



## Illinois Department of Natural Resources

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

JB Pritzker, Governor  
Colleen Callahan, 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 Hardin County Highway Department (hereinafter referred to as Hardin County) for the incidental take of the State-endangered Kentucky Crayfish (*Faxonius kentuckiensis*), and Bigclaw Crayfish (*Faxonius placidus*), and the State-Threatened Spring Cavefish (*Forbesichthys agassizii*). The Illinois Department of Natural Resources (hereinafter referred to as the Department) has determined that the taking is incidental to activities associated with upgrading the low water crossing ford carrying North Iron Furnace Road (TR 52) to a single span bridge over an unnamed tributary to Big Creek (hereinafter referred to as Tributary) 2.4 miles south/southwest of Karber's Ridge in Hardin County, IL.

### **Procedural History**

The Department received a conservation plan prepared by Brown and Roberts for Hardin County on January 4, 2022, as a request for authorization for the incidental take of Kentucky Crayfish, Bigclaw Crayfish, and Spring Cavefish. Additional information was requested by the Department on January 12, February 15, 2022, to make the conservation plan complete as prescribed by Ill. Adm. Code 1080.10. Additional information was received by the Department on January 25, and March 1, 2022. The final conservation plan was approved by the Department on March 2, 2022. 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 remove the concrete ford crossing carrying North Iron Furnace Road (TR 52) and replace it with a single span bridge with closed abutments across the Tributary in Hardin County,

Illinois. Reconstruction of this crossing is necessary because it is on a school bus route, and it is impassible during and after rainfall.

The existing structure is a concrete ford with a culvert that allows water to flow through at normal water volume.

The proposed replacement structure will be a precast prestressed concrete bridge measuring 40-feet long by 24-feet wide, supported by a bent pile abutment at each end. The abutments will be located outside of the existing streambed limits. The precast prestressed concrete bridge deck is manufactured offsite. There will be no piers placed into the Tributary. Stone riprap (RR4, 9" median size) will be placed on the abutment slopes and streambed bottom to protect from scour. The bed material for the placement area will be graded so that the finished surface of the riprap will conform to the existing channel slopes and transition to match the existing channel at the right-of-way line. The stone riprap will be placed by mechanical means to its full course thickness in one operation. Temporary stockpiling of riprap or excavated material in the channel will not be allowed.

Take of Kentucky Crayfish, Bigclaw Crayfish, and Spring Cavefish could occur as a result of the construction. Individuals may be crushed, buried, or subject to desiccation by construction activities. Indirect take could occur as a result of increased noise, vibration and turbidity in the water column that would adversely affect all life stages. Impacts to riparian areas from vegetation clearing, construction, or staging may temporarily adversely affect water quality.

The take of Kentucky Crayfish, Bigclaw Crayfish, and Spring Cavefish that could result from this project is not the purpose of Hardin County'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 Hardin County's conservation plan.

To meet the "maximum extent practicable" standard, additional minimization and/or mitigation measures may be required beyond those proposed by Hardin County, based on the life history needs of Kentucky Crayfish, Bigclaw Crayfish, and Spring Cavefish.

**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:

Hardin County states that the project is funded with the Township Bridge Program and Motor Fuel Tax funds and is already programmed. The project construction, including implementation of all measures of the Conservation Plan, will be funded for this improvement out of the County's allotment. Mitigation funds will also be paid from Hardin County. The monitoring activities will be funded through the Intergovernmental Agreement for the Illinois Transportation Biological Survey Program between IDOT and the University of Illinois.

It is the Department's opinion that Hardin County'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:

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**Kentucky Crayfish** (*Faxonius kentuckiensis*) is a state-endangered aquatic crustacean species.

**Habitat:** Kentucky Crayfish are a fully aquatic invertebrate that are found in streams with rocky substrate. Presence is high in pools with gravel, but some individuals are found in streams under brush. This species does not burrow but may bury itself in loose gravel 2-4 cm below the surface of a dry stream bed. They prefer clear water.

**Reproduction:** Mating occurs in October and November. Females are seen carrying fertilized eggs or young on the underside of their abdomen March-July. First year crayfish becoming sexually mature in August (females) and September (males), however only 31% of males will mature sexually. The species has a two-year life span.

**Population:** The greatest threat to the species is loss of habitat due to decreased water quality, siltation, damming of flowing waters, and the removal of rocky substrate and woody debris. Introduction of non-native crayfish species is also a concern.

**Distribution:** Kentucky Crayfish are only found in Illinois and Kentucky within the Ohio River watershed.

**Range in Illinois:** Kentucky Crayfish are found in one (1) of 102 Illinois counties: Hardin County. There are currently four (4) extant Element Occurrence Records of Kentucky Crayfish in the Illinois Natural History Database.

**Incidental Take Authorizations:** The Department has issued two (2) previous Incidental Take Authorizations for Kentucky Crayfish. Both were for a bridge replacement project. This is the third authorization for the taking of Kentucky Crayfish in Hardin County.

