

*Atlantic Sunrise Project – PA DEP Chapter 105 Joint Permit Application
Transcontinental Gas Pipe Line Company, LLC
Luzerne County*

ATTACHMENT G-3
THREATENED AND ENDANGERED SPECIES COORDINATION
PA FISH AND BOAT COMMISSION

Revised April 2017



Pennsylvania Fish & Boat Commission

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

April 17, 2014

IN REPLY REFER TO
SIR# 42243

ECOLOGY AND ENVIRONMENT

Rachel Smith
368 Pleasant View Drive
Lancaster, New York 14086

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No.
Atlantic Sunrise Expansion Project
Multiple Counties and Townships in Pennsylvania

Dear Rachel Smith:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish & Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish & Boat Code (Chapter 75), or the Wildlife Code.

Timber rattlesnake (*Crotalus horridus*, PA Candidate)

Timber rattlesnakes occur in the forested, mountainous regions of the Commonwealth. They prefer forested areas to forage for small mammals (e.g., mice and chipmunks) and southerly-facing slopes for hibernating and other thermoregulatory activities. The timber rattlesnake is threatened by habitat loss/alteration, wanton killing, and poaching.

We are concerned about direct and indirect effects that the proposed project could have on the local population of the timber rattlesnake in the following areas:

Our Mission:

www.fish.state.pa.us

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

County	Pipeline	Area
Clinton	Grugan Loop	Entire length
Schuylkill	CPL South	Between MP 75 and MP 77
Northumberland/Schuylkill	CPL South	Between MP 79 and MP 82
Northumberland	CPL South	Between MP 86 and MP 87

Given the proximity of the project to known critical timber rattlesnake habitat, we recommend that a timber rattlesnake habitat assessment be conducted in the **four project areas noted above** by a qualified timber rattlesnake surveyor. We have included a list of qualified surveyors and habitat assessment protocol for your convenience. This list is not an exhaustive list of qualified rattlesnake surveyors in Pennsylvania as there may be qualified surveyors who have not asked to be placed on this list. It is not mandatory that you use someone on this list. Upon completion of the habitat survey, the qualified rattlesnake biologist is to submit a report to this office for review and comment. The habitat survey report should include color photographs of the project area (keyed to a site map or diagram) and a description of habitats occurring within the immediate area to be developed (including access roads), as well as the surrounding area. Potential timber rattlesnake critical habitat (denning/gestating areas) should be photographed and mapped accordingly. In addition, the report should also include detailed project plans and maps with a description of the proposed work (including access roads), project impacts and alternatives. Pending the review of this information, a survey targeting the presence of the timber rattlesnake in the project area and/or other project modifications may be requested.

Freshwater Mussels

Rare or protected freshwater mussel species are known from the vicinity of the project area. Freshwater mussels are the most imperiled taxonomic group in North America. Nearly 20% of the species historically known to occur in the Commonwealth are now extirpated (locally extinct). Additionally 60% of Pennsylvania's remaining species are of conservation concern. We are concerned about direct and indirect (i.e., runoff) effects that the proposed project may have on the species of concern. The freshwater mussel species known from the project area are especially vulnerable to physical (dredging, rip-rap, etc.) and chemical (pH, dissolved oxygen, temperature, heavy metals and organic contaminants) changes to their aquatic environment. Therefore, we recommend using **directional boring** rather than open cutting for the **Wyoming County Susquehanna River crossing at MP 34.18**. Open cutting will most likely adversely impact the species of concern. Work should be conducted from the bank (e.g., no in-stream disturbance). Likewise, no erosion or sediment should be allowed to enter into the river (e.g., strict erosion and sedimentation control measures need to be employed).

Provided that directional boring methodology is used, in-stream work is avoided, strict E&S control measures are maintained, and best management practices are employed, we do not foresee any significant adverse impacts from the proposed activity to the mussel species of special concern or any other rare or protected species under Pennsylvania Fish & Boat Commission jurisdiction provided that the applicant implement the following contingencies to prevent impacts to water quality from drilling/boring operations:

- Have a designated environmental inspector on site for the duration of the entire crossing operation
- Stop the bore/drill immediately if anyone on site observes an Inadvertent Return.
- Have a Vac Truck on site or on call (within three hours) to begin clean-up of the release in the stream channel to prevent downstream migration of drilling fluids

• Notify PFBC Bureau of Law Enforcement Regional Office within 24 hours
http://fishandboat.com/dir_regions.htm (NE 570-477-5717).

Additionally, any release of sediment to the stream should be reason to initiate contact with the PFBC Bureau of Law Enforcement to address these issues. Any unauthorized disturbance, unpermitted discharge, or release of sediment(s) that is determined to be a pollution event (generally described <http://www.fish.state.pa.us/fishpub/summary/reporting.html>) per the Pennsylvania Fish and Boat Code will be subject to the appropriate legal enforcement action.

If, however, the work will necessitate any direct (e.g. equipment intrusion) or indirect impacts (e.g. runoff) to the waterway, this SIR must be resubmitted to this office (Natural Gas Section) for further review before work commences. With the resubmission, please include items such as detailed project plans, a description of the proposed work, aerial photographs of the general area, mapped areas that are to be impacted, stream characterizations and descriptions, and color photographs would expedite our review process. A mussel survey to assess areas of direct and indirect effects may be warranted.

Bog Turtle (*Glyptemys muhlenbergii*, PA Endangered, Federal Threatened)

The bog turtle is a small (up to a 4 inch carapace) semi-aquatic, omnivorous turtle that prefers open marshy wetlands associated with springs and groundwater, specific vegetative communities and mucky soils for burrowing. This species is restricted to the southcentral and southeast portions of Pennsylvania. However, due to the lack of pristine habitat found in its range from disturbance and plant successional processes, the bog turtle has, in some cases, become accustomed to disturbed, low quality wetland complexes often with semi-closed canopies. Bog turtles are also known to be transients in forested habitat that are associated with springs and small streams leading to more open marshes. They use these habitats as dispersal corridors to other wetlands. The bog turtle is threatened by habitat destruction, poor water quality and poaching.

In an effort to streamline our threatened and endangered species environmental review process, reduce the redundancy in project reviews and ease our staff workload, the Pennsylvania Fish and Boat Commission has delegated coordination/consultation of joint state/federally listed species impact reviews to the PA Field Office of the U.S. Fish and Wildlife Service (USFWS). Please send your project materials *if you have not already done so* to them at: U.S. Fish and Wildlife Service, Endangered Species Section, 315 South Allen St, Suite 322, State College, PA 16801-4851.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Heather A. Smiles at 814-359-5194 and refer to the SIR # 42243. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

A handwritten signature in black ink that reads "Heather Smiles". The signature is written in a cursive, flowing style.

Heather A. Smiles, Chief
Natural Gas Section

HAS/dn

Cc: Kayla Easler, USFWS
Michael Dombroskie, ACOE

PENNSYLVANIA FISH & BOAT COMMISSION

Division of Environmental Services
450 Robinson Lane
Belleville, PA 16823-9620

Timber Rattlesnake Presence-Absence Survey Guidelines

(revised 10/3/2013)

Timber Rattlesnake Natural History

Description

The timber rattlesnake (*Crotalus horridus*) is a large, heavy bodied snake of the pit viper family (Viperidae). Timber rattlesnakes have transverse "V" shaped or chevron-like dark bands on a gray, yellow, black, or brown body color. The tail is completely black with a rattle. The head is large, flat, and triangular, with two thermal-sensitive pits situated between the eyes and the nostrils. The head color of the timber rattlesnake distinguishes two distinct color phases – the dark phase has a completely black head with, generally, black eyes, and the light phase has a yellowish tan to brown head and yellow eyes. The pupils of the eyes are elliptical in shape. The dorsal scales on the timber rattlesnake are strongly keeled, giving it a "rough" appearance. The ventral (underside) of the light phase is yellowish to creamy colored while the dark phase is white with small, dark stipple-like markings. Male and female timber rattlesnakes differ in size and subcaudal scale count. Adult males are usually larger than females (average size of males 42" snout-vent length, compared to 36" for females), and have longer tails (21 or more subcaudal scales between the venter and the rattle).

Life History

Timber rattlesnakes inhabit the forested, mountainous regions of Pennsylvania. Their active season is mid-April through mid-October. They prefer upland forested areas where they forage for small mammals (e.g., mice, and chipmunks). Talus and/or scree slopes, rocky ledges, outcrops, and boulder fields generally with southerly exposures contain the entrances to over-wintering dens. Dens usually have rocky crevices, or other features that provide access to ancestral underground chambers to which the snakes return yearly for hibernation. These sites generally have rocky habitat containing a semi-open canopy close by that is used by gravid females for gestation. Timber rattlesnakes begin emerging (egress) from their dens in mid to late April. Adult males may travel up to 3 to 5 miles away from the den before returning in the fall, unlike non-gravid females, which move approximately 1 to 3 miles from the den, and gravid females, which stay close to the den (100-400m). Timber rattlesnakes begin traveling towards their den sites in September and enter their dens (ingress) for winter dormancy in late September through October.

Rattlesnakes are ambush predators. They identify rodent trails on the forest floor via scent detected with their tongues. They sit and wait for a rodent to pass by on an already established trail before striking them with a venomous bite. After swallowing its prey whole, the timber rattlesnake seeks solar heat exposure to aid digestion of meals by moving to various, usually open, areas to bask.

Females reach reproductive maturity when 7 to 9 years old, as compared to males, which reach reproductive maturity at approximately 5 to 7 years of age. Timber rattlesnakes mate in late summer to early fall (July to mid-September) in Pennsylvania. The young are born live, the following year, in late summer (late August into September) with an average litter size of 5 to 9. Individual females reproduce at intervals of approximately 3 to 5 years. Since the gravid female infrequently feeds during the summer preceding birth of her offspring, the intervening years are necessary for building sufficient body fat to

sustain her through gestation and then hibernation. So despite a life-span of up to 30 years, a female may only have 4 to 7 reproductive attempts during her lifetime.

