



# Illinois Department of Natural Resources

One Natural Resources Way • Springfield, Illinois 62702-1271

<http://dnr.state.il.us>

## **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)/Union Pacific Railroad's (UPRR) authorization for the incidental take of the state-endangered Eryngium stem borer (*Papaipema eryngii*) in Livingston County, Illinois (as described/shown in the conservation plan received by the Department on 13 March 2012) 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 construction of the Tier 1 North section of the Dwight to Pontiac High-Speed Rail, Livingston County, Illinois.

### Procedural History

IDOT, UPRR and their contractor (Huff and Huff, Oak Brook, IL) prepared a conservation plan as described by the Illinois Endangered Species Protection Act (520 ILCS 10/5.5). That plan and IDOT/UPRR request for authorization for incidental take of Eryngium stem borer were received by the Illinois Department of Natural Resources (Department) on 13 March 2012. Public notice of IDOT/UPRR request for authorization of incidental take of Eryngium stem borer was published in the Breesee Courier (Official State newspaper) and the Pontiac Daily Leader and The Paper Plus (local papers) on 27 March, 4 and 11 April 2012. Public comments on the IDOT/UPRR conservation plan were accepted by the Department until 11 May 2012. Two comments were received from the public during the Public Comment period.

### 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 applicants propose to construct railroad improvements between Dwight and Pontiac which include upgrading existing tracks, constructing turnouts, culvert improvements, siding tracks and improving existing at-grade crossings along the existing UPRR line in

anticipation of the rail being upgraded for high speed passenger service. The total project limits are Mile Posts (MP) 72.78 to MP 94.98 along the Union Pacific Railroad (UPRR), between Dwight and Pontiac, Livingston County, Illinois. The project limits include the railroad right-of-way (ROW), plus additional area outside the right-of way within the Odell Siding (MP 81.99 to MP 84.67) and Pontiac Siding (MP 92.49 to MP 94.98).

Eryngium stem borers within impacted construction zones would likely be displaced or killed by equipment and/or construction activities. Grading, soil removal, filling and associated activities to construct these features would also kill the rattlesnake master plants and disturb the duff material at the base of the plant where Eryngium stem borer larvae reside.

The new Odell Siding itself would permanently remove approximately 250 linear feet of trackside prairie that contains Eryngium stem borer habitat located at the far SW end of the proposed siding. Five (5) existing culverts scheduled for upgrade / repair occur within 160 feet of existing Eryngium stem borer habitat. These structures are close enough to Eryngium stem borer habitat that impacts are possible.

Additionally, construction activities may eliminate, degrade, or disturb areas of rattlesnake master host plant habitat in parts of the 18 IDOT/INHS identified Eryngium stem borer habitat areas identified in pre-construction surveys.

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

Eryngium stem borer habitat has been identified where it occurs throughout the entire project area. To protect areas of the rattlesnake master host plant that will not be impacted but may be near construction activity, non-intrusion fencing has been/shall be installed to alert workers of sensitive natural areas. Signs will be posted at the edge of the stem borer habitat areas to minimize accidental intrusions into these areas. Signs and fencing will be maintained throughout the life of the construction project.

### **Minimization Plan**

The following minimization measures will be implemented during planning and construction:

- 1) The existing railroad embankment will be used as much as possible. It is unlikely, however, that this option will be practical at all potential impact locations.
- 2) Prior to construction, areas of rattlesnake master plants have already been or will be identified and protected with non-intrusion fencing to alert workers and prevent accidental intrusions. The non-intrusion fencing will remain in place throughout the construction sequence.
- 3) Worker awareness training will be provided by a qualified environmental professional to help minimize and avoid impacts.
- 4) Clearing, scraping, and storage/stockpiling activities as well as equipment operation will avoid all previously identified rattlesnake master host plant areas

and be limited to those areas required for actual construction. Rattlesnake master host plant areas damaged, degraded, and/or destroyed by construction activities shall be mitigated as per Mitigation Plan (below).

- 5) In areas where construction activity is near habitat for the stem borer, strict adherence to erosion and sediment control will be enforced. Erosion and sediment control will protect the litter and duff at the base of the rattlesnake master plants. Erosion control measures will adhere to those presented in IDOT's Bureaus of Construction and Design and Environment Policy and Procedure Memorandum dated 2011. During construction, all solid waste will be disposed of properly offsite to avoid accidental deposition of material in habitat areas.
- 6) The Taxa Specialist (see Mitigation Plan below) will be provided complete access to the site and will provide a monthly report to IDOT, UPRR, and IDNR evaluating the status of protection fencing and flagging around rattlesnake master host plant areas and erosion control efforts along all rattlesnake master host plant habitat areas as well as acres of Eryngium stem borer habitat disturbed, damaged, or destroyed since previous report.
- 7) If construction extends into Eryngium stem borer moth flight season (mid-September to October), a fifty foot buffer will be maintained around Eryngium stem borer habitat remaining within the right-of-way. This buffer will be fenced in the field by 1 September to identify the limits of the established flight season buffer.

