Preserving Hyblaean Heritage: Navigating Conservation Challenges in a Dynamic Landscape

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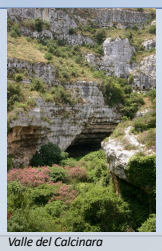
Cavagrande del Cassibile


Testa dell'Acqua

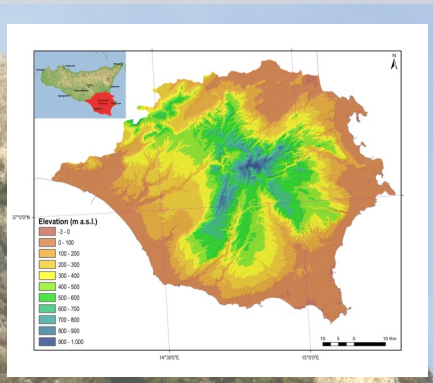

Valle del Calcinara

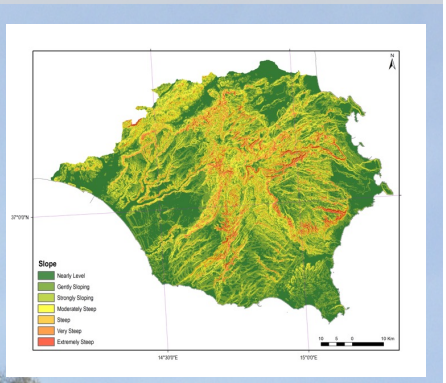

Valle dell'Anapo


Vendicari

THE PHYSICAL SETTING

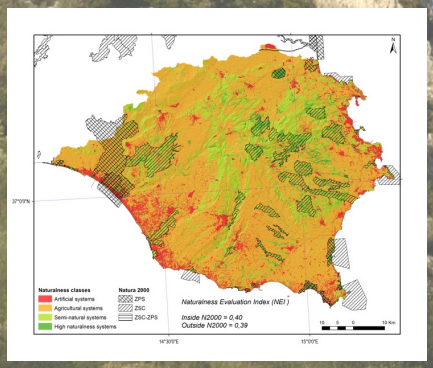
Southeastern Sicily is characterized by a prominent topography known as the Hyblean Plateau. The outcropping rocks of the Plateau mostly consist of limestone layers dating back to Lower Cretaceous to Miocene, partially topped by alkaline lava flows issuing from Plio-Pleistocene volcanic events. The coastal area of the Hyblaean Plateau is formed by Pleistocene calcarenites and Holocene alluvial deposits.

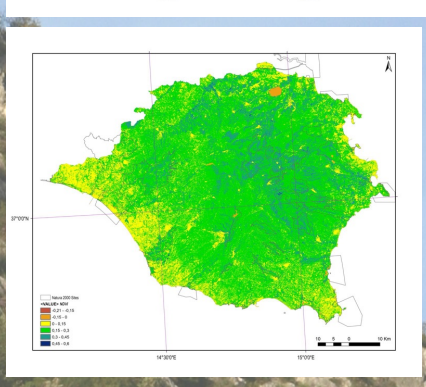




LAND USE

The earliest traces of human presence date back to the Early Bronze Age (Castelluccio culture), followed by an unbroken series of different cultures and colonizations spanning over 4000 years. This historical sequence has left behind necropolises, villages, fortifications, monasteries, farmhouses, aqueducts, water mills, wine and olive presses, a dense network of historical paths and diverse agro-sylvo-pastoral systems that shaped the Hyblaean landscape, an extraordinary blend of natural and cultural heritage. This landscape consists of pastures crop fields and groves (mostly almond, carob and olive), partially abandoned, bordered by thousand miles of terraces and dry stone walls.





Though many areas are currently experiencing abandonment, the Hyblaean traditional rural landscape mirrors human interactions with the ecosystems over generations, and serves as living record of local farming practices that have preserved an extraordinary floristic wealth, the integrity of biological successions and the responsive dynamics typical of well-preserved natural ecosystems.

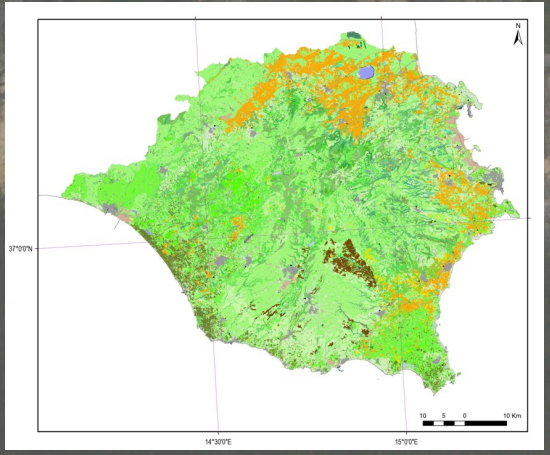
Most of the Hyblaean rural landscape is protected, but there is a lack of knowledge about the biodiversity–climate–land-use feedback system, that should guide landscape planning, protection initiatives and restoration actions. Filling this gap is particularly important because current mitigation strategies and regulatory frameworks tend to identify forest vegetation as the maximum expression of naturalness in the area, with a clear risk for the survival of an historic landscape of great value, not only due to land abandonment but also to reckless interventions aimed at promoting the wood recovery or enhancing «small woody features» that not always belong to the traditional Hyblean landscape.

OUR APPROACH, OUR AIM

Analysis of the biodiversity–climate–land-use feedback system:

- overlay vegetation-plot attributes (species and traits composition) and potentially relevant abiotic and biotic variables (topography, climate, land-cover, land-use, distance from protected areas/large settlements) and quantify the covariation through generalized linear models (GLM) and multivariate analyses;
- quantify the relationships between climate, land-use, habitat types and biodiversity through a Bayesian hierarchical modelling approach;
- explore the potential effects of climate and land-use change on vegetation diversity by integrating vegetation plot data with land-cover and downscaled climate data from COSMO-CLM2 (or similar).

This analysis will be essential to enhance the planning and management profiles dealing with restoration, rather than mere preservation, by identifying the actions that are admissible and that can be specifically oriented towards the achievement of the aims pursued by the European regulations.



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