

HA File #PA22.52
PNDI #757802

Negative Phase 1 Survey Results by a Qualified Bog Turtle Surveyor:
USFWS Courtesy Copy

**Bog Turtle (*Glyptemys muhlenbergii*) Phase I Habitat Assessment Survey
for the Greiner Property,
Mount Joy Township, Lancaster County, Pennsylvania**



Submitted November 10, 2022

to

ECS Mid-Atlantic, LLC
52-6 Grumbacher Road
York, PA 17406

by

Michael E. Torocco, Quillyn Bickley and Robert T. Zappalorti

Herpetological Associates, Inc.
Plant and Wildlife Consultants
1745 Westwood Road
Wyomissing, PA 19610

TABLE OF CONTENTS

Introduction 1
Materials and Methods 1
Project and Site Information 5
Wetland Information 5
Phase I Survey Results 6
Summary and Conclusions 7
Bog Turtle Life History 8
Literature Cited 10
Appendix A: PNDI Receipt 11
Appendix B: Wetland Location Maps 19
Appendix C: Wetland Photographs 22
Appendix D: Phase I Field Forms 27

LIST OF TABLES

Table 1. Wetland Size and Location 5
Table 2. Summary of Phase I Survey Results 6

LIST OF FIGURES

Figure 1. USGS topographic map showing the approximate location of the project area 2
Figure 2. Aerial orthophotograph showing the approximate location of the project area 3
Figure 3. An adult bog turtle from Chester County, Pennsylvania. 8
Figure 4. A yearling bog turtle from Monroe County, Pennsylvania 9

INTRODUCTION

Herpetological Associates, Inc. (HA) was contracted by ECS Mid-Atlantic, LLC to conduct a Bog Turtle (*Glyptemys muhlenbergii*) Phase I Habitat Assessment Survey for the Greiner Property (2843 Mt. Pleasant Road). A search of the Pennsylvania Natural Diversity Inventory (PNDI) database resulted in a finding of “Potential Impact” to federally-protected species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) for this project. The bog turtle conflict that is associated with this PNDI was cleared by a Qualified Bog Turtle Surveyor (QBTS) using the signature block under the USFWS Response on the PNDI receipt (PNDI #757802; **Appendix A**). This report is a courtesy copy and does not require USFWS review.

MATERIALS AND METHODS

LOCATION OF THE STUDY SITE

The approximately 109-acre project area is located in Mount Joy Township, Lancaster County, Pennsylvania (40.146053, -76.543196). The project area can be found on the Elizabethtown U.S. Geological Survey (USGS) 7.5 minute quadrangles (**Figures 1 and 2**).

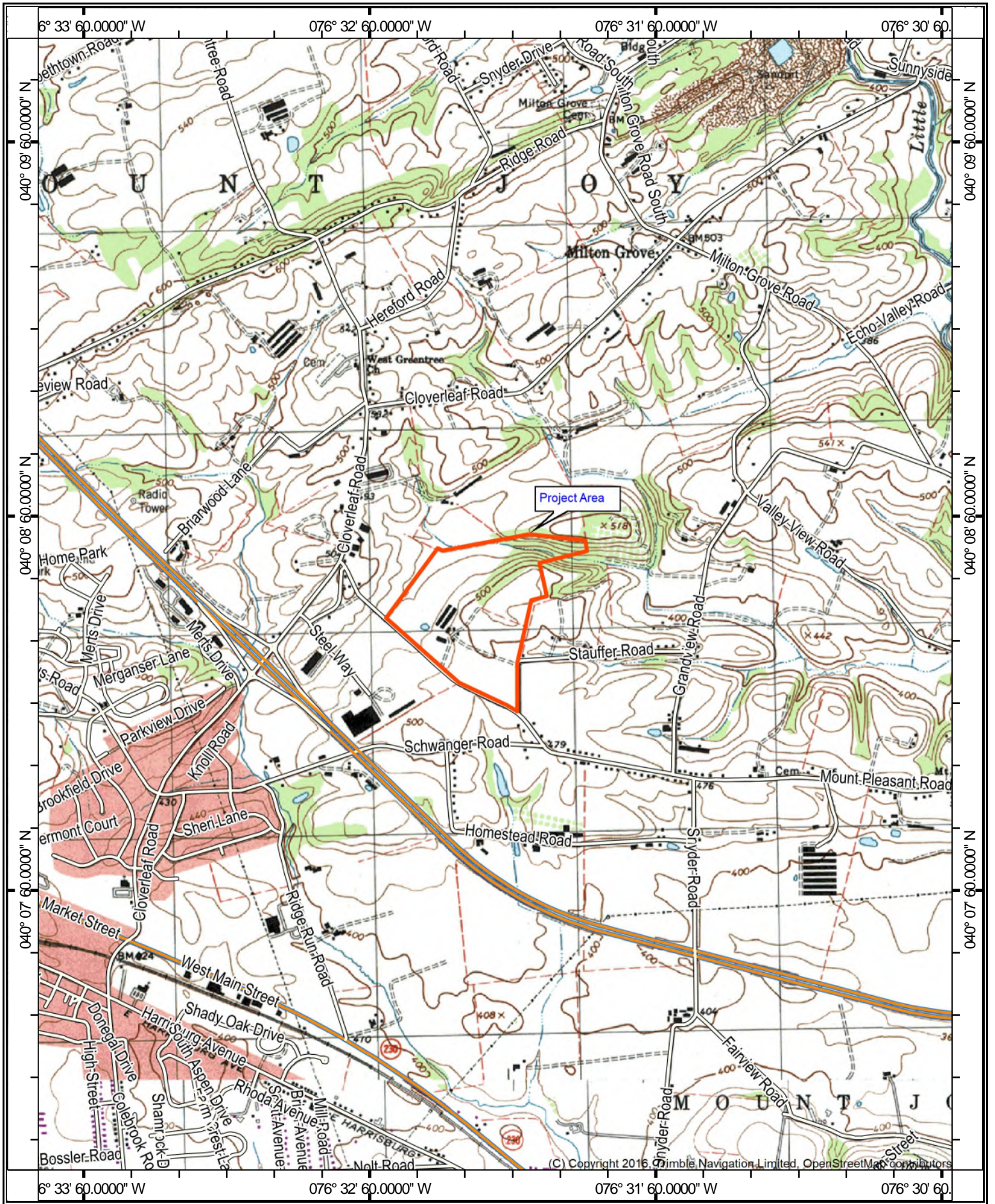
SURVEYORS

Michael Torocco and Quillyn Bickley (both Pennsylvania Qualified Bog Turtle Surveyors [QBTS]) conducted the Phase I habitat evaluation.

HABITAT EVALUATION METHODS

HA reviews publicly available data as part of a preliminary desktop review of potential natural resources for the site, as well as wetland delineation maps that are developed specifically for the Project. Data includes information relating to soils; topography; waterways; floodplains; wetlands; and rare, threatened, and endangered species.

All wetlands are evaluated in the field by a QBTS. Each wetland is categorized using the *Classification of Wetlands and Deepwater Habitats of the United States* (Federal Geographic Data Committee 2013). Wetlands typically associated with bog turtles include Palustrine Emergent (PEM), Palustrine Shrub/Scrub (PSS), and Palustrine Forested (PFO) subtypes. Bog turtles inhabit unpolluted, open bogs, marshes, and wet meadows with shallow water and a soft, deep muddy substrate. Their habitat is usually vegetated with various sedges, cattail, jewelweed, skunk cabbage, red maple, and alders (Kiviat 1978; Herman 1994; U.S. Fish and Wildlife Service 2001; 2020a). This includes primarily PEM wetlands due to the requirements of the bog turtle for basking and egg incubation. However, wetlands with a PSS component are also commonly used, which may provide additional structure for cover and hibernation. Natural plant succession of some wetlands into a PFO community is also common, and although not ideal, bog turtles may persist, especially if open canopy breaks are present.



SCALE 1:24000

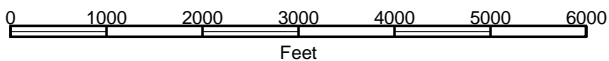
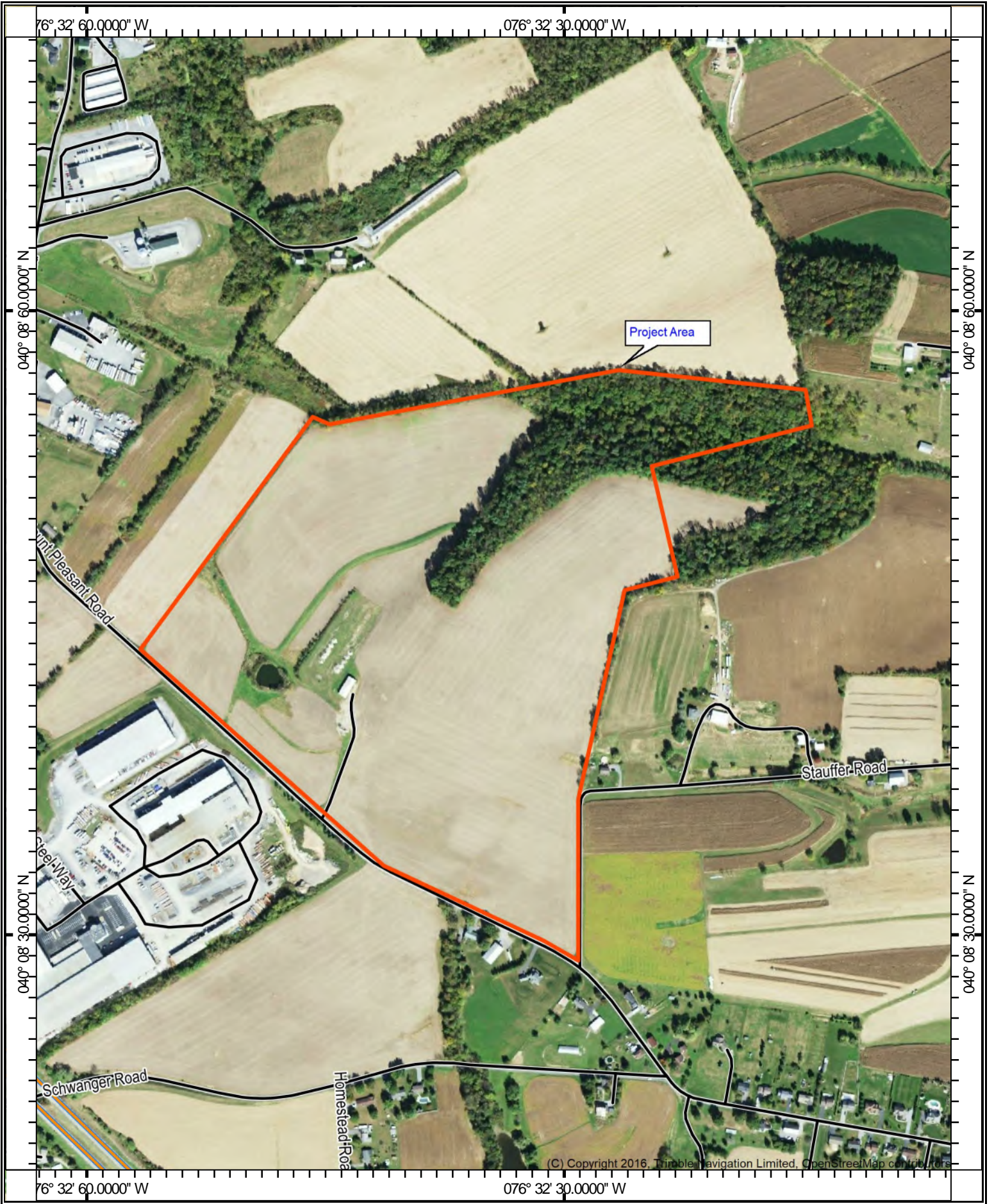


