



Fire recurrence impacts the functioning and phylogenetic structure of fungal communities in Mediterranean pine forests

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XIV MEDECOS & XIII AEET meeting

Human driven scenarios for evolutionary and ecological changes

Abstract book

31st January - 4th February 2017
Seville, Spain



Abstract book of the XIV MEDECOS & XIII AEET meeting,
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XIV MEDECOS & XIII AEET meeting

MEDECOS is an international conference organized by ISOMED, the International Society of Mediterranean Ecology, which aims to bring together the scientific community interested in Mediterranean ecosystems. **AEET** is the Spanish ecological society mainly devoted to terrestrial systems.

The origins of MEDECOS date back to March 1971, when an international group of scientists convened in Valdivia, Chile, to discuss their work on Mediterranean-climate ecosystems. MEDECOS has been hosted every 3-4 years in different locations of the five Mediterranean areas of the world (Mediterranean Basin, SW Australia, California, Central Chile and the Cape Region in South Africa). In 2017, MEDECOS will be at the University of Seville (Spain), in the “*Reina Mercedes*” Science Campus, simultaneously with the biennial meeting of the Spanish Association for Terrestrial Ecology (AEET).

The main focus of the joint conference is the ecology and evolution of Mediterranean ecosystems and their species, from plants to animals and also microorganisms. By uniting scientists and students whose research focuses on Mediterranean ecosystems, we expect to gain insights into the similarities and differences in how they function, change and evolve. The conference will also host a regular AEET meeting, thus more general topics on any aspect of ecology will be also considered.

The Conference main topics are:

- Comparative ecology and evolution
- Historical biogeography of Mediterranean lineages
- Current species conservation challenges
- Biodiversity: species interactions, networks, communities and phylogenetics
- Evolutionary and ecological drivers of Mediterranean ecosystems as biodiversity hotspots
- Ecophysiology and functional traits
- Ecosystem functioning and services: challenges and risks in a changing world
- Consequences of biotic and environmental global changes for Mediterranean ecosystems

This meeting is co-organized and supported by the Spanish Association for Terrestrial Ecology (AEET), the Doñana Biological Station (EBD-CSIC) and the University of Seville (US).



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S.04-37-Oral

Fire recurrence impacts the functioning and phylogenetic structure of fungal communities in Mediterranean pine forestsPérez-Izquierdo, L.¹, Zabal-Aguirre, M.², González-Martínez, S.C.³, Verdú, M.⁴, Buée, M.⁵, Rincón, A.⁶

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Fire is a major disturbance of Mediterranean forests. Predicted wildfire frequency increases associated with global change may alter soil fungal communities with important consequences for the functioning of forest ecosystems. Forests with low/high fire recurrence regimes of two representative Mediterranean pines, *Pinus pinaster* and *Pinus halepensis*, were monitored. Combining high-throughput sequencing with phylogenetic methods and soil enzymatic tests, we evaluated whether fire recurrence affected the structure and functioning of soil fungal communities. For *P. halepensis*, high fire recurrence increased activities related with carbon, nitrogen and phosphorous cycles, while *P. pinaster* soils barely responded. Concerning the phylogenetic structure of fungal communities, recurrent fire induced a clustering of the fungal community of *P. halepensis* marked by an overrepresentation of Basidiomycetes. For *P. pinaster*, only when representative fungal guilds (i.e. ectomycorrhizal, saprotrophic) were separately analyzed this fire-related clustering was detected. Compared with common diversity metrics, fungal phylogenetic diversity of *P. halepensis* better explained key soil activities implicated in the mobilization of nitrogen and phosphorous. Our results reveal that fire can filter certain fungal groups and affect relevant ecosystem functions, changes that can be of main importance for the resilience of Mediterranean forest ecosystems.

S.04-38-Poster

Secondary vegetation in the olistostromic complex of La Puebla de Cazalla (Sevilla, Spain)Pulgar, I.¹, Herrera, J.M.²

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Secondary vegetation in the olistostromic complex or undifferentiated subbetic complex of La Puebla de Cazalla (Sevilla Spain) is studied. This territory is included between the termomediterranean and mesomediterranean belt, mainly in the first. Biogeographical range of the territory are Mediterranean region (Western Mediterranean subregion), Betic province and Hispalense sector. The main plant communities inventoried correspond to serial climax forest communities, a thermophilus and basophilus Holm oak forest. The thorny scrubland (with *Rhamnus*, *Chamaerops* and *Asparagus*), rosemary scrubland (*Rosmarinus officinalis*), brooms (*Retama sphaerocarpa*), open thyme scrubland (*Thymus*-*Thymus*) and arid meadows (*Machrocloa tenacissima*) are the best types of vegetation represented.