Geophysical Research Abstracts
Vol. 18, EGU2016-16507, 2016
EGU General Assembly 2016

Environmental rehabilitation of dismissed quarry areas in the Emilia Apennines (Italy) based on the exploitation of geosites

Mauro Soldati, Paola Coratza, and Vittoria Vandelli
Università di Modena e Reggio Emilia, Dipartimento di Scienze Chimiche e Geologiche, Modena, Italy (soldati@unimore.it)

The landscape modifications induced by human activity in the past 50 years, due to quarrying in the catchment of Rio della Rocca (Province of Reggio Emilia, northern Italy) and plans for its environmental rehabilitation, are illustrated.
The study area is located in the northern Apennines margin, specifically in the municipality of Castellarano, and is characterised by a great variety of abiotic environments and high biodiversity. As regards the geological aspects of the area, the main lithological outcrops consists of yellow sandstones belonging to the Epi-Ligurian Sequence (Upper Eocene - Lower Oligocene) and grey clays (Lower Pliocene - Lower Pleistocene) of the marine units of the Apennine margin. From a geomorphological viewpoint, the landscape evolution of this valley has been deeply influenced by the presence of rocks with different mechanical behaviour, gravitational and rainwash processes and, more recently, human activities.
The latter have played a fundamental role in modelling the physical landscape of the area in recent times. In the Sassuolo area (Province of Modena), very close to the study area, there is the largest tile making district in the world, which was developed during the '60s and '70s of the 20th century, partly thanks to the wide availability of clayey raw materials with suitable technological properties. Since the mid-1950s the study area has been affected by intense quarrying activities which have largely modified its environmental and, in particular, geomorphological features. In the 1970s, three clay pits and four sandstone quarries were active in the area. The clay pits were used for tile production whereas the sandstone materials were utilised in large part for the building industry.
This production scenario has radically changed during the past twenty years, with the progressive abandonment of quarries due to the introduction of ever-more restrictive environmental policies, imposing rigorous planning on mining activities.
Considering the high scenic and environmental value of the study area, multidisciplinary investigations concerning the main geological, botanical and faunistic aspects were carried out in order to plan the environmental rehabilitation of the whole valley. Specific attention was given to recognition and assessment of geosites of the area in order to exploit them within a Masterplan.
On the basis of the results attained, proposals of territorial upgrading have been developed by taking into account also appraisal measures for geotourism and recreational purposes. A series of specific proposals have been presented for the protection and use of sites of geological interest in the valley. These proposals include the design of physical protection measurements, the formulation of traditional itineraries, aiming at integrating geological-geomorphological elements and information on flora and fauna, and the appraisal of geosites as basis for fostering tourism and recreation and contributing to economic activities. The aim is to show the link between Man and the geological environment with respect to exploitation of raw materials which are particularly abundant in the area studied.