Figure 1. USGS topographic map showing the approximate location of the project area.





(C) Copyright 2016, Trimble Navigation Limited, OpenStreetMap contributors

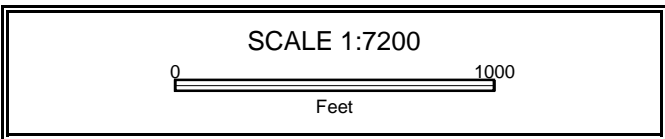


Figure 2. Aerial orthophoto showing the approximate location of the project area.



Due to the wide range of wetland types used, an experienced QBTS evaluates the existing features of each wetland for bog turtles. Three main components of each wetland are examined: hydrology, substrate, and vegetation.

1. Hydrology: A critical contribution to the hydrology of bog turtle habitats is the presence of springs. Springs that feed wetlands may be highly variable in their depth and quantity of water produced, and not all springs produce bog turtle habitat. Springs in bog turtle habitat maintain a relatively constant supply of water to the wetland, although wetlands may dry almost completely in drought years. Water produced from springs typically spreads through the wetland via shallow rivulets. Small puddles and ponding may also be present.

2. Substrate: Springs in bog turtle habitats typically result in the accumulation of deep, soft, organic substrate, which is commonly referred to as “muck”. Muck is not associated with a particular soil type, but rather a soil consistency. For the purpose of this assessment, loose, wetland soil that can be probed to three inches or greater is defined as muck. Muck depth is measured by gently pressing a probing stick to the point of resistance, and is averaged across the wetland. “Non-mucky” soil refers to substrate that cannot be probed to three inches (0 to <3 inches deep). A percentage of a wetland may be defined as mucky, with the remainder defined as non-mucky.

3. Vegetation: Vegetation is often the most variable component of bog turtle habitat, both within a region and across the range of the bog turtle. As described above, typical plant communities within a bog turtle habitat include low-growing grasses and sedges that form hummocks, as can be found in PEM wetlands. However, natural succession of a PEM wetland into PSS and PFO wetlands may still provide suitable habitat for bog turtles if adequate canopy breaks are present. Even in poor vegetation types, bog turtles may persist for decades.

Wetlands are evaluated for the above components, and are compared to confirmed bog turtle habitat located elsewhere in eastern Pennsylvania. Habitat evaluations follow guidance from the *Bog Turtle (Clemmys muhlenbergii), Northern Population, Recovery Plan* (USFWS 2001), *Guidelines for Bog Turtle Surveys for the Northern Population Range: Phase 1 and 2 Surveys* (USFWS 2020a), and *Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range: Supplemental Information* (USFWS 2020b). Details on each evaluated wetland are recorded on the *USFWS Phase I Bog Turtle Habitat Survey Data Form For the Northern Population Range (revised April 29, 2020)*.

PROJECT AND SITE INFORMATION

PROJECT / PROPERTY NAME: Greiner Property

PROJECT DESCRIPTION: The project is a proposed 1,006,880 square-foot warehouse distribution building with associated parking and stormwater management facility.

PERMIT AREA (for wetland/stream encroachments): Impacts to wetlands are anticipated, which will require DEP permitting.

CURRENT LAND USE AND SETTING: The site is currently used for agriculture, but includes a forested area that borders an unnamed tributary. The site is set within an agriculturally dominated landscape.

WATERSHED: The investigated wetlands are associated with the Little Chickies Creek HUC 12 subwatershed (HUC code: 020503060802), and the Lower Susquehanna HUC 8 subbasin. The southern corner of the property is associated with the Donegal Creek HUC 12 subwatershed (HUC code: 020503060803).

AREA INVESTIGATED: The Phase I investigation included four delineated wetlands, all located at least partly within the project area.

WETLAND INFORMATION

The wetlands were originally delineated by Andrew Young of ECS Mid-Atlantic, LLC on March 22 and 25, 2022. Determination of the presence of wetlands was based on procedures prescribed in the U.S. Army Corps of Engineers (USACE) *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, Version 2.0* (USACE 2012). A wetland location map for the project is provided in **Appendix B** (see also **Table 1**).

Table 1. Wetland Size and Location

| Wetland ID | Wetland Size (acres) | Latitude (°N) | Longitude (°W) | Is the entire wetland within project area? |
|------------|----------------------|---------------|----------------|--|
| 1 | 0.87 | 40.146678 | 76.547494 | No |
| 2 | 0.10 | 40.144982 | 76.546494 | Yes |
| 3 | 0.01 | 40.148786 | 76.540946 | Yes |
| 4 | 0.01 | 40.148781 | 76.541699 | Yes |

PHASE I SURVEY RESULTS

The Phase I survey was conducted on June 24, 2022. The investigation included four delineated wetlands, located within the project area. Details of the characteristics of each wetland are provided in **Table 2**. Wetland photographs are found in **Appendix C** and the USFWS field data forms are presented in **Appendix D**.

Table 2. Summary of Phase I Survey Results

| Wetland ID | Wetland Cowardin Classification (Type and % of Total Wetland) | | Extent of Mucky Soils (% w/in Wetland Type) | Soft (“Mucky”) Substrate Depth w/in Type (inches) | | Spring-fed Hydrology Present? | Potential Bog Turtle Habitat? |
|------------|---|-----|---|---|-----|-------------------------------|-------------------------------|
| | Type* | % | | Avg | Max | | |
| 1 | PEM | 100 | 0 | n/a | n/a | Yes | No |
| 2 | PEM | 100 | 0 | n/a | n/a | No | No |
| 3 | PEM | 100 | 0 | n/a | n/a | No | No |
| 4 | PEM | 100 | 0 | n/a | n/a | No | No |

*PEM= Palustrine Emergent; PSS=Palustrine Shrub/Scrub; PFO=Palustrine Forested

WETLAND EVALUATION

Bog turtle habitat includes three components, which include:

- Spring-fed hydrology that fans out through the wetland to form multiple shallow rivulets and small puddles;
- Deep, organic, mucky substrate that can be probed to a depth of at least three inches, but often exceeds six inches in depth;
- An emergent plant community that is composed of a diverse assemblage of herbaceous species, especially low-growing grasses and sedges.

None of the evaluated wetlands contain the correct combination of these characteristics, and therefore none of the wetlands are considered to be potential bog turtle habitat. No recommendations are suggested since potential habitat is absent.

SUMMARY AND CONCLUSIONS

HA was contracted by ECS Mid-Atlantic, LLC to conduct a Bog Turtle Phase I Habitat Assessment Survey for the Greiner Property, located in Mount Joy Township, Lancaster County, Pennsylvania. The request for the survey was initiated by a search of the PNDI database, which indicated a “Potential Conflict” with bog turtle, a species that is regulated by the USFWS (PNDI #757802).

The Phase I investigation was conducted by Michael Torocco and Quillyn Bickley (both QBTSs) on June 24, 2022, which included four delineated wetlands, all located at least partially within the project area. The results of the investigation indicated the absence of bog turtle habitat in the wetlands. The PNDI for the project was cleared via a signature by a QBTS, and therefore a review of this report by USFWS is not required.

BOG TURTLE LIFE HISTORY

Description

The bog turtle is classified taxonomically into the class *Reptilia*, order *Testudines*, suborder *Thecophora*, family *Emydidae*, genus *Glyptemys* [*Clemmys*], and species *muhlenbergii* (Schoepff 1792; **Figures 3-4**). Conant and Collins (1991) describe this turtle as small, attaining an average carapace length of 7.5-9 centimeters (3-3.5 inches), with a maximum recorded length of 11.4 centimeters (4.5 inches). The carapace is moderately domed, rather long, and slightly keeled. The scutes are often fairly deeply incised by the concentric rings of the laminae, although in older



Figure 3. A bog turtle from Chester County, PA.

animals the shell is often worn smooth through years of burrowing in mud. In specimens which do not have iron oxide or other deposits on the shell, a light “sun-burst” pattern can be seen on each scute of an otherwise brown shell. The plastron is large, and dark brown or black in color with light markings either irregularly or symmetrically arranged. The limbs are typically brown with orange or reddish beneath, and there is a conspicuous orange head blotch behind the tympanum.

Status

Pennsylvania Status - Endangered

Federal Status - Threatened

Range

Disjunct populations exist throughout the range of the bog turtle, occurring in 4 distinct areas (Conant and Collins, 1991). These separate populations occur in central New York; western Pennsylvania; eastern New York south to southern New Jersey and west to central Pennsylvania; and southern Virginia, south through western North Carolina, into extreme northern Georgia.

