

NUISANCE WILDLIFE – BATS IN GEORGIA

By Claudine Wilkins and Jessica Rock, Founders of Animal Law Source™

BACKGROUND

Bats are very misunderstood animals. Bats, generally, have been given a bad rap as “blood-sucking, disease-ridden flying rodents.” There's a lot of misinformation about bats out there, and too many people are needlessly afraid of them. Bats are mammals, not rodents. And even though there is a carnivorous blood-sucking bat, the “vampire” bat is found only in Central and South America. Humans can get rabies from a bat scratch or bat saliva, but the numbers of humans acquiring rabies from a bat are quite small. Some bats eat fruit nectar and may prey on small mammals such as birds, lizards and frogs. However, the greatest contribution that most bats make is to humans because bats eat thousands of insect pests a day, such as mosquitoes, beetles, and moths. A single bat can eat between 600 and 1000 insects every hour.

Bats feed on insects that are pests which often carry diseases that infect humans, making bats important allies in fighting vector-borne diseases. Vector-borne diseases are infections transmitted by the bite of infected arthropods, such as mosquitoes, ticks, kissing bugs (triatomine), sandflies, and blackflies. Arthropod vectors are cold-blooded (ectothermic) and are sensitive to changes in temperature. Vector-borne diseases such as Malaria, Yellow fever, Lyme disease, West Nile virus, Dengue, and now Zika, globally kill millions of people each year. In fact, bats' insatiable hunger for these insects is one reason why bats are protected under both Federal and State laws.

CHARACTERISTICS

Bats are the only mammals that can fly, with wings that have bones similar to the human hand. A bat's front limbs have membranes between their metacarpals and phalanges (basically, their "fingers") that form true, aerodynamic wings. Bats are one of the only mammals that use advanced echolocation to find food. Their advanced sonar has been studied to increase our knowledge of sonar similar to what is now used in ships. Bats are nocturnal, making it difficult to spot one in the daytime.

Bats are sometimes identified by the shape of their noses which can be small and round, leaf shaped, or shaped like a pig's nose. Bats range in size from 2-3 inches long to as large as 7 inches long with a wingspan of 21-23 inches. Bats can weigh as little as a penny and no more than two ounces. A typical lifespan, if the bat makes it to adulthood, can last up to twenty years.

Bats can be found in almost any habitat. Most bats do not favor human dwellings and usually live in cave-like or upland forest habitats in the northwestern part of Georgia. But because Bats are especially sensitive to cold weather, they sometimes roost in human structures to get out of the cold. Some of these structures may include roof gutters, behind shutters, under wood shingle siding and



roofing, awnings, trim with overhang, under flashing around chimneys, open garages, patios, porches, breezeways, and roofs. Some bats migrate and others go into torpor, a type of regulated hypothermia that can last a few hours to a few months. Bats are threatened in Georgia with habitat loss, pesticide use, lack of clean water, and human interaction. Because of human fears and lack of understanding of bat behavior, humans sometimes needlessly kill bats.

With 1000 Bat species, worldwide (order Chiroptera), and 40 different species of Bats living in the U.S., sixteen different species survive in Georgia. Some of the species in Georgia include the tri-colored bat (*Perymyotis subflavus*), little brown bat (*Myotis lucifugus*), big brown bat (*Eptesicus fuscus*), Northern long-eared bat (*Myotis septentrionalis*), Southeastern myotis (*Myotis austroriparius*), small-footed myotis (*Myotis leibii*), the federally endangered Indiana bat (*Myotis sodalis*) and gray bat (*Myotis grisescens*). (See Appendix I for complete list of Georgia bats). Presently, bat populations are being decimated by a recently introduced fungal infection, White-Nose Syndrome (WNS). In Georgia, the small-footed myotis and the tri-colored bat are state species of concern because population levels have drastically been reduced due to the infection of White-Nose Syndrome.

WHITE-NOSE SYNDROME

White-nose syndrome (*Pseudogymnoascus destructans*, WNS) was first found in Georgia in February 2013. WNS is responsible for over six million bat deaths in 29 states in the last ten years. WNS is a cold-loving fungal disease that spreads during bat hibernation. The white-spotted fungal spores are spread in the close quarters of hibernation from bat to bat. The infection causes the bats to wake up and fly outside in the cold, which uses up their fat stores, leading to early depletion of fat reserves which the animal needs to survive the winter. The bats end up either freezing or starving to death. Because bats only have one pup each year, WNS has devastated many bat populations especially the Small-footed myotis and the Tri-colored bat in Georgia.

