



University of Genova

**Department of Earth, Environmental
and Life Sciences**

**Doctorate Course in Earth and
Environmental Science and
Technology**

Università degli Studi di Genova



Dottorato in Scienze e Tecnologie
per l'Ambiente e il Territorio

Earth Science Curriculum

Research Theme n. 4

Studio dei geositi e biositi del Geoparco UNESCO del Beigua attraverso l'applicazione dei concetti di capitale naturale e di servizi ecosistemici

Study of the geosites and biosites of the Beigua UNESCO Geopark through the application of the concepts of natural capital and ecosystem services

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Program description

The project concerns the study of the relationships between geodiversity and biodiversity in the territory of the Beigua UNESCO Global Geopark through the application of the concepts of "natural capital" and "ecosystem services". The Beigua geopark cover an area of 39,200 hectares and for its peculiar geological variety is particularly suitable to develop advanced studies on the valorisation of both abiotic and biotic natural assets as well as to investigate their numerous reciprocal interactions.

This PhD projects is aimed at:

- developing and testing a multidisciplinary scientific model that, through replicable quantitative and qualitative geo-indicators and bio-indicators, enables the identification of intrinsic values and critical issues of geosites and biosites in the study area;
- developing a database of natural resources accompanied by an evaluation of their ecosystem services drawn up with the highest degree of comprehensiveness and interdisciplinarity and in a format that is open to progressive implementation and updating. Sites should be classified according to their scientific, environmental, cultural, social and territorial values as well as to their fragility and vulnerability.
- realizing an updated and interactive cartography of geotopes and biotopes using innovative data computerisation and communication systems.

Scientific results may have applications for the geopark and for local municipalities and companies either by improving management strategies or by promoting sustainable development policy. Moreover, the data obtained can become the scientific basis for the valorisation of a range of resources of the territory, including: natural heritage (e.g. geosites, biosites, landscapes, sites of natural beauty and ecological value); cultural heritage (e.g. monuments and historical sites); intangible heritage and traditions including gastronomy, crafts and local agricultural products.

The PhD candidate will have the opportunity to participate in international collaboration with research groups from the European Geopark Network.

Financial support

Tutor's publications (max 3)

- 1) Marescotti P., Brancucci G., Sasso G., Solimano M., Marin V., Muzio C., Salmona P. (2018). Geoheritage values and environmental issues of derelict mines: examples from the sulfide mines of Gromolo and Petronio Valleys (Eastern Liguria, Italy). MINERALS, vol. 8, p. 1-22, ISSN: 2075-163X, doi: 10.3390/min8060229.
- 2) Ambrosio E., Marescotti P., Benucci G.M.N., Cecchi G., Brancucci M., Zotti M., Mariotti M.G. (2019). Can the soil geology and chemistry analysis of a site predict the geographic origin of wild edible mushrooms (Porcini group)? ACTA MYCOLOGICA, vol. 54 (2), p. 1-15, ISSN: 0001-625X, doi: 10.5586/am.1130
- 3) Roccotiello E., Nicosia E., Pierdona L., Marescotti P., Ciardiello M. A., Giangrieco I., Mari A., Zennaro D., Dozza D., Brancucci M., Mariotti M.G. (2022). Tomato (*Solanum lycopersicum* L.) accumulation and allergenicity in response to nickel stress. SCIENTIFIC REPORTS, vol. 12, p. 1-15, ISSN: 2045-2322, doi: 10.1038/s41598-022-09107-x