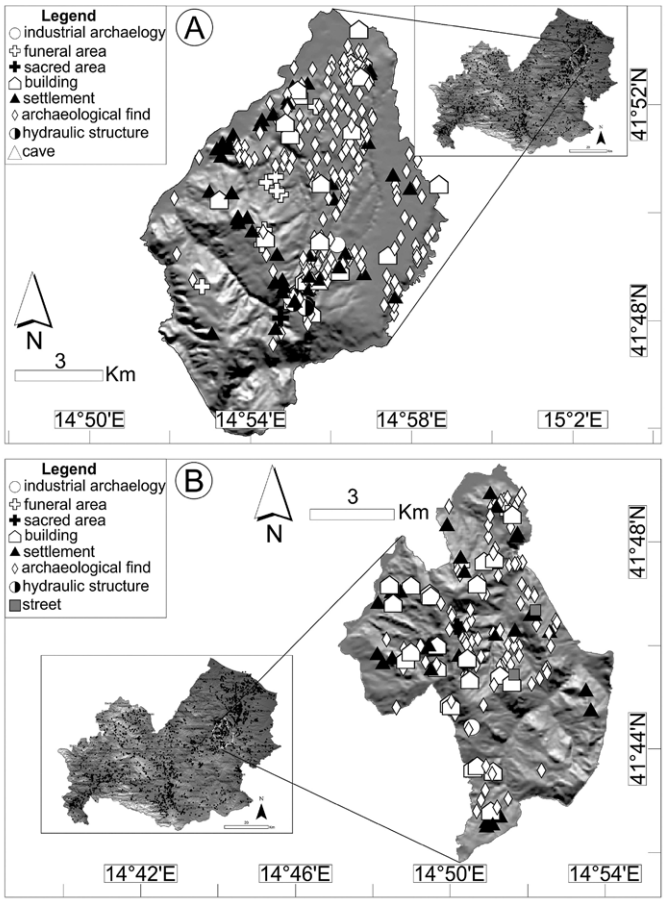

Fig. 3 – Map of the archaeological sites for all the municipalities with more than 100 mapped sites. A = Larino; B = Casacalenda. Archaeological sites have been classified according to site typology of the "description" field of the "archaeological site" shapefiles (see Material and Methods section for detail).

The Kernel density method allows us to quantify the number of archaeological sites for square-kilometre (Fig. 6). The analysis confirms the occurrence of the above described three main clusters with the highest density value occurring around Isernia, where a value of about 82 sites/km² has been obtained. In addition, maximum site density values of 21 sites/km² and 12 sites/km² have been obtained, respectively, for the NE-SW trending cluster (that corresponds to the Biferno river valley) and for the N-S trending cluster located in the central sector of the Molise Region. Furthermore, the analysis

