

GIS for the cataloging and enhancement of "specchie" located in the Upper Salento in Apulia Region (Southern Italy)

Maurizio Delli Santi¹

¹ *ISPC-CNR, Istituto di Scienze del Patrimonio Culturale – Consiglio Nazionale delle Ricerche, Campus Universitario Prov.le Lecce-Monteroni, 73100 Lecce, Tel. 0832.422228, Fax 0832.422225, E-mail: maurizio.dellisanti@cnr.it*

Abstract – A GIS (Geographical Information System) was developed for the management information related to make decisions about the restoration of some important monuments named *specchie*. The first aim of an informative system is to make it suitable in easy way to the operators which take every useful information. However, this tool requires, for its application, practice and knowledge about narrow fields, because it has to monitor spatial – physical situations in according with different “angle-shots”: so we shouldn’t leave historical research and archaeological surveys, chemical-physical both for knowing the degradation state, and also historic-artistic and architectural research.

I. INTRODUCTION

The use of GIS in the science and technology field for the conservation of Cultural Heritage is a relatively recent, nevertheless there has been in short time a large development application in this area. The reason is due substantially to the multidisciplinary nature of this research area that makes essential the use of a tool useful to correlate and integrate the various information and results from the various cognitive analysis: from the historical research to the archaeological prospecting results; from the chemical and physical analyzes aimed at understanding the conservation state to the historical-artistic and architectural study. The G.I.S. for the systematic cataloging of "specchie" was organized in a way that the common characteristics of the stone artefacts can be detected immediately: in this context was drawn up appropriate tables, to link

dynamically to the artifacts and to vector themes under investigation.

II. SPECCHIE LOCATED IN THE UPPER SALENTO

The author Neglia in 1970 published an interesting and particular study on all “*specchie*” present in Apulia. By the term "*specchia*" is currently indicated in Apulia any stones accumulation. The author Neglia notes that around the centers of Messapic origin, as Oria and Ceglie, there are rings of *specchie* which he interprets as an additional defensive system along the megalithic walls of the cities. To the north of Manduria and precisely at Km 2.3 of the road-Francavilla Manduria near the roadside is possible to see the so-called *Specchione* (Figure 1). The author Neglia includes this artifact among the constituents the *specchie* of the *circum-oritana* crown, as, the *specchia* d'Oria and the *specchia* Schiavoni. Today the *specchia* looks like a stony hill and covered with shrubs and olive tree.

The *specchia* Schiavoni is located close to the administrative border between Manduria and Oria and precisely at kilometer 0,120 of the East road Manduria-Oria (Figure 2). The author De Giorgi defines this *specchia* one of the most important of the Terra d'Otranto. The *specchia* d'Oria is located at 0,500 Km East from the intersection of the main road Manduria-Oria and highway construction in the so-called *Bradonica-Salentina*. It appears as an artifact of considerable size apparently built with the accumulation of earth and stones placed above a circumference of square blocks.

At east of Manduria (a village some km in the east part of Taranto), trails 5 km along the highway Taranto-Lecce and again at 0,550 Km south of the same road, there is a

small hill that emerges from the surrounding plain, the so-called *specchia Maliano*. It was demolished in 1927 for the construction of the Apulian Aqueduct siphon and today is possible to see the tower of the aqueduct.

The author Neglia also reports the presence of a *specchia* in the district *Torre Bianca piccola*, the district that he places on the road from Manduria to San Pancrazio Salentino. No trace remain related to this *specchia*, confirming the fact that De Giorgi already in 1888, makes known the destruction thereof.

So let the *specchia Specchiarica* that Neglia places to 10 km south from the town of Manduria and 1.250 km north of the Ionian coast. The area indicated by Neglia, it is possible detects the presence of a small rocky outcrop which rises on a plateau *macchioso*, this suggests that the author calls *specchia* a rocky outcrop of natural origin.

The *specchia Ripizzata*, according to Neglia, was near the homonymous farmhouse to 0,250 Km east of the 3 km of the national highway Taranto-Lecce in the stretch that from Manduria leading to San Pancrazio Salentino. It must be said, however, that the property surrounding the farmhouse *Ripizzata*, are visible today different *specchie* made of materials resulting from the clearing of fields nearby, one in particular, the largest, might be the *specchia* reported by Neglia.

