

Bats and Small Mammals in Old Growth Habitats in the White Mountains

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Studies of bats and small mammals in the White Mountains region are limited and those studies concerned with species-old growth habitat relationships are even fewer. The following summary highlights what has been learned about bat and small mammal species-habitat relationships in the White Mountains region.

Bats

Broadband ultrasonic detection and mist net survey work (Krusic et al. 1996; Krusic and Neefus 1996) has identified nine bat species (*Eptesicus fuscus*, *Lasiurus cinereus*, *L. borealis*, *Lasionycteris noctivagans*, *Pipistrellus subflavus*, *Myotis lucifugus*, *M. septentrionalis*, *M. leibii*, and *M. sodalis*) present during the snow-free seasons. Radiotelemetry work by Sasse and Pekins (1996) has also identified maternity colony habitats used by female northern long-eared bats.

What's been learned so far?

- Bat foraging activity across the forest landscape is highest over still water (e.g., lakes and ponds); flight activity is concentrated along bat “features” – roads, trails, and stream corridors (Krusic et al. 1996; Krusic and Neefus 1996).
- In forest stand comparisons – flight activity was highest in regenerating hardwood clearcuts (\bar{x} = 20 ac) and regenerating softwood group cuts (\bar{x} = 0.5 ac), and large sawtimber hardwood stands (Krusic and Neefus 1996); foraging activity was highest in regenerating softwood group cuts (Krusic et al. 1996).
- Northern long-eared bat (NLE) females form maternity colonies in cavity trees and snags in New England (Sasse and Pekins 1996). NLE females move among roost sites; and roost snags and cavity trees throughout the three-week sample period.
- NLE females use roost sites in and around managed forest; in patches of trees with larger than average diameters and more snags than the surrounding forest area. Roost sites were often near water. Roost snags and cavity trees had larger diameters; and roost snags were taller than available snags and live trees. Selected roost snags were more often in beech and had more bark remaining (e.g., more recently dead) than samples of available snags (Sasse and Pekins 1996).

Small Mammals

Small mammal sampling efforts (e.g., live, snap, and pitfall trapping) have identified 25+ species in five taxonomic families (e.g., shrews, moles, squirrels, mice and voles, and jumping mice). Generally, six species (*Blarina brevicauda*, *Sorex cinereus*, *Peromyscus maniculatus*, *P. leucopus*, *Clethrionomys gapperi*, and *Napaeozapus insignis*) comprise 90 to 95 percent of captures, depending on the year and prior season's hard mast crop.

What's been learned so far?

- Vegetative structure has little effect on small mammal distributions in old growth northern hardwoods in the Bowl RNA (Gore 1988). Most small mammals are ubiquitous across the forest landscape with a few exceptions (DeGraaf et al. 1991; Lovejoy 1975; Yamasaki, unpublished data).

- Short-term sampling of small mammal populations across managed, unmanaged, and remote landscapes across the WMNF indicates a broader array of small mammals captured in managed plots compared with remote plots across the WMNF (Yamasaki, unpublished data).
- Long-term sampling suggests significant yearly variation in species composition and abundance complicate comparisons of silvicultural treatments (Yamasaki, unpublished data). Sampling protocols need to reduce sources of error associated with trap type, skill level, placement, and weather (Kirkland and Sheppard 1994) to better compare results from other areas.

Conclusions

- Managed landscapes can provide suitable habitats for large- and small-diameter cavity dwellers when appropriate standards / guidelines that incorporate wildlife habitat elements are followed.
- Forest bat habitat concerns are being addressed on managed landscapes.
- There are no bat or small mammal old-growth obligate species in NH forests today.
- Continued loss of early successional habitat is a much more pressing habitat conservation issue for some reptiles, birds, and mammals in New England.

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These proceedings were prepared as a supplement to the conference. Papers submitted were not peer reviewed or edited. They were compiled by Karen P. Bennett, Extension Professor and Specialist in Forest Resources. Readers are encouraged to contact authors directly for more information or for clarifications. The papers appear in order of the conference schedule and a table of contents and the concurrent workshop schedule is included as an aid to finding papers of specific interest. Conference organizers are indebted to the authors.

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