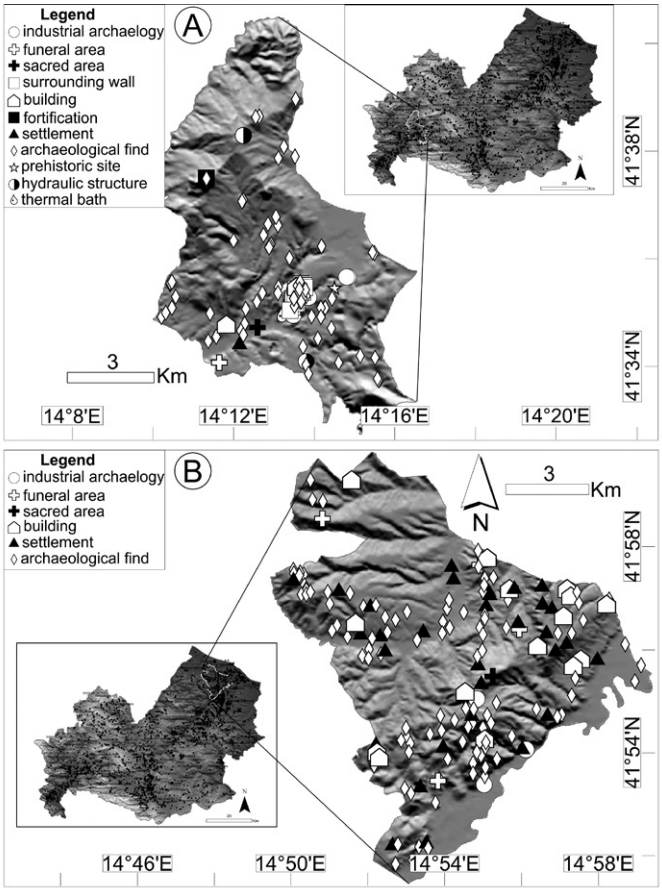

Fig. 4 – Map of the archaeological sites for all the municipalities with more than 100 mapped sites. A = Isernia; B = Guglionesi. Archaeological sites have been classified according to site typology of the "description" field of the "archaeological site" shapefiles (see Material and Methods section for detail).

enhances the occurrence of other local high-density values. The latter are in the central-northern and in the eastern sectors of the Molise Region, corresponding to the municipalities of Trivento and Macchia Valfortore respectively. Moreover, a value of 50 sites/km² has been obtained for the Trivento cluster whereas a value of about 15 sites/km² has been obtained for the Macchia Valfortore cluster.

In Figs. 7a to 7l the chronological distribution of the mapped archaeological sites is reported. It is worth to note that 1679 archaeological sites

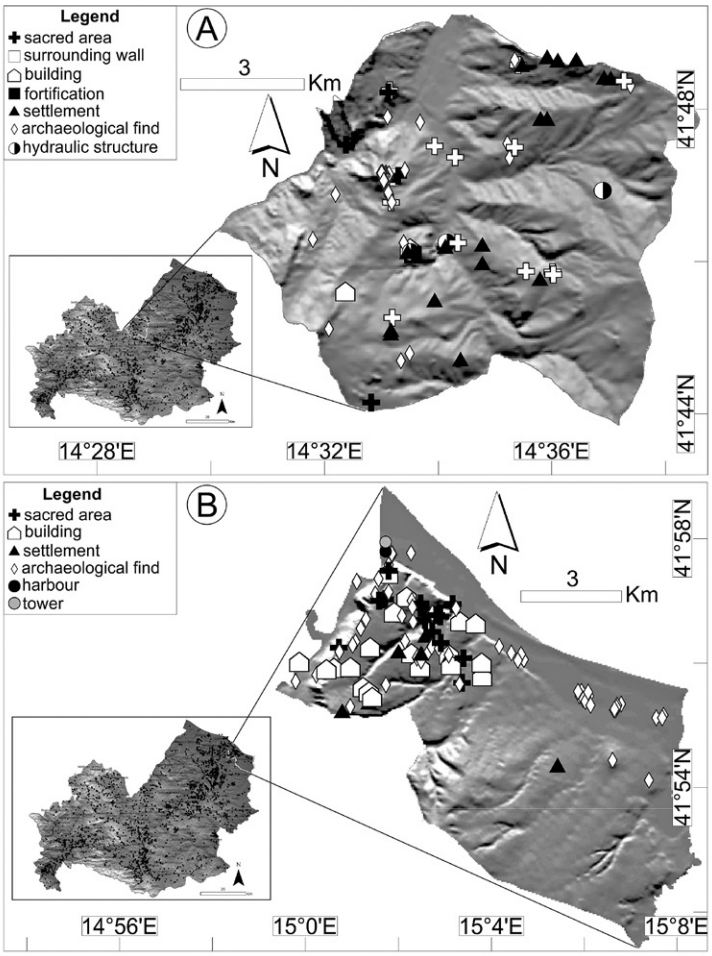

Fig. 5 – Map of the archaeological sites for all the municipalities with more than 100 mapped sites. A = Trivento; B = Campomarino. Archaeological sites have been classified according to site typology of the "description" field of the "archaeological site" shapefiles (see Material and Methods section for detail).

(54% of the total) have been either occupied for long time or re-occupied after a period of abandonment, so they will appear in more than one map. During the Palaeolithic (Fig. 7a) archaeological sites were mainly located in the north-eastern (e.g., the lower Biferno river valley) and in the south-western (e.g. the Volturno river valley and the Venafro plain) sectors of the Molise Region, with sparse sporadic sites in the central portion of the Region.

