

## SUMMARY

It is generally believed that the William L. Hutcheson Memorial Forest is in a successional stage of development from an oak-hickory forest to one in which the maples, beech, and ash are becoming increasingly important. This succession was initiated by the elimination of Indian fires following colonial settlement, and has continued to the present time. A measurement of the temporal changes in the vegetation over the past twenty years was attempted through a comparison of quadrat and transect data collected in 1950 and 1969. These data were accompanied by data on the light environment within the forest.

The past two decades are especially significant in view of the windstorms and drought which have occurred within this time period. Gaps were created in the canopy following the destruction of numerous large trees within the forest. Many of the changes in the vegetation are related to the establishment of heliophilic and hydrophilic species within these gap areas.

Although the gap areas are characterized by more intense sunlight, the forest floor beneath a continuous canopy and understory has become more intensely shaded. In 1950 the average percent light penetration during the

summer months was 3.7 and 3.4 at 6 inches and 6 feet above the forest floor. In 1969 the average light penetration had dropped to 1.1 and 1.8 percent of full sunlight. The more intense shade which has developed beneath the canopy has favored the establishment of shade tolerant species, as the maples and beech, while eliminating such shade intolerant species as the oaks.