

US EPA ARCHIVE DOCUMENT



Investigating potential human risk and preventive measures to exposure to *Baylisascaris procyonis* in Texas

Amy E. Kresta and Scott E. Henke, Ph.D.
Texas A&M University -- Kingsville, Kingsville, Texas



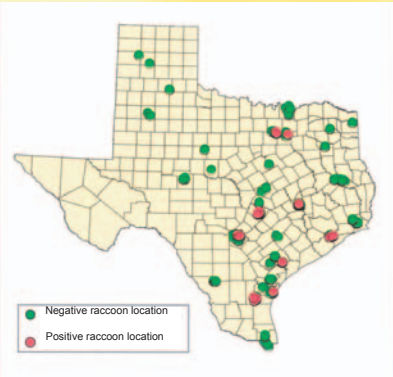
Overview:

Baylisascaris procyonis is a parasitic roundworm found in the small intestine of raccoons and can be transmitted from wildlife to humans. Humans can become infected with *B. procyonis* by ingesting eggs. Ingestion may result from contact with contaminated vegetation, soil, water, or raccoon feces. Eggs can remain viable in the environment for years; thus, increasing the likelihood of transmission to humans. Larvae of *B. procyonis* in humans can cause liver disease, blindness, seizures, paralysis, and death.



Results:

Baylisascaris procyonis were documented in 32/590 (5.4%) raccoons from several locations in the eastern half of Texas ranging from northern to coastal areas. Prevalence of *B. procyonis* was highest in the Austin, Houston and Kingsville areas with 27.6%, 15.0%, and 15.0%, respectively, of raccoons infected. Prevalence of *B. procyonis* was higher among juvenile raccoons than adults indicating that the parasite only recently has been introduced into the raccoon population.



Prevalence of *Baylisascaris procyonis* in areas of Texas.

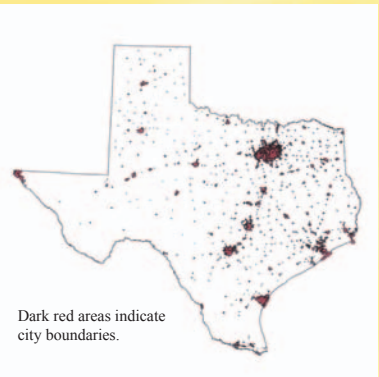
Area	# positive	(%)
Austin	8/29	(27.6%)
Houston	3/20	(15.0%)
Kingsville	3/20	(15.0%)
San Antonio	9/61	(14.8%)
Bryan/CS	3/25	(12.0%)
Dallas/Denton	3/40	(7.5%)
Corpus Christi	2/36	(5.6%)
Victoria	1/44	(2.3%)

Logistic regression identified soil texture and age to be the best predictors of *B. procyonis* presence. A higher number of positive raccoons were found on clay texture soils and older raccoons were more likely to be infected. Soil texture may influence egg mortality and transmission rate potential by preventing eggs from desiccating quickly and allowing eggs to remain on the surface.



Impact:

Baylisascaris procyonis were more prevalent in eastern, central, and coastal Texas due to the particular habitat characteristics present in these areas and larger cities in these areas are the most-at-risk of zoonotic transmission of *B. procyonis* because raccoons do not limit themselves to rural areas (they are adapted to urban/suburban conditions) thus increasing the likelihood of raccoon:human interactions. Now that we know where *B. procyonis* is occurring and could have the greatest impact on human and domestic animal populations, we are developing education material to distribute to wildlife personnel, physicians, and general public in those areas.



Wildlife researchers and trappers need information about risks dealing with infected raccoons and about how to prevent traps from being contaminated by eggs for prolonged periods of time. The general public needs to be aware of the risks of coming into contact with raccoons and raccoon feces so that these situations may be avoided to reduce potential human exposure to *B. procyonis*. Physicians need to be aware that *B. procyonis* is present in Texas and should be recognized as an important cause of larval migrans in humans. Disseminating information gained from this project is the next phase now that the scientific research is complete.

Research Methods:

We examined 590 raccoons from selected sites throughout Texas. Prevalence rates for *B. procyonis* were calculated. Relationships among infected raccoons, soil texture, vegetative community, precipitation, temperature, humidity, and proximity to human populations were statistically analyzed.

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