

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 CF Industries Sales, LLC (hereinafter referred to as CF Industries) for the incidental take of Federally-endangered and State-endangered Higgins eye (*Lampsilis higginsii*), the State-threatened black sandshell (*Ligumia recta*), and butterfly mussels (*Ellipsaria lineolata*). The Illinois Department of Natural Resources (hereinafter referred to as Department) has determined that this taking is incidental to activities associated with the Albany Terminal New Breasting Dolphins installation project at the CF Industries liquid fertilizer storage and distribution terminal in Cordova along the Mississippi River at River Mile 510 within Rock Island County, Illinois. The action area lies within the Mississippi River – Cordova Illinois Natural Areas Inventory Site #1668.

Procedural History

CF Industries prepared a conservation plan per the Act. The conservation plan was submitted by Helms and Associates on behalf of CF Industries on March 31, 2017, to the Department as a request for authorization for the incidental take of the Higgins eye, black sandshell, and butterfly mussels. The Department requested additional information on April 19, 2017, to make the conservation plan complete as prescribed by Ill. Adm. Code 1080.10. Additional information was received by the Department on July 26, 2017. A conservation plan (including a Biological Opinion issued January 23, 2017, by the US Fish and Wildlife Service) was approved by the Department on August 8, 2017. The public notice period and public comments will be detailed under #6 of the Compliance section below.

Compliance with the Illinois Endangered Species Protection Act

The Act includes six criteria which 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 be only incidental to, the carrying out of an otherwise lawful activity:

The stated and apparent purpose of this proposed action is the installation of two (2) new breasting dolphins to provide impact protection to the dock cell platform at the Albany Terminal within and immediately adjacent to the Mississippi River (River Mile 510) in Rock Island County. Installation of the new breasting dolphins will help prevent river barges from drifting under the dock platform and

provide impact protection to the dock platform as barges become lighter with the unloading of liquid fertilizer. Breasting dolphins will each entail a single pile installed approximately 39 feet apart from each other. The 48" diameter, 90-foot-tall piles will be embedded into the river bed approximately 40 feet deep and stand 50 feet above the river bed. The piles will be driven into the river bed using a pile hammer. Once the piles are 40 feet into the river bed, water will be removed from each pile and filled with concrete. Both will be installed in this manner. Structural I-beams will then be welded in place between the new piles and the existing structure above water to provide impact support for the new breasting dolphins. A working barge will be secured with two (2) 36"-diameter spuds during the new dolphin placement. Project activities will be performed as further described in the conservation plan. The proposed activities may result in direct burial or crushing of or sedimentation disturbance to mussels or indirect impact as a result of noise and vibration that may reduce the reproductive success of mussels. The resulting noise and vibrations may also disperse host fish necessary to the mussel's life cycle. Total estimated area of impact for species habitat is **108.72 square meters (0.027 acres)**. The Department concurs that the take of Higgins eye, black sandshell, and butterfly mussels that could result from this project is not the purpose of CF Industries' 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 avoidance, minimization and mitigation were included in CF Industries' conservation plan.

To meet the "maximum extent practicable" standard, additional minimization and/or mitigation measures may be required beyond those proposed by CF Industries, based on the life history needs of the Higgins eye, black sandshell, and butterfly mussels. **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.

CF Industries states that they have committed funds for the proposed project construction, mussel relocation and mitigation, project construction, and subsequent monitoring surveys. CF Industries understands that if any additional activities are planned at the facility that may affect Higgins eye, black sandshell, butterfly, or other endangered or threatened species, coordination with the Department will be required.

The Department accepts this provision as assurance that adequate funding will be available to carry out the terms of the conservation plan.

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 is a part, or the habitat essential to the species' existence in Illinois.

Higgins Eye (*Lampsilis higginsii*)

The **Higgins eye mussel** is a Federally-endangered and Illinois State-endangered mussel species. It is a medium-sized mussel that is known to inhabit large rivers. The species most commonly documented habitat consists of plant-free, stable areas of mixed sand and gravel, and it is unlikely to be found in areas of shifting sands or silt.

