

Diversity of Small Mammals Between Itasca State Park and Agaissez Sand Dunes

By

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Abstract

Small mammal diversity can vary over different habitats. In this study, data collected from forest and prairie sites was used to determine diversity between the two. The results show that small mammal diversity in a forest setting is greater than that of a prairie setting.

Introduction

Habitat can vary quite a bit from region to region. With habitat variance there is also a variance in animal abundance and diversity. In this experiment, we are studying prairie and forest habitats for diversity of small mammals. We will observe these two sites, then compare and contrast the diversity of small mammals between the two habitats. Based on my own prior experience, I predict that small mammal abundance will be greater in a forested habitat than in a prairie habitat.

Methods

To study the diversity of small mammals, we conducted a study at two different sites: Itasca State Park and Agaissez Sand Dunes. We started by choosing four locations at each site. In Itasca State Park, the following sites were chosen: red pine, burnt pine, aspen, and bog. At Agaissez Sand Dunes, the sites were burnt by road, burnt not by road, aspen, and oak savannah. Fifty-five traps were set up at each site in a grid that had five rows, with ten traps to a row, and the traps set up ten meters from each other. Every row contained nine Sherman traps and the tenth trap site, that was chosen randomly,

contained both a Russian shrew trap and a Longworth trap. We checked the trap sites for three consecutive days. When an animal was caught, we took measurements for length, weight, and determined whether it was male or female. In some cases, the animal was marked in order to determine future recaptures. Finally, we recorded all data, from every animal trapped, in order to determine animal diversity between the two sites.

Results

At Itasca State Park, forty-six animals, from seven different species, were caught (Figure 1). The species at Itasca included *Tamias striatus*, *Myodes gapperi*, *Microtus pennsylvanicus*, *Tamiasciurus hudsonicus*, *Zapus hudsonius*, *Peromyscus*, and *Sorex*. The species for *Peromyscus* and *Sorex* could not be identified in the field. At Agaissez, thirty-seven animals, from five different species were caught (Figure 2). The species here included *Peromyscus*, *Spermophilus tridecemlineatus*, *Microtus pennsylvanicus*, *Zapus hudsonius*, and *Myodes gapperi*. Again, the *Peromyscus* could not be identified in the field.

Discussion

The results of our three days of trapping indicate that the diversity in forested habitats, such as Itasca State Park, is greater than that of prairie habitats like Agaissez Sand Dunes. This is evident because seven different species were caught in Itasca State Park compared to five species trapped in Agaissez Sand Dunes (Figures 1 & 2). *Peromyscus*, *Zapus hudsonius*, *Myodes gapperi*, and *Microtus pennsylvanicus* were found at both locations. The only species found on the prairie that was not found in the forest was *Spermophilus tridecemlineatus*. Three species: *Tamias striatus*, *Tamiasciurus*

hudsonicus, and *Sorex*, were trapped in the forest and not on the prairie. This confirms what I predicted in the beginning, that a forest habitat offers more diversity than a prairie habitat. This is probably due to better resources and cover that a forest has to offer a small mammal. A forest can offer better protection from birds of prey and better protection from the weather.

