Phase I Bog Turtle Habitat Survey

for the Green Brook Flood Risk Management Project Segments C5 through D

Somerset and Middlesex Counties, New Jersey

July 21, 2020

Prepared for:

U.S. Army Corps of Engineers - New York District



US Army Corps of Engineers ®

Prepared by:

First Environment, Inc.

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1.0 Introduction

First Environment, Inc. (First Environment) was retained by the U.S. Army Corps of Engineers (USACE) to conduct a Phase I habitat survey for the federally-threatened and state-endangered bog turtle (*Glyptemys muhlenbergii*) in Segments C5 through D of the Green Brook Flood Risk Management (FRM) project in Middlesex and Somerset counties, New Jersey (Figure 1). Under the Green Brook Flood Risk Management Project, USACE intends to attenuate flooding along Green Brook and its tributaries through the construction of a series of levees, floodwalls, and pump stations. The bog turtle has been historically documented in the region, and in its review of the project the U.S. Fish and Wildlife Service (USFWS) asked for a Phase I Survey to determine the potential presence of bog turtles within the project area. A Phase I and Phase II survey of Segments C1-C4 conducted by First Environment in 2018-2019 identified one potential bog turtle habitat that was determined negative for bog turtle presence. The results of the Segment C5 through D Phase I Survey are presented in this report.

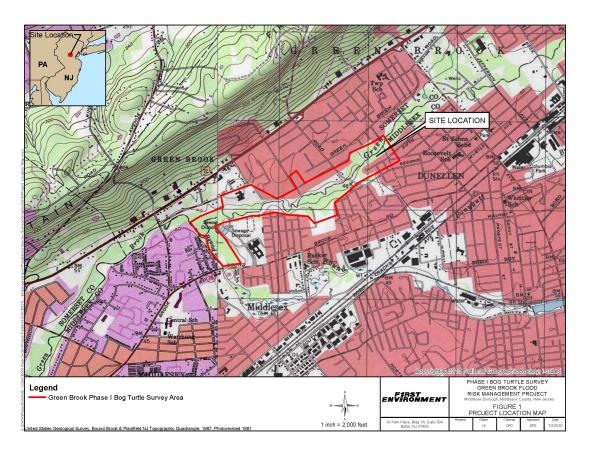


Figure 1 - Project Location Map

1.1 Species Background

The bog turtle is a semi-aquatic, freshwater turtle that prefers shallow, emergent wetlands with highly penetrable substrates saturated by perennial groundwater discharge. Bog turtle habitats fall under several wetland community classifications including freshwater marsh, medium and rich fen, wet meadow, and shrub swamp. Most bog turtle sites support a mosaic of herbaceous and woody-dominated communities. Key habitat features include soft 'mucky' soils (composed of organic or mineral material), springs and seeps, rivulets, shallow pools, and hummocks, often in the form of tussock-forming vegetation. Common flora of bog turtle habitats in the Mid-Atlantic region include rice cutgrass (*Leersia oryzoides*), cattail (*Typha*), tussock sedge (*Carex stricta*), sedges (*Carex sp.*) wool grass (*Scirpus cyperinus*), common rush (*Juncus effusus*), skunk cabbage (*Symplocarpus foetidus*), jewelweed (*Impatiens capensis*), smartweed (*Polygonum*), arrowhead (*Sagittaria*) sensitive fern (*Onoclea sensibilis*), smartweed (*Polygonum* sp.), marsh fern (*Thelypteris palustris*), peat moss (*Sphagnum* sp.), speckled alder (*Alnus serrulata*), willow (*Salix* sp.), silky dogwood (*Cornus*

amomum), poison sumac (*Rhus vernix*), spicebush (*Lindera benzoin*), northern arrowwood (*Viburnum dentatum*), red maple (*Acer rubrum*), pin oak (*Quercus palustris*), and gray birch (*Betula populifolia*). Nonnative and/or invasive species including purple loosestrife (*Lythrum salicaria*), common reed (*Phragmites australis*), Japanese stiltgrass (*Microstegium vimineum*), and multiflora rose (*Rosa multiflora*) can also be abundant. Habitats tend to be small and localized, with many sites falling under an acre in size. Bog turtles are generally active April through October. Breeding occurs in the spring, and in June females lay eggs atop moss-covered sedge tussocks or other raised surfaces in the wetland. Hatchlings emerge in September. Brumation typically occurs in tunnels saturated by groundwater, which provides a thermal buffer. Bog turtles are omnivorous and can live in excess of 50 years and perhaps much longer. The species was listed as threatened by the U.S. Fish and Wildlife Service in 1997 (Ernst and Lovich, 2009; USFWS, 2001).

2.0 Methods

The Phase I Bog Turtle Survey was conducted over the course of three days: 28 May, 3 June, and 8 June 2020 and encompassed 17 discrete wetlands (Figure 2). Surveys were conducted by Jason Tesauro, a USFWS Recognized Qualified Bog Turtle Surveyor. Each wetland was evaluated on foot for the presence of the following habitat components listed in the U.S. Fish and Wildlife Service's Bog Turtle Phase I Habitat Survey guidelines:

- substrates of saturated organic and/or mineral 'mucky' soils with high penetrability;
- hydrologic regime maintained by a consistent supply of groundwater;
- dominance of herbaceous and scrub-shrub hydrophytic vegetation including sedges and other hummock-forming graminoids.

Representative habitat photographs and GPS coordinates were taken at each survey location. Phase I data sheets were also completed. The weather conditions during the survey were non-inclement with air temperatures between 70° to 80°F.

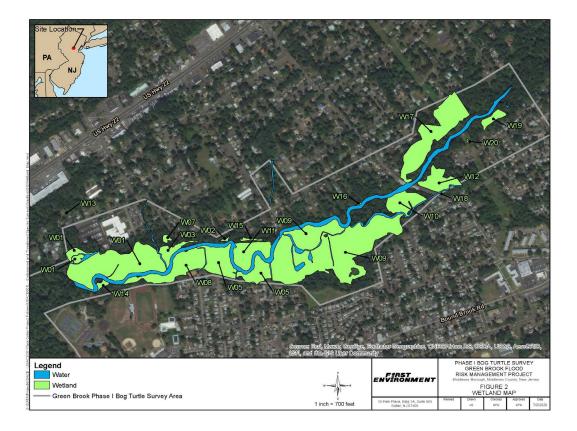


Figure 2 - Wetland Map

July 21, 2020

3.0 Results

Potential bog turtle habitat was not identified in any of the 17 wetlands surveyed in this investigation. Wetlands within the project area are generally floodplain forest maintained hydrologically by surface run-off and stream overflow. Small areas of emergent wetland habitat were identified within three wetlands: W01, W09, and W17, but none met all three of the floristic, hydrologic, and substrate Phase I criteria to be classified as potential bog turtle habitat. Descriptions and photographs of the habitat conditions at each wetland are presented in the following section. Location references for all photographs are provided in Figure 3, Appendix

3.1 Bog Turtle Phase I Habitat Survey – Wetland Descriptions and Photographs

3.1.1 Wetland W01

W01 contains a sizeable section of the Green Brook floodplain in the west end of the project area. The habitat is characterized by mostly mature floodplain swamp with impressively large specimens of pin oak and other hardwoods. Off-road vehicle (ORV) use was extensive in the forested portions of the site, with many rutted areas containing standing water. In the NW corner of the site, the hardwood swamp gives way to a small, mucky, spring-fed marsh occurring in the footprint of what appeared to be a former pond. Dominant flora observed within this sunny, emergent wetland included reed canarygrass, water purslane, and thick mats of duckweed. Willow and box elder were the most common woody plants. A snapping turtle and several green frogs were observed among the duckweed. Dragonflies were abundant. While conditions were too flooded and lacked the microtopography required by bog turtles, the prodigious groundwater discharge and rich concentration of wetland biodiversity were unique to the study area.



W01 photo 1: Floodplain forest community showing standing water in ORV path



W01 photo 2: Groundwater-fed marsh

W02 is an intermittently flooded, forested depression in the floodplain of the Green Brook and bordered on the north by an earthen levee. A bike trail crosses a portion of the site. Vegetation observed included several hardwoods and sparse herbaceous ground cover, including garlic mustard and sedges. Hydrology is driven by stream flooding; substrates were damp but firm during the site visit. W02 does not contain potential bog turtle habitat.



WO2: Intermittently flooded basin containing a well-worn bike/pedestrian trail

W03 is a floodplain swamp dominated by box elder, silver maple, and green ash. Smartweeds, Japanese stiltgrass, and various graminoids were common in the understory. Hydrology is driven by surface run-off; substrates were firm and mostly dry during the site visit. W03 does not contain potential bog turtle habitat.



W03: Hardwood swamp and lush herbaceous ground cover

Wetland W05

W05 is a floodplain swamp bordered to the north by Green Brook and John Street to the south. Dominant flora observed included sweet gum, pin oak, box elder, silver maple and ground cover comprising smartweed and several sedges. Portions of the site occurring with private residential lots were cleared and appeared to be maintained in an herbaceous condition. One flooded depression was noted. Hydrology is entirely driven by surface run-off and stream flooding. Substrates during the site visit ranged from dry to saturated with no penetrability. W05 does not contain potential bog turtle habitat.



W05 photo 1: Hardwood swamp community showing thick herbaceous cover of smartweeds and several graminoids



W05 photo 2: Hardwood swamp with small area of intermittent standing water bordering residential properties

W07 is a young hardwood swamp with a sparse canopy permitting the development of thick herbaceous understory. Dominant flora observed included red maple, box elder, multiflora rose, greater bladder sedge, smartweed, Japanese stiltgrass, and several other unidentified native grasses. Hydrology is driven by surface run-off; substrates were dry and firm during the site visit. W07 does not contain potential bog turtle habitat.



W07: Sparsely canopied, young hardwood swamp community with thick herbaceous cover

W08 is a floodplain swamp NE of Middlesex High School. Dominant flora observed included sweet gum, pin oak, box elder, silver maple and ground cover comprising Japanese knotweed, smartweed, and several sedges. As with W05 (which is contiguous to the east), portions of the site occurring with private residential lots were cleared and maintained in an herbaceous condition. A stand of the nonnative yellow flag, a marsh species, was observed in one of the lots. Hydrology is driven by surface run-off, stormwater outfalls, and stream flooding. Substrates during the site visit ranged from dry to saturated with no penetrability. W08 does not contain potential bog turtle habitat.



W08 photo 1: Hardwood swamp and herbaceous communities bordering residential properties



W08 photo 2: Intermittently flooded depression along forested floodplain

W09 is a floodplain swamp on the south side of Green Brook with several modified areas that support emergent and open water habitats. Dominant vegetation observed in the swamp included sweet gum (several massive specimens), pin oak, box elder, American elm, basswood, ash, red maple, silver maple, spicebush, and a lush carpet of herbs. Emergent wetland occurs in two areas: 1) directly behind residences of Fairfield Street and Fairfield Avenue, and 2) within a partially drained impoundment (one of several) along the Green Brook floodplain north of Fairfield Street. The emergent wetland closer to Fairfield Street and Fairfield Avenue appeared to have been cleared and altered in the past, as indicated by uneven terrain and mounds of soil colonized by flora typically associated with soil disturbance (e.g., Japanese hops). The emergent wetland flora that colonized this area included cattail, reed canarygrass, sedges, manna grass, rice-cutgrass, and Japanese stiltgrass. This community is supported by surface water run-off that creates seasonally and/or intermittently saturated conditions. The emergent wetland area occupying the former pond contained some superficial elements of potential bog turtle habitat, e.g. herbaceous vegetation (rice-cut grass, sedges, smartweed, arrowhead), saturated 'mucky' soils, and shallow water; however, the area was very small in size, occupying the drained edges of the former impoundment, and lacked perennial groundwater discharge and other habitat structure. Eastern painted turtles were abundant in the areas of remaining standing water. An adjacent pond surrounded by a dense stand of bamboo also contained eastern painted turtles and bullfrogs. W9 does not contain potential bog turtle habitat.



W9 photo 1: Mature hardwood swamp community containing extensive herbaceous ground cover



W9 photo 2: Emergent marsh community formed in a disturbed area along water main and bordering residential homes along Fairfield Ave



W9 photo 3: Permanent pond



W9 photo 4: Marsh occupying a partially-drained impoundment (dam visible in far-right corner)

W10 is a floodplain swamp. Dominant vegetation observed included red maple, pin oak, box elder, yellow poplar, American beech, spicebush, Japanese knowtweed, Japanese stiltgrass, garlic mustard, reed canarygrass, and greater bladder sedge. Hydrology is driven by surface run-off and stream flooding. Topography is somewhat variable with raised areas and depressions—some of which contained shallow ponding. Substrates during the time of the visit ranged from damp to dry. W10 does not contain potential bog turtle habitat.



W10 photo 1: Hardwood swamp community with shallow depressions dominated by graminoids



W10 (photo 2): Hardwood swamp colonized by Japanese Knotweed

W11 is a floodplain swamp dominated by silver maple, box elder, ash, and other hardwoods. Smartweeds, Japanese stiltgrass, and garlic mustard carpeted the forest floor. Several areas contained bare soil from ORV disturbance. Hydrology is driven by surface run-off and stream flooding. Substrates were generally damp and firm. W11 does not contain potential bog turtle habitat.



W11 (photo 1): Hardwood swamp community



W11 (photo 2): Portions of hardwood swamp disturbed by ORV use

Wetland W12/W18

W12 is a floodplain swamp with a small emergent wetland component bordering Warrenville Road. Dominant vegetation observed in the swamp included red maple, silver maple, ash, box elder, American sycamore, black locust, willow, pin oak; Japanese stiltgrass, Japanese knotweed were dominant herbs in the forest. Portions of the swamp had been altered by excavation and ORVs. The emergent component of the wetland consists of a mosaic of reed canarygrass, Japanese stiltgrass, and common reed. Hydrology throughout the forested and emergent areas is driven by surface run-off and stream flooding. Disturbed areas contained shallow ponding. Substrates during the time of the visit ranged from damp to dry; standing water was not present. W18 consists of a small sliver of wetland separated from W12 by a drainage channel and is ecologically identical to W12. W12/W18 do not contain potential bog turtle habitat.



W12 (photo 1): Emergent marsh community bordering Green Brook and Warrenville Road



W12 (photo 2): View of emergent marsh habitat facing Warrenville Road



W12 (photo 3): Intermittent pool within hardwood swamp



W12/W18: Watercourse separating W12 and the small sliver of forested, mostly roadside wetland within W18 (right side of photo)

W14 contains floodplain swamp dominated by sliver maple, sweet gum, Japanese knotweed, Japanese barberry, and Japanese stiltgrass. Hydrology is driven by stream flooding; substrates were dry and firm during the site visit. W14 does not contain potential bog turtle habitat.



W14: Hardwood swamp community

W15 is a forested swale located on a residential lot separated from the Green Brook floodplain by an earthen levee. The area is used as a dump for tree and landscaping debris and appeared to be mowed seasonally. Vegetation observed include red maple, American sycamore, American elm, snakeroot, and Japanese stiltgrass. Hydrology is driven by surface run-off; substrates are intermittently saturated. W15 does not support potential bog turtle habitat.



