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What Does the Fox Say? A Comparison of Rural and Urban Red Fox Vocalizations

The Red Fox (*Vulpes vulpes*) has the widest geographical range of any carnivore in the world; it can be found in much of the Northern Hemisphere and Australia. The Red Fox is a generalist predator that can live in a very wide range of habitats from deserts, arctic tundra, grasslands, and urban environments. Fox populations in urban areas are typically high. The average density of urban foxes is 2-12 adults/km² (whereas rural fox populations tend to be 0.2-2.7 adult foxes/km²). With this information in mind, my goal was to compare fox communication patterns in rural and urban areas. A review of the scientific literature on fox vocalizations reveals that most studies focus on long range communication, vocalizations selected for tameness or aggressiveness, and ontogeny of vocalizations. Few studies have been done on how red fox vocalizations are affected by urban environments. Thus less is known about the topic. Using the RAVEN interactive sound analysis software, fox calls were collected over a four-month period around known fox locations. From this data, I was able to find what time of day the foxes were more likely to call and compare the types of calls heard at each site. Fox locations were carefully chosen to represent rural and urban areas. One location was close to Montana State University with high traffic and many new developments. The other site was located several miles away from town in a farming community. I recorded some calls given off at each site and identified the types of calls made on a day to day basis. As urban areas are denser and foxes are territorial, it is predicted that a greater population of foxes in a smaller area will decrease the amount and diversity of calls made likewise foxes in rural areas will be more vocal.