

**BIOLOGICAL OPINION  
FOR THE  
ROUTE 118 LARGE CULVERT REPLACEMENT (24617.00)  
WATERFORD, MAINE  
2022-0059835**



**U.S. FISH AND WILDLIFE SERVICE  
MAINE-NEW HAMPSHIRE FISH AND WILDLIFE SERVICE COMPLEX  
ECOLOGICAL SERVICES, MAINE FIELD OFFICE  
EAST ORLAND, MAINE**

Approved by: \_\_\_\_\_  
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# United States Department of the Interior



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**Subject: 24617.00 Waterford Route 118 Large Culvert Replacement  
USFWS Project Code: 2022-0069324**

This document transmits the U.S. Fish and Wildlife Service's (Service) biological opinion (BO) based on our review of the Maine Department of Transportation's (MaineDOT) proposed actions, funded by the Federal Highway Administration, described in the Biological Assessment Form (BA Form). Formal consultation was initiated on May 1, 2023, which is the date we received the BA Form. This project qualifies for consultation under the Interim Consultation Framework for the northern long-eared bat (NLEB). This BO is submitted in accordance with section 7(a)(2) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.). It is based on information in the Service's Standing Analysis for the Interim Consultation Framework (<https://www.fws.gov/library/collections/interim-consultation-framework-northern-long-eared-bat>), the BA Form, and other sources of information, as appropriate.

The NLEB was previously listed as threatened under the Endangered Species Act (ESA) in 2015, and a special rule pursuant to section 4(d) of the ESA was finalized in 2016. The Service reclassified the NLEB as endangered on November 30, 2022, which rendered the 4(d) rule obsolete on the effective date of March 31, 2023, as 4(d) rules are not available for endangered species. All take<sup>1</sup> is now prohibited by section 9 of the ESA. All new and ongoing federal<sup>2</sup> actions that are reasonably certain to result in incidental take need exemption from the taking

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<sup>1</sup> The ESA and its implementing regulations (50 CFR 17) define take as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Incidental taking" is defined at 50 CFR 17.3 as "any taking otherwise prohibited, if such taking is incidental to, and not the purpose of, an otherwise lawful activity."

<sup>2</sup> Federal actions include all activities or programs authorized, funded, carried out, or permitted—in whole or in part—by Federal agencies in the United States or on the high seas.

prohibitions of section 9, which is provided by the Service in an Incidental Take Statement (ITS).

The Interim Consultation Framework provides a mechanism to improve the efficiency and consistency of completing formal section 7 consultation for the NLEB for projects consistent with the former 4(d) rule and provide for exemptions from section 9 prohibitions for incidental take that is reasonably certain to occur before April 1, 2024. The Interim Consultation Framework includes a Standing Analysis where the Service examined whether potential federal actions covered by the Interim Consultation Framework are likely to jeopardize the continued existence of the NLEB. The Standing Analysis was used to streamline the development of this BO and ITS Form. It is incorporated by reference in this document.

## I. DESCRIPTION OF THE PROPOSED ACTION

The action that is the subject of this BO will be implemented under the Interim Consultation Framework. The MaineDOT provided the following Project Description in the BA Form:

Large culvert replacement that will require tree clearing.

### Conservation Measures

Conservation measures represent actions outlined in the project description that the action agency will implement to further the recovery of the NLEB.

1. The project will not disturb hibernating NLEBs in a known hibernaculum during hibernation. Disturbance could include entry into a known hibernacula or the following activities within 0.25 miles of a known hibernacula: prescribed fire, blasting, pile driving, drilling, and certain military operations. Smaller buffer sizes may be appropriate depending on the intensity of the activity.
2. The project will not alter the entrance or interior environment of a known hibernaculum at any time of the year. Hibernacula alteration could include the following activities within 0.25 miles of a known hibernacula: prescribed fire, blasting, pile driving, drilling, certain pesticide use, and certain military operations. Smaller buffer sizes may be appropriate depending on the intensity of the activity.
3. The project will not remove any trees within 0.25 miles of a known hibernaculum at any time of year.
4. The project will not cut or destroy known occupied maternity roost trees, or any other trees within a 150-foot radius from the maternity roost tree, from June 1 through July 31.

## II. ACTION AREA

The action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR 402.02). The action area is not limited to the “footprint” of the project but rather encompasses the spatial extent of the modifications to the land, water, air that is caused by the action.