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**Bigclaw Crayfish** (*Faxonius placidus*) is a state-endangered aquatic crustacean species.

**Habitat:** Bigclaw Crayfish are a fully aquatic invertebrate that are found in shallow streams with rocky substrate. They prefer clear water.

**Reproduction:** Mating occurs in the fall. Females are seen carrying fertilized eggs or young on the underside of their abdomen in the spring.

**Population:** There are no known, documented threats to this species. However, they are likely the same threats as Kentucky Crayfish. Its distribution is widely distributed but disjunct.

**Distribution:** Bigclaw Crayfish are found in Illinois, Kentucky, Tennessee, Alabama, and Mississippi. They are collected in the Cumberland, lower Tennessee, and Ohio River systems. In Illinois, they are found in the Vermilion and Lower Ohio River watersheds

**Range in Illinois:** Bigclaw Crayfish are found in two (2) of 102 Illinois counties: Hardin and Champaign Counties. There are currently three (3) extant Element Occurrence Records of Bigclaw Crayfish in the Illinois Natural History Database.

**Incidental Take Authorizations:** The Department has not issued any previous Incidental Take Authorizations for Bigclaw Crayfish. This is the first authorization for the taking Bigclaw Crayfish in Hardin County.

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**Spring Cavefish** (*Ammocrypta pellucida*) are an Illinois state-threatened fish species.

**Habitat:** Spring Cavefish are troglomorphic fish found in springs and caves (most always near the surface); mouths of springs and cave streams. They are occasionally washed out into streams or pools when the water table is high.

**Distribution:** Spring Cavefish occur in the Green River system, south-central Kentucky, westward across the Shawnee Hills to southeastern Missouri, South to the Elk River system, southern Tennessee. An unsuccessful introduction attempt occurred in Adams County, IL.

**Reproduction:** Spawning occurs underground between January and March. Populations include 3-4 age classes, and some individuals spawn their second year.

**Population:** Spring Cavefish population decline has occurred because of habitat loss or modification. Additionally, pollutants into the cave system recharge area may impact this species.

**Distribution:** In Illinois, Spring Cavefish are found in the Upper Mississippi River -Cape Girardeau, Lower Ohio River, Cache River, and Big Muddy River watersheds.

**Range in Illinois:** Spring Cavefish are found in 5 of 102 Illinois counties, including Hardin, Jackson, Johnson, Pulaski, and Union Counties. There are currently eight (8) extant Element Occurrence Records of Spring Cavefish in the Illinois Natural Heritage Database.

**Incidental Take Authorizations:** The Department has not issued any previous Incidental Take Authorizations for Spring Cavefish. This is the first authorization for the taking of Spring Cavefish in Hardin County.

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Based on the amount of habitat impacted by this project, the number of known occurrences of Kentucky Crayfish, Bigclaw Crayfish, and Spring Cavefish 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 conservation plan, and the understanding that vulnerability and recovery information on the species remains limited; it is the conclusion of the Department that the taking anticipated as a result of this project will not reduce the likelihood of survival or recovery of the species in the wild within the State of Illinois, the biotic community of which these 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 Hardin County 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 Hardin County's request for authorization of incidental take was published in the *Breeze Courier* (official state newspaper) on March 9, 2022, and in *The Southern Illinoisan* (Carbondale) on March 9, March 16, and March 24, 2022. A copy of the conservation plan was deposited at the Rosiclare Memorial Public Library and the office of the Hardin County Engineer where it was available for public review. The deadline for public comment was April 24, 2022. No comments were received from the public.

### **Authorization**

It is the determination of the Department that the measures that will be implemented by Hardin County will adequately minimize and mitigate the anticipated taking of Kentucky Crayfish, Bigclaw Crayfish, and Spring Cavefish incidental to activities associated with upgrading the low water crossing ford carrying North Iron Furnace Road (TR 52) to a single span bridge over an unnamed tributary to Big Creek in Hardin County, IL. Further, the Department has concluded that the taking authorized herein will not reduce the likelihood of survival or recovery of the 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.

All terms and conditions included in the aforementioned conservation plan submitted by Hardin County 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 Hardin County in the conservation plan:

1. This authorization is effective upon the signature of the Department and shall remain in effect for a period of **seven (7) 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 Hardin County has failed to comply with any of these terms and conditions or has been responsible for the taking of the Kentucky Crayfish, Bigclaw Crayfish, and Spring Cavefish beyond that which is incidental to activities associated with upgrading the low water crossing ford carrying North Iron Furnace Road (TR 52) to a single span bridge over an unnamed tributary to Big Creek in Hardin County, IL.

2. The effective period of this authorization may be altered by mutual written agreement between Hardin County 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 Kentucky Crayfish, Bigclaw Crayfish, and Spring Cavefish, 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. **Hardin County 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. Department staff must be accompanied by an employee of Hardin County Highway Department and are required to adhere to IDOT's health and safety requirements.

