Oklahoma Department of Wildlife Conservation's Frequently Asked Questions about White-nose Syndrome in Oklahoma

What is White-nose Syndrome (WNS)?

White-nose syndrome (WNS) is a devastating disease afflicting hibernating bats that has been confirmed in 39 states and seven Canadian provinces. Since 2006, U.S. Fish and Wildlife Service biologists and partners estimate that at least 5.7 to 6.7 million bats across multiple states have now died from WNS. The disease is named for the white fungus, *Pseudogymnoascus destructans*, (*Pd*) seen on the muzzles, ears, and wings of affected bats. This disease poses a serious threat to bats that hibernate in caves and mines.

Is WNS dangerous to humans?

Thousands of people have visited affected caves and mines since white-nose syndrome was first observed, and there have been no reported human illnesses attributed to WNS. We are still learning about WNS, but we know of no risk to humans from contact with WNS-affected bats. However, we urge taking precautions and not exposing yourself to WNS. Biologists and researchers use protective clothing when entering caves or handling bats.

Are efforts being made to monitor WNS in Oklahoma?

Winter surveillance and monitoring efforts for WNS in Oklahoma began in 2010 and are ongoing. Oklahoma's geological diversity includes limestone caves (eastern Oklahoma) and gypsum caves (western Oklahoma) with a separation of about 250 miles between these two cave systems. Efforts are primarily focused on selected caves owned by conservation organizations and federal and state agencies that contain hibernating bats, though other hibernation sites on private property are also being monitored. Monitoring activities primarily include swabbing bats to collect DNA evidence of the fungus and looking for the physical presence of the fungus. Additionally, monitoring can include installing data loggers to collect humidity and temperature readings within hibernation sites, collecting tissue and blood samples from hibernating bats, and collecting soil samples. At times, bat specimens are collected for sample submission to certified laboratories when surveying bat hibernacula or for evaluating unusual bat morbidity or mortality during the winter. Winter surveillance efforts are conducted through the efforts of Rogers State University, University of Central Oklahoma, Central Oklahoma Grotto, Tulsa Regional Oklahoma Grotto, U.S. Fish and Wildlife, United States Forestry Service, Alabaster Caverns State Park, East Central University, Karst Research Institute, Kansas Department of Wildlife, Parks and Tourism, the University of Science & Arts of Oklahoma, the Sam Noble Museum of Natural History, and the Oklahoma Department of Wildlife Conservation.

Does WNS occur in Oklahoma?

Surveillance for white-nose syndrome and the fungus that causes the bat disease found that bats in 10 Oklahoma counties have been infected as of Feb. 2021 and WNS has been confirmed in Delaware and Adair counties and is suspect in LeFlore and Woods counties.

What does this mean for bats in Oklahoma?

Twenty-four species and subspecies of native bats occur in Oklahoma, 15 of which are considered hibernating bats. Three of these hibernating bat species are federally listed as endangered: the Indiana bat, *Myotis sodalis*, the gray bat, *Myotis grisescens*, and the Ozark big-eared bat, *Corynorthinus townsendii ingens*. In April, 2015 the northern long-eared bat was officially listed as federally threatened with WNS listed as the main threat to the species. Because bats are long-lived, (~5 – 15 years) but slow-reproducing (usually only 1 pup per year), bat numbers do not fluctuate widely over time and therefore bat populations affected by WNS in Oklahoma will not recover quickly.

Why should we care about bats in Oklahoma?

All of these bats play highly beneficial ecological and economic roles. Bats consume mosquitoes, moths and other night-flying insects including insects that cause extensive agricultural and forest damage. In Oklahoma, the avoided-cost value of bats (reduced cost of pesticide application) is estimated to range from $6 million to $24 million per year (Boyles, J.G., P.M. Cryan, G.F. McCracken, and T.H. Kunz. 2011. Economic Importance of Bats in Agriculture. Science 332 (6025): 41-42). They also play a vital role in cave ecosystems, providing nutrients for other cave life through their droppings and are food for other animals such as snakes and owls. Bats are also part of the natural heritage of Oklahoma and all the important ecological roles they play are probably still not known.

What are the Oklahoma Department of Wildlife Conservation (ODWC) and other state authorities doing about WNS?

ODWC biologists are aware of the serious threat posed by WNS to bat populations in Oklahoma. Through ODWC, the Oklahoma Bat Coordinating Team (OBCT) was established to create a contact list to facilitate information flow to partners, scientific cooperators, interested parties, stakeholders and user groups on bat and cave management, bat research and bat diseases, particularly WNS, in Oklahoma. The coordinating team members, listed below, include those entities that have direct bat and cave management responsibilities in Oklahoma:

• Arbuckle Karst Institute (East Central University)	• Oklahoma Tourism and Recreation Department (Alabaster Caverns State Park)
• Rogers State University	• The Oklahoma Chapter of The Nature Conservancy
• Tulsa Regional Oklahoma Grotto	• United States Fish and Wildlife Service (Ecological Services and Ozark Plateau National Wildlife Refuge)
• Central Oklahoma Grotto	• United States Forestry Service (Ouachita NF)
• Oklahoma Department of Wildlife Conservation	• University of Central Oklahoma (Selman Cave System)

For additional coordination on a national and regional level, the OBCT is a member of both the Western Bat Working Group (WBWG) and the Southeastern Bat Diversity Network (SEBDN).