1000 ft downstream of the culvert due to turbidity associated with placement of cofferdams within the unnamed tributary to the Crooked River. All habitats within 500' of the culvert due to increased noise levels associated with daytime work. No nighttime work anticipated so no lighting needed. A more specific polygon denoting the action area can be found in ECOSphere (Project Code 2022-0069324)

### III. STATUS OF THE SPECIES

See the Status of the Species in the Standing Analysis for a description of the species and its life history, range and distribution, population status and size, threats, and conservation needs.

### IV. ENVIRONMENTAL BASELINE

In accordance with 50 CFR 402.02, the environmental baseline refers to the condition of the listed species or its designated critical habitat in the action area, without the consequences to the listed species or designated critical habitat caused by the proposed action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated critical habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline. The environmental baseline is a "snapshot" of the species' health in the action area at the time of the consultation and does not include the effects of the action under review.

#### Status of the Species within the Action Area

Projects that qualify for formal consultation under the Interim Consultation Framework occur within areas where NLEBs are reasonably certain to occur and may be within a known maternity colony area, known swarming or staging area, or known winter habitat in areas where the species is active year-round<sup>3</sup>.

The NLEB is reasonably certain to be present within the action area and there are large tracts of forest in the vicinity that provide suitable roosting habitat. The action area is not within 0.25 miles of a known hibernacula or 150 feet of a known maternity roost tree.

#### Factors affecting species environment within the action area

This analysis describes factors affecting the environment of the species in the action area. There is little information on NLEB usage of habitat throughout the state of Maine. As a result, it is difficult to determine factors that influence the species environment within the action area specific to this project. Though there is suitable roosting habitat within the action area, more

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<sup>3</sup> The northern long-eared bat is active year round in the Southeast Coastal Plain from the James River in Virginia south to the border of Georgia and the species' entire range in Louisiana.

expansive tracts of forest can be found immediately adjacent in every direction which could potentially serve as roosting habitat. It is likely that nearby disbursed, sparse residential and agricultural development and Route 118 have an effect on how NLEB interact with and utilize the available habitat in the area and could impact NLEB roosting and foraging in the action area.

## V. EFFECTS OF THE ACTION

For a description of the effects of the activities that will occur during implementation of this project, see the Standing Analysis for the Interim Consultation Framework. Because the species is reasonably certain to occur within the action area, the NLEB is likely to be exposed to the stressors that could be caused by the proposed action.

The MaineDOT provided additional information regarding the specific actions that are subject to this BO in the BA Form. In the Standing Analysis, the Service described how the general categories of activities are implemented, generally, and the nature of their likely effects to the NLEB. In the BA Form, the MaineDOT provided the stressors associated with this project that will occur through April 1, 2024.

Based on this information, the proposed action is likely to result in the following effects to the NLEB. Disturbance associated with human activities (e.g., noise, exhaust, vibration, detonations, military aircraft, etc.) occurring during the active season that is significant enough to result in result in NLEBs fleeing occupied roost tree(s) during the daytime. This can cause harm (death or injury) of adults and pups from predation resulting from fleeing roost trees during the day. Work on bridges (maintenance and demolition) and culverts >4ft in diameter (removal and sliplining) where NLEBs are roosting during the active season can cause harm (death or injury) of adults and pups during construction activities or from predation resulting from fleeing the structure during the day. Removal of occupied roost trees via the removal of roosting habitat<sup>2</sup> during the active season. This can cause harm (death or injury) of pups and adults from predation resulting from fleeing roost trees during the day. Removal of occupied roost trees via the removal of roosting habitat during the maternity season. This can cause harm (death or injury) of pups and adults when the tree falls or from predation. Removal of occupied roost trees via the removal of roosting habitat during the swarming or staging season. This can cause harm (death or injury) of adults and juveniles when the tree falls or from predation.

## VI. CUMULATIVE EFFECTS

Cumulative effects are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR §402.02). Additional regulations at 50 CFR §402.17(a) identify factors to consider when determining whether activities are reasonably certain to occur. These factors include but are not limited to: existing plans for the activity; and any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

The Standing Analysis already considered the effects of the total amount of forest management, prescribed fire, and habitat removal that may occur range-wide (within the U.S.) until April 1, 2024. We were not able to distinguish between federal and non-federal projects when we

estimated the total amount of these activities. Therefore, any cumulative effects from those activities occurring within the action area do not need to be evaluated separately here. The Service is not aware of any future State, tribal, local, or private actions that are reasonably certain to occur within the action area at this time; therefore, no cumulative effects are anticipated beyond the effect of non-federal forest management, prescribed fire, and habitat removal analyzed in the Standing Analysis.