There appears to be high juvenile mortality, since many young timber rattlesnakes fall prey to a variety of natural predators (e.g., birds of prey, carnivorous mammals). Adult timber rattlesnakes have few natural enemies except humans, whose activities have the greatest direct (e.g., road-kill, illegal/wanton killing) and indirect (e.g., habitat loss) impacts to the timber rattlesnake population.

Distribution

The current range of the timber rattlesnake encompasses 31 states from Vermont and New Hampshire south to northern Florida, west to eastern Texas and then north through eastern Oklahoma, Kansas, and Nebraska, through Iowa into southeastern Minnesota. From southwestern Wisconsin the range retreats south, away from the Great Lakes, through western and southern Illinois and southern Indiana and Ohio.

In Pennsylvania the Allegheny Plateau and the Appalachians are encountered and the range goes north through New York back to southern Vermont and New Hampshire. Prior to European settlement, the range of the timber rattlesnake is thought to have spanned most of Pennsylvania. The current range of the timber rattlesnake is restricted to the more rugged, least accessible, and less populated regions of the Commonwealth. Today, timber rattlesnakes occur in forested, mountainous regions that encompass mainly the central and northeast region of Pennsylvania (e.g., Ridge and Valley Province, Laurel Highlands, Allegheny Plateau, and the Pocono Plateau).

Threats and Conservation

Given the slow maturity, low fecundity, and the many threats posed by the overexploitation of its habitat, the timber rattlesnake is vulnerable to decline. Presently, experts believe that the timber rattlesnake is declining across its range, and in Pennsylvania particularly in the peripheral areas of its range. The decline of the timber rattlesnake is attributed mainly to human activities related to habitat alteration, highways, illegal/wanton killing, and poaching. To date, the timber rattlesnake is protected in over half of the states where it occurs. In Pennsylvania, it is currently listed as a candidate species (an animal that could achieve threatened or endangered status in the future). The timber rattlesnake is legally protected in Pennsylvania and the Pennsylvania Fish and Boat Commission's Natural Diversity Section comments statewide on development projects that have potential to adversely impact timber rattlesnake populations. The Natural Diversity Section is also involved with research projects on monitoring, inventory, and den viability that are being conducted on Pennsylvania timber rattlesnakes.

Impact Review: Development Projects and Potential Conflicts with Timber Rattlesnakes

Many new projects are proposed on lands that are in close proximity to areas that have long been known to harbor timber rattlesnakes. During the environmental review process, the Division of Environmental Services staff may request a timber rattlesnake presence-absence survey if: 1) a timber rattlesnake habitat assessment was positive, and/or 2) the vicinity of the area that is proposed to be developed is currently or historically known to support timber rattlesnakes. Given the terrain, timber rattlesnakes may be utilizing the project area for denning, reproduction (gestation), basking, and/or foraging. These surveys should be conducted by a PFBC-approved timber rattlesnake surveyor (list enclosed). This list is not an exhaustive list of qualified rattlesnake surveyors in Pennsylvania as there may be qualified surveyors who have not asked to be placed on this list. It is not mandatory that you use someone on this list. Following the survey, a report documenting the surveyor's findings is submitted to the PFBC for review and comment. This information is pertinent for the staff to provide recommendations for avoiding adverse impacts from the proposed project to the timber rattlesnake population and its habitat.

Presence - Absence Survey Guidelines/Methods

Habitat Assessment

If a timber rattlesnake habitat assessment has not been conducted, areas within and at least 300ft around the project area need to be identified that are most likely to support timber rattlesnakes (e.g., talus slopes, scree areas, boulder fields, rocky outcrops, rocky right-of-ways). Although search ranges will vary with project location and size, in general, a search range should include the entire project area (including temporary and permanent impacts) and a **minimum of 300ft from the project boundary**. Results of the habitat assessment, if needed, should be recorded on the Timber Rattlesnake Habitat Assessment Form (2-11-10), which should be requested from the Division of Environmental Services. Presence/absence surveys are to target areas that have been identified as potential hibernacula/den and/or gestation/basking habitats and have a high potential to support timber rattlesnakes.

Sampling Times and Targeted Search Areas

Timber rattlesnake presence-absence surveys are to be conducted when rattlesnakes are active (i.e., no earlier than April 15, nor later than September 15, with an emphasis on the visitations/surveys being completed prior to parturition and when the ground temperature is $\geq 75^{\circ}$ Fahrenheit). Air temperatures should be at or above 65° Fahrenheit, and surveys cannot be conducted during rain events. Surveys are to target areas that have high potential to support timber rattlesnakes (e.g., talus/scree slopes, boulder fields, rocky outcrops, and rocky right-of-ways).

Each of the identified potential habitat areas, must be visited a minimum of four (4) times on separate dates during the date ranges listed below based on the type of habitat identified.

- Potential Hibernacula/Den Areas: April 15 – May 31; minimum of 4 separate surveys for each identified area. Surveys must not be completed on successive days and are to be timed to coincide with the emergence period for the particular region.
- Potential Gestation/Birthing Areas: June 1 – September 15; minimum of 4 separate surveys for each identified area. Surveys must be separated by one (1) week and are to be scheduled and completed prior to parturition to avoid the transition period when snakes are less likely to be encountered.

Site visits should coincide with optimal weather conditions needed to detect rattlesnakes. Sampling of a potential habitat area may cease upon detection of timber rattlesnake presence; however, the PFBC review of potential project impacts will benefit from as much information as can be gathered about the extent of use of each habitat area.

Methods/Handling

Timber rattlesnake surveys should be conducted by PFBC-approved timber rattlesnake surveyors who have the proper skills and permits required (PFBC Type III Scientific Collecting Permit) to handle this venomous species (list enclosed). This list is not an exhaustive list of qualified surveyors in Pennsylvania as there may be qualified surveyors who have not asked to be placed on this list. It is not mandatory that you use someone on this list. Once the targeted areas and sampling times have been established, the targeted sites are to be visited by qualified personnel and their permit-listed assistants (see PFBC Scientific Collecting Permit). Dens, gestation/birthing areas, and/or individual occurrences are to be mapped and described accordingly.

Color phase, sex, total length, snout-vent length (SVL), and reproductive condition should be recorded from timber rattlesnakes observed at the site.

Reporting Requirements

Upon completion of the timber rattlesnake presence-absence survey, the surveyor is to submit a report to this office (Natural Diversity Section) for review. Survey reports are to document both abiotic and biotic parameters observed. The survey report must include the following information:

- Project narrative/description, exact project location, equipment to be used in earth moving activities, alternatives, etc.
- Survey dates, names of surveying personnel, USGS 7.5 minute maps showing the project area relative to the survey location, start and end times, start and end temperature, ground and air temperature, % cloud cover, other weather conditions, and calculation of person hours/search area.

The following information is to be reported from timber rattlesnakes observed at the site:

- Color phase, sex, total length, snout-vent length (SVL), and reproductive condition.

In addition, the following locational information and habitat descriptions are to be reported:

- Exact location (latitude/longitude and map datum used, located on topographic map), color photograph of animal(s), micro and macro habitat descriptions (vegetation descriptions, % cover, rock size and % cover), color photographs of habitat (dated, labeled, and keyed to a map), all herpetofauna seen, and any behavioral notes.

PENNSYLVANIA FISH & BOAT COMMISSION
Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823-9620

QUALIFIED TIMBER RATTLESNAKE SURVEYORS

The following list includes persons known to the Pennsylvania Fish and Boat Commission (PFBC) to possess skills and have experience in properly searching for and finding timber rattlesnakes (*Crotalus horridus*) and in identifying their critical habitat. This list is not an exhaustive list of qualified surveyors in Pennsylvania as there may be qualified surveyors who have not asked to be placed on the list. Placement on the list is not to be construed as an endorsement of individuals or firms by the PFBC or any of its employees.

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E-mail: christopherscamacho@gmail.com

Zoladz, Justin A.

From: SirTrackAutoResponse <RA-pndiautoresponse@pa.gov>
Sent: Tuesday, January 27, 2015 3:11 PM
To: Netti, Gregory
Cc: Zoladz, Justin A.
Subject: PNDI review by PFBC
Attachments: 42243_1-27-2015.pdf

Please find attached a response to your submission for environmental review by the Pennsylvania Fish and Boat Commission.

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Pennsylvania Fish & Boat Commission

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

January 27, 2015

IN REPLY REFER TO
SIR# 42243

Ecology and Environment, Inc.
Greg Netti
368 Pleasant View Drive
Lancaster, New York 14086

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No.
Atlantic Sunrise Expansion Project

Dear Greg Netti:

This is a response to your updated submission for the Atlantic Sunrise Project; received on January 20, 2015. The Pennsylvania Fish and Boat Commission (PFBC) sent an initial response letter dated April 17, 2014. Since that time your project has changed and you initiated further contact with PFBC.

Based on the updated pipeline route, the PFBC is concerned the project will have an impact on the following species of special concern:

Timber rattlesnake (*Crotalus horridus*, PA candidate)

The April 17, 2014 letter requested habitat assessments for four areas along the pipeline route. The alternate route has changed the locations that the PFBC recommends that a timber rattlesnake habitat assessment be conducted (Table 2) by a qualified rattlesnake surveyor (a list of qualified surveyors and survey protocol was previously provided).

Table 2. Timber rattlesnake habitat assessment areas. ¹

County	Pipeline	Area
Clinton	Chapman Loop	Entire length
Schuylkill	CPL South	MP 77.7 – 79.7
Northumberland/Schuylkill	CPL South	MP 81.7 – 84.7
Northumberland	CPL South	MP 88.1 – 90

¹ Updated from April 17, 2014 letter.

