

Bat Communities at Abandoned Railroad Tunnels in Chesapeake and Ohio Canal National Historical Park

Joshua B. Johnson, *University of Maryland Center for Environmental Science, Appalachian Laboratory, 301 Braddock Road, Frostburg, MD 21532*

J. Edward Gates, *University of Maryland Center for Environmental Science, Appalachian Laboratory, 301 Braddock Road, Frostburg, MD 21532*

Aimee Haskew, *University of Maryland Center for Environmental Science, Appalachian Laboratory, 301 Braddock Road, Frostburg, MD 21532*

Jennifer Saville, *University of Maryland Center for Environmental Science, Appalachian Laboratory, 301 Braddock Road, Frostburg, MD 21532*

Scott Bell, *National Park Service, Chesapeake and Ohio Canal National Historical Park, 1850 Dual Highway, Suite 100, Hagerstown, MD 21740*

Abstract: Proposed extension of the Western Maryland Rail Trail includes use of three abandoned railway tunnels in the Chesapeake and Ohio Canal National Historical Park (CHOH). Based on prior winter observational surveys, these tunnels were known hibernacula for several common bat species. Because some species can hibernate in concealed locations and species using these tunnels could be at risk from construction and operation of the Rail Trail, we conducted spring emergence and fall swarming surveys for 172 nights in 2006–2009 to document the occurrence of bat species and their relative abundances. We captured 4,430 bats comprised of 7 cavernicolous species, including a federally-endangered Indiana myotis (*Myotis sodalis*) and 188 state-endangered eastern small-footed myotis (*M. leibii*). Eastern small-footed myotis capture rates were higher than any reported in this geographic area, evidence that these tunnels are the largest known hibernacula of this species regionally. The many silver-haired bat captures indicate that this species hibernates in the tunnels, contributing an interesting characteristic to an uncertain aspect of their ecology. No captured bats have showed evidence of White Nose Syndrome (WNS), though the tunnels are ~30 km from a known WNS-infected hibernaculum. This project highlights the difficulties in balancing historical, recreational, and natural resources at our national parks. Potential railway tunnel modifications—e.g., paving, water drainage, structural reinforcement, lighting, etc.—and trail use—e.g., timing of access, noise, etc.—would alter existing structural and microclimatic parameters and impact: 1) endangered bat species, 2) historic architecture, and 3) trail users. By-passing the tunnels altogether via connecting pathways to the CHOH towpath would be a viable alternative, but could locally alter the historic character of the towpath.

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