### **Mitigation Plan**

It is known that construction of the Odell Siding will result in elimination of 250 linear feet of Eryngium stem borer habitat within the ROW. Other areas of Eryngium stem borer habitat will likely be impacted by the proposed project between Dwight and Pontiac. The applicant will mitigate all disturbed, damaged, and destroyed habitat as per the mitigation plan below.

Eryngium stem borer habitats within the UPRR right-of-way (ROW) are currently unmanaged. Local environmental groups have indicated that some minimal maintenance of the prairies along the ROW occurs by local entities. The UPRR currently does not manage the sites.

Mitigation shall consist of 5 parts:

1. hiring of a taxa specialist to perform all mitigation actions and reporting required by this ITA,
2. identification of Eryngium stem borer mitigation habitat under conservation protection and management to act as a recipient / translocation site;
3. translocation of existing Eryngium stem borer larvae and their host plants to the mitigation site,
4. monitoring of construction avoidance of Eryngium stem borer habitat within the UPRR ROW marked prior to construction,
5. monitoring of Eryngium stem borers along the UPRR ROW and at the recipient mitigation site,
6. annual reporting

### **1. Taxa Specialist**

The applicants will obtain a qualified contractor to perform all mitigation actions and reporting required by this ITA. The Contractor selected to conduct this work will meet the following minimum requirements:

- 1) As an agency or individual, have or be able to obtain an IDNR Permit for the handling and care of the Eryngium stem borers.
- 2) Have a minimum of a four-year degree in conservation or environmental sciences (or entomology) with focus on habitat restoration and threatened and endangered species protection.
- 3) Knowledge of prairie habitats and Eryngium stem borers, with experience in conducting work or research on these topics including live trapping of individuals of Eryngium stem borers.
- 4) Familiarity in developing monitoring techniques for Eryngium stem borers and applying them to the translocation sites.
- 5) Familiarity in the preparing of annual reports required by the IDNR

## **2. Identification of Translocation Site**

The destination site landowner shall meet the following requirements:

- 1) Have a land management plan that includes the restoration of prairie habitats that will enhance the growth of rattlesnake master, the Eryngium stem borers' host plant
- 2) Have the ability to provide minimal maintenance activities in the area of the translocated plants and larvae that would include:
  - Prescribed Burns
  - Knowledge of mowing / maintenance activities in native prairie habitat
  - Licensed Illinois pesticide applicators available to control invasive plants
- 3) Ability to manage and disburse escrow funds and provide annual reporting on budget activities related to the translocation activities.
- 4) Be within the Grand Prairie Natural Section of the Grand Prairie Natural Division within Will, Grundy, Kankakee, and/or Livingston County.

Mitigation will establish new populations of Eryngium stem borers within existing prairie sites supporting populations of rattlesnake master host plants which currently do not harbor the moth. Currently, it is believed that the Will County Forest Preserve District may be enhancing habitat for the species within certain preserves. The applicant in conjunction with the IDNR will coordinate with the Will County Forest Preserve District as necessary to guide them on habitat replacement. The Forest Preserve District may be aware of parcels of land that are suitable for the translocation of the stem borer and addition plants. The IDNR has also indicated that certain IDNR lands may also be suitable translocation sites for the stem borer and live plants.

If the destination agency does not have the capability to conduct these maintenance activities, the representative Contractor to perform these duties for the UPRR and IDOT will also have to meet the three above referenced criteria for maintenance of the translocation destination site.

The UPRR and IDOT will establish and fund a maintenance account to be used for activities related to specific management activities in the destination site. As special maintenance activities may be needed at the translocation destination site that may not be currently on-going, the Applicant will develop an escrow account to assist land managers in the proper maintenance of the sites used for the mitigation. Prior to the translocation, a budget will be developed for routine on-going maintenance for a period not to exceed five years.

Management may include mowing, prescribed burns, and manual or chemical removal of potentially invasive plant species. If remedial actions are required, a specific budget will have to be developed after a determination of needs is completed. The applicants will fund these actions in their entirety upon review and agreement of the plan by the landowner and IDNR.