Higgins eye mussels are bradyctytic, or long-term brooders, meaning that the females will retain developing glochidia in their gills over winter and release them the following spring or summer. Higgins eye females will retain glochidia from September through May, with glochidial release observed from June to July. As with other mussels, Higgins eye glochidia parasitize certain fish species until they grow into juvenile mussels. Possible glochidial host fish species for the Higgins eye include sauger (*Sander canadensis*), largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), walleye (*Sander vitreus*), yellow perch (*Perca flavescens*), black crappie (*Pomoxis nigromaculatus*), and green sunfish (*Lepomis cyanellus*).

Higgins eye mussels are rare or extirpated from much of their historical range. Their decline is due to poor habitat conditions resulting from human river management, non-point and point-source water and sediment pollution, and the infestation of invasive zebra mussels (*Dreissena polymorpha*). The Higgins eye mussel was the first freshwater mussel species to gain federal protection in the United States. In Illinois, Higgins eye mussels have been found in the Mississippi River in Henderson, Mercer, Whiteside, and Jo Daviess Counties, and in the Mississippi and Rock Rivers in Rock Island County. There are currently 11 extant Element Occurrence Records for Higgins eye mussels in the Illinois Natural Heritage Database from Henderson, Jo Daviess, Rock Island, and Whiteside Counties. The Department has four (4) previous Incidental Take Authorizations either pending or executed for the potential taking of Higgins eye mussels. Types of projects included dredging, bridge removal and replacement, thermal variance, and pier removal.

Black sandshell (*Ligumia recta*)

The **black sandshell** mussel is an Illinois State-threatened mussel species. It is found in medium to large rivers in areas with strong currents. The species is known to prefer substrates of coarse sand, gravel, cobble, or silt.

Black sandshell mussels are long-term brooders, with females retaining developing glochidia in their gills from August until the following July, after which glochidia are released. Gravid female black sandshells are known to display their marginal papillae, moving them in a way that attracts fish hosts before releasing the parasitic glochidia. Black sandshell host fish include walleye, bluegill (*Lepomis macrochirus*), largemouth bass, sauger, white crappie (*Pomoxis annularis*), and other fish species that have been suggested as possible hosts.

Black sandshell populations have declined due to habitat degradation. In Illinois, black sandshells have been found in the Mississippi, Kaskaskia, Vermilion, Ohio, Kankakee, Rock, Iroquois, and Little Wabash Rivers, as well as several smaller creeks and tributaries. There are currently 102 extant Element Occurrence Records for black sandshell mussels in the Illinois Natural Heritage Database in 31 of 102 Illinois counties. The Department has 28 Incidental Take Authorizations either pending or executed for the potential taking of black sandshell. Types of projects included dredging, bridge removal and construction/replacement, boat dock construction, railroad construction, pier removal, dam removal, piling installation, riprap installation, oil pipeline construction, and diffuser installation.

Butterfly (*Ellipsaria lineolata*)

The **butterfly mussel** is an Illinois State-threatened mussel species. It is known to inhabit large rivers in areas of moderate to swift current, and is usually found in substrates of coarse sand and gravel.

Butterfly mussels are long-term brooders, with females retaining developing glochidia in their gills from August until the following July. Known glochidial host fish for this species are freshwater drum (*Aplodinotus grunniens*), green sunfish, and sauger.

Butterfly mussel populations are shrinking due to a decline in habitat conditions associated with river/water management, impacts from the invasive zebra mussel, and from historic overharvest caused by the button and pearl industries. In Illinois, butterfly mussels have been found in the Mississippi and Ohio Rivers, in 12 of 102 counties. There are currently 34 extant Element Occurrence Records for butterfly mussels in the Illinois Natural Heritage Database. The Department has 11 previous Incidental Take Authorizations either pending or executed for the potential taking of butterfly mussels. Types of projects included dredging, construction of offshore structures, bridge removal and replacement, riprap installation, and boat dock installation.

