Northern Long-Eared Bat (NLEB) Guidance for NDDOT Projects

Note– This guidance document is intended to be a starting point to determine potential impacts to the NLEB and associated conservation measures. For further guidance refer to links provided on this page, or contact the NDDOT Biologist (Greg Schonert - 701-328-2592).

Determine if project will require the removal of trees and/or work on structures (bridges, culverts, old buildings). If yes, proceed to Step 1. If no, proceed to Step 2. See following page for examples of suitable/unsuitable roosting structures.

Step 1 - Determine habitat suitability in the vicinity of proposed project.

- If project is not located within 1.5 miles of wooded areas, proceed to Step 2.
- If project is located in an area of the state within 1.5 miles of dense wooded areas (i.e. riparian areas, wooded draws, other dense patches of trees), proceed to Step 3 for projects requiring tree removal. Proceed to Step 4 for projects requiring work on structures. Refer to USFWS Interim Guidance document for further information regarding habitat requirements for the NLEB. http://www.fws.gov/midwest/endangered/mammals/nlba/pdf/NLEBinterimGuidance6Jan2014.pdf
- Three areas of the state have confirmed sightings of the NLEB (Turtle Mountains, Badlands, Missouri River Valley). If project is located near/within 3 miles of any of these areas, further review is required.

Step 2– No Effect Determination

No further action is necessary. A "No Effect" determination can be recommended.

Step 3 - Determine number of trees to be impacted with a DBH of at least 3 inches.

Note - Trees must contain cracks, crevices, or peeling bark in order to provide suitable roosts for this species. Dead/dying trees offer ideal day/night roosting sites for the NLEB.

- If project will only require removal of trees or shrubs with a DBH of less than 3 inches, see Step 2.
- If project will require removal of trees with a DBH of at least 3 inches that exhibit cracks, crevices or peeling bark, perform enumeration (either estimation or physical counts) on all suitable trees to be removed, and proceed to Step 5. Isolated trees may be considered suitable habitat when they exhibit characteristics of a suitable roost, and are within 1,000 feet of other forested/wooded habitat.

Step 4 - Determine type of structure/s and potential roosting suitability

- Review structure plans and/or visit feature to look for evidence of bat use. Vertical crevices with a 0.5-1.25 inch gap and at least 12 inches deep are considered ideal roost locations. Crevices must also be sealed properly to be considered an ideal roost location. Evidence of stormwater staining indicates that the crevice is not properly sealed, and would not provide a suitable roost location. Evidence of bat use includes visual observations of guano, or staining along entry/exit points (crevices/cracks). See the following link for more information regarding ideal highway structure roost characteristics. http://www.batcon.org/pdfs/bridges/BatsBridges2.pdf
- If no evidence of bat use is observed during field visit, or engineering plans reveal that the structure does not contain cracks or crevices (i.e. cast in place), no further action is necessary as the feature would not provide a suitable roost location for this species. A "No Effect" determination can be recommended. Note– bridges that do not have cracks or crevices may provide roosting locations for other species of bat, however; the NLEB has not been known to roost in the open concrete beams found on most types of bridges during the day. NLEBs may roost for short periods of time on open beams on bridges during the night during feeding if there is suitable foraging habitat or alternative roosting locations nearby.
- If evidence of bat use is observed, or plans indicate that suitable roost locations may be present within a structure, proceed to Step 6.

Step 5 - Conservation Measures for Tree Removals– If Potential Impact Present, BA may be Required

- Conduct tree removals outside of summer maternity season (April 1st - Sept. 31).
- If seasonal restrictions cannot be met for tree removal activities, conduct presence/absence surveys. See the following link for more information regarding these types of surveys. http://www.fws.gov/midwest/Endangered/mammals/inba/surveys/pdf/2014IBatSummerSurveyGuidelines13Jan2014.pdf
- If presence/absence surveys reveal presence of NLEB, contact the USFWS Ecological Services office in Bismarck for further guidance (Terry Ellsworth - 701-355-8505). If no presence of NLEB is detected, proceed to Step 2. Survey data is effective for two years from initial survey date.
- If tree removals are required in heavily wooded areas, tree replacement/mitigation may be necessary.

Step 6 - Conservation Measures for Structure Removals- If Potential Impact Present, BA may be Required

- Conduct demolition/structure removal outside of summer maternity season (Apr. 1 - Sept. 31).
- Conduct any construction activities on bridges during daylight hours only. This will decrease the likelihood of impacting NLEBs that may temporarily use the structure at night for roosting between feeding activities.
- Conduct humane exclusion. Place mesh netting (0.25 inch or less), caulk, or expanding foam on the underside of a structure over any cracks/crevices prior to initiation of summer maternity season to prevent bats from using structure.
- If seasonal restrictions cannot be met for structure removal activities, conduct presence/absence surveys. See the link provided in Step 5 for more information regarding these types of surveys.

