

**Abstract:**

Species included in the family *Halimedaceae* are tropical and subtropical marine algae, belonging to *Bryopsidales*. The macroscopic siphonocladous thallus of these green algae is attached to the ground via holdfast. Segments of the thallus are able to store  $\text{CaCO}_3$ , i.e. to calcificate. Consequently, dead segments of *Halimeda* are one of the major producers of seashore sediments. Thanks to beforementioned properties, these organisms play an important role in the global carbon cycle. Interestingly, the species of *Halimedaceae* are a great tool for studying the global climate change processes. Based on their strictly temperature-defined areas of occurrence in which they are able to grow and reproduce, we can easily observe the effect of increasing temperature of the seawater. Despite the significant role of *Halimedaceae* in marine ecosystems, these species have so far been relatively neglected in biological research. That was, amongst others, one of the main impulses for writing this thesis.

**Keywords:** aragonite, calcification, ecology, green algae, *Halimeda*, sediment, segment, utricle