

Southeastern Cave Bats: Reservoirs for Future Populations

Katie Gillies, *Bat Conservation International, 500 Capital of Texas Highway, Building 1, Austin, TX 78746-3302*

Southeast Bat Diversity Network, *University of Kentucky, Wildlife Ecology and Management, 214 Thomas Poe Cooper Building, Lexington, KY 40546-0073*

Abstract: Since 2006, White-Nose Syndrome (WNS) has devastated bat populations across eastern North America. The U.S. Fish and Wildlife Service estimates the loss at more than 5.5 million bats. WNS and/or the fungal causative agent (*Geomyces destructans*) has now been documented in 21 states in the United States including Alabama, Kentucky, Missouri, North Carolina, Oklahoma, Tennessee and West Virginia, and 4 Canadian provinces. Several southern states have confirmed the presence of *G. destructans*, without manifestation of WNS or the significant mortality observed in northeastern sites. Additionally, some southern species, including the Virginia big-eared bat (*Corynorhinus townsendii virginianus*), a federally endangered species, have not displayed the pathogen mediated damage associated with WNS, despite their suspected vulnerability to infection and exposure to the fungus. With the unprecedented loss of bats in eastern North America, southeastern cave-roosting populations of bats may eventually serve as genetic reservoirs to enhance and supplement bat populations across the eastern United States. We collected estimates of bat mortality due to WNS across impacted states. Estimates of percent decline by species and by state demonstrate substantial variation in losses across the range of the disease, with fatalities less severe in southern reaches of the distribution. As such, it becomes increasingly important to protect existing roosts and suitable habitats of bats throughout the southeast region. Protection of critical roosting sites is essential to ensure that bats possessing varying genetic compositions are retained in wild populations. Included is a discussion of priorities for southeastern bat conservation as well as the potential for scientifically sound management practices that promote conservation at the landscape level.

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