

Science Notes

Mine portals at New River Gorge: An ecological perspective



Figure 1. Until the late 1990s, abandoned mine portals at New River Gorge were managed only in the context of visitor safety. However, wildlife surveys in the fall seasons of 2002–2006 contributed information about the importance of this habitat in the lives of a variety of rare and sensitive species.

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NUMEROUS WILDLIFE SPECIES DEPEND ON cave resources to complete their life cycles. Although abandoned mine portals are an unnatural feature on the landscape, they provide habitat conditions that are similar to cave environments. In the late 1980s, surveys in New River Gorge National River (West Virginia) identified more than 100 abandoned mine portals. Until the late 1990s, however, park staff viewed these abandoned mines only in the context of visitor safety (fig. 1). Now, faunal inventories highlight the portals as habitats for rare species such as cave salamanders (*Eurycea lucifuga*) and Allegheny woodrats (*Neotoma magister*, fig. 2). While in other portions of its range the Allegheny woodrat continues to disappear, in New River Gorge, mine portals have contributed to the stability

of the population. Investigators have also identified various bat species using the portals; however, the specific species and extent of use remained unknown until 2002.

Surveys of the portals conducted in the fall seasons of 2002–2006 resulted in the identification of numerous bat species at New River Gorge National River. Most significant was the identification of two federally endangered species: Virginia big-eared bat (*Corynorhinus townsendii virginianus*, fig. 3) and Indiana bat (*Myotis sodalis*). Before 2002, Virginia big-eared bats had not been documented using abandoned mine portals. Since 2002, investigators have identified both endangered species at numerous portals during the fall. The instability of



Figure 2. A recent ear tattoo, visible on this rare Allegheny woodrat, facilitates monitoring of the species in abandoned mine portals at New River Gorge National River. Though this species is in decline across its range, the population at the national river has been stabilized by the availability of mine portal habitat.

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the portals, however, limited internal surveys that would ascertain what species use the portals for hibernation. In early 2007, park staff surveyed eight portals in anticipation of the emergence of post-hibernating bats. The first portal survey resulted in the capture and release of nearly 100 bats within two hours. Five species comprised the blizzard of emerging bats, including Virginia big-eared bats and rare eastern small-footed bats (*Myotis leibii*). Bats emerged from all the sampled portals, with half of these portals containing Virginia big-eared bats.

Many species that use the abandoned mine portals at New River Gorge National River have declined across their range, which underscores the importance of the portals managed by the National Park Service. In 2006, staff at New River Gorge initiated efforts to preserve the portal openings by using bat-friendly gates and exterior stabilization; this practice will likely continue through the next decade. Bat-friendly gates, which allow unimpeded movement of bats in and out of the portal but keep humans out, safeguard this significant habitat (see fig. 1). Protection of the portals allows for cultural resource preservation, interpretive opportunities, and protection of habitats recognized as critical for rare subterranean fauna.



Figure 3. The endangered Virginia big-eared bat inhabits abandoned mine portals at New River Gorge National River.

NPS/MATTHEW VARNER

—**Matthew Varner**, Wildlife Biologist, New River Gorge National River; matthew_varner@nps.gov.