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A comparison of mammal diversity in prairie and forest habitats

In this study we examined the diversity of small mammals found within various types of forest habitats in comparison to the diversity of mammals caught in prairie habitats. Through an analysis of our results we were able to determine which ecosystem was more diverse. We predicted that the prairie habitats would be more diverse than the mixed forests because the prairie ecosystem can support many more kinds of species.

The mixed forests habitats consisted of a burned deciduous area, an unburned deciduous area, a burned red pine area, an unburned red pine area, an aspen area, and finally a bog area. We set a gridline of forty-eight trap nights for the different habitats, forty Sherman traps and eight Longworth traps. The gridlines consisted of four lines of traps with ten traps in each row spaced ten meters apart. Two trap spots in each line had an additional Longworth trap. These trap spots were chosen at random. Sites were checked once a day for three consecutive days. Each mammal captured was identified and individually marked, and the data was recorded and pooled into a single data set. The same method applies for the prairie location, which consisted of rush south, rush north, Coburn east, Coburn west, Waubun wet, and Waubun dry.

In this experiment we found that there was a higher diversity of mammalian species in the prairie type habitat as opposed to the forest habitat. However, there was a higher density of mammals in the forest habitat. As shown in table 1 (Vang 2010) the average capture in the forest habitat for 144 trap nights were 30.67 as opposed to the 7.17 on the prairie (Table 2 Vang 2010).

The Prairie sites contained ten different mammalian species, whereas the forest only contained seven different species. Three of these species were caught in both sites, PE XX (*Peromyscus maniculatus* or *Peromyscus leucopus*), MI PE (*Microtus pennsylvanicus*), and BL BR (*Blarina brevicauda*). Some of these mammals were caught in the habitat boundaries on both sites, which is most likely due to the similarities in the different habitat types. For example, the bog and Waubun wet were fairly similar in habitat. The different types of vegetation and lack of deep rooted trees could be the reason for catching more fossorial type mammals in the prairie as opposed to arboreal type mammals that were caught in the forest. In addition, most modern prairies are located in close proximity to farms. This could be another factor for the mixture of habitats because of the new food supply that is introduced into the area through humans. To investigate the influence of humans on mammals and habitat overlap we can examine the correlation between habitats on the edges of farms and other human structures as opposed to habitats that don't experience human disruption.

Forested Habitats: (Table 1)

Burned Deciduous	**Unburned Deciduous**	**Burned Red Pine**	**Unburned Red Pine**	**Aspen**	**Bog**
PE XX	PE XX	PE XX	PE XX	PE XX	PE XX
MY GA	MY GA	MY GA	MY GA	MY GA	TA ST
TA ST	MI PE	TA ST	TA ST	GL VO	MI PE
			BL BR		TA HU
Total Capture: 37	Total Capture: 40	Total Capture: 44	Total Capture: 46	Total Capture: 5	Total Capture:12
Avg Capture: 30.67					

(Fig. 1. Table of all species found at each forested site for three consecutive days; PE XX- *Peromyscus maniculatus* or *Peromyscus leucopus*; MY GA- *Myodes gapperi*; TA ST- *Tamius striatus*; MI PE- *Microtus pennsylvanicus*; BL BR- *Blarina brevicauda*; GL VO- *Glaucomys volans*; TA HU- *Tamiasciuris hudsonicus*)

Prairie Habitats: (Table 2)

Rush South	**Rush North**	**Coburn East**	**Coburn West**	**Waubun Wet**	**Waubun Dry**
PE XX	PE XX	BL BR	MI PE	CO CR	SO HA
PE MA BA	PE MA BA	MI PE	SP TR	MU XX	ZA HU
MI PE	MI PE			MI PE	
ZA HU	SP TR			ZA HU	
SP TR	MI OC				
Total Capture: 14	Total Capture: 10	Total Capture: 5	Total Capture: 4	Total Capture: 4	Total Capture: 6
Avg. Capture: 7.17					

(Fig. 2. Table of all species found at each prairie site for three consecutive days; PE XX- *Peromyscus maniculatus* or *Peromyscus leucopus*; PE MA BA- *Peromyscus maniculatus biardii*; MI PE- *Microtus pennsylvanicus*; BL BR- *Blarina brevicauda*; ZA HU- *Zapus hudsonius*; SP TR- *Spermophilus tridecemlineatus*; MI OC- *Microtus ochrogaster*; CO CR- *Condylura cristata*; MU XX- *Mustela ermine* or *Mustela frenata*; SO HA- *Sorex haydeni*)

Citations

Vang, Na. 2010. A Comparison of Small Mammal Diversity in Forested Habitats to Prairie Habitats. Itasca Biological Station: 2.