## VII. CONCLUSION

Section 7(a)(2) of the ESA requires that federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. “Jeopardize the continued existence of” means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution (RND) of that species (50 CFR 402.02). The Service adds the effects of the action and the cumulative effects to the status of the species and to the environmental baseline to determine if the proposed action is likely to appreciably reduce the likelihood of both the survival and recovery of a listed species in the wild by reducing the RND of that species.

### Summary of Effects to Individuals

The removal of roost trees via the removal of roosting habitat during the active, maternity, and swarming or staging season can cause harm through reduced fitness by fragmenting maternity colonies and affecting behavioral patterns associated with breeding. Clearing for this project will occur during the active season; therefore, we expect there will be impacts during the maternity season, and individual bats are expected to be directly harmed. We do not anticipate the loss of any colonies, but we do anticipate one maternity colony could be fragmented by permanent maternity roosting habitat removal, which would cause a reduction in reproductive fitness. Additional harm is anticipated for unquantified effects from “other” activities that may affect the NLEB. We are unable to quantify the effects due to the programmatic nature of this standing analysis; however, we do not expect the additional impacts to substantially increase the number of individuals affected or number of maternity colonies affected due to the low likelihood of activities impacting maternity colonies (occupancy rates are typically <5%) the widely dispersed nature of activities across the landscape. We expect projects that qualify for the Interim Consultation Framework to reduce the number of NLEBs and reduce reproductive success.

### Summary of Effects to Populations

Because impacts to individuals could occur, we assess how the potential adverse effects to individuals affect the overall health and viability of NLEB populations. Therefore, we analyzed effects to representation units (RPU) to better understand whether these local effects could affect the species’ resilience, redundancy, and representation. Our analysis predicts that there is a low likelihood that individual activities within these categories will intersect NLEBs and that few NLEBs will be affected within each RPU (Table 4, Table 5, and Table 6 [from the Standing Analysis]). Less than 1% of all maternity colonies will be affected in each RPU. Even if the

impacts were severe enough to result in the loss of a maternity colony, the resilience, redundancy, and representation would not be significantly affected in any RPU.

Where the species has substantially declined as a result of WNS, the surviving members of the population may be resilient or resistant to WNS. These surviving populations are particularly important to the persistence of the populations. The individual effects analysis indicates that some additional impacts will occur as a result of this action. We do not know at this time if the impacts from this action are additive to the effects of WNS; however, even if the potential mortality from these activities is additive to the impacts from WNS, our analysis suggests that the proportion of maternity colonies that will be affected in each RPU is small and would not significantly affect the species' likelihood of persisting in any of these RPUs. Reproduction, numbers, and distribution (RND) changes at the RPU level are not likely. Based on the relatively small numbers affected annually compared to the RPU population sizes, we do not anticipate population-level effects to the NLEB. Based on this Standing Analysis, we conclude that adverse effects from forest management, prescribed fire, and habitat removal, and other activities will not significantly affect the species' RND at the population-level.

WNS is the primary factor causing the declines of NLEBs. Our analysis of the effects of activities that may occur between March 2023 and April 2024 indicates that the additional loss of individual NLEB resulting from these activities would not exacerbate the effects of WNS at the scale of the RPUs within its range.

The Service determined that projects consistent with the Interim Consultation Framework are not likely to jeopardize the continued existence of the NLEB based on the status of the species, total effects of the potential federal actions that may be conducted under the Interim Consultation Framework, and cumulative effects of non-federal forest management, prescribed fire, and habitat removal expected to occur range-wide over the next year. At the project-specific level, we need to evaluate both the environmental baseline within the action area and cumulative effects within the action area in order to determine if our conclusion in the Standing Analysis is valid for this specific project. If the action area of a specific project has critical significance to the conservation of the NLEB or the cumulative effects within the action area exceed those contemplated by the Standing Analysis, we may need to re-visit our conclusion.

