Phase 1 Bog Turtle Habitat Assessment

Clear Property, 515 Woodstock Road, Millbrook, Town of Washington, Dutchess County, NY

Prepared for

LRC Group

18 October 2024

Edgewood Environmental Consulting, LLC

Thinking outside.

Document details	The details entered below are automatically shown on the cover and the main page footer. PLEASE NOTE: This table must NOT be removed from this document.
Document title	Phase 1 Bog Turtle Habitat Assessment
Document subtitle	Clear Property, 515 Woodstock Road, Millbrook, Town of Washington, Dutchess County, NY
Project No.	2024-014
Date	18 October 2024
Version	1
Author	Michael S. Fishman
Client Name	The LRC Group

Document history

				Edgewood approval to issue		
Version	Revision	Author	Reviewed by	Name	Date	Comments
Draft	1	MSF	JSF	MSF	10/18/24	Released for Client Review

Phase 1 Bog Turtle Habitat Assessment

Clear Property, 515 Woodstock Road, Millbrook, Town of Washington, Dutchess County, NY

Edgewood Environmental Consulting, LLC
Consulting · Research · Education
5 Edgewood Parkway
Fayetteville, NY 13066
(315) 456-8731

CONTENTS

ACRONYMS AND ABBREVIATIONS

Name	Description
ac	Acre
AMSL	Above mean sea level
°C	Degrees Celsius (temperature)
cm	Centimeter
EAF	Environmental Assessment Form
ERM	Environmental Resource Mapper
°F	Degrees Fahrenheit (temperature)
ft	Feet
ha	Hectares
in	Inches
IPaC	Information for Planning and Consultation system (USFWS)
km	Kilometer
LLC	Limited Liability Corporation
m	meter
mi	mile
°N	Degrees North (Latitude)
NHD	National Hydrography Dataset
NIDIS	National Integrated Drought Information System
NY	New York
NYSDEC	New York State Department of Environmental Conservation
NYNHP	New York Natural Heritage Program
NYSECL	New York State Environmental Conservation Law
USA	United States of America
USFWS	United States Fish & Wildlife Service
°W	Degrees West (Longitude)
WGS84	World Geodetic System 1984 (geodetic datum)

1. INTRODUCTION

Tim and Johna Clear are planning to subdivide their ±90.87-ac property located at 515 Woodstock Road, Millbrook, NY (Study Site). Planning for this subdivision requires appropriate environmental due diligence to determine if the property contains any regulated or sensitive environmental elements which could influence how the property is subdivided. Edgewood Environmental Consulting, LLC (Edgewood) previously completed a desktop data review to discover any published data on site conditions and natural resources on the site, mapped ecological communities, delineated wetlands, and completed a general biodiversity survey on the site in late April and May of 2024. Online data reviews revealed that the threatened bog turtle (*Glyptemys muhlenbergii*) was known to occur in the vicinity of the Study Site, and during the wetland delineation, Edgewood identified habitat elements in three wetlands (Wetlands E, H, and J) that were consistent with bog turtle habitat, however, no formal bog turtle habitat assessment was conducted at that time. Edgewood visited the site again on 02 October 2024 to formally assess bog turtle habitat according to methods outlined in *Guidelines for Bog Turtle Surveys for the Northern Population Range, Phase 1 and 2 Surveys* (U.S. Fish and Wildlife Service (USFWS), 2020, hereafter, Federal Guidelines). This report summarizes the methods used in this study, and the findings of the onsite Phase 1 bog turtle habitat assessment.

2. BOG TURTLE HABITAT

Bog turtles are considered habitat specialists, and have home ranges that vary from 0.5 to 2.0 ha (1.23 – 4.9 ac) (NYSDEC, 2013). Their habitat is defined by multiple elements, including soil texture and saturation, hydrology (presence of water), vegetation community, habitat structure, and area. The Federal Guidelines define suitable bog turtle habitat across the northern range in general terms as exhibiting three structural elements: soils, hydrology, and vegetation. Suitable soils in bog turtle habitat should be permanently saturated, deep (3 to 5 inches or deeper), mucky or peaty soils in which the turtles can burrow during the winter months when they go into torpor. Bog turtle habitats should have shallow, spring-fed or groundwater-fed, slow-flowing or still water, and should ideally be connected or close to other wetlands to allow for dispersal across the landscape. Suitable vegetation in bog turtle habitat varies widely throughout the northern range, influenced by geology, hydrology, soil chemistry, land use, and ecological factors such as natural succession, beaver flooding, and grazing by domestic and wild herbivores. Wetland plant communities including fens, wet meadows, marshes, drainage swales, shrub swamps, and forested wetlands that contain more than 50% canopy coverage may be used by bog turtles if supported by other factors. Bog turtle habitats may also be a mosaic of several of these cover types.

The New York State Department of Environmental Conservation (NYSDEC) and New York Natural Heritage Program (NYNHP) define bog turtle habitat more specifically as it has been observed in New York State. Both agencies define New York bog turtle habitat as, “open canopy wet meadows, sedge meadows, and calcareous fens,” and indicate that when trees or shrubs are present, they are typically scattered. Bog turtles are ectothermic (“cold-blooded”), and therefore rely strongly on open-canopy habitats in which they can bask and nest in open sunlight. NYSDEC (2013) also indicated that the habitats on which they rely are declining in the state.

Klemens (2001) stated that, “Bog turtles inhabit a variety of wetland types throughout their range, but generally these are small, open-canopy, herbaceous sedge meadows and fens bordered by more thickly vegetated and wooded areas.” According to Klemens, “unless

disrupted by fire, beaver activity, grazing, or periodic wet years, open canopy wetlands are slowly invaded by woody vegetation and undergo a transition into closed-canopy wooded swamplands that are unsuitable for habitation by bog turtles."

3. SITE LOCATION AND DESCRIPTION

The Study Site was a ±90.87-ac property located on the north and south sides of Woodstock Road, immediately west of Stanford Road, in the hamlet of Millbrook, Town of Washington, Dutchess County, New York (Study Site). The Study Site centroid coordinates were 41.811844°N, 73.708961°W (WGS84 datum, NY State Plane projection). The center of the parcel was located at elevation of 580 feet above mean sea level (AMSL), but sloped gently down to the south and southwest of Woodstock Road to a low elevation of 550 feet AMSL, and up toward Stanford Road to a high point of 620 feet AMSL, just south of Woodstock Road. Topography on the site could be described as a rolling mosaic of small knolls or knobs and depressions. Reference is made to ***Figure 1. Site Location Map.***

The northern portion of the Study Site, north of Woodstock Road, contained one single-family residential house on the north side of Woodstock Road (#515) with multiple associated outbuildings (*e.g.*, barns, sheds, coops etc.). The southeastern corner of the property north of Woodstock Road was occupied by a large pole barn and smaller agricultural structures, as well as fenced pens for livestock. North of these buildings was a fenced meadow that was probably previously used as a pasture. The western 2/3 of the northern part of the Study Site was divided into mature hardwood forest to the north, a small meadow area in the middle, and a successional shrubland and hardwood forest along the north side of Woodstock Road.

South of Woodstock Road contained another single-family dwelling (#525), which also had several small outbuildings/sheds. West of the house was a mowed lawn and a pond, surrounded by scrub-shrub wetland and shallow emergent marsh habitats. South of the house was a mosaic of successional hardwood forest, conifer plantation, a variety of successional stages (old field, shrubland, and forest), and forested swamp. East of the house was a lawn, and large area of successional old field that was formerly used as pasture. South of this pasture was a large wetland complex with multiple successional stages (marsh, shrub-swamp, forested swamp). East of this wetland complex, the land sloped up to Stanford Road, and was made up of a mixture of successional old fields (former fenced pastures) and successional hardwood forest patches. Edgewood identified 18 ecological cover types on the Study Site, as classified in *Ecological Communities of New York State, Second Edition* (Edinger, *et al*., 2014), including:

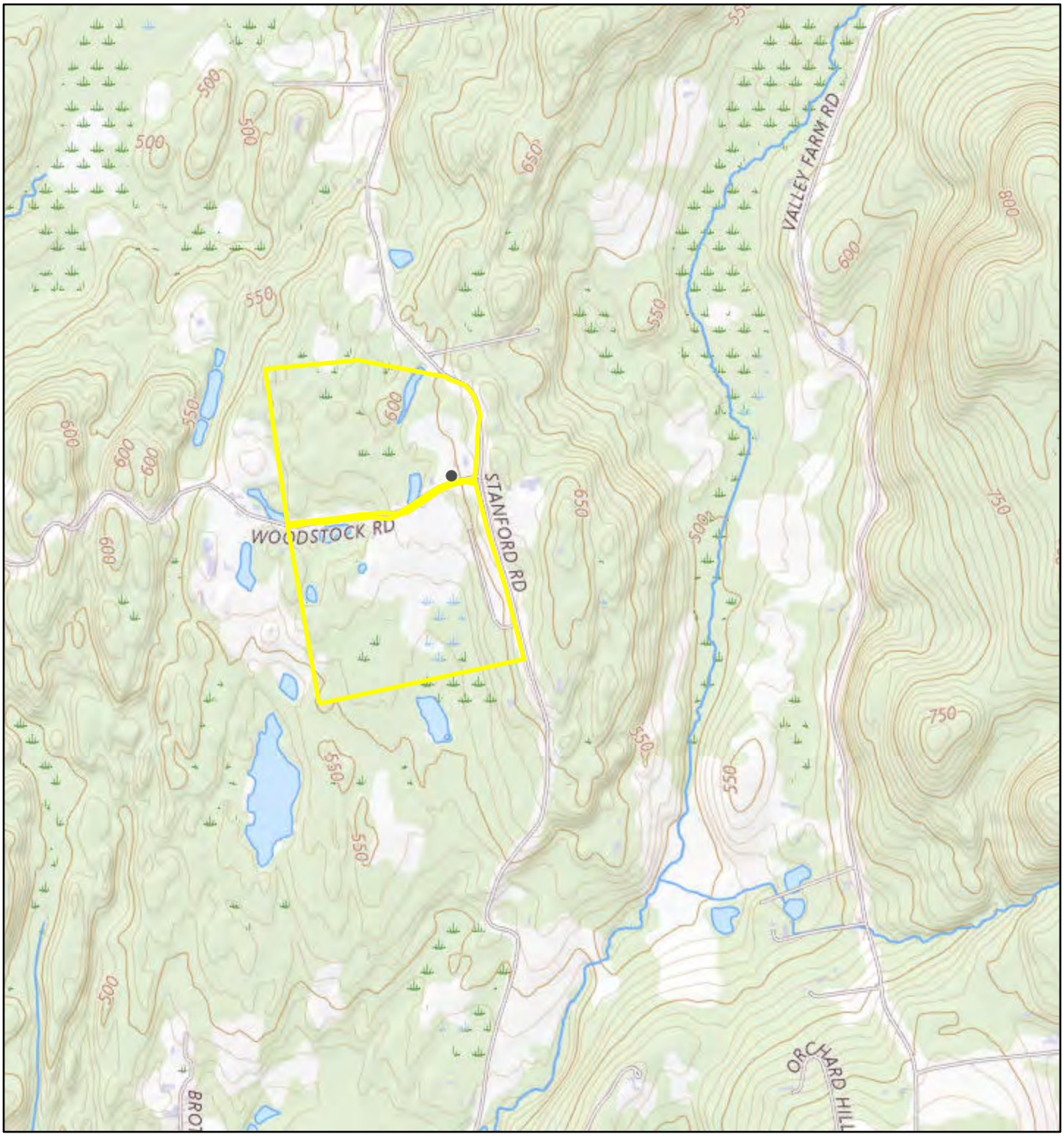
1. Eutrophic Pond (EP)
2. Deep Emergent Marsh (DEM)
3. Shallow Emergent Marsh (SEM)
4. Shrub Swamp (ShSw)
5. Red Maple Hardwood Swamp (RMHS)
6. Vernal Pool (VP)
7. Successional Old Field (SOF)
8. Successional Shrubland (SuSh)
9. Appalachian Oak-Hickory Forest (AOHF)

