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Spatial and temporal separation between the golden jackal and three sympatric carnivores in a human-modified landscape in central Bulgaria

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ABSTRACT

The range of the golden jackal (Canis aureus) in Europe has expanded from southern regions northward and westward, raising concerns of increased competitive interactions with other carnivores. In Europe, the jackal is most common in Bulgaria, where it co-occurs with several other carnivore species. We investigated the spatial occurrence and daily activities of golden jackals and three smaller sympatric carnivores: the red fox (Vulpes vulpes), the European badger (Meles meles) and the stone marten (Martes foina). Using camera trapping in spring and summer in a human-modified landscape of central Bulgaria, we ascertained that red foxes were separated from jackals spatially, whereas badgers and martens were active at different times of the day. We suggest that differences in resource partitioning between jackals and the three smaller

carnivore species were associated with a variation in resource use patterns (e.g., food or microhabitats). Our findings indicate that spatial/temporal separation allows smaller species to avoid direct confrontations and agonistic competitions with jackals, resulting in successful co-occurrence.

KEYWORDS:

Canis aureus | competition | ecological niche | intra-guild interaction | spatial niche | temporal niche

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Disclosure statement

No potential conflict of interest was reported by the authors.

Additional information

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