

# **Coprophagy: An ecological investigation of the consumption of mammalian carnivore feces**

by

**Troy R. Livingston**

B.S., Kansas State University, 1989

M.S., Kansas State University, 2001

## **ABSTRACT**

The ecology of carnivore feces consumption (i.e., coprophagy) was investigated on Fort Riley, Kansas from January 2000 through December 2000. Feces from captive bobcats (*Lynx rufus*), captive coyotes (*Canis latrans*), and free ranging coyotes were randomly placed on tracking stations throughout woodland and prairie habitats to determine rates of coprophagy on known feces by local wildlife.

Rates of coprophagy on feces placed at tracking stations during winter and spring were 7 and 18%, respectively, while rates during autumn and summer were 32 and 50%, respectively. A variety of animal species were present at stations where coprophagy occurred including opossums (*Didelphis virginiana*), coyotes, bobcats, whitetail deer (*Odocoileus virginianus*), cottontail rabbits (*Sylvilagus floridanus*) and raccoons (*Procyon lotor*), and numerous insect and bird species.

Levels of coprophagy varied seasonally in relation to habitat type during summer and autumn and in relation to an interaction effect between feces type and habitat during spring ( $P = 0.029$ ). Eighty percent of coyote feces consumed during spring were from prairie sites and 100% of bobcat feces consumed were in woodland habitats. The lowest rates of coprophagy occurred during winter 2000.

Highest rates of coprophagy occurred during summer with significant differences in levels of consumption occurring between habitat types. Sixty-seven percent of feces consumed were located in woodland habitats. Opossums were the most frequent visitors to coprophagy stations followed by insects.

There was a significant difference in the levels of coprophagy in prairie and woodlands during autumn 200 ( $P = 0.01$ ). Feces were consumed nearly 3 times more often at stations located in woodland habitats than at stations located in prairie habitats, and opossums were the most frequent visitors to stations where coprophagy occurred.

High levels of coprophagy occurred on a seasonal basis at Fort Riley, Kansas. It was unclear what factors cause coprophagy in wildlife populations, however, coprophagy could bias ecological studies that rely upon feces as indicators of animal activity, habitat associations, diets, and species abundance because many feces would not be available for study.