Geographic Distribution and Prevalence of Cytauxzoon felis in Wild Felids.

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Abstract: Cytauxzoon felis, a tick-borne protozoal parasite of wild and domestic felids, is the causative agent of cytauxzoonosis in domestic and exotic felids. *C. felis* can be transmitted by two tick species, *Dermacentor variabilis* and *Amblyomma americanum*. The distribution of these ticks overlap considerably throughout the southern United States, but *D. variabilis* ranges farther into northern states. The objective of the current project was to determine the distribution and prevalence of *C. felis* in bobcats (*Lynx rufus*) and other wild/exotic felids from ten eastern states (Georgia, Kansas, Kentucky, Louisiana, Missouri, North Carolina, North Dakota, Ohio, Oklahoma, and West Virginia). The bobcat is believed to be the primary reservoir for *C. felis*, but few studies have looked at the distribution and prevalence of the parasite within wild felids. Blood and/or spleen samples from hunter/ trapper-killed felids (n=420) were tested for *C. felis* by PCR, targeting the ribosomal internal transcribed spacer region 1 (ITS-1) region. Prevalence was higher in southern states where both tick species are present. The prevalences in Kansas (41 bobcats), Kentucky (74 bobcats), Louisiana (one bobcat, one cougar [*Felis concolor*], one serval [*Leptailurus serval*]), Missouri (39 bobcats), North Carolina (8 bobcats) and Oklahoma (20 bobcats), were 27%, 55%, 33%, 79%, 63% and 60%, respectively. The prevalence was lower in West Virginia (0%, 37 bobcats), Ohio (5%, 19 bobcats), Georgia (3%, 69 bobcats) and North Dakota (3%, 114 bobcats). These data indicate that *C. felis* is widespread in bobcat populations, but the spatial differences in prevalence may relate to differences in the distributions of the two tick species. The ultimate goal of this project is to investigate intraspecific variability of *C. felis* throughout the eastern United States by comparison of ITS sequences present in wild felids with those detected in domestic cats and ticks.

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