Habitat mitigation for Eryngium stem borer at the translocation site will be on a per acre basis at a rate of 5:1. Measurements for any and all impacted locations will include a ¼ mile buffer NE and a ¼ mile buffer SW of the Eryngium stem borer habitat at impacted locations and will include the entire width of the UPRR ROW at the impacted location. "Impacted locations" will include any and all areas of disturbance, damage, and/or destruction of any IDOT/INHS identified Eryngium stem borer (rattlesnake master host plant) habitat along the Dwight to Pontiac Rail Line. Any single impacted location of Eryngium stem borers or their habitat which measures out to less than 1/5<sup>th</sup> acre shall be valued at 1/5<sup>th</sup> of an acre.

The mitigation site and management budget will be approved by the landowner and IDNR ITA Coordinator prior to any translocations and management fund expenditures. Any remedial management actions and budgets will be approved by the landowners and IDNR ITA Coordinator (or his designee) prior to any remedial management expenditures.

### **3. Translocation of Eryngium stem borer larvae**

To accomplish the translocation, individual caterpillars will be safely trapped and translocated live to the identified translocation sites. The goal of the live capture will be to relocate the actual larvae in addition to the plants and root mass. The Contractor will work with local experts to conduct live capture. In addition, live plants which may harbor stem borer moth larvae will be manually removed. The goal will be to remove as much of the near surface root mass as possible to allow the highest potential rates of success of the translocation. Plants will be removed by shovel, with an approximate 24 inch wide root ball to get as much of the duff as possible. Care will be taken during the relocation activities to protect the duff and litter material at the base of the plant and move this material carefully with the root mass and live plant. The moth may be sensitive to trampling during this period. The ideal time for translocation is during the dormant season, which is approximately November through March; however, due to project schedules, the plant translocation may be completed in late spring. If the plants are in flower, special care will be taken to protect the plant during translocation and once introduced into the suitable destination site, supplemental watering of the translocated plants will occur.

With approval of the receiving agencies, the destination sites will also be overseeded with rattlesnake master seed to supplement the number of future host plants, if deemed necessary. Overseeding will be completed by the selected contractor. Seeds will be obtained from sources within 50 miles of the Dwight to Pontiac project or from within the area encompassed by the Grand Prairie Natural Division (or a vendor with plant stock from those sources). Seeding should be completed between May and June using stratified seed, or between November and March using unstratified seed.

The selected contractor will follow management practices for the translocation destination sites as outlined in the Conservation Assessment for Eryngium Stem borer by the U.S. Forest Service. The conservation assessment states that only one third of the habitat should be burned at once, since the moth is sensitive to fire. In addition, any mowing should occur after June 15, although little is known about the impact of mowing on the moth. Exotic species should be controlled using an integrated pest management plan, with care taken to minimize impact to the moth. Woody plants should be removed.

#### **4. Monitoring Construction Avoidance**

The applicants, through the selected Contractor, will be responsible for post construction follow-up visits to the project corridor between Dwight and Pontiac to monitor the condition of the Eryngium stem borer habitat not within the work areas along with any remaining stem borer individuals. This will include assessing the condition of the non-intrusion fencing and erosion control measures that were installed prior to construction and the condition of the areas that were regraded and revegetated.

Monitoring will continue for 1 year after the completion of the project.

#### **5. Monitoring Eryngium stem borer moths and habitat**

The applicants, through the selected Contractor, will be responsible for monitoring of Eryngium stem borers and stem borer habitat at the UPRR ROW between Dwight and Pontiac as well as the translocation site for 4 years after project completion (at the UPRR ROW) and for 4 years after translocation (at the translocation site). Monitoring follow the guidelines of the U.S. Forest Service Conservation Assessment for Eryngium stem borer. The condition of the plants will be assessed biannually during this period to determine the success of the translocation. As stated previously, there are differing opinions on the success of translocating actual live rattlesnake master plants. Therefore, there is the possibility of 100% mortality of the live translocated plants; however, the overseeding of the site will be completed to compensate for mortality.

Over the monitoring period, a census will be conducted once annually to determine the population of the species within the destination sites and the UPRR ROW between Dwight and Pontiac. For larvae or caterpillars, a count of the individuals to be relocated will be completed before release to the destination site. After the first full year within the destination site(s), a census for larvae will be conducted to determine whether the populations are succeeding at the new destination site.

