Desert tortoises (Gopherus agassizii) within shorter distances of human population centers have a higher prevalence of two respiratory disease pathogens, according to a study by USGS and University of Florida scientists published in *The Journal of Wildlife Management*.

Scientists evaluated 1,004 tortoises from the Mojave Desert for prevalence of two pathogens, *Mycoplasma agassizii* and *Mycoplasma testudineum*, both of which cause upper respiratory tract disease in desert tortoises. Tortoises were defined as “test-positive” if they were positive by culture and/or DNA identification, or positive or suspect for the respective antibody for either *Mycoplasma* species.

The scientists plotted *Mycoplasma* prevalence against tortoise GPS location; habitat factors (vegetation, elevation, slope, and aspect); tortoise size and sex; distance from another test-positive tortoise; and human activity variables (distances to roads, agricultural areas, playas, urban areas, and centers of populated census blocks). Analytical models evaluated the data for the two *Mycoplasma* species separately.

The most important factor determining disease prevalence was distance to human households. The prevalence of test-positive tortoises was low: 1.49% (15/1,004) for *Mycoplasma agassizii* and 2.89% (29/1,004) for *Mycoplasma testudineum*. The geographic distributions of test-positive tortoises for the two *Mycoplasma* species showed little overlap: only 2 tortoises were test-positive for both diseases.

The relationship between *Mycoplasma*-positive tortoises and distance to human populations may be due to escaped or released captive pet tortoises, because the prevalence of *Mycoplasma agassizii* in captive tortoises is known to be high. Indeed, the source of *Mycoplasma* upper respiratory tract disease in wild desert tortoises is thought to be infected captive tortoises, versus a natural origin in the Mojave. *Mycoplasma* species have been reported in various tortoise species imported for the pet trade from eastern U.S., Europe, Asia, and Africa.

**This Brief Refers To:**