ABSTRACT OF THE THESIS

Edaphic algae in abandoned

fields of the Piedmont of New Jersey

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Soils from fields ranging in years since abandonment from two to eighty-three, and a climax forest were assayed for algal composition. The distribution patterns of 22 genera of 8 algal divisions and their relative abundance were determined. Results showed some differences in generic composition with increasing time since abandonment, but no evidence of temporal or seasonal succession was found. There was a paucity of blue-green algae in the older areas. The Chlorophyceae were present in all areas. Tetracystis, Chlorococcum, Chlamydomonas and Klebsormidium were the most commonly encountered genera. The largest numbers of algal cells were found in soils where the calcium content was highest.