

APPENDIX C

U.S. Fish and Wildlife Service's Biological Opinion (BO)

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United States Department of the Interior



FISH AND WILDLIFE SERVICE
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IN REPLY REFER
TO:
IL-IAFO

March 9, 2020

Federal Highway Administration
U.S. Department of Transportation
Illinois Division
ATTN: Ms. Janis Piland
3250 Executive Park Drive
Springfield, Illinois 62703

Dear Ms. Piland:

This document transmits the Fish and Wildlife Service's (Service) biological opinion for the proposed Illinois Department of Transportation, (ILDOT) Illinois Route 100/106 (Florence Bridge) Bridge removal and replacement project over the Illinois River, Pike and Scott Counties, Illinois. The project as proposed includes replacement of the existing lift bridge with a new two-lane bridge with raised vertical clearance. The project as proposed will require 63.5 total acres of new right-of-way (ROW) and includes impacts to 57 acres of forested habitat within the project area. Formal consultation under Section 7 of the Endangered Species Act (Act) was initiated by your office on November 19, 2019, following receipt of the revised biological assessment.

ILDOT determined the project may affect and is likely to adversely affect the federally threatened decurrent false aster (*Boltonia decurrens*), northern long eared bat (*Myotis septentrionalis*), and the federally endangered Indiana bat (*Myotis sodalis*). Due to the project being 37 acres greater than what was analyzed in the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat, the proposed project is outside the scope of that biological opinion (USFWS 2018). This biological opinion addresses effects of the project on the federally threatened decurrent false aster (*Boltonia decurrens*), northern long eared bat (*Myotis septentrionalis*), and the federally endangered Indiana bat (*Myotis sodalis*).

This project is consistent with the description of the proposed action in the programmatic biological opinion for the final 4(d) rule for the northern long-eared bat dated January 5, 2016 (USFWS 2016). ILLDOT proposes to remove suitable habitat for the northern long-eared bat between October 1 and March 31 when bats are not present. Furthermore, any take resulting from clearing in the summer is not prohibited by the final 4(d) rule for the northern long-eared bat (50 CFR §17.40(o)) because no clearing will occur within 0.25 miles of a known hibernaculum or within 150 feet of known, occupied maternity roost trees in June or July. Based on this, the project will not result in any effects beyond those previously evaluated in the Service's programmatic biological opinion for the final 4(d) rule. Therefore, the programmatic biological opinion satisfies ILLDOT's responsibilities under ESA section 7(a)(2) relative to the northern long-eared bat for this project.

ILDOT has determined that this project will have no effect on the gray bat (*Myotis grisescens*), Eastern prairie fringed orchid (*Plantanthera leucophaea*), Higgins eye pearl mussel (*Lampsilis higginsii*), Spectaclecase mussel (*Cumberlandia monodonta*), or the bald eagle (*Haliaeetus leucocephalus*), a federal species of concern; therefore, consultation with the Service is not required. If you have any questions or concerns regarding this consultation, please contact Heidi Woeber of this office 309/757-5800, ext. 209.

Comments provided under the Fish and Wildlife Coordination Act

The Service recommends that impacts to streams and wetlands be avoided, and buffers surrounding these systems be preserved. Streams and wetlands provide valuable habitat for fish and wildlife resources, and the filtering capacity of wetlands helps to improve water quality. Naturally vegetated buffers surrounding these systems are also important in preserving their wildlife-habitat and water quality-enhancement properties. We support and recommend mitigation activities that reduce the likelihood of invasive plant spread and encourage native plant colonization. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats. We recommend that all disturbed areas in the project vicinity be mulched and revegetated with native plant species.

Comments are provided under the authority of and in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.); and the Endangered Species Act of 1972, as amended.

BIOLOGICAL OPINION

Description of Proposed Action

The action, as proposed, includes the replacement of the IL 100/106 Bridge over the Illinois River in Pike and Scott Counties, Illinois. ILLDOT proposes to implement the project beginning in the Fall of 2022 through 2025. Section 2.0 of the Biological Assessment (BA), along with supporting materials submitted by ILLDOT, include additional details about the proposed action. During construction the land within and around its footprint would be cleared and graded. Approximately 63.5 acres of new ROW would be required for the project, 2.59 acres of which would impact *B. decurrens* on the eastern side of the Illinois River in Scott County. Fifty-seven acres of trees would be cleared as a result of this action, which would affect Indiana bats. ILLDOT proposes to implement the following conservation measures to avoid, minimize, and mitigate adverse impacts to *B. decurrens* and the Indiana bat:

