

SUMMARY

1. During the first eight years following abandonment, the mean ground cover density and the range of ground cover densities in abandoned fields were observed to increase. In fields 10 to 16 years of age, the mean ground cover density and range of ground cover densities were found to be similar and generally greater than the mean and range in younger fields.
2. Microtus pennsylvanicus and Blarina brevicauda were captured in significantly different ground cover densities than were Zapus hudsonius and Peromyscus leucopus. Microtus pinetorum was captured in ground cover densities not statistically different from those in which all the previously mentioned species were captured.
3. M. pennsylvanicus and Blarina were the only species for which a significant correlation was observed between capture success and ground cover density.
4. A model was formulated to explain, in part, why the complement of small mammal species changes during secondary succession in fields on the New Jersey Piedmont at the Hutcheson Memorial Forest.