

EFFECTS OF LIMING ON THE EPIPELIC ALGAL COMMUNITY OF WOODS LAKE, NEW YORK

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Abstract: The biovolume and species composition of algae on the sediment along a depth gradient were determined before and after liming of acidic (pH 4.9), oligotrophic Woods Lake in the Adirondack Park in New York State (Herkimer Co., NY, USA). The epipelagic algal community was dominated by diatoms and cyanobacteria prior to and following liming. Distinct depth zonation patterns of community composition were evident and unaffected by CaCO_3 addition. Treatment with calcite increased pH from 4.9 to above 9.0, caused ANC to rise from 0 to $>400 \mu\text{eq}\cdot\text{L}^{-1}$, and immediately reduced overall water clarity which subsequently improved during the summer. There was a significant decrease ($p < 0.001$) in total algal biovolume after liming corresponding to a significant reduction in biovolume of *Hapalosiphon pumilus* at the deepest sites. Total diatom biovolume was not significantly changed as a result of the addition of calcite; however, a shift in community composition from dominance by *Navicula tenuicephala* and *Fragilaria acidobiontica* to dominance by *Achnanthes microcephala* and *Anomoeoneis vitrea* was observed following liming.

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