If population numbers are dropping over the monitoring periods, an assessment will be made if remedial actions are necessary. The decision process will include staff from IDOT, UPRR, IDNR, taxa experts under contract, and landowners involved in the mitigation implementation. If the drop in populations is considered critical, an assessment of the habitat and potential reasons for the reduction will be studied. From this analysis, the Applicant will be responsible for developing a remedial action plan in coordination with the destination site agency and selected Contractors.

### **6. Annual Reporting**

An annual report will be prepared and provided to IDNR ITA Coordinator that summarizes: 1) the census of the Eryngium stem borer and condition of stem borer habitat along the UPRR ROW between Dwight and Pontiac, 2) the census of the Eryngium stem borer and the condition of stem borer habitat at the translocated destination sites and 3) an evaluation of the need for or potential need for remedial actions at the translocation site. The yearly reports will indicate the percent survival of relocated plants, and 3) all other information and observations made at the UPRR ROW or the translocated site germane to the presence or survival of Eryngium stem borers.

The annual report will be completed and submitted to the IDNR ITA Coordinator by November 1st of the each year; the first report will be due November 1, 2012.

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

This project is funded by the American Recovery and Reinvestment Act. There is a cooperative agreement in place between Federal Railroad Administration (FRA) and IDOT to implement any mitigation required for this project. Adequate funding for mitigation and monitoring will be available to meet the goals of this conservation plan.

The applicants will provide an habitat management escrow account in the amount of \$10,000 per year for no more than 5 years to assist land managers in the proper maintenance of the sites used for the mitigation. In addition, the applicants will provide additional funds to support any required remedial management actions identified and budgeted as per Mitigation Plan #2 – Identification of Translocation Sites.

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 Eryngium stem borer is a moth that lives in mesic and wet-mesic prairies. The moth is dependent upon the presence of rattlesnake master (*Eryngium yuccifolium*), its host plant. A population of 100-1,000 rattlesnake master plants is needed for the species to persist at a site (U.S. Forest Service, 2003).

Eggs are laid within the duff of the rattlesnake master plant in the fall. Larvae emerge in

late May and bore into the rattlesnake master plant near the ground. The larvae live in the rattlesnake master roots until August, when they pupate either in the plant or the soil. Adults emerge in mid-September, and are on wing through early October. The adult moths are nocturnal.

Because the moth is dependent upon prairies with rattlesnake master, habitat destruction is a major threat. Larvae overwinter in duff.

In Illinois, the Eryngium stem borer is known from two distinct geographic areas – a Southern Till Plain region in Marion, Fayette, and Effingham counties and a Grand Prairie region in Will, Grundy, and Livingston counties. The species is also known from and has persisted in a re-introduction site in a protected natural area in Cook County.

The Illinois Natural Heritage Database (NH dB) contains 10 Element Occurrence Records (EORs) for the Eryngium stem borer – 4 in the Grand Prairie area, 5 in the Southern Till Plain area and the Cook County reintroduction site. Nine of the ten EORs date from 2001 – 2010. Estimates of abundance of the species at these sites range from “100s” to “3963 at 9 locations”.

The EOR impacted by this ITA is the Hitts Siding – Odell EOR which extends along a railroad ROW from Will through Grundy and into Livingston County. The NH dB reports a 2001 sighting of “100s” of larvae noted at a location described as “Odell N”. Larvae have been reported at two other specific locations from this EOR in 1995–1998. No Eryngium stem borer searches have been performed south of Odell.

Preconstruction surveys for Eryngium stem borer habitat (mesic/wet-mesic prairie or prairie remnants with rattlesnake master) were identified by IDOT/INHS in 2011 for the railroad ROW from Dwight to Pontiac in Livingston County. This area includes 18 miles of the 27+ mile Hitts Siding EOR. The survey recorded 22 segments within the ROW that support rattlesnake master host plants. These segments range in length from @ 200’ to over 2500’ (1/2 mile) and were concentrated in three general areas: just NE of Pontiac (@1/2 mile in length), @1/2 way between Pontiac and Odell (@1.5 mi), NE of Odell (@1 mi), and SW of Dwight (@ 2 mi).

Overall, rattlesnake master was found to be relatively common in the corridor in prairie between Pontiac and Dwight. The largest populations occur south of Dwight and north of Odell – likely the location of the “Odell N” site in the NH dB noted above.

It is known the project will destroy a 250’ length of Eryngium stem borer habitat in the area between Odell and Pontiac (S of Odell). The habitat destroyed is the NE-most segment of the larger Pontiac-Odell area referenced above and is @ ½ mile NE of the other habitat units within that segment, 2 of which are over 1000’ in length. There is no suitable habitat north of the impacted site for over 5 miles and it is over 7 miles from the likely “Odell N” site reported in the NH dB.

