



## Pennsylvania Fish & Boat Commission

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**Division of Environmental Services**  
Natural Diversity Section  
450 Robinson Lane  
Bellefonte, PA 16823  
(814) 359-5236

October 5, 2016

Peter Brown  
HDR Engineering, Inc.  
970 Baxter Boulevard, Suite 301  
Portland, ME 04103

**RE: Species Impact Review – SIR#43765**  
**Biological Opinion, Threatened and Endangered Species Special Permit**  
**Lake Erie Connector Project**  
**Erie County, Pennsylvania**

Dear Mr. Brown:

The Pennsylvania Fish and Boat Commission (PFBC) has reviewed the project plans and biological assessment for the proposed Lake Erie Connector Project. The enclosed document represents the PFBC's biological opinion about the effects of the proposed activity on state listed fish species, and a Special Permit that authorizes incidental take for the Eastern Sand Darter.

Pursuant to the authority under the Fish and Boat Code, 30 Pa.C.S. § § 2102 and 2305, the PFBC hereby grants ITC Lake Erie Connector LLC a Special Permit, as per 58 PA Code 75.4 (1)(iii) to take threatened and endangered species for activities of the Lake Erie Connector Project. This permit authorizes take, which was determined by the enclosed PFBC Biological Opinion to include the state endangered Eastern Sand Darter. The permit conditions outlined in the PFBC Special Permit are mandatory. This Special Permit is valid through the completion of the project, and expires on 31 December 2019. If the in-lake portions of this project are not completed by 31 December 2019, ITC Lake Erie Connector LLC shall reinitiate consultation with the PFBC to re-evaluate project impacts on the state listed species, and to determine the appropriateness of the Special Permit and its conditions contained in the Biological Opinion.

**Our Mission:**

[www.fish.state.pa.us](http://www.fish.state.pa.us)

*To protect, conserve and enhance the Commonwealth's aquatic resources and provide fishing and boating opportunities.*

P. Brown  
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If you have any questions regarding this Biological Opinion and/or Special Permit, please contact me at 814-359-5113.

Sincerely,

A handwritten signature in black ink that reads "Christopher A. Urban". The signature is written in a cursive style with a large, prominent initial "C".

Christopher A. Urban, Chief  
Natural Diversity Section

cc: Mark Hartle, PFBC  
Heather Smiles, PFBC  
Dan Ryan, PFBC  
PA-DEP, NW Region, Meadville

Enclosure

**BIOLOGICAL OPINION**

**Effects of the Lake Erie Connector Project on the Eastern Sand Darter, Erie County,  
Pennsylvania**

**Species Impact Review #43765**

**May 2016**

**Pennsylvania Fish and Boat Commission  
Division of Environmental Services  
450 Robinson Lane  
Bellefonte, PA 16823**

## DESCRIPTION OF THE PROPOSED ACTION

ITC Lake Erie Connector LLC (the Applicant) is proposing to construct and operate the Lake Erie Connector Project (LECP). This project would entail constructing approximately 72.4 miles (116.5 km) of high-voltage direct current (HVDC) electric transmission line that would transfer electricity between Canada and the United States. A detailed description of the proposed construction activities for LECP was provided in a report submitted to the Pennsylvania Fish and Boat Commission (PFBC) and is briefly summarized herein (HDR 2015). Approximately 42.5 miles (68.4 km) of the LECP line is proposed to occur within Erie County, Pennsylvania, United States. In Lake Erie, the cables will be buried in the lakebed to protect against damage from shipping traffic, fishing activity, and ice scour. The shoreline crossings from land to Lake Erie will be completed by horizontal directional drilling (HDD). In Pennsylvania, the HDD will exit the lakebed at approximately 2,000 feet (600 meters) from shore at a water depth of approximately 18 ft (5.4 meters). From the exits of the HDD bores, a trench will be blasted and excavated in the bedrock until softer lakebed material is encountered and jet plow (high pressure water) facilitated burial is possible. The blasting is to occur for approximately 1.4 km and require approximately 130 days.

## SPECIES OF CONCERN AND EFFECTS OF THE ACTION

A Species Impact Review (SIR) permit application was submitted to the PFBC through the Pennsylvania Natural Diversity Inventory (PNDI) system for the LECP and the potential presence of fishes listed as endangered in Pennsylvania was identified in SIR43765. These fish species are Lake Sturgeon (*Acipenser fulvescens*), Cisco (*Coregonus artedii*), and Eastern Sand Darter (*Ammocrypta pellucida*).

Potential impacts on the Lake Sturgeon were considered insignificant given the location of the LECP area of operation, the rarity of the Lake Sturgeon, and its use of near shore areas and lotic systems for spawning.

The Cisco is currently considered likely extirpated in Lake Erie, but specimens are occasionally encountered (Coldwater Task Group 2015). The only recent reports from Pennsylvania waters have come from 1986 and 1987. From 1990 to 2014, only 39 specimens were reported from Lake Erie, mostly by commercial fishermen operating in Ontario waters (Coldwater Task Group 2015). At this time, it is unclear if these recent collections represent a Lake Erie remnant stock or strays from Lake Huron. In either case, the rarity or absence of Cisco in the LECP area and the pelagic nature of Cisco, make it highly unlikely that the LECP would significantly affect critical habitat for this species.