The specific effects of this project, together with the environmental baseline and cumulative effects within the action area, is consistent with the Standing Analysis and therefore we conclude that this project will not jeopardize the continued existence of the NLEB for the following reasons: 1) adverse impacts all have a low likelihood of occurrence, and severe, localized effects are not expected; 2) less than 1% of all maternity colonies will be affected in each RPU. Even if the impacts were severe enough to result in the loss of a maternity colony, the resilience, redundancy, and representation would not be significantly affected in any RPU; 3) while impacts could occur to individuals or populations, we do not consider these impacts to affect the survival or recovery of NLEBs in the RPUs or range-wide; and 4) WNS is the primary factor causing the declines of NLEBs. Our analysis of the effects of activities that may occur between March 2023 and April 2024 indicates that the additional loss of individual NLEB resulting from this project will not exacerbate the effects of WNS at the scale of the RPUs within its range.

## VIII. INCIDENTAL TAKE STATEMENT

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibit the take of endangered and threatened species, respectively, without special exemption. Harm is further defined by regulation. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement (ITS).

The measures described below are non-discretionary and must be undertaken by the MaineDOT, as applicable, for the exemption in section 7(o)(2) to apply. The MaineDOT has a continuing duty to regulate the activity covered by this ITS. If the MaineDOT fails to assume and implement the terms and conditions as part of the proposed action the protective coverage of section 7(o)(2) may lapse. To monitor the impact of incidental take, the MaineDOT must document the progress of the action and its impact on the species as specified in the ITS. [50 CFR §402.14(i)(3)]

### Amount or Extent of Take

This section specifies the amount or extent of take of the NLEB that the action is reasonably certain to cause via the project. We anticipate that take is reasonably certain to occur resulting from the removal of roosting habitat during the active, maternity, and swarming or staging seasons, disturbance associated with human activities (e.g., noise, exhaust, vibration, detonations, etc.), and construction work on culverts >4ft in diameter (demolition and replacement) potentially occupied by roosting bats during the active season. These actions can cause harm (death or injury) of pups, juveniles, and adults.

For impacts from tree removal, the following ITS will use acres of habitat as a surrogate for quantifying the amount or extent of incidental take because determining the exact numerical limits on the amount of incidental take are not practical and cannot be feasibly used as a trigger for determining when reinitiation would be required. In this situation, acres of habitat impacted will serve as a reasonable and appropriate surrogate for quantifying and tracking incidental take of the NLEB because any activities within suitable habitat where NLEB exist are reasonably certain to directly and indirectly cause the anticipated incidental take of NLEBs within the bounds of the identified acres of habitat.

The ESA does not require use of precise, empirical scientific data to make decisions, but instead requires use of the best available scientific and commercial data to make determinations within specified statutory time frames. Therefore, when lacking empirical data, the Service must make science-based assumptions in its decision-making process. This is often the case when the Service must complete its effects analysis, jeopardy and adverse modification determinations, and ITS based on data that is incomplete, and lacks site-specific, empirical data.

For the NLEB, it is not practical to express the amount of anticipated take in terms of individuals because there is no density or abundance estimate for the portion of the action area where take is anticipated. As a result, predicting the precise number of individuals that will be taken is not



possible. Additionally, it is not practical to monitor take-related impacts in terms of individual NLEBs for the following reasons: (1) the NLEB has a small body size, is drab in color, which makes encountering dead or injured individuals unlikely; (2) NLEBs occupy summer habitats (heavily forested) where they are difficult to locate (multiple roosts located within and outside of the action area); (3) NLEBs spend a substantial portion of their lifespan underground; (4) take may occur offsite (e.g., the bat dies outside of the action area); (5) starvation or failure to reproduce cannot be detected; and (6) losses may be masked by fluctuations in numbers associated with WNS.

Because the location, timing, and acreage of habitat impacts can be readily identified, measured, and monitored, this surrogate is the most reasonable means for detecting when take may be exceeded. While working outside of the evaluated parameters (e.g., work zones, seasonal or timing restrictions, and specified acreages) it does not automatically mean that take has been exceeded, these events provide a clear trigger that requires the Action Agency to reinitiate consultation, during which the Service will determine whether incidental take has been exceeded since detection of individuals taken, as described above, is not practical.

The anticipated take is described in the table below.