W15: Sparsely forested, managed wetland area occurring along the edge of residential property

Wetland W16

W16 contains the shoreline and floodplain of the Green Brook. Dominant vegetation observed included Japanese knotweed, smartweed, and box elder. Hydrology is driven by stream flooding; substrates are comprised by alluvium and mineral soils. W16 does not contain potential bog turtle habitat.



W16: Shoreline and forested floodplain along Green Brook

W17 is a floodplain swamp bordering the north side of Green Brook and is intersected by a JCP&L overhead transmission line right-of-way (ROW). The maintained ROW contains emergent marsh and several ponds. Dominant vegetation observed in the forested portions of the site included pin oak, red maple, shagbark hickory, box elder, blackhaw, snakeroot, false nettle, greater bladder sedge, Japanese stiltgrass. Emergent wetland habitat under the ROW contained reed canarygrass, fringed sedge, sensitive fern, Japanese knotweed, jewelweed, smartweed, soft rush, and scattered multiflora rose and wild raspberry. Water plantain and spatterdock were dominant in the ponds. The hydrology throughout W17 appeared to be mostly driven by surface run-off (stormwater outfalls observed in forested portions) and stream flooding, with perhaps a small groundwater component contributing to the hydrology of the ponds. Substrates at the time of the visit were firm and mostly dry with the exception of the ponds and a stormwater ditch. Despite supporting an extensive marsh community (the largest of its kind encountered in the study area), W17 does not contain the appropriate soils and hydrology to provide potential bog turtle habitat.



W17 (photo 1): Extensive emergent marsh community under the JCP&L utility ROW



W17 (photo 2): Hardwood swamp community - east side of ROW



W17 (photo 3): Hardwood swamp community - west side of ROW



W17 (photo 4): Flooded drainage ditch excavated along residential properties

W19 consists of a sparsely canopied, red maple-dominant floodplain swamp bordering the south side of Green Brook. Hydrology is driven by surface run-off. Substrates at the time of the visit were dry and firm. Dominant herbaceous flora observed included smartweed, Japanese knotweed, and fringed sedge. Surface water was present in a small intermittent pond along the east end of the wetland, bordering residential properties. W19 does not contain suitable bog turtle habitat.



W19 (photo 1): Intermittent woodland pond within hardwood swamp community



W19 (photo 2): Patch of herbaceous vegetation in forest gap

W20 consists of a small, intermittently flooded depression under the JCP&L ROW. Hydrology is driven by surface run-off and occasional stream flooding. Substrates at the time of the visit were dry and firm. Dominant herbaceous flora observed included reed canary grass, Japanese knotweed, Japanese stiltgrass, and greater bladder sedge. W20 does not contain suitable bog turtle habitat.



W20: Intermittently flooded herbaceous wetland under JCP&L ROW

Conclusions and Recommendations

A Phase I Bog Turtle Survey of 17 wetlands within the Segment C5 through D of the Green Brook Flood Risk-Management project did not identify any potential bog turtle habitats. Wetlands were mostly closed-canopy, floodplain swamp subjected to extensive and frequent flooding. Of the few emergent wetland communities that occur in the survey area (W01, W09, and W17), only W09 is characterized by significant groundwater discharge—a core requirement of bog turtles. Nevertheless, W09 does not contain the plant community and habitat structure required by the species and has been historically altered to form an impoundment. Based on the results of this investigation, no further bog turtle survey is warranted for this portion of the project.

References

Ernst, C.H. and J.E. Lovich. 2009. Turtles of the United States and Canada. 2nd Edition, Johns Hopkins University Press, Baltimore.)

U.S. Fish and Wildlife Service. 2001. Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan. Hadley, Mass. 103 pp.

Appendix A: Phase 1 Survey Photograph Locations



Appendix B: Qualifications of Personnel

Jason Tesauro

EDUCATION:

1998 - 2002: Rutgers the State University of New Jersey

Graduate School

M.S. Ecology and Evolution Advisor: Dr. David Ehrenfeld

Thesis: The Effects of Livestock Grazing on the Bog turtle (Clemmys muhlenbergii)

1992 - 1997: Rutgers the State University of New Jersey

Rutgers College B.A. Anthropology

Minor - Biological Sciences

EMPLOYMENT HISTORY:

Biologist - First Environment, Butler, New Jersey (2018 - present)

Wildlife Ecologist - Jason Tesauro Consulting, LLC, Millbrook, New York (2003 - present)

Associate Biologist - Hudsonia, Ltd., Annandale, New York (1998 - present)

Wildlife Ecologist - Environmental Defense Fund, Washington, D.C. (2003 - 2010)

Senior Zoologist - New Jersey Division of Fish and Wildlife Endangered & Nongame Species Program, Hampton, New Jersey (1994 - 2003)

PUBLICATIONS/ARTICLES:

Tesauro, J. 2001. Restoring wetland habitats with cows and other livestock. *Conservation Biology in Practice* 2:26-30.

Tesauro, J. and David Ehrenfeld. 2007. The effects of livestock grazing on the bog turtle [Glyptemys (=Clemmys) mulenberghii]. Herpetologica 63:293-300.

Lathrop, R., P. Montesano, J. Tesauro, and B. Zarate. 2005. Statewide mapping and assessment of vernal pools: A New Jersey case Study. *Journal of Environmental Management* 76:230-238.

Bell-Travis, K., I. Haeckel, G. Stevens, J. Tesauro, and E. Kiviat. Bog Turtle (*Glyptemys muhlenbergii*)
Dispersal Corridors and Conservation in New York, USA. *Herpetological Conservation and Biology* 13(1):257–272.

PROFESSIONAL CERTIFICATIONS:

U.S. Fish and Wildlife Service Recognized Qualified Bog Turtle Surveyor/Trapper for Pennsylvania, New Jersey, and New York

PROFESSIONAL AFFILATIONS:

Board of Directors, The Wetlands Trust, Burdett, New York (January 2016 - present)

Board of Directors, The Wetlands Conservancy, Brooktondale, New York (March 2015 - present)

Appendix C: Phase I Datasheets

| | Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range (Revised April 29, 2020) Please do not edit document. Wetland ID: |
|------------------|--|
| | Property/Project Name Green Brook FRM |
| | Coordinates 40. 586730, -74.498 172 Project Type Flood vertention |
| o j t | Entity Requesting Phase 1 Survey 400 F |
| General Info | Entity Requesting Phase 1 Survey ACOE County/Township/Municipality Somerset, Green Brook Lead Surveyor Tescuro Affiliation FE |
| ene | Lead Surveyor TP-SQLAXD |
| U | Other Assistants Present |
| | Other Assistants Present |
| | Date of Survey |
| u | Last Precipitation < 24 hours 21-7 days > 1 week unknown Drought conditions? Yes No Unknown |
| nditi | Drought Index*1 (Circle): none DO D1 D2 D3 D4 Wetland Photos Taken Yes No (Provide photo location map) |
| Date/Condition | Notes (e.g., details about drought, flood, abnormally dry, and/or snow/ice conditions, and any other seasonal conditions observed): |
| Dat | |
| | |
| | |
| | Wetland Size acres, if known # Wetlands w/in Project Area ² /7 |
| | 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 |
| | Hydrology and Soils (check all that apply): use additional pages to further discuss pertinent general wetland information |
| | ☑ prings/SeepsSpringhouse ☑ Trib/StreamPond ☑ StormwaterIron BacteriaWatercress |
| | Water Visible on Surface Evidence of Flooding Yes No If yes, (Seasonal Flooding ⁴ Routine Flooding ⁵) |
| | Rivulets (inches deep) Subsurface Tunnel/Rivulets Tire Ruts (inches deep) |
| | Small Puddles/Depressions (inches deep) Saturated soils present? If yes, year-round? Kikely Unlikely Unk |
| | Yes No Are there any signs of disturbance to <u>hydrology</u> (e.g., drainage ditches, tile drainages, berms, culverts, fill material, |
| Wetland Info | Former pond in Small section of site that supports mansh |
| | Estimate time period (in years) of disturbance*: ≤ 56-1011-20 ≥ 20 |
| | For ditches that may be present, is there bog turtle habitat? If yes, describe: |
| | NO |
| | |
| | |
| | 1.00 |

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: | WOI | |
|-------------|-----|--|
| | | |

ONV Jugafic

Wetland Type/Vegetation

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

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*:

Mineral soils

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

Wetland Type % of Total Wetland % of Wetland Type w/Muck Avg. Muck Depth Max. Muck Depth PEM Portion of Wetland: in. PSS Portion of Wetland: in. PFO Portion of Wetland: POW/PUB Portion of Wetland: in. <u>in.</u>

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.

| į. | | | | | |
|--|---|---|---|------------------------------------|---|
| Alder Spp. Alnus spp. | Common Reed Phragmites australis | Jewelweed Impatiens capensis | Rice Cutgrass Leersia oryzoides | Spicebush Lindera benzoin | Willow spp. Salix spp. |
| Alder-leaved Buckthorn Rhamnus alnifolia | Dogwood Spp. Cornus spp. | Mile-A-Minute Persicaria perfoliata | Rough-leaved Goldenrod Solidago patula | Spike-Rush Eleocharis palustris | Woolly-fruited Sedge Carex lasiocarpa |
| American Elm Ulmus americana | Duck Potato Sagittaria latifolia | Multiflora Rose Rosa multiflora | Sensitive Fern Onoclea sensibilis | Swamp Rose Rosa palustris | Woolly Bulrush or Woolgrass Scirpus cyperinus |
| Arrowhead Sagittaria latifolia | Eastern Red Cedar Juniperus virginiana | Poison Sumac Toxicodendron vernix | Shrubby Cinquefoil Dasiphora fruticosa | Sweetflag Acorus calamus | Yellow-Green Sedge Cyperus esculentus |
| Carpetgrass Axonopus fissifolius | Eastern Tamarack Larix laricina | Porcupine Sedge Carex hystericina | Skunk Cabbage Symplocarpus foetidus | Tearthumb Spp. Polygonum spp. | |
| Cattail <i>Typha</i> spp. | Grass-of-Parnassus Parnassia glauca | Purple Loosestrife Lythrum salicaria | Smooth Sawgrass Cladium mariscoides | . Tussock Sedge Carex stricta | |
| Cinnamon Fern Osmundastrum cinnamomeum | Inland sedge Carex interior | Red Maple Acer rubrum | Soft Rush or Common Rush Juncus effusus | Viburnum Spp. Viburnum spp. | 4 |
| Common Boneset Eupatorium perfoliatum | Japanese Stiltgrass Microstegium vimineum | Reed Canary Grass Phalaris arundinacea | Sphagnum Moss Sphagnum spp. | White turtlehead Chelone glabra | |

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

Duckweed, water purstane, box elder -> Dominant in herbaceous Pin Oak, sweet sum + other hardwords deminant in PFO

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.

| | Wetland ID: Wol |
|-----------------------|---|
| Di | rescribe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.): Floodplain swamp burdleved by development |
| Landscape Info ⊤ | How much of this wetland is located off-site (<i>i.e.</i> , outside the property boundaries or right-of-way)? One 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 | f 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) |
| 15 | s there potential bog turtle habitat within 300 feet*?YesYnoUnk Habitat off-site?YesYnoUnk |
| H | f yes, how did you conclude this? |
| | Adjacent arms Surveyed |
| | Egg2ng. |
| | |
| Species | Were any bog turtles observed?YesNo If yes, how many? *Note that you must be permitted by the state you are conducting the survey in to handle bog turtles. Other herps observed?YesNo If yes, which ones? *Report bog turtle observations to your local FWS Field Office and state wildlife office within 48 hrs. |
| *), | YesNoUnsure The hydrology criterion for bog turtle habitat is met. YesNoUnsure The soils criterion for bog turtle habitat is met. YesNoUnsure The vegetation criterion for bog turtle habitat is met. YesNoUnsure This wetland HAS potential bog turtle habitat (fair to good quality). YesNoUnsure 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?): Floodplain swampfed by overflow, von-off; 951. Closed convey |
| Lead Sul | 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 Sum (esumo Signature Signature |
| | Date 7/3/2020 |
| | Contact Information 20/84/6879 |
| | |
| **1 | Important** Please include all Phase 1 data forms in a final Phase 1 bog turtle habitat assessment report (see Attachment |

^{**}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*).

| | Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range Wetland ID: |
|----------------|--|
| Info | Property/Project Name Green Brook FRM Coordinates 40. 587553 -74. 442090 Project Type Flood refundin Entity Requesting Phase 1 Survey ACOE |
| General Info | County/Township/Municipality Somevset, Every Brook |
| g | Lead SurveyorAffiliation |
| | Other Assistants Present |
| | Date of Survey 6/3/2020 Time In Time Out Air Temp F ° C° |
| ition | Last Precipitation _ < 24 hours 1-7 days _ > 1 week _ unknown Drought conditions? _ Yes 100 _ Unknown |
| Date/Condition | 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 Size acres, if known # Wetlands w/in Project Area ² /7 |
| | Estimate wetland size (acres) < 0.1 \(\sum_{0.1} - 0.5 \) 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 Frib/Stream Pond Stormwater Iron Bacteria Watercress |
| | Water Visible on Surface Evidence of Flooding ★Yes No If yes, (Seasonal Flooding ⁴ ★Routine Flooding ⁵) Rivulets (inches deep) Subsurface Tunnel/Rivulets Tire Ruts (inches deep) |
| | Small Puddles/Depressions (inches deep) Saturated soils present? If yes, year-round? Unlikely Unk |
| Į. | Yes No Are there any signs of disturbance to <u>hydrology</u> (e.g., drainage ditches, tile drainages, berms, culverts, fill material, ponds, roads, beaver activity)? |
| Wetland Info | Flooding, ORV/Bikes |
| | Estimate time period (in years) of disturbance*: ≤ 56-1011-20 > 20 |
| | For ditches that may be present, is there bog turtle habitat? If yes, describe: |
| | |

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:_ W02 |
|--|---|--|--|-----------------------|
| XYes ZNO Are ther | e any signs of disturbar Frail Mroys | nce to <u>vegetation</u> (e.g., mowing, pa | asturing, burning)? If ye | s, describe: |
| Rate (scale of 1-4) level of burning observed 3. M | of vegetation disturband Noderate to high grazin | ce* (Circle): 1. Light to moderate g or mowing 4. Mowing occurs | e grazing or mowing during bog turtle activ | 2. No grazing, mowing |
| Soil types present*: | | | | |
| | (soils all | List moins | | |
| Minera | soils; all | stimate acreage or percentage: _ | 0, | /. |
| Minera | · | • | Avg. Muck Depth | Max. Muck Depth |
| Mineral How much suitable habit | at is in this wetland? Es | stimate acreage or percentage: _ | Avg. Muck Depth in. | Max. Muck Depth in. |
| Mineral How much suitable habit Wetland Type | at is in this wetland? Es | stimate acreage or percentage: _ | | |
| How much suitable habit Wetland Type PEM Portion of Wetland: | at is in this wetland? Es | stimate acreage or percentage: _ | <u>in.</u> | <u>in.</u> |

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.

