

The Detritic Compartment in a *Posidonia oceanica* Meadow: Litter Features, Decomposition Rates, and Mineral Stocks

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Abstract. The ecosystem associated to the Mediterranean seagrass *Posidonia oceanica* shows a clear distinction in two subcompartments regarding turnover time: aboveground and belowground. Aboveground parts (leaves) are highly dynamic, and most of the leaf material is decomposed or exported in less than one year, representing a net loss of nutrients. In contrast, belowground biomass (roots and rhizomes) has a turnover time of the order of centuries, with a consequent accumulation of organic matter in the sediment. The accumulation rates for the single elements rank in the order C > N > P. This ecosystem may be considered as a sink for biogenic elements.