Habitat and Life History

Although rarely found far from water, the bog turtle is not a strong swimmer and may drown quickly if forced to stay in deep water; generally bog turtles are found wallowing in soft mud or swimming in shallow (several inches) streams and puddles. This turtle is omnivorous, and may feed on a variety of insects, earthworms, slugs, or berries. Loss of habitat through the direct destruction of wetlands, fragmentation of range as a result of long-term geologic factors (Carr, 1952), and

vegetative succession by wetland trees and invasive plants have all greatly impacted bog turtle populations.

Bog turtles generally do not move large distances and have relatively small home ranges. Not unlike other turtle species, males appear to have a larger home range than females (Lovich et al., 1992). In Pennsylvania, Ernst (1977) reports mean



Figure 4. A yearling bog turtle from Monroe County, PA.

home range for males as 1.33 ha, and 1.26

ha for females. Chase, et al. (1989) is in agreement, but differences in mean home range between both sexes are larger and statistically significant for thread trailed specimens in Maryland: $\bar{x} = 0.176$ ha for males, $\bar{x} = 0.066$ ha for females. Distance traveled between locations of radiotracked bog turtles in North Carolina ranged 0-87 m ($\bar{x} = 24.3$ m) for males and 0-62 m ($\bar{x} = 15.8$ m) for females (Lovich, et al., 1992); rates of movements (distance/day) were also significantly larger for males. Movements and home range dimensions of bog turtles may be governed by the size of suitable habitat available to them.

Unlike most other chelonians, *G. muhlenbergii* do not travel to dry upland areas or the shore or beach of a pond to deposit their eggs. Instead, they select suitable slightly elevated nesting sites within their semi-aquatic marshy habitat (Zappalorti et al., 2015). Probably because of the constant saturated soil conditions in such environments, eggs are not buried in deep nest chambers. Instead, they are deposited in a shallow depression on the surface of raised grassy tussocks and are slightly covered with available humus and vegetation (Ernst et al., 1994). The elevated base of tussock-forming grasses and sedges is the preferred nesting site, but nests have also been found on moss covered stumps and *Sphagnum* clumps. Nesting areas typically have limited canopy closure, support low vegetation and provide ample solar exposure. The possibly unique nesting habits of *G. muhlenbergii* is believed to reduce high predation usually associated with upland egg-laying (Kiviat, 1978). In most chelonians and generally other K-selected vertebrates, the period of greatest vulnerability is during the early stages of life.

LITERATURE CITED

- Carr, A. 1952. *Handbook of Turtles*. Cornell University Press, Ithaca, New York.
- Chase, J.D., K.R. Dixon, J.E. Gates, D. Jacobs and G.J. Taylor. 1989. Habitat characteristics, population size, and home range of the bog turtle, *Clemmys muhlenbergii*, in Maryland. *J. Herpetol.* 23(4):356-362.
- Conant, R. And J.T. Collins. 1991. *A Field Guide to Reptiles and Amphibians of Eastern and Central North America*. Third Edition, Expanded.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
- Ernst, C.H. and R.B. Bury. 1977. *Clemmys muhlenbergii*. Catalog of American Amphibians and Reptiles. SSAR, 204:1-2.
- Ernst, C.H., J.E. Lovich and R.W. Barbour. 1994. *Turtles of the United States and Canada*. Smithsonian Institution Press, Washington and London. 578 pp.
- Federal Geographic Data Committee. 2013. Classification of wetlands and deepwater habitats of the United States. FGDC-STD-004-2013. Second Edition. Wetlands Subcommittee, Federal Geographic Data Committee and U.S. Fish and Wildlife Service, Washington, DC.
- Herman, D.W. 1994. The bog turtle, *Clemmys muhlenbergii*, in North Carolina: An action plan for its conservation and management. Zoo Atlanta, Department of Herpetology, Atlanta, Georgia. 144 pp. Submitted to The North Carolina Wildlife Resources Commission, Contract No. 93 SG 06.
- Kiviat, E. 1978. Bog turtle habitat ecology. *Bull. Chicago Herpetological Society* 13:29-42.
- Lovich, J.E., D.W. Herman and K.M. Fahey. 1992. Seasonal activity and movements of bog turtles (*Clemmys muhlenbergii*) in North Carolina. *Copeia* 1992:1107-1111.
- Schoepff, Johann David. 1792. *Historia testudinvm iconibvs illvstrata (Illustrated History of the Turtles)*. In Latin.
- U.S. Army Corps of Engineers (USACE). 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0, ed. J. F. Berkowitz, J. S. Wakeley, R. W. Lichvar, C. V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Fish and Wildlife Service (USFWS). 2001. Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan. Hadley, Massachusetts. 103 pp.
- U.S. Fish and Wildlife Service (USFWS). 2020a. Guidelines for Bog Turtle Surveys for the Northern Population Range: Phase 1 and 2 Surveys. Technical document, revised October 26, 2018. 20 pp.
- U.S. Fish and Wildlife Service (USFWS). 2020b. Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range: Supplemental Information. Technical document, revised October 26, 2018. 4 pp.
- Zappalorti, R.T., J.E. Lovich, R. Farrell, and M.E. Torocco. 2015. Nest-Site Characteristics of *Glyptemys muhlenbergii* (Bog Turtle) in New Jersey and Pennsylvania. *Northeastern Naturalist* 22(3):573-584.

APPENDIX A

PNDI Receipt

1. PROJECT INFORMATION

Project Name: **2843 Mt. Pleasant Road**

Date of Review: **4/22/2022 03:28:15 PM**

Project Category: **Development, New commercial/industrial development (store, gas station, factory)**

Project Area: **109.29 acres**

County(s): **Lancaster**

Township/Municipality(s): **MOUNT JOY TOWNSHIP**

ZIP Code:

Quadrangle Name(s): **ELIZABETHTOWN**

Watersheds HUC 8: **Lower Susquehanna**

Watersheds HUC 12: **Donegal Creek; Little Chickies Creek**

Decimal Degrees: **40.146053, -76.543196**

Degrees Minutes Seconds: **40° 8' 45.7904" N, 76° 32' 35.5041" W**



2. SEARCH RESULTS

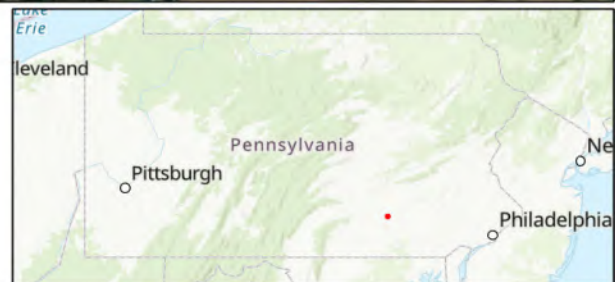
| Agency | Results | Response |
|---|-------------------------|---|
| PA Game Commission | No Known Impact | No Further Review Required |
| PA Department of Conservation and Natural Resources | No Known Impact | No Further Review Required |
| PA Fish and Boat Commission | No Known Impact | No Further Review Required |
| U.S. Fish and Wildlife Service | Potential Impact | MORE INFORMATION REQUIRED, See Agency Response |

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

2843 Mt. Pleasant Road

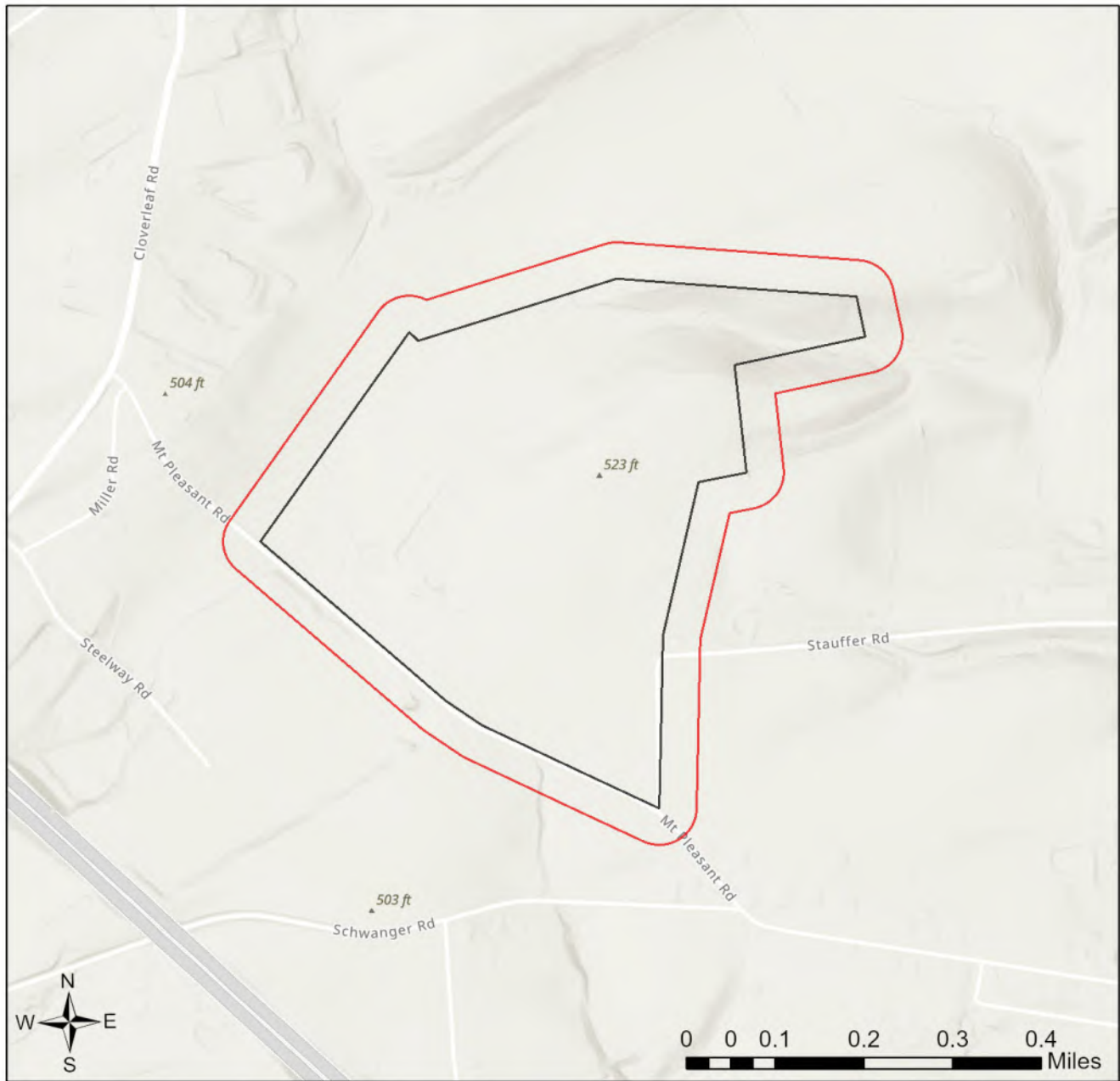




-  Buffered Project Boundary
-  Project Boundary



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland,

2843 Mt. Pleasant Road



-  Buffered Project Boundary
-  Project Boundary



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

RESPONSE TO QUESTION(S) ASKED

Q1: Which of the following closest describes the proposed project?

