

**ASSESSING MINE OPENINGS FOR BAT USE
BAT DETECTION METHODS AND PORTAL CLOSURE GUIDELINES**

1. Mine Opening Assessments

- a. All mine openings proposed for closure will be evaluated using the *Protocol for Assessing Bat Use of Potential Hibernacula* (Appendix A).
- b. If a mine opening has one or more characteristics making bat occupation unlikely (see “Assessing Suitability of Caves/Abandoned Mines for Bat Surveys” in Appendix A), the portal or opening may be closed at any time without further consultation with the U.S. Fish and Wildlife Service (USFWS) or Pennsylvania Game Commission (PGC).
- c. If a mine opening is potentially suitable for bats, the opening will undergo a bat survey in accordance with the specifications detailed in Appendix A. This survey will be done by a Qualified Indiana Bat Surveyor (see list at <http://www.fws.gov/northeast/pafo/surveys.html>).
- d. Appendices A and B will be provided to individuals contracted to conduct bat surveys so they are aware of the survey protocols, bat detection thresholds, closure guidelines, and reporting procedures. Survey results (see 3, below), will be included in their report for all surveyed mine openings.
- e. Given the effects of white-nose syndrome on bats, it is recommended that any site where bats are captured be given priority for the installation of bat-friendly gates.

2. Survey Results & Remedial Actions

The action to be taken at a mine opening depends upon the bat survey results, as detailed below, based on the detection method used.

- a. Detection Method 1 – trap placement at mine opening during the fall sampling period, in accordance with Appendix A.

| Capture Results¹ / Opening | Action |
|---|--|
| No bats (of any species) | Close opening between May 15 and August 30. ² |
| 1 or more Indiana bats | Consult with USFWS <u>and</u> install bat-friendly gate between May 15 and August 30. |
| Any state-listed species | Consult with PGC <u>and</u> install bat-friendly gates. |
| 1 or 2 bats (not including any federal or state-listed bats) | Install bat-friendly gates <u>or</u> close the opening between June 1 and July 31. It is recommended that any site where bats are captured be given priority for the installation of bat-friendly gates. |
| ≥ 3 bats (not including any federal or state-listed bats) | Install bat-friendly gates and avoid impacts to habitat in the vicinity of the opening, <u>or</u> consult with PGC & USFWS regarding the potential for listed species. |

¹ These are cumulative capture results from the entire fall sampling period.

² A seasonal restriction is warranted to avoid sealing undetected federal and state-listed bats within mines. White-nose syndrome has reduced bat populations substantially, affecting our ability to detect the presence of individual bats associated with these reduced populations. In addition, the fall sampling period targets Indiana bats and little brown bats, but is likely to miss other species of concern (e.g., eastern small-footed bat, northern long-eared bat).

- b. Detection Method 2 – Use of a bat detector with no trap over the mine opening. This assumes the opening is too dangerous to set up a trap.

Detector should be placed between 5-15 feet from the opening and pointed towards opening if horizontal (into or across any vertical or subsidence entrances). If the acoustic detector is farther than 15 feet from the opening, a visual detection method (e.g., night vision, infrared, or thermal-imaging device) should be used in conjunction with the acoustic detector.

Detectors should be in operation for a minimum of 5 hours each night, for at least 3 nights in the fall within specified time frames in Appendix A, and should meet temperature and environmental conditions outlined in Appendix A. Analyze all calls using a USFWS-approved call analysis program, and submit the diagnostic results from the program to the USFWS and PGC. A copy of the raw call files should be kept for a minimum of 3 years, should either agency desire a copy or to have the files run through a new/updated program.

| <u>Results³ / Opening</u> | <u>Action</u> |
|---|---|
| No detected bat passes into/out of mine portal | Close opening between May 15 and August 30. |
| ≤ 5 detected bat pass into/out of mine portal | Analyze calls. If it is not a threatened or endangered bat species, either close the opening between June 1 and July 31 <u>or</u> install bat-friendly gates. Consult with PGC if any state-listed species are detected, along with USFWS if any federally-listed species are detected. |
| > 5 detected bat passes into/out of mine portal | Analyze all calls. Consult with USFWS and PGC, or install bat-friendly gates. |

3. Reporting and Documentation

- a. All results from bat surveys will be submitted to the PGC in accordance with PGC-approved reporting procedures and data sheets. Bat survey results will also be submitted to the USFWS, with the following information detailed on an Excel spreadsheet: location of portal (latitude/longitude), dates surveyed, survey detection method and equipment used (see above), name and affiliation of surveyor, survey results by date, action taken (or proposed to be taken) with regard to each portal (gate, backfill/seal, no action), and date of action at each portal (date gated or closed).
- b. Provide the PGC and USFWS with the exact location (latitude/longitude) of all mine openings. For each opening, indicate the action taken (*i.e.*, gate installed, opening sealed shut), along with date of action.

4. Gating

All gates should be “bat-friendly”. To avoid harming bats and changing the cave or mine microclimate, gates should be constructed consistent with current gating guidelines for bat conservation. The inclusion of doors on gates installed at coal mines is discouraged. Further information can be found in the [Agency Guide to Cave and Mine Gates 2009](#).

³ These are cumulative results from the entire fall sampling period.