

Investigating benthic assemblages on northern Adriatic concrete artificial reefs: methodological comparison

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Abstract. Benthic assemblages colonising 16 concrete artificial reefs in the northern Adriatic Sea, at 13-14 m in depth, were investigated by both destructive and not destructive sampling techniques. Sessile species were removed by scraping off using hammer and chisel within a 20x20 cm frame, the removed materials were collected in tissue bags. Image samples were obtained by a digital camera equipped with strobe and a 21x28 cm frame. For each reef, 4 random scraped samples and 6 random pictures were analysed. The scraped samples, analysed under a dissecting microscope, provided densities of 106 taxa, which include small sessile species (e.g. the zoantharian *Epizoanthus* spp., the polychaetes *Spirobranchus triqueter* and *Sabellaria spinulosa*, and the bivalve *Anomia ephippium*) as well as several vagile organism (e.g. the amphipod *Monocorophium acherusicum*) inhabiting deposited sediments. Pictures, analysed superimposing a 100 cells grid, provided percent cover data of only 26 taxa. Despite the obvious different taxonomic resolution, both methods were enough informative to allow to discriminate between typologies and ages of the submerged structures. For management purposes, photographic sampling may be preferred because it is faster and not destructive, allowing higher replication in space and time.