Your answer is: No groundwater extraction (e.g., water supply well, well for irrigation, groundwater pumping to facilitate mining, pump-and-treat operation) is proposed in order to implement or support this project.

Q2: Describe how wastewater (effluent) will be handled (select one). For the purpose of this question, wastewater/effluent does not include stormwater runoff. If the project involves solely the renewal or modification of an existing discharge permit (e.g., NPDES permit), select from options 3, 4, 5, or 6 below.

Your answer is: All wastewater/effluent from this project/activity will be routed to an existing municipal wastewater treatment plant.

Q3: Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.

Your answer is: Someone qualified to identify and delineate wetlands (holding a natural resource degree or equivalent work experience) has investigated the site, and determined that wetlands ARE located in or within 300 feet of the project area. (A written report from the wetland specialist, and detailed project maps should document this.)

Q4: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).

Your answer is: The project will affect 1 to 39 acres of forests, woodlots and trees.

Q5: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?

Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

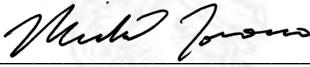
RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE:

Information Request: Conduct a Bog Turtle Habitat (Phase 1) Survey in accordance with USFWS Guidelines for Bog Turtle Surveys (April 2020). Evaluate all wetlands within 300 feet of the project area, which includes all areas that will be impacted by earth disturbance or project features (e.g., roads, structures, utility lines, lawns, detention basins, staging areas, etc.). IF THE PHASE 1 SURVEY IS DONE BY A QUALIFIED BOG TURTLE SURVEYOR (see <https://www.fws.gov/northeast/pafo/endangered/surveys.html>): 1) Send positive results to USFWS for concurrence, along with a project description documenting how impacts will be avoided. OR, conduct a Phase 2 survey and send Phase 1 and 2 results to USFWS for concurrence. 2) Send a courtesy copy of negative results to USFWS (label as "Negative Phase 1 Survey Results by Qualified Bog Turtle Surveyor: USFWS Courtesy Copy"). USFWS approval of negative results is not necessary when a qualified surveyor does the survey in full accordance with USFWS guidelines. IF THE PHASE 1 SURVEY IS NOT DONE BY A QUALIFIED SURVEYOR: Send ALL Phase 1 results to USFWS for concurrence, and if potential habitat is found, also send a project description documenting how impacts will be avoided. As a qualified bog turtle surveyor, I Michael Torocco (name) certify that I conducted a Phase 1 survey of all wetlands in and within 300 feet of the project area on 6/24/2022 (date) and determined that bog turtle habitat is absent.

 (Signature)

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email the following information to the agency(s) (see AGENCY CONTACT INFORMATION). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies (but not USFWS).

*If information was requested by USFWS, applicants must email, or mail, project information to IR1_ESPenn@fws.gov to initiate a review. USFWS will not accept uploaded project materials.

Check-list of Minimum Materials to be submitted:

___ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

___ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

___ **SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

___ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

___ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.



5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

PA Fish and Boat Commission

Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

U.S. Fish and Wildlife Service

Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Game Commission

Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Andrew Young
Company/Business Name: ECS Mid Atlantic
Address: 52-b Brynbarchen Road
City, State, Zip: Tork PA 17406
Phone: (717) 767-4788 Fax: ()
Email: ayoung@ecslimited.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Andrew Young
applicant/project proponent signature


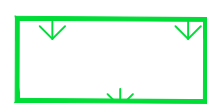


6/28/22
date

APPENDIX B

Wetland Location Maps



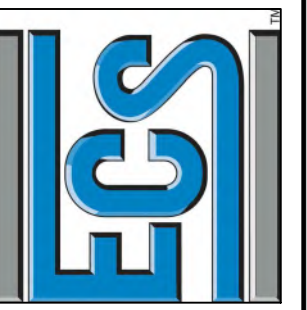
LEGEND

-  PERENNIAL STREAM CHANNEL (R3)
-  PALUSTRINE EMERGENT WETLAND (PEM)
-  APPROXIMATE PROPERTY BOUNDARY
-  DATA POINT
DP-

CELEBRATING
OVER 30 YEARS
OF EXCELLENCE

ECS MID-ATLANTIC, LLC
1406 THUNDERBOLT PLACE
CHARLOTTE, VA 20051
1-800-822-3489
703-471-8400
(FAX) 703-534-5927

"SETTING THE STANDARD FOR SERVICE"

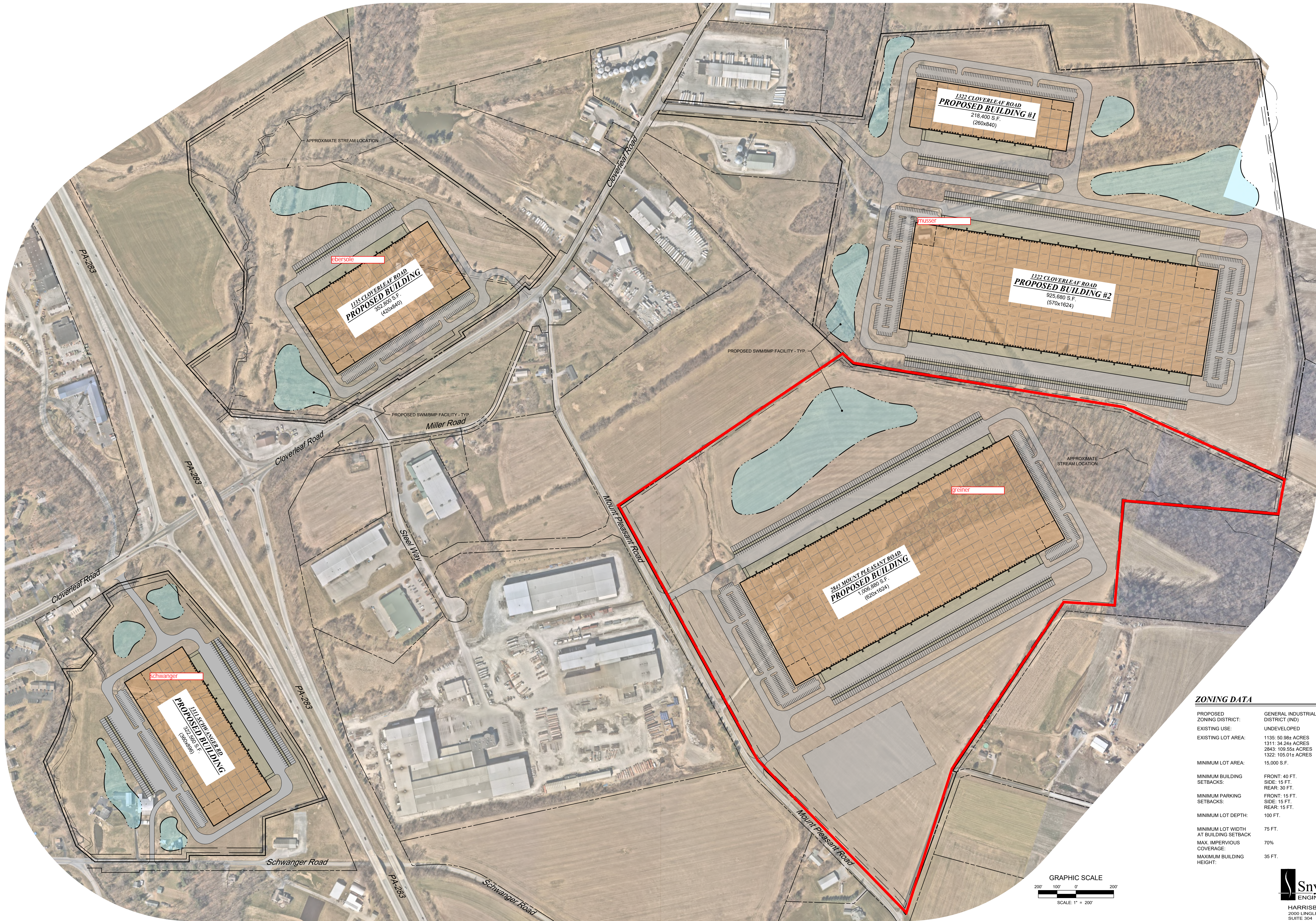
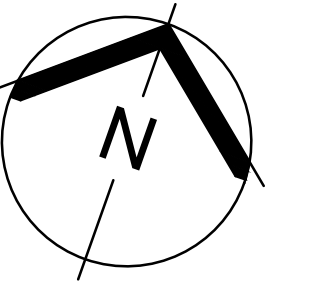


GRENIER PROPERTY
2843 MT. PLEASANT ROAD
MOUNT JOY, PA

WATERS OF THE US
DRAWING
LANDWORKS CIVIL DESIGN, LLC

| | |
|---------------|------------|
| ECS REVISIONS | |
| | |
| ENGINEER | DRAFTING |
| ALY | AECM |
| SCALE | 1" = 96' |
| PROJECT NO. | 47-14225 |
| SHEET | 1 OF 1 |
| DATE | 04/20/2022 |