Our Mission:

www.fish.state.pa.us

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

Freshwater Mussels

In the April 17, 2014 letter the PFBC recommended using directional bore rather than open cutting for the Wyoming County Susquehanna River crossing. After review of the updated pipeline route, PFBC still concurs with the HDD crossing method and the recommendations previously included in the April 17, 2014 letter.

If, however, the work will necessitate any direct (e.g., equipment intrusion) or indirect impacts (e.g., runoff) to the waterway, this SIR must be resubmitted to this office for further review before work commences. With the resubmission, please include items such as detailed project plans, a description of the proposed work, aerial photographs of the general area, mapped areas that are to be impacted, stream characterizations and descriptions, and color photographs would expedite our review process. A mussel survey to assess areas of direct and indirect effects may be warranted.

Bog Turtle (*Glyptemys muhlenbergii*, PA Endangered, Federal Threatened)

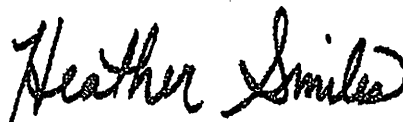
As recommended in the April 17, 2015 letter, continue to coordinate the updated route with the U.S. Fish and Wildlife Service.

The PFBC appreciates the detailed information (GIS shapefiles) provided for this review. Any modification to this corridor could cause the review to change and contact should be initiated to determine the impact(s).

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Heather A. Smiles at 814-359-5194 and refer to the SIR # 42243. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,



Heather A. Smiles, Chief
Natural Gas Section

HAS/dn

Zoladz, Justin A.

From: SirTrackAutoResponse <RA-pndiautoresponse@pa.gov>
Sent: Wednesday, February 11, 2015 8:49 AM
To: Netti, Gregory
Subject: PNDI review by PFBC
Attachments: 42243_2-9-2015.pdf

Please find attached a response to your submission for environmental review by the Pennsylvania Fish and Boat Commission.

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Pennsylvania Fish & Boat Commission

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

February 11, 2015

IN REPLY REFER TO
SIR# 42243

Ecology and Environment, Inc.
Greg Netti
368 Pleasant View Drive
Lancaster, New York 14086

**RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No.
Atlantic Sunrise Expansion Project**

Dear Greg Netti:

This is in response to your January 28, 2015 email in which you submitted to the Pennsylvania Fish and Boat Commission (PFBC) a shape file containing the current Atlantic Sunrise Expansion Project centerline and mileposts, and in response to the access road shape file that was overlooked in the PFBC January 27, 2015 response letter to you.

Based on the review of the above referenced shape files, the PFBC is concerned the project will have an impact on the timber rattlesnake (*Crotalus horridus*, PA candidate). The PFBC recommends that a timber rattlesnake habitat assessment be conducted by a qualified rattlesnake surveyor (a list of qualified surveyors and survey protocol was previously provided) in the areas listed in the table below that are to be disturbed by the pipeline and access road construction activities required for the project. Due to the milepost changes each time the alignment is altered, general areas of concern are now noted using local roads.

	County	Area
1	Lebanon	Between Acorn Road and SR 443
2	Schuylkill	Just north of Fisher Acres Lane to SR 209
3	Schuylkill	Between SR 125 and Pine Drive (4009)
4	Schuylkill	Between Deep Creek Road (4020) and Creek Road (4039)
5	Schuylkill/Northumberland	Between Helfenstein Road and SR 901
6	Northumberland	Between Main Street (near Sagon) to Reading Turnpike
7	Clinton	Entire length

Our Mission:

www.fish.state.pa.us

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

After review of the current centerline, mileposts and access road shape files, there are no changes to the freshwater mussel and Bog turtle comments included in the PFBC January 27, 2015 response letter.

The PFBC appreciates the detailed information (GIS shapefiles) provided for this review. Any modification to this corridor could cause the review to change and contact should be initiated to determine the impact(s).

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Heather A. Smiles at 814-359-5194 and refer to the SIR # 42243. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

A handwritten signature in black ink that reads "Heather Smiles". The signature is written in a cursive, flowing style.

Heather A. Smiles, Chief
Natural Gas Section

HAS/dn



Pennsylvania Fish & Boat Commission

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

March 2, 2015

IN REPLY REFER TO
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Greg Netti
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**RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
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Atlantic Sunrise Expansion Project**

Dear Greg Netti:

I have reviewed the timber rattlesnake habitat assessment report dated January 2015, which was prepared by The WHM Group, for the Atlantic Sunrise Project. Upon review of the habitat assessment, which only included the areas identified in our January 27, 2015 response letter, it was concluded that habitats on the proposed project site have the potential to support timber rattlesnakes and determined that critical habitat for timber rattlesnake den and gestation sites may be present on the project site. I concur with their findings based on the report and photographs. Furthermore, we look forward to receiving the timber rattlesnake habitat assessment results on the additional areas of concern noted in our response letter to you dated February 11, 2015, that were not included in the January 2015 habitat assessment report.

Given the above information and in consideration of the status and sensitivity of the timber rattlesnake, the Pennsylvania Fish & Boat Commission recommend that the project avoid potential habitat areas by finding an avoidance route or construction alternative so that a 300 foot buffer be established from the edge of the project disturbance and the potential den (overwintering) habitat that was identified in the assessment. If the project cannot be adjusted, we recommend that a Timber Rattlesnake Presence-Absence Survey be conducted to determine the presence or absence of rattlesnake hibernacula in the project area.

It is important that biologists conducting the surveys have demonstrated experience in detecting timber rattlesnakes and their habitat, possess the skills necessary to handle this venomous species and possess the proper PFBC Scientific Collecting Permit. The surveyor will follow the Rattlesnake Presence-Absence Survey Guidelines (revised 2-27-2015) utilizing the procedures, survey times, and reporting criteria as contained therein.

Our Mission:

www.fish.state.pa.us


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

Because the target habitat type is potential hibernacula/den, the survey window is April 15-May 15. For your convenience, enclosed is a list of qualified rattlesnake surveyors. This list is not an exhaustive list of qualified surveyors in Pennsylvania as there may be qualified surveyors who have not asked to be placed on this list. It is not mandatory that you use someone on this list.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Heather A. Smiles at 814-359-5194 and refer to the SIR # 42243. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

A handwritten signature in black ink that reads "Heather Smiles". The signature is written in a cursive, flowing style.

Heather A. Smiles, Chief
Natural Gas Section

HAS/dn

PENNSYLVANIA FISH & BOAT COMMISSION
Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823-9620

QUALIFIED TIMBER RATTLESNAKE SURVEYORS

The following list includes persons known to the Pennsylvania Fish and Boat Commission (PFBC) to possess skills and have experience in properly searching for and finding timber rattlesnakes (*Crotalus horridus*) and in identifying their critical habitat. This list is not an exhaustive list of qualified surveyors in Pennsylvania as there may be qualified surveyors who have not asked to be placed on the list. Placement on the list is not to be construed as an endorsement of individuals or firms by the PFBC or any of its employees.

Stan Boder
Wildlife Specialists, LLC
2780 Hills Creek Road
Wellsboro PA 16901
Office: 570-376-2255
Cell: 570-952-1169
E-mail: stan@wildlife-specialists.com

Michael Torocco
Herpetological Associates, Inc
1745 Westwood Road
Wyomissing, PA 19507
Phone: 610-670-1017
Cell: 609-618-3998
E-mail: mtorocco@herpetologicalassociates.com

Glenn Johnson, Ph.D.
Professor, Department of Biology
State University of New York at Potsdam
44 Pierrepont Road
Potsdam NY 13676
Office: (315) 267-2710
Home: (315) 268-1649
E-mail: johnsong@potsdam.edu

W.H. Martin
1227 Engle Molers Rd
Harpers Ferry WV 25425
(304) 876-3219
E-Mail: whmartin@crotalus.org

B. Scott Fiegel, Howard K. Reinert Ph.D.
Ecological Associates
PO Box 181
Oley PA 19547-0181
610-987-6585
Bscottfiegel@aol.com

Kathy Michell
KT Wildlife, LLC
42 School St
Narrowsburg, NY 12764
Home: 845-252-3501
Cell: 845-807-7485
E-mail: kmichell@hvc.rr.com

Howard Reinert, Ph.D.
Professor, Biology Department
The College of New Jersey
P.O Box 7718, 2000 Pennington Road
Ewing NJ 08628-0718
Office: (609) 771-2474
hreinert@tcnj.edu

Gian Rocco, Ph.D.
322 Strawberry Hill Road
Centre Hall, PA 16828
Home: 814-364-1204
Cell: (814) 883-8635
gxr124@psu.edu

Randy Stechert
Timber Rattlesnake Consultant
50 School Street
Narrowsburg NY 12764-6432
Home: (845) 252-3517

Robert Zappalorti
Herpetological Associates, Inc.
575 Toms River Road
Jackson NJ 08527
Office: (732) 833-8600
E-mail: Rzappalort@aol.com

Phillip R. Dunning
WHM Group, Inc.
2525 Green Tech Drive
State College, PA 16803
Office: (814) 689-1650 Cell: (215) 815-9571
E-mail: flip3238@aol.com

Chris Camacho
West Branch Limited LLC
416 Short Run Road
Galeton, PA 16922
Office: (814) 435-8274
Cell: (914) 584-1088
E-mail: christopherscamacho@gmail.com

PENNSYLVANIA FISH & BOAT COMMISSION

Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823-9620

Timber Rattlesnake Presence-Absence Survey Guidelines

(revised 2/27/15)

Timber Rattlesnake Natural History

Description

The timber rattlesnake (*Crotalus horridus*) is a large, heavy bodied snake of the pit viper family (Viperidae). Timber rattlesnakes have transverse "V" shaped or chevron-like dark bands on a gray, yellow, black, or brown body color. The tail is completely black with a rattle. The head is large, flat, and triangular, with two thermal-sensitive pits situated between the eyes and the nostrils. The head color of the timber rattlesnake distinguishes two distinct color phases – the dark phase has a completely black head with, generally, black eyes, and the light phase has a yellowish tan to brown head and yellow eyes. The pupils of the eyes are elliptical in shape. The dorsal scales on the timber rattlesnake are strongly keeled, giving it a "rough" appearance. The ventral (underside) of the light phase is yellowish to creamy colored while the dark phase is white with small, dark stipple-like markings. Male and female timber rattlesnakes differ in size and subcaudal scale count. Adult males are usually larger than females (average size of males 42" snout-vent length, compared to 36" for females), and have longer tails (21 or more subcaudal scales between the venter and the rattle).