6. Biological consultants employed by, or conducting work on behalf of, Hardin County 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 as authorized under 17 Illinois Administrative Code 520, and an IDNR Endangered Species Permit as authorized under 17 Illinois Administrative Code 1070.
7. Hardin County shall notify the Department's Endangered Species Program by email correspondence of construction commencement and completion of work to replace the ford carrying North Iron Furnace Road (TR 52) with a single span bridge over an unnamed tributary to Big Creek in Hardin County. A **project status report** shall be submitted to the Department within **90 days** of completion 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 **halts work** and shall be reported to the Department within 48 hours accompanied by location information (photograph, map, and GPS coordinates).
9. Hardin County shall conduct, or cause to be conducted, the following pre-construction or construction efforts:
  - a. Four weeks prior to the initiation of work, Hardin County shall notify IDOT Bureau of Design and Environment (BDE) and the Department. Within one week of notification, the Illinois Natural History Survey shall be tasked to hand-move cobble class-sized rocks within the stream to a location just outside and upstream of the limits of construction.
  - b. All instream work shall be done from the adjacent banks with excavators. The excavators will not be allowed to enter or cross the stream. The contractor will be required to transport excavators from one side to the other via public roadways or have two excavators on the project.
  - c. Instream work shall be prohibited from March 1 to June 30.
  - d. Sediment and erosion best management practices shall be utilized.
  - e. Disturbance of vegetation shall be minimized to prevent erosion and sedimentation. Existing vegetation will be preserved where attainable and disturbed portions of the site will be stabilized.
  - f. Erosion and sediment control measures shall be monitored weekly to ensure effectiveness.
  - g. Erosion and sediment control measures shall be inspected prior to continuation of construction, after events of heavy rain.
  - h. The precast prestressed concrete bridge deck shall be scheduled for late summer or early fall when the stream is at its lowest flow.
  - i. No bedding fabric shall be placed under the riprap.
  - j. Debris shall be removed from the streambed as soon as practicable.

- k. Stone and excavated material shall not be stockpiled in the stream channel.
  - l. All disturbed areas shall be seeded upon completion of construction activities.
10. Hardin County shall conduct, or cause to be conducted, thorough surveys for Kentucky Crayfish, Bigclaw Crayfish, and Spring Cavefish within the project area in Years 1 and 3 following project completion:
- a. **Spring Cavefish**: sampling within a 50-meter reach of the stream centered on the bridge using kick-seining. Ten 1-meter squared kick-seine efforts will be made in habitat suitable for Spring Cavefish. Kick-seining involves disturbing the substrate by sweeping feet back and forth immediately upstream of a stationary minnow seine and allowing the current to carry fish into the net. Total length of all Spring Cavefish shall be recorded.
  - b. **Kentucky and Bigclaw Crayfish**: sampling within a 50-meter reach of the stream centered on the bridge using both quantitative and qualitative methods. Four 1-meter squared areas of suitable habitat immediately downstream of the ford will be sampled using kick-seining methods. All substrate within the quadrat will be vigorously disturbed to dislodge crayfish. All crayfish within each quadrat will be individually identified and counted. After quadrat sampling, other suitable habitat will be sampled by kick-seining with a 10-foot minnow seine for 30 minutes.
  - c. **A report including, but not limited to, the survey methodology utilized, water temperature, habitat characteristics, the species and abundance of fish and crayfish located, density estimates from quadrat samples, length, sex (if discernable), and a map of the species locations and areas surveyed shall be provided to the Department within 90 days of completion of the survey.**

11. Mitigation to the maximum extent practicable is required by the Act. Mitigation requirements for this authorization are calculated as follows:

Hardin County shall submit mitigation to the Illinois Department of Natural Resources - Illinois Wildlife Preservation Fund in the amount of **\$18,450 within 90 days of execution of this agreement**. The mitigation will be earmarked to bring conservation benefit to the Spring Cavefish (\$5,200), and Kentucky Crayfish, and Bigclaw Crayfish (\$13,250).

Mitigation payments are nonrefundable, including events of revocation or termination. 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.

12. 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



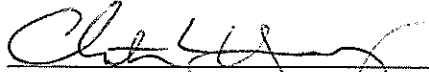
One Natural Resource Way  
Springfield, IL 62702-1271

(217)557-8243  
DNR.ITAcordinator@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.

13. The Hardin County official identified below is authorized to execute this agreement. Execution by Hardin County indicates acceptance of all terms and conditions described in this authorization.
14. The execution of this agreement does not waive or excuse the responsibilities of Hardin County 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:*

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

*For the Hardin County Highway Department:*

  
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Mr. Justin Hastie, County Engineer

June 24, 2022  
\_\_\_\_\_  
Date

06-16-2022  
\_\_\_\_\_  
Date