10. Successional Southern Hardwoods (SSH)
11. Conifer Plantation (CP)
12. Mowed Lawn with Trees (MLT)
13. Mowed Lawn (ML)
14. Mowed Roadside Pathway (MRP)
15. Unpaved Road/Path (UPRP)
16. Rural Structure Exterior (RSE)
17. Interior of Barn/Agricultural Building (IBAB)
18. Interior of Non-Agricultural Building (INAB)

The locations and distributions of these ecological communities are illustrated in ***Figure 2. Ecological Communities Map.***

Edgewood identified and delineated 18 wetlands on the Study Site, labeled Wetland A through Wetland R. The locations, extents, and spatial distribution of these wetlands are indicated in ***Figure 3. Site Wetland Map***. Wetlands E, H, and J were the only wetlands that contained habitat elements resembling those found in suitable bog turtle habitat, so this habitat assessment focused only on these three wetlands.

Figure 1. Site Location Map



Clear Property Bog Turtle Phase 1 Habitat Assessment
Woodstock Road, Millbrook,
Town of Washington, Dutchess County, NY

N

1:18,056

0 0.1 0.2 0.4 mi

0 0.17 0.35 0.7 km

Legend:

Property Boundary

Edgewood Environmental Consulting, LLC

2021 USGS

Figure 2. Ecological Communities

Clear Property Bog Turtle Phase 1 Habitat Assessment
Woodstock Road, Millbrook, NY
Town of Washington, Dutchess County

Legend

- Study Site Boundary
- Delineated Wetlands
- ABC Ecological Community (See report text for abbreviations)

Woodstock Rd
Stanford Rd
Google Earth
700 ft
N
Edgewood Environmental Consulting, LLC

Figure 3. Site Wetlands Map

Clear Property Bog Turtle Phase 1 Habitat Assessment
Woodstock Road, Millbrook,
Town of Washington, Dutchess County, NY

Legend

- Study Site Boundary
- Delineated Wetland Boundary
- A — Wetland ID
- ## ac — Area of Wetland (acres)
- PUB3... — Cowardin Wetland Classification

Stanford Rd

P
0.53 ac
PUB3H/FO1C

R
0.17 ac
PUB3H/FO1B

Q
0.26 ac
PUB3C/FO1B

M
0.14 ac
PUB3C/FO1B

L
0.04 ac
PUB3C/FO1B

N
0.03 ac
PUB3C/FO1B

O
0.26 ac
PUB3C/FO1B

K
0.05 ac
PUB3C/FO1B

I
1.91 ac
PUB3H/FO1B/EM1B

H
1.57 ac
PUB3H/FO1B/EM1B

J
0.32 ac
PFO1C

Woodstock Rd

Woodstock Rd

G
0.87 ac
PEM1B

Stanford Rd

C
1.84 ac
PUB2H/EM1B/SS1B

F
0.36 ac
PUB3H/EM1B

B
0.09 ac
PUB3H

D
0.21 ac
PUBH

A
7.67 ac
PEM1/SS1/FO1B

E
1.80 ac
PFO1H/B

Edgewood Environmental Consulting, LLC

N

Google Earth

700 ft

4. METHODS

4.1 Desktop Data Review

Edgewood reviewed a variety of data from online sources to determine site conditions, including topography, drainage, ecological communities, wetlands and surface waters, as well as known records of bog turtle on or near the Study Site. Desktop and online data sources that were reviewed included:

- USFWS's Information for Planning and Consultation
    - Known or modeled occurrence of threatened or endangered species
- NYSDEC's Environmental Resource Mapper and Environmental Assessment Form (EAF) Mapper
    - Occurrences of listed threatened/endangered species and other resources
- U.S. Geologic Survey Topographic Maps
    - Landscape topography, slopes, watercourses, and landscape features
- Aerial orthophotos (Google Earth Pro)
    - Ecological cover types, buildings, landscape features
- National Hydrography Database Maps
    - Surface water flows and connectivity
- U.S. Drought Monitor
    - Low rainfall and drought conditions that may influence inundation levels in wetland habitats.

4.2 Field Survey

Edgewood visited the site over the course of six days (29 April-2 May and 23-24 May 2024) to identify and delineate wetlands and other ecological community types (habitats), assess potential habitats, and to catalog plant and animal species observed by direct observation. Edgewood returned to the Study Site on 02 October 2024 specifically to conduct a Phase 1 Bog Turtle Habitat Assessment per the Federal Guidelines. The field assessment included extensive pedestrian visual surveys of Wetlands E, H, and J to observe and document vegetation, hydrology, and soils, as well as habitat structure and extent. Edgewood identified dominant vegetation within each wetland and looked for indicator species that were typical of bog turtle habitat. Each wetland was photographed in four cardinal directions to document the appearance and structure of habitat. Soils were observed for mucky texture and depth, and water levels and flow (if any) were observed and documented on standard data sheets based on the data sheets provided in the Federal Guidelines. The completed data sheets site photographs are in ***Appendix D***. Wetlands E, H, and J were separately assessed and documented, because they were each distinct wetlands that were not connected to each other. They were also considered in relation to each other and other wetlands identified on the Study Site, relative to distance, and connectivity.

5. FINDINGS

5.1 Desktop Data Review

Edgewood's review of desktop data provided baseline information for the Study Site Description in Section 3, above, and documented surface water and wetland connectivity on and offsite. It also documented federal and state agency records of occurrence of bog turtle in the vicinity of the Study Site.

5.1.1 USFWS Information for Planning and Consultation (IPaC) System

The IPaC Resource List (***Appendix A***) for the Study Site indicated bog turtle (*Glyptemys muhlenbergii*), a threatened species, occurred near the Study Site[1]. No specific location for this occurrence was provided.

5.1.2 NYSDEC's Environmental Assessment Form Mapper and Environmental Resource Mapper

NYSDEC's Environmental Assessment Form Mapper Summary Report for the Study Site (***Appendix B***) indicated that there were no known records of listed threatened or endangered species on or near the Study Site. ***Appendix C. NYSDEC's Environmental Resource Mapper (ERM)*** does not always identify which species occurrences are indicated on the maps. The ERM for the Study Site indicated that the nearest known occurrence of any rare species was ±1.3 mi southwest of the Study Site for rare mosses that were not listed by New York State. The next nearest record of rare species was 1.6 mi east for New England Cottontail (*Sylvilagus transitionalis*). The ERM also identified an unspecified, "Animals Listed as Endangered or Threatened" more than 2 miles to the east and more than 2.5 mi to the south. Therefore, the closest possible known occurrence for bog turtle is more than 2 mi from the Study Site. Travis, *et al*. (2018) stated that most movements of bog turtles in New York were less than 350 m (±1,148 ft), but longer movements of 750 m (±2,460 ft) and 1,500 m (±4,921 ft) had been recorded. Longer dispersal distances of up to 4 km (±2.48 mi) are only known from the southern part of this species' range. Therefore, the nearest known occurrence of bog turtle to the Study Site is greater than previously known dispersal distances of this species in New York.

5.1.3 National Hydrography Database

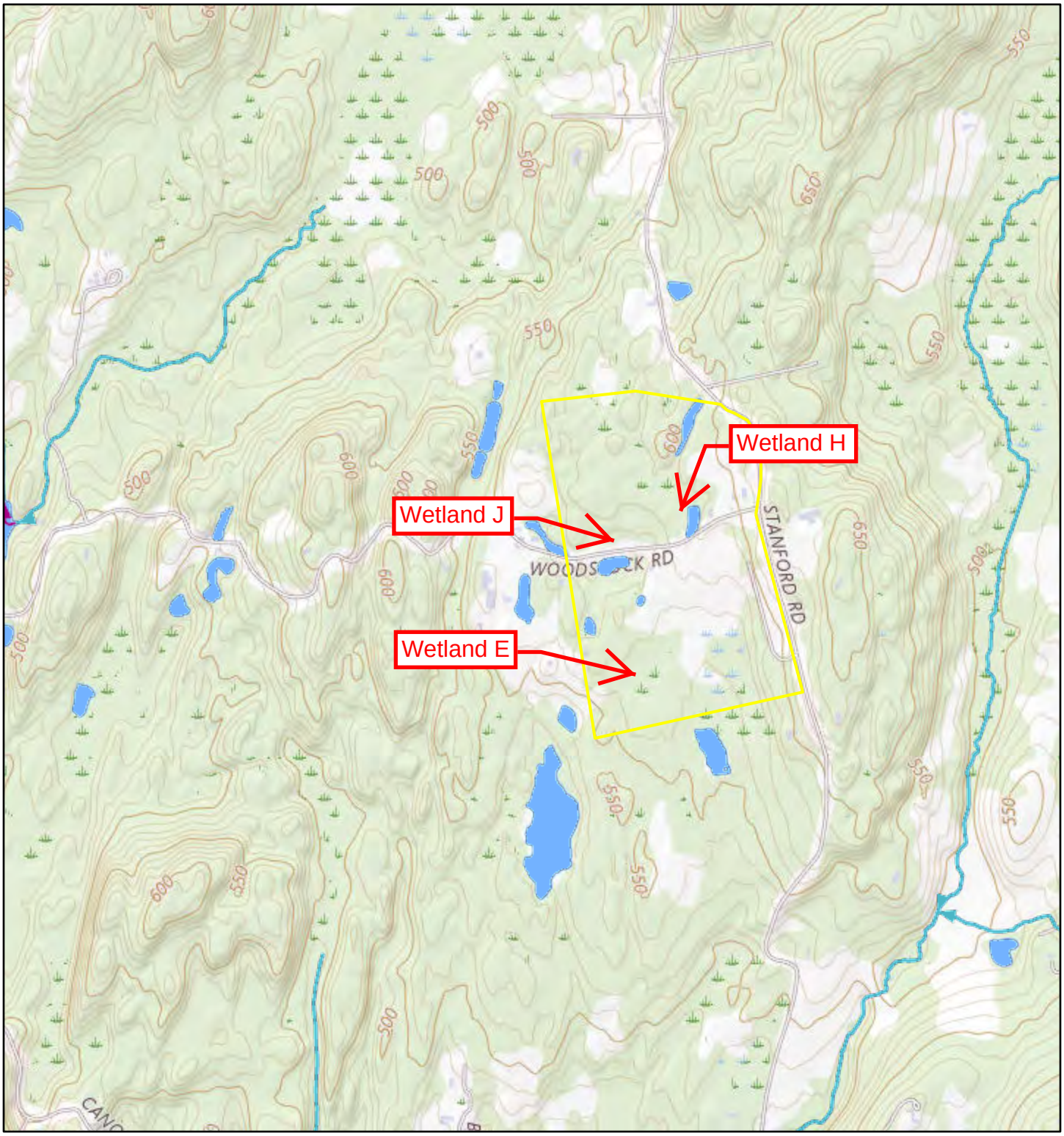
Figure 4. National Hydrography Dataset Map shows a number of wetlands and waterbodies on the Study Site, and the locations of Wetlands E, H, and J are called out. The map does not indicate any connection of these wetlands with other wetlands onsite or offsite. This means that none of these wetlands is part of a wetland corridor that is hydrologically connected to wetlands offsite. Bog turtles often move between habitat areas and disperse across the landscape via connected wetland corridors. Although they can cross areas of upland in their movements, bog turtles in New York do not tend to move long distances over upland habitats (Travis, *et al*., 2018).