Life History

Timber rattlesnakes inhabit the forested, mountainous regions of Pennsylvania. Their active season is mid-April through mid-October. They prefer upland forested areas where they forage for small mammals (e.g., mice, and chipmunks). Talus and/or scree slopes, rocky ledges, outcrops, and boulder fields generally with southerly exposures contain the entrances to over-wintering dens. Dens usually have rocky crevices, or other features that provide access to ancestral underground chambers to which the snakes return yearly for hibernation. These sites generally have rocky habitat containing a semi-open canopy close by that is used by gravid females for gestation. Timber rattlesnakes begin emerging (egress) from their dens in mid to late April. Adult males may travel up to 3 to 5 miles away from the den before returning in the fall, unlike non-gravid females, which move approximately 1 to 3 miles from the den, and gravid females, which stay close to the den (100-400m). Timber rattlesnakes begin traveling towards their den sites in September and enter their dens (ingress) for winter dormancy in late September through October.

Rattlesnakes are ambush predators. They identify rodent trails on the forest floor via scent detected with their tongues. They sit and wait for a rodent to pass by on an already established trail before striking them with a venomous bite. After swallowing its prey whole, the timber rattlesnake seeks solar heat exposure to aid digestion of meals by moving to various, usually open, areas to bask.

Females reach reproductive maturity when 7 to 9 years old, as compared to males, which reach reproductive maturity at approximately 5 to 7 years of age. Timber rattlesnakes mate in late summer to early fall (July to mid-September) in Pennsylvania. The young are born live, the following year, in late summer (late August into September) with an average litter size of 5 to 9. Individual females reproduce at intervals of approximately 3 to 5 years. Since the gravid female infrequently feeds during the summer preceding birth of her offspring, the intervening years are necessary for building sufficient body fat to

sustain her through gestation and then hibernation. So despite a life-span of up to 30 years, a female may only have 4 to 7 reproductive attempts during her lifetime.

There appears to be high juvenile mortality, since many young timber rattlesnakes fall prey to a variety of natural predators (e.g., birds of prey, carnivorous mammals). Adult timber rattlesnakes have few natural enemies except humans, whose activities have the greatest direct (e.g., road-kill, illegal/wanton killing) and indirect (e.g., habitat loss) impacts to the timber rattlesnake population.

Distribution

The current range of the timber rattlesnake encompasses 31 states from Vermont and New Hampshire south to northern Florida, west to eastern Texas and then north through eastern Oklahoma, Kansas, and Nebraska, through Iowa into southeastern Minnesota. From southwestern Wisconsin the range retreats south, away from the Great Lakes, through western and southern Illinois and southern Indiana and Ohio.

In Pennsylvania the Allegheny Plateau and the Appalachians are encountered and the range goes north through New York back to southern Vermont and New Hampshire. Prior to European settlement, the range of the timber rattlesnake is thought to have spanned most of Pennsylvania. The current range of the timber rattlesnake is restricted to the more rugged, least accessible, and less populated regions of the Commonwealth. Today, timber rattlesnakes occur in forested, mountainous regions that encompass mainly the central and northeast region of Pennsylvania (e.g., Ridge and Valley Province, Laurel Highlands, Allegheny Plateau, and the Pocono Plateau).

Threats and Conservation

Given the slow maturity, low fecundity, and the many threats posed by the overexploitation of its habitat, the timber rattlesnake is vulnerable to decline. Presently, experts believe that the timber rattlesnake is declining across its range, and in Pennsylvania particularly in the peripheral areas of its range. The decline of the timber rattlesnake is attributed mainly to human activities related to habitat alteration, highways, illegal/wanton killing, and poaching. To date, the timber rattlesnake is protected in over half of the states where it occurs. In Pennsylvania, it is currently listed as a candidate species (an animal that could achieve threatened or endangered status in the future). The timber rattlesnake is legally protected in Pennsylvania and the Pennsylvania Fish and Boat Commission's Natural Diversity Section comments statewide on development projects that have potential to adversely impact timber rattlesnake populations. The Natural Diversity Section is also involved with research projects on monitoring, inventory, and den viability that are being conducted on Pennsylvania timber rattlesnakes.

Impact Review: Development Projects and Potential Conflicts with Timber Rattlesnakes

Many new projects are proposed on lands that are in close proximity to areas that have long been known to harbor timber rattlesnakes. During the environmental review process, the Division of Environmental Services staff may request a timber rattlesnake presence-absence survey if: 1) a timber rattlesnake habitat assessment was positive, and/or 2) the vicinity of the area that is proposed to be developed is currently or historically known to support timber rattlesnakes. Given the terrain, timber rattlesnakes may be utilizing the project area for denning, reproduction (gestation), basking, and/or foraging. These surveys should be conducted by a PFBC-approved timber rattlesnake surveyor (list enclosed). This list is not an exhaustive list of qualified rattlesnake surveyors in Pennsylvania as there may be qualified surveyors who have not asked to be placed on this list. It is not mandatory that you use someone on this list. Following the survey, a report documenting the surveyor's findings is submitted to the PFBC for review and comment. This information is pertinent for the staff to provide recommendations for avoiding adverse impacts from the proposed project to the timber rattlesnake population and its habitat.

Presence - Absence Survey Guidelines/Methods

Habitat Assessment

If a timber rattlesnake habitat assessment has not been conducted, areas within and at least 300ft around the project area need to be identified that are most likely to support timber rattlesnakes (e.g., talus slopes, scree areas, boulder fields, rocky outcrops, rocky right-of-ways). Although search ranges will vary with project location and size, in general, a search range should include the entire project area (including temporary and permanent impacts) and a minimum of 300ft from the project boundary. Results of the habitat assessment, if needed, should be recorded on the Timber Rattlesnake Habitat Assessment Form (2-11-10), which should be requested from the Division of Environmental Services. Presence/absence surveys are to target areas that have been identified as potential hibernacula/den and/or gestation/basking habitats and have a high potential to support timber rattlesnakes.

Sampling Times and Targeted Search Areas

Timber rattlesnake presence-absence surveys are to be conducted when rattlesnakes are active (i.e., no earlier than April 15, nor later than September 15, with an emphasis on the visitations/surveys being completed prior to parturition and when the ground temperature is $\geq 75^{\circ}$ Fahrenheit). Air temperatures should be at or above 65° Fahrenheit, and surveys cannot be conducted during rain events. Surveys are to target areas that have high potential to support timber rattlesnakes (e.g., talus/scree slopes, boulder fields, rocky outcrops, and rocky right-of-ways).

Each of the identified potential habitat areas, must be visited a minimum of four (4) times on separate dates during the date ranges listed below based on the type of habitat identified.

- Potential Hibernacula/Den Areas: April 15 – May 15, minimum of 4 separate surveys for each identified area. Surveys must not be completed on successive days and are to be timed to coincide with the emergence period for the particular region. Note: the completion date of the survey may be extended by obtaining approval from PFBC, Division of Environmental Services, Natural Diversity Section. Consideration will be given based on the progress of emergence across the Commonwealth for that particular year and the region in which the survey is conducted.
- Potential Gestation/Birthing Areas: June 1 – September 15; minimum of 4 separate surveys for each identified area. Surveys must be separated by one (1) week and are to be scheduled and completed prior to parturition to avoid the transition period when snakes are less likely to be encountered.

Site visits should coincide with optimal weather conditions needed to detect rattlesnakes. Sampling of a potential habitat area may cease upon detection of timber rattlesnake presence; however, the PFBC review of potential project impacts will benefit from as much information as can be gathered about the extent of use of each habitat area.

Methods/Handling

Timber rattlesnake surveys should be conducted by PFBC-approved timber rattlesnake surveyors who have the proper skills and permits required (PFBC Type III Scientific Collecting Permit) to handle this venomous species (list enclosed). This list is not an exhaustive list of qualified surveyors in Pennsylvania as there may be qualified surveyors who have not asked to be placed on this list. It is not mandatory that you use someone on

this list. Once the targeted areas and sampling times have been established, the targeted sites are to be visited by qualified personnel and their permit-listed assistants (see PFBC Scientific Collecting Permit). Dens, gestation/birthing areas, and/or individual occurrences are to be mapped and described accordingly. Color phase, sex, total length, snout-vent length (SVL), and reproductive condition should be recorded from timber rattlesnakes observed at the site.

Reporting Requirements

Upon completion of the timber rattlesnake presence-absence survey, the surveyor is to submit a report to this office (Natural Diversity Section) for review. Survey reports are to document both abiotic and biotic parameters observed. The survey report must include the following information:

- Project narrative/description, exact project location, equipment to be used in earth moving activities, alternatives, etc.
- Survey dates, names of surveying personnel, USGS 7.5 minute maps showing the project area relative to the survey location, start and end times, start and end temperature, ground and air temperature, % cloud cover, other weather conditions, and calculation of person hours/search area.

The following information is to be reported from timber rattlesnakes observed at the site:

- Color phase, sex, total length, snout-vent length (SVL), and reproductive condition.

