



A MANUAL CORER TO SAMPLE SEDIMENTS IN THE SEAGRASS MEADOWS



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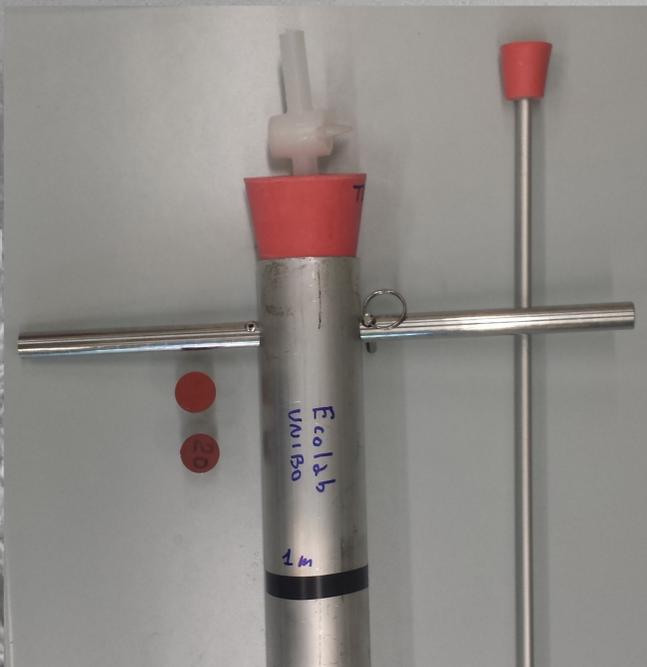
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Seagrass meadows, such as *Posidonia oceanica*, are characterised by intricate root systems that hold sediments, organic matter, pollutants and remains of other organisms, like spicules of sponges, sclerites of corals, shells of gastropods and bivalves, exoskeletons of crustaceans and echinoderms. Due to the vertical growth promoted by orthotropic rhizomes, these sediments represent archives of the past conditions and recent dynamics. Recently the accumulation of organic matter in seagrass meadow sediments was proved to play a relevant role in the global carbon storage [1], helping in keeping global changes under control. However, sampling is not easy due to the presence of strong roots that hinder the penetration of the sampler [2]. In order to overcome this issue, a light and portable hand corer was specifically designed and tested. It consists of an aluminium tube 1.20 m long with an external diameter of 6 cm (2 mm thick). One end has been provided with a Starrett® bi-metal dual pitch hole saw (diameter 56 mm), and a removable external plastic collar. The other end was fitted with a removable steel handle. Rubber plugs, one with a bleed valve, and a piston for sediment extrusion complete the equipment. The handle allows the operator to give a short and quick alternative rotation. This movement enables the hole saw to cut the roots, removing the major obstacle to the corer penetration. The collar permits the displacement of the external sediments facilitating the corer extraction, but it can be removed according to sediments features. The corer extraction must be done with the upper plug with the valve closed to avoid sediment loss. This valve permits the water purge during the insertion of the plugs. In different *Posidonia* meadows, samples long up to 70 cm were obtained with a limited effort.



- [1] Campbell, J.E., Lacey, E.A., Decker, R.A., Crooks, S. and Fourqurean, J.W. (2015) Carbon Storage in seagrass beds of Abu Dhabi, United Arab Emirates. *Estuaries and Coasts* 38, 242-251.
- [2] Buia, C., Gambi, M.C. and Dappiano, M. (2004) Seagrass systems, in: Gambi, M.C., Dappiano, M. (Eds.), *Mediterranean marine benthos: a manual of methods for its sampling and study*. Società Italiana di Biologia Marina, Genova, pp. 133-183.