



Illinois Department of Natural Resources

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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 Chevron Environmental Management Company (hereinafter referred to as CEMC) for the incidental take of the State-endangered smooth softshell turtle (*Apalone mutica*), State-threatened eastern sand darter (*Ammocrypta pellucidum*) and eastern ribbonsnake (*Thamnophis sauritus*). The Illinois Department of Natural Resources (hereinafter referred to as Department) has determined that the taking is incidental to activities associated with riverbank stabilization in the Embarras River. This stabilization shall occur along and within a 1,520 linear-foot section of the Embarras River that adjoins CEMC's former Indian Refinery in Lawrence County, Illinois.

Procedural History

The Department received a conservation plan prepared by Trihydro Corporation for CEMC on July 17, 2017, as a request for authorization for the incidental take of smooth softshell turtle, eastern sand darter, and eastern ribbonsnake. Additional information was requested by the Department on August 7, 2017, to make the conservation plan complete as prescribed by Ill. Adm. Code 1080.10. Additional information was received by the Department on August 9, 2017. The final conservation plan was approved by the Department on August 11, 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 to stabilize a riverbank on the Embarras River in Lawrence County, Illinois. CEMC proposes to first develop a temporary level access road to service heavy machinery. The area of the Embarras River riverbank adjacent to the former Indian Refinery will be cut back to a 1.5:1 slope. CEMC will then place geotextile fabric and rip rap rock, using a backhoe bucket, along the constructed slope to stabilize it. Excess rock will be placed at the toe to naturally settle into the river bed with future erosion. CEMC will place bendway weirs every 200 feet and 1-2 feet diameter concrete culverts 4-8 feet in length below the water line, at the foot of the bank, every 100 feet to

enhance aquatic species habitat. Finally, CEMC will retract the temporary access road and restore the forested wetlands by recreating pre-development contours, planting tree saplings, and seeding herbaceous cover species. Total estimated area of impact for species habitat is 2.15 acres.

Terrestrial take of smooth softshell turtle and eastern ribbonsnake could occur as a result of increased noise, traffic/use of heavy machinery, and people within the Project Area during construction and restoration. Further, the creation of a level space for heavy machinery may result in the removal of forest debris and crayfish burrows that eastern ribbonsnakes hide in. The eastern ribbonsnake may also use the road to facilitate thermoregulation as the cleared area will receive more sun exposure. The construction phase associated with the stabilization of the bank yields the greatest potential for aquatic incidental taking of smooth softshell turtle or the eastern sand darter. This may occur from placement of rock to armor the bank or placement of weirs and culverts to enhance habitat causing direct crushing or indirect harassment. The take of smooth softshell turtle, eastern ribbonsnake, and eastern sand darter that could result from this project is not the purpose of CEMC'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 CEMC's conservation plan.

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

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:

CEMC owns and is responsible for the long-term management of the property. The site is covered under the Comprehensive Environmental Response, Compensations, and Liability Act (CERCLA). Therefore, CEMC is responsible for the environmental stewardship of this area into the future.

It is the Department's opinion that CEMC'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:

Smooth Softshell Turtle (*Apalone mutica*)

The **smooth softshell** is an Illinois State-endangered aquatic turtle species. Smooth softshells get their name from their smooth, leather-like, flexible carapace in place of the hard, outer shell typical of most turtles. Although smooth softshells 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 softshells 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 softshells have the ability to extract oxygen from the water through their skin and can remain submerged for long periods of time.

Smooth softshells 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 softshells can be found in rivers throughout the State of Illinois, including the Mississippi, Ohio, Rock, Illinois, Sangamon, Kaskaskia, Wabash and Embarras River basins. Smooth softshells are currently extant in 17 of 102 Illinois counties. There are 19 extant Element Occurrence Records for smooth softshell in the Illinois Natural Heritage Database. There are 3 Incidental Take Authorizations either pending or executed for the potential take of smooth softshell in the State of Illinois. This is the second Incidental Take Authorization granted for smooth softshell in Lawrence County.