Among *specchie* Salento surveyed by Neglia figure also the Monte dei Diavoli. The author identifies this *specchia* through the toponym *monte* that usually indicates a site place at altitude. It is actually a small rocky outcrop 117 meters above sea level, which is situated along the main road that leads to the resort town of Manduria - San Pietro in Bevagna until Km 6.5 and again at 0,750 Km east from that highway.

Conclude this list of *specchie* located in the territory of Manduria, with two *specchie* surveyed by Neglia but not included in the survey conducted by Marra and published in the essay of *ArcheoClub*, There are the *specchia Montebello* located in the countryside north-east of Manduria, between the districts of *Pittore* and *San Giovanni*, precisely at Km 1.3 of the northern highway Taranto-Lecce and *specchia del diavolo*, which is located in the north/north-west of Manduria after about 1.5 Km of the road that from Manduria leads to the station of Sava.



Fig. 1 – Lo Specchione.



Fig. 2 - La specchia Schiavoni.

III. THE GIS STRUCTURE

In the analysis conducted by GIS befallerth not a mere representation of geometric objects or objects: what is evident is rather the direct spatial relationships between the different elements, such the connection, the adjacency or the inclusion.

In practice, the data model, in an optical effective interaction, must provide for the insertion, in its interior, descriptive data of the individual real objects, defined as attributes of the space.

These three sets of information (geometry, topology, attributes) are then actually implemented in a GIS with a specific physical model, which today is based on relational data structures, typical of the most advanced database and hardware architectures and software type client/server, typically in local networks of computers: in this case, for the implementation and subsequent management of the data the QGis software was used. It will be necessary however to distinguish between types of data (figure 3). They are usually distinguishable into two categories:

1. spatial data;
2. attribute data, associated with the spatial data (figure 4).

Spatial data (maps, surveys, etc.) were implemented through manual digitizing, scanning and graphic files in vector format; however the attribute data were introduced via script from the keyboard of electronic processor. After the process above described, the table-attribute connected interactively to medieval monuments were properly prepared, as well as to determine, by pointing to the request for data, a class of detailed information on the site object of interest (figure 5).

IV. CONCLUSIONS

This important analysis tool (that can be constantly updated, and easy read-understand) is a composed documents that are useful not only for scientific research, but also for institutional poupose, in order to launch local or regional activities related to recover the historical building and it also an important tool from the economic point of view.

