Coralline algae of calcareous biological concretions of the northern Adriatic Sea (Tegnue and Trezze)

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The northern Adriatic Sea is a shallow basin with hydrological features remarkably different from the rest of the Mediterranean. Its bottom is mostly soft, but in the area between the Gulf of Trieste and the delta of the River Po numerous biogenic outcrops are scattered within it, at depths ranging between -5 and -25 m. These outcrops, locally known as Tegnue or Trezze, consist of concretions derived from the building action of calcareous organisms on hard substrata of diverse geological origins. In recent years these habitats have received great attention; however, due to logistical sampling constraints related to their offshore location, their benthic communities are still imperfectly known. Based on observations made in the last two decades and collections made in summer 2017, we studied the diversity and distribution of coralline algae living on the Trezze and Tegnue. *Lithophyllum incrustans* was the most common coralline species and was a major contributor to bioconstruction of some outcrops, but its abundance varied considerably among outcrops; its identity was confirmed using molecular data (*psb*A sequences). A species of *Lithophyllum* in need of taxonomic assessment was the main coralline in some outcrops in the easternmost part of the area; molecular data (*psb*A and *cox*2,3 sequences) show that this species is closely related to *Lithophyllum stictiforme*, but distinct from it at species level. Additional species recorded include *Hydrolithon boreale*, *H. farinosum*, *Lithophyllum corallinae*, *L. cystoseirae*, *L. pustulatum*, *L. racemus*, *Lithothamnion corallioides*, *L. minervae*, *L. sonderi*, *Mesophyllum macroblastum*, *M. philippii*, *Neogoniolithon brassica-florida*, *Pneophyllum confervicola*, *P. fragile*, *Phymatolithon calcareum* and *P. lenormandii*. Overall the results suggest that the communities of these outcrops differ substantially from the coralligenous communities of other parts of the Mediterranean and that different outcrops are characterized by different coralline species.