Eastern Sand Darter (*Ammocrypta pellucidum*)

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 can 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 are currently extant in 8 of 102 Illinois counties including Champaign, Coles, Crawford, Cumberland, Jasper, Lawrence, Mercer, and Vermilion. There are currently 21 extant Element Occurrence Records for eastern sand darter in the Illinois Natural Heritage Database. There are 5 Incidental Take Authorizations either pending or executed for the potential take of eastern sand darter in the State of Illinois. This is the second Incidental Take Authorization granted for eastern sand darter in Lawrence County.

Eastern Ribbonsnake (*Thamnophis sauritus*)

The eastern ribbonsnake is an Illinois State-threatened semi-aquatic snake species. Eastern ribbonsnakes are known for their 3 solid, light (usually yellow) stripes along the back and each side of their body. Eastern ribbonsnakes will bask in the sun for thermoregulation. They are often found basking in mud or floating in the water. Eastern ribbonsnakes are found in marshes, bogs, ponds, swamps, and along the edge of standing or flowing water. They prefer areas in or near vegetative cover. Shelters and hibernation sites include thick vegetation or burrows. Eastern ribbonsnake diet typically consists of amphibians, invertebrates, and fish found in or directly around water.

Eastern ribbonsnakes hibernate during the winter in a crayfish burrow or similar underground burrows. They migrate between their aquatic habitat to a hibernaculum on higher ground. They are active diurnally, typically from April-October. Breeding occurs in the spring and females give birth to 3-26 young in

July or August. Females are ovoviviparous and carry their eggs until they hatch. Young will become sexually mature at 2-3 years. Young and adults are susceptible to predation by wading birds, mammals, and other snakes.

Aquatic habitat alteration by humans can have negative impacts to the species, based on its life history needs. Habitat destruction, especially degradation of shoreline vegetation, is negatively impacting their populations. Installation of erosion matting is a threat to the eastern ribbonsnake if work is being conducted around creeks and rivers where they are present.

Eastern ribbonsnakes can be found in wet areas in south and south eastern Illinois. Eastern ribbonsnakes are currently extant in 5 of 102 Illinois counties. These include Crawford, Johnson, Lawrence, Massac, and Pulaski. There are currently 5 extant Element Occurrence Records for eastern ribbonsnakes in the Illinois Natural Heritage Database. This is the only Incidental Take Authorization pending for the potential take of eastern ribbon snake in the State of Illinois. There are no other Incidental Take Authorizations granted for eastern ribbon snake in Lawrence County.

Based on the amount of habitat impacted by this project, the number of known occurrences of the endangered and threatened species in Illinois, an assessment of the potential effect of this project on the 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 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 CEMC 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 CEMC's request for authorization of incidental take was published in the *Breeze Courier* (official state newspaper) on August 14, 2017, and in the *Lawrenceville Daily Record* on August 14, 21, and 28 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 September 27, 2017. No comments were received from the public.

Authorization

It is the determination of the Department that the measures that will be implemented by CEMC will adequately minimize and mitigate the anticipated taking of smooth softshell turtle, eastern sand darter, and eastern ribbonsnake incidental to activities associated with bank stabilization on 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 smooth softshell turtle, eastern sand darter, and eastern ribbonsnake 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 may inhabit the Embarras River, **this agreement does not authorize take of any species except the smooth softshell turtle, eastern sand darter, and eastern ribbonsnake.**

All terms and conditions included in the aforementioned conservation plan submitted by CEMC 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 CEMC 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 CEMC has failed to comply with any of these terms and conditions or has been responsible for the taking of the smooth softshell turtle, eastern sand darter, or eastern ribbonsnake beyond that which is incidental to activities associated with the bank stabilization along and within the Embarras River in Lawrence County, Illinois.

2. The effective period of this authorization may be altered by mutual written agreement between CEMC 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 may only be transferred upon approval and written authorization by the Department.