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

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

Wetland Type/Vegetation

Baper Knotwad, Boxelder, American elm, Silvermaple, Sarlic mustad, smartweed

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.

| | Wetland ID: Wo2 |
|----------------|--|
| | Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.): Floodplain swamp surrounded by development |
| randscape mile | How much of this wetland is located off-site (<i>i.e.</i> , 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)? |
| | None of itAll of itPart of it (acres or% of the off-site portion) |
| | Is there potential bog turtle habitat within 300 feet*?Yes |
| | Adjacentavens surveyed |
| | Hajacore - |
| | |
| ŝ | *Note that you must be permitted by the state you Were any bog turtles observed?Yes No lf yes, how many?are conducting the survey in to handle bog turtles. |
| Species | Other herps observed?YesNo If yes, which ones? *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. |
| | Notes (How did you reach this opinion?): |
| | Flood plain sweep driven by stream over flow |
| | a |
| | Lead Surveyor – please sign below certifying to the best of your knowledge that all of the information provided herein is accurate and complete. |
| | Print NameSasn legavo Signature |
| | Date |
| | Contact Information 201 841 6879 |
| | |

^{**}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*).

| Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range (Revised April 29, 2020) Please do not edit document. | Wetland ID: W63 PNDI # (for PA): |
|--|--|
| Property/Project Name <u>Green Brook FRM</u> Coordinates <u>40,587350, -74,499219</u> Project Type <u>F/600</u> Entity Requesting Phase 1 Survey <u>ACOE</u> County/Township/Municipality_ | I Me Lendion |
| Lead SurveyorAffiliation/ Other Assistants Present | |
| Date of Survey 6/8/2020 Time In Time Out | YesNoUnknown (Provide photo location map) |
| Wetland Size acres, if known # Wetlands w/in Project Area² Estimate wetland size (acres) < 0.1 0.1 - 0.5 0.5 - 1 | neral wetland information ria Watercress ding ⁴ \rightarrow Routine Flooding ⁵) eep) und? \rightarrow Likely Unlikely |
| Estimate time period (in years) of disturbance*: $_ \le 5$ $_ 6-10$ $_ 11-20$ $_ > 20$ For ditches that may be present, is there bog turtle habitat? If yes, describe: | |
| 1 (*) Denotes reference to the Supplemental Information document that provides more details on this r | 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: | WO3 |
|----------------|---|---|--|--|---|--|
| | Yes 🔭 Are | there any signs of dis | turbance to <u>vegetatio</u> | <u>on</u> (e.g., mowing, pasturin | g, burning)? If yes, o | describe: |
| | | | | | | |
| | | | | | | |
| | Rate (scale of 1-4) le burning observed ⁶ | vel of vegetation dist 3. Moderate to high | urbance* (Circle): 1. grazing or mowing | Light to moderate grazi 4. Mowing occurs durin | ing or mowing 2. g bog turtle active : | No grazing, mowing, season |
| | Soil types present*: | | | | | |
| | Miner | ul soils | | | | |
| ı | How much suitable h | nabitat is in this wetla | ind? Estimate acreag | e or percontago: | 0% | |
| _ | | Table to the time well | ma. Estimate dereug | e or percentage. | | |
| 1 | Wetland Type | % of Total Wet | land % of Wetlan | d Type w/Muck Ave | g. Muck Depth | Max. Muck Depth |
| ١ | PEM Portion of Wetl | land: | | _ | in. | <u>in.</u> |
| i | PSS Portion of Wetla | ınd: | | | <u>in.</u> | in. |
| ١ | PFO Portion of Wetla | and: <u>/60</u> | | 0 | O in. | O in. |
| - | POW/PUB Portion of | f Wetland: | | | in. | <u>in.</u> |
| , | CIRCLE all vegetation you observe that are | n* from list below th e not listed in table ir | at is dominant (≥ 209 n the "notes" space p | % for each wetland typo provided below or in th | e listed above) and e extra table cells. | add other species |
| | Alder Spp. Alnus spp. | Common Reed Phragmites australis | Jewelweed Impatiens capensis | Rice Cutgrass Leersia oryzoides | Spicebush Lindera benzoin | Willow spp. Salix spp. |
| ype/Vegetation | Alder-leaved Buckthorn Rhamnus alnifolia | Dogwood Spp. Cornus spp. | Mile-A-Minute Persicaria perfoliata | Rough-leaved Goldenrod Solidago patula | Spike-Rush Eleocharis palustris | Woolly-fruited Sedge Carex lasiocarpa |
| ype | American Elm | Duck Potato | Multiflora Rose | Sensitive Fern | Swamp Rose | Woolly Bulrush or |

Woolgrass Ulmus americana Sagittaria latifolia Rosa multiflora Rosa palustris Onoclea sensibilis Scirpus cyperinus Arrowhead Eastern Red Cedar Poison Sumac Sweetflag Shrubby Cinquefoil Yellow-Green Sedge Sagittaria latifolia Juniperus virginiana Toxicodendron vernix Dasiphora fruticosa Acorus calamus Cyperus esculentus Carpetgrass Eastern Tamarack Porcupine Sedge Skunk Cabbage Tearthumb Spp. Axonopus fissifolius Larix laricina Carex hystericina Symplocarpus foetidus Polygonum spp. Cattail Grass-of-Parnassus Purple Loosestrife **Smooth Sawgrass** . Tussock Sedge Typha spp. Parnassia glauca Lythrum salicaria Cladium mariscoides Carex stricta Cinnamon Fern Soft Rush or Inland sedge Red Maple Viburnum Spp. Osmundastrum Common Rush Carex interior Acer rubrun Viburnum spp. cinnamomeum Juncus effusus Common Boneset Japanese Stiltgráss **Reed Canary Grass** Sphagnum Moss White turtlehead Eupatorium Microstegium Phalaris arundinacea Sphagnum spp. Chelone glabra perfoliatum vimineum

Wetland

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

Mixed hardwoods — Silver maple, elim etc.

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.

| | Wetland ID: |
|------------------|---|
| | Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.): |
| | Floodplain sweeps surrounded by development |
| | |
| | |
| 0 | |
| Landscape Info | How much of this wetland is located off-site (i.e., outside the property boundaries or right-of-way)? |
| Scap | Tone of it – the entire wetland is within the property boundaries |
| Lanc | 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)? |
| | None of itAll of itPart of it (acres or% of the off-site portion) |
| | Is there potential bog turtle habitat within 300 feet*?Yes NoUnk Habitat off-site?Yes NoUnk |
| | If yes, how did you conclude this? |
| | Adjacent cereus surveyed |
| | |
| • | |
| Species | Were any bog turtles observed?Yes |
| Š | Other herps observed?YesNo If yes, which ones? *Report bog turtle observations to your local FWS Field Office and state wildlife office within 48 hrs. |
| • | YesNo Unsure The hydrology criterion for bog turtle habitat is met. |
| | Yes XNoUnsure 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). |
| 5 | This wetland does NOT have potential bog turtle habitat. |
| - | Notes (How did you reach this opinion?): |
| o A | Notes (How did you reach this opinion?): Flood plain Swamp fell marn fuined by stream over flow, run-off |
| 2 | run-off |
| reda surveyor Op | 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 Sa Sa Cesuro Signature Signature |
| | Date 7/3/2020 |
| | Contact Information 201 841 6879 |
| | |
| | |

^{**}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*).

| | Property/Project Name |
|---|--|
| | Coordinates 40.586862, -74.496675 Project Type Flood Refer Lein |
| | Entity Requesting Phase 1 Survey ACOE |
| | County/Township/Municipality |
| | Lead Surveyor |
| | Other Assistants Present |
| | Date of Survey 6/3/2020 Time In Time Out Air Temp F° C° |
| | Last Precipitation < 24 hours 27-7 days > 1 week unknown Drought conditions? Yes 24 hours |
| | Drought Index*1 (Circle) none D0 D1 D2 D3 D4 Wetland Photos Taken YesNo (Provide photo location map) |
| | Notes (e.g., details about drought, flood, abnormally dry, and/or snow/ice conditions, and any other seasonal conditions observed): |
| | a, and any contact of the contact of |
| | |
| | |
| • | Wetland Size acres, if known # Wetlands w/in Project Area ² |
| | 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 Stormwater Iron Bacteria Watercress |
| | Water Visible on Surface |
| | Rivulets (inches deep) Subsurface Tunnel/Rivulets Tire Ruts (inches deep) |
| | Small Puddles/Depressions (inches deep) 🔊 aturated soils present? If yes, year-round? Likely 👱 nlikely Un |
| | YesYo Are there any signs of disturbance to <u>hydrology</u> (e.g., drainage ditches, tile drainages, berms, culverts, fill material, ponds, roads, beaver activity)? |
| | Estimate time period (in years) of disturbance*: $_ \le 5$ $_ 6-10$ $_ 11-20$ $_ > 20$ |
| | For ditches that may be present, is there bog turtle habitat? If yes, describe: |
| | |
| | |

 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.

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Wetland Type/Vegetation

| Wetland ID: | WOS |
|-------------|-----|
| | |

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

Some cheaving in residential lots that extendinto flooplain

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

Soil types present*:

Mineral soils

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

| • 1 |
|-------|
| |
| |
| /_ |
| / |

| Wetland Type | % of Total Wetland | % of Wetland Type w/Muck | Avg. Muck Depth | Max. Muck Depth |
|-------------------------|--------------------|--------------------------|-----------------|-----------------|
| PEM Portion of Wetland: | | | in. | in. |
| PSS Portion of Wetland: | | | in. | in. |
| PFO Portion of Wetland: | 100 | | in. | in. |
| POW/PUB Portion of Wei | tland: | | 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.

| | Alder Spp. <i>Alnus</i> spp. | Common Reed Phragmites australis | Jewelweed Impatiens capensis | Rice Cutgrass Leersia oryzoides | Spicebush Lindera benzoin | Willow spp. Salix spp. |
|---|--|---|---|---|---------------------------------------|---|
| • | Alder-leaved Buckthorn Rhamnus alnifolia | Dogwood Spp. Cornus spp. | Mile-A-Minute Persicaria perfoliata | Rough-leaved Goldenrod Solidago patula | Spike-Rush Eleocharis palustris | Woolly-fruited Sedge Carex lasiocarpa |
| • | American Elm Ulmus americana | Duck Potato Sagittaria latifolia | Multiflora Rose Rosa multiflora | Sensitive Fern Onoclea sensibilis | Swamp Rose Rosa palustris | Woolly Bulrush or Woolgrass Scirpus cyperinus |
| | Arrowhead Sagittaria latifolia | Eastern Red Cedar Juniperus virginiana | Poison Sumac Toxicodendron vernix | Shrubby Cinquefoil Dasiphora fruticosa | Sweetflag Acorus calamus | Yellow-Green Sedge Cyperus esculentus |
| 1 | Carpetgrass Axonopus fissifolius | Eastern Tamarack <i>Larix laricina</i> | Porcupine Sedge Carex hystericina | Skunk Cabbage Symplocarpus foetidus | Parthumb Spp. Polygonum spp. | |
| | Cattail <i>Typha</i> spp. | Grass-of-Parnassus Parnassia glauca | Purple Loosestrife Lythrum salicaria | Smooth Sawgrass Cladium mariscoides | . Tussock Sedge Carex stricta | |
| | Cinnamon Fern Osmundastrum cinnamomeum | Inland sedge Carex interior | Red Maple Acer rubrum | Soft Rush or Common Rush Juncus effusus | Viburnum Spp. <i>Viburnum</i> spp. | |
| | Common Boneset Eupatorium perfoliatum | Japanese Stiltgrass Microstegium vimineum | Reed Canary Grass Phalaris arundinacea | Sphagnum Moss Sphagnum spp. | White turtlehead Chelone glabra | |

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

Pin oak, silver maple, boxelder, sedges, sweetym

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.

| | Wetland ID: W05 |
|------------------|---|
| | Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.): Floodplain Swemp surrounded by development |
| בפותאכפותה ווויס | 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)? None of itAll of itPart of it (acres or% of the off-site portion) Is there potential bog turtle habitat within 300 feet*?YesNoUnk Habitat off-site?YesNoUnk If yes, how did you conclude this? |
| - sanade | Were any bog turtles observed?YesXNoIf yes, how many? *Note that you must be permitted by the state you are conducting the survey in to handle bog turtles. Other herps observed?YesXNoIf yes, which ones? *Report bog turtle observations to your local FWS Field Office and state wildlife office within 48 hrs. |
| | Yes NoUnsure The hydrology criterion for bog turtle habitat is met. The soils criterion for bog turtle habitat is met. The vegetation criterion for bog turtle habitat is met. The vegetation criterion for bog turtle habitat is met. The vegetation criterion for bog turtle habitat is met. This wetland HAS potential bog turtle habitat (fair to good quality). 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 NameSignature |
| | Contact Information 201 811 6879 |
| • | |

^{**}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*).

| Phase 1 Bog Turtle Habitat Survey Data Form for the (Revised April 29, 2020) Please do not edit document. | e Northern Population Range | Wetland ID: PNDI # (for PA): | | | | |
|--|--|---------------------------------|----------------------------------|--|--|--|
| Property/Project Name | FRM | | | | | |
| Coordinates 40,587684, -74.49463 | | Me funte | 1 | | | |
| Entity Requesting Phase 1 Survey ACOE | | | <u> </u> | | | |
| County/Township/Municipality Samerse / | Green Brook | | | | | |
| Lead Surveyor | Affiliation | FE | | | | |
| Other Assistants Present | Amaton | | | | | |
| Date of Survey 6/8/2020 Time In | Time Out | Air Temp | E º Cº | | | |
| Last Precipitation _ < 24 hours _ > 1 week | unknown Drought conditions? | Xii reilip | F | | | |
| Drought Index *1 (Circle none 00 D1 D2 D3 D4 We Notes (e.g., details about drought, flood, abnormally dry, and/o | etland Photos Taken Yes No | (Provide photo locati | ion map) oserved): | | | |
| Wetland Size acres, if known # Wetlands w/in | Project Area ² | | | | | |
| 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 >60 | | | | | | |
| Hydrology and Soils (check all that apply): use additional pa | | neral wetland info | rmation | | | |
| | | | | | | |
| Springs/Seeps Springhouse Trib/Stream Pond Stormwater Iron Bacteria Watercress Water Visible on Surface Evidence of Flooding \(\sumsymbol{Y} \) Evidence of Flooding \(\sumsymbol{Y} \) Yes No If yes, (\(\sumsymbol{S} \) Seasonal Flooding Routine Flooding \(\sumsymbol{Y} \) | | | | | | |
| Rivulets (inches deep) Subsurface Tunnel/Riv | vulets Tire Ruts (inches de | een) | ioounig j | | | |
| Small Puddles/Depressions (inches deep)XSatu | | | والمائلة | | | |
| Yes No Are there any signs of disturbance to <u>hydr</u> ponds, roads, beaver activity)? | rology (e.g., drainage ditches, tile drain | ages, berms, culverts | onlikely Un s, fill material, | | | |
| Storm wester run off from | road | | | | | |
| Estimate time period (in years) of disturbance*: 25 | 6-1011-20 > 20 | | | | | |
| For ditches that may be present, is there bog turtle habita | t? If yes, describe: | | | | | |
| | | | | | | |
| 1 (*) Denotes reference to the Supplemental Information docum 2 Each wetland must have a separate Phase 1 habitat assessment | t data form completed | | | | | |
| ³ Determine percent cover of abundant species for the wetland, in the wetland and have the highest percent of | not by wetland type. Abundant species | are those that are n | nost promine | | | |

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: | WOT |
|-------------|-----|
|-------------|-----|

<u>in.</u>

in.

