

ACTIVITIES OF THE FORT DRUM FISH & WILDLIFE MANAGEMENT PROGRAM : BAT MANAGEMENT & WHITE-NOSE SYNDROME

Fort Drum's Fish & Wildlife Management Program is responsible for all aspects of fish and wildlife resources on the installation. The primary focus is to support and sustain the military mission, but supporting the mission takes many forms. We ensure compliance with state and federal regulations; review proposed actions for potential impacts to fish, wildlife and their habitats; monitor various environmental parameters to maintain healthy ecosystems; promote and manage outdoor recreation; and ensure good stewardship of lands for military training and the public. Managing bats and involvement with wildlife health issues are just two activities of the Fish & Wildlife Management Program.

White-nose Syndrome (WNS) is a condition that has been responsible for the death of hundreds of thousands of bats in the eastern United States. WNS was first detected in February 2006 in Howes Cave in Schoharie Co., New York and has now spread to nine states and as far south as Virginia.

WNS is named for the distinctive white fungus growing on the noses of infected bats (see photo on right), although the fungus may also appear on the wings, ears and tail. The fungus has been identified, but researchers still do not know whether the fungus is the cause of bat deaths or whether it is simply the result of a weakened immune system caused by other factors. Modes of transmission and prevention of WNS are also unclear. What is known is that during hibernation, bats are using up their fat reserves long before the winter is over and they have been dying of starvation. Bat colonies infected with WNS have experienced mortality rates of 70-100%.



Infected hibernating bats with the characteristic "white nose" of fungus. (Photo: NYSDEC)

Because WNS was first discovered in New York, the New York State Department of Environmental Conservation (NYSDEC) has been on the forefront of WNS research. Likewise, Fort Drum has also become actively involved with WNS efforts through our active cooperation with NYSDEC and continuing survey efforts before and after WNS was detected.



The wing membrane of a little brown bat from the LeRay bat house. Note the white splotches and hole in the wing. This bat scored a 3.

In May 2009, Fort Drum worked with NYSDEC biologists to capture and assess little brown bats for WNS at the LeRay bat house (see Page 6). This was the first stage of a long-term study to be carried out by NYSDEC to determine if the fungus can survive outside of the hibernaculum (where bats hibernate), and if transmission is possible in a summer maternity colony. Fort Drum is one of three study sites in New York State.

Damage to the wing and tail membranes of bats—including splotching, scarring and even holes and tears (see photo on left)—is thought to be correlated with the fungal infection during hibernation. Forty-three little brown bats from the LeRay bat house were captured and had their wing condition assessed on a 4-point scale from 0 (meaning no damage) to 3 (heavy damage with over 50% of their wing membrane showing scarring and relatively large holes present). In general, the wing condition of the bats were poor with the majority of wings exhibiting scarring at a level of 2 or 3 and very few bats scoring a 0 with no wing damage. Fifteen bats were selected for a full work-up which included marking individuals with very small bands and swabbing the wing membranes to determine whether the fungus was still active. All bats were released with the hope of recapturing

and reassessing them later. Recaptured bats may be taken into captivity and housed individually in hibernation chambers and monitored for the development of the fungus.

In the meantime, acoustical surveys and mistnetting efforts have been intensified on Fort Drum and monitoring locations have been established based on past sites surveyed to detect any population changes in bats. At this time, preliminary results show a significant decline in bats throughout the installation.

Fort Drum's Fish & Wildlife Management Program has also been heavily involved in an interdisciplinary working group consisting of other federal and state agencies, universities, and private organizations across the U.S. to determine courses of action for both research and management needs in response to WNS. Many of the management strategies Fort Drum has already implemented to benefit the federally endangered Indiana bat will also benefit other bat species. This may be important as once common bats become rare and may potentially become threatened or endangered if the spread of WNS cannot be slowed or stopped soon.

For more information about WNS, see the USFWS web site at: http://www.fws.gov/northeast/white_nose.html.