Conservation Recommendations for Emergency Actions in Kentucky

U.S. Fish and Wildlife Service
Kentucky Ecological Services Field Office

The U.S. Fish and Wildlife Service's (Service) Kentucky Ecological Services Field Office (KFO) provides the following conservation recommendations to avoid and minimize potential effects to federally listed species and designated critical habitat that may occur as a result of an emergency action. If possible, we recommend obtaining a resource list from the Service's Information for Planning and Consultation (IPaC) website (https://ipac.ecosphere.fws.gov) to determine which listed species and/or critical habitats may be present in the action area; however, this process is not required and should not delay or impede the response to the emergency action. If you are able to incorporate all of these recommendations into the emergency action, the action is not likely to adversely affect these listed species or critical habitats.

BAT SPECIES

The following recommendations apply to the gray bat, Indiana bat, northern long-eared bat, and Virginia big-eared bat, unless noted otherwise.

Potential Hibernacula and Non-forested Roosting Habitat

Habitat: caves and their associated sinkholes, fissures, and other karst features; rockshelters; underground quarries; abandoned mine portals and their associated underground workings; bridges; culverts (≥4-feet tall and ≥23-feet long); barns, houses, and other buildings.

- No caves (or their associated sinkholes, fissures, or other karst features), rockshelters, underground quarries, abandoned mine portals (or their associated underground workings), or any other cave-like features are present in the action area.
- No blasting or other activities that generate significant vibrations (i.e., rock trenching, hoe ramming, jack hammering, etc.).
- No drilling or boring.
- No bridges or culverts are present in the action area.
- All culverts present in the action area are fully enclosed or blocked (e.g., under roadway or soil), enclosed with grills or grates, or fully obstructed from bats in any other manner.

Northern Long-eared Bat Only

- No removal, modification, or maintenance of human-made structures (e.g., barns, houses, and other buildings).
- No intentional exclusion of bats from human-made structures that are known or suspected to contain roosting bats.

Virginia Big-eared Bat Only

- No project activities within 1,000 feet of a cliffline.

Aquatic Habitat
Habitat: streams, lakes, ponds, and other waterbodies that may be used by bats as drinking sources and/or foraging habitat.

- Implement Best Management Practices (BMPs) associated with federal, state, and/or local permits, agency standards, or other standard BMPs used for similar activities. Examples include BMPs associated with U.S. Army Corps of Engineers permits, Kentucky Division of Water Water Quality Certifications, and Kentucky or National Pollution Discharge Elimination System permits.
- No new point source discharges from a facility other than a water treatment plant or storm water system.
- No new water-borne contaminant sources are created (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant).

INDIANA BAT AND/OR NORTHERN LONG-EARED BAT ONLY

Forested Habitat
Habitat: forested/wooded habitats where bats roost, forage, and travel, including forested blocks and linear features such as fencerows, riparian forests, and other wooded corridors. These habitats may be dense or loose aggregates of trees with variable amounts of canopy closure. Isolated trees are considered suitable habitat when they exhibit the characteristics of a suitable roost tree and are located within 1,000 feet of other suitable habitat. A suitable roost tree is a tree (live or dead) that exhibits any of the following characteristics: exfoliating bark, crevices, cracks, and/or cavities. Both species roost under exfoliating bark, in cavities of dead, dying, and live trees, and in snags (i.e., dead trees or dead portions of live trees). For Indiana bats, suitable roost trees will have a diameter-at-breast height (DBH) of 5 inches or greater. For northern long-eared bats, the minimum DBH for a suitable roost tree is 3 inches. Note: Trees that are lying on the ground or leaning more than 30 degrees are not considered suitable roost trees.

