

Public Abstract

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Title:RESPONSE OF RACCOON SPATIAL AND SOCIAL BEHAVIOR TO THE PRESENCE OF AN EXPERIMENTALLY CLUMPED FOOD RESOURCE

The spatial and behavioral ecology of many putatively solitary carnivore species can fluctuate based on the availability and location of resources. Hallmarks of a more solitary existence include limited home range overlap and concurrent space use with conspecifics, and lack of social denning behaviors. Conversely animals exhibiting greater sociality or a more spatially aggregated local distribution also have greater overlap and conspecific co-occurrence values and higher frequencies of proximal or communal denning. The transition from a solitary to a social or group-living lifestyle can occur when clumped resources patches are available for extended periods. In this study I used raccoons as a model for solitary carnivore and take an experimental approach to examine how raccoons respond to the addition of a predictable and abundant food resource. I contrasted raccoons inhabiting two adjacent sites on the University of Missouri Thomas S. Baskett Research and Education Area located 8 km east of Ashland. I created a permanent feeding station where 35 kg of dog food was placed in pile weekly while the other site received the food dispersed to multiple sites that varied over time. Raccoons were outfitted with radio telemetry collars and data were analyzed to assess for differences between the sites. Home range size did not differ between treatments sites or genders, but raccoons from the clumped resource site were more likely to occur in the same geographic space. Communal denning, proximity of dens, and den reuse behaviors did not differ overall between the two sites, but clumped resource site raccoons moved shorter distances between subsequently used den sites and to utilize dens located within a smaller area. Differences in the patterns of overlap, co-occurrence, communal denning, proximal denning, and den reuse found in this study suggest that raccoons and perhaps other putatively solitary mesocarnivores are not truly solitary, but rather appear so only where resource availability induces territories occupied by just a single individual. Given sufficient resources or food patches, these species may exhibit a more social existence. Understanding how these normally solitary carnivores react to resource availability to form spatial groups can provide researchers and resource managers with the knowledge to address a variety of habitat and species management questions.