As part of this ITA, the applicants will create a new translocated population within the

Will-Grundy-Livingston County Eryngium stem borer region. Eryngium stem borer habitat at that location will be mitigated on an acre basis at a rate of 5:1. Mitigation acres will be calculated based on the size of the destroyed habitat plus a ¼ mile buffer at each end of the destroyed RR ROW habitat. Any destroyed habitat unit and buffer less than 1/5<sup>th</sup> of an acre will be rounded up to 1/5<sup>th</sup> acre and require 1.0 acre mitigation.

If successful, this will result in at least one new population and EOR for this species. This will improve the recovery potential for this species in Illinois as the site will be able to support the species long.

The translocation of the individual plants and root mass will not occur within the existing ROW. Areas outside the UPRR property with suitable conditions will be selected for the translocation site. By relocating the plants away from the railroad, suitable habitat will be expanded and these new habitat areas will not be subject to potential impacts that may be caused by the operation of the high speed rail activity after construction is completed.

The majority of land use adjacent to the project is agricultural, with small scattered urban areas, thereby reducing potentially available suitable sites near the project. The location of suitable translocation sites will be coordinated with local experts who currently are involved in the protection of the species to identify prime translocation areas. Potential translocation destination sites will be identified and presented to the IDNR and the landowner for approval. It is possible more than one site may be selected to expand the populations of rattlesnake master to more sites.

Through the development of this program, the IDNR will be able to document the results of the translocation and potential for future use of the live capture program. Methods for successful and safe capture, transport, and release of the larvae will be developed at this time with the goal of developing permanent protocols for this activity. This information will be shared with the US Fish & Wildlife Service as this agency is currently considering listing the Eryngium stem borer as a federally protect species.

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:

This authorization is, by definition, subject to the terms and conditions herein and official IDOT/UPRR 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:

Public notice of IDOT/UPRR request for authorization of incidental take of Eryngium stem borer was published in the Breese Courier (Official State newspaper) and the Pontiac Daily Leader and The Paper Plus (local papers) on 27 March, 4 and 11 April 2012. Public comments on the IDOT/UPRR conservation plan were accepted by the Department until 11 May 2012.

Two comment packages, one each from a local landowner and the Livingston County Environmental Association, were received (8 May 2012 and 7 May 2012, respectively). IDOT/UPRR official responses were received by the IDNR on 31 May 2012. The comment packages and responses remain on file at the Illinois Department of Natural Resources, attn: ITA Coordinator, One Natural Resources Way, Springfield, Illinois 62702-1271.

## Authorization

It is the determination of the Department of Natural Resources that the measures described in this Authorization and Implementing Agreement to be implemented by IDOT and the UPRR, will most likely adequately minimize and mitigate for the anticipated taking of Eryngium stem borers due to the construction of the Tier 1 North section of the Dwight to Pontiac High-Speed Rail, Livingston County, Illinois. Further, it is our opinion that the take authorized herein would not diminish the likelihood of the survival of the Eryngium stem borers 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.

The Illinois Department of Natural Resources has determined that this authorized take is incidental to the construction of the Tier 1 North section of the Dwight to Pontiac High-Speed Rail, Livingston County, 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 Odell Siding is officially opened for railroad 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. The effective period of this authorization may be altered by mutual agreement between IDOT, UPRR, and the Department.
3. This authorization may be revoked pursuant to Section 5.5 of the Act if the Department finds that IDOT or UPRR has failed to comply with any of these terms and conditions or has been responsible for the take of any Eryngium stem borers (or any other State listed species) beyond that which is incidental to the construction of the Tier 1 North section of the Dwight to Pontiac High-Speed Rail, Livingston County, Illinois.
4. The IDOT and UPRR officials identified below are authorized to execute this agreement. Execution by IDOT and UPRR indicate acceptance of all terms and conditions described in this document.

For the Union Pacific Railroad

David Orrell  
Signature

David Orrell  
General Director  
Print name and official title

9-14-12  
Date Signed

For the IL Department of Transportation

Miriam Gutierrez  
Signature

Miriam Gutierrez, Bureau Chief of  
Print name and official title High Speed &  
Passenger Rail

9/11/12  
Date Signed

For the IL Department of Natural Resources

James Herkert  
Dr. James Herkert, Office Director  
IDNR-Office of Resource Conservation

10-16-12  
Date Signed

Attach:  
Submitted Conservation Plan  
Conservation Assessment for Eryngium Root Borer (USFS, 2003)