TiBE

Invaders on the HORIZON!

Advancing Invasion Science
from Genes
to Ecosystems
to Society

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VILA DO CONDE, PORTUGAL

Book of Abstracts

The Conference

TiBE - **Trends in Biodiversity and Evolution -** Conference, is an annual meeting organized by CIBIO – Research Centre in Biodiversity and Genetic Resources – InBIO Associate Laboratory, that aims to bring together researchers, post-graduate and graduate students working on the field of biodiversity and evolutionary biology to present and discuss cutting-edge findings in relevant topics related with speciation, behaviour, molecular evolution, comparative genomics, ecology, population and conservation genetics research, among others.

Since the creation of the TEAMING project **BIOPOLIS**, with a strong link with the University of Montpellier, TiBE is part of the strategy for communication and dissemination of BIOPOLIS/CIBIO-InBIO into the future.

This year's edition - 2023

Invaders on the Horizon! Advancing Invasion Science from Genes to Ecosystems and Society aims to foster interdisciplinary collaboration and explore the multifaceted challenges posed by ***invasive alien species***, a major driver of global change. With a strong focus on the genetic, ecological, and societal aspects of biological invasions, this conference provides a unique platform to exchange knowledge and insights.

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Comparing the impacts of *Carpobrotus spp.* and *Opuntia stricta* on plant and invertebrate communities in small Mediterranean islands

Michele Mugnai[1,2]*; Alice Misuri[1,2]; Eugenia Siccardi[2]; Elena Tricarico[1,2]; Sara Forni[1,2]; Marco Morbidelli[2]; Daniele Viciani[1,2]; Renato Benesperi[1,2]; Giacomo Santini[1,2]; Alberto Masoni[1,2]; Paride Balzani[3]; Simona Maccherini[1,4]; Emanuele Fanfarillo[1,4]; Claudia Angiolini[1,4]; Tiberio Fiaschi[4]; Debora Barbato[1,5]; Giuseppe Manganelli[1,5]; Andrea Benocci[7]; Giuseppe Mazza[1,6]; Silvia Landi[1,6]; Alessandra Lagomarsino[6]; Camilla Fagorzi[1,2]; Alessio Mengoni[1,2]; Lorenzo Lazzaro[2]

1. NBFC, National Biodiversity Future Center, Palermo, Italy
2. Department of Biology, University of Florence, Firenze, Italy
3. Faculty of Fisheries and Protection of Waters, South Bohemian Research Center of Acquaculture and Biodiversity of Hydrocenoses, University of South Bohemian, Vodňany, Czech Republic
4. Dipartimento di Scienze della Vita, Siena, Italy
5. Dipartimento Scienze fisiche, della Terra e dell'ambiente, Siena, Italy
6. Council for Agricultural Research and Economics Research Centre for Plant Protection and Certification, CREA, Firenze, Italy
7. Museo di Storia Naturale Accademia dei Fisiocritici, Siena, Italy

* michele.mugnai@unifi.it

Carpobrotus spp. and *Opuntia stricta* are important invasive alien plants in Mediterranean habitats, particularly for island systems. Despite the negative ecological impacts of *Carpobrotus*. on soil and vegetation have been widely documented, their impacts on invertebrate communities are poorly understood. For example, a decrease in the species richness of beetles and spiders has been observed after its removal. As regards *Opuntia*, there are as well few studies on its impact on invertebrate communities, in favour of others more focused on its socioeconomic impacts and on plant diversity loss. Contrary to what has been found for *Carpobrotus*, *Opuntia* seems not to significantly affect spider communities, but it does significantly affect beetle assemblages. Our study aims to assess the impacts of these species on native plant and invertebrate communities in Giglio and Capraia, two small islands of the Tuscan Archipelago (Italy). We sampled 24 square plots of 4 m2, 12 for each island and species. In both case, 6 of them were randomly placed in invaded patches and 6 of them in natural communities as control. All these plots were located within habitats of conservation interest. For each of them, we recorded data on plant species occurrence, their abundance. Furthermore, we collected soil samples for the Berlese funnel method and for soil microbiota analysis and sampled ants using pitfall traps. Preliminary results show a decrease in plant species richness in the invaded areas compared to the uninvaded ones in both cases. We detected a greater loss of plant species for *Carpobrotus* invasion than in the case of *Opuntia* invasion, given the ability of the former to build suffocating monospecific mats. As regards the impacts on the soil fauna, *Opuntia* does not seem to change completely soil structure and invertebrate communities, while *Carpobrotus* significantly modify edaphic properties and invertebrate communities.

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