The Eastern Sand Darter (ESD) has been observed in the vicinity of the LECP area (HDR 2015, Stauffer et al. 2016, PFBC Lake Erie Research Unit unpublished data) within Pennsylvania. The Eastern Sand Darter is a benthic fish which occupies areas dominated by sand substrate, in which they routinely bury themselves. Survey data collected in Pennsylvania demonstrate the Eastern Sand Darter is present at depths to 29 meters in Lake Erie and in open water during the summer at various depths. This information suggests that spawning may occur at those locations and not strictly in near shore areas; however, this has not been investigated. It appears that the LECP activities will likely encounter Eastern Sand Darter within the construction area. As an initial

SIR response, the PFBC requested that the LECP avoid conducting activities affecting sand substrate in Pennsylvania during the Eastern Sand Darter spawning window of 1 June – 31 August. Construction during these dates was deemed by the Applicant to be essential for the completion of the LECP and the spawning seasonal restriction could not be observed. Consultation with the PFBC was initiated to resolve the conflict and at that approximate time the Applicant subsequently informed the PFBC that blasting was going to be required to bury a portion of the transmission line. The Applicant was asked to develop and present a Biological Assessment characterizing the impacts to the Eastern Sand Darter and estimate the expected take related to the activities of the LECP.

To facilitate the assessment of take of the Eastern Sand Darter within Pennsylvania, the PFBC Lake Erie Research Unit, Fisheries Management Division provided benthic trawl data to the Applicant and their consultant, HDR. These trawl data were the result of PFBC surveys intended to assess percid gamefish recruitment, predominately in the fall and with some data available from summer surveys. A total of 366 trawl samples were considered with 17 trawls having captured Eastern Sand Darters. It is not clear if all of the trawls not having captured Eastern Sand Darters were spatially well distributed or if they occurred in areas with suitable habitat for Eastern Sand Darters. Only the spatial distribution of Eastern Sand Darter capture sites was presented by HDR (2015) within the report figures (Figure 3.1-1, p.15). The capture of Eastern Sand Darters in these trawls was incidental and not the results of targeted searches. From these data, HDR (2015) calculated a long term average density of 0.43 Eastern Sand Darters per hectare and concluded that the PFBC trawl data suggested there was predominantly low recruitment with an occasional stronger year class at approximately 10 year intervals on average. These conclusions were based on the number of trawls conducted that had and had not captured Eastern Sand Darter throughout the percid assessments (N = 366).

A benthic trawl is likely to be more effective at capturing Eastern Sand Darters under certain conditions and representation in the trawls was not necessarily a reflection of abundance in the wild. Eastern Sand Darter are a benthic fish and are known to burrow into sand (Trautman 1981), potentially reducing their recruitment to a trawl when it does not dig into the top layer of sand or when the trawl bounces breaking contact with the bottom. Although the benthic trawl is capable of capturing small benthic fishes, the capture probability for the Eastern Sand Darter, if present, is not likely to be 100% in a benthic trawl. This assertion is contrary to what is implied by HDR.

HDR (2015, p.12) states the following: “Because the present Project will involve blasting in areas where fish occupation will change on a daily and seasonal basis, it is impossible to predict with absolute certainty that no fishes will be impacted detrimentally.” The HDR calculated average Eastern Sand Darter per hectare (0.43) assumes that the available trawl data averaged across years and localities is representative of the Eastern Sand Darter population at the site of the LECP where and when the blasting is to occur. Figure 3.1-1 (HDR 2016) also clearly shows that a portion of the fisheries survey data for the Eastern Sand Darter from trawls has been collected from the vicinity of the LECP. The potential for an abundant year class of Eastern Sand Darters to be present at the site of the LECP and during the construction period were not considered by HDR (2015).

To address these concerns, a more conservative calculation is presented herein to provide an alternative calculation of potential take based on available field data. The average density value

0.43 ESD/hectare, is replaced in the HDR calculations by the density calculated from the most abundant trawl value, 6.69 ESD/hectare (see HDR 2015). A correction factor was not added to address the effect of benthic trawl efficacy for catching Eastern Sand Darters; however, we believe this (6.69 ESD/hectare) is a more realistic representation of the potential population in the project vicinity.

The lethal take evaluation presented by HDR (2015) was focused on areas where blasting will be conducted in conjunction with the sandy habitats preferred by the Eastern Sand Darter and the PFBC agrees with this habitat based approach to assessing impacts. Sand overburden (over shallow bedrock) is present for approximately 578 meters of the project path where blasting is planned. A corresponding area of 7.84 hectares in these sandy areas is estimated to be affected by blasting (HDR 2015). In this area, lethal take of 52 Eastern Sand Darters could be expected (6.69 fish/hectare x 7.84 hectares) using the maximum observed density versus lethal take of 4 Eastern Sand Darter using a long term average density from all of the PFBC trawls and areas (0.43 ESD/hectare x 7.84 hectares)).

