Prey diversity and selection by two generalist mammalian predators in suburban habitats.

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Abstract

In urbanized areas, some species (synurbic species) may take advantage of the access to new resources and habitat types in urbanized areas. In these human altered habitats, the decreased of large predators, leads to the increase of wild medium-sized predators. In addition, the presence of domestic predators, commensal prey species and anthropogenic refuses modify trophic interactions in urbanized areas. Domestic cats and red foxes are among the most abundant medium-sized carnivores in European urbanized areas. Although their diets were described in these areas, neither their concomitant predation pattern nor their prey selectivity were studied yet. Here, we monitored prey availability (in richness, diversity and density) and cat and fox diets in three suburban habitats (park, agricultural land and forest) during 2-years to evaluate the prey selectivity by both predators. We detected significant differences in prey richness and diversity inter- and intra-habitats. In addition, lagomorph, small mammal, bird and invertebrate densities were significantly affected by habitats, seasons and habitat : season. The overall cat diet richness was lower than fox diet richness, while cat diet diversity was higher than fox diet diversity. We assess significant differences in cat and fox diet richness and diversity according to habitats and seasons. Overall both predators positively selected vertebrate prey (mammals and birds). Thus, fox and cats may have a synergetic effect on those prey populations. Within habitats and across seasons, predator scat composition was significantly more specialized than the average predator diet suggesting the existence of individual trophic specialization. We strongly recommend to simultaneously monitoring prey availability and predator diets to be able to model concomitant predator impacts, particularly in disturbed areas where small changes in species abundances can lead to strong trophic cascades.

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