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

Wetland Type/Vegetation

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*:

Mineral soils

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

| Wetland Type | % of Total Wetland | % of Wetland Type w/Muck | Avg. Muck Depth | Max. Muck Depth |
|-------------------------|--------------------|--------------------------|-----------------|-----------------|
| PEM Portion of Wetland: | | *** | in. | in. |
| PSS Portion of Wetland: | | | in. | in. |
| PFO Portion of Wetland: | 100 | | in. | in. |
| POW/PUB Portion of Wet | land: | | 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.

| | Alder Spp. Alnus spp. | Common Reed Phragmites australis | Jewelweed Impatiens capensis | Rice Cutgrass Leersia oryzoides | Spicebush Lindera benzoin | Willow spp. Salix spp. |
|-----|--|---|---|---|------------------------------------|---|
| 0 1 | Alder-leaved Buckthorn Rhamnus alnifolia | Dogwood Spp. Cornus spp. | Mile-A-Minute Persicaria perfoliata | Rough-leaved Goldenrod Solidago patula | Spike-Rush Eleocharis palustris | Woolly-fruited Sedge Carex lasiocarpa |
| : | American Elm Ulmus americana | Duck Potato Sagittaria latifolia | Multiflora Rose Rosa multiflora | Sensitive Fern Onoclea sensibilis | Swamp Rose Rosa palustris | Woolly Bulrush or Woolgrass Scirpus cyperinus |
| | Arrowhead Sagittaria latifolia | Eastern Red Cedar Juniperus virginiana | Poison Sumac Toxicodendron vernix | Shrubby Cinquefoil Dasiphora fruticosa | Sweetflag Acorus calamus | Yellow-Green Sedge Cyperus esculentus |
| | Carpetgrass Axonopus fissifolius | Eastern Tamarack <i>Larix laricina</i> | Porcupine Sedge Carex hystericina | Skunk Cabbage Symplocarpus foetidus | Tearthumb Spp. Polygonum spp. | |
| | Cattail <i>Typha</i> spp. | Grass-of-Parnassus Parnassia glauca | Purple Loosestrife Lythrum salicaria | Smooth Sawgrass Cladium mariscoides | . Tussock Sedge Carex stricta | |
| | Cinnamon Fern Osmundastrum cinnamomeum | Inland sedge Carex interior | Red Maple Acer rubrum | Soft Rush or Common Rush Juncus effusus | Viburnum Spp. Viburnum spp. | |
| | Common Boneset Eupatorium perfoliatum | Apanese Stiltgrass Microstegium vimineum | Reed Canary Grass Phalaris arundinacea | Sphagnum Moss Sphagnum spp. | White turtlehead Chelone glabra | |

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

Box elder, Sreaks bladder sedfe

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.

| | Wetland ID: Wo7 |
|----------------|---|
| | Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.): |
| | Flood plain swamp surrounded by development |
| Landscape Into | How much of this wetland is located off-site (<i>i.e.</i> , outside the property boundaries or right-of-way)? |
| _ | 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*?YesNoUnk Habitat off-site?YesNoUnk |
| | If yes, how did you conclude this? |
| | Adjournt areas surveyed |
| species | Were any bog turtles observed? Yes No If yes, how many? The state you are conducting the survey in to handle bog turtles. Other herps observed? Yes No If yes, which ones? *Report bog turtle observations to your local FWS Field Office and state wildlife office within 48 hrs. |
| | Yes |
| | Date 7/3/2020 |

201 841 6879

Contact Information _____

^{**}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*).

| <i>Pha</i> (Rev | ise 1 Bog Turtle Habitat Survey Data Form for the I ised April 29, 2020) Please do not edit document. | Northern Population Range | Wetland ID: WOS PNDI # (for PA): |
|---------------------------|--|--|---------------------------------------|
| Prop | perty/Project Name | K FRM | |
| Coo | rdinates 40.586253 -74. 495296 | Project Type | and vefention |
| | ty Requesting Phase 1 Survey | Troject type | 000 14 141144 |
| | nty/Township/Municipality | Nuellen | |
| Lead | SurveyorTesauro | Affiliation | FF |
| | er Assistants Present | Amilation | |
| | e of Survey 6/8/2020_ Time In | Time Out | Air Temp F ° C° |
| Last | Precipitation < 24 hours > 1 week | unknown Drought conditions? | Yes Unknown |
| Dro | ught Index*1 (Circle): none Do D1 D2 D3 D4 Wetla | | |
| Drou Note | es (e.g., details about drought, flood, abnormally dry, and/or s | now/ice conditions, and any other se | asonal conditions observed): |
| Estir | land Size acres, if known # Wetlands w/in Promate wetland size (acres) < 0.1 0.1 - 0.5 | 0.5 - 1 _ 1 - 2 _ 2 - 4 / | > 5+10+ |
| | mate % Canopy Cover* ³ 0% ≤ 5 6-20 | | |
| Hydi | rology and Soils (check all that apply): use additional page | s to further discuss pertinent ge | neral wetland information |
| | Springs/SeepsSpringhouse \(\sum_{\text{Trib/Stream}}\)Pon | d Stormwater Iron Bacte | ria Watercress |
| △ " | Water Visible on Surface Evidence of Flooding 🔀 es | No If yes, (Seasonal Floo | ding⁴ ≥ Routine Flooding⁵) |
| | Rivulets (inches deep) Subsurface Tunnel/Rivul | ets Tire Ruts (inches de | eep) |
| × | Small Puddles/Depressions (inches deep) 🗷 Satura | ted soils present? If yes, year-rou | nd? 🗶 Likely Unlikely Unk |
| pond | Yes No Are there any signs of disturbance to <u>hydrolo</u> ls, roads, beaver activity)? | ogy (e.g., drainage ditches, tile draina | ages, berms, culverts, fill material, |
| Estin | nate time period (in years) of disturbance*: $_ \le 5 \6-1$ | .011-20> 20 | |
| For c | ditches that may be present, is there bog turtle habitat? | If yes, describe: | |
| 1 (*) [² Eacl | Denotes reference to the Supplemental Information documen h wetland must have a separate Phase 1 habitat assessment da | t that provides more details on this p | articular question. |

dant 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: | |
|-------------|--|
| | |

etland Info

Wetland Type/Vegetation

XYes _ No Are there any signs of disturbance to <u>vegetation</u> (e.g., mowing, pasturing, burning)? If yes, describe:

Small aveas Cleared within TCS. Jen Jin los exfuely into Floodplan

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

% of Wetland Type w/Muck

Soil types present*:

Wetland Type

Mineral Soils

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

% of Total Wetland

Avg. Muck Depth Max. Muck Depth in. in.

PEM Portion of Wetland:

PSS Portion of Wetland:

PSS Portion of Wetland: 21.

PFO Portion of Wetland: 28.

POW/PUB Portion of Wetland: _____

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.

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

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

Silvermaple, sedses, Jap . Knotweed, Sweetsum, boxelder, private Small putches yellow Nos

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.

| Docaribo curround | ing landanana (| | | | Wetland ID: | W08 |
|--|--|---|---|---|---|---|
| | ing landscape (e.g., wi | | | | etc.): | |
| | wetland is located of one of it – the entire v me of it – Acre | wetland is within th | e property boun | daries | • • | |
| If part of this wetl | and continues off-site | e, how much of the | off-site portion | was surveyed (or | n foot)? | |
| No | one of it All of it | Part of it (| acres or% | of the off-site po | rtion) | |
| Is there potential If yes, how did you | bog turtle habitat wit u conclude this? | thin 300 feet*? | Yes <u>X</u> No | Unk Habitat off | -site? Yes 🐴 | NoUnl |
| Adjua | ent avens si | wagel | | | | |
| | | | | | *Note that you must be | permitted by the stat |
| Were any bog turi Other herps obser | :les observed?Yes ved?Yes X No | sNo If you lf you lf yes, which one | es, how many? es? | | are conducting the surv *Report bog turtle obse Field Office and state w | rvations to your local I |
| Yes XNoYes XNoYes XNoYes XNoYes XNoYes XNoYes XNo | les observed?Yes | If yes, which one rology criterion for scriterion for bog to etation criterion for land HAS potential land HAS potential | bog turtle habita urtle habitat is m bog turtle habit bog turtle habita bog turtle habita | at is met. et. at is met. at (fair to good qu at (low to very lov | are conducting the surv *Report bog turtle obse Field Office and state w uality). v quality). | rvations to your local l Idlife office within 48 |
| Yes XNoYes XNoYes XNoYes XNoYes XNoYes XNoYes XNoYes XNoYes (How did y | Unsure The hydi Unsure The soils Unsure The vege Unsure This wet Unsure This wet | If yes, which one rology criterion for scriterion for bog to etation criterion for land HAS potential cland HAS potential htial bog turtle habin?): | bog turtle habita urtle habitat is m bog turtle habita bog turtle habita bog turtle habita tat Uf | at is met. let. lat is met. lat (fair to good quat (low to very low list (low to very low | *Report bog turtle obse Field Office and state w uality). v quality). habitat is preser | rvations to your local Idlife office within 48 |
| Yes XNo Yes XOO Lead Surveyor— accurate and cor | Unsure The hydromy The soils The vegeon Unsure This wet This wet This wet The soils This wet The soil This wet This opinion The soil This wet Thi | If yes, which one rology criterion for so criterion for bog to teation criterion for dand HAS potential dand HAS potential ntial bog turtle habitan?): | bog turtle habita urtle habitat is m bog turtle habita bog turtle habita bog turtle habita tatUr | at is met. let. let is met. let is met. let (fair to good que let (low to very low ISURE if suitable | *Report bog turtle obse Field Office and state w allity). v quality). habitat is preser | rvations to your local Idlife office within 48 |
| Yes No Yes Ano | Unsure The hydromy Unsure The soils The vegeon Unsure This wet Unsure This wet Hoes NOT have potential of the control of the c | If yes, which one rology criterion for so criterion for bog to the tation criterion for dand HAS potential dand HAS potential dand bog turtle habitan?): The market critifying to the best | bog turtle habita urtle habitat is m bog turtle habita bog turtle habita bog turtle habita tatUr | at is met. let. let is met. let is met. let (fair to good que let (low to very low ISURE if suitable | *Report bog turtle obse Field Office and state w allity). v quality). habitat is preser | rvations to your local ldlife office within 48 |

^{**}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*).

| | Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population RangeWetland ID:WO9(Revised April 29, 2020)Please do not edit document.PNDI # (for PA): |
|----------------|---|
| General Info | Property/Project Name Green Brook FRM Coordinates 40.587307, -74. 485 955 Project Type Flood refin from Entity Requesting Phase 1 Survey ACOE County/Township/Municipality Moddlesex, Dunellan Lead Surveyor (ESauro) Affiliation FE Other Assistants Present |
| Date/Condition | Date of Survey 6/3/2020 Time In Time Out Air Temp F ° C° Last Precipitation < 24 hours 1-7 days > 1 week unknown Drought conditions? Yes No Unknown Drought Index*1 (Circle): none 00 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 acres, if known # Wetlands w/in Project Area2 Estimate wetland size (acres) < 0.1 0.1 - 0.5 0.5 - 1 1 - 2 2 - 4 5 + |

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: | WOG | |
|-------------|-----|--|
| | | |

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

etland Inf

Wetland Type/Vegetation

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*:

mineral soils

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

0%

| Wetland Type PEM Portion of Wetland: | % of Total Wetland | % of Wetland Type w/Muck ← O. 1.1 | Avg. Muck Depth | Max. Muck Depth |
|--|--------------------|------------------------------------|-----------------|-----------------|
| PSS Portion of Wetland: | | <u></u> | <u> </u> | |
| PFO Portion of Wetland: POW/PUB Portion of Wetland | <u>95%</u> | 07 | in. | <u>in.</u> |
| POW/POB Portion of Wei | liano: | | 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.

| 1 | | | | | |
|--|---|---|---|------------------------------------|---|
| Alder Spp. Alnus spp. | Common Reed Phragmites australis | Jewelweed Impatiens capensis | Rice Cutgrass Leersia oryzoides | Spicebush Lindera benzoin | Willow spp. Salix spp. |
| Alder-leaved Buckthorn Rhamnus alnifolia | Dogwood Spp. Cornus spp. | Mile-A-Minute Persicaria perfoliata | Rough-leaved Goldenrod Solidago patula | Spike-Rush Eleocharis palustris | Woolly-fruited Sedge Carex lasiocarpa |
| American Elm Ulmus americana | Duck Potato Sagittaria latifolia | Multiflora Rose Rosa multiflora | Sensitive Fern Onoclea sensibilis | Swamp Rose Rosa palustris | Woolly Bulrush or Woolgrass Scirpus cyperinus |
| Arrowhead Sagittaria latifolia | Eastern Red Cedar Juniperus virginiana | Poison Sumac Toxicodendron vernix | Shrubby Cinquefoil Dasiphora fruticosa | Sweetflag Acorus calamus | Yellow-Green Sedge Cyperus esculentus |
| Carpetgrass Axonopus fissifolius | Eastern Tamarack <i>Larix laricina</i> | Porcupine Sedge Carex hystericina | Skunk Cabbage Symplocarpus foetidus | Polygonum spp | |
| Cattail Typha spp. | Grass-of-Parnassus Parnassia glauca | Purple Loosestrife Lythrum salicaria | Smooth Sawgrass Cladium mariscoides | . Tussock Sedge Carex stricta | |
| Cinnamon Fern Osmundastrum cinnamomeum | Inland sedge Carex interior | Red Maple Acer rubrum | Soft Rush or Common Rush Juncus effusus | Viburnum Spp. Viburnum spp. | |
| Common Boneset Eupatorium perfoliatum | Japanese Stiltgrass Microstegium vimineum | Reed Canary Grass Phalaris arundinacea | Sphagnum Moss Sphagnum spp. | White turtlehead Chelone glabra | |

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

Jupunes hops, pinoak, basswood, ash, silver maple, Boxelder

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.