<b>Activity</b>	<b>Time Period</b>	<b>Amount of Take Anticipated (# of Individuals)</b>	<b>Amount of Take Anticipated (Surrogate of Areal Extent of Impacts)</b>
Removal of roosting habitat	Active Season	NA	0.1 acres
Removal of roosting habitat	Maternity Season	NA	0.1 acres
Culverts >4ft in diameter	Active Season	NA	84 linear feet

Effect of Take

In the accompanying BO, the Service determined that the level of anticipated take is not likely to jeopardize the continued existence of the NLEB.

Reasonable and Prudent Measures

The USFWS considers the following reasonable and prudent measure(s) to be necessary and appropriate to minimize the incidental take of the NLEB.

RPM 1–Conservation Measures

All conservation measures, as described in the BA Form and restated in the Conservation Measures section of this BO, shall be fully implemented.

RPM 2–Monitoring and Reporting Requirements

Report to the Service annually about the status of the Project activities until the Project and all terms and conditions have been implemented. Report any injured or dead NLEBs incidentally observed to the Service.

### Terms and Conditions

The MaineDOT must comply with the terms and conditions of this statement, provided below, which include monitoring and reporting requirements. Any taking which is subject to this ITS that is in compliance with the following terms and conditions is not a prohibited taking under the ESA, and no other authorization or permit under the ESA is required.

#### Term & Condition 1.1 (RPM 1–Conservation Measures)

The MaineDOT shall require and include full implementation and adherence to the conservation measures identified in the BA Form as a condition of any permit or contract issued for the Project.

#### Term & Condition 1.2 (RPM 1–Conservation Measures)

If any conservation measures cannot be implemented or require modification, MaineDOT will contact the Service for further discussion before proceeding.

#### Term & Condition 2.1 (RPM 2–Monitoring and Reporting Requirements)

MaineDOT will notify contractors and construction staff of conservation measures and ensure compliance with these measures.

#### Term & Condition 2.3 (RPM 2–Monitoring and Reporting Requirements)

The MaineDOT will make all reasonable efforts to educate personnel to report any sick, injured, and/or dead bats (regardless of species) located in the project action area during construction, operations, maintenance, or monitoring activities immediately to the USFWS Maine Ecological Services Field Office (Patrick Dockens; patrick\_dockens@fws.gov, (207) 460-2566). When injured or dead bats are found, the MaineDOT shall follow the steps outlined in condition 2.5 below.

#### Term & Condition 2.4 (RPM 2–Monitoring and Reporting Requirements)

Injured listed species must be cared for by a licensed veterinarian or other qualified persons. Dead individuals must be sealed in a resealable plastic bag containing a paper with the date and time when the animal was found, the location where it was found, and the name of the person who found it, and the bag containing the specimen frozen in a freezer located in a secure site, until instructions are received from the Service regarding the disposition of the dead specimen.

#### Term & Condition 2.5 (RPM 2–Monitoring and Reporting Requirements)

To monitor the impacts of incidental take, the MaineDOT must report the progress of the action and its impact on the NLEB as specified below. The MaineDOT will report the progress and impacts for each activity no later than May 1, 2024.

To report on the extent and nature of incidental take each year, the MaineDOT will provide the Service with the following information, or alternative information that the MaineDOT and the Service agree is appropriate.

- The completion status of the project
- The conservation measures that were applied
- The acreage of tree removal by activity type in the take table
- The status and results of the RPMs and Terms and Conditions
- Any listed species survey or habitat reports, or structure assessments, if applicable

#### IX. REINITIATION NOTICE

This concludes formal consultation on the proposed project. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the action agency that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; 3) the action is subsequently modified in a manner that causes an effect to listed or critical habitat not considered in this opinion; or 4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The Standing Analysis and Interim Consultation Framework only consider and address the effects of covered actions that are expected to occur from March 2023 until April 1, 2024. In other words, the Standing Analysis and Interim Consultation Framework do not consider any effects (i.e., incidental take) of the covered actions that may occur after April 1, 2024. Therefore, after April 1, 2024, any action agency that was issued an individual BO that relied on this Standing Analysis and Interim Consultation Framework will need to reinitiate consultation if its continuing, discretionary action is expected to affect the NLEB (i.e., cause incidental take). If the action agency fails to reinitiate consultation on or before April 1, 2024, its individual BO will no longer be based on the best available information, which means the action agency's section 7 compliance and incidental take exemptions provided by section 7(o)(2) may lapse.

#### X. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the ESA [16 USC 1536(a)(1)] directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service has not identified any additional actions that, if undertaken by the MaineDOT, would further the conservation of the NLEB for this project.