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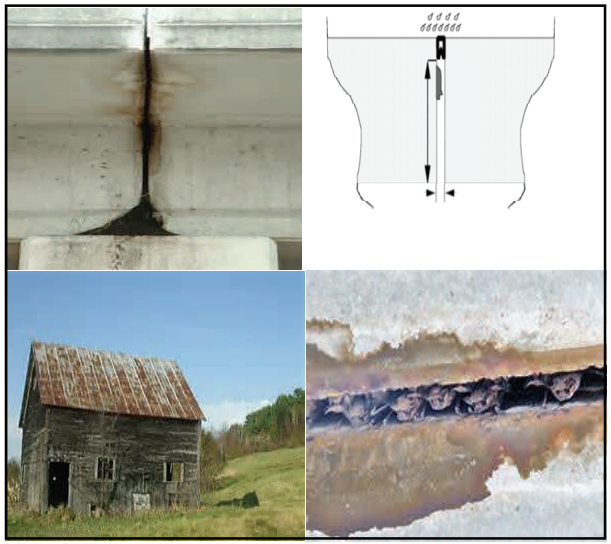
If uncertain whether or not a structure would be considered a suitable day or night roost for this species, refer to the following link (http://www.batcon.org/pdfs/bridges/BatsBridges2.pdf), or contact the NDDOT Biologist (Greg Schonert - 701-328-2592) ***Note –*** *There is a difference between day and night roosts for bat species. Day roosts are used for extended rest periods and rearing young, while night roosts are used briefly for resting during foraging. Over the course of a night, bats may rest more than once at different roosting locations. The biggest concern regarding DOT and the NLEB is disturbance of potential day roosts. If a potential night roost structure is part of a proposed project but would not be considered a day roost (cracks or crevices), conduct all construction activities during daylight hours only to avoid any impacts to NLEB .*

Unsuitable Roosting Structures

Suitable Night Roosting Structures

Suitable Day Roosting Structures



Characteristics of Unsuitable Artificial Roosting Structures

- If an artificial roosting structure is not located within 1.5 miles of wooded areas, no further review is required, due to lack of nearby foraging areas and alternative roosting locations. Even ideal roosting structures are rarely used by bats in areas dominated by open plains.
- Corrugated metal and small concrete culverts are the least preferred artificial roost structures. These structures are prone to flooding, and do not exhibit cracks or crevices. All corrugated metal culverts and concrete culverts under 5 feet tall can be excluded from further analysis.
- Generally speaking, large concrete box culverts over five feet in diameter do not provide suitable day roosting sites for bats due to lack of cracks/crevices. In addition, most concrete box culverts are frequently inundated/flooded, which would also make them unsuitable for both day and night roosting sites.
- Flat slab bridges would not be considered suitable day or night roosting structures.
- Crevices must be sealed at the top. Evidence of storm-water staining along the length of the crevice indicates that it is not sealed properly and should not be considered an ideal roost.
- During the summer months, sun-exposed bridges act as thermal sinks. Therefore, bridges receiving no sun have been shown to have little or no bat use.

Characteristics of Suitable Artificial Roosting Structures

- Ideal day roosting structures must have the following characteristics: Constructed of concrete, with vertical crevices (0.5-1.25 inches wide) at least 12 inches deep and protected from weather. Also must be located 10 feet or more above the ground. Ideal night roosting structures include concrete structures with protection from wind. Parallel box beam bridges offer ideal day and night roost conditions. Pre-stressed concrete girder bridges could also offer ideal day and night roosting locations.
- Old buildings may offer several areas that could have ideal day roosting areas. However, if a building is to be removed, but is not within close proximity to wooded areas (1.5 miles) then the structure would not be considered a suitable roost site, due to lack of nearby foraging areas and alternative roosting locations.
- Concrete box culverts that are between 5-10 feet tall, have openings protected from high winds, and that are not susceptible to flooding, may be suitable day or night roosting sites, especially if they are older and contain cracks, crevices, or imperfections. If a project is located in/near suitable habitat, concrete box culverts may be used as night roosts, although unlikely to be used if flooded frequently.
- Caves and mines also provide suitable roosting/hibernating habitat, however these areas are unlikely to be located near highway systems. If a cave or mine is known or discovered near a highway system and may be potentially impacted by a project, please contact NDDOT ETS (Greg Schonert - 701-328-2592).