CONCEPTUAL GENERAL INDUSTRIAL SITE PLAN FOR PANATTONI MOUNT JOY TOWNSHIP, LANCASTER COUNTY, PENNSYLVANIA

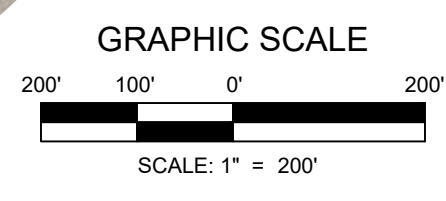


SITE DATA

| | |
|-----------------------------|---|
| 1135 CLOVERLEAF ROAD: | 352,800± SF (420x840) 170 EMPLOYEE PARKING SPACES 35± DOCK POSITIONS 52 TRAILER STORAGE SPACES |
| 1311 SCHWANGER ROAD: | 322,560± SF (360x896) 184 EMPLOYEE PARKING SPACES 44± DOCK POSITIONS 105 TRAILER STORAGE SPACES |
| 2843 MOUNT PLEASANT ROAD: | 1,006,880± SF (820x1624) 480 EMPLOYEE PARKING SPACES 168± DOCK POSITIONS 236 TRAILER STORAGE SPACES |
| 1322 CLOVERLEAF ROAD: | BUILDING 1 218,400± SF (260x840) 178 EMPLOYEE PARKING SPACES 40± DOCK POSITIONS 58 TRAILER STORAGE SPACES BUILDING 2 925,680± SF (570x1624) 564 EMPLOYEE PARKING SPACES 170± DOCK POSITIONS 240 TRAILER STORAGE SPACES |
| TOTAL BUILDING AREA: | 2,826,320± SF |

ZONING DATA

| | |
|--|---|
| PROPOSED ZONING DISTRICT: | GENERAL INDUSTRIAL DISTRICT (IND) |
| EXISTING USE: | UNDEVELOPED |
| EXISTING LOT AREA: | 1135: 50.98± ACRES 1311: 34.24± ACRES 2843: 109.55± ACRES 1322: 105.01± ACRES 15,000 S.F. |
| MINIMUM LOT AREA: | 15,000 S.F. |
| MINIMUM BUILDING SETBACKS: | FRONT: 40 FT. SIDE: 15 FT. REAR: 30 FT. |
| MINIMUM PARKING SETBACKS: | FRONT: 15 FT. SIDE: 15 FT. REAR: 15 FT. |
| MINIMUM LOT DEPTH: | 100 FT. |
| MINIMUM LOT WIDTH AT BUILDING SETBACK: | 75 FT. |
| MAX. IMPERVIOUS COVERAGE: | 70% |
| MAXIMUM BUILDING HEIGHT: | 35 FT. |



DATE: 11/15/2024
PROJECT: PANATTONI INDUSTRIAL SITE PLAN
DRAWN BY: [Name]
CHECKED BY: [Name]
SCALE: AS SHOWN
SHEET NO. 1 OF 1

APPENDIX C

Wetland Photographs



Appendix C1. Wetland 1 includes a silted-in, mechanically-created pond.



Appendix C2. Northwesterly view through the breach in the pond berm.



Appendix C3. Pond outflow is directed into this mechanically-created agricultural field ditch.



Appendix C4. A second linear, ag-ditch extends northeast to southwest with an eventual intersection with the pond outflow ditch (view faces northeast).



Appendix C5. Wetland 2 consists of a linear drainage ditch through an agricultural field, and contains an area with significant tire rutting.



Appendix C6. Wetland 3 is a short, shallow drainage swale supplied by overland flow.



Appendix C7. Wetland 4 is a depressional wetland with a poorly defined drainage swale.

APPENDIX D

Phase I Field Forms

Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range

(Revised April 29, 2020) Please do not edit document.

Wetland ID: 1
PNDI # (for PA): 757802

General Info

Property/Project Name Greener
Coordinates 40.146678, -76.547494 Project Type Warehouse
Entity Requesting Phase 1 Survey ECS
County/Township/Municipality Mt. Joy Twp., Lancaster Co.
Lead Surveyor Michael Torocco Affiliation HA
Other Assistants Present Quillyn Bickley

Date/Condition

Date of Survey 6/24/22 Time In 1100 Time Out 1215 Air Temp. 76 F C
Last Precipitation < 24 hours 1-7 days > 1 week unknown Drought conditions? Yes No Unknown
Drought Index*¹ (Circle): none D0 D1 D2 D3 D4 Wetland Photos Taken Yes No (Provide photo location map)
Notes (e.g., details about drought, flood, abnormally dry, and/or snow/ice conditions, and any other seasonal conditions observed):

Wetland Info

Wetland Size 0.87 acres, if known # Wetlands w/in Project Area² 4
Estimate wetland size (acres) < 0.1 0.1 - 0.5 0.5 - 1 1 - 2 2 - 4 5+ 10+
Estimate % Canopy Cover*³ 0% ≤ 5 6-20 21-40 41-60 > 60
Hydrology and Soils (check all that apply): use additional pages to further discuss pertinent general wetland information
 Springs/Seeps Springhouse Trib/Stream Pond ^{6 in. H₂O} Stormwater Iron Bacteria Watercress
 Water Visible on Surface Evidence of Flooding Yes No If yes, (Seasonal Flooding⁴ Routine Flooding⁵)
 Rivulets (inches deep) Subsurface Tunnel/Rivulets Tire Ruts (inches deep)
 Small Puddles/Depressions (inches deep) Saturated soils present? If yes, year-round? Likely Unlikely Unk
 Yes No Are there any signs of disturbance to hydrology (e.g., drainage ditches, tile drainages, berms, culverts, fill material, ponds, roads, beaver activity)?
Wetland consists of man-made pond and 2 mechanically created ag. ditches
Estimate time period (in years) of disturbance*: ≤ 5 6-10 11-20 > 20

For ditches that may be present, is there bog turtle habitat? If yes, describe:
No springs or mucky substrate present in either WL ditches - NOT BT Habitat

¹ (*) Denotes reference to the Supplemental Information document that provides more details on this particular question.
² Each wetland must have a separate Phase 1 habitat assessment data form completed.
³ Determine percent cover of abundant species for the wetland, not by wetland type. Abundant species are those that are most prominent in the wetland and have the highest percent of coverage compared to other species.
⁴ Seasonal flooding in wetlands/streams can occur as a result of spring snow melt/heavy rain that increases water levels in these systems.
⁵ Routine flooding refers to tidally-influenced wetland/stream systems or the occurrence of normal rain patterns throughout the year.

Yes No Are there any signs of disturbance to vegetation (e.g., mowing, pasturing, burning)? If yes, describe:

Mowing along wetland edges

Wetland Info

Rate (scale of 1-4) level of vegetation disturbance* (Circle): 1. Light to moderate grazing or mowing 2. No grazing, mowing, burning observed⁶ 3. Moderate to high grazing or mowing 4. Mowing occurs during bog turtle active season

Soil types present*: Saturated, accumulated silt

How much suitable habitat is in this wetland? Estimate acreage or percentage: 0%

| Wetland Type | % of Total Wetland | % of Wetland Type w/Muck | Avg. Muck Depth | Max. Muck Depth |
|-----------------------------|--------------------|--------------------------|-----------------|-----------------|
| PEM Portion of Wetland: | <u>100</u> | <u>0</u> | <u>X</u> in. | <u>X</u> in. |
| PSS Portion of Wetland: | _____ | _____ | _____ in. | _____ in. |
| PFO Portion of Wetland: | _____ | _____ | _____ in. | _____ in. |
| POW/PUB Portion of Wetland: | _____ | _____ | _____ in. | _____ in. |

CIRCLE all vegetation* from list below that is dominant (≥ 20% for each wetland type listed above) and add other species you observe that are not listed in table in the "notes" space provided below or in the extra table cells.

Wetland Type/Vegetation

| | | | | | |
|--|---|---|---|---|---|
| Alder Spp. <i>Alnus</i> spp. | Common Reed <i>Phragmites australis</i> | <u>Jewelweed</u> <i>Impatiens capensis</i> | <u>Rice Cutgrass</u> <i>Leersia oryzoides</i> | Spicebush <i>Lindera benzoin</i> | Willow spp. <i>Salix</i> spp. |
| Alder-leaved Buckthorn <i>Rhamnus alnifolia</i> | Dogwood Spp. <i>Cornus</i> spp. | Mile-A-Minute <i>Persicaria perfoliata</i> | Rough-leaved Goldenrod <i>Solidago patula</i> | Spike-Rush <i>Eleocharis palustris</i> | Woolly-fruited Sedge <i>Carex lasiocarpa</i> |
| American Elm <i>Ulmus americana</i> | Duck Potato <i>Sagittaria latifolia</i> | Multiflora Rose <i>Rosa multiflora</i> | Sensitive Fern <i>Onoclea sensibilis</i> | Swamp Rose <i>Rosa palustris</i> | Woolly Bulrush or Woolgrass <i>Scirpus cyperinus</i> |
| Arrowhead <i>Sagittaria latifolia</i> | Eastern Red Cedar <i>Juniperus virginiana</i> | Poison Sumac <i>Toxicodendron vernix</i> | Shrubby Cinquefoil <i>Dasiphora fruticosa</i> | Sweetflag <i>Acorus calamus</i> | Yellow-Green Sedge <i>Cyperus esculentus</i> |
| Carpetgrass <i>Axonopus fissifolius</i> | Eastern Tamarack <i>Larix laricina</i> | Porcupine Sedge <i>Carex hystericina</i> | Skunk Cabbage <i>Symplocarpus foetidus</i> | Tearthumb Spp. <i>Polygonum</i> spp. | |
| <u>Cattail</u> <i>Typha</i> spp. | Grass-of-Parnassus <i>Parnassia glauca</i> | Purple Loosestrife <i>Lythrum salicaria</i> | Smooth Sawgrass <i>Cladium mariscoides</i> | Tussock Sedge <i>Carex stricta</i> | |
| Cinnamon Fern <i>Osmundastrum cinnamomeum</i> | Inland sedge <i>Carex interior</i> | Red Maple <i>Acer rubrum</i> | Soft Rush or Common Rush <i>Juncus effusus</i> | Viburnum Spp. <i>Viburnum</i> spp. | |
| Common Boneset <i>Eupatorium perfoliatum</i> | Japanese Stiltgrass <i>Microstegium vimineum</i> | <u>Reed Canary Grass</u> <i>Phalaris arundinacea</i> | Sphagnum Moss <i>Sphagnum</i> spp. | White turtlehead <i>Chelone glabra</i> | |

Notes on additional plant species (e.g., sedge, rush, grass, shrub, tree species):

Polygonum sp.