| - | Wetland ID: Wetland |
|--------------|--|
| D | escribe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.): |
| | Flood plain swamp surrounded by development |
| | |
| | |
| Н | low 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 |
| Ιf | |
| 11 | f part of this wetland continues off-site, how much of the off-site portion was surveyed (on foot)? |
| ls | None of itAll of itPart of it (acres or% of the off-site portion) |
| | s there potential bog turtle habitat within 300 feet*?Yes NoUnk Habitat off-site?Yes NoUnk f yes, how did you conclude this? |
| ••• | , |
| | Adjacent avers surveyed |
| | 70-0 |
| - | |
| ٧ | Vere any bog turtles observed?YesNoIf yes, how many? *Note that you must be permitted by the state y are conducting the survey in to handle bog turtle Other herps observed?YesNoIf yes, which ones? *Report bog turtle observations to your local FW |
| O | Other herps observed? Yes NoIf yes, which ones? *Report bog turtle observations to your local FN Field Office and state wildlife office within 48 hrs |
| | Pasteria Mented to Jentho 12/17/00 SVEEN TVC |
| | Euseun painted value, solling, seeming |
| (| Yes No Unsure The hydrology criterion for bog turtle habitat is met. |
| `. | 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 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 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 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). Yes No Unsure This wetland HAS potential bog turtle habitat (low to very low quality). Yes No Unsure This wetland HAS potential bog turtle habitat UNSURE if suitable habitat is present. |
| | 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). Yes No Unsure This wetland HAS potential bog turtle habitat (low to very low quality). Yes No Unsure This wetland HAS potential bog turtle habitat UNSURE if suitable habitat is present. |
| | 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). Yes No Unsure This wetland HAS potential bog turtle habitat (low to very low quality). Yes No Unsure This wetland HAS potential bog turtle habitat UNSURE if suitable habitat is present. |
| | Yes NoUnsure The hydrology criterion for bog turtle habitat is met. YesNoUnsure The soils criterion for bog turtle habitat is met. YesNoUnsure The vegetation criterion for bog turtle habitat is met. YesNoUnsure This wetland HAS potential bog turtle habitat (fair to good quality). YesNoUnsure This wetland HAS potential bog turtle habitat (low to very low quality). YesNoUnsure This wetland HAS potential bog turtle habitat (low to very low quality). YesNoUnsure This wetland HAS potential bog turtle habitat (low to very low quality). YesNoUnsure The vegetation criterion for bog turtle habitat is met. This vegetation criterion for bog turtle habitat is met. This vegetation criterion for bog turtle habitat is met. This vegetation criterion for bog turtle habitat is met. This vegetation cr |
| | 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). Yes No Unsure This wetland HAS potential bog turtle habitat (low to very low quality). Your Surface How did you reach this 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. The vegetation criterion for bog turtle habitat is met. The vegetation criterion for bog turtle habitat is met. The vegetation criterion for bog turtle habitat is met. The vegetation criterion for bog turtle habitat is met. This wetland HAS potential bog turtle habitat (fair to good quality). 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?): Small 'mucky' herbaceous area in draincolponel CO.lacre; uge to show the start of the information provided herein is accurate and complete. |
| | Yes NoUnsure The hydrology criterion for bog turtle habitat is met. YesNoUnsure The soils criterion for bog turtle habitat is met. YesNoUnsure The vegetation criterion for bog turtle habitat is met. YesNoUnsure This wetland HAS potential bog turtle habitat (fair to good quality). YesNoUnsure This wetland HAS potential bog turtle habitat (low to very low quality). This wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat is present. Notes (How did you reach this opinion?): Small 'mucky' herbacrous area in drained pondCo.l acre : use |
| | Yes NoUnsure The hydrology criterion for bog turtle habitat is met. YesNoUnsure The soils criterion for bog turtle habitat is met. YesNoUnsure The vegetation criterion for bog turtle habitat is met. The vegetation criterion for bog turtle |
| - ; 4 | Yes NoUnsure The hydrology criterion for bog turtle habitat is met. YesNoUnsure The soils criterion for bog turtle habitat is met. YesNoUnsure The vegetation criterion for bog turtle habitat is met. YesNoUnsure This wetland HAS potential bog turtle habitat (fair to good quality). YesNoUnsure This wetland HAS potential bog turtle habitat (low to very low quality). This wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat is present. Notes (How did you reach this opinion?): Small 'mucky' herbacrous area in drained pondO.l acre : use |

^{**}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*).

| Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range (Revised April 29, 2020) Please do not edit document. | Wetland ID: WLO |
|--|---|
| Property/Project Name <u>Creen Brook From</u> Coordinates <u>40,589/45, -74, 482729</u> Project Type <u>F/c</u> Entity Requesting Phase 1 Survey <u>ACOL</u> | ood 12 few Leon |
| County/Township/Municipality Mi'clellesex Dune/len Lead Surveyor ESauro Affiliation Other Assistants Present | FE |
| Date of Survey 5/28/2020 Time In Time Out | Yes Unknown (Provide photo location map) |
| Wetland Size acres, if known #Wetlands w/in Project Area² Estimate wetland size (acres) < 0.1 0.1 - 0.5 0.5 - 1 1 - 2 | neral wetland information ria Watercress ding4Routine Flooding5) eep) und?Likely Unlikely Unl |
| Estimate time period (in years) of disturbance*: $_ \le 5$ $_ 6-10$ $_ 11-20$ $_ > 20$ For ditches that may be present, is there bog turtle habitat? If yes, describe: | |
| 1 (*) Denotes reference to the Supplemental Information document that provides more details on this p | 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.

| Vetland | ID: | WIO | |
|---------|-----|-----|--|
| | | | |

Yes XNo Are there any signs of disturbance to <u>vegetation</u> (e.g., mowing, pasturing, burning)? If yes, describe:

Wetland Info

Wetland Type/Vegetation

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*:

Mineral soils

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

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

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

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

Yellow poplar, beech, box elder, pinonk, Jup. Knoweed, garlic mushad,
greefer bladdersedge

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.

| | Wetland ID: | WIO |
|---|--|---|
| Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow fie Floodplain Swamp Surrounded by development | eld, etc.): | |
| How much of this wetland is located off-site (<i>i.e.</i> , outside the property boundaries or right None of it – the entire wetland is within the property boundaries Some of it – Acres or% of the wetland appears to be located. | | |
| If part of this wetland continues off-site, how much of the off-site portion was surveyed | d (on foot)? | |
| None of it All of it Part of it (acres or% of the off-site | • | |
| Is there potential bog turtle habitat within 300 feet*?YesNoUnk Habitat | t off-site ? Yes | ∠ No _Unk |
| If yes, how did you conclude this? | | |
| Adjacent areas surveyed | | |
| | | |
| Were any bog turtles observed?YesNo If yes, how many? Other herps observed?YesNo If yes, which ones? | are conducting the su *Report bog turtle of | be permitted by the state yourvey in to handle bog turtles eservations to your local FWS 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 Yes No Unsure This wetland HAS potential bog turtle habitat (low to very This wetland does NOT have potential bog turtle habitat. UNSURE if suita | v low quality) | ent. |
| Notes (How did you reach this opinion?): Floodplain swamp mainfuined by stream over | er Hon | |
| Lead Surveyor – please sign below certifying to the best of your knowledge that all of accurate and complete. Print Name Signature | the information pr | ovided herein is |
| _ / / | | - |
| - 1/3 P- 040 | | |
| Date | | |
| Date | | |

^{**}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*).

| <u>Ph</u> (Re | ase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range vised April 29, 2020) Please do not edit document. | Wetland ID: PNDI # (for PA): | |
|-------------------------|--|---------------------------------|------------------|
| | operty/Project Name <u> </u> | Ivel L | |
| Ent | tity Requesting Phase 1 Survey ACOE unty/Township/Municipality Somewsed Green Blook | N PEPALVE | <u> </u> |
| Lea | | E | |
| | ner Assistants Present | | |
| Da | te of Survey6/3/2020_ Time In Time Out | Air Temp. | F ° C° |
| | t Precipitation < 24 hours 21-7 days > 1 week unknown Drought conditions? | Yes No | Unknown |
| Dro | pught Index*1 (Circle none D0 D1 D2 D3 D4 Wetland Photos Taken Yes No (i | | on map) |
| | tes (e.g., details about drought, flood, abnormally dry, and/or snow/ice conditions, and any other sea | | |
| 1 | | | |
| | | | |
| | | | |
| We | etland Size acres, if known # Wetlands w/in Project Area ² | | |
| | imate wetland size (acres) < 0.1 0.1 - 0.5 0.5 - 1 2 2 - 4 | 5+ 10+ | |
| | imate % Canopy Cover* ³ 0% ≤ 5 6-20 21-40 41-60 ≿ > 60 | | . 3 |
| | drology and Soils (check all that apply): use additional pages to further discuss pertinent gen | neral wetland info | rmation |
| | Springs/SeepsSpringhouseTrib/StreamPondStormwater Iron Bacter | | |
| | Water Visible on Surface Evidence of Flooding Yes No If yes, (Seasonal Flooding | | |
| ***** | Rivulets (inches deep) Subsurface Tunnel/Rivulets Tire Ruts (inches de | en) | ooding / |
| | Small Puddles/Depressions (inches deep) Saturated soils present? If yes, year-roun | | nlikalı Unk |
| X | Yes Are there any signs of disturbance to <u>hydrology</u> (e.g., drainage ditches, tile drainads, roads, beaver activity)? | ges, berms, culverts | , fill material, |
| βΟΠ | Some one tire uns | | |
| | mate time period (in years) of disturbance*:56-1011-20 > 20 | | |
| For | ditches that may be present, is there bog turtle habitat? If yes, describe: | | |
| | | | |
| | | | |
| | | | |

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: | WII | | |
|-------------|-----|--|--|
| .\? If da | .· | | |

Wetland Info

Wetland Type/Vegetation

Yes Are there any signs of disturbance to <u>vegetation</u> (e.g., mowing, pasturing, burning)? If yes, describe: ONV traffix in portions of site

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*:

Mineral soils

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

| \bigcirc | γ. | |
|------------|----|--|
| | | |

| Wetland Type | % of Total Wetland | % of Wetland Type w/Muck | Avg. Muck Depth | Max. Muck Depth |
|-------------------------|--------------------|---|-----------------|-----------------|
| PEM Portion of Wetland: | - | | in. | in. |
| PSS Portion of Wetland: | | | in. | in. |
| PFO Portion of Wetland: | 100 | 0% | in. | in. |
| POW/PUB Portion of Wet | land: | *************************************** | 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.

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

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

Garlic musturd, Schurr maple, box clow, ash

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.

| Wetland ID: WI1 |
|---|
| Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.): Floodplain Swamp Svirounded by development |
| 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)? 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? Adj'acend areas surveyed |
| Were any bog turtles observed?YesNoIf yes, how many? *Note that you must be permitted by the state you are conducting the survey in to handle bog turtles. Other herps observed?YesNoIf yes, which ones? *Report bog turtle observations to your local FWS Field Office and state wildlife office within 48 hrs. |
| YesNoUnsure The hydrology criterion for bog turtle habitat is metYesNoUnsure The soils criterion for bog turtle habitat is metYesNoUnsure The vegetation criterion for bog turtle habitat is metYesNoUnsure This wetland HAS potential bog turtle habitat (fair to good quality)YesNoUnsure This wetland HAS potential bog turtle habitat (low to very low quality)This wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat is present. Notes (How did you reach this opinion?): Floodplain Swamp mainlened by Stream over flow |
| 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 Signature Date 6/3/2020 |
| |

^{**}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*).

