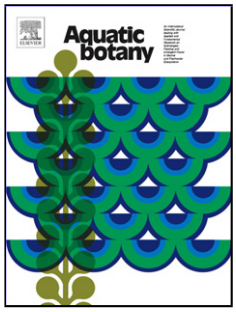

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Clam harvesting decreases the sedimentary carbon stock of a *Zostera marina* meadow

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Highlights

- The undisturbed seagrass meadow is a sink of sediment carbon as compared to un-vegetated areas.
- Clam harvesting drove organic carbon content in the seagrass meadow to levels recorded in un-vegetated areas.
- Sequestered organic carbon was dominated by non-seagrass sources
- Bivalves management plans should take into account the ecological integrity of seagrass meadows

1. Introduction

Marine vegetated coastal habitats (mangroves, salt marshes and seagrasses) have been broadly recognised to have a major role on the global carbon cycle (Smith, 1981; Duarte et al., 2005; Nellemann et al., 2009). However, they have been traditionally overlooked from global estimations of the C reservoirs and therefore, from carbon market protocols (Duarte et al., 2010; Pendleton et al., 2012). The oceanic biological carbon pump and the sequestration of organic