⁶ No grazing, mowing, or burning is given a "2" rank as this is considered more harmful to bog turtle wetlands than Rank 1 (light to moderate grazing or mowing). Light to moderate habitat management is beneficial to suppressing succession of native and non-native plant species.

Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.):

Large agricultural fields

Landscape Info

How much of this wetland is located **off-site** (i.e., outside the property boundaries or right-of-way)?

- None of it – the entire wetland is within the property boundaries
- Some of it – _____ Acres or 10 % of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the **off-site portion** was surveyed (on foot)?

- None of it
- All of it
- Part of it (_____ acres or _____ % of the off-site portion)

Is there potential bog turtle habitat **within 300 feet***? Yes No Unk Habitat **off-site**? Yes No Unk

If yes, how did you conclude this?

Species

Were any bog turtles observed? Yes No If yes, how many? _____
Other herps observed? Yes No If yes, which ones?

*Note that you must be permitted by the state you are conducting the survey in to handle bog turtles.
*Report bog turtle observations to your local FWS Field Office and state wildlife office within 48 hrs.

Lead Surveyor Opinion

- Yes No Unsure The **hydrology** criterion for bog turtle habitat is met.
- Yes No Unsure The **soils** criterion for bog turtle habitat is met.
- Yes No Unsure The **vegetation** criterion for bog turtle habitat is met.
- Yes No Unsure This wetland **HAS** potential bog turtle habitat (fair to good quality).
- Yes No Unsure This wetland **HAS** potential bog turtle habitat (low to very low quality).
- This wetland does **NOT** have potential bog turtle habitat. **UNSURE** if suitable habitat is present.

Notes (How did you reach this opinion?):

Lead Surveyor – please sign below certifying to the best of your knowledge that all of the information provided herein is accurate and complete.

Print Name Michael Torocco Signature [Signature]

Date 6/24/22

Contact Information 609-618-3998

****Important**** Please include all Phase 1 data forms in a final Phase 1 bog turtle habitat assessment report (see Attachment 3 in *Guidelines for Bog Turtle Surveys* for checklist) and submit to your local state wildlife agency and U.S. Fish and Wildlife Service Field Office (see Attachment 1 in *Guidelines for Bog Turtle Surveys*).

(Revised April 29, 2020)

Additional space for notes, color photos, or maps/sketch of wetland (or attach printed map with each wetland type carefully outlined; include all wetland types [PEM, PSS, PFO, POW/PUB], streams/ditches, north arrow, property/project borders, and areas of core bog turtle habitat. Include **color photos** for each wetland assessed and separate Phase 1 data forms for each when submitting to agencies, as well as any reptile and amphibian species you encounter, if possible.

- WL begins as spring-fed pond w/ breached berm on NW edge (6 in. H₂O, 6 in. silt) continues to NW as linear drainage ditch between crop fields (3 ft wide, 2 in. H₂O, 2 in. silt).
- WL widens at the intersection with second ag. ditch draining from NE

Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range

(Revised April 29, 2020) Please do not edit document.

Wetland ID: 2
PNDI # (for PA): 75780Z

General Info

Property/Project Name: Greener
Coordinates: 40.144982, -76.546494
Project Type: Warehouse
Entity Requesting Phase 1 Survey: ECS
County/Township/Municipality: Mt. Joy Twp., Lancaster Co.
Lead Surveyor: Michael Torocco
Affiliation: HA
Other Assistants Present: Quillyn Bickley

Date/Condition

Date of Survey: 6/24/22
Time In: 1030
Time Out: 1100
Air Temp: 76 F
Last Precipitation: < 24 hours
Drought conditions: No
Drought Index: none
Wetland Photos Taken: Yes

Wetland Info

Wetland Size: 0.10 acres
Wetlands w/in Project Area: 4
Hydrology and Soils: Water Visible on Surface, Evidence of Flooding, Rivulets, Tire Ruts, Saturated soils present?
Wetland contains mechanically-created ditch - as field drainage
Estimate time period of disturbance: > 20

For ditches that may be present, is there bog turtle habitat? If yes, describe:
Ditch lacks springs, surface water and muck

1 (*) Denotes reference to the Supplemental Information document that provides more details on this particular question.
2 Each wetland must have a separate Phase 1 habitat assessment data form completed.
3 Determine percent cover of abundant species for the wetland, not by wetland type.
4 Seasonal flooding in wetlands/streams can occur as a result of spring snow melt/heavy rain that increases water levels in these systems.
5 Routine flooding refers to tidally-influenced wetland/stream systems or the occurrence of normal rain patterns throughout the year.

Wetland ID: 2

Yes No Are there any signs of disturbance to vegetation (e.g., mowing, pasturing, burning)? If yes, describe:

Wetland occurs in farm field which is mowed

Wetland Info

Rate (scale of 1-4) level of vegetation disturbance* (Circle): 1. Light to moderate grazing or mowing 2. No grazing, mowing, burning observed⁶ 3. Moderate to high grazing or mowing 4. Mowing occurs during bog turtle active season

Soil types present*: Saturated, non-mucky (< 3 in.)

How much suitable habitat is in this wetland? Estimate acreage or percentage: 0%

| Wetland Type | % of Total Wetland | % of Wetland Type w/Muck | Avg. Muck Depth | Max. Muck Depth |
|-----------------------------|--------------------|--------------------------|-----------------|-----------------|
| PEM Portion of Wetland: | <u>100</u> | <u>0</u> | <u>X</u> in. | <u>X</u> in. |
| PSS Portion of Wetland: | _____ | _____ | _____ in. | _____ in. |
| PFO Portion of Wetland: | _____ | _____ | _____ in. | _____ in. |
| POW/PUB Portion of Wetland: | _____ | _____ | _____ in. | _____ in. |

CIRCLE all vegetation* from list below that is dominant (≥ 20% for each wetland type listed above) and add other species you observe that are not listed in table in the "notes" space provided below or in the extra table cells.

Wetland Type/Vegetation

| | | | | | |
|--|---|---|---|---|---|
| Alder Spp. <i>Alnus</i> spp. | Common Reed <i>Phragmites australis</i> | Jewelweed <i>Impatiens capensis</i> | Rice Cutgrass <i>Leersia oryzoides</i> | Spicebush <i>Lindera benzoin</i> | Willow spp. <i>Salix</i> spp. |
| Alder-leaved Buckthorn <i>Rhamnus alnifolia</i> | Dogwood Spp. <i>Cornus</i> spp. | Mile-A-Minute <i>Persicaria perfoliata</i> | Rough-leaved Goldenrod <i>Solidago patula</i> | Spike-Rush <i>Eleocharis palustris</i> | Woolly-fruited Sedge <i>Carex lasiocarpa</i> |
| American Elm <i>Ulmus americana</i> | Duck Potato <i>Sagittaria latifolia</i> | Multiflora Rose <i>Rosa multiflora</i> | Sensitive Fern <i>Onoclea sensibilis</i> | Swamp Rose <i>Rosa palustris</i> | Woolly Bulrush or Woolgrass <i>Scirpus cyperinus</i> |
| Arrowhead <i>Sagittaria latifolia</i> | Eastern Red Cedar <i>Juniperus virginiana</i> | Poison Sumac <i>Toxicodendron vernix</i> | Shrubby Cinquefoil <i>Dasiphora fruticosa</i> | Sweetflag <i>Acorus calamus</i> | Yellow-Green Sedge <i>Cyperus esculentus</i> |
| Carpetgrass <i>Axonopus fissifolius</i> | Eastern Tamarack <i>Larix laricina</i> | Porcupine Sedge <i>Carex hystericina</i> | Skunk Cabbage <i>Symplocarpus foetidus</i> | Tearthumb Spp. <i>Polygonum</i> spp. | |
| Cattail <i>Typha</i> spp. | Grass-of-Parnassus <i>Parnassia glauca</i> | Purple Loosestrife <i>Lythrum salicaria</i> | Smooth Sawgrass <i>Cladium mariscoides</i> | Tussock Sedge <i>Carex stricta</i> | |
| Cinnamon Fern <i>Osmundastrum cinnamomeum</i> | Inland sedge <i>Carex interior</i> | Red Maple <i>Acer rubrum</i> | Soft Rush or Common Rush <i>Juncus effusus</i> | Viburnum Spp. <i>Viburnum</i> spp. | |
| Common Boneset <i>Eupatorium perfoliatum</i> | Japanese Stiltgrass <i>Microstegium vimineum</i> | Red Canary Grass <i>Phalaris arundinacea</i> | Sphagnum Moss <i>Sphagnum</i> spp. | White turtlehead <i>Chelone glabra</i> | |

Notes on additional plant species (e.g., sedge, rush, grass, shrub, tree species):

⁶ No grazing, mowing, or burning is given a "2" rank as this is considered more harmful to bog turtle wetlands than Rank 1 (light to moderate grazing or mowing). Light to moderate habitat management is beneficial to suppressing succession of native and non-native plant species.

Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.):

Large agricultural (crop) fields

Landscape Info

How much of this wetland is located **off-site** (i.e., outside the property boundaries or right-of-way)?

- None of it – the entire wetland is within the property boundaries
- Some of it – _____ Acres or _____% of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the **off-site portion** was surveyed (on foot)?

- N/A None of it All of it Part of it (_____ acres or _____% of the off-site portion)

Is there potential bog turtle habitat **within 300 feet***? Yes No Unk Habitat **off-site**? Yes No Unk

If yes, how did you conclude this?

Species

Were any bog turtles observed? Yes No If yes, how many? _____
Other herps observed? Yes No If yes, which ones?