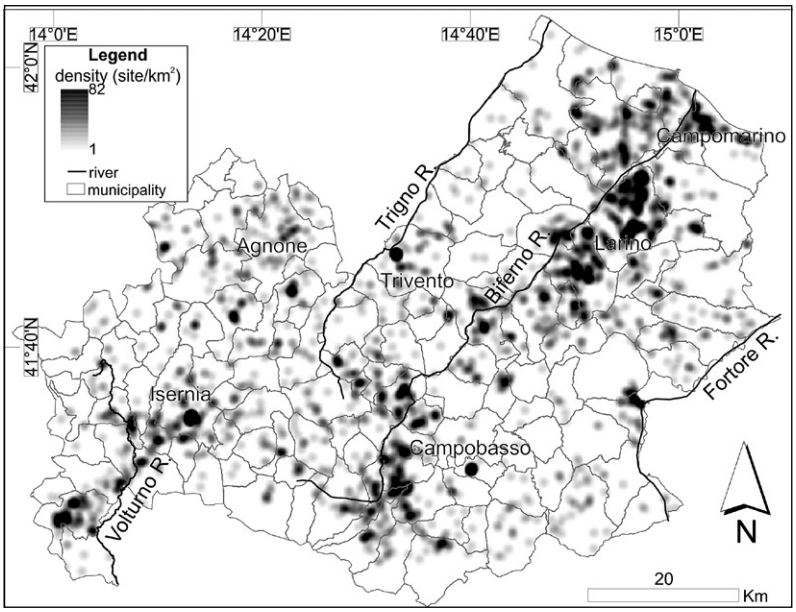

Fig. 6 – Density map of the archaeological sites of the Molise Region.

The same areas resulted to be occupied also during the Neolithic, together with diffuse findings in the central portion of the Molise Region and in the medium Biferno river valley (Fig. 7b). During the Eneolithic (Fig. 7c), the Bronze Age (Fig. 7d) and the Iron Age (Fig. 7e), archaeological sites have been recognized only in the Biferno river valley and in the central portion of the Region. On the opposite, they were completely lacking in the western portion of the Region, with the only exception of few sporadic findings and of a sites cluster in the northern sector of the study area during the Iron Age. Archaeological sites of Samnite Age (Fig. 7f) are widespread all over the entire study area, with only some areas in the central portion of the Region with some Samnite finds.

The same occurred during the Roman time (Fig. 7g), with Roman finds distributed in the entire Region and mirroring the three main clusters recognized in Fig. 1. Medieval finds are spread in the entire study area, with two main clusters in the Biferno river valley and in the central portion of the Region (Fig. 7h). On the opposite, Post-medieval archaeological sites have been recognized only in the Biferno valley and in the central portion of the Region, being completely lacking in the rest of the Region (Fig. 7i). Recent archaeological finds (Fig. 7j) are very few with a random distribution within the study area. Finally, 372 sites (12% of the total, Fig. 7k) have an uncertain age and they have been mainly recognized in the central-western portion of the Molise Region.