In addition, the following locational information and habitat descriptions are to be reported:

- Exact location (latitude/longitude and map datum used, located on topographic map), color photograph of animal(s), micro and macro habitat descriptions (vegetation descriptions, % cover, rock size and % cover), color photographs of habitat (dated, labeled, and keyed to a map), all herpetofauna seen, and any behavioral notes.

From: Allen, Anne
To: Smith, Rachel; MacLeod, Steven; Netti, Gregory; Moore, Joel
Cc: Gregory, Amanda
Subject: FW: Atlantic Sunrise Project - Seasonal Restriction and Waiver Request Clarification
Date: Tuesday, March 3, 2015 9:10:40 AM
Attachments: Image001.jpg

From: Blascovich, Sara [mailto:SBlascovich@trcsolutions.com]
Sent: Monday, March 02, 2015 2:29 PM
To: Smiles, Heather A
Cc: Allen, Anne; Gregory, Amanda; Zimmer, John; Netti, Gregory
Subject: RE: Atlantic Sunrise Project - Seasonal Restriction and Waiver Request Clarification

Thanks for the quick response Heather. I don't think we have any additional questions at this time.

From: Smiles, Heather A [mailto:hsmiles@pa.gov]
Sent: Monday, March 02, 2015 3:12 PM
To: Blascovich, Sara
Cc: Allen, Anne; Gregory, Amanda; Zimmer, John; Netti, Gregory
Subject: RE: Atlantic Sunrise Project - Seasonal Restriction and Waiver Request Clarification

Sara,

Your trout seasonal timing restriction periods in your table below are correct.

Unnamed tributaries with perennial and intermittent flow will carry the same trout designation as the waterbody they are tributary to as follows:

- Tributaries to wild trout streams are classified as wild trout streams for their function as habitat for segments of wild trout populations, including nurseries and refuges, and in sustaining water quality necessary for wild trout.
- Tributaries to stocked trout streams will only have the March 1 to June 15 instream construction restriction if the work in the tributary occurs within 0.5 miles of the stocked trout stream.

PFBC does not typically issue waiver requests for naturally reproducing wild trout streams or Class A trout streams.

PFBC Natural Gas Section will coordinate directly with our WCO's, if necessary, regarding a waiver request.

There could be warm water fisheries timing restrictions (for example, anadromous fish restrictions) and also timing restrictions if there was a species of concern in that warm water with a different spawning/nesting period.

Please contact me now if you have additional questions or concerns.

Thanks,

Heather Smiles | Chief, Natural Gas Section
Division of Environmental Services | PA Fish & Boat Commission
450 Robinson Lane | Bellefonte PA 16823
Phone: (814) 359-5194 | Fax: (814) 359-5175
hsmiles@pa.gov

From: Blascovich, Sara [<mailto:SBlascovich@trcsolutions.com>]
Sent: Monday, March 02, 2015 1:55 PM
To: Smiles, Heather A
Cc: Allen, Anne; Gregory, Amanda; Zimmer, John; Netti, Gregory
Subject: Atlantic Sunrise Project - Seasonal Restriction and Waiver Request Clarification

Good afternoon, Heather-

As a follow up from our December meeting and in preparation of our permit application packages, we would like to confirm our understanding of the seasonal construction restrictions and waiver request requirements.

The following table is our understanding of current seasonal timing restrictions by the designated Fish and Boat Commission trout listing:

Trout Designation	Construction Restriction
Stocked Trout Stream	March 1 to June 15
Stream Section that Supports Naturally Reproducing Trout	October 1 to December 31
Class A Wild Trout Stream	October 1 to April 1

Based on our prior discussion, unnamed tributaries with perennial and intermittent flow will carry the same trout designation as the waterbody they are tributary to.

Additionally, it is our understanding that waiver requests can be made in specific instances where there is not a practicable means to completing construction without the waiver. Per our December 18, 2014 meeting, PFBC does not typically issue waivers for Class A Wild Trout Streams, and any waiver request for a stocked stream would need approval from your office and the local WCO. We assume that PFBC will coordinate directly with the local WCO and provide a single approval.

It was also our understanding that there are no additional restrictions on warm water fisheries, aside from if the particular waterbody has a trout designation.

Please let me know if we have appropriately captured the PFBC's seasonal restrictions as well as your position on waiver requests.

Thanks!

Sara Blascovich

Senior Regulatory Analyst/Project Manager

trc-logo-blue



300 North 2nd Street, Suite 600, Harrisburg, PA 17101

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Telephone Call Summary Sheet

By:	Ryan Nelson, (WHM Consulting, Inc.)	Date:	06/02/15
Talked With:	Heather Smiles	Project Number:	WHM#-EEI-020,023
Of:	PFBC	Project Name:	Atlantic Sunrise Project
Telephone Number:	814-359-5194	Subject:	Timber Rattlesnake Dens and Bog Turtle Findings – 2015 P/A Surveys

I spoke to Heather Smiles of the PFBC this morning in regards to the timber rattlesnake dens found along Chapman and CPLS and also about the Bog Turtles found on CPLS.

Timber Rattlers

I discussed that 2 dens were found on the project, one on Chapman and one on CPLS.

For Chapman, I told her the den was found away from the project and will not be impacted, therefore this den is a non-issue. She had nothing to add to this.

For CPLS, I discussed with her the den that was found on [REDACTED] where the current proposed route has a conflict with the den and asked for her opinion on our proposed re-route. I explained that the project is co-locating the [REDACTED] overlapped with the den location. The currently proposed pipeline route [REDACTED] the den. I then said our proposed avoidance would be for the project to continue co-locating,

[REDACTED] away from the den. [REDACTED] from the den. I stated that this is being proposed to avoid the den being impacted by the project along with limiting the forest fragmentation on the state game lands. She understood and agreed that this seems like an adequate plan. Additionally, she said to expect a timber rattlesnake monitoring requirement while activities are being completed in this area.

Bog Turtles

I discussed with her the bog turtle finding [REDACTED] I told her that we completed the spring Phase 2 and 3 surveys, and are currently collecting telemetry data weekly during the active season and monthly during the inactive season. I told her that this was a new site for turtles and the area where the turtles seem to be concentrated (and where our qualified surveyor believes they are hibernating) is currently away from the project impacts. Since the Project will impact the wetland the turtles are in, she asked how we are avoiding the population. I said the wetland [REDACTED] [REDACTED]. She seemed fine with everything currently going on here: the current pipeline location, the survey results and continued telemetry surveys.

MacLeod, Steven

From: MacLeod, Steven
Sent: Monday, June 08, 2015 4:25 PM
To: 'Smiles, Heather A'
Cc: Zoladz, Justin A.
Subject: RE: Atlantic Sunrise Susquehanna mussel survey

Heather,

Attachment received, thank you.

To summarize our discussion this afternoon:

- PFBC would require a mussel survey and relocation effort at both Susquehanna crossings if impacts were anticipated from the Atlantic Sunrise Project, e.g., through the use of an open-cut crossing method.
- While Transco anticipates avoiding impacts at these crossings through the use of HDD, the company may conduct a baseline mussel survey at the Susquehanna crossings in case an alternate crossing method becomes necessary or other unanticipated impact occurs.
- For baseline survey purposes, PFBC would expect to see a "Phase 1" level of effort, as described in the protocol that you provided. Any mussel surveys should be completed prior to October 15, or when the river temperature drops below 55 degrees, whichever comes first, as described in the protocol.
- If a mussel survey were conducted during the summer of 2015, then for permitting purposes PFBC would consider the results of the survey valid even if construction did not actually commence until fall of 2016 (i.e., more than 12 months after the baseline survey was performed).
- No federally listed mussel species are known to occur at either Susquehanna River crossing.
- The latest PFBC list of qualified mussel surveyors for the Atlantic Slope was updated February 2015.

Please let me know if I have misinterpreted anything, or if you think of any other detail that may be helpful in developing a scope of work for a baseline mussel survey.

Regards,
Steve



ecology and environment, inc.

Steven MacLeod, *Environmental Scientist*
368 Pleasant View Drive, Lancaster, NY 14086
Phone: 716-684-8060 Ext: 3907 • Cell: 716-462-0845
smacleod@ene.com • www.ene.com

From: Smiles, Heather A [<mailto:hsmiles@pa.gov>]
Sent: Monday, June 08, 2015 3:14 PM
To: MacLeod, Steven
Cc: Zoladz, Justin A.
Subject: RE: Atlantic Sunrise Susquehanna mussel survey

Steven,

Here's the protocol we spoke about.

Thanks,
Heather

From: MacLeod, Steven [<mailto:SMacLeod@ene.com>]
Sent: Friday, June 05, 2015 4:02 PM
To: Smiles, Heather A
Cc: Zoladz, Justin A.
Subject: RE: Atlantic Sunrise Susquehanna mussel survey

Okay, thanks. Will try to catch you then.

Cheers,
Steve



Steven MacLeod, *Environmental Scientist*
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Phone: 716-684-8060 Ext: 3907 • Cell: 716-462-0845
smacleod@ene.com • www.ene.com

From: Smiles, Heather A [<mailto:hsmiles@pa.gov>]
Sent: Friday, June 05, 2015 2:29 PM
To: MacLeod, Steven
Cc: Zoladz, Justin A.
Subject: RE: Atlantic Sunrise Susquehanna mussel survey

Steve,

I am available all day Monday if you'd like to call me at my office. 814-359-5194

Thanks,

Heather Smiles | Chief, Natural Gas Section
Division of Environmental Services | PA Fish & Boat Commission
450 Robinson Lane | Bellefonte PA 16823
Phone: (814) 359-5194 | Fax: (814) 359-5175
hsmiles@pa.gov

From: MacLeod, Steven [<mailto:SMacLeod@ene.com>]
Sent: Friday, June 05, 2015 11:39 AM
To: Smiles, Heather A
Cc: Zoladz, Justin A.
Subject: Atlantic Sunrise Susquehanna mussel survey

Dear Heather,

I am working on Transco's Atlantic Sunrise Project with Justin Zoladz and Ryan Nelson (among others). I have a few questions regarding a potential baseline mussel survey at the two Susquehanna River crossings. Is there a good time for me to call you to discuss these questions?

