



Nora Lea, Kanawha State Forest's very own Northern Long-eared Bat
Courtesy, All Star Ecology

Who Speaks for the Bats?: A Close Call for Nora Lea

The habitat of a rare bat in Kanawha State Forest (KSF) was nearly destroyed by a controversial surface mine. In 2005, a bat survey conducted on Kanawha Fork and Middlelick Ridge found that Northern Long-eared Bats (NLEBs) and four other species lived there in the summer. A pregnant NLEB and six pregnant or lactating bats of the other species proved that the location supported maternity colonies. Then, in 2009 a second survey found that the NLEBs still had a maternity colony there. Of 36 NLEBs captured, 17 females were found to be producing milk for their pups.

In the same year, a deadly fungus-borne disease called *White-nose Syndrome* was detected in a few WV bat populations. Cave-hibernating bats have been decimated in several northeastern states since discovery of the disease in 2006, and by 2013, known NLEB hibernacula populations in WV had been cut nearly in half (48%).



The white mold on this Northern Long-eared Bat is the deadly fungus that causes White-nose Syndrome.
J.R. Hoyt photo, https://www.eurekalert.org/multimedia/pub/web/83288_web.jpg

In October of that year, the U.S. Fish & Wildlife Service (FWS) proposed to list the species as either threatened or endangered, pending further study. The WV Dept. of Environmental Protection's Div. of Mining and Reclamation (DMR) rushed to permit the Keystone Development No. 2 mine on Middlelick Ridge (to your left across Shooting Range Road), next to the KSF Historic District, despite objection by the State Historic Preservation Office, as well as overwhelming public outcry and a long record of violations at two other mines owned by the same companies. The DMR allowed the mine operator, Revelation Energy, to destroy NLEB habitat without first developing a Protection and Enhancement Plan (PEP) to guide the operations and avoid outright killing of bats during timbering, blasting, and excavation. The federal Office of Surface



Looking southwest towards KSF. The bat habitat was destroyed before a Protection and Enhancement Plan was in place, thus violating state mining regulations. Keely Kernan photo from https://www.kanawhaforestcoalition.org/kd2-mine-?lightbox=image_1w11

Mine Reclamation and Enforcement (OSM) issued a Ten-Day Notice of Violation to the DMR for the illegal activity.

During April of 2015, with approval of the FWS and the WV Dept. of Natural Resources (WVDNR), a group of citizen's organizations spearheaded by the Mary Ingles Trail Blazers, the Kanawha Forest Coalition, and the Kanawha Trail Club funded a spring emergence bat survey at abandoned mines in KSF near this spot.



Photo courtesy Dianne Anestis

All-Star Ecology found that at least one of the mines served as a hibernaculum for the NLEB. Biologists captured a healthy female bat, nicknamed *Nora Lea* (see her photo at the upper left of this sign).