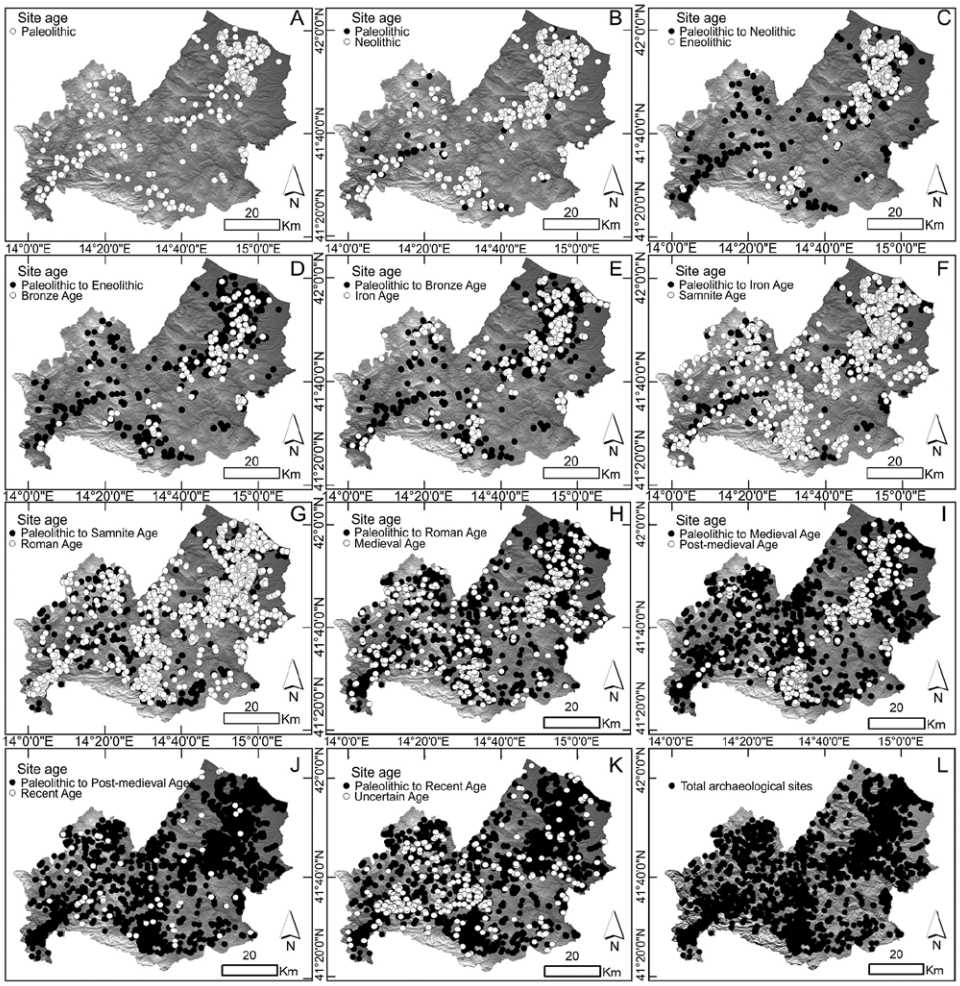

Fig. 7 – Chronological distribution of the archaeological sites in the Molise Region. White dots indicates archaeological sites of a precise age whereas black dots indicate archaeological sites older than the considered age.

We have also analysed site distribution as a function of the site elevation (expressed in meters above sea level) to verify if either sites distribution moved towards higher or lower elevations during time or if any correlation is present. In Fig. 8 we report a box plot of the site elevation as a function of the site age. It is possible to note that the minimum site elevation is almost constant during different period. The median values (dotted line within each box plot of Fig. 8) highlight the occurrence of an increasing trend from the

Palaeolithic (median value around 190 m a.s.l.) to the Medieval time (median value around 530 m a.s.l.), with a local minimum during the Eneolithic Age (median value around 190 m a.s.l.). A decreasing trend of the site elevation has been recognized from the Medieval to the Recent Ages (median value around 400 m a.s.l.). The same trend has been recognized for the maximum elevations with values ranging from about 1050 m a.s.l. (during both the Paleolithic and the Neolithic Ages) to about 1300 m a.s.l. (during the Medieval Age), with a local minimum during the Eneolithic Age (maximum elevation around 880 m a.s.l.) and a local maximum during the Samnite Age (maximum elevation close to 1400 m a.s.l.).

The typology of archaeological finds is shown in Fig. 9. Type groups are those included in the "description" field of the "archaeological site" shapefiles described in the material and methods section. Moreover, the most diffuse site type is the archaeological finds group that includes 57,1% of the total mapped sites followed by settlements (12,9%) and buildings (9,8%). Sacred areas represent 5,8% of the total sites whereas buildings dealing with industrial archaeology and funeral areas correspond to 2,6% of the total. Surrounding walls include 2,4% of the total sites, being followed by castles (1,9%), fortifications (1,4%) and hydraulic structures (1,3%). Streets and towers are less diffuse, both representing 0,6% of the total mapped areas. Moreover, the "other" type group includes archaeological sites of distinct types (such as caves, cave paintings, submarine archaeological finds and thermal baths) that, collectively, do not exceed 1% of the total mapped sites.