Potential impacts from the grapnel run, HDD, jet plow operations, EMF, temperature change, and cable maintenance effects are reported by HDR (2015) to be insignificant in regards to the Eastern Sand Darter. The PFBC is inclined to agree with these assertions in the biological assessment and has not included any estimate of take for these aspects for the Eastern Sand Darter.

## CONCLUSION – BIOLOGICAL OPINION

Chapter 75.4 (1) (i) authorizes the PFBC to make determinations regarding the continued existence of a listed threatened and endangered species within Pennsylvania. It is the Biological Opinion of the PFBC, that the proposed project will have no demonstrable adverse impacts on the population of the Eastern Sand Darter within the Commonwealth. This determination is based on the likely severity of species take following an analysis of the project effects. It is our best professional judgment that the proposed project is not likely to jeopardize the continued existence of the species within the Commonwealth. We do anticipate some level of species take; however, we do not expect the level of take to adversely impact the local population of Eastern Sand Darter known from Lake Erie. The PFBC is defining “take” as removing or killing of animals through any means directly or indirectly and in a time frame coincident with (immediate) or delayed following a specific activity.

## SPECIAL PERMIT

### Amount or Extent of Threatened and Endangered Species Take

This Special Permit allows for the take of 52 Eastern Sand Darter from the area of the LECF during stated project activities. To further avoid and minimize further take associated with the impacts from the proposed development on the Eastern Sand Darter and its habitat, the following mandatory permit conditions shall be implemented. These conditions also include mitigation measures to compensate for take of listed species and conservation measures to ensure the long-term protection of the listed species.

## Special Permit Conditions

1. Best management practices to be used:
  - a. Erosion and Sedimentation Pollution Control Plan. During the project, the Applicant shall implement an “Erosion and Sedimentation Pollution Control Plan” that shall be implemented as approved by the Pennsylvania Department of Environmental Protection.
  - b. Additional impact avoidance techniques for fishes outlined by HDR (2015):
    - i. Implementation of confined stemmed bore hole blasting techniques.
    - ii. Implementation of appropriate depth of the blast hole collar and charge weight.
    - iii. Implementation of appropriate delays between the onset of multiple blasts.
    - iv. Implementation of appropriate stemming techniques.
    - v. The Project may also use additional impact avoidance techniques such as use of blasting mats, deployment of bubble curtains or measures to mobilize and clear fish from the immediate blast area.
2. Reporting of dead listed species found on the project site: Any dead specimens of listed species (see 58 PA Code Chapter 75) that are found within the project action area shall be clearly photographed and frozen/preserved for PFBC review. In conjunction with the preservation of any dead specimens, the observer has the responsibility to ensure that evidence intrinsic to determining the cause of death of the specimen is not disturbed. The finding of dead specimens does not imply enforcement proceedings pursuant to Section 2305 of the Fish and Boat Code (Act 1980-175, Title 30). The reporting of dead specimens is required within 24 hours to enable the PFBC to determine if species take is reached or exceeded and to ensure that the permit conditions are appropriate and effective. Upon locating a dead specimen, the Applicant or its representatives must notify the Pennsylvania Fish and Boat Commission’s Division of Environmental Services, 814-359-5237.
3. Mitigation/restitution for take of the Eastern Sand Darter:
  - a. The Applicant has agreed to render the replacement value of the estimated take of Eastern Sand Darters. The replacement value of the Eastern Sand Darter was assessed using best available information and the guidance outlined by the “fish kill manual” of the American Fisheries Society (Southwick and Loftus 2003). After discussion with aquaculturists experienced in raising *Ammocrypta* spp., it was determined that the replacement cost for an Eastern Sand Darter would be approximately \$100 per individual. The total replacement value [mitigation] would then be \$5,200 (52 ESD x \$100 /ESD) for the estimated impacts of the LECP.
  - b. Mitigation for Eastern Sand Darters will be included with the PFBC Division of Environmental Services blasting permit assessment. Under Section 2906 of the Fish and Boat Code (Act 1980-175, Title 30), any person using explosives shall make restitution to the Pennsylvania Fish and Boat Commission for all fish destroyed when using explosives. The SIR permit and Biological Opinion is not meant to address concerns for any other populations of fish.

### Literature Cited

- Coldwater Task Group. 2015. Report of the Lake Erie Coldwater Task Group, March 2015. Presented to the Standing Technical Committee, Lake Erie Committee of the Great Lakes Fishery Commission. Ann Arbor, Michigan, USA.
- HDR Engineering, Inc. 2015. Lake Erie Connector Project, Biological Assessment, Eastern Sand Darter. Report prepared for ITC Lake Erie Connector LLC, Novi, Michigan.
- 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.
- Trautman, M. B. 1981. The fishes of Ohio, revised edition. Ohio State University Press, Columbus.