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Soil and carbon accumulation rates in different ecological types of mangroves in a karstic region (Celestún, Yucatán)

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Mangroves, as well as other coastal ecosystems, perform a fundamental role as sinks of carbon in their soils for long periods of time (hundreds to thousands of years). This capacity for sequestering carbon is controlled by several factors, such as mesoscale meteorology, structural complexity of the forest, hydrological regimes, and microtopography. Therefore, quantifying the carbon on these forests is fundamental to understand their potential for climate change mitigation and local adaptation. The Ria Celestun Biosphere Reserve is a natural protected area located in a karstic region in Mexico with a shallow slope and a strong environmental gradient that allows the presence of different ecological types of mangroves. Based on the analysis of sedimentary cores collected in mangrove areas and dated with the ²¹⁰Pb method, we assessed the soil and carbon accumulation rates in the upper 50 centimeters in four ecological types of mangroves (fringe, basin, dwarf and peten). According to preliminary results, basin mangrove dominated by *Rhizophora mangle* and *Avicennia germinans* showed higher values of carbon stocks (360 MgCha⁻¹), than fringe and peten mangroves (240 MgCha⁻¹ and 270 MgCha⁻¹, respectively). Taking into account gaps in mangrove knowledge in karst regions and among mangrove associations, the results could be used as a tool for decision-making and priority-setting of conservation actions.