

THE RELATIVE INFLUENCES OF TURTLE ECOLOGY AND AMBIENT WATER QUALITY ON DETERMINING THE COMMUNITY COMPOSITION OF EPIZOIC DIATOMS

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Diatoms often attach themselves to the carapaces of aquatic turtles. Studies conducted in Oklahoma on museum specimens of the common snapping turtle suggest that some species of diatom specifically live on turtles; they do not live on other substrates within their environment (Wu and Bergey, 2017). However, no studies of this kind have been conducted in Texas. This study considers the relative importance of water quality, substrate availability, and aspects of turtle ecology and behavior on the diatom community assemblage. We sampled at least 10 individuals each from specimens of 5 different aquatic turtle species for the presence of epizoic diatoms. The carapace was scrubbed with a test tube brush to collect samples before releasing the turtle. Museum specimens were sampled to consider differences among different species. To consider potentially confounding influences of ambient water quality, various species of turtles were caught by live-trapping and by hand in the Trinity River Basin in Texas. In addition, turtles were trapped in nearby golf course ponds to consider potential influences of lentic versus lotic systems. Rocks were also sampled for epilithic diatoms for comparison. Water quality metrics such as TP, TN, conductivity, temperature, pH, and TDS were taken on site. Finally, diatom community composition from the same species of turtle (red-eared slider) were compared among different rivers. Preliminary results find that benthic species are dominant in all samples, including members of the genera *Luticola*, *Gyrosigma*, and *Gomphonema*. Statistical analysis consider the relative importance of water quality, substrate availability, and aspects of turtle ecology and behavior for the diatom community assemblage.