Finally, we have analysed a possible correlation between site location and some either man-made (*tratturi*) or natural (river) features of the landscape (Fig. 10). Archaeological sites located within 1000 m from the *tratturi* are reported in Fig. 10a. As *tratturi* appeared during the V century BC (Mastronardi 2004), the archaeological sites from the Palaeolithic to the Iron Age have been excluded from this analysis. This buffer includes 530 sites (19% of the 2786 sites ranging in age from the Samnite to the Recent time), also counting 58 sites of uncertain age. All the site typologies listed in Fig. 9 fall within this buffer. In addition, archaeological sites located within 1000 m from main rivers are reported in Fig. 10b. It includes 399 sites (13% of the total) whose ages range from the Palaeolithic to the Recent time, also including 45 sites of uncertain age. Again, all the site typologies listed in Fig. 9 fall within this buffer.

4. Discussion and conclusion

The use of GIS software and database has become widespread practice in international archaeology allowing to store and to analyse a large amount of data (Djindjian 1998; Gillings, Wheatley 2003; Chapman 2006).

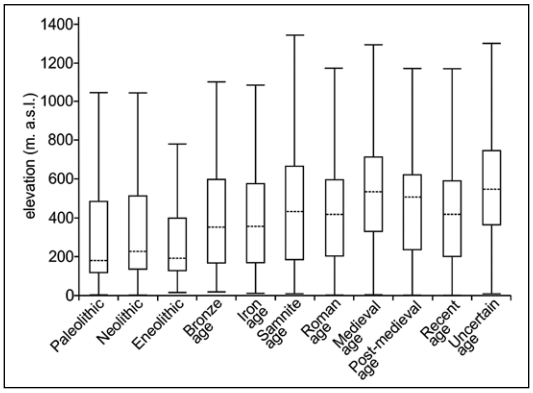

Fig. 8 – Box plot of the site elevation (m a.s.l.) as a function of site age.

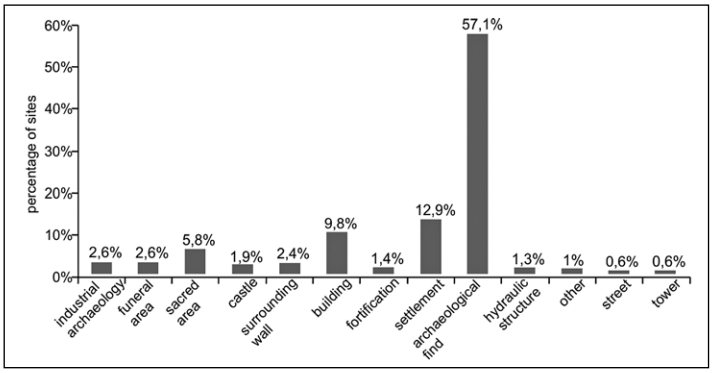

Fig. 9 – Percentage of archaeological site typology respect to the total mapped sites.

Moreover, this study provides a powerful tool to analyse human distribution in the Molise Region. It represents, up to now, the largest, more detailed and well-organized GIS database of archaeological finds within the study area.

Some relevant features could be derived by the GIS analysis described in the previous sections. First, 3111 archaeological sites represent an unexpected and relevant number of mapped sites, widespread in the entire region, with three main clusters located along the Biferno river valley, in the central and in the south-western sectors of the region, respectively. Moreover, the highest densities (expressed as site/km^2) have been found in the south-western cluster. Here, the density value of 82 archaeological sites/km^2 has been recognized in

