

THE AQUATIC MACROPHYTE COMMUNITY OF ONONDAGA LAKE: FIELD SURVEY AND PLANT GROWTH BIOASSAYS OF LAKE SEDIMENTS

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Abstract: Onondaga Lake, located in the Syracuse metropolitan area of upstate New York, has been heavily impacted by domestic and industrial waste effluents, resulting in a lake with high salinity, low light availability, and a highly calcareous, nutrient-poor sediment. These factors appear interrelated in reducing the cover, distribution and diversity of aquatic plants between 1940 and 1990. A quantitative survey in 1991 found that only 13% of the littoral zone had any aquatic plants. The plant community was dominated by *Potamogeton pectinatus* (11%), with four other submersed aquatic plants found: *Ceratophyllum demersum*, *Heteranihera dubia*, *Myriophyllum spicatum*, and *Potamogeton crispus*. Aquatic plants were found less often than expected on the calcium-carbonate oncolite sediments, which are formed from precipitated calcium carbonate, compared to other sediment types in the lake. Laboratory studies were developed to evaluate the role of sediments in limiting plant growth. These studies showed that Onondaga Lake sediments supported less growth than a reference sediment, but no differences among Onondaga Lake sediment types (oncolite, silt, sand or organic) were found in plant growth bioassay studies.

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