5.1.4 Weather and U.S. Drought Monitor

Weather during this habitat assessment was clear, 16.4 to 20.8°C (61.4-69.4°F), with calm to light winds from the southwest. Rainfall had been minimal for the 30-day period prior to the site visit on 02 October. ***Figure 5. U.S. Drought Monitor Plot***, below, illustrates drought and low

[1] Other listed species were indicated by IPaC as well, and were addressed in Edgewood's Biodiversity Survey Report (2024).

Figure 4. National Hydrography Dataset Map



Clear Property Bog Turtle Habitat Survey
Woodstock Road, Millbrook,
Town of Washington, Dutchess County, NY

N

1:18,056

0 0.1 0.2 0.4 mi

0 0.17 0.35 0.7 km

Legend

- Study Site Boundary
- Watercourse and Flow Direction
- Pond/Lake

Edgewood Environmental Consulting, LLC

precipitation periods for Dutchess County this year. Drought levels are indicated on a scale from D0 (Abnormally Dry) to D4 (Exceptional Drought). These data inform the habitat assessment by illustrating whether low rainfall or drought might influence water levels in wetland habitats.

Observations of inundation in Wetlands E, H, and J in April and May 2024, during Edgewood's wetland delineation and biodiversity survey, occurred during normal rainfall periods. Observations on 02 October 2024, during this habitat assessment, showed only saturated soils, but no inundation. These later observations occurred during an abnormally dry period (Drought Category D0), which indicates abnormally dry, but not actual drought conditions.

Figure 5. U.S. Drought Monitor plot for Dutchess County for 2024.

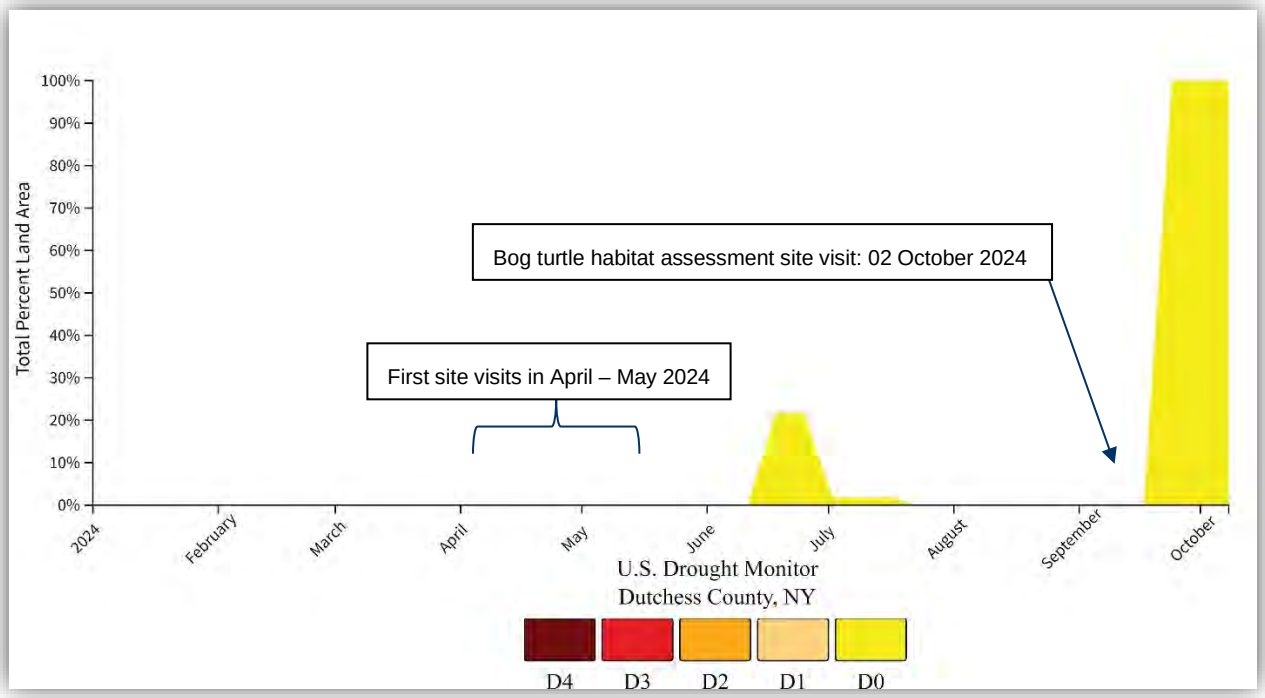


Image from NIDIS (2024) website: https://www.drought.gov/data-maps-tools/us-drought-monitor

Therefore, to be conservative, inundation observations from the earlier site visits were used to characterize these wetlands, and Edgewood assumed that each wetland would be inundated year-round in a normal rainfall year.

5.2 Wetland E

Wetland E was located in the southwest corner of the Study Site and was 0.72 ha (1.80 ac) in area. The entire wetland was a red maple-hardwood swamp, with a Cowardin (1979) wetland classification of permanently flooded/seasonally saturated palustrine broad-leafed deciduous forested swamp (PFO1H/B)[2]. The northern end of the wetland was a basin of 0.47 ha (1.17

[2] This wetland was noted as a permanently flooded/seasonally saturated wetland in the delineation report, as it was inundated with up to 23 cm (9 in) of water in the spring, with surrounding areas of saturated soils. At the October site visit, under abnormally dry

Flooded basin of Wetland E: Note tussock sedge groundcover in deep mucky soils and shallow inundation, with a closed canopy of mid-sized red maples.

Shallow swale to the southwest of the flooded basin, showing sparse vegetation and no flooding. Stone wall in the background is the south property boundary of the Study Site.

conditions, soils in the basin were still saturated, but not inundated. Accounting for the abnormally dry conditions in October, it was assumed that under normal rainfall, the basin would have been flooded.

acres), inundated in the spring (April/May) to a depth of about 23 cm (±9 in), but with only saturated soil by October. The basin had mucky soils about 20-23 cm (8-9 in) deep, and contained a dense growth of tussock sedge (*Carex stricta*) as a ground cover, beneath a closed (80-100%) forest canopy of small to mid-sized (10 to 15 cm/4 to 6 in) trees, which were predominantly red maple (*Acer rubrum*). The flooded basin was surrounded by a narrow skirt of saturated soil forested wetland, dominated by red maples.

The basin had an outlet to the southwest via a narrow channel that flowed out to a wider, shallow swale, which terminated about 15 m (±50 ft) south of the southern property boundary. Water flowing out of the wetland during high water periods percolated into the ground in the shallow swale, and no surface water was observed in the swale either in the April/May visits (during a normal rainfall period) or in October. Neither the narrow channel, nor the shallow swale exhibited prolonged inundation, nor did they contain significant groundcover vegetation or sedge hummocks.

Despite the hummocks of tussock sedge, shallow inundation, and deep mucky soils in the northern basin of Wetland E, the basin had an almost entirely closed forest canopy, leaving no sun-exposed sites for turtles to bask or nest. No such open-canopy wetland habitat with appropriate vegetation, hydrology, and soils occurred adjacent to or even near Wetland E. The entire area of the basin was also smaller than the lowest range of bog turtle home ranges known in NY. In addition, Wetland E was not connected with any wetlands onsite or offsite that would allow turtles to migrate to the Study Site within wetland habitats. Without open canopy habitat, due to its limited size, and its lack of offsite or onsite connectivity, as well as having no direct or nearby association with open canopy sedge meadow wetlands with suitable habitat for basking, Wetland E was deemed unsuitable as bog turtle habitat.

5.3 Wetland H

Wetland H was located centrally on the Study Site, about 75 m (±245 ft) north of Woodstock Road, and about 150 m (±492 ft) west of Stanford Road, and was associated with a small pond. Wetland H was 0.63 ha (±1.57 ac) in area, but only about 0.1 ha (±0.24 ac) of the wetland immediately adjacent to the north-northwest bank of the pond exhibited sedge-dominated groundcover that initially suggested possible bog turtle habitat. Wetland H had multiple cover types, and was classified as a permanently flooded mud-bottomed pond with a seasonally saturated broad-leaf deciduous forested swamp, and a seasonally saturated persistent emergent marsh (PUB3H/FO1B/EM1B). The area of interest in this wetland was the red maple-hardwood swamp, which was similar in structure to Wetland E, in that it had a canopy dominated by red maple with a ground cover dominated by tussock sedge, but it also had a dense understory of buttonbush (*Cephalanthus occidentalis*) and other shrubs. Soils were mucky, but only to a depth of about 2 inches, below which was a firmer silt loam soil. The tree canopy was closed to an extent of about 80-100%, which precluded open sun exposure at ground level. This area was inundated with about 10-13 cm (4-5 in) of water observed in the spring field visits, but only shallow (5-8 cm/2-3 in) pockets of inundation remained in October.

The red maple swamp habitat drained to the pond, which had an outlet via a culvert under Woodstock Road to Wetland F. Wetland F was not connected to any other wetlands on or offsite.