| Property | y/Project Name | Green Br | rook Fra | 1 | | |
|--|--|--|---|---|--|--|
| Coordina | 1111 60 | Company of the compan | | | Food ve Inte | m |
| Entity Re | equesting Phase 1 Sur | A | | ,, <u></u> | | |
| County/ | Township/Municipali | ty Middle | esex. Dune | llen | | |
| | rveyor | | • | Affiliation | FE | |
| Other As | ssistants Present | | | | | |
| Date of S | Survey 5/28/ | 2020 Time In | Tin | ne Out | Air Temp | F ° C° |
| Last Pre | cipitation < 24 hou | rs 2 1-7 days> | 1 week unknow | n Drought cond | itions?Yes _No | Unknown |
| Drought | : Index*1 (Circle) (none | D0 D1 D2 D3 D | — 04 Wetland Photo | s Taken 🔀 es | No (Provide photo loc | ation man) |
| | | | | | other seasonal conditions | |
| ` | , | ,, | y, and or show, ice co | maraons, and any | other seasonal conditions | observed): |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| · | | | | | | |
| Wetland | d Size acres, i | f known # Wetland | ds w/in Project Are | n ² | *************************************** | |
| | d Size acres, i | | | | | |
| Estimate | e wetland size (acres) | < 0.1 0.1 | - 0.5 0.5 - 1 | _ 1-2 🗶 | 2-4 _ 5+ _ 10- | ÷ . |
| Estimate Estimate | e wetland size (acres) e % Canopy Cover*3 | < 0.1 0.1 0% ≤ 5 | - 0.5 _ 0.5 - 1 _ 6-20 2 1-40 | 1 - 2 41-60 | > 60 | |
| Estimate Estimate Hydrolo | e wetland size (acres) e % Canopy Cover*3 gy and Soils (check all | < 0.1 0.1 0% ≤ 5 that apply): use addit | - 0.5 0.5 - 1 _ 6-2021-40 ional pages to furth | 1 - 2 41-60 ner discuss pertir | > 60 nent general wetland in | nformation |
| Estimate Estimate Hydrolo | e wetland size (acres) e % Canopy Cover* ³ gy and Soils (check all fines) | < 0.1 0.1 0% ≤ 5 that apply): use addit nouse X Trib/Strea | - 0.5 0.5 - 1 _ 6-2021-40 ional pages to furth m PondSto | 1-2 41-60 er discuss pertir rmwater Iro | > 60 nent general wetland in n Bacteria Watercre | nformation ess |
| Estimate Estimate Hydrolo | e wetland size (acres) e % Canopy Cover* ³ gy and Soils (check all fines) | < 0.1 0.1 0% ≤ 5 that apply): use addit nouse X Trib/Strea | - 0.5 0.5 - 1 _ 6-2021-40 ional pages to furth m PondSto | 1-2 41-60 er discuss pertir rmwater Iro | > 60 nent general wetland in n Bacteria Watercre | nformation ess |
| Estimate Estimate Hydrolo Sprii | e wetland size (acres) e % Canopy Cover*3 gy and Soils (check all sings/Seeps graph Springs er Visible on Surface | < 0.1 0.1 0% ≤ 5 that apply): use addit nouse Trib/Strea Evidence of Flood | - 0.5 0.5 - 1 _ 6-20 | 1 - 2 41-60 ler discuss pertir rmwater Iron If yes, (Seasor | > 60 nent general wetland in n Bacteria Watercre nal Flooding ⁴ Routine | nformation ess |
| Estimate Estimate Hydrolo Sprii Wat Rivu | e wetland size (acres) e % Canopy Cover*3 _ gy and Soils (check all fings/Seeps Springhter Visible on Surface | < 0.1 0.1 0% ≤ 5 that apply): use addit nouse Trib/Strea Evidence of Flood p) Subsurface Tu | - 0.5 0.5 - 1 _ 6-20 | 1 - 2 41-60 ner discuss pertir rmwater Iron If yes, (Seasor re Ruts (in | . > 60 nent general wetland in n Bacteria Watercre nal Flooding ⁴ Routine nches deep) | n formation ess e Flooding ⁵) |
| Estimate Estimate Hydrolo Sprii Wat Rivu | e wetland size (acres) e % Canopy Cover*3 gy and Soils (check all angs/Seeps — Springher Visible on Surface allets (inches dee | < 0.1 0.1 _ 0% ≤ 5 that apply): use addit nouse Trib/Strea Evidence of Flood p) Subsurface Tu s (inches deep | - 0.5 0.5 - 1 6-20 | 1 - 2 41-60 ner discuss pertir rmwater Iron If yes, (Seasor Ire Ruts (in | rear-round? ∠Tikely | nformation ess e Flooding ⁵) _ Unlikely Unk |
| Estimate Estimate Hydrolo Sprin Wat Rivu Sma | e wetland size (acres) e % Canopy Cover*3 gy and Soils (check all angs/Seeps Springlater Visible on Surface allets (inches deepth of the surface and source and surface any source and surface and | < 0.1 0.1 0% ≤ 5 that apply): use addit nouse X Trib/Strea Evidence of Flood p) Subsurface Tu s (inches deep signs of disturbance | - 0.5 0.5 - 1 _ 6-20 | 1 - 2 | > 60 nent general wetland in nent general wetland in nearteria Watercre nal Flooding4Routine near seep) rear-round? | oformation ess e Flooding ⁵) _ Unlikely Unk erts, fill material, |
| Estimate Estimate Hydrolo Sprin Wat Rivu Sma | e wetland size (acres) e % Canopy Cover*3 gy and Soils (check all angs/Seeps Springlater Visible on Surface allets (inches deepth of the surface and source and surface any source and surface and | < 0.1 0.1 0% ≤ 5 that apply): use addit nouse X Trib/Strea Evidence of Flood p) Subsurface Tu s (inches deep signs of disturbance | - 0.5 0.5 - 1 _ 6-20 | 1 - 2 | > 60 nent general wetland in nent general wetland in nearteria Watercre nal Flooding4Routine near seep) rear-round? | oformation ess e Flooding ⁵) _ Unlikely Unk erts, fill material, |
| Estimate Estimate Hydrolo Sprin Wat Rivu Sma | e wetland size (acres) e % Canopy Cover*3 gy and Soils (check all angs/Seeps Springhter Visible on Surface allets (inches deed all Puddles/Depression No Are there any pads, beaver activity)? | < 0.1 0.1 0% ≤ 5 that apply): use addit house A Trib/Strea Evidence of Flood p) Subsurface Tu s (inches deep signs of disturbance | - 0.5 0.5 - 1 _ 6-20 | 1 - 2 | rear-round? ∠Tikely | oformation ess e Flooding ⁵) _ Unlikely Unkerts, fill material, |
| Estimate Estimate Hydrolo Sprin Wat Rivu Sma | e wetland size (acres) e % Canopy Cover*3 gy and Soils (check all angs/Seeps Springlater Visible on Surface allets (inches deepth of the surface and source and surface any source and surface and | < 0.1 0.1 0% ≤ 5 that apply): use addit house A Trib/Strea Evidence of Flood p) Subsurface Tu s (inches deep signs of disturbance | - 0.5 0.5 - 1 _ 6-20 | 1 - 2 | > 60 nent general wetland in nent general wetland in nearteria Watercre nal Flooding4Routine near seep) rear-round? | oformation ess e Flooding ⁵) _ Unlikely Unk erts, fill material, |
| Estimate Estimate Hydrolo Sprii Wat Rivu Sma Yes ponds, ro | e wetland size (acres) e % Canopy Cover*3 gy and Soils (check all angs/Seeps Springhter Visible on Surface allets (inches deed all Puddles/Depression No Are there any pads, beaver activity)? | < 0.1 0.1 0% ≤ 5 that apply): use addit house A Trib/Strea Evidence of Flood p) Subsurface Tu s (inches deep signs of disturbance | -0.5 0.5 - 1 6-20 | 1 - 2 41-60 ner discuss pertir rmwater Iron If yes, (Seasor Ire Ruts (in present? If yes, y Irainage ditches, ti | > 60 nent general wetland in nent general wetland in nearteria Watercre nal Flooding4Routine near seep) rear-round? | oformation ess e Flooding ⁵) _ Unlikely Unk erts, fill material, |
| Estimate Estimate Hydrolo Sprii Wat Rivu Sma Yes ponds, ro | e wetland size (acres) e % Canopy Cover*3 gy and Soils (check all angs/Seeps Springhter Visible on Surface allets (inches deepended in the surface and surf | < 0.1 0.1 0% ≤ 5 that apply): use addit nouse | - 0.5 0.5 - 1 _ 6-20 | 1-2 \times41-60 ner discuss pertir rmwater Iron If yes, (Seasor re Ruts (in present? If yes, y drainage ditches, ti | > 60 nent general wetland in nent general wetland in nearteria Watercre nal Flooding4Routine near seep) rear-round? | oformation ess e Flooding ⁵) _ Unlikely Unk erts, fill material, |
| Estimate Estimate Hydrolo Sprii Wat Rivu Sma Yes ponds, ro | e wetland size (acres) e % Canopy Cover*3 gy and Soils (check all angs/Seeps Springhter Visible on Surface allets (inches deed all Puddles/Depression No Are there any pads, beaver activity)? Testpits for Soils for S | < 0.1 0.1 0% ≤ 5 that apply): use addit house A Trib/Strea Evidence of Flood p) Subsurface Tu s (inches deep signs of disturbance Oug inches of disturbance* | - 0.5 0.5 - 1 _ 6-20 | 1-2 | > 60 nent general wetland in nent general wetland in nearteria Watercre nal Flooding4Routine near seep) rear-round? | ess e Flooding ⁵) Unlikely Unk erts, fill material, |

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: | w/z/ | W18 |
|-------------|------|-----|
| | | |

__Yes __Yoo Are there any signs of disturbance to <u>vegetation</u> (e.g., mowing, pasturing, burning)? If yes, describe:

Wetland Type/Vegetation

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*:

Mineral soils

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

| Wetland Type | % of Total Wetland | % of Wetland Type w/Muck | Avg. Muck Depth | Max. Muck Depth |
|-------------------------|--------------------|--------------------------|-----------------|-----------------|
| PEM Portion of Wetland: | <u> 20 /.</u> | O | in. | in. |
| PSS Portion of Wetland: | <u>31.</u> | | ←in. | in. |
| PFO Portion of Wetland: | <u> 75/.</u> | | <u>in.</u> | <u>in.</u> |
| POW/PUB Portion of Wet | tland: | | in. | în. |

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.

| | Alder Spp. Alnus spp. | Common Reed Phragmites australis | Jewelweed Impatiens capensis | Rice Cutgrass Leersia oryzoides | Spicebush Lindera benzoin | Willow spp. Salix spp. |
|---|--|---|---|---|------------------------------------|---|
| | Alder-leaved Buckthorn Rhamnus alnifolia | Dogwood Spp. Cornus spp. | Mile-A-Minute Persicaria perfoliata | Rough-leaved Goldenrod Solidago patula | Spike-Rush Eleocharis palustris | Woolly-fruited Sedge Carex lasiocarpa |
| 1 | American Elm Ulmus americana | Duck Potato Sagittaria latifolia | Multiflora Rose Rosa multiflora | Sensitive Fern Onoclea sensibilis | Swamp Rose Rosa palustris | Woolly Bulrush or Woolgrass Scirpus cyperinus |
| | Arrowhead Sagittaria latifolia | Eastern Red Cedar Juniperus virginiana | Poison Sumac Toxicodendron vernix | Shrubby Cinquefoil Dasiphora fruticosa | Sweetflag Acorus calamus | Yellow-Green Sedge Cyperus esculentus |
| | Carpetgrass Axonopus fissifolius | Eastern Tamarack <i>Larix laricina</i> | Porcupine Sedge Carex hystericina | Skunk Cabbage Symplocarpus foetidus | rearthumb Spp. Polygonum spp | |
| | Cattail <i>Typha</i> spp. | Grass-of-Parnassus Parnassia glauca | Purple Loosestrife Lythrum salicaria | Smooth Sawgrass Cladium mariscoides | . Tussock Sedge Carex stricta | |
| | Cinnamon Fern Osmundastrum cinnamomeum | Inland sedge Carex interior | Red Maple Acer rubrum | Soft Rush or Common Rush Juncus effusus | Viburnum Spp. Viburnum spp. | |
| | Common Boneset Eupatorium perfoliatum | Apanese Stiltgrass Microstegium vimineum | Reed Canary Grass Phalaris arundinacea | Sphagnum Moss Sphagnum spp. | White turtlehead Chelone glabra | |

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

Sap. Knowweel, Silvermaple, pin oak, black locust, American sycamore

ash, boxellar, herbaceous area alonsstole road—sets regularly invadable

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.

| | Wetland ID: WIZ/WI8 |
|-----------------|--|
| | Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.): |
| | Flood plain swamp surrounded by development |
| Landscape Info | How much of this wetland is located off-site (<i>i.e.</i> , outside the property boundaries or right-of-way)? |
| _ | 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 🔀 NoUnk Habitat off-site?Yes 🔀 NoUnk |
| | If yes, how did you conclude this? |
| | Adjusted areas surreyed |
| | |
| Species | Were any bog turtles observed?Yes You If yes, how many? *Note that you must be permitted by the state you are conducting the survey in to handle bog turtles. |
| Spe | Other herps observed?Yes No If yes, which ones? *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. |
| noing. | Notes (How did you reach this opinion?): |
| | Floodplain Swamp maintained by Stream over flow |
| Lead Surveyor O | 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 Signature |
| | Print Name Sason (esauvo Signature Signature Date 7/3/2020 |
| | Contact Information 2018416879 |
| | Contact Information 200 0 1 (66 / 7 |

^{**}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) Please do not edit document. PNDI # (for PA): |
|---|---|
| | Property/Project Name <u>Green Brook</u> FRM Coordinates <u>40.586150</u> -74. 497588 Project Type <u>Flood refer from</u> Entity Requesting Phase 1 Survey <u>ACOE</u> |
| | County/Township/Municipality Somers Middleser Dunellen Lead Surveyor Affiliation FE Other Assistants Present |
| | Date of Survey 6 8 2020 Time In Time Out Air Temp F ° C° Last Precipitation < 24 hours 1-7 days > 1 week unknown Drought conditions? Yes 1 No Unknown Drought Index*1 (Circle): none 20 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 Size acres, if known # Wetlands w/in Project Area² Estimate wetland size (acres) < 0.1 0.1 - 0.5 |
| | 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 |

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: | W14 |
|-------------|-----|
| | |

__Yes No Are there any signs of disturbance to <u>vegetation</u> (e.g., mowing, pasturing, burning)? If yes, describe:

Wetland Type/Vegetation

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*:

Mineral soils

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

| | 1 |
|---|----|
| P | |
| | (- |

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

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

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

Silver mople, Sweet sum, barberry, Knohved

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.

| | Wetland ID: |
|---|---|
| | Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.): Floodplain Sweep Svrrounded by developed |
| | How much of this wetland is located off-site (<i>i.e.</i> , outside the property boundaries or right-of-way)? |
| | 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? Advantages Surveyed |
| _ | Were any bog turtles observed?Yes No |
| | Yes |
| | How Splain Swamp Maintel by Stream overflow 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 Jq Sm 1esawo Signature Date 7/3/2020 Contact Information Z01 841 6879 |
| | Contact information |

^{**}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*).

| Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range (Revised April 29, 2020) Please do not edit document. | Wetland ID: PNDI # (for PA): | |
|---|--|--|
| Property/Project Name Green Book FRM Coordinates 40. 587779 -74. 491066 Project Type F(e | odve fu f | en |
| County/Township/MunicipalitySomerset_, Green Brook | | |
| | FF | |
| Other Assistants Present | | |
| Last Precipitation < 24 hours > 1 week unknown Drought conditions? Drought Index*1 (Circle) none D0 D1 D2 D3 D4 Wetland Photos Taken Yes No (I | Yes 	No Provide photo location | Unknown on map) |
| Notes (e.g., details about drought, flood, abnormally dry, and/or snow/ice conditions, and any other sea | asonal conditions ob: | served): |
| Estimate % Canopy Cover*3 0% ≤ 5 6-20 21-40 | neral wetland informia Watercress ding4 Routine Floor ep) and? Likely Ur ges, berms, culverts, | ooding ⁵) nlikely Unk fill material, |
| | Property/Project Name | PNDI# (for PA):_ Property/Project Name |

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.

| Mowing | there any signs of dis | sturbance to <u>vegetati</u> | ion (e.g., mowing, pasturin ol Scapers clebur) | ng, burning)? If yes, | describe: |
|---|--|--|---|--|--|
| ate (scale of 1-4) le urning observed ⁶ oil types present*: | evel of vegetation dist | curbance* (Circle): 1. grazing or mowing | . Light to moderate graz 4. Mowing occurs durin | ing or mowing 2 | No grazing mow |
| | | | | | |
| <u>Vetland Type</u> EM Portion of Wet | % of Total We | | nd Type w/Muck Ave | g. Muck Depth | Max. Muck Depth |
| | | | <u> </u> | <u> </u> | <u>in</u> |
| SS Portion of Wetla | *** | | | <u>in.</u> | <u>in.</u> |
| FO Portion of Wetl | and: | | | in. | <u>in.</u> |
| | C | | | | |
| OW/PUB Portion o | | | | in. | <u>in.</u> |
| IRCLE all vegetatio | n* from list below th | at is dominant (≥ 20) n the "notes" space Jewelweed Impatiens capensis | % for each wetland type provided below or in the Rice Cutgrass Leersia oryzoides | e listed above) and | d add other specie |
| IRCLE all vegetatio ou observe that are | n* from list below th e not listed in table io Common Reed | n the "notes" space Jewelweed | Provided below or in the Rice Cutgrass | e listed above) and e extra table cells. Spicebush | d add other specie |
| IRCLE all vegetatio ou observe that are Alder Spp. Alnus spp. Alder-leaved Buckthorn | n* from list below th e not listed in table in Common Reed Phragmites australis Dogwood Spp. | Jewelweed Impatiens capensis Mile-A-Minute | Rice Cutgrass Leersia oryzoides Rough-leaved Goldenrod | e listed above) and e extra table cells. Spicebush Lindera benzoin Spike-Rush | Willow spp. Salix spp. Woolly-fruited Sede |
| IRCLE all vegetatio ou observe that are Alder Spp. Alnus spp. Alder-leaved Buckthorn Rhamnus alnifolia American Elm | n* from list below the not listed in table in Common Reed Phragmites australis Dogwood Spp. Cornus spp. Duck Potato | Jewelweed Impatiens capensis Mile-A-Minute Persicaria perfoliata Multiflora Rose | Rice Cutgrass Leersia oryzoides Rough-leaved Goldenrod Solidago patula Sensitive Fern | e listed above) and e extra table cells. Spicebush Lindera benzoin Spike-Rush Eleocharis palustris Swamp Rose | Willow spp. Salix spp. Woolly-fruited Sedg Carex lasiocarpa Woolly Bulrush or Woolgrass Scirpus cyperinus Yellow-Green Sedg |
| American Elm Ulmus americana | n* from list below the not listed in table in Common Reed Phragmites australis Dogwood Spp. Cornus spp. Duck Potato Sagittaria latifolia Eastern Red Cedar | Jewelweed Impatiens capensis Mile-A-Minute Persicaria perfoliata Multiflora Rose Rosa multiflora | Rice Cutgrass Leersia oryzoides Rough-leaved Goldenrod Solidago patula Sensitive Fern Onoclea sensibilis Shrubby Cinquefoil | e listed above) and e extra table cells. Spicebush Lindera benzoin Spike-Rush Eleocharis palustris Swamp Rose Rosa palustris Sweetflag | Willow spp. Salix spp. Woolly-fruited Sedg Carex lasiocarpa Woolly Bulrush or Woolgrass Scirpus cyperinus Yellow-Green Sedg |
| Alder Spp. Alder Spp. Alnus spp. Alder-leaved Buckthorn Rhamnus alaifolia American Elm Ulmus americana Arrowhead Sagittaria latifolia Carpetgrass | n* from list below the not listed in table in Common Reed Phragmites australis Dogwood Spp. Cornus spp. Duck Potato Sagittaria latifolia Eastern Red Cedar Juniperus virginiana Eastern Tamarack | Jewelweed Impatiens capensis Mile-A-Minute Persicaria perfoliata Multiflora Rose Rosa multiflora Poison Sumac Toxicodendron vernix Porcupine Sedge | Rice Cutgrass Leersia oryzoides Rough-leaved Goldenrod Solidago patula Sensitive Fern Onoclea sensibilis Shrubby Cinquefoil Dasiphora fruticosa Skunk Cabbage | e listed above) and e extra table cells. Spicebush Lindera benzoin Spike-Rush Eleocharis palustris Swamp Rose Rosa palustris Sweetflag Acorus calamus Tearthumb Spp. | Willow spp. Salix spp. Woolly-fruited Sedg Carex lasiocarpa Woolly Bulrush or Woolgrass Scirpus cyperinus Yellow-Green Sedg |
| American Elm Ulmus americana Arrowhead Sagittaria latifolias Carpetgrass Axonopus fissifolius | n* from list below the not listed in table in Common Reed Phragmites australis Dogwood Spp. Cornus spp. Duck Potato Sagittaria latifolia Eastern Red Cedar Juniperus virginiana Eastern Tamarack Larix laricina Grass-of-Parnassus | Jewelweed Impatiens capensis Mile-A-Minute Persicaria perfoliata Multiflora Rose Rosa multiflora Poison Sumac Toxicodendron vernix Porcupine Sedge Carex hystericina | Rice Cutgrass Leersia oryzoides Rough-leaved Goldenrod Solidago patula Sensitive Fern Onoclea sensibilis Shrubby Cinquefoil Dasiphora fruticosa Skunk Cabbage Symplocarpus foetidus | e listed above) and e extra table cells. Spicebush Lindera benzoin Spike-Rush Eleocharis palustris Swamp Rose Rosa palustris Sweetflag Acorus calamus Tearthumb Spp. Polygonum spp. | Willow spp. Salix spp. Woolly-fruited Sedg Carex lasiocarpa Woolly Bulrush or Woolgrass |

