

IMPACTS OF REED CANARYGRASS (*PHALARIS ARUNDINACEA* L.) ON COMMUNITIES OF SMALL MAMMALS

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Abstract: The diversity and complexity of native vegetation in sedge meadows of the northern Great Plains are being altered by the highly invasive plant, reed canarygrass (*Phalaris arundinacea* L.). However, the consequences for wildlife of the widespread conversion of diverse sedge communities to plant communities dominated by reed canarygrass are largely unknown. The purpose of this study was to determine the effects of invasion by reed canarygrass on small mammals. We hypothesized that small mammals would be negatively affected by the invasion of reed canarygrass. We predicted lower richness, diversity, and relative abundance of small mammals in invaded sites. More specifically, we predicted that specialist species of mammals would be impacted more than generalist species. We sampled small mammals monthly at three paired native and invaded sites during June-September 2006 and 2007. Richness of small mammals was not different between treatments. However, diversity of small mammals was greater at native sites than at invaded sites during 2006. In addition, relative abundances of the northern short-tailed shrew (*Blarina brevicauda*) and the arctic shrew (*Sorex arcticus*) were greater at native sites than at invaded sites. However, there were no differences for the meadow vole (*Microtus pennsylvanicus*), deer mouse (*Peromyscus maniculatus*), and short-tailed weasel (*Mustela erminea*). These results support our hypotheses that the small mammal community was negatively affected by the invasion of reed canarygrass. In addition, specialist species (e.g., shrews) were affected more than generalist species (e.g. deer mouse). This study demonstrates the negative effect of a plant invasion at a higher trophic level.