Groundcover was dominated by hummocks of tussock sedge, and the area was inundated with shallow water, but the mucky soils were not deep enough to enable bog turtles to burrow, and the entire area was beneath a shady closed tree canopy with no sun-exposed sites for turtles to bask or nest. No open-canopy wetland habitat with appropriate vegetation, hydrology, or soils

occurred adjacent to or even near Wetland H. The area of tussock sedges was too small to provide a home range area for bog turtles, and was not near any suitable habitat on or offsite that could. Wetland H was not connected with any wetlands offsite that would allow turtles to migrate to the Study Site within wetland habitats. Due to soil and vegetation conditions, lack of open canopy habitat, no connectivity to offsite wetlands, and no direct or nearby association with open canopy sedge meadow wetlands with suitable habitat for basking, Wetland H was not considered to provide suitable potential bog turtle habitat.

Portion of Wetland H located northwest of the pond (see house on far side of pond). Groundcover was dense tussock sedge with scattered shrubs, but a closed tree canopy dominated by red maples overhead.

Shallow (5 cm/2 in) mucky soils in Wetland H were saturated with small pockets of 5-8 cm (2-3 in) inundation.

5.4 Wetland J

Wetland J was located immediately north of Woodstock Road, about 340 m (±1,110 ft) west of Stanford Road. The entire wetland was 0.13 ha (0.32 ac) in area, but only about 0.07 ha (0.18 ac) contained sedge-dominated groundcover that suggested possible bog turtle habitat. The ecological community of Wetland J was red maple-hardwood swamp, with a Cowardin (1979) classification of seasonally saturated broad-leaf deciduous forested swamp (PFO1B). Much of this wetland had a canopy dominated by red maple with a ground cover dominated by tussock sedge, with patches of shrubs of winterberry (*Ilex verticillata*), multiflora rose (*Rosa multiflora*), and arrowwood (*Viburnum dentatum*).

View north from center of Wetland J shows dense growth of trees that close the canopy over this wetland, leaving it mostly shaded, except along the road.

View south from center of Wetland J shows the southern edge of the wetland along Woodstock Road, the only area of the wetland that gets sun exposure.

Soils in this wetland were damp to saturated silt loam, rather than mucky in texture. The tree canopy was closed to an extent of 80-100%, casting the entire wetland, except the edge near the road, in shade. This wetland was inundated with about 10-13 cm (4-5 in) of water in the spring, but had only damp (not saturated) soils in October, with no standing water.

The area drained via a culvert under Woodstock Road to Wetland C on the south side of the road. Wetland C contained a pond that drained via a small outlet stream to the northwest, into an offsite pond on an adjacent parcel that had no outlet.

Wetland J is not likely to support bog turtles, given its small size, lack of mucky soils, and its seasonal hydrology. Soils in this wetland were damp, but not saturated at the surface, and were not mucky in texture, so could not provide burrowing habitat for bog turtles. The closed tree canopy shaded most of the wetland, and even the southern edge, adjacent to Woodstock Road, had limited sun exposure due to the shrubs that shaded much of that edge. The wetland was connected via Wetland C to an offsite pond on the adjacent property, but the offsite wetland was not connected to any further wetlands and had no outlet, so could not provide a connective habitat corridor for turtles to migrate over the landscape. Therefore, this wetland lacked appropriate soils, hydrology, and solar exposure, so was not considered to be suitable potential bog turtle habitat.

6. CONCLUSIONS

Online data reviews and field assessments of Wetlands E, H, an J on the Study Site revealed that none of these wetlands provide suitable potential habitat for bog turtles. All of these wetlands had closed tree canopies, casting all of the wetlands into shade, except during late fall, winter, and early spring, when turtles would ordinarily be in torpor. None of these wetlands had substantive connections to other wetlands onsite or offsite that would provide a connective wetland corridor allowing turtles to move on or off the site in dispersal across the landscape. Soils in Wetlands H and J were also not suitable for bog turtles, being too shallow for burrowing in Wetland H, and having no mucky texture in Wetland J. None of the wetlands has open, sedge meadow or fen habitats associated with or near them to provide necessary basking and nesting sites for bog turtles. Given that the nearest known bog turtle occurrence is about 4 km (±2.5 mi) away, it is unlikely that bog turtles from that population could reach any of the wetlands on this Study Site without having other significant habitats and wetland connective corridors in between. Therefore, the Study Site should not be considered potentially suitable habitat to support bog turtles.

7. REFERENCES

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C.

Klemens, M. 2001. Bog turtle (*Clemmys muhlenbergii*) northern population recovery plan. Prepared in cooperation with Pennsylvania Field Office, U.S. Fish and Wildlife Service, State College, PA, for Region 5 U.S. Fish and Wildlife Service, Hadley, MA. 109 pp.

National Integrated Drought Information System (NIDIS). 2024. Historical Conditions for Dutchess County U.S. Drought Monitor. Downloaded from NIDIS website, https://www.drought.gov/data-maps-tools/us-drought-monitor. Accessed 18 October 2024.

New York State Department of Environmental Conservation (NYSDEC). 2024. Bog Turtle. In NYSDEC Website: https://dec.ny.gov/nature/animals-fish-plants/bog-turtle#:~:text=In%20New%20York%2C%20the%20bog,spp.)%20or%20sphagnum%20moss. Accessed 17 October 2024.

New York State Department of Environmental Conservation (NYSDEC). 2013. Species status assessment (bog turtle). In. Species of greatest conservation need. NYSDEC, Albany, NY. 14 pp.

Travis, K.B., I. Haeckel, G. Stevens, J. Tesauro, and E. Kiviat. 2018. Bog turtle (*Glyptemys muhlenbergii*) dispersal corridors and conservation in New York, USA. Herpetological Conservation and Biology 13(1): 257-272.

U.S. Fish and Wildlife Service (USFWS). 2020 (revised). Guidelines for bog turtle surveys for the northern population range, Phase 1 and 2 surveys. U.S. Fish and Wildlife Service. Hadley, MA.

APPENDIX A IPAC RESOURCE LIST

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Dutchess County, New York

Local office

New York Ecological Services Field Office

(607) 753-9334
(607) 753-9699
fw5es_nyfo@fws.gov

3817 Luker Road
Cortland, NY 13045-9385

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Indiana Bat Myotis sodalis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered

Reptiles

NAME	STATUS

NAME	STATUS
Bog Turtle Glyptemys muhlenbergii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6962	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31

Golden Eagle *Aquila chrysaetos*

Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

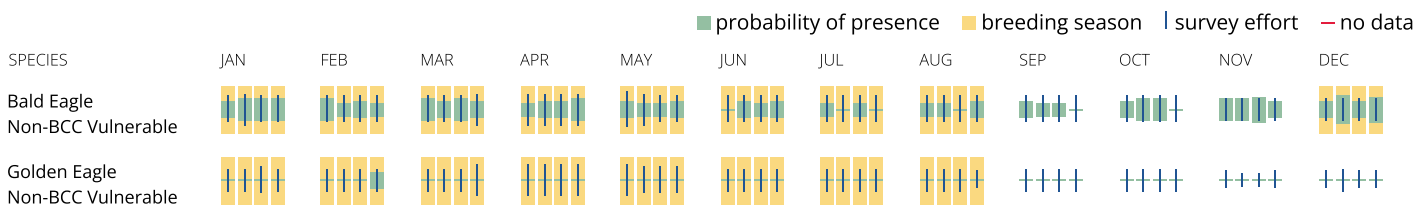
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Belted Kingfisher *Megaceryle alcyon* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 15 to Jul 25
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Eastern Meadowlark *Sturnella magna* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 25 to Aug 31
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Golden-winged Warbler *Vermivora chrysoptera* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8745	Breeds May 1 to Jul 20
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere

Pectoral Sandpiper Calidris melanotos This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

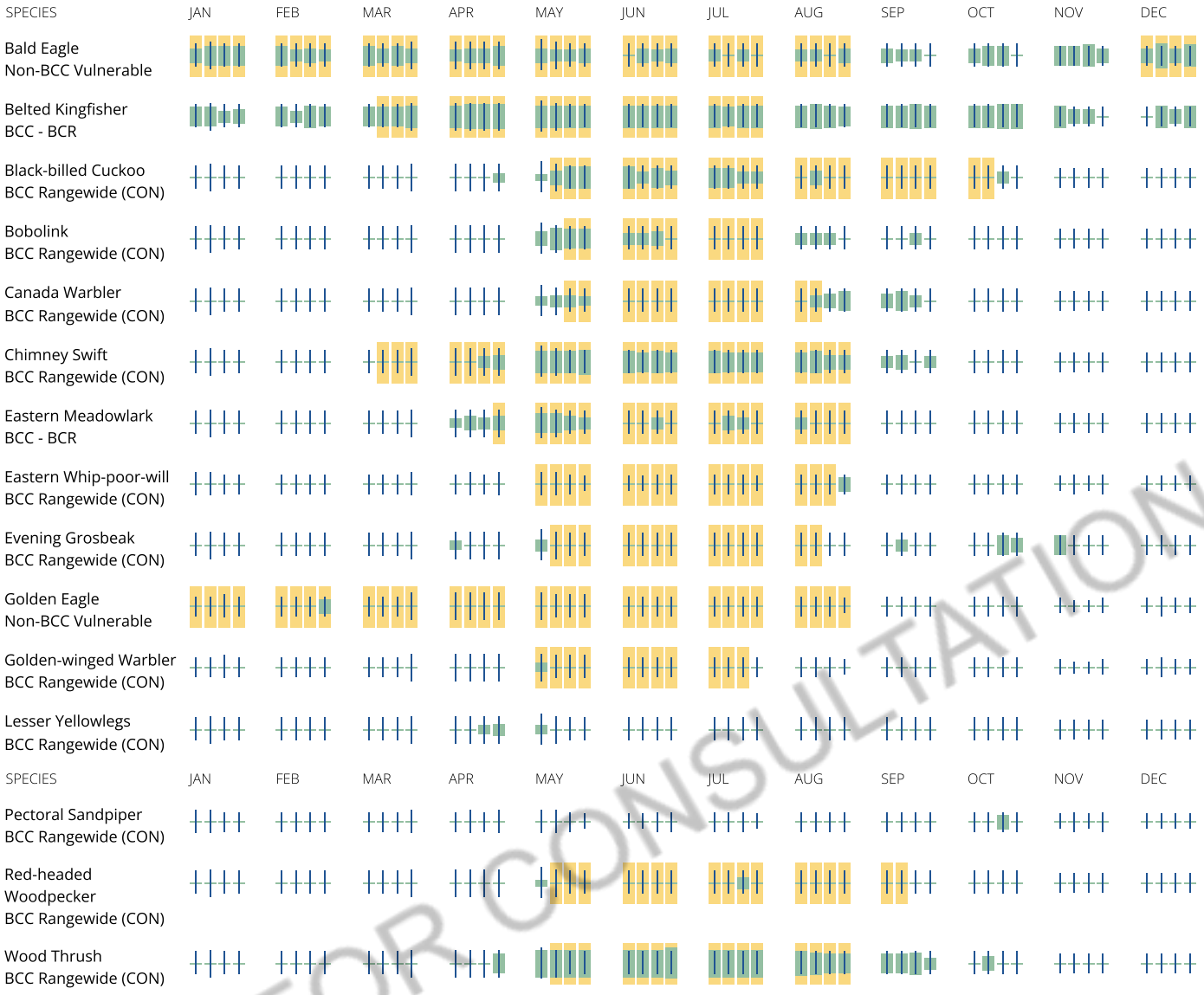
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

