



Illinois Department of Natural Resources

One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov

Bruce Rauner, Governor
Wayne A. Rosenthal, Director

Authorization for Incidental Take and Implementing Agreement

Pursuant to the Illinois Endangered Species Protection Act (Act) (520 ILCS 10/5.5) and the regulations adopted to implement the Act (17 Ill. Adm. Code 1080), authorization is hereby granted to the Illinois Department of Transportation (hereinafter referred to as IDOT) for the incidental take of the State-threatened eastern sand darter (*Ammocrypta pellucidum*) and the State-endangered smooth softshell (*Apalone mutica*). The Illinois Department of Natural Resources (hereinafter referred to as Department) has determined that the taking is incidental to activities associated with the replacement of the Illinois Route 1 bridge over the Embarras River in Lawrence County, Illinois.

Procedural History

The Department received a conservation plan prepared by IDOT on November 14, 2016, as a request for authorization for the incidental take of eastern sand darter. On November 16, 2016, the Department recommended the addition of smooth softshell to the applicant's conservation plan. Additional information as requested by the Department was received on December 8, 2016, to make the conservation plan complete as prescribed by Ill. Adm. Code 1080.10. That additional information was received by the Department on December 16, 2016. The Department requested additional information on January 9, 2017. The final conservation plan was approved by the Department on January 20, 2017. The public notice period will be detailed under #6 of the Compliance section below.

Compliance with the Illinois Endangered Species Protection Act

The Act includes six criteria that must be satisfied for the authorization of incidental take of an endangered or threatened species. These criteria and the Department's determination for each are listed below.

1. The taking will not be the purpose of, but will only be incidental to, the carrying out of an otherwise lawful activity:

The stated and apparent purpose of this proposed action is the replacement of the Illinois Route 1 bridge over the Embarras River in Lawrence County, Illinois. Bridge replacement activities include removal of the existing bridge structure, including the deck and five piers (three in-stream piers), and replacement with a new bridge supported by two new in-stream support piers. The construction will be facilitated by either a floating barge causeway or temporary rock causeways, depending on contractor preference. The beams of the old bridge will be removed intact by crane and stockpiled for disposal. The old concrete piers will be sawed or jackhammered into pieces for removal by machinery accessing the site via the

causeway(s). The two new support piers will be installed with drilled shafts for added support. When construction is complete, the temporary rock causeways will be removed using an excavator, and the rock will be placed in the slopes of the river bank for added stabilization. The area of impact, including the area required for construction of the temporary rock causeways, is **0.83 acre**.

Take of the eastern sand darter and smooth softshell could occur as a result of being crushed or smothered during installation of the new piers or rock causeways, sedimentation within and downstream from the project site, and temporary turbidity increases during construction. Disturbance from noise and vibration within the river could have an adverse effect on some life history stage of the eastern sand darter or smooth softshell. The take of eastern sand darter and smooth softshell that could result from this project is not the purpose of IDOT's activities, but is incidental to the carrying out of an otherwise lawful activity.

2. The parties to the conservation plan will, to the maximum extent practicable, minimize and mitigate the impact caused by the taking:

Proposed minimization and mitigation measures were included in IDOT's conservation plan.

To meet the "maximum extent practicable" standard, additional minimization and/or mitigation measures may be required beyond those proposed by IDOT, based on the life history needs of the eastern sand darter and smooth softshell.

All required minimization and mitigation measures are presented under the Authorization section below.

3. The parties to the conservation plan will ensure that adequate funding for the conservation plan will be provided:

IDOT states that they will fully fund the bridge replacement and fully support the conservation plan. The estimated costs include funding for all activities associated with the implementation of the conservation plan, including all mitigation and monitoring measures. IDOT has a contractual obligation with the Illinois Natural History Survey, who will be in charge of post-construction monitoring proposed in the conservation plan. IDOT understands that if any additional activities are planned at the facility that may affect eastern sand darter, smooth softshell, or other endangered or threatened species, coordination with the Department will be required.

It is the Department's opinion that IDOT's stated commitment to funding their proposed minimization and mitigation measures is sufficient to satisfy this criterion.

4. Based on the best available scientific data, the Department has determined that the taking will not reduce the likelihood of survival or recovery of the endangered species or threatened species in the wild within the State of Illinois, the biotic community of

which the species are a part, or the habitat essential to the species' existence in Illinois:

The **eastern sand darter** is a State-threatened fish species in Illinois. It is a small fish, ranging from 2-3 inches in length. It is found in slow-moving areas of medium to large size streams. Eastern sand darters are only found in areas with clean sandy substrates and are known to vacate an area if clean sand is compromised by mud or silt. The species spends much of their time on the stream bottom buried in the sand with only their snout and eyes exposed waiting for food items to float by. Eastern sand darters feed on small insects, insect larvae, and zooplankton.

