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# Connectivity and fragmentation in the Mediterranean - How are mosaics of diversity (at gene, species and community levels) connected in the socio-ecological systems of the Mediterranean?

Christophe Lejeusne\*<sup>1</sup> and The Members Of The Biodivmex Wg2

<sup>1</sup>Station biologique de Roscoff [Roscoff] (SBR) – Université Pierre et Marie Curie (UPMC) - Paris VI, CNRS : UMR7144 – Place Georges Teissier - BP 74 29682 ROSCOFF CEDEX, France

## Abstract

In the Mediterranean basin, connectivity and fragmentation are central aspects of biodiversity. The intensive human activities on Mediterranean ecosystems over millennia have shaped them - modifying and even creating some of them. They have major impacts on species migrations as well as gene flow, while also affecting human activities and societies. The main goal of the WG2 of the Biodivmex program is to understand how Mediterranean biodiversity is related to insularity (e.g. "true islands", but also oases, submarine caves, ports, mountain tops, and valley), at different multi-scale ecosystem levels (e.g. from gene to species, or community and agrosystem level), from an integrative, both social and biological, perspective. Here, the condition of the "insularity" is not the isolation, but *a contrario* being a network(s)'s node. Connectivity and fragmentation, which are perhaps the best explanatory factors to deal with insularities, have also become central concepts in public policy and landscape management at community level (Green and Blue Infrastructure). Yet, little is known about the effects of social and ecological connectivities and/or fragmentations on the structure, functioning, and evolution of ecosystems, including agroecosystems or more or less anthropogenic landscapes. One central question is how are mosaics of diversity (at gene, species and community levels) connected in the socio-ecological systems of the Mediterranean? Through various examples, we will illustrate how the various forms of insularity (Mediterranean insularities) are fundamental in the Mediterranean and at the same time remain poorly explored.

**Keywords:** Mediterranean insularities, "true islands", oases, submarine caves, ports, mountain tops, connectivity, fragmentation, endemism

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\*Speaker