- 1) Temporary fencing shall be placed along the edge of the ROW and around the uneconomic remnant property to be acquired on the east side of the river (see figure 4, BA 2019) to prevent equipment from entering *B. decurrens* habitat. The fencing shall run along the edge of the ROW and the uneconomic remnant property between the river's edge and the levee to prevent construction equipment from driving around the fence and over *B. decurrens* habitat or any flowering plants. This area is likely to flood, so the type of fencing used will be designed to withstand flooding.
- 2) *B. decurrens* seeds will be collected in late September or October (depending on bloom time, weather, and rainfall) two years and one year preceding initial construction activities. For example, if construction activities are scheduled to begin during the spring of 2022, seed collection will occur during the autumn of 2020 and/or 2021 depending on population numbers. Allowing two years for seed collection will increase the likelihood of obtaining enough seed in

the event that blooming individuals within the population were extremely low or absent for a given year.

- 3) The flowering/fruitleading heads within the population will be collected during the years described in mitigation measure number two. A small portion of the fruitleading inflorescence of each individual (or numerous individuals, depending on population size) will be clipped and seeds shaken into a clean bucket. Collecting seeds from individual plants spanning the entire population will increase the likelihood of obtaining genetic variation (i.e., seed from plants growing in full sun, partial shade, river sediment, gravelly soil, etc.).
- 4) After *B. decurrens* seeds are collected they will be allowed to dry for 5 to 7 days in a climate-controlled lab (approximately 67° F [19.4° C] and relative humidity 45%). Seeds will then be divided into lots (depending on seed volume obtained) and placed in Ziploc bags and stored in a freezer at a constant temperature of approximately 20° F (-6.7° C). This storage method will allow seeds to be stored for several years (3 to 7 years, possibly longer). The project will take approximately four years to complete from the time the construction begins to after the existing bridge is removed. If seeds are collected two years prior to letting they will be stored for six years which is within the safe limits of this storage method.
- 5) Seed dispersal will optimally be at the original site where seeds were collected. When all construction activities are completed at the bridge construction site, seeds will be removed from cold storage and hand broadcast at the site between late April and June. Broadcasting of seed will depend on weather and flood conditions, and optimally will take place at the end of the last major flood event.
- 6) If unforeseen circumstances arise and the seed has been held for seven growing years ILDOT will consider whether the seed shall continue to be held or dispersed at an alternate location. Dispersal could occur at Ray Norbut State Fish and Wildlife Area, five miles north of the project site, on the west side of the river, which is owned and managed by the Illinois Department of Natural Resources (ILDNR). Another area where dispersal could occur is the floodplain habitat within Meredosia Lake approximately 20 miles north of the bridge project site, on the east side of the Illinois River in Morgan County. This site is also owned and managed by ILDNR. Both potential alternative sites have existing populations of *B. decurrens*. ILDOT will coordinate with USFWS and ILDNR should this circumstance arise.
- 7) Any unavoidable tree removal will take place between October 1 and March 31, which is outside of the known maternity season for the Indiana bat and NLEB in Illinois.
- 8) A bat bridge assessment, or bat emergence survey, will be conducted within two years of letting. If any bats are found to be roosting in the existing bridge then ILDOT will determine the bat species. If the bats are determined to be Indiana bat then the bridge will be removed between October 1 and March 31 of any given year.
- 9) Tree replacement will follow ILDOT's D&E-18 policy which provides that "For trees removed from forest areas...the intent of replacement plantings should be to provide comparable functional replacement. Where comparable functional replacement cannot be achieved through replacement plantings within the right-of-way, consideration should be given to providing replacement plantings off the right-of-way." The replacement trees should provide suitable bat

habitat. Trees that provide suitable habitat are listed in Table 5 of the “Indiana Bat (*Myotis sodalis*) Draft Recovery Plan: First Revision.”

Status of the Species

Decurrent false aster (*Boltonia decurrens*)

Species description, distribution, life history, population dynamics, and status are fully described on pages 1-6 for *B. decurrens* in the Decurrent False Aster (*Boltonia decurrens*) Recovery Plan (USFWS 1990) and are hereby incorporated by reference. Information is also presented in the listing documents, the Decurrent False Aster (*Boltonia decurrens*) 2012 5-Year Review: Summary and Evaluation (USFWS 2012), and the Final Biological Opinion for the Operation and Maintenance of the 9-foot Navigation Channel on the Upper Mississippi River System (USFWS 2000), the Biological Assessment of the Upper Mississippi River-Illinois Waterway System Navigation Study (USACE 2004), and the Service’s Biological Opinion for the Upper Mississippi River-Illinois Waterway System Navigation Study (USFWS 2004). Impoundment of the Illinois River and prolonged high water events during the growing season reduce available habitat and have led to the decline of the species (USFWS 2012). Since the issuance of the 5-Year Review in 2012, there has been no change in the status of the species.

