

Authorization for Incidental Take and Implementing Agreement

Pursuant to the Illinois Endangered Species Protection Act (520 ILCS 10/5.5) the Illinois Department of Transportation's (IDOT) authorization for the incidental take of the State threatened black sandshell mussel (*Ligumia recta*) in Rock Island County, Illinois [associated with the Landing at Schwiebert Park project] is hereby granted, subject to the terms and conditions described in the attached Authorization and Implementing Agreement. The Illinois Department of Natural Resources has determined that this authorized take is incidental to the Schwiebert Riverfront Park Transient Boat Dock in Rock Island, Illinois.

Procedural History

Stanley Consultants, Inc. (on behalf of the City of Rock Island – CORI) prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and CORI's request for authorization for the incidental take of black sandshell mussels were received by the Illinois Department of Natural Resources (Department) on September 12, 2012. Public notice of CORI's request for authorization of incidental take of black sandshell mussels was published in the Breese Courier (Official State newspaper) and the Rock Island Argus (local circulation) on December 20, December 27, 2012 as well as on January 3, 2013. Public comments on CORI's conservation plan were accepted by the Department until February 4, 2013. No comments were received by the public during the period of December 20, 2012 through February 4, 2013.

The proposed boat dock project is located on the left bank of the Mississippi River, on the City of Rock Island riverfront at River Mile 482.5. The dock, as originally proposed in the first application submittal, was located several hundred feet downstream from the current proposed location but was moved upstream, at the request of the Rock Island Corps of Engineers, because of concern for conflicts with barge traffic. The current location is slightly into the mouth of Sylvan Slough approximately 1,700' downstream of Lock & Dam 15. The dock facility is in the NE ¼ of Section 35, Township 78N, and Range 2W along 1st Avenue between 17th and 20th Streets.

Procedural History

This project was initially submitted to the IDNR's Office of Realty and Environmental Planning (OREP) for review under the Endangered Species Consultation Process. Upon review within OREP, this project was then elevated to the IDNR's internal Incidental Take Authorization (ITA) committee. The ITA committee decided that this project should formally participate in the Incidental Take Authorization process and seek a formal ITA. At the request of the ITA committee, the OREP project manager was instructed to prepare a letter to the applicant suggesting modifications to the project [which would reduce impacts to the species of concern] and pursuit of a formal ITA – via submission of a Conservation Plan. That plan and CORI's request for authorization for the incidental take of black sandshell mussels were received by the Illinois Department of Natural Resources (Department) on September 12, 2012. Public notice of CORI's request for authorization of incidental take of black sandshell mussels was published in the Breese Courier (Official State newspaper) and the Rock Island Argus (local circulation) on December 20, December 27, 2012 as well as on January 3, 2013. Public comments on CORI's conservation plan were accepted by the Department until February 4, 2013. No comments were received by the public during the period of December 20, 2012 through February 4, 2013. Stanley Consultants, Inc. (on behalf of the City of Rock Island – CORI) prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5).

Compliance with the Endangered Species Protection Act

The Illinois Endangered Species Protection Act includes six (6) criteria which must be met for the authorization of incidental take of an endangered or threatened species. These criteria and the Department's determination for each criterion 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 proposed project involves installation of nineteen (19) 12" diameter pipe piles. None of the piles will be filled with concrete. Holes will be drilled into the rock bottom from a drilling rig mounted on a construction barge. The excavated rock (drill tailings) will be removed and disposed of in an upland location. The piles will be lowered into the drilled holes and "grouted" into place. Grout will be pumped into the piles where it will exit the bottom of the piles and flow upward around the outside of the piles filling the annular space between the pipe and the wall of the drilled holes. The drilled holes are expected to be approximately 18" in diameter. Each drilled hole will impact approximately 1.8 square feet of river bottom. Sixteen individuals of various mussel species per square meter were found at pile No. 1707 which is well outside the project footprint. Thirty-two individuals per square meters were collected at No. 1709 which is 60'+ upstream of the nearest pile. Eighteen mussels were collected at No. 1715 where no piles will be located. If any pile was drilled into the highest mussel concentration found (32 mussels/square meter or 32 mussels per 10.8 square feet), approximately 5 mussels would be impacted by the drilled hole (1.8 square feet). Since black sandshell only represented 1.1% of the mussels collected, there is very little chance that any black sandshells will be lost. Setting spud piles from the construction barge could also directly impact black sandshell(s) and indirect impacts from watercraft using the facility could also occur.

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

The State-threatened black sandshell mussel (*Ligumia recta*) is widely distributed in much of the Midwest, but uncommon. Its preferred habitat is in the riffles or raceways of medium to large rivers with strong currents and having gravel or firm, sand bottoms. It can be found in sand, gravel or silt, and in water depths of several inches to more than six feet. Its host fish species for its glochidia include rock bass (*Ambloplites rupestris*), largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), sauger (*Stizostedion canadense*), white crappie (*Pomoxis annularis*), green sunfish (*Lepomis cyanellus*), and common carp (*Cyprinus carpio*).