American sycamore, white Snakeroot

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.

| her herps observed?YesNo If yes, how many?her herps observed?YesNo If yes, which ones? _YesNoUnsure The hydrology criterion for bog turtle habitat is metYesNoUnsure The soils criterion for bog turtle habitat is metYesNoUnsure The vegetation criterion for bog turtle habitat is metYesNoUnsure This wetland HAS potential bog turtle habitat (fair to good quaYesNoUnsure This wetland HAS potential bog turtle habitat (low to very lowYhis wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat | -way)? site oot)? on) ite? Yes | pe permitted by the stat rvey in to handle bog tu servations to your local |
|--|--|--|
| w much of this wetland is located off-site (i.e., outside the property boundaries or right-of None of it — the entire wetland is within the property boundariesSome of it — Acres or% of the wetland appears to be located off-part of this wetland continues off-site, how much of the off-site portion was surveyed (on food of the image). None of it All of it Part of it (acres or% of the off-site port it is there potential bog turtle habitat within 300 feet*? Yes No Unk Habitat off-sites, how did you conclude this? Areas Sweet Yes No Unsure If yes, which ones? Yes No Unsure The soils criterion for bog turtle habitat is met Yes No Unsure The soils criterion for bog turtle habitat is met Yes No Unsure The wegetation criterion for bog turtle habitat (fair to good qualty yes No Unsure This wetland HAS potential bog turtle habitat (low to very low Yes No Unsure This wetland HAS potential bog turtle habitat (low to very low Yes No Unsure This wetland HAS potential bog turtle habitat (low to very low Yes No Unsure This wetland HAS potential bog turtle habitat (low to very low Yes No Unsure This wetland HAS potential bog turtle habitat (low to very low Yes No This wetland HAS potential bog turtle habitat (low to very low | oot)? on) ite?Yes Note that you must are conducting the su | pe permitted by the stat rvey in to handle bog tu servations to your local |
| None of it — the entire wetland is within the property boundaries Some of it — Acres or % of the wetland appears to be located off- part of this wetland continues off-site, how much of the off-site portion was surveyed (on fi None of it All of it Part of it (acres or % of the off-site port there potential bog turtle habitat within 300 feet*? Yes No Unk Habitat off-s yes, how did you conclude this? Add access Sweet Pere any bog turtles observed? Yes No If yes, how many? her herps observed? Yes No If yes, which ones? 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 (fair to good qua Yes No Unsure This wetland HAS potential bog turtle habitat (low to very low This wetland does NOT have potential bog turtle habitat UNSURE if suitable habitat wetland to the control of the property of the | oot)? on) ite?Yes Note that you must are conducting the su | pe permitted by the stal rvey in to handle bog tu servations to your local |
| None of it — the entire wetland is within the property boundaries Some of it — Acres or % of the wetland appears to be located off- part of this wetland continues off-site, how much of the off-site portion was surveyed (on fi None of it All of it Part of it (acres or % of the off-site port there potential bog turtle habitat within 300 feet*? Yes No Unk Habitat off-s yes, how did you conclude this? Add access Sweet Pere any bog turtles observed? Yes No If yes, how many? her herps observed? Yes No If yes, which ones? 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 (fair to good qua Yes No Unsure This wetland HAS potential bog turtle habitat (low to very low This wetland does NOT have potential bog turtle habitat UNSURE if suitable habitat wetland to the control of the property of the | oot)? on) ite?Yes Note that you must are conducting the su | pe permitted by the stal rvey in to handle bog tu servations to your local |
| None of itAll of itPart of it (acres or% of the off-site port there potential bog turtle habitat within 300 feet*?YesNoUnk Habitat off-site port there potential bog turtle habitat within 300 feet*?YesNoUnk Habitat off-site port in the process of the process | on) te?Yes Note that you must be reconducting the su | pe permitted by the sta rvey in to handle bog tu servations to your local |
| None of itAll of itPart of it (acres or% of the off-site port there potential bog turtle habitat within 300 feet*?YesNoUnk Habitat off-site port there potential bog turtle habitat within 300 feet*?YesNoUnk Habitat off-site port in the process of the process | on) te?Yes Note that you must be reconducting the su | pe permitted by the sta rvey in to handle bog tu servations to your local |
| there potential bog turtle habitat within 300 feet*?YesNoUnk Habitat off-set, how did you conclude this? Adjacut aveas Suveyed ere any bog turtles observed?YesNo | Note that you must it re conducting the su | pe permitted by the sta rvey in to handle bog tu servations to your local |
| ere any bog turtles observed?YesNoIf yes, how many?her herps observed?YesNoIf yes, which ones? YesXNoUnsureThe hydrology criterion for bog turtle habitat is metYesXNoUnsureThe soils criterion for bog turtle habitat is metYesXNoUnsureThe vegetation criterion for bog turtle habitat is metYesXNoUnsureThis wetland HAS potential bog turtle habitat (fair to good quaYesXNoUnsureThis wetland HAS potential bog turtle habitat (low to very lowYesXNoUnsureThis wetland HAS potential bog turtle habitat (low to very lowYesXNoUnsureThis wetland HAS potential bog turtle habitatUNSURE if suitable habitat wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat | Note that you must i re conducting the su Report bog turtle ob | pe permitted by the sta rvey in to handle bog tu servations to your local |
| ere any bog turtles observed?YesNo | re conducting the su Report bog turtle ob | rvey in to handle bog tu servations to your local |
| ere any bog turtles observed?YesNo | re conducting the su Report bog turtle ob | rvey in to handle bog to servations to your local |
| her herps observed?YesNo If yes, how many?her herps observed?YesNo If yes, which ones? _YesNoUnsure The hydrology criterion for bog turtle habitat is metYesNoUnsure The soils criterion for bog turtle habitat is metYesNoUnsure The vegetation criterion for bog turtle habitat is metYesNoUnsure This wetland HAS potential bog turtle habitat (fair to good quaYesNoUnsure This wetland HAS potential bog turtle habitat (low to very lowYhis wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat | re conducting the su Report bog turtle ob | rvey in to handle bog to servations to your loca |
| her herps observed?YesNo If yes, how many?her herps observed?YesNo If yes, which ones? _YesNoUnsure The hydrology criterion for bog turtle habitat is metYesNoUnsure The soils criterion for bog turtle habitat is metYesNoUnsure The vegetation criterion for bog turtle habitat is metYesNoUnsure This wetland HAS potential bog turtle habitat (fair to good quaYesNoUnsure This wetland HAS potential bog turtle habitat (low to very lowYhis wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat wetland does NOT have potential bog turtle habitatUNSURE if suitable habitat | re conducting the su Report bog turtle ob | rvey in to handle bog to servations to your local |
| 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 quated to yery low this wetland does NOT have potential bog turtle habitat UNSURE if suitable habitat. | | wildlife office within 48 |
| 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 quated to yery low this wetland does NOT have potential bog turtle habitat UNSURE if suitable habitat. | | |
| Yes No Unsure This wetland HAS potential bog turtle habitat (fair to good qua _ Yes No Unsure This wetland HAS potential bog turtle habitat (low to very low This wetland does NOT have potential bog turtle habitat UNSURE if suitable have | | |
| _Yes _NoUnsure This wetland HAS potential bog turtle habitat (low to very lowUnsure if suitable habitatUNSURE if suitable habitat. | ity) | |
| | quality). | |
| The state of the s | bitat is prese | ent. |
| lotes (How did you reach this opinion?): | • | |
| Edge of floodplain swamp - extends | inte | lawn |
| ead Surveyor – please sign below certifying to the best of your knowledge that all of the in | formation pr | ovided herein |
| ccurate and complete. | > | |
| rint Name Sason lesawo Signature | | No. |
| ate 7/3/2020 | | |
| 70, 641,662 | | |
| ontact Information | | |

^{**}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*).

| D. | operty/Project NameGreen Brook FRM |
|------------------|--|
| | |
| | ordinates 40.589017, -74.485127 Project Type Flood refur from |
| د. | tity Requesting Phase 1 Survey ACOE unty/Township/Municipality - Smevsef Green Brook |
| 1.0 | and Survivor |
| | ad SurveyorAffiliationFE |
| _ | mei Assistants Present |
| Da | te of Survey 6/8/2020 Time In Time Out |
| La | te of Survey 6/8/2020 Time In Time Out Air Temp F°C° st Precipitation < 24 hours > 1 week unknown Drought conditions? Yes No Unknown |
| Dr | ought Index*1 (Circle) none D0 D1 D2 D3 D4 Wetland Photos Taken Yes No (Provide photo location map) |
| N | ites (e.g. details about drought flood observed by developing the state of the stat |
| 140 | tes (e.g., details about drought, flood, abnormally dry, and/or snow/ice conditions, and any other seasonal conditions observed): |
| | |
| | |
| | |
| W | etland Size acres, if known # Wetlands w/in Project Area ² |
| Es | imate wetland size (acres) < 0.1 \(\sum 0.1 - 0.5 \) 0.5 - 1 1 - 2 2 - 4 5+ 10+ |
| | |
| Es | |
| | imate % Canopy Cover* ³ 0% ≤ 5 6-20 21-40 > 41-60 > 60 |
| Ну | imate % Canopy Cover* ³ 0% ≤ 5 6-20 21-40 |
| Hy - | imate % Canopy Cover*3 0% ≤ 5 6-20 21-40 |
| Hy | imate % Canopy Cover*3 0% ≤ 5 6-20 21-40 |
| Hy | imate % Canopy Cover*3 0% ≤ 5 6-20 21-40 |
| Hy | drology 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 |
| Hy | drology and Soils (check all that apply): use additional pages to further discuss pertinent general wetland information _ Springs/Seeps SpringhouseXrib/Stream Pond Stormwater Iron Bacteria Watercress _ Water Visible on Surface |
| Hy | drology 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 |
| Hy | drology and Soils (check all that apply): use additional pages to further discuss pertinent general wetland information _ Springs/Seeps SpringhouseXrib/Stream Pond Stormwater Iron Bacteria Watercress _ Water Visible on Surface |
| Hy | drology and Soils (check all that apply): use additional pages to further discuss pertinent general wetland information _ Springs/Seeps SpringhouseXrib/Stream Pond Stormwater Iron Bacteria Watercress _ Water Visible on Surface |
| Hy | drology and Soils (check all that apply): use additional pages to further discuss pertinent general wetland information _Springs/SeepsSpringhouseXrib/StreamPondStormwaterIron BacteriaWatercress _Water Visible on SurfaceEvidence of Flooding XYesNoIf yes, (Seasonal Flooding 4Routine Flooding 5) _Rivulets (inches deep)Subsurface Tunnel/RivuletsTire Ruts (inches deep) _Small Puddles/Depressions (inches deep)Saturated soils present? If yes, year-round?LikelyUnly YesNoAre there any signs of disturbance to _hydrology (e.g., drainage ditches, tile drainages, berms, culverts, fill material, ands, roads, beaver activity)? |
| Hy | drology and Soils (check all that apply): use additional pages to further discuss pertinent general wetland information _ Springs/Seeps SpringhouseXrib/Stream Pond Stormwater Iron Bacteria Watercress _ Water Visible on Surface |
| Hy | drology 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 |
| Hy | drology and Soils (check all that apply): use additional pages to further discuss pertinent general wetland information _Springs/SeepsSpringhouse _\text{Trib/Stream}PondStormwaterIron BacteriaWatercress _Water Visible on SurfaceEvidence of Flooding \text{Yes}No _ If yes, (Seasonal Flooding ^_Routine Flooding ^5) _Rivulets (inches deep)Subsurface Tunnel/RivuletsTire Ruts (inches deep) _Small Puddles/Depressions (inches deep)Saturated soils present? If yes, year-round?LikelyUnlikelyUn _Yes \text{No} Are there any signs of disturbance to \(\frac{hydrology}{hydrology} \) (e.g., drainage ditches, tile drainages, berms, culverts, fill material, ands, roads, beaver activity)? |
| Hy | drology 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 |
| Hy po | drology 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 |

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: | W | lG | |
|---------|-----|---|----|--|
| | | | | |

__ Yes ____Yo Are there any signs of disturbance to <u>vegetation</u> (e.g., mowing, pasturing, burning)? If yes, describe:

Wetland Type/Vegetation

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*:

Mineral; allovium

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

| 1 / | |
|-----|--|
| | |
| / . | |

| Wetland Type | % of Total Wetland | % of Wetland Type w/Muck | Avg. Muck Depth | Max. Muck Depth |
|-------------------------|--------------------|--------------------------|-----------------|-----------------|
| PEM Portion of Wetland: | _2/ | 0/1 | in. | in |
| PSS Portion of Wetland: | | | in. | in. |
| PFO Portion of Wetland: | 100 48/. | 0% | in. | in. |
| POW/PUB Portion of Wet | land: | | 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.