Biologists have observed extreme variability in individual population sizes in the monitoring history of the species. Due to the intermittent nature of the available data, long-term trends are not readily apparent but appear to include a periodic expansion and contraction of populations (See Appendices A and B in the 5-Year Review, hereby incorporated by reference, for charts of available long-term monitoring data) (USFWS 2012). However, in spite of intermittent data collection, fluctuations in population sizes do not appear to indicate a substantial increase or decrease in the overall populations. Therefore, the Service’s 5-Year Review determined that the species population status has generally remained stable (USFWS 2012). *B. decurrens* is a fugitive species endemic to the Illinois River System that relies on flood pulses to maintain populations and suitable habitat.

Environmental Baseline

The environmental baseline for *B. decurrens* was fully described in Part I of the Recovery Plan and is hereby incorporated by reference. Since the issuance of the July 2012 5-Year Review, there has been no change in the environmental baseline.

Status of the species within the action area

Illinois Natural History Survey conducted botanical surveys in 2017 (ILNHS 2018) to determine if *B. decurrens* was present in the action area. The surveys identified five populations of *B. decurrens* and several individuals within the action area, with a total of 8,825 rosettes. The two westernmost populations (7 and 8 as shown in Figure 3, BA 2019) occur within several hundred feet of each other near the northern tip of Ferry Lake. Site 7 consists of 3,750 rosettes, with 3,250 occurring on the north side of the existing bridge and 500 occurring on the south side of the existing bridge. No populations exist underneath the existing Florence Bridge. Site 8, directly south of site 7, consists of 1,465 rosettes with 1500 rosettes occurring on the north end of site 8. The remaining populations, sites 4, 9 and 10 exist east of these. Sites 4 and 9 are on the northern side of the existing roadway and site 10 is on the southern side of the existing roadway. Site 4 consists of 500 rosettes, site 9 consists of 2,050 rosettes, and site 10 on the south side of the roadway consists of 1,060 rosettes. All five sites are within the project action area. We are unaware of other proposed Federal actions that may affect *B. decurrens* in the project area at this time.

Effects of the Action

The effects of the action are “all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action.” (See 50 CFR §402.17)

Based on analysis of the information provided in your BA and supporting materials, we have determined that adverse effects to *B. decurrens* from this project could occur due to the land clearing and grading of the project area prior to construction. Temporary fencing as described in avoidance measure 1 will prevent direct adverse effects to some individual plants. Any individuals located in the construction area would incur a direct impact. Potential indirect impacts to *B. decurrens* may occur due to future repairs on the new bridge. Access may be required if repairs are necessary when plants are blooming and if the plant occurs where the repairs are necessary, direct impacts may result. It is, however, difficult to predict when and where these events will occur and if *B. decurrens* will be present when repairs are necessary.

We are not aware of any non-federal actions in the action area that are reasonably certain to occur. Thus, we do not anticipate any cumulative effects associated with this project.

Indiana bat (*Myotis sodalis*)

Species description, distribution, life history, population dynamics, and status are fully described in Part I and Part II for the Indiana bat in the Indiana Bat Draft Recovery Plan: First Revision (2007 Plan) (USFWS 2007) and the September 2009 5-year Review (USFWS 2009) and are hereby incorporated by reference. Since the issuance of the most recent Review in 2019, there has been no change in the status of the species.

Based on censuses taken at all hibernacula, the total known Indiana bat population is estimated to number about 537,297 bats (King 2019). Population trend data showed steady increases from 2001 to 2007, a drop in 2009, an increase in 2011, and continually dropping populations until 2017. With the spread of white-nose syndrome (WNS), future population trends are uncertain. The current revised 2007 Plan delineates recovery units based on population discreteness, differences in population trends, and broad level differences in land-use and macrohabitats. There are currently four recovery units (RUs) for the Indiana bat: Ozark-Central, Midwest, Appalachian Mountains, and Northeast. The majority of Illinois, including the project area, falls within the Ozark-Central Recovery Unit.