Eastern sand darter spawn typically takes place in June or early July, though females have been observed carrying eggs as late as August. Females are able to mate twice per breeding season, producing up to 350 eggs with an average clutch size of 71 eggs. Females bury eggs in sand, after which point no further parental care is given. Eggs hatch after less than seven days, and fry begin feeding after nine days. Juvenile eastern sand darters reach sexual maturity after one year.

Eastern sand darter populations have declined due to habitat loss, increased siltation of sandy habitats, declining water quality, and habitat alteration due to the installation of dams and other manmade structures. In Illinois, eastern sand darters have been found in the Vermilion, Embarras, and Little Wabash River basins. Eastern sand darters have been found in 9 of 102 Illinois counties including Champaign, Coles, Crawford, Cumberland, Jasper, Lawrence, Mercer, Richland, and Vermilion. There are currently 26 extant Element Occurrence Records for eastern sand darter in the Illinois Natural Heritage Database. There have been two previously issued or pending incidental take authorizations for the eastern sand darter in the State of Illinois, both for dam removal projects. This is the first authorization for eastern sand darter in Lawrence County.

In September 2014, a fish survey was conducted in the project area by the Illinois Natural History Survey. One juvenile eastern sand darter was found during the survey. IDOT estimates that this project will result in the take of up to four eastern sand darters, or one per 10,000 ft² of impact area.

The **smooth softshell** is an Illinois State-endangered aquatic turtle species. Smooth softshell get their name from their smooth, leather-like, flexible carapace in place of the hard outer shell typical of most turtles. Although smooth softshell will bask out of water like other turtle species, they are never far from water and are almost fully aquatic, as their soft carapace makes them more susceptible to desiccation than other turtle species. Smooth softshell are found in large, unpolluted rivers in the central United States, and prefer areas with moderate to fast currents and sandy or muddy substrates lacking rocky areas and dense vegetation. They can also be found in lakes, impoundments, and shallow bogs.

Smooth softshell have the ability to extract oxygen from the water through their skin and can remain submerged for long periods of time.

Smooth softshell hibernate during the winter buried under sandy or muddy substrates. They emerge in the spring and breed from May to June. Nesting takes place from June to early July on sandbars and riverbanks with full exposure to sun. Females lay up to 30 eggs in a single nest. Eggs incubate for 8-12 weeks before hatchlings emerge. Smooth softshell hatchlings are highly susceptible to predation by fish, other turtles, snakes, wading birds, and some mammals. Males that survive the early years of life become sexually mature in their fourth year, while females become mature at 7-9 years.

The primary threats to smooth softshell populations are habitat degradation, pollution, human activities at nesting sites, and overharvest by humans as meat or as bycatch of commercial fishing. Land clearing and wetland drainage for agriculture, pollution by sewage, and construction of locks and dams have negatively affected smooth softshell habitat and populations, along with increased runoff and silt caused by changes in the habitat structure near rivers. Smooth softshell nests are susceptible to increased boat traffic, as excessive waves caused by boats can cause nests to be uncovered or drowned.

Smooth softshell can be found in rivers throughout the State of Illinois, including the Mississippi, Ohio, Rock, Illinois, Sangamon, Kaskaskia, Wabash and Embarras River basins. Smooth softshell have been found in 18 of 102 Illinois counties. There are currently 21 extant Element Occurrence Records for smooth softshell in the Illinois Natural Heritage Database. This is the first Incidental Take Authorization issued for smooth softshell in Lawrence County and in the State of Illinois.

A survey for smooth softshell at the project site has not taken place, but surveys conducted by the Illinois Natural History Survey at the downstream Embarras River Bottoms State Habitat Area in 2015 found 18 individual smooth softshell turtles, including 8 mature females, indicating a sizeable smooth softshell population in the Embarras River. IDOT estimates that this project will result in take of 7 smooth softshell turtles.

Based on the amount of habitat impacted by this project, the number of known occurrences of the eastern sand darter and smooth softshell in Illinois, an assessment of the potential effect of this project on individual listed species in the project footprint, the conservation measures included in this authorization for incidental take, and the understanding that vulnerability and recovery information on the species remains limited; the Department has concluded that the taking proposed herein will not reduce the likelihood of survival or recovery of the eastern sand darter or smooth softshell in the wild within the State of Illinois, the biotic community of which the species are a part, or the habitat essential to the species' existence in Illinois.