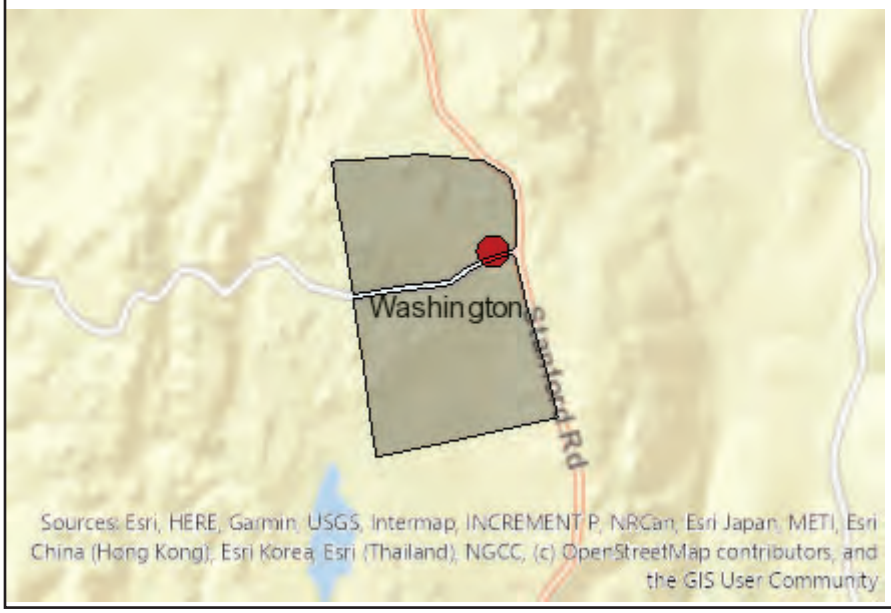
Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX B NYSDEC EAF MAPPER SUMMARY

EAF Mapper Summary Report

Tuesday, March 19, 2024 11:49 AM



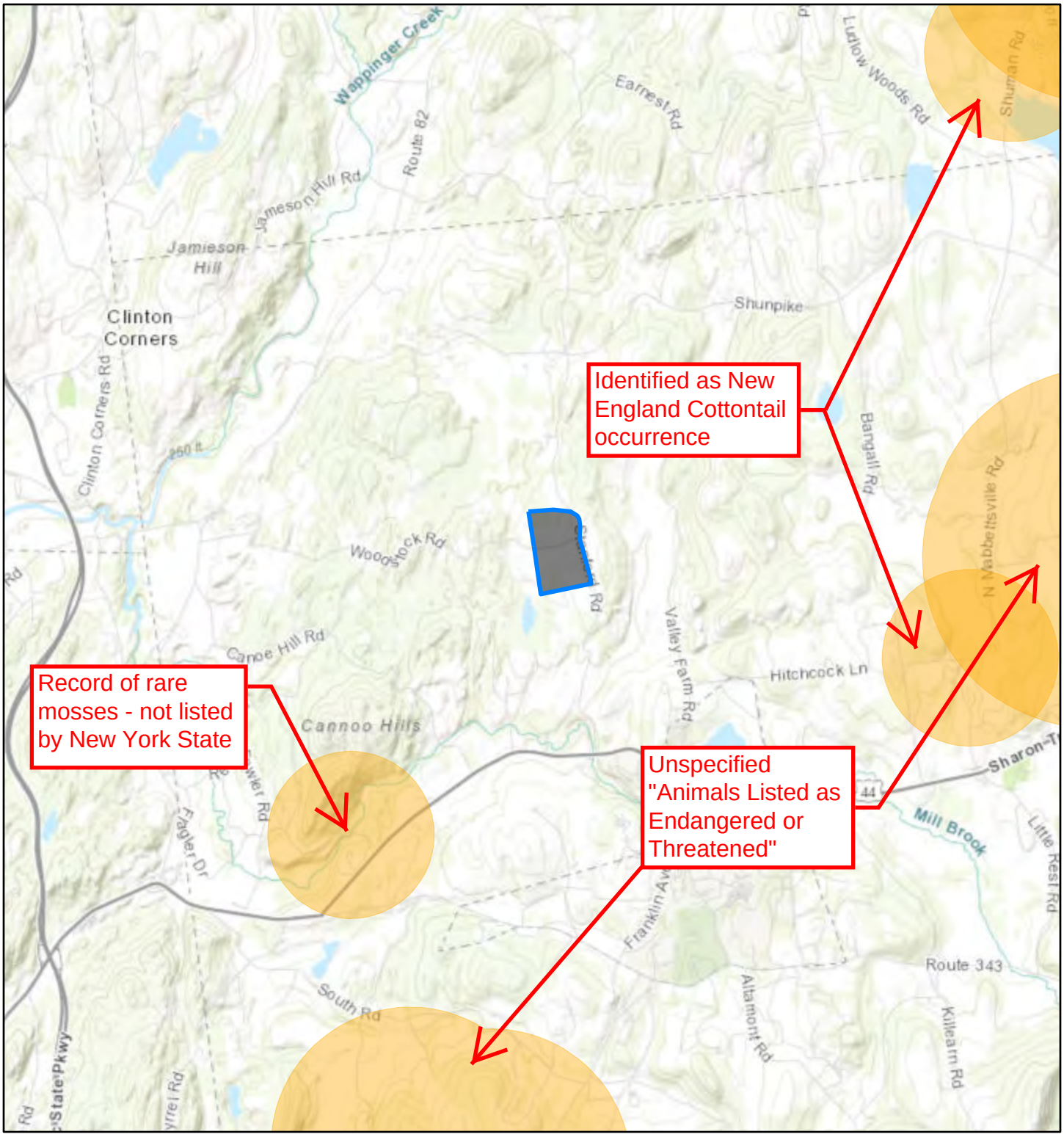
Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

B.i.i [Coastal or Waterfront Area]	No
B.i.ii [Local Waterfront Revitalization Area]	No
C.2.b. [Special Planning District]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h [DEC Spills or Remediation Site - Potential Contamination History]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Listed]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.i [DEC Spills or Remediation Site - Environmental Site Remediation Database]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.1.h.iii [Within 2,000' of DEC Remediation Site]	No
E.2.g [Unique Geologic Features]	No
E.2.h.i [Surface Water Features]	Yes
E.2.h.ii [Surface Water Features]	Yes
E.2.h.iii [Surface Water Features]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
E.2.h.iv [Surface Water Features - Wetlands Name]	Federal Waters
E.2.h.v [Impaired Water Bodies]	No
E.2.i. [Floodway]	No
E.2.j. [100 Year Floodplain]	No
E.2.k. [500 Year Floodplain]	No
E.2.l. [Aquifers]	No
E.2.n. [Natural Communities]	No
E.2.o. [Endangered or Threatened Species]	No

E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	Yes
E.3.a. [Agricultural District]	DUTC021
E.3.c. [National Natural Landmark]	No
E.3.d [Critical Environmental Area]	No
E.3.e. [National or State Register of Historic Places or State Eligible Sites]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
E.3.f. [Archeological Sites]	No
E.3.i. [Designated River Corridor]	No

APPENDIX C NYSDEC ENVIRONMENTAL RESOURCE MAPPER

Appendix C: NYSDEC's Environmental Resource Map



Clear Property Bog Turtle Phase 1 Habitat Assessment
515 Woodstock Road
Millbrook, Town of Washington, Dutchess County, NY

1:72,224

N

0 0.45 0.9 1.8 mi

0 0.75 1.5 3 km

Legend:

- Study Site
- Known listed species occurrence location plus buffer

Edgewood Environmental Consulting, LLC

APPENDIX D BOG TURTLE HABITAT ASSESSMENT DATA AND PHOTOS

Phase 1 Bog Turtle Habitat Assessment-Northern Population Range

General Information: Wetland ID: E Pg. 1 of 4

Project Name: Clear Subdivision

Position: 41.80954 °N 73.70933 °W Datum: WGS 84 Elev.: (m) 177

Location: Southwest quadrant of Clear parcel, ±250m S/o Woodstock Road, ±290m W/o Stanford Road

Entity Requesting Phase 1 Survey: Owner/Town of Washington

Lead Surveyor: Michael S. Fishman Affiliation: Edgewood Env. Consulting

Contact: (315) 456-8731, mfishman@edgewoodenviro.com

Other Observers: Alexis La Fever

Date/Conditions:

Date: 02 October Time In: 0845 Out: 0955 (EDT) EST

Weather:
Temp (°C): 16.4° Wind Dir: SW Wind Spd (kts): 1 Last Precip (days): >30

Drought Index: (D0) D1 D2 D3 D4

Wetland Information:

Wetland Area (acres): 1.80 (E) # of Wetlands on Project Site: 18

Estimated Wetland Area (acres) <0.1 0.1-0.5 0.5-1.0 (1.0-2.0) 2.0-4.0 5+ 10+

Estimated % Canopy Cover: 0% <5% 6-20% 21-40% 41-60% (>60%)

Wetland Type	% of Total Wetland	% Wetland w/Muck	Avg. Muck Depth	Max Muck Depth
Emergent	____	____	____	____
Scrub/Shrub	____	____	____	____
Forested	100%	85%	6-8 in.	9
Open Water	____	____	____	____

Landscape Information:

Describe surrounding landscape/ecological communities: Successional northern hardwoods to N, E, W, S. Scrub-shrub wetland and successional shrubland to NE

Does wetland extend offsite? (Y) N

How much of wetland is offsite? __None __All √Part (0.03 acres/ 1 %)

How much of offsite wetland was surveyed? √None √All __Part (0.03 acres/ 1 %)

Is there bog turtle habitat within 300 feet of Site? Y (N)

Phase 1 Bog Turtle Habitat Assessment-Northern Population Range

Hydrology Information: Wetland ID: E Pg. 2 of 4

(check all that apply): __Springs/seeps __Springhouse __Trib/Stream __Pond √Stormwater __Iron Bacteria __Watercress √Surface Water __Tire Ruts __Flood Evidence __Rivulets (depth:____in) __Puddles/basins (depth:____ in)

Signs of disturbance to hydrology (ditching, tile, berms, culverts, fill, excavated ponds, beavers, etc.)? None or None

Bog Turtle Habitat in any ditches? Y (N) Describe: no ditches

Estimated time period of disturbance (yrs since): <5 6-10 11-20 >20 N/A

Soils Information:

Soil Type(s): Nassau-Cardigan Complex, rolling, very rocky (NwC)

Saturated Soils? (Y) N (Perennial) Seasonal Sub silt loam (Su)

Signs of soil disturbance: None

Vegetation Information: Check any that are >20% for any wetland type above.

