

The influence of forest harvesting on habitat use by foraging insectivorous bats

Lead by: Krista Patriquin

Theme: Small Mammals

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End: 2001

Participants

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Background

Bats play an integral role in forest dynamics, as they are major predators of nocturnal, flying insects. Prey (insects) availability, risk of predation and the ability to fly in an area, dictate the foraging behavior of bats. These factors are in turn influenced by forest stand structure, which is clearly influenced by fire and logging.

Objectives

Although the impact of logging on bats has recently received considerable attention, most studies are anecdotal, few studies have approached this question experimentally. Therefore, the objective of this study is to experimentally examine the impacts of natural and human caused disturbances on the foraging behavior of bats. The species of bats present in the boreal forest as well as their reproductive chronology will be documented, as very little is known about bats in the northern regions.

Key Results

Larger bat species (i.e. silver-haired and big brown bats) were most active in 0% retention patches and least active in 100% patches. This may be due to the fact that larger species tend to be confined to more open habitat as they are less maneuverable than smaller species. Smaller bat species (i.e. little brown and northern long-eared bats) did not display significant differences in activity among patch types. Northern long-eared bats were rarely active in 0% patches and there was a trend toward higher northern long-eared bat activity in 100% patches. Little brown foraging activity was greatest in 0% patches. Smaller species are more maneuverable and thus can exploit richer food sources in more cluttered habitat. Little brown bats and silver-haired bats were more active at the edge than in the center of 0% patches. Northern long-eared bats were not active in the center of 0% patches. Silver-haired bats are larger but are capable of foraging in edge habitat despite higher clutter than in the center. Northern long-eared bats are gleaners (remove insects from foliage), thus they may not use open habitat lacking prey sources. There are obvious differences in habitat use among species of bats. Little brown, northern long-eared and silver-haired bats were captured in the EMEND area. The northern long-eared bat is provincially listed as ?May be at Risk?. No reproductive females and no juveniles were captured over two summers in the EMEND area. This suggests that this population is not reproducing. Bats tend not to forage in heavy rain and temperatures below 10°C, both of these poor conditions were encountered frequently at night in the EMEND area. Poor environmental conditions may account for absence of reproductive bats.