5. Any measures required under Section 5.5(b)(6) of the Act will be performed:

These measures are listed below under "Authorization." This authorization is, by definition, subject to those terms and conditions and the signature of a representative of IDOT indicates their commitment to performing those measures.

6. The public has received notice of the application and has had the opportunity to comment before the Department made any decision regarding the application:

Public notice of IDOT's request for authorization of incidental take was published in the *Breeze Courier* (official state newspaper) on January 24, 2017, and in the *Lawrenceville Daily Record* on January 24, January 31, and February 7, 2017. A copy of the conservation plan was deposited at the Lawrence Public Library, where it was available for public review. The deadline for public comment was March 7, 2017. No comments were received from the public.

Authorization

It is the determination of the Department that the measures that will be implemented by IDOT will adequately minimize and mitigate the anticipated taking of eastern sand darter and smooth softshell incidental to activities associated with the replacement of the Illinois Route 1 bridge over the Embarras River in Lawrence County, Illinois. Further, the Department has concluded that the take authorized herein will not reduce the likelihood of survival or recovery of the eastern sand darter or smooth softshell in the wild within the State of Illinois, the biotic community of which the species are a part, or the habitat essential to the species' existence in Illinois. Additional listed species are known to inhabit the Embarras River, **this agreement does not authorize take of any species except the eastern sand darter and the smooth softshell.**

All terms and conditions included in the aforementioned conservation plan submitted by IDOT to the Department are incorporated into this agreement by reference and are made a part thereof.

Pursuant to Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5] and the Administrative Rules for the Incidental Taking of Endangered and Threatened Species [Ill. Adm. Code 1080.40(b)], this authorization is issued subject to the following terms and conditions, which may include additions or modifications to the minimization and mitigation measures proposed by IDOT in the conservation plan:

1. This authorization is effective upon the signature of the Department and shall remain in effect for a period of five (5) years from the date of the Department signature, unless terminated by written agreement of both parties.

This authorization may be revoked pursuant to the Act and Ill. Adm. Code 1080.80(b) if the Department finds that IDOT has failed to comply with any of these terms and conditions or has been responsible for the taking of the eastern sand darter or smooth

softshell beyond that which is incidental to activities associated with the replacement of the Illinois Route 1 bridge over the Embarras River in Lawrence County, Illinois.

2. The effective period of this authorization may be altered by mutual written agreement between IDOT and the Department. The Illinois Endangered Species Protection Board shall be notified of any such alteration.

Any substantive changes, including but not limited to a change in the project footprint or a change in the State-listed species which could potentially be affected, will require that a new conservation plan be submitted to the Department to initiate the review and public notice process as required by the Act.

3. This authorization is non-transferable.
4. All on-site personnel shall be educated on the sensitive biological resources in the area, the identification of listed species, regulations protecting the species, where the species might be found, avoidance areas, travel restrictions for equipment and vehicles, how to report sightings or incidents that may involve take, and the importance of avoiding take of the species. **IDOT shall submit a copy of the education materials to the Department.**
5. The Department reserves the right of entry by its staff or representatives to inspect species, potential habitat, and species management practices.
6. Biological consultants employed by IDOT shall hold the necessary permits for work with non-listed and listed species; these include an Illinois Department of Natural Resources (IDNR) Scientific Collection Permit and an IDNR Endangered Species Permit.
7. IDOT shall notify the Department's Endangered Species Program by email correspondence of construction commencement and completion of the replacement of the Illinois Route 1 bridge over the Embarras River. A **project status report** shall be submitted to the Department by January 1 following completion (open to the public) summarizing the implementation of minimization, mitigation, and restoration measures and evaluating the effectiveness of those measures and shall include a project photo log. The report shall also include a map and GPS coordinates of any listed species found within the project footprint, description of any injuries or mortalities, and the disposition of any individuals that were injured or killed.
8. Any discoveries of additional listed species beyond those identified in this agreement shall be reported to the Department within 48 hours accompanied by location information (photograph, map, and GPS coordinates).
9. IDOT shall conduct, or cause to be conducted, the following pre-construction or construction efforts:

- a. No instream work shall take place during the eastern sand darter spawning season (May 15-August 15), nor during smooth softshell nesting season (June 1-September 30). If sandbars in the project area are inundated by high water for more than five (5) consecutive days after July 1, the smooth softshell restriction is lifted.
 - b. Temporary rock causeways shall not span the entire width of the river, and shall not dam the river at any time.
 - c. No debris shall be allowed to fall into the river channel during bridge removal or replacement. All pieces of the old bridge shall be mechanically removed and stockpiled in an upland area until disposal. If a bridge beam is structurally deficient and cannot be lifted out intact, the contractor shall break it up as necessary and capture falling debris by protective means.
 - d. All broken concrete resulting from pier demolition and removal shall be immediately removed from the river channel and disposed.
 - e. Erosion and sediment control measures shall be implemented in all areas affected by riparian activities. Disturbance of vegetation shall be minimized to prevent erosion and sedimentation. All disturbed areas shall be seeded or otherwise stabilized upon completion of construction activities.
 - f. No equipment shall be placed in the water during the course of construction.
 - g. All staging of materials shall take place in an upland area.
10. IDOT shall conduct, or cause to be conducted, the following post-construction monitoring measures in Year 2 and Year 5 following construction completion (for example, if the project is completed in 2017, monitoring shall take place in 2019 and 2022):
- a. A thorough survey of freshwater fish in and around the project area. **A report including, but not limited to, the survey methodology utilized, the species and numbers of fish located, the age of each individual sampled if possible, and a map of the species locations shall be provided to the Department within 90 days of completion of each survey.**
 - b. A thorough survey for smooth softshell turtles in and around the project area. Surveys shall take place between May and October, outside of the smooth softshell annual hibernation season. **A report including, but not limited to, the survey methodology utilized, the number of smooth softshells located, the approximate age and sex of each individual sampled if possible, and a map of the species locations shall be provided to the Department within 90 days of completion of the survey.**
11. The salvage of non-listed fish is hereby authorized by the Department with signature of this agreement per the Illinois Fish and Aquatic Life Code (515 ILCS 5/1-150).
12. Mitigation to the maximum extent practicable is required by the Act. Mitigation requirements for this authorization are calculated as follows:

- a. In lieu of onsite mitigation for the potential take of the smooth softshell, IDOT shall support efforts identified in the Department's 2014 Smooth Softshell Recovery Outline by conducting surveys in the Wabash River, Skillet Fork Creek, and Little Wabash River; rivers identified as needing contemporary surveys for the species. Surveys shall follow protocols described in the Smooth Softshell Recovery Outline. They shall consist of setting 20 baited hoop traps for 3 days, yielding two sampling events per river reach. Traps shall be placed approximately every 200 meters. If a smooth softshell is detected before all three sampling events have occurred in one river, a new river and reach shall be surveyed for the remaining sampling events. Thus, at a minimum, three reaches of three rivers may be sampled, and at most three reaches of three rivers shall be sampled. Surveys shall be completed by December 31, 2018. IDOT's support of the Department's Smooth Softshell recovery effort is valued at **\$6,540.00**. This value includes salary, mileage, lodging, and per diem for survey personnel.
- b. In lieu of onsite mitigation for the potential taking of the eastern sand darter, IDOT shall provide compensatory mitigation in the amount of **\$10,400.00** to the Illinois Natural History Survey to support the publication of *An Atlas of Illinois Fishes*, a comprehensive and current account of fish species distribution throughout Illinois. Payment shall be submitted **within 90 days of the execution of this agreement**.

Mitigation values are based on the Department's best current understanding of the species life history needs and impact analysis relevant to the site's proposed conceptual design elements available at the time of review. Mitigation payments are nonrefundable, including events of revocation or termination.

13. All reports, notifications, and other project documentation shall be submitted to:

Illinois Department of Natural Resources
Office of Resource Conservation
Endangered Species Program – Incidental Take Authorization Coordinator
One Natural Resource Way
Springfield, IL 62702-1271

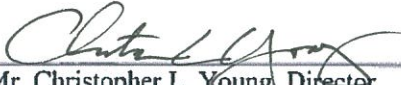
(217)557-8243

The Department's Endangered Species Program shall provide all reports required under this agreement to the Illinois Endangered Species Protection Board and to the Department's Natural Heritage Database.

14. The IDOT official identified below is authorized to execute this agreement. Execution by IDOT indicates acceptance of all terms and conditions described in this authorization.
15. The execution of this agreement does not waive or excuse the responsibilities of IDOT to comply with other Federal, State, or local regulations, including but not limited to obtaining any required permits for the execution of this project.

For the Illinois Department of Natural Resources:

For the Illinois Department of Transportation:



Mr. Christopher L. Young, Director
Office of Resource Conservation



Mr. Jeffrey South, Region 4 Engineer

6/7/17

Date

06/01/17

Date