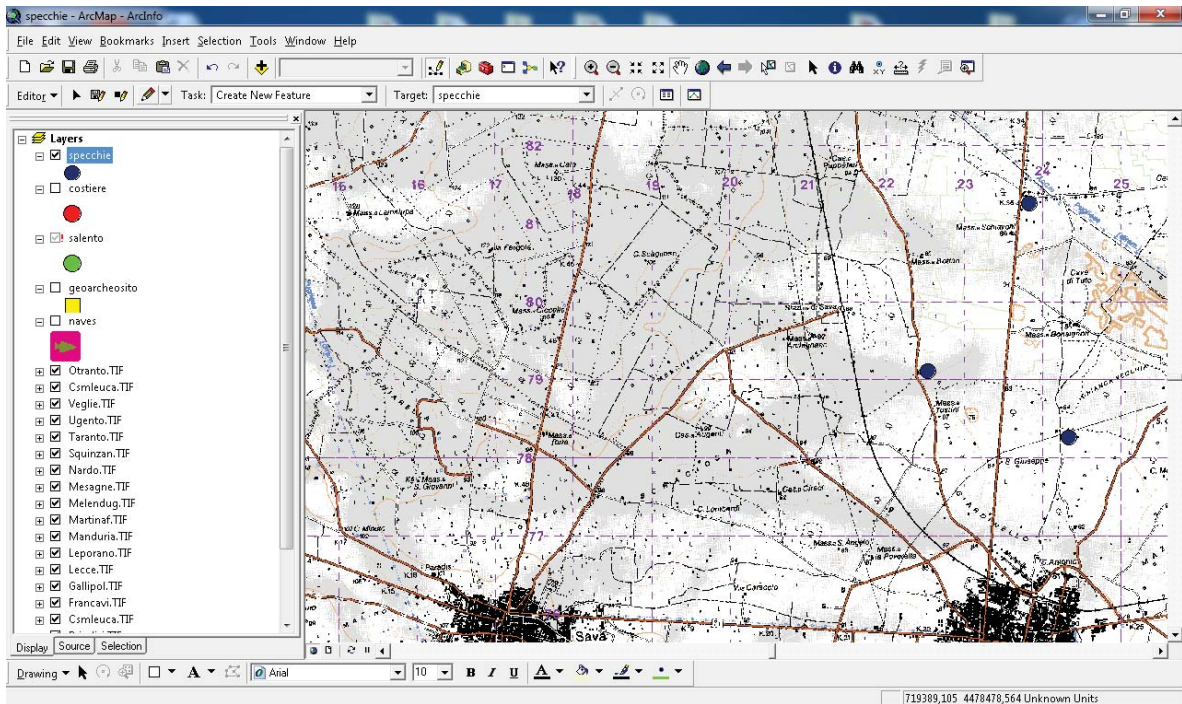


Fig. 3 Screen during a work session: it shows the type referred to geotipe specchia the punctual type.

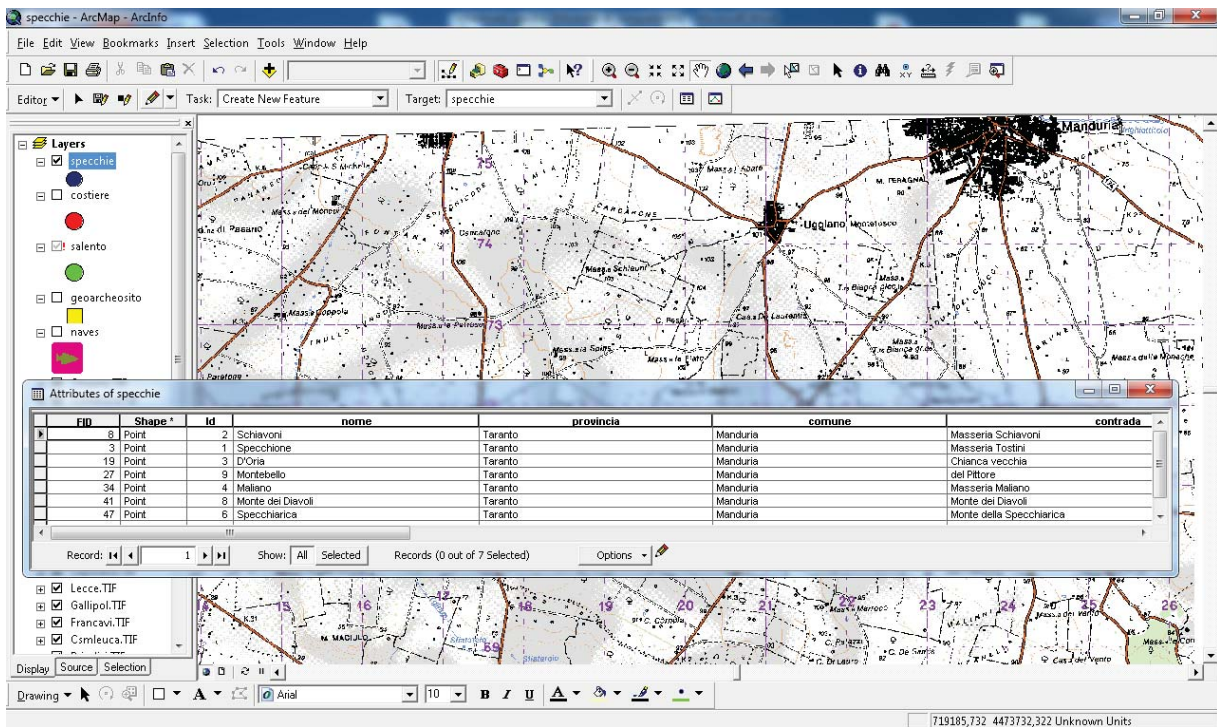


Fig. 4 Screen during a work session: evidenced the database related to the spatial data (specchie).