Similar habitat is located both upstream and downstream of the work area as indicated by the previous survey work done downstream and the work upstream included in the recent survey. The proposed improvements are not expected to have any impact on the black sandshell's continued use of the area. There are no planned maintenance activities that would be expected to impact the mussel resource. Mussels will likely re-colonize any area where they have been removed from.

All mussels will be removed from within the footprint of each pile drilling and a 5' diameter buffer around each pile before any construction occurs. All mussels will also be relocated from within the areas where spud piles are placed during construction. The mussels will be marked and then relocated to areas up (preferably) or downstream where mussel concentrations are known to exist. This relocation effort will minimize the potential for direct impacts to mussels located in "harm's way" and consequently any black sandshells that might be present within the footprint. Indirect impacts from construction or from watercraft activity during operation of the facility are expected

to be negligible. Regular inspections by the City's (CORI) Resident Engineer, particularly during the period of the relocation work, will ensure that the Contractor and the divers are closely coordinating the mussel removal and relocation effort. The Resident Engineer will also closely monitor the accuracy of diver's removal locations.

Overall, CORI shall ensure that all freshwater mussel surveys, and subsequent relocations, would be conducted prior to initiation of boat dock construction. All mussels observed (listed or non-listed species) are to be relocated in order to minimize impacts.

Mussel surveys/relocations will be conducted using standard survey techniques including, but not limited to, searching by feel to methodically cover the area to be disturbed by the project, viewing boxes, wading in shallow water, and SCUBA in deeper water. All mussels found will be identified to species and all shells shall be uniquely marked using a non-lethal method – this will allow for identification during post-construction/follow-up surveys. Mussels will be relocated into areas of suitable habitat, in the same stream/river, preferably upstream of the construction site. Specifically, the transplant site will be close to the collection area and have similar to better water quality and substrate.

The ecological staff/freshwater mussel consultant conducting this mussel relocation effort shall have extensive experience with Midwestern mussels. The mussel consultant will provide the Department with a report detailing the results of all mussel surveys and relocation efforts within 60 days of completing all surveys/relocations [this report will also be submitted internally to the Illinois Natural Heritage Database and the Illinois Endangered Species Protection Board]. In summary, mussel surveys and related relocations will occur only after Department authorization and prior to any construction activities.

These measures discussed above should minimize the amount of habitat that is affected.

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

The City of Rock Island (CORI) is committed to funding the construction and operation of the transient boat dock facility including any costs associated with constraints or conditions imposed by the permitting process. The City has been anticipating the minimization and mitigation requirements addressed herein and understand if changes are made to the facility that could potentially impact the mussel resource, that they are required to contact the Illinois DNR and possibly re-visit the imposed conditions. In addition, CORI exclusively abides by the National Environmental Policy Act (NEPA) and all associated state and federal environmental laws in carrying out its mission of performing the most environmentally sensitive methods of transportation planning and engineering.

Partial funding for this project was received from FWS and authorized by the Illinois Department of Natural Resources. The project is also authorized by the City of Rock Island who is responsible for partial funding and for overseeing the project.

In addition, the City of Rock Island has filed a Joint Permit Application with the Corps of Engineers for an Individual Section 404 permit; and to the Illinois Department of Natural Resources and the Illinois Environmental Protection Agency for the appropriate State Permits. The City will abide by all required environmental laws and conditions imposed by any of the agencies to construct and operate an environmentally sensitive facility.

4. Based on the best available scientific data, the Department has determined that the taking will not reduce the likelihood of the survival or recovery of the endangered species or threatened species in the wild in Illinois, the biotic community of which the species is a part, or the habitat essential to the species' existence in Illinois:

The relocation of all mussels encountered will make it unlikely that a significant number of individuals will be exposed to threats related to the Schwiebert Riverfront Park Transient Boat Dock in Rock Island, Illinois.

Several alternative designs were examined for configuring and constructing this project but all were evaluated relative to: constructability, maximizing dock spacing, engineering economy, and impacts to navigation. Several configurations were examined before a plan was selected that maximized the number of slips and minimized impacts to passing boaters. Dock anchoring alternatives included sunken anchors with cabling; and size and quantity of piling.

None of the alternatives appeared to provide any advantages for reducing impacts to the mussel resource, primarily because all were expected to have a minor impact. There is no existing transient boat dock facility that could be replaced, expanded, or rehabilitated. The only project that meets the needs and/or desires of the City is a new transient boat dock. No serious consideration was given to a "Do Nothing" alternative because of the obvious result of not having a transient boat dock facility. There would not be any take of listed mussel species if this alternative were selected.