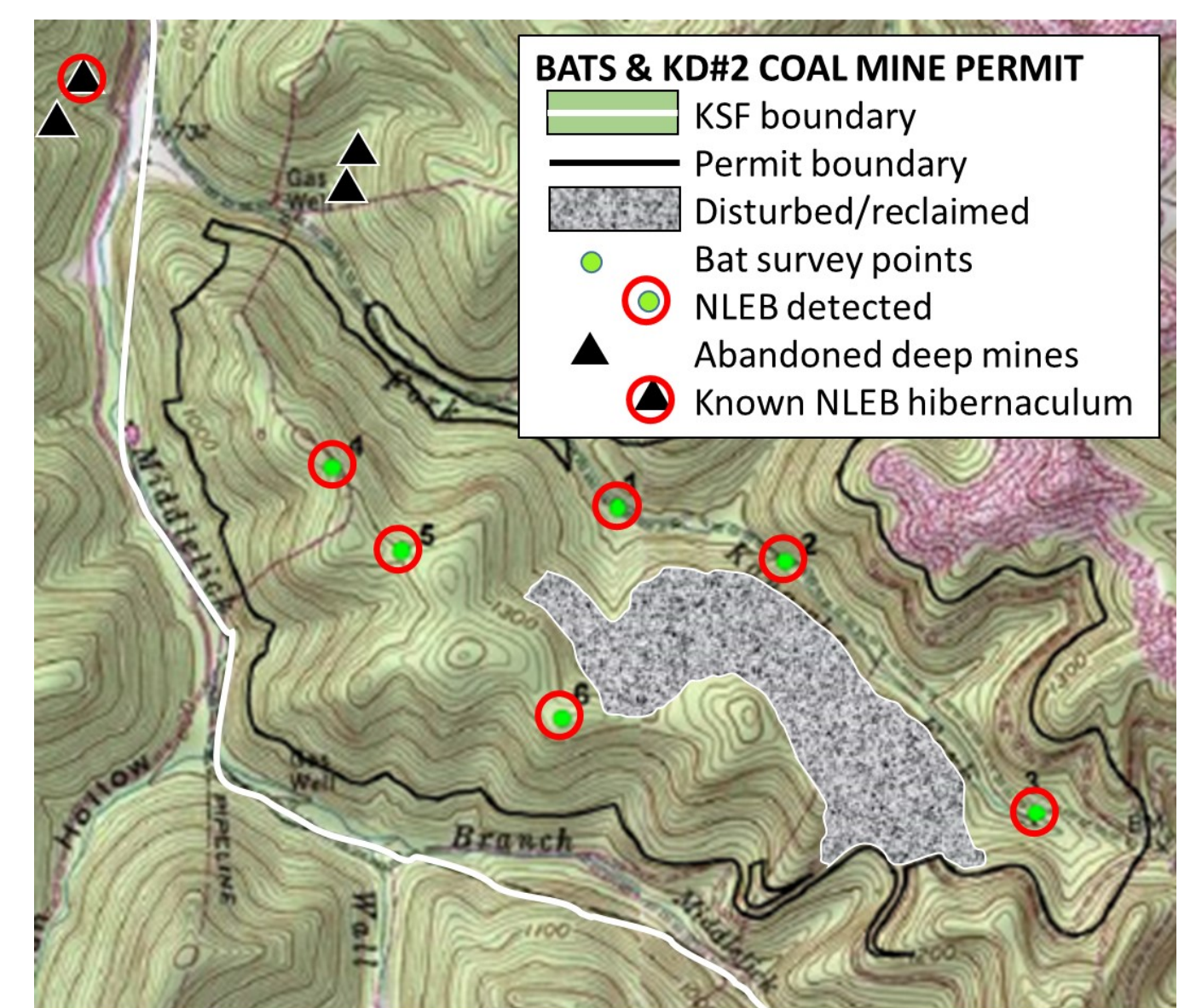
Bat biologists set up a harp trap at the Kanawha State Forest mine portal where Nora Lea was captured. They also used mist nets, acoustic equipment, and night-vision cameras.
Photo courtesy of Doug Wood



On May 4, 2015, the NLEB was listed as *threatened* by the USFWS, yet the DMR continued to allow the destruction of maternity habitat during the pupping season without the guidance of a PEP. Spurred by data from the spring emergence survey that confirmed the locale was serving not only as a summer maternity colony, but also a winter

hibernation zone, the OSM issued another Ten-Day Notice of Violation against the DMR, while the FWS sent a letter of reprimand warning the DMR that it was now in violation of the Endangered Species Act.

The DMR eventually ordered Keystone to develop a PEP. Then the agency ordered Keystone to cease further mining because of uncontrolled acid mine drainage into Kanawha Fork and Middlelick Branch. Keystone did not produce the PEP until December, 2015, when the initial reclamation phase was almost completed. A guidance document developed after guidance was no longer needed!



The acid mine drainage will be a problem forever, but at least Nora Lea and her kind were granted a few more years of living in their chosen home territory. NLEBs have a sparse hibernation distribution in western WV, so the abandoned mines in KSF and vicinity may act as winter bat refugia free from White-nose Syndrome. The incredible diversity of bats in Kanawha State Forest (nine species) reflects the legacy of care that WVDNR staff and friends of the forest have given this green gem now surrounded by so much destroyed and degraded bat habitat (see the map on the other side of this sign board). Do your part to help KSF remain a productive habitat for bats and other wildlife. Volunteer!

Numerous acidic seeps and outfalls from the Keystone and Revelation Companies' mines caused the Dept. of Environmental Protection to list Kanawha Fork as biologically impaired. Note the very low pH of 4.37 shown on the meter below.
Photo courtesy of Doug Wood