Sincerely,
Steve



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MacLeod, Steven

From: Smiles, Heather A <hsmiles@pa.gov>
Sent: Thursday, June 18, 2015 9:29 AM
To: MacLeod, Steven
Cc: Smith, Rachel
Subject: RE: Atlantic Sunrise Susquehanna mussel survey

Categories: Agency Communication

Steve,

Yes, that is acceptable.

Heather

From: MacLeod, Steven [mailto:SMacLeod@ene.com]
Sent: Tuesday, June 16, 2015 8:36 PM
To: Smiles, Heather A
Cc: Smith, Rachel
Subject: RE: Atlantic Sunrise Susquehanna mussel survey

Hello Heather,

After sending the message below, I found that the December 2005 guidelines you provided indicate that a Phase 1 survey should encompass

"an area extending at least 500 feet upstream and laterally from the proposed dredging area, and an area 1500 feet downstream of the dredging area." Therefore, unless you advise otherwise, we will use these limits for the extent of the survey areas at both Susquehanna crossings.

Thanks again,
Steve



Steven MacLeod, *Environmental Scientist*
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Phone: 716-684-8060 Ext: 3907 • Cell: 716-462-0845
smacleod@ene.com • www.ene.com

From: MacLeod, Steven
Sent: Tuesday, June 16, 2015 2:25 PM
To: 'Smiles, Heather A'
Cc: Smith, Rachel
Subject: RE: Atlantic Sunrise Susquehanna mussel survey

Hello Heather,

We are considering a mussel survey study area that measures half the river width upstream of a proposed crossing and three times the width downstream (e.g., for a 200m width, the limits of the survey would be 100m upstream and 600m downstream). Is this an acceptable area for our baseline survey?

Thank you,
Steve



ecology and environment, inc.

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From: Smiles, Heather A [<mailto:hsmiles@pa.gov>]
Sent: Monday, June 08, 2015 3:14 PM
To: MacLeod, Steven
Cc: Zoladz, Justin A.
Subject: RE: Atlantic Sunrise Susquehanna mussel survey

Steven,

Here's the protocol we spoke about.

Thanks,
Heather

From: MacLeod, Steven [<mailto:SMacLeod@ene.com>]
Sent: Friday, June 05, 2015 4:02 PM
To: Smiles, Heather A
Cc: Zoladz, Justin A.
Subject: RE: Atlantic Sunrise Susquehanna mussel survey

Okay, thanks. Will try to catch you then.

Cheers,
Steve



ecology and environment, inc.

Steven MacLeod, *Environmental Scientist*
368 Pleasant View Drive, Lancaster, NY 14086
Phone: 716-684-8060 Ext: 3907 • Cell: 716-462-0845
smacleod@ene.com • www.ene.com

From: Smiles, Heather A [<mailto:hsmiles@pa.gov>]
Sent: Friday, June 05, 2015 2:29 PM
To: MacLeod, Steven
Cc: Zoladz, Justin A.
Subject: RE: Atlantic Sunrise Susquehanna mussel survey

Steve,

I am available all day Monday if you'd like to call me at my office. 814-359-5194

Thanks,

Heather Smiles | Chief, Natural Gas Section
Division of Environmental Services | PA Fish & Boat Commission
450 Robinson Lane | Bellefonte PA 16823

Phone: (814) 359-5194 | Fax: (814) 359-5175
hsmiles@pa.gov

From: MacLeod, Steven [<mailto:SMacLeod@ene.com>]
Sent: Friday, June 05, 2015 11:39 AM
To: Smiles, Heather A
Cc: Zoladz, Justin A.
Subject: Atlantic Sunrise Susquehanna mussel survey

Dear Heather,

I am working on Transco's Atlantic Sunrise Project with Justin Zoladz and Ryan Nelson (among others). I have a few questions regarding a potential baseline mussel survey at the two Susquehanna River crossings. Is there a good time for me to call you to discuss these questions?

Sincerely,
Steve



ecology and environment, inc.

Steven MacLeod, *Environmental Scientist*
368 Pleasant View Drive, Lancaster, NY 14086
Phone: 716-684-8060 Ext: 3907 • Cell: 716-462-0845
smacleod@ene.com • www.ene.com

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Meeting Summary

Attendees:

PFBC: Heather Smiles and Gregory Lech

Transco: Joseph Dean and David Sztrajn

E & E: Casey Talento, Joel Moore (call-in), and Steven Macleod (call-in)

WHM: Ryan Nelson

Meeting Date: 23 July 2015

Project: Atlantic Sunrise Project

Project Segment: Pipeline facilities in Pennsylvania

Meeting Location: PFBC Northcentral Outreach and Education Office -- Pleasant Gap, PA

Meeting Time: 1:00 PM

Issues/Keywords: Project update; survey update; timber rattlesnake; bog turtle; mussel surveys; trout stream crossings

Transcontinental Gas Pipe Line Company, LLC (Transco) held a meeting with the U.S. Fish and Wildlife Service (USFWS) on July 23, 2015 to discuss topics related to state-listed threatened and endangered species surveys, mussel survey, and time of year restrictions for trout stream crossings. The project status was briefly discussed to begin the meeting. Summaries of discussion topics are provided below.

Timber Rattlesnake

- Two dens were identified during Phase 2 surveys in the vicinity of the project: [REDACTED]
[REDACTED] Transco adjusted the alignment of CPL South to create [REDACTED] PFBC concurred that the route adjustment around the den is an appropriate avoidance measure and that construction could be completed any time of year in this location. PFBC will likely require timber rattlesnake construction monitoring at this den should construction take place during the snake's active season (approximately April 15 to October 15). The den [REDACTED] does not require any route adjustment due to its distance from the workspace. Although not discussed during the meeting, Transco assumes that construction monitoring will also be required in this location if construction take place during the snake's active season.
- WHM's 2015 gestation survey results were discussed. Potential gestation habitat was present at five of the seven areas surveyed for rattlesnakes in 2015. Only one confirmed gestation area was found in the vicinity of the project, located near [REDACTED]. Although not discussed at the meeting, the location of this confirmed gestation site is outside of the Project workspace. No other surveyed areas were identified as having confirmed gestation habitat. The need to rebuild impacted, potentially suitable gestation habitat was discussed in general terms. PFBC indicated that if building gestation habitat is requested, the habitat should be built in areas that would not be disturbed again (future loops, etc.) and that would be used by timber rattlesnakes (near to existing hibernacula with similar environmental conditions). The PFBC did not identify specific habitat reconstruction requirements during this meeting but will make a final determination following their review of a survey report (pending).
- Two no-access areas were discussed briefly to determine if it would be possible for Transco to clear these areas of potential timber rattlesnake issues using desktop information and, if so, what information would be considered adequate to do so. PFBC indicated that once they have the survey reports and can review these areas, they will

make a determination if desktop review would be satisfactory, or if Transco will need to field survey these areas once access becomes available.

Bog Turtle

- Survey results were described for Phase 2 and 3 surveys completed in 2015. Only one wetland had confirmed presence of bog turtles: V. [REDACTED]
[REDACTED] Eleven bog turtles were captured in this wetland, and eight suitably mature turtles were fitted with transmitters and are actively being tracked through 2015. Phase 3 tracking survey results to date, including hand capturing, trapping, and telemetry, show that bog turtles are inhabiting [REDACTED]
[REDACTED] WHM explained that telemetry is taking place weekly during the active season and monthly during the inactive season. Transco is monitoring bog turtle activity in the wetland and will use the tracking data to design the crossing in a manner which avoids and minimizes impacts to bog turtles inhabiting the wetland.

Susquehanna River Mussel Surveys

- Mussel surveys of the two Susquehanna River crossings are proposed as a contingency in case difficulties arise with the proposed HDD activities, such that in-water work is required. Transco indicated that geotechnical investigations of the crossings have been recently completed or are scheduled in August, and Transco will have a better understanding of HDD strategies once those investigations are complete and have been evaluated.
- Surveys are planned for the 2015 survey season, which Ms. Smiles confirmed would end October 15. Transco is evaluating proposals from two companies that have malacologists who are qualified to perform the surveys in this portion of Pennsylvania. Ms. Smiles confirmed that Transco/E&E representatives can contact her once a surveyor is selected to discuss the proposed survey plan with the PFBC malacologist, Nevin Wolfe. Ms. Smiles indicated that her office would be interested in receiving a copy of the final proposed survey plan for review, but that she expected the surveyor to know the process for obtaining the Scientific Collector Permit through a separate PFBC section.

Trout Stream Crossings

- PFBC will expect another round of review of stream crossings, fisheries classifications, and construction windows based on new field data and any route modifications adopted since PFBC's last review. PFBC requested that the next crossing table submitted for review highlight changes or new crossings to facilitate review, as has been done in the past, and that shapefiles providing crossing locations are included with the table.
- PFB indicated that the trout stocking schedule is typically finalized during February of each year. The 2015 stocking schedule and locations are good indicators of likely schedule and locations for 2016. It is unlikely that there will be extensive changes to the 2016 schedule.
- Transco discussed the challenges the in-stream construction windows present for a large scale project, particularly in light of other timing restrictions that apply to the same area. Typical construction methods, time requirements for stream crossings, and complications related to segmenting the pipe installation into many sections were presented to provide context to the discussion. Transco indicated that they are interested in working with PFBC informally prior to formal waiver requests to ensure that high priority resources and other PFBC sensitivities are accounted for in construction planning.
- PFBC indicated they would be least likely to grant waiver requests for perennial natural trout reproduction (Wild Trout, including Class A) streams.
- PFBC indicated that construction restrictions for approved trout waters and trout stocked streams are geared towards protecting angling opportunities. PFBC would consider construction window waivers on approved trout waters and trout stocked streams based on the timing and location of stocking with respect to construction. Waivers would be less likely within 0.5 miles of stocking locations. PFBC indicated that waivers for crossings located closer to stocking locations may be considered if construction is completed early in the March 1 - June

15 restriction period prior to stocking, or later during that period if the last stocking event is "earlier" in the stocking restriction window. PFBC indicated that they may consider allowing crossings on June 1st if a significant amount of time had passed since the last scheduled stocking. PFBC mentioned that fishing is heavy for about 10 days after a stream is stocked.