The black sandshell mussel is widely distributed in Illinois. The occurrences in the northern half of the state are sporadic and it currently only occupies one third of the drainages it formerly occupied. The black sandshell still occurs in many localities in Illinois including the following northwestern Illinois watersheds: Lower Rock, Kishwaukee, and Pecatonica.

As stated in the April 1996 Technical Report (working draft) titled - "Measures to minimize harm to *Lampsilis higginsii* [federally endangered Higgins Eye mussel] caused by passage of commercial navigation vessels in the upper Mississippi River" [prepared by the U.S. Army Corps of Engineers-Waterways Experiment Station]:

Relocation is one of several methods that can be used to protect freshwater mussels. Relocation can be used to recolonize areas where previous populations were extirpated, to remove mussels from proposed construction sites, to boost numbers of endangered species, or to protect against high densities of the zebra mussel (*Dreissena polymorpha*). The survival of relocated mussels is closely linked to habitat quality.

Relocation sites should have the same conditions of substratum type and stability, and water velocity as the original habitat. Research from the federally endangered Higgins Eye mussel (*Lampsilis higginsii*) recovery team, under the guidance of the United States Fish and Wildlife Service, has determined that minimal mortality (<12%) and high recovery rate (>88%) were shown when aerial exposure of mussels was less than four (4) hours and when relocations were conducted in spring or autumn when air (12-18 C) and water temperature (15-23 C) were moderate.

5. Any measures required under Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.40(b)], will be performed:

Additional measures are listed below under "Authorization." This authorization is, by definition, subject to those terms and conditions and official CORI signature(s) on this authorization 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:

Stanley Consultants, Inc. (on behalf of the City of Rock Island – CORI) prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and CORI's request for authorization for the incidental take of black sandshell mussels were received by the Illinois Department of Natural Resources (Department) on September 12, 2012. Public notice of CORI's request for authorization of incidental take of black sandshell mussels was published in the Breese Courier (Official State newspaper) and the Rock Island Argus (local circulation) on December 20, December 27, 2012 as well as on January 3, 2013. Public comments on CORI's conservation plan were accepted by the Department until February 4, 2013. No comments were received by the public during the period of December 20, 2012 through February 4, 2013.

Authorization

It is the determination of the Department that the measures to be implemented by CORI will adequately minimize and mitigate for the anticipated taking (relocation) of a small number of black sandshell mussels due to the Schwiebert Riverfront Park Transient Boat Dock in Rock Island, Illinois. Further, it is our opinion that the take (relocation) authorized herein would not diminish the likelihood of the survival of the black sandshell mussel in the wild within the State of Illinois, the biotic community of which the species is a part or the habitat essential to the species' existence in Illinois.

Pursuant to Section 5.5 of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.40(b)], this authorization is issued subject to the following additional terms and conditions:

1. This authorization is effective upon signature of the Department and shall remain in effect for a period of five (5) years after the official "project completion date". "Completion" shall be defined as the date the Schwiebert Riverfront Park Transient Boat Dock is officially open for public use. This authorization is effective unless terminated pursuant to Section 5.5. of the Illinois Endangered Species Protection Act [520 ILCS 10/5.5 - 17 IL. Adm. Code Part 1080.80].

2. Prior to construction of the Schwiebert Riverfront Park Transient Boat Dock in Rock Island, Illinois, CORI shall conduct/facilitate, or cause to be conducted, a thorough survey of the reach of the affected portion of the Mississippi River that will be directly affected by boat dock construction activities and shall relocate any and all (listed and/or non-listed species) freshwater mussels found within the area that will be directly affected by the dock construction to suitable habitat, preferably upstream, of the project site.

Handling of mussels shall be in compliance with any and all conditions and/or protocols included in the state and/or federal authorizations for this work. All mussels found will be identified to species and all shells shall be uniquely marked using a non-lethal method – this will allow for identification during post-construction/follow-up surveys. Relocated mussels shall be identified to species and enumerated. A report on the species and numbers of mussels relocated and the location(s) at which they were released shall be provided to the Department within 60 days of completion of the relocation.

3. CORI shall conduct/facilitate, or cause to be conducted, a thorough survey of both the affected portion of the Mississippi River that will be directly affected by boat dock construction activities (i.e. construction right-of-way) and the mussel relocation site(s) in the second (2) and fifth (5) years following completion of the Schwiebert Riverfront Park Transient Boat Dock. "Completion" shall be defined as the date the Schwiebert Riverfront Park Transient Boat Dock is officially open for

public use. Freshwater mussels located within the construction right-of-way and relocation site(s) shall be identified to species and enumerated and the length of each mussel shall be measured to the nearest millimeter. Handling of mussels shall be in compliance with any and all conditions and/or protocols included in the state and/or federal authorizations for this work. A report on the species, numbers, and sizes of mussels found shall be provided to the Department, attn.: Joseph Kath, within 60 days of the completion of this survey.