Historically, the Ozark-Central Recovery Unit had the largest numbers of Indiana bats in hibernacula; however, populations have declined such that the Midwest RU unit hosts the largest populations of Indiana bats. Prior to 2012, the majority of hibernating bats in the Ozark-Central RU were assumed to overwinter in Pilot Knob Mine in Missouri. Dramatic declines in the hibernating population at this site have occurred since the early 1980s from an original estimation of approximately 100,000 in the 1970s to an estimation of 1,678 in the 2000s. The discovery of a previously unknown P1 hibernation site has increased the baseline size of the population in the Ozark-Central RU, but not the overall trend across the range of the species. The newly discovered site houses approximately 180,801 hibernating Indiana bats (USFWS 2019). Based on observations by private cavers, the site has been occupied by a similar number of Indiana bats since the 1970s and would have concurrently occupied both sites; these bats are not considered to be bats that moved from Pilot Knob Mine. Bats from the previously unknown site have since been incorporated into the estimated population for the Ozark-Central RU and the current 2019

population estimate is approximately 276,317 (USFWS 2019). The project area is located approximately 40 miles from the newly discovered hibernation site in Missouri.

Based on the amount of tree removal and IL DOT's assumption that a maternity colony exists within the 57 acres of trees that will be cleared, this project may affect, is likely to adversely affect, the Indiana bat and 60 female Indiana bats will be harmed through the removal of occupied habitat.

Environmental Baseline

The purpose of the environmental baseline is to describe past and ongoing human and natural factors that have contributed to the current status of the species and its habitat in the project vicinity. Range-wide factors affecting the species include those listed under Threats and Reasons for Listing in the 2007 Plan (USFWS 2007). Other factors with the potential to adversely affect roosting habitat include forest clearing by private industry within the summer range in Illinois, woodlot management and wetland drainage by landowners, and other private and municipal land management activities that affect the structure and abundance of forest resources in Illinois.

Much of the remaining forested land cover classes in the predominately agricultural areas of central Illinois represent potential summer habitat for the Indiana bat. Due to their migratory behavior, Indiana bats likely follow watershed drainage corridors en route to their summer habitats and in returning to their hibernacula. In doing so, they may stop and roost temporarily in suitable floodplain trees, manmade structures such as barns or bridges, or may select an area to spend the summer in a maternity colony. However, little definitive information exists regarding the species' maternity habitat selection versus habitat availability.

Status of the species within the action area

A review of the BA (2019) and supporting materials, hereby incorporated by reference, adequately describe the action area for the project. The BA states that suitable habitat exists within the action area, and the IL DOT has chosen to assume presence of the species in lieu of conducting presence/absence surveys.

Effects of the Action

The effects of the action are "all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action." (See 50 CFR §402.17).

Based on analysis of the information provided in your BA and supporting materials, we have determined that adverse effects to the Indiana bat from this project could occur due to forested land clearing and the removal of potential maternity roost trees. However, implementation of seasonal cutting restrictions (avoidance measure 7) will avoid direct adverse effects to individual bats.

Projects that require the removal of one or more potential primary maternity roost trees outside of the Indiana bats' maternity season can result in adverse effects to colony members upon their return to maternity areas following hibernation. When a primary roost tree becomes unsuitable, members of a colony may initially distribute themselves among several previously used alternate roost trees (USFWS

2002; Kurta et al. 2002). It is not known how long it takes for the colony to attain the same level of roosting cohesiveness that it experienced prior to the loss of an important primary roost tree. Colony cohesiveness is essential for successful birth and rearing of young. It is likely that due to the ephemeral nature of roost trees, the Indiana bat has evolved to be able to relocate replacement roosts, if available, when their previously-used roost trees become unsuitable. Until the bats from the colony locate another desirable primary roost tree and reunite, it is possible, however, that some individual members of a colony will be subject to increased stress resulting from (1) having to search for a replacement primary roost tree, which increases energy expenditure and risk of predation; (2) having to roost in alternate trees that are less effective in meeting thermoregulatory needs; and (3) having to roost singly, rather than together, which decreases the likelihood in meeting thermoregulatory needs, thereby reducing the potential for reproductive success.

