ORAL PRESENTATION

EXPLORING DIATOM ECOLOGY ON THE CORAL REEFS OF THE SAUDI ARABIAN RED SEA COASTLINE IN THE DEVELOPMENT OF A DIATOM-BASED, COST-EFFECTIVE BIOMONITORING TOOL

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Due to their diversity and quick response to changing environmental conditions, diatoms have been successfully utilized to monitor aquatic environments and provide early warning of possible harmful or undesired water quality affects, or as monitoring tools to help provide objective goals for efforts to mitigate water quality issues in a cost-effective fashion. One environment where diatoms have not been used in this fashion, however, are vulnerable coral reef habitats, such as those found along the Saudi Arabian Red Sea coastline. This has largely been due to a general lack of knowledge of tropical benthic diatom taxonomy and ecology. We have created an international collaboration to overcome these obstacles, building a database of benthic marine diatoms and their habitats, in one of the first studies of marine benthic diatom tolerance and distribution in relationship to coastal pollution in a tropical region. In February 2015 and May 2016, we collected benthic diatoms by SCUBA diving from a diversity of coral reef-associated substrates from five locations with different levels of human impact along the Saudi Arabian Red Sea coastline. Results from the 2015 sampling show a change in the species diversity of the diatom assemblage between sites under different degrees of human impact. We also present findings which suggest diatom species diversity can also change as a function of collection depth.