Results and Discussion

Results suggested that the numerical differences of both Ovenbird breeding success and small mammal abundance found in large and small forests were statistically significant. While Ovenbird breeding success was extremely low in small, fragmented forests (25% success), success was relatively high on the larger study sites (77% success) (Goodrich et al. unpubl. data) (Figure 1). These results agreed with other studies and further supported the idea that small forest size and associated edges resulting from habitat fragmentation may negatively effect reproductive success of nesting Ovenbirds.

Small mammals were significantly more abundant in small forests compared with large forests (Noojibail et al. unpubl. data) (Figure 1). Examination of the differences in small mammal community composition in the different size forests indicated that the diversity of species captured was low for both forest size classes. Five species were captured with white-footed mice (*Peromyscus leucopus*) being the most abundant on all plots. Eastern chipmunks (*Tamias striatus*), grey squirrels (*Sciurus carolinensis*), flying squirrels (*Glaucomys volans*), and meadow voles (*Microtus pennsylvanicus*) were trapped less frequently (Figure 2).

Reasons for the high overall abundance of small mammals in fragmented matrices are speculative though there is evidence that the dispersal of many small mammals from

Figure 2

Numerical distribution of small mammal species captured on large (>100 ha) and small plots over a period of 108 trap-nights per size calss from mid-May to mid-August 1993 in eastern Pennsylvania.

SPECIES	LARGE	SMALL
White-footed mouse	133	292
Eastern Chipmunk	1	25
Grey Squirrel	2	0
Southern Flying Squirrel	1	0
Meadow Vole	2	0
Total	139	317

Literature Cited

Ambuel, B. and S.A. Temple. 1983. Area dependent changes in bird communities and vegetation of southern Wisconsin forests. Ecology 64:10571068.

Andren, H., P. Angelstam, E. Lindstrom, and P. Widen. 1985.

Differences in predation pressure in relation to habitat fragmentation: an experiment. Okios 45:273-277.

Andren, H., and P. Angelstam. 1988. Elevated predation rated as an edge effect in habitat islands: experimental evidence. Ecology 69:544 547.

Andren, H. 1992. Corvid density and nest predation in relation to forest fragmentation: a landscape perspective. Ecology 73:794 - 804.

Angelstam, P. 1986. Predation on ground-nesting birds' nests in relation to predator densities and habitat edge. Okios 47;365-373.

Askins, R.A., J.F. Lynch, and R. Greenberg. 1990. Population declines in migratory birds in eastern North America,

Chapter 1 In: Current Ornithology. 7:1-57. D.M. Power ed. Plenum Press, New York and London.

Brittingham, M.C. and S.A. Temple. 1983. Have cowbirds caused forest songbirds to decline? Bioscience 33:31-35.

Linzey, A.V. 1989. Response of the white-footed mouse (Peromyscus leucopus) to the transition between disturbed and undisturbed habitats. Can. J. Zool. 67:505-512, and M.H. Kesner. 1991.

Major, R.E. 1990. The effect of human observers on the intensity ofnest predation. Ibis 132: 608-612.

Martin, T.E. 1987. Artificial nest experiments: effects of nest appearance and type of predator. Condor 89:925-928.

Morton, E.S. 1980. Our migrant birds: can we continue to take them for granted? Atl. Nat. 33:36-40.

Nour, N., Matthysen, E., and Dhondt, A.A. 1993. Artificial nest predation and habitat fragmentation: different trends in bird and mammal predators. Ecography 16: 111-116.

Reitsma, L.R., Holmes, R.T. and Sherry, T.W. 1990. Effects of removal of red squirrels, Tamiasciurus hudsonicus, and eastern chipmunks, Tamias striatus, on nest predation in a northern hardwood forest: an artificial nest experiment. Oikos 57:375-380.

Porneluzi, P., J. Bednarz, L.J. Goodrich, J. Hoover, N. Zawada. 1993. Reproductive performance of territorial ovenbirds occupying forest fragments and a continuous forest in Penn-