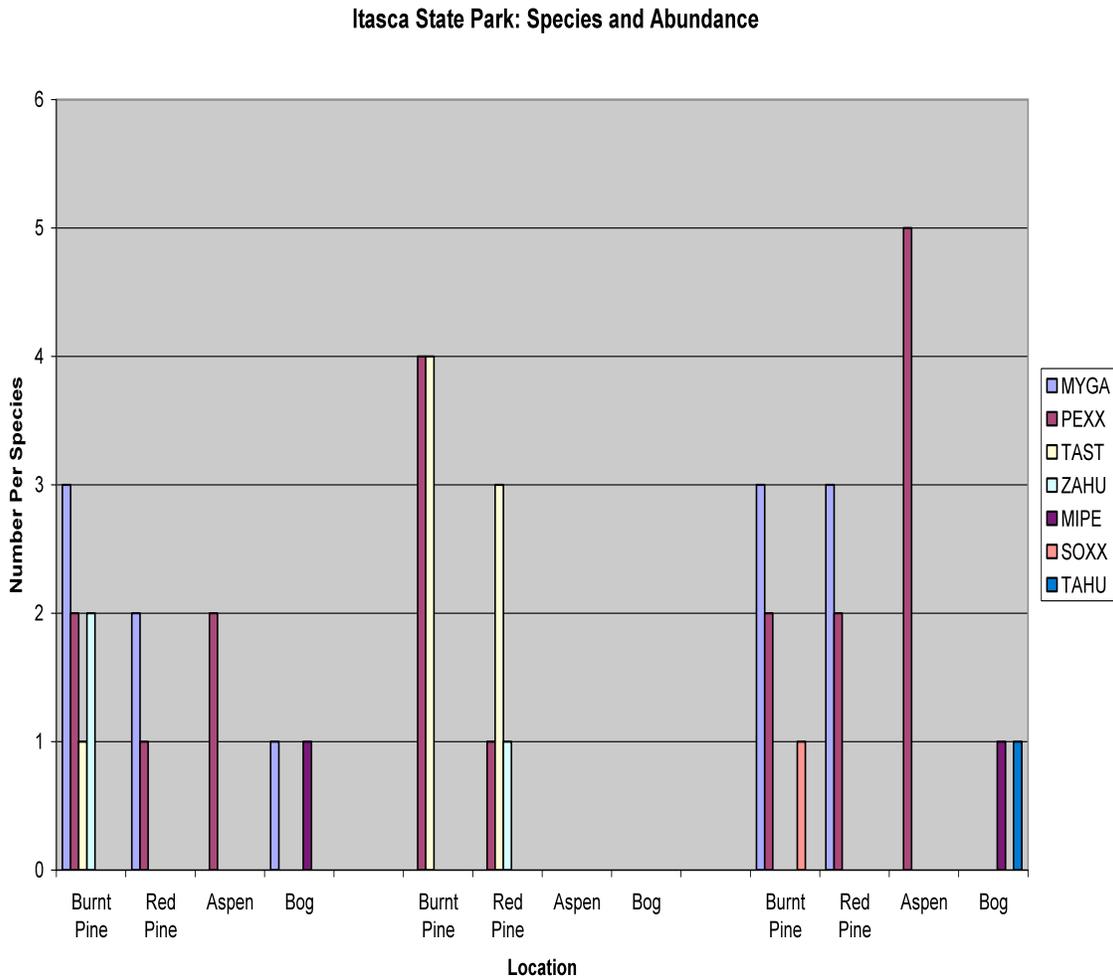


Figure 1. Itasca State Park abundance and diversity. Genus and Species are abbreviated with the first two letters of each name.

Agaissez Sand Dune: Species and Abundance

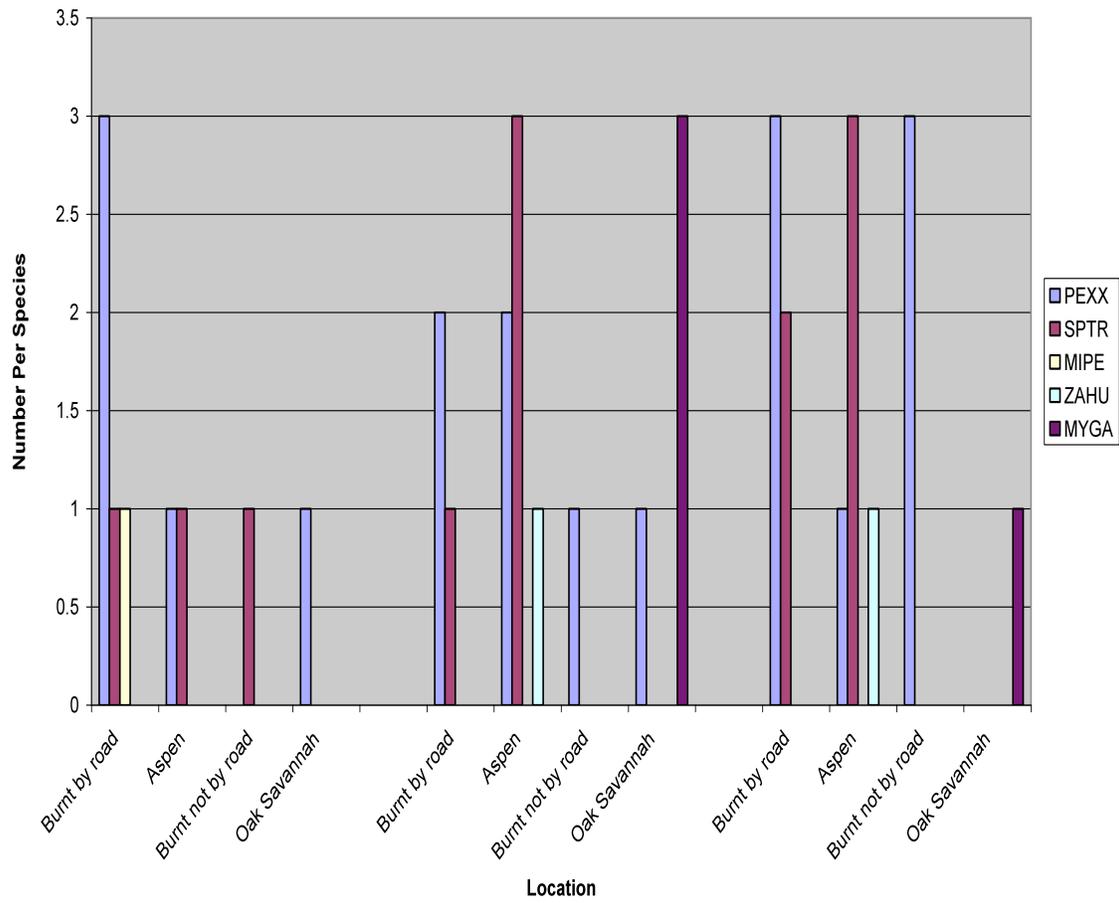


Figure 2. Agaissez Sand Dunes abundance and diversity. Genus and Species are abbreviated with the first two letters of each name.