- No removal of suitable forested habitat.
  Note: Trees determined to be hazard trees (i.e., trees that are deemed an immediate threat to human life, public health and safety, or improved property by the agency) may be removed if necessary. If possible, perform an emergence survey in accordance with the most current version of the Range-Wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines prior to tree removal.
- If suitable forested habitat must be removed, remove this habitat during the hibernation period (October 16 to March 31). If the action area overlaps known Indiana bat summer and/or swarming habitat, removal of suitable forested habitat at any time of year is considered an adverse effect. See attached habitat maps to determine if the action is located within known summer and/or swarming habitat.
- If the action is contained within an already established and currently maintained utility right-of-way (ROW), no trimming, limbing, or cutting of trees during the pup season (May 15 to July 31). Additionally, no removal of entire trees outside the ROW or expansion of the ROW.
- No construction of new roads or increase in the number of travel lanes on existing roads.
- No increase in average night-time traffic on existing roads.

- No pesticide use other than herbicides.
- When herbicide use is required, utilize targeted application methods such as spot-spraying, hack-and-squirt, basal bark, injections, cut-stump, or spot-spraying (i.e., foliar spraying on individual herbaceous plants with no spraying of deciduous tree leaves).
- No chronic or intense night-time noise above current ambient levels in suitable forested habitat during the summer occupancy period (April 1 to October 15) or fall swarming (August 16 to November 15)/spring staging (April 1 to May 31) periods if the action is located within known swarming habitat. See attached habitat maps to determine if the action area overlaps known swarming habitat.
- No temporary or permanent artificial lighting within 1,000 feet of suitable forested habitat unless the lights are downward-facing, full cut-off lens lights (with same intensity or less for replacement lighting). If using the Backlight, Uplight, Glare (BUG) system developed by the Illuminating Engineering Society, all three ratings (backlight, uplight, and glare) are as close to zero as possible, with a priority of "uplight" of 0.
- Direct temporary lighting away from suitable forested habitat.

Indiana Bat Only

- No removal of Indiana bat primary maternity roost trees (PMRT) or suitable forested habitat immediately surrounding a PMRT. A PMRT is a dead tree or snag that is 9 inches or greater in diameter at breast height and has loose or exfoliating bark, cracks, crevices, and/or hollows. A live tree may also qualify if it contains hollows or dead portions with loose or exfoliating bark, cracks, and/or crevices.

Indiana Bat Critical Habitat

The following recommendations apply to designated critical habitat for the Indiana bat.
Habitat: caves.

- No impacts within 0.5 mile of Mammoth Cave National Park or Carter Caves State Park, where the caves associated with this critical habitat are located.
  Note: Meade County, Kentucky is located within critical habitat associated with Wyandotte Cave in Indiana; however, a "no effect" determination can be made for this critical habitat because the cave is located more than 0.5 mile from the county/state line.
- No blasting or other activities that generate significant vibrations (i.e., rock trenching, hoe ramming, jack hammering, etc.).

FISH, MUSSEL, AND CRUSTACEAN SPECIES

The following recommendations apply to all listed fish species, mussel species, and crustacean species and designated critical habitat for these species, unless noted otherwise.
Habitat: rivers and perennial streams.

- No disturbance to the channel or banks of a perennial stream.
- No disturbance to the channel or banks of an ephemeral stream less than 600 feet upstream from its confluence with a perennial or intermittent stream.
- No new point source discharges into a stream or changes to an existing point source discharge (e.g., outfalls, leachate ponds).
- No activities that would alter stream flow, such as hydropower energy production, impoundments, intake structures, diversion structures, and/or turbines.

- No dredging or in-stream gravel mining.
- No resource extraction (e.g., mining, oil/gas, logging) or associated exploration activities.
- No activities that would contribute measurable nonpoint source pollution to streams (e.g., sediment, nutrients, etc.).
- No vegetation removal within 200 feet of a perennial stream bank.
- No excavation or grading of uplands within 200 feet from the banks of a river or perennial stream or in areas located in or partly in a "special flood hazard area" as designated by FEMA.
- No excavation or grading that would create new water bars or ditches that channel stormwater into a stream.
- All excavation and grading and BMPs to stabilize all excavated and graded areas are completed within one month.
- Implement Best Management Practices (BMPs) associated with federal, state, and/or local permits, agency standards, or other standard BMPs used for similar activities. Examples include BMPs associated with U.S. Army Corps of Engineers permits, Kentucky Division of Water Water Quality Certifications, and Kentucky or National Pollution Discharge Elimination System permits.

