

**Ecology and Interspecific Relationships of Mammalian Predators on Fort Riley Military Reservation, Kansas**

by

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**ABSTRACT**

**The ecology and interspecific relationships of coyotes, bobcats, raccoons, and opossums were examined on Fort Riley Military Reservation, from April 1996 through March 1998. Radio-collars were placed on 13 coyotes, 10 bobcats, 18 raccoons, and 14 opossums to determine seasonal home range sizes and seasonal habitat use.**

**Male coyotes were the largest mammalian predators based on body weight (13.3 kg), followed by female coyotes (11.6 kg), male bobcats (11.1 kg), male raccoons (9.1 kg) female bobcats (8.3 kg), female raccoons (7.0 kg), male opossums (2.2 kg), and female opossums (2.1 kg).**

**Resident coyotes had relative small mutually exclusive home ranges (4.2 km<sup>2</sup>), while transient (nomadic) coyotes had much larger home ranges (53.4 km<sup>2</sup>) that overlapped each other, and the home ranges of the residents. The coyote density was high (0.9-1.0 coyotes/km<sup>2</sup>), with transient coyotes making up 40-50% of the population.**

**Home ranges of adult resident bobcats overlapped among and between sexes, and the home range of an adult male bobcat (20.0 km<sup>2</sup>) was considerably larger than the home ranges of females (7.5 km<sup>2</sup>). Kitten bobcats had smaller home ranges than resident adults of the same sex, while transient bobcats had much larger home ranges (57.1 km<sup>2</sup>) than resident adults.**

**Female raccoons had relatively small, overlapping home ranges (1.2 km<sup>2</sup>) and adult male raccoons had larger, mutually exclusive home ranges (2.6 km<sup>2</sup>). Home ranges of female opossums (0.5 km<sup>2</sup>) were smaller than the home range of a male opossum (1.0 km<sup>2</sup>) in spring-summer.**

**Coyotes were the most dominant mammalian predators on Fort Riley, and they influenced the home ranges, habitat use, mortality, social organization and/or food availability of bobcats, raccoons, and opossums. Habitats selected by coyotes remained consistent between seasons. However, bobcats, female raccoons, and probably opossums changed their habitat use in fall-winter, apparently in an effort to reduce contact and/or competition with coyotes during lean periods. Coyotes preyed upon opossums, female raccoons, and yearling raccoons during late winter-early spring, and the carrying capacity of bobcats was probably reduced by the high coyote density. The ecology of the predator community on**

**Fort Riley was influenced by the specific needs of each species as well as the needs of other predator species that were present.**