Título: Unveiling species assemblage rules in gypsum plant communities
Autor: Ricardo Sánchez Martín
Directores: Alicia Montesinos Navarro y Miguel Verdú del Campo

Hora lectura: 11:30:00
Fecha lectura: 28/04/2023
Lugar lectura: Centro de Investigaciones sobre Desertificación (CIDE, CSIC-UV-GVA). Salón de Actos IVIA. Moncada (Valencia).

Abstract:
Understanding the underlying mechanisms behind species assembly is vital for comprehending species maintenance and can assist us in predicting how communities may respond to the perturbations of a changing world. In this thesis, we tried to understand how abiotic environmental conditions, plant strategies, and biotic interactions shape plant communities growing in stressful environments.
To do so, we conducted three studies in gypsum outcrops developed on semi-arid environments and their surrounding milder limestone environment in Southeast Spain. Here, we assessed the plant traits related to overcoming stress and their relationship with biotic interactions. From these studies, we extracted three chapters, which results are summarized below:

First, in Chapter 1, we found that species living in stressful environments have different coping strategies to overcome stressful gypsum conditions. Specifically, We identified particular traits allowing certain species to thrive in these stressful environments while others are stress-sensitive.

Second, in Chapter 2, we found that rare and stress-sensitive species rely on facilitation from different species to establish in gypsum, resulting in multispecific patches where species balance their performance at the adult stage, suggesting that the facilitation effect could endure throughout the plants' lifespan.

Finally, in Chapter 3, we explore the rewiring capacity of facilitative interactions. Specifically, we found that facilitation depends on the presence of specific nurse species, which limits the beneficiaries' rewiring capacity. Furthermore, the characteristics that determine nurse species selection vary depending on both the local environment stress and the presence of species with attributes that can mitigate these stresses.
In conclusion, the study highlights the importance of facilitation in structuring natural communities and provides insights into the underlying mechanisms behind species assembly and maintenance.