__*Alnus spp.* Alder spp.	__*Salix spp.* Willow spp.	√*Cornus spp.* Dogwood spp.	__*Ulmus americana* American Elm
__*Larix laricina* Larch/Tamarack	√*Acer rubrum* Red Maple	__*Juniperus virginiana* Eastern Redcedar	__*Rhamnus alnifolia* Alder-leaf Buckthorn
__*Lindera benzoin* Spicebush	__*Rosa palustris* Swamp Rose	√*Rosa multiflora* Multiflora Rose	__*Toxicodendron vernix* Poison Sumac
√*Viburnum spp.* Viburnums	__*Chelone glabra* White Turtlehead	__*Typha spp.* Cattails	√*Symplocarpus foetidus* Skunk Cabbage
__*Polygonum spp.* Tearthumbs	__*Acorus calamus* Sweetflag	__*Impatiens capensis* Jewelweed	__*Solidago patula* Rough leaf goldenrod
__*Parnassia glauca* Grass of Parnassus	√*Lythrum salicaria* Purple Loosestrife	__*Dasiphora fruiticosa* Shrubby Cinquefoil	__*Persicaria perfoliata* Mile-a-Minute
__*Sagittaria latifolia* Arrowhead	√*Sphagnum spp.* Sphagnum moss	__*Eupatorium perfoliatum* Boneset	√*Osmunda cinnamomea* Cinnamon Fern
√*Onoclea sensibilis* Sensitive Fern	__*Leersia oryzoides* Rice Cutgrass	__*Phragmites australis* Common Reed	__*Cladium mariscoides* Smooth Sawgrass
__*Phalaris arundinacea* Reed Canary Grass	__*Axonopus fissifolius* Carpetgrass	__*Microstegium vimineum* Japanese Stilt Grass	√*Scirpus cyperinus* Woolgrass (Bulrush)
__*Juncus effusus* Soft Rush	__*Eleocharis palustris* Spikerush	√*Carex stricta* Tussock Sedge	__*Carex lasiocarpa* Woolly-fruited Sedge
__*Carex interior* Inland Sedge	__*Cares hystericina* Porcupine Sedge	__*Cyperus esculentus* Yellow-green Sedge	√ Other Species (Below)

Phase 1 Bog Turtle Habitat Assessment-Northern Population Range

Vegetation List: **Wetland ID:** E **Pg. 3 of** 4

Acer rubra
Berberis thunbergii
Fraxinus spp. snag
Cephalanthus occidentalis
Symplocarpus foetidus
Carex stricta
Onoclea sensibilis
Vaccinium corymbosum
Viburnum dentatum
Thelypteris palustris
Rosa multiflora (edge)
sphagnum moss
Scirpus cyperinus
Cornus sericea
Lythrum salicaria
Boehmeria cylindrica
Solanum dulcamara
Fraxinus umbellata (edge)

Signs of Vegetation Disturbance: None

Level of Vegetation Disturbance (circle one):
1. Light to moderate grazing or mowing
2. No grazing, mowing, burning observed
3. Moderate to high grazing or mowing
4. Mowing occurs when bog turtles active

Wildlife Species List:
Green Frog

Any bog turtles observed? Y (N) **How Many?** ____

Potential Bog Turtle Habitat Determination:

✓ Hydrology criterion for bog turtle habitat is met

✓ Soils criterion for bog turtle habitat is met

✓ Vegetation criterion for bog turtle habitat is met

__ This wetland **HAS** potential habitat for bog turtles (fair to good quality). Acres:____

? This wetland **HAS** potential habitat for bog turtle (poor quality)- forested only Acres: 1.17

__ This wetland **HAS NO** potential habitat for bog turtle ✓

Why? Closed tree canopy over sedges-has no open canopy for basking or nesting — area is < 0.5 ha

Phase 1 Bog Turtle Habitat Assessment-Northern Population Range

Sketch Map: **Wetland ID:** E **Pg. 4 of** 4

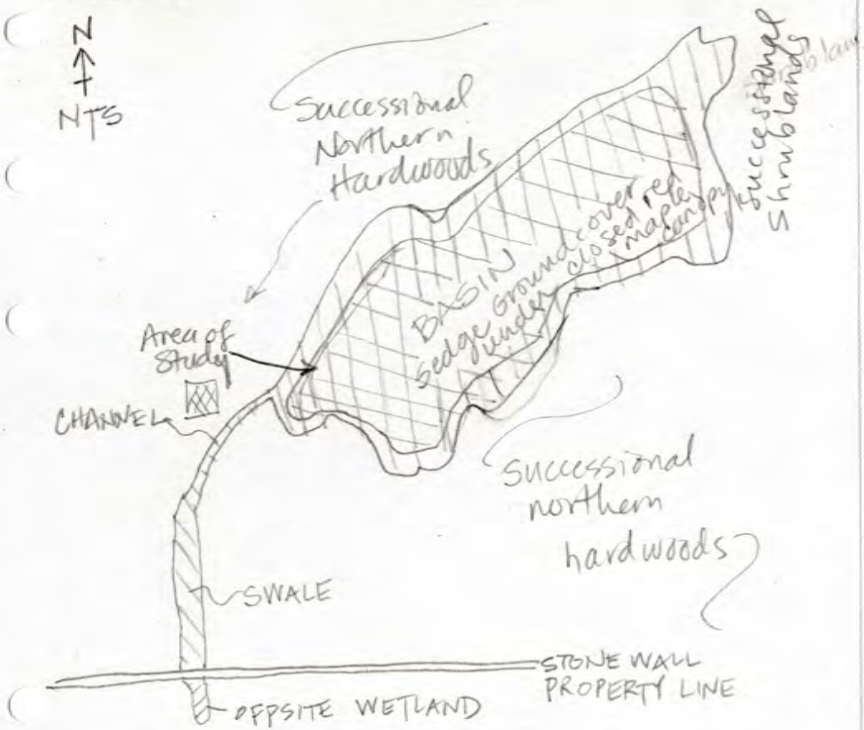


Photo #	Photo description
DSC 2251-54	Centroid photos N, E, S, W wetland E
2255	NE end of wetland E
2256	S end of wetland - bog turtle habitat - outlet
2257	S end of wetland at property border

☐ See additional notes on following pages:____

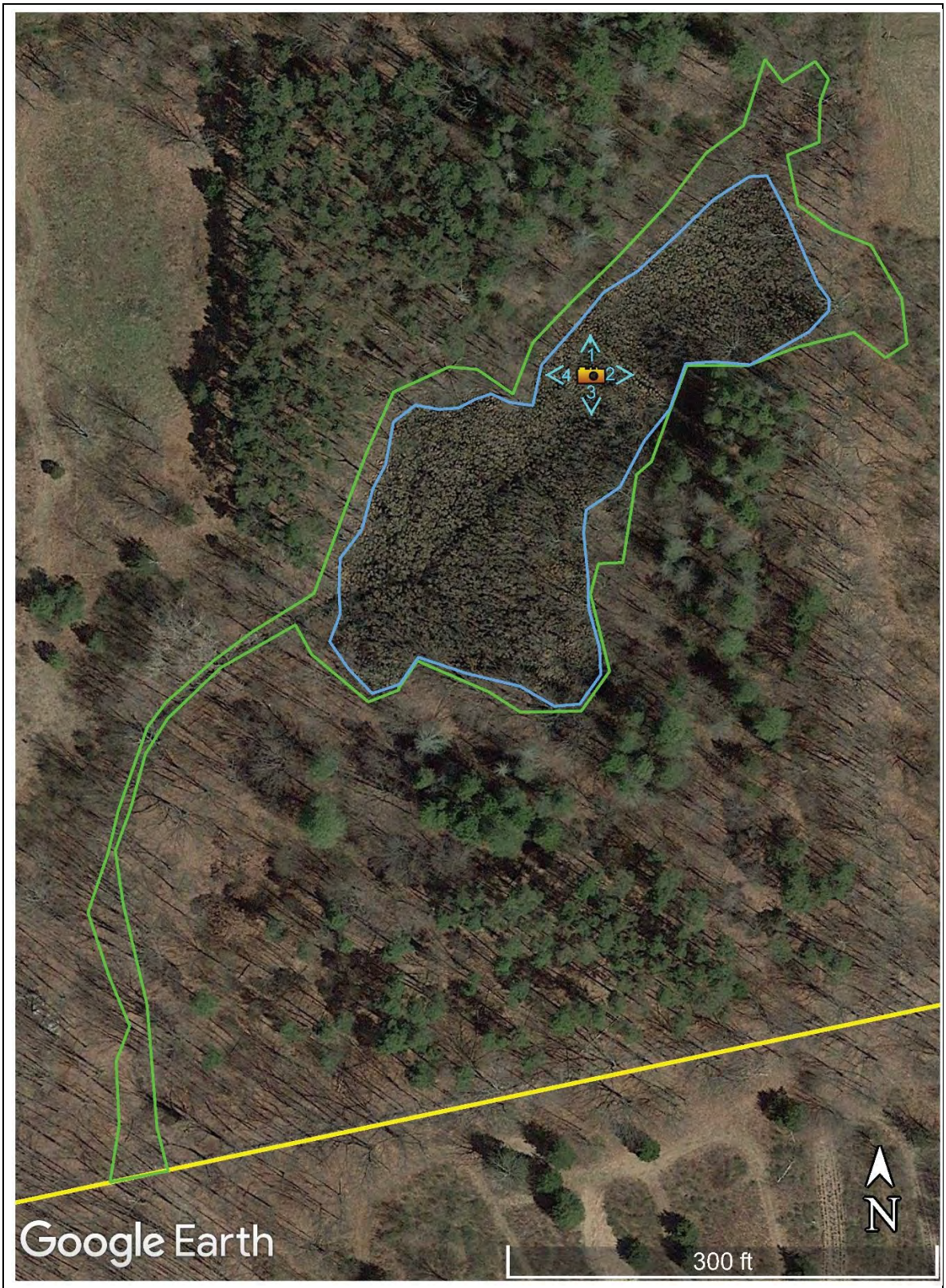


Photo Location Map

Legend:
- Clear Property Boundary
- Wetland E Boundary
- Area reviewed for bog turtle habitat
- Location from which photos were taken
- # > Photo number and direction

Edgewood Environmental Consulting, LLC	**Wetland E – Site Photographs** **Bog Turtle Phase 1 Habitat Assessment** **Clear Property, 515 Woodstock Road, Millbrook, NY** Project Number 2024-014

Photograph: 1	View north from middle of Wetland E of forested wetland in shade.

