



Vegetation of sea,
oceanic and ecological
islands of Europe

66th ANNUAL SYMPOSIUM

From local to global:
vegetation patterns
across spatial scales
in a changing World

IAVS



16 - 20 SEPTEMBER 2024

Pestana Casino Park Hotel
Funchal, Madeira, Portugal

PROGRAMME AND ABSTRACTS

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Biogeography and Evolution in Island Ecosystems

P1

ENVIRONMENTAL HETEROGENEITY DRIVES PLANT TRAIT DISTRIBUTIONS IN TERRESTRIAL HABITAT ISLANDS

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Environmental heterogeneity representing various patterns of resources and limiting factors is an important driver of community-level patterns by affecting the selection of the most adaptive functional traits. We explored plant trait–environment relationships in environmentally heterogeneous microsite complexes at a few meters' scale for which we used ancient Bulgarian and Hungarian burial mounds covered by dry grasslands. We assessed within-site trait variability typical of certain microsites (mound slopes with different aspects, mound tops, and surrounding plain grasslands) characterized by different combinations of environmental parameters using a dataset of 480 vegetation plots. We calculated community-weighted means (CWMs) and abundance models. Despite their small size, vegetation on mounds was characterized by different sets of functional traits (higher canopy, level of clonality, and heavier seeds) compared to the plain grasslands. Mild north-facing slopes held perennial species with light seeds, short flowering period, and high proportion of dwarf shrubs sharply contrasted from plain grasslands, and also from south-facing slopes and mound tops with harsh environmental conditions. Patterns predicted by CWMs and abundance models differed in the case of certain traits (perenniality, canopy height, and leaf dry matter content), suggesting that environmental factors do not necessarily affect trait optima directly, but influence them indirectly through correlating traits. Due to the large relative differences in local environmental parameters, contrasts in trait composition among microsites were mostly consistent and independent from the macroclimate. Mounds with high environmental heterogeneity can considerably increase variability in plant functional traits and ecological strategies both at the site and landscape levels.

Keyword: abundance trait models, community-weighted mean, environmental filtering, kurgan, landscape feature, microsite, refugium

P2

REVISITING THE SMALL MEDITERRANEAN ISLAND OF PIANOSA (ITALY) ★

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Resurveying historical vegetation plots has become a fundamental methodology in ecological research as it provides a unique opportunity to estimate vegetation and environmental changes over the past decades, allowing to evaluate how the vegetation dynamics are affected by anthropogenic factors, such as land-use change, invasion of alien species and climate change. Small islands are among the ecosystems in which the effect of these processes might be more detectable and less predictable. One of this case consists in Pianosa (Tuscan Archipelago, Italy), a small Mediterranean island in which such factors had influences since the end of the 1990s. This research aimed to evaluate how different types of vegetation occurring on the island (rocky cliff, Mediterranean xeric grasslands, and scrub) changed in the last 15 years, both in terms of species and functional composition. A total of 53 vegetation relevés carried in 2008 have been resurveyed following the original methodology in spring 2023. The preliminary results showed a significant compo-

sitional shift for all the vegetation types. The main processes which has been detected as responsible of such changes in species composition are: i) the spread of some alien species which colonised and drastically changed the physiognomy of some contexts; ii) a significant encroachment of the grasslands by typical shrub species, with their transition to maquis; iii) a decrease of the abundance of some typical rocky cliff species. Such changes in species composition have been recognized, even at higher degrees, at functional level, and is probably due to the changes in vegetation physiognomy.

Keyword: vegetation science, functional traits, resurvey

P3

THE REVIEW OF THE VEGETATION RESEARCH ON EASTERN ADRIATIC ISLANDS (CROATIA)

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Croatia has 1231 islands (ranging in size from 1 to 485 km²), islets (<1 km²), and reefs. The 30 largest Croatian islands cover as much as 92.2% of the total island area, with elevations ranging from several meters to 778 m a.s.l. While the flora of the eastern Adriatic islands and islets, belonging to Croatia's territory, is relatively well-documented, the same cannot be asserted regarding the extent of understanding of their vegetation. This area has been neglected in studies of Mediterranean vegetation diversity, or at least not represented to the extent of some other areas. It's important to note that the primary reason for this is the small size of the community of botanists, particularly phytosociologists, in Croatia. Previous studies on the vegetation covering the entire surface of the islands are over 60 years old (e.g., Krk, Rab, Pag), while more recent research, conducted in the last two decades, is still scarce (e.g., Molat, Olib). In the last decade, systematic research on the vegetation of islands, especially those smaller than 1 km², particularly in the central and southern Adriatic, has intensified. In summary, there is a lack of data on the vegetation of the majority of islands and islets in Croatia. Most of the available data for the islands mainly comes from studies focusing on specific types of vegetation, such as maquis, garrigue, dry grasslands, calcareous rocky slopes with chasmophytic vegetation and dry walls.

Keyword: Vegetation, Phytosociology, Syntaxonomy, Northeastern Mediterranean

P4

TRACING VEGETATION DYNAMICS ON RIVER ISLANDS BY REMOTE SENSING

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Rivers play a pivotal role in biodiversity conservation and ecological connectivity. Understanding how plant communities vary in these highly dynamic systems and how their changes are visible by applying remote sensing approaches is crucial for implementing effective conservation strategies. The Tagliamento river (N-E Italy) is characterized by flashy-flood events and a wide pristine gravel-bed where river bars are characterized by complex habitats corresponding to different successional stages. It is therefore subjected to nature conservation initiatives.

In this area, 51 plots of 100 m² area have been surveyed during the last week of June 2022 and 2023, within an Erasmus+ program involving

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