For WNS, OBCT serves as a point of contact for the National White-Nose Syndrome Committee, two regional bat organizations and bat conservation groups. OBCT responds to requests regarding specific Oklahoma bat and cave information as it relates to WNS and OBCT in turn disseminates updated WNS information to a contact list that includes partners, researchers,

park naturalists, rehabilitators, and nuisance wildlife control operators.

Is ODWC closing caves and/or locations where bats may be viewed?

In Oklahoma, 24 known caves fall under state, federal or tribal authority; most caves occur on private lands. Those caves occurring on federal lands (national wildlife refuges, national forest service lands) have already been closed to public access. Caves located on Wildlife Department managed lands with significant bat resources have restricted access.

Alabaster Caverns State Park offers two public caving options; a year-round, guided tour through the main show cavern and a daily, self-guided "wild caving" experience from April 1 thru September 30. The main cavern has a year-round, resident population of four bat species while the undeveloped caves have a transient bat population. Any closings of either of these two caving options will come from the State Park Director; Oklahoma Tourism and Recreation Department after consulting with the Oklahoma Department of Wildlife Conservation, Oklahoma State Park staff members, neighboring state parks' departments and additional agencies and entities as needed.

The University of Central Oklahoma owns a cave system but public access is prohibited without permission and/or departmental staff in attendance.

The Nature Conservancy in Oklahoma owns caves within the Nickel, Twin Cave, Charley Owl and Eucha Nature Preserves in the Ozark region of northeast Oklahoma and within the Four Canyon Preserve in western Oklahoma. All caves have restricted access.

ODWC plans to continue public viewings of evening bat emergences of the migratory Mexican free-tailed bat, *Tadarida brasilensis*, maternity colony at the Selman Bat Cave Wildlife Management Area. The public viewing area is situated at least ¼ mile from the cave entrance and, due to the gypsum topography, cannot be seen during the viewings.

Researchers that apply for a Scientific Collectors Permit to trap, salvage or collect bats in Oklahoma receive an advisory related to these activities. (See Appendix 1.)

What should a landowner do if they have a bat roost (i.e. hibernaculum, maternity cave, or other congregation of bats) on their property?

It is recommended that landowners prohibit access to their caves for the time being, (with possible exceptions for surveillance teams associated with ODWC or USFWS). If landowners decide to allow access they should require all cave visitors to disinfect their clothing, boots, and gear before entering their cave if the visitors have been in any other cave. Cleaning all caving gear with approved disinfectants as outlined in the U.S. Fish and Wildlife Service's decontamination protocol should be required.

If you would like to visit with a biologist about bat roosts on your property please contact wildlife biologist Melynda Hickman at melynda.hickman@odwc.ok.gov; (405) 990-4977.

Appendix 1: The following information is provided as a special advisory for Scientific Collector's Permit applicants who wish to collect bats or animals within cave environments.

Considerations of White-nose Syndrome in Bats during Scientific Collecting Activities

Since you have applied for a Wildlife Collector's Permit to trap, salvage, or collect bats in Oklahoma, you are likely aware of White-nose Syndrome (WNS) and the danger it poses to populations of cave bats in North America. If you are not familiar with this disease, please take the time to familiarize yourself. A few websites that provide good information and additional links are:

National Speleological Society
US Fish & Wildlife Service
USGS National Wildlife Health Center

Even if you are already aware of WNS, it is a good idea to check one or more of these websites regularly because new information is posted quite often.

Because human spread of WNS is considered a possibility and the additional stress to bats by researchers may increase arousals and cause loss of fat reserves or interfere with maternity activities, the following special notes apply to your Wildlife Collector's Permit:

Those permit applications that propose entering bat roosts (hibernacula, maternity or both) must show evidence that the cave owner and/or manager has been contacted and that the applicant has received permission to access the cave. If the research project or survey spans multiple years, the Wildlife Department may restrict the number of times the roost can be entered.

Any equipment (nets, traps, gloves, etc.) that has been in contact with bats outside of Oklahoma must be properly decontaminated in accordance with the most current WNS National Decontamination Protocol before being used in Oklahoma. Any equipment that has contacted bats or has been inside caves or mines in suspect/confirmed WNS-affected counties in the nation may not be used in Oklahoma. Properly decontaminate gear being used in a suspect/confirmed Oklahoma county between sites.

The Oklahoma Department of Wildlife Conservation also shares Recommendations and Suggested Best Management Practices to Address White-nose Syndrome in Oklahoma.

Report any signs of WNS to the Oklahoma Department of Wildlife Conservation as soon as possible: melynda.hickman@odwc.ok.gov or 405-990-4977.