*Note that you must be permitted by the state you are conducting the survey in to handle bog turtles.
*Report bog turtle observations to your local FWS Field Office and state wildlife office within 48 hrs.

Lead Surveyor Opinion

- Yes No Unsure The **hydrology** criterion for bog turtle habitat is met.
- Yes No Unsure The **soils** criterion for bog turtle habitat is met.
- Yes No Unsure The **vegetation** criterion for bog turtle habitat is met.
- Yes No Unsure This wetland **HAS** potential bog turtle habitat (fair to good quality).
- Yes No Unsure This wetland **HAS** potential bog turtle habitat (low to very low quality).
- This wetland does **NOT** have potential bog turtle habitat. **UNSURE** if suitable habitat is present.

Notes (How did you reach this opinion?):

Lead Surveyor – please sign below certifying to the best of your knowledge that all of the information provided herein is accurate and complete.

Print Name Michael Torocco Signature [Signature]

Date 6/24/22

Contact Information 609-618-3998

****Important**** Please include all Phase 1 data forms in a final Phase 1 bog turtle habitat assessment report (see Attachment 3 in *Guidelines for Bog Turtle Surveys* for checklist) and submit to your local state wildlife agency and U.S. Fish and Wildlife Service Field Office (see Attachment 1 in *Guidelines for Bog Turtle Surveys*).

Additional space for notes, color photos, or maps/sketch of wetland (or attach printed map with each wetland type carefully outlined; include all wetland types [PEM, PSS, PFO, POW/PUB], streams/ditches, north arrow, property/project borders, and areas of core bog turtle habitat. Include **color photos** for each wetland assessed and separate Phase 1 data forms for each when submitting to agencies, as well as any reptile and amphibian species you encounter, if possible.

- Wetland consists of drainage ditch within an agricultural field
- Wetland hydrology linked to overland flow; no springs present
- Substrate is non-mucky (< 3in.)
- Tire ruts from farm equipment create depressions/drainage in SE lobe of wetland

Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range

(Revised April 29, 2020) Please do not edit document.

Wetland ID: 3
PNDI # (for PA): 75780Z

General Info

Property/Project Name: Arenier
Coordinates: 40,148786, -76,540946 Project Type: Warehouse
Entity Requesting Phase 1 Survey: ECS
County/Township/Municipality: Mt. Joy Twp., Lancaster Co.
Lead Surveyor: Michael Torocco Affiliation: HA
Other Assistants Present: Quillyn Bickley

Date/Condition

Date of Survey: 6/24/22 Time In: 1315 Time Out: 1345 Air Temp: 76 F
Last Precipitation: < 24 hours
Drought Index: none
Wetland Photos Taken: Yes
Notes: Recent heavy rain

Wetland Info

Wetland Size: 0.01 acres, if known # Wetlands w/in Project Area: 4
Estimate wetland size (acres): < 0.1, 0.1 - 0.5, 0.5 - 1, 1 - 2, 2 - 4, 5+, 10+
Estimate % Canopy Cover: > 60
Hydrology and Soils: Water Visible on Surface, Evidence of Flooding, Rivulets, Small Puddles/Depressions, Saturated soils present?
Estimate time period (in years) of disturbance: < 5
For ditches that may be present, is there bog turtle habitat? No ditches present

1 (*) Denotes reference to the Supplemental Information document that provides more details on this particular question.
2 Each wetland must have a separate Phase 1 habitat assessment data form completed.
3 Determine percent cover of abundant species for the wetland, not by wetland type. Abundant species are those that are most prominent in the wetland and have the highest percent of coverage compared to other species.
4 Seasonal flooding in wetlands/streams can occur as a result of spring snow melt/heavy rain that increases water levels in these systems.
5 Routine flooding refers to tidally-influenced wetland/stream systems or the occurrence of normal rain patterns throughout the year.

X Yes No Are there any signs of disturbance to vegetation (e.g., mowing, pasturing, burning)? If yes, describe:

Wetland Info

Rate (scale of 1-4) level of vegetation disturbance* (Circle): 1. Light to moderate grazing or mowing 2. No grazing, mowing, burning observed⁶ 3. Moderate to high grazing or mowing 4. Mowing occurs during bog turtle active season

Soil types present*: Saturated, clayey, non-mucky (< 3m.)

How much suitable habitat is in this wetland? Estimate acreage or percentage: 0%

| Wetland Type | % of Total Wetland | % of Wetland Type w/Muck | Avg. Muck Depth | Max. Muck Depth |
|-----------------------------|--------------------|--------------------------|-----------------|-----------------|
| PEM Portion of Wetland: | <u>100</u> | <u>0</u> | <u>X</u> in. | <u>X</u> in. |
| PSS Portion of Wetland: | _____ | _____ | _____ in. | _____ in. |
| PFO Portion of Wetland: | _____ | _____ | _____ in. | _____ in. |
| POW/PUB Portion of Wetland: | _____ | _____ | _____ in. | _____ in. |

CIRCLE all vegetation* from list below that is dominant (≥ 20% for each wetland type listed above) and add other species you observe that are not listed in table in the "notes" space provided below or in the extra table cells.

Wetland Type/Vegetation

| | | | | | |
|--|---|--|---|---|---|
| Alder Spp. <i>Alnus</i> spp. | Common Reed <i>Phragmites australis</i> | <u>Jewelweed <i>Impatiens capensis</i></u> | Rice Cutgrass <i>Leersia oryzoides</i> | Spicebush <i>Lindera benzoin</i> | Willow spp. <i>Salix</i> spp. |
| Alder-leaved Buckthorn <i>Rhamnus alnifolia</i> | Dogwood Spp. <i>Cornus</i> spp. | Mile-A-Minute <i>Persicaria perfoliata</i> | Rough-leaved Goldenrod <i>Solidago patula</i> | Spike-Rush <i>Eleocharis palustris</i> | Woolly-fruited Sedge <i>Carex lasiocarpa</i> |
| American Elm <i>Ulmus americana</i> | Duck Potato <i>Sagittaria latifolia</i> | Multiflora Rose <i>Rosa multiflora</i> | Sensitive Fern <i>Onoclea sensibilis</i> | Swamp Rose <i>Rosa palustris</i> | Woolly Bulrush or Woolgrass <i>Scirpus cyperinus</i> |
| Arrowhead <i>Sagittaria latifolia</i> | Eastern Red Cedar <i>Juniperus virginiana</i> | Poison Sumac <i>Toxicodendron vernix</i> | Shrubby Cinquefoil <i>Dasiphora fruticosa</i> | Sweetflag <i>Acorus calamus</i> | Yellow-Green Sedge <i>Cyperus esculentus</i> |
| Carpetgrass <i>Axonopus fissifolius</i> | Eastern Tamarack <i>Larix laricina</i> | Porcupine Sedge <i>Carex hystericina</i> | Skunk Cabbage <i>Symplocarpus foetidus</i> | Tearthumb Spp. <i>Polygonum</i> spp. | |
| Cattail <i>Typha</i> spp. | Grass-of-Parnassus <i>Parnassia glauca</i> | Purple Loosestrife <i>Lythrum salicaria</i> | Smooth Sawgrass <i>Cladium mariscoides</i> | Tussock Sedge <i>Carex stricta</i> | |
| Cinnamon Fern <i>Osmundastrum cinnamomeum</i> | Inland sedge <i>Carex interior</i> | Red Maple <i>Acer rubrum</i> | Soft Rush or Common Rush <i>Juncus effusus</i> | Viburnum Spp. <i>Viburnum</i> spp. | |
| Common Boneset <i>Eupatorium perfoliatum</i> | <u>Japanese Stiltgrass <i>Microstegium vimineum</i></u> | Reed Canary Grass <i>Phalaris arundinacea</i> | Sphagnum Moss <i>Sphagnum</i> spp. | White turtlehead <i>Chelone glabra</i> | |

Notes on additional plant species (e.g., sedge, rush, grass, shrub, tree species):

⁶ No grazing, mowing, or burning is given a "2" rank as this is considered more harmful to bog turtle wetlands than Rank 1 (light to moderate grazing or mowing). Light to moderate habitat management is beneficial to suppressing succession of native and non-native plant species.

Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.):

Wetland occurs at western edge of forested block, otherwise surrounded by large crop fields

Landscape Info

How much of this wetland is located **off-site** (i.e., outside the property boundaries or right-of-way)?

- None of it – the entire wetland is within the property boundaries
- Some of it – _____ Acres or _____% of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the **off-site portion** was surveyed (on foot)?

- N/A None of it All of it Part of it (_____ acres or _____% of the off-site portion)

Is there potential bog turtle habitat **within 300 feet***? Yes No Unk Habitat **off-site**? Yes No Unk

If yes, how did you conclude this?

Species

Were any bog turtles observed? Yes No If yes, how many? _____
Other herps observed? Yes No If yes, which ones?

*Note that you must be permitted by the state you are conducting the survey in to handle bog turtles.
*Report bog turtle observations to your local FWS Field Office and state wildlife office within 48 hrs.

- Yes No Unsure The **hydrology** criterion for bog turtle habitat is met.
- Yes No Unsure The **soils** criterion for bog turtle habitat is met.
- Yes No Unsure The **vegetation** criterion for bog turtle habitat is met.
- Yes No Unsure This wetland **HAS** potential bog turtle habitat (fair to good quality).
- Yes No Unsure This wetland **HAS** potential bog turtle habitat (low to very low quality).
- This wetland does **NOT** have potential bog turtle habitat. **UNSURE** if suitable habitat is present.

Lead Surveyor Opinion

Notes (How did you reach this opinion?):

Lead Surveyor – please sign below certifying to the best of your knowledge that all of the information provided herein is accurate and complete.

Print Name Michael Torocco Signature [Signature]

Date 6/24/22

Contact Information 609-618-3998

****Important**** Please include all Phase 1 data forms in a final Phase 1 bog turtle habitat assessment report (see Attachment 3 in *Guidelines for Bog Turtle Surveys* for checklist) and submit to your local state wildlife agency and U.S. Fish and Wildlife Service Field Office (see Attachment 1 in *Guidelines for Bog Turtle Surveys*).