Based on the amount of habitat impacted by this project, the number of known occurrences of the Higgins eye, black sandshell, and butterfly mussels in Illinois, an assessment of the potential effect of this project on individual mussels in the project footprint, the conservation methods included in this authorization for take and the conservation plan, and the understanding that vulnerability and recovery information on the three species remains limited; it is the conclusion of the Department that the taking anticipated as a result of the 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 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.

Additional measures are listed below under "Authorization." This authorization is, by definition, subject to those terms and conditions and the signature of a representative from CF Industries 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 CF Industries' request for authorization of incidental take was published in the *Breeze Courier* (official state newspaper) on November 14, and in the *Moline Dispatch* and the *Rock Island Argus* on November 14, 21, and 29, 2017. A copy of the conservation plan was deposited at the Cordova District Library and Albany Public Library, where it was available for public review. The deadline for public comment was December 29, 2017. No comments were received from the public.

Authorization

It is the determination of the Department that the measures to be implemented by CF Industries will adequately minimize and mitigate the anticipated taking of Higgins eye, black sandshell and butterfly mussels as a result of breasting dolphin installation, as part of the Albany Terminal New Breasting Dolphins installation project in Rock Island County, Illinois. Further the Department has concluded that the taking authorized herein will not reduce the likelihood of survival or recovery of Higgins eye, black sandshell, and butterfly mussels 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.

All terms and conditions included in the aforementioned Conservation Plan submitted by CF Industries 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 CF Industries 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 CF Industries has failed to comply with any of these terms and conditions or has been responsible for the taking of Higgins eye, black sandshell and butterfly mussels beyond that which is incidental to the Albany Terminal New Breasting Dolphins installation project in Rock Island County, Illinois.

2. The effective period of this authorization may be altered by mutual written agreement between CF Industries and the Department. In this event, the Department shall notify the Illinois Endangered Species Protection Board of 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. The Department reserves the right of entry by its staff or representatives to inspect potential habitat and species management practices.
5. Biological consultants employed by CF Industries shall hold the necessary permits for work with non-listed and listed species; these include an Illinois Department of Natural Resources Scientific Collection Permit and an Illinois Department of Natural Resources Endangered Species Permit.
6. 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).
7. CF Industries shall notify the Department's Endangered Species Program by email correspondence of construction commencement and completion of the installation of two (2) breasting dolphins within the permit action area. A **project status report** shall be submitted to the Department within **90 days** following completion summarizing the implementation of minimization and mitigation 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. All on-site personnel shall be educated on the sensitive biological resources in the area, the identification of Higgins eye, black sandshell and butterfly mussels, 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, the importance of avoiding take of the species, and response protocol if the species are found. **CF Industries shall submit a copy of the education materials to the Department.**
9. 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, including photograph and GPS coordinates.
10. CF Industries shall conduct, or cause to be conducted, the following pre-construction or construction efforts:
 - a. Ensure that contractors will only conduct construction activities within the defined action area.
 - b. Vibratory hammer is to be used for no more than four (4) days to minimize vibrations and potential impact to species.
11. CF Industries shall conduct, or cause to be conducted, the following mussel relocation effort prior to the start of construction:
 - a. A thorough relocation of freshwater mussels within the project action area. This area is defined as the footprint and a buffer zone around all permanent and temporary pilings. Areas to be searched will include a 5-foot buffer around the spud piles and a 10-foot buffer around the two (2) new breasting dolphins. The total area is **108.72 square meters**. The search shall be conducted during biologically suitable mussel relocation periods. All listed mussels shall receive a unique marking to aid in identification of these individuals during monitoring. In addition, the non-listed mussels relocated shall be etched or glitter-glued, such that they can be Used to estimate survivorship or relocated mussels in later surveys.
 - b. Those conducting the search must be qualified at accurate identification of freshwater mussel species. All native freshwater mussels found during this search shall be relocated to suitable habitat as discussed below under (c). Zebra mussels shall be removed from native freshwater mussel shells to the extent practicable and disposed of on dry land or in trash receptacles to desiccate. It is unlawful to release this injurious species back to aquatic habitat in Illinois per 17 Ill. Adm. Code 805.30(b). Equipment decontamination measures shall be deployed to prevent translocation of zebra mussels into new waterbodies.