Photograph: 2	View east from middle of Wetland E of forested wetland in shade.

Edgewood Environmental Consulting, LLC	**Wetland E – Site Photographs** **Bog Turtle Phase 1 Habitat Assessment** **Clear Property, 515 Woodstock Road, Millbrook, NY** Project Number 2024-014

Photograph: 3	View south from middle of Wetland E of forested wetland in shade.

Photograph: 4	View west from middle of Wetland E of forested wetland in shade.

Phase 1 Bog Turtle Habitat Assessment-Northern Population Range

General Information: Wetland ID: H Pg. 1 of 4

Project Name: Clear Subdivision

Position: 41.81301 °N 73.70850 °W Datum: WGS84 Elev.: (m) 175

Location: North central on parcel, ± 75m N/o Woodstock Rd, ±150m W/o Stanford Rd. Near flag WLH-042

Entity Requesting Phase 1 Survey: Owner / Town of Washington

Lead Surveyor: Michael S. Fishman Affiliation: Edgewood Env. Consulting

Contact: (315) 456-8731 mfishman@edgewoodenv.com

Other Observers: Alex A. Lafever

Date/Conditions:

Date: 02 October Time In: 10:10 Out: 11:15 (EDT) EST

Weather:

Temp (°C): 16.4 Wind Dir:___ Wind Spd (kts): 0 Last Precip (days): >30

Drought Index: (D0) D1 D2 D3 D4

Wetland Information:

Wetland Area (acres): 1.57 (H) # of Wetlands on Project Site: 18

Estimated Wetland Area (acres) <0.1 01-0.5 0.5-1.0 (1.0-2.0) 2.0-4.0 5+ 10+

Estimated % Canopy Cover: 0% <5% 6-20% 21-40% 41-60% (>60%)

Wetland Type	% of Total Wetland	% Wetland w/Muck	Avg. Muck Depth	Max Muck Depth
Emergent	____	____	____	____
Scrub/Shrub	____	____	____	____
Forested	100%	15%	1-2in	2in
Open Water	____	____	____	____

Landscape Information:

Describe surrounding landscape/ecological communities: Eutrophic pond to E, Successional Shrubland to W, Successional Northern hardwoods N & S, Red maple hardwood Swamp NE

Does wetland extend offsite? Y (N)

How much of wetland is offsite? ✓None __All __Part (___acres/___%)

How much of offsite wetland was surveyed? ✓None __All __Part (___acres/___%)

Is there bog turtle habitat within 300 feet of Site? Y (N)

Phase 1 Bog Turtle Habitat Assessment-Northern Population Range

Hydrology Information: Wetland ID: H Pg. 2 of 4

(check all that apply): __Springs/seeps __Springhouse __Trib/Stream ✓Pond (adjacent) ✓Stormwater __Iron Bacteria __Watercress ✓Surface Water __Tire Ruts __Flood Evidence __Rivulets (depth:____in) __Puddles/basins (depth:____in)

Signs of disturbance to hydrology (ditching, tile, berms, culverts, fill, excavated ponds, beavers, etc.)? NONE or None

Bog Turtle Habitat in any ditches? Y (N) Describe: No ditches

Estimated time period of disturbance (yrs since): <5 6-10 11-20 >20 N/A

Soils Information:

Soil Type(s): Sun silt loam (Su)

Saturated Soils? (Y) N (Perennial) Seasonal

Signs of soil disturbance: NONE

Vegetation Information: Check any that are >20% for any wetland type above.

__*Alnus spp.* Alder spp.	__*Salix spp.* Willow spp.	__*Cornus spp.* Dogwood spp.	__*Ulmus americana* American Elm
__*Larix laricina* Larch/Tamarack	✓*Acer rubrum* Red Maple	__*Juniperus virginiana* Eastern Redcedar	__*Rhamnus alnifolia* Alder-leaf Buckthorn
__*Lindera benzoin* Spicebush	__*Rosa palustris* Swamp Rose	__*Rosa multiflora* Multiflora Rose	__*Toxicodendron vernix* Poison Sumac
✓*Viburnum spp.* Viburnums	__*Chelone glabra* White Turtlehead	__*Typha spp.* Cattails	__*Symplocarpus foetidus* Skunk Cabbage
__*Polygonum spp.* Tearthumbs	__*Acorus calamus* Sweetflag	__*Impatiens capensis* Jewelweed	__*Solidago patula* Rough leaf goldenrod
__*Parnassia glauca* Grass of Parnassus	__*Lythrum salicaria* Purple Loosestrife	__*Dasiphora fruiticosa* Shrubby Cinquefoil	__*Persicaria perfoliata* Mile-a-Minute
__*Sagittaria latifolia* Arrowhead	✓*Sphagnum spp.* Sphagnum moss	__*Eupatorium perfoliatum* Boneset	__*Osmunda cinnamomea* Cinnamon Fern
✓*Onoclea sensibilis* Sensitive Fern	__*Leersia oryzoides* Rice Cutgrass	__*Phragmites australis* Common Reed	__*Cladium mariscoides* Smooth Sawgrass
__*Phalaris arundinacea* Reed Canary Grass	__*Axonopus fissifolius* Carpetgrass	__*Microstegium vimineum* Japanese Stilt Grass	✓*Scirpus cyperinus* Woolgrass (Bulrush)
✓*Juncus effusus* Soft Rush	__*Eleocharis palustris* Spikerush	✓*Carex stricta* Tussock Sedge	__*Carex lasiocarpa* Woolly-fruited Sedge
__*Carex interior* Inland Sedge	__*Cares hystericina* Porcupine Sedge	__*Cyperus esculentus* Yellow-green Sedge	__Other Species (Below)

M.S. Fishman 2024 JOURNAL Page____

Phase 1 Bog Turtle Habitat Assessment-Northern Population Range

Vegetation List: Wetland ID: H Pg. 3 of 4

Acer rubra	Sphagnum spp.
Carex stricta	Vaccinum corymbosum
Spirea alba	Scirpus cyperinus
Ilex verticillata	Cephalanthus occidentalis
Onoclea sensibilis	Juncus effusus
Thelypteris palustris	

Signs of Vegetation Disturbance: None

Level of Vegetation Disturbance (circle one):

1. Light to moderate grazing or mowing
2. No grazing, mowing, burning observed
3. Moderate to high grazing or mowing
4. Mowing occurs when bog turtles active

Wildlife Species List:

- Eastern painted turtle in adjacent pond
- Canada goose " " "
- Mallard " " "

Any bog turtles observed? Y (N) **How Many?** ____

Potential Bog Turtle Habitat Determination:

✓ Hydrology criterion for bog turtle habitat is met

✓ Soils criterion for bog turtle habitat is met

✓ Vegetation criterion for bog turtle habitat is met

__ This wetland **HAS** potential habitat for bog turtles (fair to good quality). Acres:____

__ This wetland **HAS** potential habitat for bog turtle (poor quality). Acres:____

✓ This wetland **HAS NO** potential habitat for bog turtle

Why? Closed forest canopy. No connectivity to other wetlands

M.S. Fishman 2024 JOURNAL Page____

Phase 1 Bog Turtle Habitat Assessment-Northern Population Range

Sketch Map: Wetland ID: H Pg. 4 of 4

Photo #	Photo description
2259	centroid pt N
2260	" E
2261	" S
2262	" W

☐ See additional notes on following pages:____

Photo Location Map

Legend: Clear Property Boundary; Wetland Boundary; Area reviewed for bog turtle habitat; Location from which photos were taken; # > Photo number and direction

Edgewood Environmental Consulting, LLC	**Wetland H – Site Photographs** **Bog Turtle Phase 1 Habitat Assessment** **Clear Property, 515 Woodstock Road, Millbrook, NY** Project Number 2024-014

Photograph: 1	View north from middle of Wetland H of forested wetland in shade and dense shrub cover.

Photograph: 2	View east from middle of Wetland H of forested wetland in shade.

Edgewood Environmental Consulting, LLC	**Wetland H – Site Photographs** **Bog Turtle Phase 1 Habitat Assessment** **Clear Property, 515 Woodstock Road, Millbrook, NY** Project Number 2024-014

Photograph: 3	View south from middle of Wetland H of forested wetland in shade, showing dense shrub cover.

Photograph: 4	View west from middle of Wetland H of forested wetland in shade, and successional shrubland beyond the wetland.

Edgewood Environmental Consulting, LLC	**Wetland H – Site Photographs** **Bog Turtle Phase 1 Habitat Assessment** **Clear Property, 515 Woodstock Road, Millbrook, NY** Project Number 2024-014

Phase 1 Bog Turtle Habitat Assessment-Northern Population Range

General Information: Wetland ID: J Pg. 1 of 4

Project Name: Clear Subdivision

Position: 41.81216 °N 73.71027 °W Datum: WGS 84 Elev.: (m) 178

Location: N/s Woodstock Rd ±320m W/o Stanford Rd

Entity Requesting Phase 1 Survey: Owner | Tocon of Washington

Lead Surveyor: Michael S. Fishman Affiliation: Edgewood Env. Consult.

Contact: (315)456-8731 mfishman@edgewoodenviro.com

Other Observers: Alexis A. Lafever

Date/Conditions:

Date: 2 October Time In: 11:25 Out: 11:45 (EDT) EST

Weather:

Temp (°C): 20.8 Wind Dir: — Wind Spd (kts): 0 Last Precip (days): >30

Drought Index: (D0) D1 D2 D3 D4

Wetland Information:

Wetland Area (acres): 0.32# of Wetlands on Project Site: 18

J

Estimated Wetland Area (acres) <0.1 (0.1-0.5) 0.5-1.0 1.0-2.0 2.0-4.0 5+ 10+

Estimated % Canopy Cover: 0% <5% 6-20% 21-40% 41-60% >60% 80%+

Wetland Type	% of Total Wetland	% Wetland w/Muck	Avg. Muck Depth	Max Muck Depth
Emergent	____	____	____	____
Scrub/Shrub	____	____	____	____
Forested	100%	0%	no muck	____
Open Water	____	____	____	____

Landscape Information:

Describe surrounding landscape/ecological communities: N-Successional Shrubland, E+W Successional Northern Hardwood, S-Unpaved Road Shrub Swamp

Does wetland extend offsite? Y (N)

How much of wetland is offsite? ✓None __All __Part (___acres/___%)

How much of offsite wetland was surveyed? ✓None __All __Part (___acres/___%)

Is there bog turtle habitat within 300 feet of Site? Y (N)

Phase 1 Bog Turtle Habitat Assessment-Northern Population Range

Hydrology Information: Wetland ID: J Pg. 2 of ___

(check all that apply): __Springs/seeps __Springhouse __Trib/Stream __Pond

✓Stormwater __Iron Bacteria ✓Watercress ✓Surface Water __Tire Ruts

__Flood Evidence __Rivulets (depth:____in) __Puddles/basins (depth:____in)

Signs of disturbance to hydrology (ditching, tile, berms, culverts, fill, excavated ponds, beavers, etc.)?

