

## **PST20 - Metacommunities and biodiversity patterns in mediterranean versus tropical temporary ponds**

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The recent establishment of alternative conceptual models of metacommunity theory and the development of numerical techniques accounting for environmental and spatial constraints on species distributions have motivated a burst of empirical tests over the past decade. Some patterns have arisen, such as the predominance of environmental over spatial effects, or the reduction of spatial effects in taxa with higher dispersal abilities and smaller body size. Still, large geographic gaps exist, as most studies have been carried out in temperate environments. In addition, there is evidence for an influence of the spatial extent of the study, and the results from surveys that consider temporal effects suggest that the response of metacommunity organization to niche and neutral processes strongly differ between different time periods. Through the METACOMM project we aim to disentangle the role of space, environment and time in structuring metacommunities of a variety of aquatic organisms (prokaryotes, algae, macrophytes, invertebrates and vertebrates), explored using standardized methods at the same spatial extent, by comparing a set of temporary ponds in a dry-tropical climate (Guanacaste, Costa Rica) with another set in a Mediterranean landscape (Valencia, Spain).

Among other hypotheses, we expect a stronger impact of environment and space on community assembly in the temperate area, as compared to tropical zones which experience higher precipitation rates and reduced temperature variations. Strong rains in seasonal dry-tropical areas may counteract spatial filters by increasing among-pond connectivity. Furthermore, environmental constraints may be reduced in the warmer climate with more constant temperature. At this first stage of the project we will provide some preliminar data on biodiversity of different aquatic taxa in a selected set of ponds.