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. **CEMC 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 CEMC 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. CEMC shall notify the Department's Endangered Species Program by email correspondence of construction commencement and completion of the bank stabilization on Embarras River. A **project status report** shall be submitted to the Department within **90 days** 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 State-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. CEMC shall conduct, or cause to be conducted, the following pre-construction or construction efforts:
 - a. Heavy equipment shall not enter the water during placement of rip rap and culverts; except that arms and buckets will have limited entry.
 - b. Exclusionary fencing shall be erected to prevent snakes from entering the construction area.
 - c. Fencing shall be monitored to ensure that there are no holes and species are excluded from the project area.
 - d. Gravel for the anchor bags shall not consist of existing bed materials to reduce disturbance to the stream substrate.
 - e. Construction and removal of the access road shall not happen until late summer when female smooth softshell turtles are no longer nesting to reduce disturbance of the reproductive success of female turtles.
 - f. The project area shall be cleared of any apparent wildlife prior to the beginning of work each day.
 - g. Sedimentation and erosion control shall be implemented during construction to eliminate runoff into the Embarras River.

- h. If a smooth softshell turtle is identified in the construction area, trained personnel shall halt work in the area, inform appropriate personnel to document the encounter, and approach the turtle to flush it away from the bank.
 - i. If an eastern ribbonsnake is found inside the exclusion fence or on the temporary access road, trained personnel will inform appropriate personnel to document the encounter, approach the snake, guide it outside of the exclusion fence, and inspect the fence for gaps or imperfections.
- 10. CEMC shall conduct, or cause to be conducted, post-construction monitoring measures for smooth softshell turtle during Year 2 following construction completion. **A report including, but not limited to, the survey methodology utilized, a description of habitat, the number of individuals located, the estimated age of each individual sampled if possible, and a map of the species locations shall be provided to the Department within 90 days of survey completion.**
- 11. CEMC shall conduct, or cause to be conducted, post-construction monitoring measures for eastern sand darter during Year 2 following construction completion. **A report including, but not limited to, the survey methodology utilized, the species and number of fish located, the estimated age of each individual sampled if possible, and a map of the species locations shall be provided to the Department within 90 days of survey completion.**
- 12. CEMC shall conduct, or cause to be conducted, post-construction monitoring measures for eastern ribbonsnake during Year 2 following construction completion. **A report including, but not limited to, the survey methodology utilized, a description of habitat, the number of individuals located, the estimated age of each individual sampled if possible, and a map of the species locations shall be provided to the Department within 90 days of survey completion.**
- 13. CEMC shall conduct, or cause to be conducted, the following post-construction monitoring measures for successful restoration efforts annually for a minimum of three years and a maximum of five years following construction completion.
 - a. A thorough survey of the vegetation present and the success of the restoration. This shall include monitoring of invasive and noxious weeds. **A report including, but not limited to, the survey methodology utilized and results shall be provided to the Department within 90 days of survey completion.**
 - b. A thorough survey of trees in the project area. This shall include the total survival of trees, tree heights, and the voluntary establishment of soft mast tree species. This may include cutting, thinning or mowing soft mast tree species that establish within the area. **A report including, but not limited to, the survey methodology utilized and results shall be provided to the Department within 90 days of survey completion**
 - c. If success is not achieved within five years, CEMC shall work with US Army Corps of Engineers to identify and correct deficiencies and monitoring requirements shall be extended for an additional period determined at that time.

14. The salvage of non-listed aquatic life is hereby authorized by the Department with signature of this agreement per the Illinois Fish and Aquatic Life Code (515 ILCS 5/1-150).
15. Mitigation to the maximum extent practicable is required by the Act. Mitigation requirements for this authorization are calculated as follows:
- a. CEMC shall place bendway weirs and concrete culverts along the 1,520 feet stabilized riverbank to enhance aquatic habitat. CEMC will cover the cost of implementation which is estimated to be greater than **\$63,000**.
 - b. A report of the completion of this mitigation project shall be provided to the Department **within 90 days after construction completion**.

Mitigation values are based on the Department's best current understanding of the species life history needs and impact analysis relevant to the project site's proposed conceptual design elements available at the time of review.

16. 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

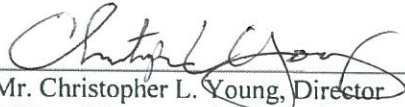
DNR.ITAcoordinator@illinois.gov

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.

17. The CEMC official identified below is authorized to execute this agreement. Execution by CEMC indicates acceptance of all terms and conditions described in this authorization.
18. The execution of this agreement does not waive or excuse the responsibilities of CEMC 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 Chevron Environmental Management Company:



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



Robert Lavorerio
Environmental Compliance Officer

10/17/17

Date

October 17, 2017

Date