Kentucky Cave Shrimp and its Critical Habitat Only

- No impacts to sinkholes or other karst features. Protect all karst features in the action area to prevent sediment and other contaminants from entering the groundwater system.

PLANT SPECIES

The following recommendations apply to listed plant species and their designated critical habitats.

Braun's Rock-cress, Short's Bladderpod, and their Critical Habitats

Braun's rock-cress habitat: forested habitat on steep, shady limestone slopes above streams or ravines leading to streams; typically occurs in sheltered areas (e.g., downhill side of trees), areas scoured by talus movement or erosion, and disturbed areas (e.g., hiking/animal trails, roadcuts); always in at least partial shade; poor competitor, rarely found in areas with dense ground cover.
Short's bladderpod habitat: forested habitat on steep, rocky, south- to west-facing slopes and talus areas near rivers and streams; along tops, bases, and ledges of bluffs; most commonly in areas with a relatively open overstory canopy; closely associated with calcareous outcrops.

- No ground disturbance, vegetation removal, or mowing on forested slopes above streams or ravines leading to streams.
- No herbicide application.
- No changes to hydrologic patterns upgradient of suitable habitat areas.

Kentucky Glade Cress and its Critical Habitat

Habitat: areas with shallow soils in cedar glades and glade-like areas underlain with Silurian dolomite or dolomitic limestone; eroded shallow soil areas with exposed bedrock, areas where the soil has been scraped off the underlying bedrock, and former glade and barrens sites that have been converted to pastures, lawns, or roadsides; poor competitor and intolerant of shade.

- No ground disturbance or other activities in cedar glades, glade-like areas, or areas that are open and non-shaded (e.g., pastures, lawns, and roadsides with no trees).
- No herbicide application.
- No changes to hydrologic patterns upgradient of suitable habitat areas.

Price's Potato-bean

Habitat: openings and edges of mixed hardwood forests underlain by limestone or alluvium, often occurring on forested hillsides or bluffs that slope into floodplains of streams and rivers; road and utility rights-of-way; unable to tolerate deep shade.

- No ground disturbance, vegetation removal, or mowing in forested openings or along forest edges.
- Limit all activities to areas that are open and non-shaded (e.g., fields or lawns with no trees).
- No herbicide application.

Short's Goldenrod

Habitat: dry, open habitats, including cedar glades and thickets, eroded areas, and edges of open oak-hickory forests; pastures, old fields, and road and utility rights-of-way; requires full or partial sunlight.

- No ground disturbance, vegetation removal, or mowing in cedar glades/thickets, eroded areas, forest edges, or other open areas (e.g., pastures, old fields, and rights-of-way).
- No herbicide application.

Virginia Spiraea and/or Cumberland Rosemary

Virginia spiraea habitat: banks, meander scrolls, point bars, natural levees, and braided features of high-gradient streams that are periodically disturbed by flooding; not typically found in these areas when trees and/or tall, fast-growing herbaceous species are present that shade out the species.

Cumberland rosemary habitat: open areas along sand, gravel, and boulder bars in the floodplain of streams with sandstone bedrock that are periodically disturbed by flooding; not typically found directly adjacent to the stream channel or in areas where trees and/or tall, fast-growing herbaceous species are present that shade out the species.

- No ground disturbance, vegetation removal, or mowing within 300 feet of a stream.
- No herbicide application.

White Fringeless Orchid

Habitat: wet forested areas such as seeps, seepage slopes, bogs, or swamps with sandy, acidic soils that are partially shaded; surface depressions with saturated soils.

- No impacts to seeps, bogs, and other wetlands or areas within 300 feet of these features.
- Avoid measurable changes in precipitation runoff to areas of suitable habitat (e.g., from impervious surfaces, from timber removal).
- Avoid grading that would change hydrologic patterns.

If all of the above recommendations are incorporated into the emergency action, the KFO recommends completing applicable determination keys on the Service's IPaC website (https://ipac.ecosphere.fws.gov) after the emergency is under control. If completion of a determination key results in a "no effect" and/or "not likely to adversely affect" determination for a species and/or critical habitat, no further Endangered Species Act Section 7 consultation is required for that species/critical habitat. The determination key letter serves as the agency's documentation of Section 7 consultation. If a determination key results in a "may affect" determination for a species or critical habitat, further coordination with the KFO is necessary.