(Revised April 29, 2020)

Additional space for notes, color photos, or maps/sketch of wetland (or attach printed map with each wetland type carefully outlined; include all wetland types [PEM, PSS, PFO, POW/PUB], streams/ditches, north arrow, property/project borders, and areas of core bog turtle habitat. Include **color photos** for each wetland assessed and separate Phase 1 data forms for each when submitting to agencies, as well as any reptile and amphibian species you encounter, if possible.

- Wetland consists of short drainage swale with direct outflow to trib
1-2 ft wide, 0.5 m H₂O

- Fed by overland flow; no
springs

- Substrate is clayey and firm

Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range

(Revised April 29, 2020) Please do not edit document.

Wetland ID: 4
PNDI # (for PA): 757802

General Info

Property/Project Name Greener
Coordinates 40.148781, -76.541699 Project Type Warehouse
Entity Requesting Phase 1 Survey ECS
County/Township/Municipality Mt. Joy Twp., Lancaster Co
Lead Surveyor Michael Torocco Affiliation HA
Other Assistants Present Quillyn Bickley

Date/Condition

Date of Survey 6/24/22 Time In 1230 Time Out 1300 Air Temp. 76 F C
Last Precipitation X < 24 hours 1-7 days > 1 week unknown Drought conditions? Yes X No Unknown
Drought Index*1 (Circle): none D0 D1 D2 D3 D4 Wetland Photos Taken X Yes No (Provide photo location map)
Notes (e.g., details about drought, flood, abnormally dry, and/or snow/ice conditions, and any other seasonal conditions observed):

Wetland Info

Wetland Size 0.01 acres, if known # Wetlands w/in Project Area2 4
Estimate wetland size (acres) < 0.1 0.1 - 0.5 0.5 - 1 1 - 2 2 - 4 5+ 10+
Estimate % Canopy Cover*3 0% <= 5 X 6-20 21-40 41-60 > 60
Hydrology and Soils (check all that apply): use additional pages to further discuss pertinent general wetland information
Springs/Seeps Springhouse Trib/Stream Pond Stormwater Iron Bacteria Watercress
Water Visible on Surface Evidence of Flooding Yes X No If yes, (Seasonal Flooding4 Routine Flooding5)
Rivulets (inches deep) Subsurface Tunnel/Rivulets Tire Ruts (inches deep)
Small Puddles/Depressions (inches deep) Saturated soils present? If yes, year-round? Likely Unlikely Unk
Yes X No Are there any signs of disturbance to hydrology (e.g., drainage ditches, tile drainages, berms, culverts, fill material, ponds, roads, beaver activity)?
Estimate time period (in years) of disturbance*: <= 5 6-10 11-20 > 20

For ditches that may be present, is there bog turtle habitat? If yes, describe:
No ditches present

1 (*) Denotes reference to the Supplemental Information document that provides more details on this particular question.
2 Each wetland must have a separate Phase 1 habitat assessment data form completed.
3 Determine percent cover of abundant species for the wetland, not by wetland type. Abundant species are those that are most prominent in the wetland and have the highest percent of coverage compared to other species.
4 Seasonal flooding in wetlands/streams can occur as a result of spring snow melt/heavy rain that increases water levels in these systems.
5 Routine flooding refers to tidally-influenced wetland/stream systems or the occurrence of normal rain patterns throughout the year.

Wetland ID: 4

X Yes X No Are there any signs of disturbance to vegetation (e.g., mowing, pasturing, burning)? If yes, describe:

Wetland Info

Rate (scale of 1-4) level of vegetation disturbance* (Circle): 1. Light to moderate grazing or mowing 2. No grazing, mowing, burning observed⁶ 3. Moderate to high grazing or mowing 4. Mowing occurs during bog turtle active season

Soil types present*: Non-mucky (< 3 in.)

How much suitable habitat is in this wetland? Estimate acreage or percentage: 0%

| Wetland Type | % of Total Wetland | % of Wetland Type w/Muck | Avg. Muck Depth | Max. Muck Depth |
|-----------------------------|--------------------|--------------------------|-----------------|-----------------|
| PEM Portion of Wetland: | <u>100</u> | <u>0</u> | <u>X</u> in. | <u>X</u> in. |
| PSS Portion of Wetland: | _____ | _____ | _____ in. | _____ in. |
| PFO Portion of Wetland: | _____ | _____ | _____ in. | _____ in. |
| POW/PUB Portion of Wetland: | _____ | _____ | _____ in. | _____ in. |

CIRCLE all vegetation* from list below that is dominant (≥ 20% for each wetland type listed above) and add other species you observe that are not listed in table in the "notes" space provided below or in the extra table cells.

Wetland Type/Vegetation

| | | | | | |
|--|---|---|---|---|---|
| Alder Spp. <i>Alnus</i> spp. | Common Reed <i>Phragmites australis</i> | Jewelweed <i>Impatiens capensis</i> | Rice Cutgrass <i>Leersia oryzoides</i> | Spicebush <i>Lindera benzoin</i> | Willow spp. <i>Salix</i> spp. |
| Alder-leaved Buckthorn <i>Rhamnus alnifolia</i> | Dogwood Spp. <i>Cornus</i> spp. | Mile-A-Minute <i>Persicaria perfoliata</i> | Rough-leaved Goldenrod <i>Solidago patula</i> | Spike-Rush <i>Eleocharis palustris</i> | Woolly-fruited Sedge <i>Carex lasiocarpa</i> |
| American Elm <i>Ulmus americana</i> | Duck Potato <i>Sagittaria latifolia</i> | Multiflora Rose <i>Rosa multiflora</i> | Sensitive Fern <i>Onoclea sensibilis</i> | Swamp Rose <i>Rosa palustris</i> | Woolly Bulrush or Woolgrass <i>Scirpus cyperinus</i> |
| Arrowhead <i>Sagittaria latifolia</i> | Eastern Red Cedar <i>Juniperus virginiana</i> | Poison Sumac <i>Toxicodendron vernix</i> | Shrubby Cinquefoil <i>Dasiphora fruticosa</i> | Sweetflag <i>Acorus calamus</i> | Yellow-Green Sedge <i>Cyperus esculentus</i> |
| Carpetgrass <i>Axonopus fissifolius</i> | Eastern Tamarack <i>Larix laricina</i> | Porcupine Sedge <i>Carex hystericina</i> | Skunk Cabbage <i>Symplocarpus foetidus</i> | Tearthumb Spp. <i>Polygonum</i> spp. | |
| Cattail <i>Typha</i> spp. | Grass-of-Parnassus <i>Parnassia glauca</i> | Purple Loosestrife <i>Lythrum salicaria</i> | Smooth Sawgrass <i>Cladium mariscoides</i> | Tussock Sedge <i>Carex stricta</i> | |
| Cinnamon Fern <i>Osmundastrum cinnamomeum</i> | Inland sedge <i>Carex interior</i> | Red Maple <i>Acer rubrum</i> | Soft Rush or Common Rush <i>Juncus effusus</i> | Viburnum Spp. <i>Viburnum</i> spp. | |
| Common Boneset <i>Eupatorium perfoliatum</i> | Japanese Stiltgrass <i>Microstegium vimineum</i> | <u>Reed Canary Grass</u> <i>Phalaris arundinacea</i> | Sphagnum Moss <i>Sphagnum</i> spp. | White turtlehead <i>Chelone glabra</i> | |

Notes on additional plant species (e.g., sedge, rush, grass, shrub, tree species):

⁶ No grazing, mowing, or burning is given a "2" rank as this is considered more harmful to bog turtle wetlands than Rank 1 (light to moderate grazing or mowing). Light to moderate habitat management is beneficial to suppressing succession of native and non-native plant species.

Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.):

Wetland occurs at western edge of forested block, otherwise surrounded by crop fields

Landscape Info

How much of this wetland is located **off-site** (i.e., outside the property boundaries or right-of-way)?

- None of it – the entire wetland is within the property boundaries
- Some of it – _____ Acres or _____% of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the **off-site portion** was surveyed (on foot)?

- N/A None of it All of it Part of it (_____ acres or _____% of the off-site portion)

Is there potential bog turtle habitat **within 300 feet***? Yes No Unk Habitat **off-site**? Yes No Unk

If yes, how did you conclude this?

Species

Were any bog turtles observed? Yes No If yes, how many? _____
Other herps observed? Yes No If yes, which ones?

*Note that you must be permitted by the state you are conducting the survey in to handle bog turtles.
*Report bog turtle observations to your local FWS Field Office and state wildlife office within 48 hrs.

Lead Surveyor Opinion

- Yes No Unsure The **hydrology** criterion for bog turtle habitat is met.
- Yes No Unsure The **soils** criterion for bog turtle habitat is met.
- Yes No Unsure The **vegetation** criterion for bog turtle habitat is met.
- Yes No Unsure This wetland **HAS** potential bog turtle habitat (fair to good quality).
- Yes No Unsure This wetland **HAS** potential bog turtle habitat (low to very low quality).
- This wetland does **NOT** have potential bog turtle habitat. **UNSURE** if suitable habitat is present.

Notes (How did you reach this opinion?):

Lead Surveyor – please sign below certifying to the best of your knowledge that all of the information provided herein is accurate and complete.

Print Name Michael Torow Signature [Handwritten Signature]

Date 6/24/22

Contact Information 609-618-3998

****Important**** Please include all Phase 1 data forms in a final Phase 1 bog turtle habitat assessment report (see Attachment 3 in *Guidelines for Bog Turtle Surveys* for checklist) and submit to your local state wildlife agency and U.S. Fish and Wildlife Service Field Office (see Attachment 1 in *Guidelines for Bog Turtle Surveys*).

Additional space for notes, color photos, or maps/sketch of wetland (or attach printed map with each wetland type carefully outlined; include all wetland types [PEM, PSS, PFO, POW/PUB], streams/ditches, north arrow, property/project borders, and areas of core bog turtle habitat. Include **color photos** for each wetland assessed and separate Phase 1 data forms for each when submitting to agencies, as well as any reptile and amphibian species you encounter, if possible.

- Wetland perched on area between toe of farm field slope and tributary. Fed by overland flow. No springs present. Poor drainage.
- No surface water
- Substrate is firm