ORAL PRESENTATION

INFLUENCE OF AGRICULTURAL PRATICES ON ALGAL COMMUNITY ON LAKE OCONEE, GEORGIA

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Algae are precise indicators of ecological conditions in lotic and lentic habitats. Water quality was assessed for five subregions of Georgia's Lake Oconee and its surrounding wetlands and tributaries over a 2 year period. Sites were chosen based on their level of human impact: suburban development greater than thirty years, modern suburban development, industry, agriculture, and an area of low human activity. Temperature, pH, dissolved oxygen and turbidity measurements were normal for oligotrophic lakes. 126 samples were collected and nutrient influx from construction, cattle farms and recreation were assessed within each habitat. Measurements of chlorophyll a and algal community relative abundance indicated that the least impacted and modern suburban areas had a significantly lower number of primary producers and were diatom dominated. Lacustrine diatom biodiversity of the Piedmont Region of Georgia is reported here for the first time. Preliminary data indicate that the majority of the 234 taxa were oligotophic and common. *Asterionella formosa* Hassal, *Achnanthidium minutissimum* (Kützing) Czarnecki and *Fragilaria crotonensis* Kitton dominated all samples with the exception of the old suburban and agricultural site. Higher nutrient sites were dominated by *Nitzschia acicularis* (Kützing) Smith, *N. palea* (Kützing) Smith and *Synedra ulna* (Nitzsch) Ehrenberg. These results suggest that algal community structure is responsive to changes in water quality and nutrient loading in the lakes, ultimately affecting upper trophic levels.