Adult male and non-reproductive female Indiana bats may also be indirectly exposed to loss of roosting habitat. In general, effects on these individual bats would be less severe than the effects associated with individuals of maternity colonies. Adult male and non-reproductive female Indiana bats are not subject to the physiological demands of pregnancy and rearing young. Males and non-reproductive females typically roost alone or occasionally in small groups. When these individuals are displaced from roosts they must utilize alternative roosts or seek out new roosts. Because these individuals are not functioning as members of maternity colonies, they do not face the challenge of reforming as a colony. Roost tree requirements for non-reproductive Indiana bats are less specific whereas maternity colonies generally require larger roost trees to accommodate multiple members of a colony. Therefore, it is anticipated that adverse indirect effects to non-reproductive bats will be less than the effects to reproductively active females. The Service anticipates that indirect effects to non-reproductive Indiana bats from the loss of roosting habitat will be insignificant.

We are not aware of any non-federal actions in the action area that are reasonably certain to occur. Thus, we do not anticipate any cumulative effects associated with this project.

Reasonable and Prudent Measures

The Service believes the following reasonable and prudent measures are necessary and appropriate to minimize the effects of the project on *B. decurrens* and Indiana bat.

1. All conservation measures for *B. decurrens* will be implemented as described above.
 - a. Specific construction paths identified with fencing (identified in the BA) will be designated through known populations of *B. decurrens* to reduce trampling and compaction.
2. Removal of trees in the project area that meet the current Service definition of potential Indiana bat roost trees is prohibited, except as follows:
 - a. Potential roost trees may only be removed from the project area, before April 1 and after September 30 of any given year.
 - b. If removal of a potential roost tree is necessary outside of that timeframe to protect human health and safety, the Service and the Illinois Department of natural Resources shall be notified, and reasonable effort shall be made to determine if the tree is occupied by one or more Indiana bats. If the tree is

determined to be occupied, further coordination with the Service and Illinois Department of Natural Resources is expected.

- c. All surveys should be conducted using the most recent Indiana bat survey protocol available from the Service.
- d. Should exit counts from an identified Indiana bat maternity roost tree exceed 60 bats, consultation should be reinitiated.
- e. The Service should be notified upon the capture of an Indiana bat during any performed survey and given an opportunity to review this Opinion for accuracy. If the Opinion and the analyses therein are no longer accurate, consultation will be reinitiated.

Terms and Conditions

In order to be exempt from the prohibitions of Section 9 of the ESA, the ILDOT must comply with the following terms and conditions. These terms and conditions are non-discretionary.

1. The conservation measures identified above should be applied to the project.
2. The reasonable and prudent measures identified above, should be applied to the project.
3. Monitoring results shall be submitted to the Illinois/Iowa Ecological Services Field Office of the Service by December 31 of the year in which the monitoring event occurred. Reports should contain:
 - a. Amount of habitat cleared.
 - b. Whether or not dead Indiana bats were found in the project area. Should one or more Indiana bats be encountered during the course of the project, the Illinois/Iowa Field Office should be notified upon the discovery, and the number, age, sex, and reproductive status of the bat(s) should be reported.

Conclusion

After reviewing site specific information, including 1) the scope of the project, 2) the environmental baseline, 3) the status of *B. decurrens* known to be present in the project area and the Indiana bat and its assumed presence within the project area, 4) the effects of the action, and 5) any cumulative effects, it is the Service's biological opinion that this project is *not likely to jeopardize* the continued existence of *B. decurrens* or the Indiana bat. No critical habitat has been designated for *B. decurrens*, and therefore none will be affected. There is no critical habitat for Indiana bat in the project area, therefore none will be affected.

Incidental Take Statement

Given the proposed conservation measures, the Service anticipates that non-maternal season tree removal of 57 acres during the initial stages of construction will result in take, in the form of harm, of less than 60 adult female bats. This is based on the assumption there is one undetected maternity colony present in the areas designated for tree removal. This level of expected take of Indiana bats from the proposed project is *not likely to result in jeopardy* to the species.

We understand that ILDOT is implementing all pertinent Indiana bat conservation measures, specifically 7 through 9 stipulated in the BA in part 4.2.3. These measures will minimize the impact of the anticipated incidental take.

This fulfills your section 7(a)(2) requirements for this action. However, should the proposed project be modified or the level of take identified above be exceeded, ILDOT should promptly reinitiate consultation as outlined in 50 CFR §402.16. 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 agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species 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. Requests for reinitiation, or questions regarding reinitiation, should be directed to the U.S. Fish and Wildlife Service's Illinois-Iowa Field Office, located in Moline, Illinois.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Kraig McPeek', with a long horizontal flourish extending to the right.

Kraig McPeek
Field Supervisor

cc: ILDOT (Hurley)
ILDNR (Hayes)

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