It has been speculated that the disease was brought to the U.S. from Europe, with devastating consequences, because unlike European populations, North American Bats have little or no resistance to this disease. As a result, it has spread from Georgia to Canada and as far west as Washington state. By the end of the 2009-2010 hibernating season, 16 states and 3 Canadian provinces had confirmed cases of bats with WNS. (In the U.S.: Connecticut, Delaware, Indiana, Kentucky, Maryland, Massachusetts, Missouri, New Hampshire, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Vermont, Virginia, and West Virginia. In Canada: New Brunswick, Ontario, Quebec; and also, found in Nova Scotia).

By May of 2016, white-nose syndrome was confirmed or suspected in 11 Georgia counties. It also has been confirmed in four Border States: Tennessee, Alabama, North and South Carolina. Because 15% of Georgia's caves are on state-managed lands, the Wildlife Resources Division of Georgia Department of Natural Resources weighed its options for managing access to caves and mines on State lands. Humans who visit caves play an unintentional part in spreading the fungus from cave to





cave through human contact on clothing and gear. As a result, officials have limited activities or closed many caves from recreational visits to reduce exposure of WNS to Georgia's fragile bat populations.

FEDERAL LAW

The U.S. Fish and Wildlife Service monitors the Endangered Species Act of 1973 (16 U.S.C. §1531) which protects "threatened" (in danger of becoming endangered) and "endangered" (in danger of becoming extinct) species and their habitats. The U.S. Fish and Wildlife Service lists several bat species on the Endangered Species list including the Gray Bat, Hawaiian Hoary Bat, Indiana Bat, Lesser Long-nosed Bat, Mexican Long-nosed Bat, Ozark Big-eared Bat, Northern long-eared bat, and the Virginia Big-eared Bat. Only two bat species found in Georgia are protected under the Endangered Species Act, the gray bat and Georgia Indiana bat.

In an effort to conserve the Northern Long-eared bat, the U.S. Fish and Wildlife Service has announced an interim rule, effective in 2016, that uses flexibilities under section 4(d) of the Endangered Species Act (ESA) to tailor protections to areas affected by White-nose syndrome during the bat's most sensitive life stages. The rule is designed to protect the Northern Long-eared bat while minimizing regulatory requirements for landowners, land managers, government agencies and others within the species' range. The 4(d) rule "prohibits purposeful take of Northern Long-eared bats until May 3, 2016. After May 3, 2016, individuals who wish to capture and handle Northern Long-eared bats for recovery purposes will need a permit pursuant to section 10(a)(1)(A) of the Act. Incidental take resulting from otherwise lawful activities will not be prohibited in areas not yet affected by White-nose syndrome (WNS)."

GEORGIA LAW

As with most wildlife species in Georgia, native bats are considered protected as a "nongame" wild animal under state law, which means no native species of bat in Georgia is allowed to be kept as a pet, nor is it legal to intentionally capture, kill, or harm any of the sixteen Georgia native species of bats found in the State. Disturbing wildlife dens, holes, or homes, or driving wildlife, from their dens, holes, or homes is also illegal (OCGA §12-4-146 (a) It shall be unlawful to remove, kill, harm, or disturb any wildlife found within any cave...).

Under Georgia's animal anti-cruelty statutes, O.C.G.A. §16-12-4(f)(1)(A) does not prohibit a person from "injuring or killing an animal reasonably believed to constitute a threat for injury or damage to any property, livestock, poultry or any pest that might be exterminated or removed from a business, residence, or other structure." However, under Federal law, "unknowingly" killing even one endangered species bat, (the gray bat, the Georgia Indiana bat, and now add the Northern long-eared bat), can carry a fine up to \$25,000, and for "knowingly" killing one on the endangered species list, a fine up to \$50,000 and one year in jail. (See 16 U.S.C. §1540). Unless one is able to distinguish between an endangered species and a non-endangered species, it is best not to physically harm any bats in Georgia. Bat removal should involve humane relocation and not bat extermination.



