

## Saltpan as carbon sink

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Part of the Marchamalo salt pans (Murcia, Spain) has been abandoned for 28 years. The project “RESALAR” aims to restore 8 ha of this saltpan to extract salt in a traditional way while preserving biodiversity and historical heritage. The principal primary producers in hypersaline wetlands are microorganisms such as cyanobacteria and chlorophytes. Once the microorganism’s biomass becomes part of the decomposing sediment organic matter, the high sediment salinity and moisture levels leads to an anoxic environment, allowing it to be buried in the sediments. In this context, our study, previous to the restoration, aims to assess the carbon stock accumulated during the period of disuse as well as measure the carbon dioxide (CO<sub>2</sub>) efflux from the saltpan to the atmosphere and the effect of various physicochemical variables on soil CO<sub>2</sub> emissions. To determine the carbon stock in the first 0.5 m we extracted a core from every tank, analyzed the bulk density, organic carbon, inorganic carbon and salinity in 5 cm sections. CO<sub>2</sub> fluxes were measured using a soil respiration chamber connected to an infrared gas analyzer, and samples were taken from the first 10 cm of soil to analyze physicochemical variables. Our preliminary results shows that mean carbon stock value was 1349.71±251.39 Mg ha<sup>-1</sup> and mean CO<sub>2</sub> flux was 0.55±0.84 g m<sup>-2</sup> h<sup>-1</sup>. Temperature was the main CO<sub>2</sub> flux driver, while sediment moisture was the main carbon burial driver. Our results will be used to suggest management strategies to make the salt extraction compatible with carbon burial.

**Preferred Session:** \_\_\_ OS2 \_\_\_\_\_

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