- PFBC would be more likely to consider waiver requests for crossings of streams that support natural trout reproduction (Wild Trout) during the earlier part of the construction restriction period (October 1 - November 1) and stated that spawning sensitivity is greater in the later part of the restriction period.
- PFBC would consider waivers on a site-specific basis and would look at site photos, trout species present, flow regime (Ephemeral, Intermittent, Perennial) at the time of the proposed crossing, stream width, and other descriptive data. PFBC is receptive to working with Transco to consider specific crossings prior to formal waiver requests, including possible site-visits in October/November 2015, but would have difficulty doing this earlier due to existing workload. It was noted that October/November site-visits would be more indicative of site conditions at the time of crossing in 2016.

Other Fishery Topics

- PFBC inquired about ATON plans and blasting permits, reminding Transco that these items will need to be addressed for stream crossings as appropriate.

Next Steps and Action Items

- E&E will provide an updated stream crossing list for PFBC review in September/October 2015.
- Transco will evaluate the potential need for waivers to in-stream construction timing restrictions based on construction feasibility; though construction planning will comply with these restrictions to the greatest extent practicable. Transco will prioritize stream crossings for potential waiver requests that are least sensitive to PFBC concerns over trout fisheries based on the information discussed in this meeting. Transco will coordinate with PFBC during the Summer/Fall 2015 to determine what additional information may be provided to assess streams that are identified as potential candidates for timing restriction waivers, and follow up with this information as appropriate. Transco may schedule site visits to specific crossings with PFBC during October/November 2015, as deemed necessary.

- End of Notes -

Commented [jm1]: Greg, this wasn't discussed this explicitly, but is the general sense of what the next steps seem to be. Cosoy and Joe discussed this after the meeting. She may be able to confirm or provide more specifics.
Or we can see what Joe says after reviewing??



ecology and environment, inc.

International Specialists in the Environment

BUFFALO CORPORATE CENTER

368 Pleasant View Drive

Lancaster, New York 14086

Tel: (716) 684-8060, Fax: (716) 684-0844

July 29, 2015

Heather Smiles

Pennsylvania Fish and Boat Commission

Natural Gas Section

450 Robinson Lane

Bellefonte, PA, 16823

Re: Transcontinental Gas Pipe Line Company, LLC. – Atlantic Sunrise Project
SIR No. 42243
2015 Timber Rattlesnake Survey Report

Dear Ms. Smiles:

Ecology and Environment, Inc. (E & E), on behalf of Transcontinental Gas Pipe Line Company, LLC (Transco), contracted WHM Consulting, Inc. (WHM) to conduct a Phase I habitat assessment and Phase II denning presence/absence survey for the Pennsylvania candidate species Timber rattlesnake (*Crotalus horridus*) for the above-referenced Project. Enclosed are three (3) hard copies and one CD of the *Timber Rattlesnake (Crotalus horridus) Phase I Habitat Assessment and Phase II Denning Presence/Absence Report – July 2015* for your review.

This report updates the *Timber Rattlesnake (Crotalus horridus) Habitat Survey Report* submitted to PFBC on February 6, 2015 and includes the previously reported findings of the 2014 Phase I habitat surveys, the results of the additional Phase I surveys completed in 2015, and all Phase II denning presence/absence surveys performed in 2015. Therefore, please consider this as a stand-alone report, incorporating data from the previous February report, in addition to the new findings.

Note that this report also reflects discussions with Pennsylvania Fish and Boat Commission (PFBC) staff during a meeting on Thursday, July 23, 2015. A complete summary of that meeting will be submitted to the PFBC for review in the near future.

Please do not hesitate to contact me at (716) 684-8060, or gnetti@ene.com, if you have any questions regarding this submittal. We look forward to continuing consultation with the PFBC on the timber rattlesnake and other state and federally-listed species associated with Transco's Atlantic Sunrise Project.

Sincerely,
ECOLOGY & ENVIRONMENT, INC.

Greg Netti
Project Manager

Ms. Heather Smiles
July 29, 2015

Enclosures: 2015 Timber Rattlesnake Survey Report – July 2015 (3 hardcopies and 1 CD)

CC: Joe Dean, Transco
Steven MacLeod, E & E
Ryan Nelson, WHM



ecology and environment, inc.

Global Environmental Specialists

BUFFALO CORPORATE CENTER

368 Pleasant View Drive, Lancaster, New York 14086

Tel: (716) 684-8060, Fax: (716) 684-0844

LETTER OF TRANSMITTAL

Attention: Heather Smiles
Company: Pennsylvania Fish & Boat Commission – Natural Gas Section
Address: 450 Robinson Lane
City: Bellefonte, PA, 16823
From: Steven MacLeod
Date: 4 August 2015

**Please be advised
we are sending the
following:**

- | | | |
|--|--|---|
| <input type="checkbox"/> Draft Text | <input checked="" type="checkbox"/> Enclosed | <input type="checkbox"/> Under separate cover via |
| <input checked="" type="checkbox"/> Final Text | <input checked="" type="checkbox"/> Figures/Tables | |
| <input type="checkbox"/> Confidential Text | <input type="checkbox"/> Photographs | |
| | <input type="checkbox"/> Drawings | |

Number of copies	Description
1	Hardcopy of July 2015 Draft Biological Assessment for the Atlantic Sunrise Project

These items are being transmitted:

- | | |
|--|--|
| <input type="checkbox"/> As requested | <input type="checkbox"/> To resubmit for approval |
| <input type="checkbox"/> Approved with corrections noted | <input type="checkbox"/> Returned with corrections |
| <input type="checkbox"/> To submit for distribution | <input checked="" type="checkbox"/> For your review and comments |

Comments:

Courtesy copy for your consideration, particularly with respect to bog turtle.



Telephone Call Summary Sheet

By:	Steven MacLeod	Date:	09-03-2015 (08:30)
Spoke With:	Heather Smiles and Nevin Welte	Project Number:	1000891.0009.06.01
Of:	PA Fish & Boat Commission	Project Name:	Atlantic Sunrise
Telephone Number:	800-747-5150 (conf. call)	Subject:	Susquehanna Mussel Surveys

Call Purpose:

Review of freshwater mussel survey method proposed for the Project's two Susquehanna River crossings.

Call Summary:

Mr. MacLeod (E&E) and Ryan Schwegman (EnviroScience) spoke with Ms. Smiles and Mr. Welte to discuss and obtain concurrence of the proposed baseline mussel survey method for the Project's Susquehanna River crossings in Wyoming and Columbia Counties. Mr. MacLeod reiterated that the proposed crossing method is horizontal directional drilling (HDD), so the surveys are proposed as a pre-caution in case difficulties arise with the HDD plan such that in-water disturbance occurs (e.g., through the use of an open-cut strategy).

The surveys will generally be conducted according to the PFBC 2005 mussel survey protocol for the Allegheny and Ohio River systems. Transects would be spaced 50m apart within 150m of the proposed routes, and additional transects would be set 100m apart between 150m and 450m downstream of the routes. The surveys will likely be conducted by boats using divers depending on river levels/flows, which have recently been relatively low.

Mr. Welte agreed that this approach is suitable based on the conditions of the Susquehanna at these crossings, the unlikely presence of listed species, and the lack of proposed in-water impacts. He also agreed that additional searches between the transects would not be necessary for this baseline effort, given the conditions of the river and the tighter (50m) transect spacing near the proposed crossing.

Mr. Schwegman indicated that EnviroScience would be ready to mobilize as soon as Tuesday, September 8th pending finalization of paperwork. Mr. Welte indicated that, in contrast to the 2005 protocol date of October 15th, surveys should be completed by September 30th based on other recent surveys that indicate mussels may begin burrowing deeper in early October. Mr. MacLeod noted that the Wyoming County crossing survey would be performed first because there is an access area that facilitates shoreline observation of the initial survey activities. Ms. Smiles and Mr. Welte asked to be notified of when the surveys were going to occur, but they were unsure if PFBC staff would be able to visit the sites during either survey.



Pennsylvania Fish & Boat Commission

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

December 8, 2015

IN REPLY REFER TO
SIR# 42243

Ecology and Environment, Inc.
Greg Netti
368 Pleasant View Drive
Lancaster, New York 14086

**RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
Atlantic Sunrise Expansion Project
Susquehanna River Mussel Report**

Dear Greg Netti:

We have reviewed the EnviroScience "Draft report: Freshwater Mussel Surveys for the Two Proposed Pipeline Crossings of the Susquehanna River in Wyoming and Columbia Counties, Pennsylvania, 2015". According to the resulting report, a total of 16 live mussels were found during the two surveys. These species included the Green Floater (*Lasmigona subviridis*), Elktoc (*Alasmidonta marginata*), Yellow Lampmussel (*Lampsilis cariosa*), Creeper (*Strophitus undulatus*), and the Eastern Floater (*Pyganodon grandis*).

Since Transco intends to cross under the Susquehanna River at both the Wyoming and Columbia County locations using horizontal direction drilling, the Pennsylvania Fish and Boat Commission (PFBC) recommends that the applicant implement the following contingencies to prevent impacts to water quality from drilling/boring operations:

- Have an environmental inspector on site for the duration of the entire crossing operation.
- Stop the bore/drill immediately if anyone on site observes an inadvertent Return.
- Have a Vac Truck on site or on call (within three hours) to begin clean-up of the release in the stream channel to prevent downstream migration of drilling fluids.
- Notify PFBC Bureau of Law Enforcement Regional Office within 24 hours (NC 814-359-5250; NE 570-477-5717; NW 814-337-0444; SW 814-445-8974).