The Georgia Department of Natural Resources allows removal of the few species of bats that have adapted to using human structures for shelter (the Georgia evening bat, Georgia big brown or the Georgia Mexican free-tailed bat) on a case-by-case basis, usually with little expense to the homeowner and with no harm done to the bats. According to the Wildlife Resources Division, Bat exclusions should be avoided between April 1st and July 31st in Georgia because during this maternity time of year, bat pups are too young to fly and may become trapped and die inside structures. If exclusions must be completed during this period, they must be completed by a licensed Nuisance Wildlife Control Operator (see list of approved operators at <http://gadnrle.org/>).

Georgia's State Wildlife Action Plan created in 2005 by a coalition of agencies, academics, companies and land owners, strives to maintain, conserve and restore native wildlife species and habitats before they become endangered or extinct. Georgia's plan lists 349 animals and 290 plant species as critical high priorities for conservation. The Plan includes monitoring all of Georgia's native bat species.

The Wildlife Resources Division has also designed a simple plan that outlines steps for raising awareness about WNS, preventing or slowing its spread, reporting and analyzing bats, and managing related natural resources such as caves. The overall investigation has three primary focus areas: research, monitoring, and outreach. An extensive network of state and federal agencies, universities, caving grottos and private individuals are working to investigate the source, spread and cause of bat deaths associated with WNS, and are developing management strategies to minimize its impact. (See GADNRBats@dnr.ga.gov for more information).

REFERENCES

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www.federalregister.gov/documents www.defenders.org/bats/bats
www.ridacritter.com/bats.php www.unitedbatcontrol.com/georgia_bat_removal.htm
www.fws.gov/midwest/Endangered/mammals/grbat_fc.html

APPENDIX I

LIST OF BATS IN GEORGIA

Big Brown Bat - <i>Eptesicus fuscus</i>	Seminole bat - <i>Lasiurus seminolus</i>
Silver-haired bat - <i>Lasionycteris noctivagans</i>	Northern Yellow Bat - <i>Lasiurus intermedius</i>
Southeastern bat - <i>Myotis austroriparius</i>	Rafinesque's big-eared bat - <i>Corynorhinus</i>
<i>rafinesquii</i>	
Mexican free-tailed bat - <i>Tadarida brasiliensis</i>	Northern long-eared bat - <i>Myotis septentrionalis</i>
Eastern pipistrelle - <i>Pipistrellus subflavus</i>	Little brown bat - <i>Myotis lucifugus</i>
Eastern red bat - <i>Lasiurus borealis</i>	Hoary bat - <i>Lasiurus cinereus</i>
Eastern small-footed bat - <i>Myotis leibii</i>	Indiana bat - <i>Myotis sodalis</i>
Evening bat - <i>Nycticeius humeralis</i>	Gray bat - <i>Myotis grisescens</i>

OCGA §16-12-4 Cruelty to animals.

(b) A person commits the offense of cruelty to animals when he or she causes death or unjustifiable physical pain or suffering to any animal by an act, an omission, or willful neglect. Any person convicted of a violation of this subsection shall be guilty of a misdemeanor; provided, however, that:

(1) Any person who is convicted of a second or subsequent violation of this subsection shall be punished by imprisonment not to exceed 12 months, a fine not to exceed \$5,000.00, or both; and

(2) Any person who is convicted of a second or subsequent violation of this subsection which results in the death of an animal shall be guilty of a misdemeanor of a high and aggravated nature and shall be punished by imprisonment for not less than three months nor more than 12 months, a fine not to exceed \$10,000.00, or both, which punishment shall not be suspended, probated, or withheld.

(c) A person commits the offense of aggravated cruelty to animals when he or she knowingly and maliciously causes death or physical harm to an animal by rendering a part of such animal's body useless or by seriously disfiguring such animal. A person convicted of the offense of aggravated cruelty to animals shall be punished by imprisonment for not less than one nor more than five years, a fine not to exceed \$15,000.00, or both, provided that any person who is convicted of a second or subsequent violation of this subsection shall be punished by imprisonment for not less than one nor more than five years, a fine not to exceed the amount provided by Code Section 17-10-8, or both.

Credit to Kaye Klapper