

17 temporary freshwater pools from four pool landscapes in Malta. The pools were visited weekly throughout one wet season, from September 2012 to March 2013. Coverage and abundance of macrophytes (including Charophytes) and filamentous algae was assessed during each visit whilst microcrustaceans were collected, using standard sweeps with a plankton net, in September, November, December and February. Basin morphometry (surface area, depth profile, sediment depth) was characterised for each pool during the dry season whilst pH, nitrate, nitrite and phosphate content of pool water were measured during hydroperiod. The distances between pools and the connectivity between them were also determined. The results indicated that spatial separation between pools was more important than environmental factors in determining community similarity across pools. The relationship between community composition and regional and local scales of observation was complex and was dependent on whether flora or fauna were being considered. Priority effects also played a role in shaping these communities since monopolisation of resources by the first pool colonisers may have resulted in biological barriers to late colonisers.

Implications of climate change for rice farming in the Doñana wetland (SW Spain)

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Climate change impacts are expected to affect rice farming and wetlands welfare in the Doñana protected Area, due to decreases in quantity and quality water supply and higher temperatures. The largest rice farming area is closely located to the Doñana wetlands in the Guadalquivir river basin estuary (South Western of Spain). These two systems share a great dependence on water and natural resources and suitable climate conditions for their proper functioning. They are highly vulnerable to environmental changes and efforts should be addressed to improve their local adaptive capacity, since they both provide benefits to the society. In this study, we explore the potential impacts for the rice farming in Doñana, its adaptive capacity and possible adaptation measures for the system. The potential impacts are identified by combining results from a literature review and stakeholders interviews. We assess the risk of heat stress under current and projected local-scale climate scenarios. Findings suggest that rice crops will probably suffer water and heat stress during the flowering and grain filling stage (from august to September) under a drier and warmer climate scenario, and in turn the natural wetland will be negatively affected by water degradation and scarcity. Thus, the water conflict among systems will be increased and adaptation measures will be necessary to ensure the water provision and to maintain the socio-economic and the wetland ecosystems welfare. We briefly outline the local adaptive capacity of the rice farming and some of the synergies and trade-offs for the adaptation measures according to the social, economic and environmental context.