

Public Abstract

First Name:Trenton

Middle Name:Nathaniel

Last Name:Smith

Adviser's First Name:Joshua

Adviser's Last Name:Millspaugh

Co-Adviser's First Name:

Co-Adviser's Last Name:

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Title:Broad-scale Resource Selection and Food Habits of a Recently Reintroduced Elk Population in Missouri

Since being extirpated from eastern North America, elk (*Cervus elaphus*) have been reintroduced in 10 eastern states and 1 Canadian province. Little is known about the habitat needs of these eastern populations of elk. Therefore, our objectives were to determine habitat selection and food habits of the recently reintroduced elk population in Missouri. To achieve these objectives, we placed GPS collars on all adult animals prior to their release.

To determine elk habitat selection, we compared the landscape features of elk locations with those of locations considered available through a hierarchical Bayesian model. Elk selected forage openings (fields cultivated to provide forage for wildlife) over all other landscape features. Other features associated with open land including low canopy cover, glades, and pastures also had substantial effects on elk habitat selection.

We determined the food habits of elk in Missouri by comparing diet composition with forage availability. We measured diet composition through examining fresh fecal samples. We determined forage availability through sampling vegetation at random points. Elk selected grains and cool-season grasses over all other forage classes. Legumes were the most highly consumed forage class. Approximately half of the elk diet was composed of plants cultivated in forage openings.

The availability of open lands is a critical resource for elk in forest dominated landscapes in the eastern U.S. Managers of elk populations in similar ecosystems should ensure the availability of open lands is sufficient which might be met through maintenance of forage openings and restoration of natural open lands.