NONE

or None

Bog Turtle Habitat in any ditches? Y (N) Describe:

No ditches

Estimated time period of disturbance (yrs since): <5 6-10 11-20 >20 N/A

Soils Information:

Soil Type(s): Nassau-Cardigan Complex, rolling, very rocky (NwC)

Saturated Soils? (Y) N Perennial (Seasonal)

Signs of soil disturbance:

None

✓Sphagnum notably sparse

Vegetation Information: Check any that are >20% for any wetland type above.

__*Alnus spp.* Alder spp.	__*Salix spp.* Willow spp.	__*Cornus spp.* Dogwood spp.	__*Ulmus americana* American Elm
__*Larix laricina* Larch/Tamarack	✓*Acer rubrum* Red Maple	__*Juniperus virginiana* Eastern Redcedar	__*Rhamnus alnifolia* Alder-leaf Buckthorn
__*Lindera benzoin* Spicebush	__*Rosa palustris* Swamp Rose	✓*Rosa multiflora* Multiflora Rose	__*Toxicodendron vernix* Poison Sumac
__*Viburnum spp.* Viburnums	__*Chelone glabra* White Turtlehead	__*Typha spp.* Cattails	__*Symplocarpus foetidus* Skunk Cabbage
✓*Polygonum spp.* Tearthumbs	__*Acorus calamus* Sweetflag	✓*Impatiens capensis* Jewelweed	__*Solidago patula* Rough leaf goldenrod
__*Parnassia glauca* Grass of Parnassus	✓*Lythrum salicaria* Purple Loosestrife	__*Dasiphora fruiticosa* Shrubby Cinquefoil	__*Persicaria perfoliata* Mile-a-Minute
__*Sagittaria latifolia* Arrowhead	__*Sphagnum spp.* Sphagnum moss	__*Eupatorium perfoliatum* Boneset	__*Osmunda cinnamomea* Cinnamon Fern
✓*Onoclea sensibilis* Sensitive Fern	__*Leersia oryzoides* Rice Cutgrass	__*Phragmites australis* Common Reed	__*Cladium mariscoides* Smooth Sawgrass
__*Phalaris arundinacea* Reed Canary Grass	__*Axonopus fissifolius* Carpetgrass	__*Microstegium vimineum* Japanese Stilt Grass	__*Scirpus cyperinus* Woolgrass (Bulrush)
__*Juncus effusus* Soft Rush	__*Eleocharis palustris* Spikerush	✓*Carex stricta* Tussock Sedge	__*Carex lasiocarpa* Woolly-fruited Sedge
__*Carex interior* Inland Sedge	__*Cares hystericina* Porcupine Sedge	__*Cyperus esculentus* Yellow-green Sedge	__Other Species (Below)

Phase 1 Bog Turtle Habitat Assessment-Northern Population Range

Vegetation List: **Wetland ID:** J **Pg. 3 of** 4

Acer rubrum
Ulmus americana
Onoclea sensibilis
Carex stricta
Ilex verticillata
Rhamnus cathartica
Persicaria sagittata
Impatiens capensis
Nasturtium officinale
Toxicodendron radicans
Rosa multiflora
Epilobium sp.
Viburnum dentatum
Thelypteris palustris

Signs of Vegetation Disturbance:

Level of Vegetation Disturbance (circle one):

1. Light to moderate grazing or mowing
2. No grazing, mowing, burning observed
3. Moderate to high grazing or mowing
4. Mowing occurs when bog turtles active

Wildlife Species List:

Any bog turtles observed? Y (N) **How Many?** ____

Potential Bog Turtle Habitat Determination:

✓ Hydrology criterion for bog turtle habitat is met

__ Soils criterion for bog turtle habitat is met

__ ✓ Vegetation criterion for bog turtle habitat is met

__ This wetland **HAS** potential habitat for bog turtles (fair to good quality). Acres:____

__ This wetland **HAS** potential habitat for bog turtle (poor quality). Acres:____

__ ✓ This wetland **HAS NO** potential habitat for bog turtle

Why? Soils not muddy, closed canopy, area too small

Phase 1 Bog Turtle Habitat Assessment-Northern Population Range

Sketch Map: **Wetland ID:** J **Pg. 4 of** 4

N
↑
NTS

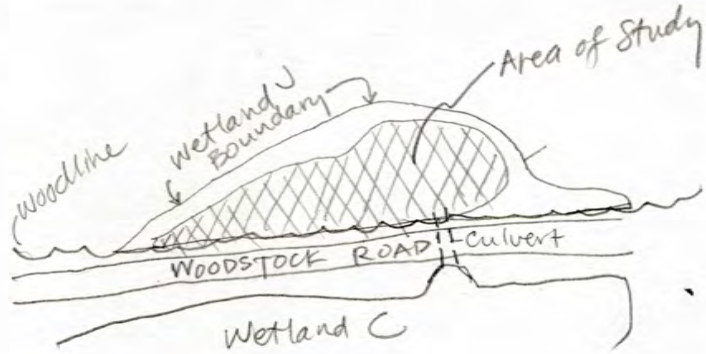


Photo #	Photo description
2265	N - Centroid point
2266	E "
2267	S
2268	W

☐ See additional notes on following pages:____

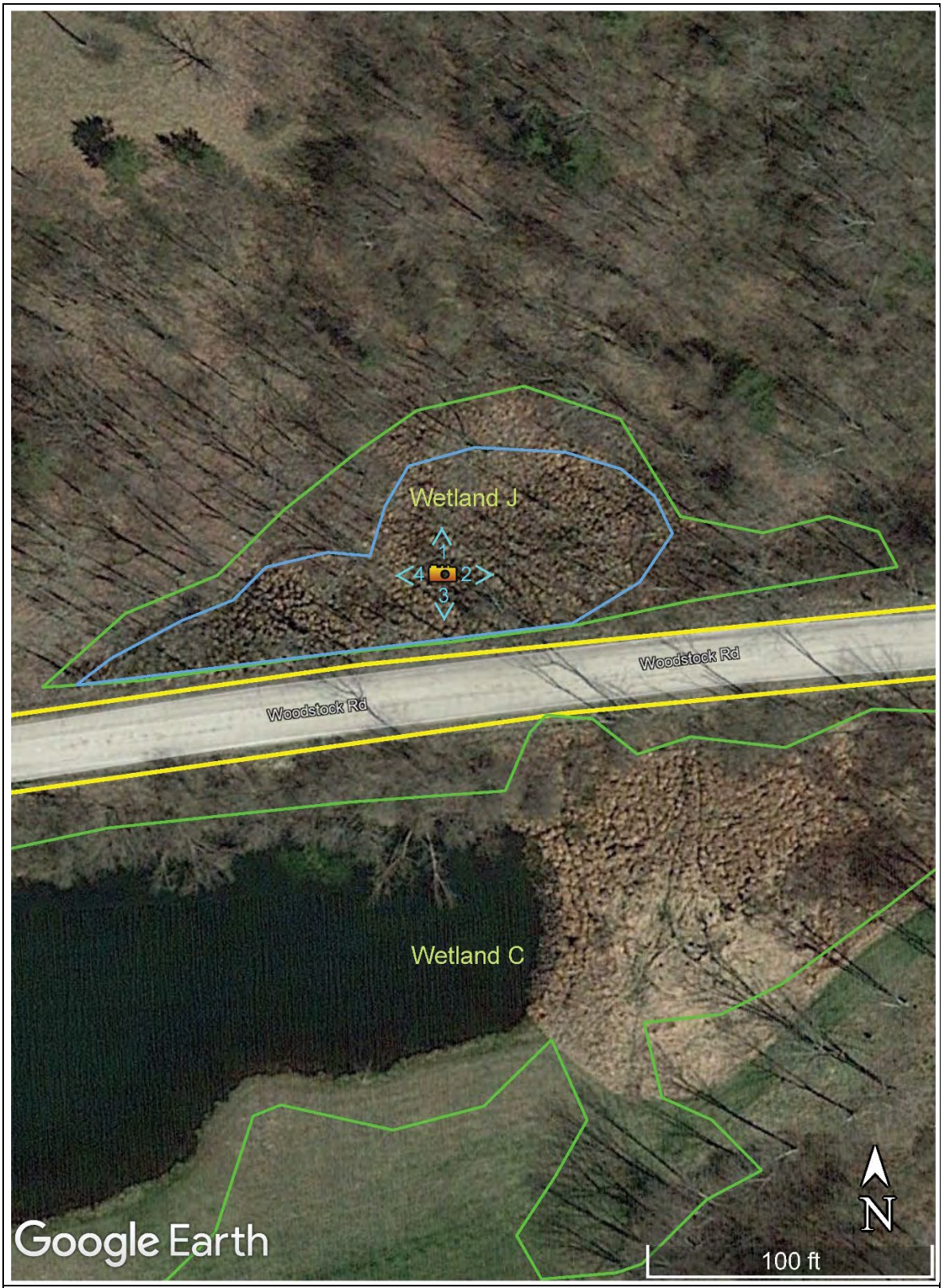


Photo Location Map

Legend: Clear Property Boundary; Area reviewed for bog turtle habitat; # Photo number and direction; Wetland Boundary; Location from which photos were taken

Edgewood Environmental Consulting, LLC

Wetland J – Site Photographs
Bog Turtle Phase 1 Habitat Assessment
Clear Property, 515 Woodstock Road, Millbrook, NY
Project Number 2024-014

Photograph: 1	View north from middle of Wetland J of forested wetland in shade and dense shrub cover.

Photograph: 2	View east from middle of Wetland J of forested wetland in shade.

Edgewood Environmental Consulting, LLC	**Wetland J – Site Photographs** **Bog Turtle Phase 1 Habitat Assessment** **Clear Property, 515 Woodstock Road, Millbrook, NY** Project Number 2024-014

Photograph: 3	View south from middle of Wetland J of forested wetland in shade, with dense shrub cover. Woodstock Road is in background.

Photograph: 4	View west from middle of Wetland J of forested wetland in shade, and dense shrub cover in wetland. Woodstock Road can be seen to left.

Edgewood Environmental Consulting, LLC	**Wetland J – Site Photographs** **Bog Turtle Phase 1 Habitat Assessment** **Clear Property, 515 Woodstock Road, Millbrook, NY** Project Number 2024-014

Edgewood Environmental Consulting, LLC
5 Edgewood Parkway
Fayetteville, NY 13066
www.edgewoodenviro.com

T: +1 315.456.8731