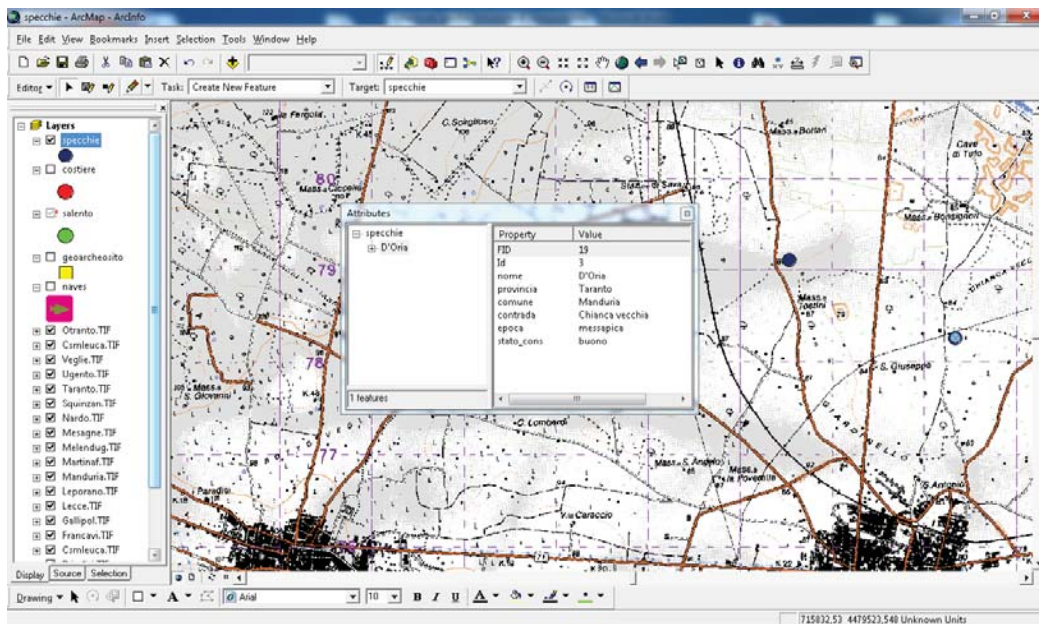


Fig. 5 Screen during a work session: evidenced the database related to the spatial data.

REFERENCES

- [1] De Giorgi C., 1905. *Le specchie in Terra d'Otranto (Note e Documenti)*, in Riv. Stor. Salent., nn. 7-8, 11-12. Lecce.
- [2] Neglia G., 1970. *Il fenomeno delle cinte di "Specchie" nella penisola salentina*, Bari.
- [3] Delli Santi M., Gizzi F.T., Masini N., Pellettieri A., Potenza M.R., Santagata P., 1999. *Il G.I.S. nella fotointerpretazione aerea di un territorio: Monte Serico in Basilicata*, in Atti della 3° Conferenza Nazionale ASITA: Informazioni Territoriali e Rischi Ambientali (Napoli, 9-12 novembre 1999), vol. II, pp. 703-708.
- [4] Marra R., 2002. *Le specchie situate nel territorio di Manduria*, in Quaderni Archeo, NN. 6-7 - 2002, Barbieri Editore, Manduria, 2002, 153-174.
- [5] Delli Santi M., 2004. *Gis per la catalogazione, gestione e valorizzazione della Rabatana di Tursi*, Ministero per i Beni e le Attività Culturali e Fondazione Sassi di Matera (a cura di Cosimo Damiano Fonseca), Altrimedia Edizioni, Matera, pp. 331-334.
- [6] Delli Santi M., 2013. *A survey of Franciscan convents in Basilicata (Italy). Creation of a GIS for knowledge, improvement and use of Cultural Heritage*, Proceedings of the 4th EARSel Workshop on "Remote Sensing for Cultural Heritage", 6 – 7 June 2013 – Matera, Italy, EARSel 2013, pp. 55-62.
- [7] Delli Santi M., 2014. *INDUSTRIAL HERITAGE IN BASILICATA (SOUTHERN ITALY)*, Proceedings of the 6th International Congress on "Science and Technology for the Safeguard of Cultural Heritage in the Mediterranean Basin", 22 - 25 October 2013 – Athens, Greece, VOL. III, Ed. VALMAR, Roma, pp. 112 – 118.