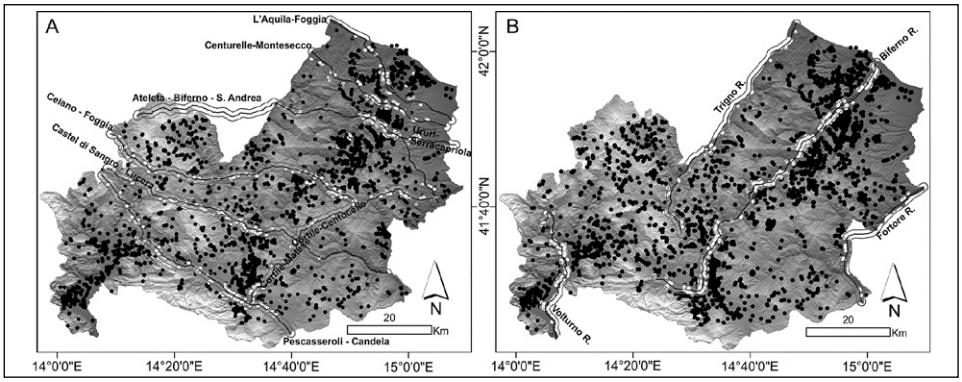

Fig. 10 – a) White dots indicate archaeological sites located within 1000 m from the "tratturi" (black, continuous line); b) White dots indicate archaeological sites located within 1000 m from the main rivers. In both figures, black dots indicate archaeological sites far more than 1000 m from the applied buffers.

correspondence of the historical centre of Isernia. This high-density value is due to the detailed archaeological survey carried out by Amato *et al.* (2016) that has been included in our database. Most of the mapped archaeological sites have been classified as archaeological finds, whereas the most diffuse site typologies, that reflect the occurrence of a well-organized human society, are settlements, buildings and sacred areas.

The chronological and the elevation (expressed as meter above sea level) distribution of archaeological sites enhance that, during the Palaeolithic to the Iron Age time span, archaeological sites were clustered along the Biferno valley and in the central sector of the Molise Region. In addition, they were located at the median elevation usually not exceeding 400 m a.s.l. probably because these areas were very close to the river network that represented the main water source at that time. During the Samnite and Roman ages, archaeological sites are almost homogeneously distributed in the entire region. In this period, and during the Samnite Age, humans started moving uphill, as it is testified by the occurrence of several Samnite fortification located on top of many ridges. This is due to the necessity to protect human settlements from foreign invasion also considering that the highest topographic peaks led the view to reach far distances. This tendency to protect human settlements is still present during Medieval time, when foreign attacks were common. For these reasons, many castles were built on the top of the ridges during Medieval to Post-medieval times.

It must be highlighted that the archaeological sites GIS database could be continuously upgraded with the inclusion of new data related to the collection of new and unknown archaeological sites. It is worthy to note that, anyway,

the documentary research has pointed out some critical aspects. During the analysis of the Superintendence for Archaeological Heritage archives, it was impossible to trace the complete documentation related either to archaeological surveys carried out during the period 1970-1990 or to excavations in course of publication. In addition, there is an anomalous lack of information on some archaeological contexts, as evidenced by the few archaeological sites mapped in the municipality of Campobasso. Furthermore, archaeological sites are missing in other areas because of the lack of interest of the scientific community to carry on a systematic study. In other cases, the geomorphological and the environmental features of the territory were not favourable to the establishment of human settlements.

Notwithstanding the limits of data collection, the product of this research represents an exhaustive census of archaeological sites within the Molise Region and the GIS analysis carried out within this study allowed us to recognize some relevant features of human distribution through space and time. This GIS database represents, up to now, the most powerful tool to promote the knowledge of the archaeological heritage of the Molise Region worldwide and to address urban planning in the next years.

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ABSTRACT

The Molise Region, on the Adriatic coast of southern Italy, experienced human presence since prehistoric times. Site distribution is not homogeneous throughout the region and a comprehensive census of all known archaeological sites has never been performed. In this paper, we present the results of a three-year project for the GIS mapping and database creation for all the known archaeological sites of the Molise Region. As a result, 3111 archaeological sites have been mapped, stored in a GIS database and then analysed through Spatial Analyst tools. Most of the mapped sites have been classified as area of archaeological finds (57.1% of the total sites), followed by settlements (12.9%) and buildings (9.8%). Site distribution is mainly clustered along the Biferno river valley, in the central and in the south-western sectors of the Molise Region. The largest human occupation of the region occurred during the Samnite and Roman ages. Archaeological sites are also located at different elevation a.s.l., with a general increasing trend of site elevation through time. This GIS database is, up to now, the most complete census of archaeological sites in the study area, thus representing a powerful tool to promote the archaeological heritage of the Molise Region and to address urban planning.