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

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

| Sagunese Knotweed | , boxelder; | Small shoreline avea | u/ |
|--|-------------|----------------------|----|
| A COLOR PRODUCTION CONTRACTOR CON | / | polysomm 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.

| 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)? None of it — All of it — Part of it (| WIG | Wetland ID: | | | | | | |
|---|--|---|--|---|--|---|---------------------------------|--|
| | | | _ | | | | | |
| Were any bog turtles observed?YesNoIf yes, how many? | NoUnk | ty boundaries I appears to be located off-site portion was surveyed (on foot)? % of the off-site portion) | None of it – the entire wetland is within the property of the westland continues off-site, how much of the off-site wetland continues off-site, how much of the off-site wetland continues off-site, how much of the off-site within acres within acres potential bog turtle habitat within 300 feet*? Yes ow did you conclude this? | e wetland res or ite, how m t Part vithin 300 | of it – the entire of it – Acro continues off-sit of it All of it turtle habitat with the conclude this? | None of i Some of i Some of i of this wetland co None of i re potential bog tur how did you concl | If part of Is there p | |
| 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?): Carl plain Swamp Mainfained by Stream overflow accurate and complete. Print Name | in to handle bog turtle ations to your local FV | many? are conducting the sun *Report bog turtle obs | ny bog turtles observed? Yes No If yes, h | es No | observed? Ye | any bog turtles obs | Were an | |
| Lead Surveyor – please sign below certifying to the best of your knowledge that all of the information provide accurate and complete. Print Name Signature | | itat is met. Ile habitat is met. Ile habitat (fair to good quality). Ile habitat (low to very low quality). Ile habitat (low to very low quality). Ille UNSURE if suitable habitat is prese | NoUnsure The soils criterion for bog turtle NoUnsure The vegetation criterion for bog NoUnsure This wetland HAS potential bog This wetland HAS potential bog turtle habitat. (How did you reach this opinion?): | Is criterion cetland HAS etland HAS ential bog on?): | Unsure The soils Unsure The vegounsure This wet Unsure This wet s NOT have poter | NoUns | Yes Yes Yes This | |
| Date | | nowledge that all of the information pro | urveyor – please sign below certifying to the best of y te and complete. | ertifying t | ase sign below ce | Surveyor – please rate and complete. | Lead Su accurate Print Na | |
| Contact Information 201 841 6879 | | | t Information 201 841 6879 | 841 6 | 2018 | act Information | Contact | |

^{**}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*).

| | Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range (Revised April 29, 2020) Please do not edit document. Wetland ID: |
|----------------|--|
| General Into | Property/Project Name Green Brook FRM Coordinates 40.591861, -74, 480 906 Project Type Flood refin from Entity Requesting Phase 1 Survey ACOF County/Township/Municipality Somerset, Green Brook Lead Surveyor Resource Affiliation FE |
| | Other Assistants Present |
| Date/Condition | Date of Survey 5/28/2020 Time In Time Out Air Temp 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 Into | Wetland Size acres, if known # Wetlands w/in Project Area² Estimate wetland size (acres) < 0.1 0.1 - 0.5 0.5 - 1 1 - 2 2 - 4 5 + |
| | Estimate time period (in years) of disturbance*: ≤ 56-1011-20 |
| | For ditches that may be present, is there bog turtle habitat? If yes, describe: |
| | |

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: | WIT |
|-------------|-----|
|-------------|-----|

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

Occassiond R.O.W. mainfenance

etland In

Wetland Type/Vegetation

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*:

mineral soils

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

| | 0/ |
|-------------------------|------------|
| \mathcal{O}_{λ} | / : |
| | |

| Wetland Type | % of Total Wetland | % of Wetland Type w/Muck | Avg. Muck Depth | Max. Muck Depth |
|-------------------------|--------------------|--------------------------|-----------------|-----------------|
| PEM Portion of Wetland: | _15/. | <u> 0%</u> | in. | in. |
| PSS Portion of Wetland: | | | in. | in. |
| PFO Portion of Wetland: | 85/. | 0/. | in. | in. |
| POW/PUB Portion of Wet | land: | | 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.

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

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

Row: Seiges - fringed, greater bludder sedst, sputterdock (ponds) juliter plantain No: Forest: pinoak, shasbark hickory, snakerost.

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.

| cribe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, Floodplain Sweinp Surrounded by developm | |
|--|---|
| | 70-W- |
| w much of this wetland is located off-site (<i>i.e.</i> , outside the property boundaries or righted. None of it – the entire wetland is within the property boundaries Some of it – Acres or% of the wetland appears to be located on the content of the wetland appears to be located on the content of the wetland appears to be located on the content of the wetland appears to be located on the content of | |
| art of this wetland continues off-site, how much of the off-site portion was surveyed (o | on foot)? |
| one of it All of it Part of it (acres or% of the off-site po | ortion) |
| here potential bog turtle habitat within 300 feet* ?Yes _ No Unk Habitat of | ff-site?Yes 🛂NoUnk |
| es, how did you conclude this? | |
| Adjacent avers surveyed | |
| v | |
| re any bog turtles observed?Yes \(\sum_No \) If yes, how many? ner herps observed? \(\sum_Yes \) No If yes, which ones? Size n fros | *Report bog turtle observations to your local FWS Field Office and state wildlife office within 48 hrs. |
| Yes NoUnsure The hydrology criterion for bog turtle habitat is met. Yes NoUnsure The soils criterion for bog turtle habitat is met. Yes NoUnsure The vegetation criterion for bog turtle habitat is met. Yes NoUnsure This wetland HAS potential bog turtle habitat (fair to good q This wetland HAS potential bog turtle habitat (low to very low This wetland does NOT have potential bog turtle habitatUNSURE if suitable | juality). hydro/soi/s were |
| otes (How did you reach this opinion?): Floodplain swamp, mursh supported by flo | pooling; ponds |
| ead Surveyor – please sign below certifying to the best of your knowledge that all of the courate and complete. | information provided herein is |
| int Name Jusa (esauvo Signature Signature | |
| ate 7/3/2020 | |
| ontact Information 2018416879 | |

^{**}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*).

| <u>F</u> | Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range Revised April 29, 2020) Please do not edit document. Wetland ID: |
|-------------|--|
| E C | Property/Project Name |
| - E L | Pate of Survey 5/28/2620 Time In |
| E H | Vetland Size acres, if known # Wetlands w/in Project Area² stimate wetland size (acres) < 0.1 0.1 - 0.5 0.5 - 1 |
| | stimate time period (in years) of disturbance*: $_ \le 5$ $_ 6-10$ $_ 11-20$ $_ > 20 or ditches that may be present, is there bog turtle habitat? If yes, describe:$ |
| | *) Denotes reference to the Supplemental Information document that provides more details on this particular question. |

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: | W19 |
|--------|---|-------|
| Yes No | Are there any signs of disturbance to <u>vegetation</u> (e.g., mowing, pasturing, burning)? If yes, described | ribe: |
| | | |

Wetland Type/Vegetation

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*:

Mineral soils

| 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: | | | in. | in. |
| PSS Portion of Wetland: | | | in. | in. |
| PFO Portion of Wetland: | _98_ | 0/. | in. | in. |
| POW/PUB Portion of We | tland: <u>2 //</u> | 0% | <u></u> | 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.

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

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.

| | Wetland ID: W19 |
|----------------------|---|
| | Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.): |
| | Floodplain Snump surrounded by chevelopment |
| | y (occipied) |
| | |
| | |
| Эfo | |
| Landscape Info | How much of this wetland is located off-site (<i>i.e.</i> , outside the property boundaries or right-of-way)? |
| dsca | 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 |
| Lan | |
| | 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*?YesYNoUnk Habitat off-site?YesNoUnk |
| | If yes, how did you conclude this? |
| | Adjacentavers Surveyed |
| | |
| | |
| S | *Note that you must be permitted by the state you are conducting the survey in to handle bog turtles. |
| Species | Were any bog turtles observed?YesNoIf yes, how many? are conducting the survey in to handle bog turtles. Other herps observed?YesNoIf yes, which ones? *Report bog turtle observations to your local FWS |
| S | Field Office and state wildlife office within 48 hrs. |
| | Yes XNo 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 ZNO Unsure This wetland HAS potential bog turtle habitat (low to very low quality). |
| Ē | This wetland does NOT have potential bog turtle habitat. |
| <u>pini</u> | Notes (How did you reach this opinion?): |
| ō | Floodplain wetkind maintained by stream overflow |
| rvey | 1 (003 p (4/1) 10 1 more) |
| Lead Surveyor Opinio | Lead Surveyor - please sign below certifying to the best of your knowledge that all of the information provided herein is |
| Lea | accurate and complete. |
| | Print Name Sason Lescuro Signature |
| | 7/-1- |
| | Date // 3/ 2020 |
| | Contact Information |
| | |

^{**}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*).

| | Phase 1 Bog Turtle Habitat Survey Data Form for the Northern Population Range (Revised April 29, 2020) Please do not edit document. Wetland ID: |
|----------------|--|
| | Property/Project Name Gveen Povol FRM Coordinates 40.591287, -71.47880 Project Type Flood refusion Entity Requesting Phase 1 Survey ACOE County/Township/Municipality Middlesex, Dunellin |
| | Lead SurveyorAffiliationFE Other Assistants Present |
| Date/condition | Date of Survey 5/28/2020 Time In Time Out Air Temp F ° C° Last Precipitation < 24 hours 1-7 days > 1 week unknown Drought conditions? Yes No Unknown Drought Index*1 (Circle none 00 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 Size acres, if known #Wetlands w/in Project Area² Estimate wetland size (acres) _ < 0.1 |
| | Estimate time period (in years) of disturbance*: < 56-1011-20 > 20 For ditches that may be present, is there bog turtle habitat? If yes, describe: |
| | 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: W26 Yes _ No Are there any signs of disturbance to <u>vegetation</u> (e.g., mowing, pasturing, burning)? If yes, describe: O. W. Main fenance | |
|--|------|
| Rate (scale of 1-4) level of vegetation disturbance* (Circle): 1. Light to moderate grazing or mowing 2. No grazing, mow burning observed 3. Moderate to high grazing or mowing 4. Mowing occurs during bog turtle active season Soil types present*: Mineral Soil Soil S How much suitable habitat is in this wetland? Estimate acreage or percentage: | ing, |
| Wetland Type % of Total Wetland % of Wetland Type w/Muck Avg. Muck Depth Max. Muck Depth PEM Portion of Wetland: in. in. in. PFO Portion of Wetland: in. in. in. POW/PUB Portion of Wetland: in. in. in. in. in. in. in. in. in. in. | 1 |

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.

| | Alder Spp. <i>Alnus</i> spp. | Common Reed Phragmites australis | Jewelweed Impatiens capensis | Rice Cutgrass Leersia oryzoides | Spicebush Lindera benzoin | Willow spp. Salix spp. |
|---|--|---|---|---|------------------------------------|---|
| F | Alder-leaved Buckthorn Rhamnus alnifolia | Dogwood Spp. Cornus spp. | Mile-A-Minute Persicaria perfoliata | Rough-leaved Goldenrod Solidago patula | Spike-Rush Eleocharis palustris | Woolly-fruited Sedge Carex lasiocarpa |
| | American Elm Ulmus americana | Duck Potato Sagittaria latifolia | Multiflora Rose Rosa multiflora | Sensitive Fern Onoclea sensibilis | Swamp Rose Rosa palustris | Woolly Bulrush or Woolgrass Scirpus cyperinus |
| 9 | Arrowhead Sagittaria latifolia | Eastern Red Cedar Juniperus virginiana | Poison Sumac Toxicodendron vernix | Shrubby Cinquefoil Dasiphora fruticosa | Sweetflag Acorus calamus | Yellow-Green Sedge Cyperus esculentus |
| A | Carpetgrass xonopus fissifolius | Eastern Tamarack <i>Larix laricina</i> | Porcupine Sedge Carex hystericina | Skunk Cabbage Symplocarpus foetidus | Tearthumb Spp. Polygonum spp. | |
| | Cattail <i>Typha</i> spp. | Grass-of-Parnassus Parnassia glauca | Purple Loosestrife Lythrum salicaria | Smooth Sawgrass Cladium mariscoides | . Tussock Sedge Carex stricta | |
| | Cinnamon Fern Osmundastrum cinnamomeum | Inland sedge Carex interior | Red Maple Acer rubrum | Soft Rush or Common Rush Juncus effusus | Viburnum Spp. Viburnum spp. | |
| | Common Boneset Eupatorium perfoliatum | Japanese Stiltgrass Microstegium vimineum | Reed Canary Grass Phalaris arundinaced | Sphagnum Moss Sphagnum spp. | White turtlehead Chelone glabra | |

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

Wetland Type/Vegetation

Japanese Knowal, yeater bladdersedst

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.

| w much of this wetland is located off-site (i.e., outside the property boundaries or ri | ield, etc.): |
|--|---|
| w much of this wetland is located off-site (<i>i.e.</i> , outside the property boundaries or ri | |
| w much of this wetland is located off-site (<i>i.e.</i> , outside the property boundaries or ri | |
| v much of this wetland is located off-site (<i>i.e.</i> , outside the property boundaries or ri | |
| v much of this wetland is located off-site (<i>i.e.</i> , outside the property boundaries or ri | |
| v much of this wetland is located off-site (<i>i.e.</i> , outside the property boundaries or ri | |
| v much of this wetland is located off-site (i.e., outside the property boundaries or ri | |
| | ight-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 | ed off-site |
| art of this wetland continues off-site, how much of the off-site portion was surveye | ed (on foot)? |
| None of it All of it Part of it (acres or% of the off-sit | te portion) |
| nere potential bog turtle habitat within 300 feet* ?Yes _ 'No Unk Habita | at off-site ? Yes ➤ No Un |
| es, how did you conclude this? | <u> </u> |
| Adjacant area surveyed | |
| AU army area stronger | |
| | |
| Δ | |
| re any bog turtles observed? Yes No If yes, how many? | *Note that you must be permitted by the sta are conducting the survey in to handle bog to |
| er herps observed?Yes ´No | *Report bog turtle observations to your local Field Office and state wildlife office within 48 |
| | |
| 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 is met. | od quality). |
| Yes No Unsure This wetland HAS potential bog turtle habitat (low to ver | ry low quality). |
| This wetland does NOT have potential bog turtle habitat UNSURE if suita | able habitat is present. |
| otes (How did you reach this opinion?): | |
| Floodplain depression that's maintain toverflow from Gren Bresk | and he storm we |
| + Dun Alan from Grey Breisk | 2 |
| | |
| ad Surveyor – please sign below certifying to the best of your knowledge that all of curate and complete. | the information provided herein |
| | |
| | |
| te7/3/2020 | |
| | |
| ntact Information 201 841 6875 | |

^{**}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*).

July 2020

Prepared by: First Environment, Inc.