Additionally, I recommend that any release of sediment to the stream should be reason to initiate contact with the PFBC Bureau of Law Enforcement to address these issues. Any unauthorized disturbance, unpermitted discharge, or release of sediment(s) that is determined to be a pollution event (generally described <http://www.fish.state.pa.us/fishpub/summary/reporting.html>) per the Pennsylvania Fish and Boat Code will be subject to the appropriate legal enforcement action.

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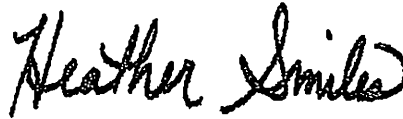
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Provided that these recommendations are followed, as well as best management practices and an approved strict erosion and sedimentation control plan is maintained, then I do not anticipate the proposed activity to have any significant adverse impacts to the freshwater mussel species of special concern.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Heather A. Smiles at 814-359-5194 and refer to the SIR # 42243. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

A handwritten signature in black ink that reads "Heather Smiles". The signature is written in a cursive, flowing style.

Heather A. Smiles, Chief
Natural Gas Section

HAS/dn

Cc: Steven MacLeod, E&E
Nevin Welte, PFBC



Pennsylvania Fish & Boat Commission

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

January 28, 2016

IN REPLY REFER TO
SIR# 42243

Ecology and Environment, Inc.
Greg Netti
368 Pleasant View Drive
Lancaster, New York 14086

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No.
Atlantic Sunrise Project

Dear Greg Netti:

This responds to your recent correspondence related to the Atlantic Sunrise Project in regards to a Pennsylvania Natural Diversity Inventory (PNDI) threatened and endangered species impact review. On January 11, 2016, an updated *Timber Rattlesnake (Crotalus horridus) Phase I Habitat Assessment and Phase II Denning Presence/Absence Report*, prepared by WHM Consulting, Inc., was submitted to our office for review.

The purpose of your investigation was to determine whether habitat for the timber rattlesnake exists within 300 feet of the limit of disturbance (LOD) of the proposed project. Following identification of potential timber rattlesnake habitat during Phase I surveys, WHM completed Phase II presence/absence surveys of potential denning and gestation habitats identified within the study area. A review of this updated report revealed the following:

Presence/Absence Survey Results

Survey Area 4 along Central Penn Line(CPL) South – Schuylkill County

A timber rattlesnakes den was confirmed in this project area. Due to the discovery of this den, Transco has [REDACTED] By doing this, there will [REDACTED]

[REDACTED] therefore, if the work is to be conducted out of the active season of the timber rattlesnake, then I do not anticipate any adverse impacts to this species of special concern. However, if work is to be conducted from April 15-October 15 [REDACTED]

[REDACTED] then I recommend that you take the following precautions to safeguard workers and

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rattlesnakes:

1. A Pennsylvania Fish and Boat Commission (PFBC) approved timber rattlesnake biologist who has the proper permits (Scientific Collector's Permit), and the proper skills to handle this venomous species will be on-site prior to and during construction.

2. The PFBC approved timber rattlesnake biologist will be on-site prior to and during construction activities, during the above time frame, to inspect and clear the area (including staging areas and access roads) of timber rattlesnakes and to capture and remove any rattlesnakes that may interfere with work activities.

3. Timber rattlesnakes observed on-site are to be measured, sexed, and the habitat characterized where the snake was found. All captured snakes should be released within close proximity (under 100 meters) of the capture site if possible. Rattlesnake captures and relocations are to be documented by photographs, habitat descriptions, in addition to being mapped and labeled accordingly. The biologist is to submit a report to this office (Natural Diversity Section) following the completion of the project documenting all of the activity and herpetofauna encountered.

4. If erosion control fabric is to be used at this site, materials that are known to reduce the risk of snake entrapment should be selected, such as loosely woven natural fiber ECM. Use of monofilament/plastic netting should be avoided.

5. Workers responsible for implementing this project should be advised that timber rattlesnakes may be encountered and that avoidance is the best means of minimizing risks to personal safety. It is suggested a procedure be implemented for timber rattlesnake encounters and workers are to be advised that the timber rattlesnake is a state protected species and is not to be harmed. Killing of timber rattlesnakes is prohibited by the Commission pursuant to 58 Pa. Code Section 79.6.

6. During the construction period, PFBC personnel may communicate with the on-site biologist and may visit the site area periodically to view the progression of the project and answer any questions or concerns that may arise. For safety purposes, PFBC personnel will register with the on-site manager upon entering the construction area.

[REDACTED]

A timber rattlesnake den and gestation habitat was confirmed in this project area. The proposed pipeline alignment and access road avoids the confirmed den habitat [REDACTED]. Both critical habitat areas should not be impacted by construction of the project; however, other [REDACTED] which is also located on the north side of the proposed pipeline, but much closer than the confirmed den habitat. PFBC would like to point out that if the new pipeline loop could be constructed [REDACTED] the confirmed den and other potential critical habitat areas identified could be completely avoided.

Given the documented occurrences of timber rattlesnakes along [REDACTED] a PFBC approved timber rattlesnake biologist should also be on-site during all construction activities taking place from April 15 – October 15th.

Remaining Areas To Be Surveyed

Area 6 of CPL South- Southern Portion

If the potential den habitat identified in this area during the Phase I survey cannot be avoided and the project adjusted, we recommend that a Phase II timber rattlesnake presence-absence survey be conducted to determine the presence or absence of rattlesnake hibernacula in the project area in the spring of 2016.

0.5 mile segment of Area 5 of CPL South

PFBC concur with your potential survey scenarios for this inaccessible parcel as detailed in your January 2016 report and we look forward to the forthcoming additional information about this area in order to render a decision on whether the pipeline project has the potential to impact timber rattlesnakes or their critical habitat in this 0.5 mile segment.

PFBC Rattlesnake Presence-Absence Survey Guidelines (revised 2-27-2015) and a list of qualified rattlesnake surveyors are enclosed for your convenience. This list is not an exhaustive list of qualified surveyors in Pennsylvania as there may be qualified surveyors who have not asked to be placed on this list. It is not mandatory that you use someone on this list.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Heather A. Smiles at 814-359-5194 and refer to the SIR # 42243. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,



Heather A. Smiles, Chief
Natural Gas Section

HAS/dn



Pennsylvania Fish & Boat Commission

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

May 31, 2016

IN REPLY REFER TO
SIR# 42243

Ecology and Environment, Inc.
Greg Netti
368 Pleasant View Drive
Lancaster, New York 14086

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
Atlantic Sunrise Project
2016 Timber Rattlesnake Survey Report – May 2016

Dear Greg Netti:

This responds to your recent correspondence related to the Atlantic Sunrise Project in regards to a Pennsylvania Natural Diversity Inventory (PNDI) threatened and endangered species impact review. On May 16, 2016, we received the *Timber Rattlesnake (Crotalus horridus) Phase I Habitat Assessment and Phase II Presence/Absence Report* dated May 2016, prepared by WHM Consulting, Inc., for our review.

In 2016 you conducted a Timber Rattlesnake (*Crotalus horridus*) presence/absence survey (Phase 2) for the above-referenced project at two remaining areas not previously accessible to survey. These two areas included a small portion of CPL South - Survey Area 5 and Area 6, as described in our January 28, 2016 response letter to you. According to the resulting report, no species of concern were found and the site likely is not occupied by the Timber Rattlesnake (*Crotalus horridus*). I concur with the results of this evaluation; therefore, I do not foresee the proposed project resulting in adverse impacts to the Timber Rattlesnake (*Crotalus horridus*) at those two project areas.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

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If you have any questions regarding this review, please contact Heather A. Smiles at 814-359-5194 and refer to the SIR # 42243. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

A handwritten signature in black ink that reads "Heather Smiles". The signature is written in a cursive, flowing style.

Heather A. Smiles, Chief
Natural Gas Section

HAS/dn



Pennsylvania Fish & Boat Commission

Division of Environmental Services
Natural Gas Section
450 Robinson Lane
Bellefonte, PA 16823

September 2, 2016

IN REPLY REFER TO
SIR# 42243

Ecology and Environment, Inc.
Greg Netti
368 Pleasant View Drive
Lancaster, New York 14086

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
Atlantic Sunrise Expansion Project Update
CPL South Alternatives 22 and 24D

Dear Greg Netti:

This responds to your recent correspondence submitted to the Pennsylvania Fish and Boat Commission (PFBC) related to the Atlantic Sunrise Expansion Project (Project) in regards to a Pennsylvania Natural Diversity Inventory (PNDI) threatened and endangered species impact review of species under the jurisdiction of the PFBC.

On August 25, 2016 representatives of the Project submitted two alternatives, by e-mail, for consideration, that extend beyond the PFBC's previous Project review area.

CPL Alternative 22 – Lancaster County:

An element occurrence of a rare, candidate, threatened, or endangered species under our jurisdiction is known from the vicinity of the proposed project. However, given the nature of the proposed project, the immediate location, or the current status of the nearby element occurrence(s), no adverse impacts are expected to the species of special concern.

CPL Alternative 24D – Columbia County:

Except for occasional transient species, rare, candidate, threatened or endangered species under our jurisdiction are not known to exist in the vicinity of the project area. Therefore, no biological assessment or further consultation regarding rare species is needed with the Commission. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

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

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Heather A. Smiles at 814-359-5194 and refer to the SIR # 42243. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

A handwritten signature in black ink that reads "Heather Smiles". The signature is written in a cursive, flowing style.

Heather A. Smiles, Chief
Natural Gas Section

HAS/dn