

DEVELOPING A GENERAL THEORY OF PRIMATE SPACE USE: INSIGHTS FROM MECHANISTIC ANALYSES OF MAMMALIAN MOVEMENT ECOLOGY

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Patterns of space-use by individuals are a fundamental component of primate ecology, influencing their social organization, mating systems and demography. To date, the principal methods used to analyze home range patterns of primates and other mammals have been statistical home range models (such as minimum convex polygon and kernel methods), and resource selection analyses of habitat use. Here, using patterns of movement and space-use by white-faced capuchins in Barro Colorado Island, and coyotes and elk in Yellowstone as examples, I discuss how mechanistic home range models provide a new alternative framework for understanding how the behavioral responses of primates and other mammals to resources, conspecifics, competitors and predators gives rise to their observed patterns and intensity of space use.

Keywords: movement ecology, home ranges, space-use, movement models