

A comparison of epizoic diatom communities on green turtle (*Chelonia mydas*) from two remote localities

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Diatoms are often some of the earliest colonizers on any marine substrate and it has been suggested that sea turtles should harbour epibiotic diatom communities. Nevertheless, direct evidence of epibiotic diatoms on sea turtles has only recently been provided from loggerhead *Caretta caretta* and olive ridley *Lepidochelys olivacea* turtles.

Here, we present our most recent findings from studies on sea turtle diatoms associated with green (*Chelonia mydas*) turtles from two different and remote localities. Using Scanning Electron Microscopy and techniques involving Critical Point Drying, we examined carapace samples from multiple individuals of green turtles collected in Costa Rica (Atlantic coast) and Iran (Persian Gulf). The examined diatom communities differed largely in terms of abundances, species number, and growth form structure. At both sampling stations, however, attached erect taxa, such as *Achnanthes* spp., *Poulinea* spp., and *Chelonicola* spp., dominated. Twenty-one diatom taxa were found in Costa Rica, but only 6 in the Persian Gulf. Diatoms from both localities were surrounded by large amounts of exopolymeric matrix. Interestingly, in Costa Rican samples, apart from diatoms, abundant mats of bacteria and some filamentous algae were observed, whereas Iranian samples contained diatoms only. This suggests that some diatom taxa might be associated with other epizoic organisms rather than with the turtle itself. Epibiosis in the marine environment is primarily facultative in nature and this is probably the case with the majority of diatom taxa documented here. On the other hand, some diatoms observed in our study are likely to be truly epizoic taxa. The diatom genera, *Chelonicola* and *Poulinea*, have only recently been described from olive ridley carapaces and, so far, have not been observed elsewhere. Therefore, we predict that many more previously undescribed taxa will be discovered with continued research.