Assessment of Abandoned Mines as Bat Habitat – Points for Consideration*
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The recognition of abandoned mines serving as critical habitat for bats has become an accepted component of bat conservation and land management. Determining a process through which sites can be evaluated is a key step in making such management decisions. Acceptance of bat gates by bats at sites used for a variety of purposes (hibernacula, night-roosting, day- roosting, maternity/nursery roosts) has now been documented. While sites with large numbers of bats (thousands) have been more difficult to manage, largely owing to the flyway restrictions associated with bat gate installations, the northern tier of the country generally does not have numbers of bats that present managers with this problem. Indeed, what constitutes a "significant" site in more northerly regions may be considered only incidental in warmer climates.

TIMING- The first important consideration for assessment is timing of surveys and evaluation. Seasonal surveys are required to provide a comprehensive understanding of how sites are used by bats. While bats may use sites throughout the course of the year, each site may also be used exclusively for a specific purpose during a single season (e.g., little or no bat activity within the active season provides no information as to whether the site is a significant hibernaculum).

MINE LOCATION – Sites located in remote areas may be of lower priority to managers than sites in areas with public use. Sites with moderate to high levels of human disturbance may no longer be used by bats even though the site provides microclimate conditions suitable for bat use. Is the site an isolated roost or are there other similar alternate roosts in the area? Is the site visible from a public road?

MINE CHARACTERISTICS – Mines need to be evaluated by competent geologists (familiar with underground mining techniques and methods) or mining engineers. Is the mine located in stable material? Mine portals are often located in unstable material while the interior can be located in competent rock. Basing the management of a mine on the appearance or characteristics of the portal may result in unnecessary loss of significant habitat. If the mine is located in unstable material, protecting the site through gating may result in bats becoming entrapped or killed as a result of catastrophic collapse. Relying on size estimations of underground workings based upon waste rock dumps can be misleading. Interior collapses may have closed off much of the mine workings even though a large waste dump indicates extensive workings. Small dumps may mean that material was removed from another opening that may or may not still exist. Dumps in areas where roads have been constructed are often used for constructing or repairing road beds. Over time, dumps in steep terrain or near drainage bottoms can be diminished by natural erosion processes. Mines that are entirely timbered are less likely to be used by bats than a site without timbering (likely related to predation concerns and timber use as ladders by predators). Multiple portals or entry-points into a mine often provide a wider range of microclimates within the mine that can be beneficial in meeting bat requirements. Much of this information cannot be collected from outside the mine. NOTE: Mine entry should only be undertaken by those with specialized training and equipment.

All active season information pertaining to bat activity can be collected from outside the mine. Winter entry surveys are required to confirm the site's use as a hibernaculum.

Closures of mines too dangerous to enter should be done at time of year to minimize the impact on bats. This includes properly conducted exclusions in advance of the permanent closure.

*Assessing sites for potential bat gate installation is a complex process requiring extensive experience with bats in the area and with mine characteristics. This listing is intended to provide a general description of important considerations.