If all of the above recommendations cannot be incorporated into the emergency action and/or determination keys cannot be used to complete Section 7 consultation, the agency should coordinate with the KFO as soon as practicable after the emergency is under control to determine if listed species or critical habitat may have been adversely affected by the action. Below are additional conservation recommendations that can be implemented to avoid and minimize potential adverse effects.

BAT SPECIES

The following recommendations apply to the gray bat, Indiana bat, northern long-eared bat, and Virginia big-eared bat, unless noted otherwise.

Potential Hibernacula and Non-forested Roosting Habitat

- If features are present in the action area that could be potential hibernacula and/or non-forested roosting habitat, conduct a Phase 1 Habitat Assessment of these features in accordance with the most current version of the Range-Wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines. If the assessment documents that the features are not suitable hibernacula/non-forested roosting habitat, impacts to the features would not result in potential effects to listed bats.
- If drilling or boring is required, conduct appropriate preliminary evaluations to ensure the activity is unlikely to encounter karst voids or other voids.
- If bridges and/or appropriately sized culverts are present in the action area, conduct an assessment of these structures in accordance with the most current version of the Range-Wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines. If the assessment documents that the structures are not suitable roosting habitat, impacts to the structures would not result in potential effects to listed bats.
- If removal, replacement, repair, and/or maintenance of an existing bridge or culvert is required, perform the work during the hibernation period (October 16 to March 31).

Northern Long-eared Bat Only

- Limit removal, modification, and maintenance of human-made structures (e.g., barns, houses, or other buildings) and intentional exclusion of bats from structures to the hibernation period (October 16 to March 31). If work must be done outside this period, search the structure for bats prior to work if possible.

INDIANA BAT AND NORTHERN LONG-EARED BAT ONLY

Forested Habitat

- If suitable forested habitat must be removed during the summer occupancy period (April 1 to October 15), remove this habitat outside the pup season (May 15 to July 31).

FISH, MUSSEL, AND CRUSTACEAN SPECIES

The following recommendations apply to all listed fish species, mussel species, and crustacean species and designated critical habitat for these species.

- If disturbance is required to the channel or banks of a perennial stream:
    - Avoid heavy equipment use within the stream. Conduct in-stream work from the stream banks or existing infrastructure (e.g., road, bridge, culvert).
    - If heavy equipment use is required within the stream, use temporary work pads, timber mats, or other protective structures. Use clean riprap with no earth fill and/or other natural materials. All temporary structures should be removed as soon as possible following completion of work, and the streambed restored to original conditions.
    - Do not take material from the streambed.
    - Use existing crossings (e.g., bridges, culverts) if equipment must access both sides of the stream instead of crossing through the stream. If no existing crossings are available, cross the stream perpendicular to flow at an existing ford or a location with stable, rock substrate, low water level, and minimal flow.
    - Maintain stream flow and aquatic organism passage at all times.
    - Schedule in-stream work to avoid environmentally sensitive periods such as spawning and migration (e.g., March through June for fish species, July 20 to September 10 for Big Sandy crayfish).
- For underground utility crossings of perennial streams, utilize horizontal directional drilling or other trenchless techniques to avoid direct impacts to the stream.
- During bridge repairs and demolition, use containment under the bridge deck to catch debris and prevent any materials from entering the stream.
- Avoid removal of trees and other vegetation along stream banks. If vegetation removal is required, leave stumps and root wads to the extent practicable. Remove all woody debris from the stream.
- Seed/live stake and stabilize all disturbed stream banks and adjacent areas immediately after completion of work. Use native seed mixes and avoid planting non-native invasive species.

PLANT SPECIES

The following recommendations apply to listed plant species and their designated critical habitats.

- Use native seed mixes and avoid planting non-native invasive species when stabilizing disturbed areas within suitable habitat.
- Remove and stockpile topsoil when disturbing suitable habitat, then re-spread this material following the action to help maintain potential seed banks.