- c. Relocation site has been pre-approved by the Department and USFWS. Relocation sites shall be in areas with suitable stable substrates, similar unionid assemblages, and low to no zebra mussel infestations.
 - d. Mussels shall not be relocated when air temperatures are at or below 32 degrees Fahrenheit, nor when water temperatures are at or below 40 degrees Fahrenheit. All mussels will be held in mesh bags suspended in the river or in containers of water changed every hour (every half-hour when air temperatures are at or above 87 degrees Fahrenheit). Water in containers shall be taken from the river where the mussels were collected. No mussels shall be held for more than three (3) hours before being returned to suitable habitat in the river.
 - e. Mussel relocation shall occur between April 1 and November 1 during suitable mussel relocation conditions. The mussel relocation shall occur within 90 days prior to the onset of construction.
 - f. **A report including, but not limited to, the survey methodology utilized, water temperature, species and numbers of mussels relocated, the age of each individual collected indicating whether recruitment is evident, and a map of the species locations and relocation site shall be provided to the Department within 90 days of completion of the relocation.**
12. CF Industries shall conduct, or cause to be conducted, a thorough survey for freshwater mussels around the project action area and the relocation site in the 1st, 3rd, and 6th years following construction completion. For example, if the project is completed in 2018, these surveys shall be conducted in 2019, 2021 and 2024, when water levels and temperatures are suitable. **A report including, but not limited to, the survey methodology utilized, water temperature, the species and numbers of mussels located (noting any marked individuals), the age of each individual collected indicating whether recruitment is evident, an analysis of survival rates, and a map of the species locations shall be provided to the Department within 90 days of completion of each survey.**
13. Mitigation to the maximum extent practicable is required by the Act. Mitigation requirements for this authorization are as follows:
- a. In lieu of onsite mitigation, CF Industries shall commit \$5,600 to National Great Rivers Research and Education Center to support a RiverWatch Mussel Workshop Facilitator Training Seminar.
 - b. The donation shall be provided to the recipient facility **within 90 days of execution of this agreement.** Mitigation payments are nonrefundable, including events of revocation or termination. Proof of donation must be provided to the Department.
 - c. A report shall be submitted to the Department within 90 days of seminar completion including workshop agenda and training manual, participant numbers, field training locations, site mussel data, lessons learned, and potential next steps for seminar attendees.

- d. If the RiverWatch Mussel Workshop Facilitator Training Seminar is not feasible, CF Industries shall remit compensatory mitigation in the amount of \$5,600 within 90 days of execution of this agreement to the Illinois Wildlife Preservation Fund earmarked for bringing conservation benefit to the species potentially taken within the project footprint.

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.

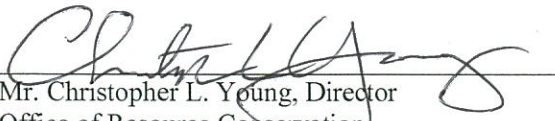
14. All reports, notifications, and other project documentation shall be submitted to:
Illinois Department of Natural Resources
Office of Resource Conservation
Endangered Species Program – Incidental Take Authorization Coordinator
One Natural Resource Way
Springfield, IL 62702-1271

(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.


15. The CF Industries official identified below is authorized to execute this agreement. Execution by CF Industries indicates acceptance of all terms and conditions described in this authorization.
16. The execution of this agreement does not waive or excuse the responsibilities of CF Industries 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:


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

5/10/18
Date

For CF Industries Sales, LLC:


Mr. Amanuel Welderuffael
General Manager, Distribution Facilities

04/25/2018
Date