*Additional copies of these monitoring reports shall also be sent by the applicant to the following:

Illinois Endangered Species Protection Board
Attn: Anne Mankowski
One Natural Resources Way
Springfield, Illinois 62702-1271

Illinois Department of Natural Resources
Natural Heritage Database – Attn: Tara Kieninger
One Natural Resources Way
Springfield, Illinois 62702-1271

This report(s) shall also include a qualitative evaluation of the habitat for freshwater mussels being provided by the construction right-of-way area and the relocation site(s) and the manner in which that habitat has changed since the initial boat dock project.

4. All mussels encountered within the State of Illinois during this project shall be subject to the general U.S. Fish and Wildlife Service handling protocol for determining presence/absence of species as found in "Section H" of the attached Federal Fish and Wildlife document.

5. According to the following scientific publication (2003):
Southwick, R.I., and A.J. Loftus, editors. 2003. Investigation and monetary values of fish and freshwater mussel kills. American Fisheries Society, Special Publication 30, Bethesda, Maryland.

Standard formulas have been developed to determine the replacement costs of juvenile freshwater mussels. Cost categories for production of juvenile mussels (2 months old) and their relevant production costs are as follows: EASY = \$0.44/mussel; AVERAGE = \$0.73/mussel; and DIFFICULT = \$9.63/mussel. All variables associated with producing mussels were considered in assigning mussels to cost categories. The costs assigned to the three categories were calculated based on the actual average costs incurred by mussel propagation facilities to raise mussel species assigned to each category. In addition, based on the experience and data from expert panel members, combined with limited available data, a conservative survival rate of 9.5% is employed. This panel also determined that five (5) years is the typical age of sexual maturity. When performing a cost analysis, if ages cannot be determined, then we shall assume all are adult/mature mussels.

For this project, we will assume that natural reproduction will be the means for the resource to repair itself. Repopulation of lost mussels are achieved by natural reproduction of the mussels that remain after the project has been completed. In this case, the costs of the mussels, if they were to be produced and stocked, is used as a surrogate value to assign damages for the responsible party [i.e. the calculated costs are used to assess restitution/mitigation, even though no stocking occurs. All mitigation costs are deposited into the Illinois Wildlife Preservation Fund and are used solely for the management and recovery of listed mussels within the State of Illinois.

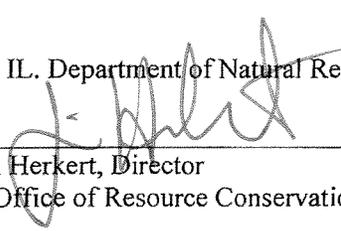
Using the project specifics:

- a. 19 piles are to be installed
- b. If any pile was drilled into the highest mussel concentration found (32 mussels/square meter or 32 mussels per 10.8 square feet), approximately 5 mussels would be impacted by the drilled hole (1.8 square feet). We will therefore assume a loss of 5 black sandshell mussels/piling
- c. 19 pilings x 5 mussels/piling = 95 mussels impacted
- d. 95 mussels/0.095 survival rate = 1,000 mussels needed for replacement
- e. Black sandshell = AVERAGE cost category (\$0.73/mussel)
- f. $1,000 \times 0.73 = \underline{\$730.00}$

Accordingly, this yields a total mitigation amount of: \$730.00 due to the Department. Therefore, the applicant shall provide the Department with a check made out to the Illinois Wildlife Preservation Fund in the amount of: \$730.00. This check shall be received within 6 months after formal implementation of the ITA (after the document is signed by both the CORI and the IDNR). These funds will be used solely for management and recovery actions of listed mussels within the State of Illinois.

6. The effective period of this authorization may be altered by mutual agreement between CORI and the Department.
7. This authorization may be revoked pursuant to Section 5.5 of the Act if the Department finds that CORI has failed to comply with any of these terms and conditions or has been responsible for the take of any black sandshell mussels beyond that which is incidental to the Schwiebert Riverfront Park Transient Boat Dock in Rock Island, Illinois.
8. The CORI official identified below is authorized to execute this agreement. Execution by CORI indicates acceptance of all terms and conditions described in this document.

For the IL. Department of Natural Resources

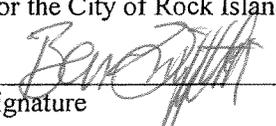


Dr. Jim Herkert, Director
IDNR Office of Resource Conservation

Date Signed

5-1-13

For the City of Rock Island (CORI), Illinois



Signature

Ben Griffith, AICP
Planning & Redevelopment Administrator

Please print name and official title

March 25, 2013

Date Signed