

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]	No
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.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]	Yes
E.2.o. [Endangered or Threatened Species - Name]	Blanding's Turtle, Indiana Bat

E.2.p. [Rare Plants or Animals]	No
E.3.a. [Agricultural District]	No
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

*Threatened and Endangered Species
Habitat Suitability Assessment Report*

Downey Energy
Old Route 9
Town of Wappinger
Dutchess, New York

July 29, 2019

Prepared by:

Michael Nowicki
Ecological Solutions, LLC
1248 Southford Road
Southbury, CT 06488
(203) 910-4716

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1.0 INTRODUCTION

A Habitat Suitability Assessment was completed on a 5(+/-) acres site located on Old Route 9 in the Town of Wappinger, Dutchess County, New York (Figure 1) for species that include the Indiana bat (*Myotis sodalis*), Northern long-eared bat (*Myotis septentrionalis*), and Blanding's turtle (*Emydoidea blandingii*) as part of the environmental review for the project and New York State Department of Environmental Conservation (NYSDEC) Environmental Resource Mapper (Figure 2).

A field assessment was conducted on July 24, 2019 to determine whether these natural communities and suitable habitat for these species is present on the site. There were two cover types identified in the project area during the field investigation by Ecological Solutions, LLC.

TABLE 1
COVER TYPES IDENTIFIED ON THE SITE

EXISTING CONDITIONS
Upland Hardwood Forest
Forested Wetland Area

1. Upland Hardwood Forest - The project area contains about 4.75 acres of young upland hardwood forest located between Old Route 9 to the east and Route 9 to the west. The trees are ash, maple, tulip tree, and some small oaks all in the range of 6-8 inches dbh.

2. Forested Wetland Area - The front of the site along Old Route 9 contains about 0.25 acres of wooded wetland that was verified by the NYSDEC to be eligible for the status as a NYSDEC wetland due to the proximity of the offsite NYSDEC mapped wetland on the east side of Old Route 9. Trees located here are ash, red maple, and elm in the 3-4 inch dbh range. There was no standing water in the wetland.

2.0 HABITAT SUITABILITY ASSESSMENT/CONCLUSION

2.1 Indiana bat

The Indiana bat typically hibernates in caves/mines in the winter and roosts under bark or in tree crevices in the spring, summer, and fall. Suitable potential summer roosting habitat is characterized by trees (dead, dying, or alive) or snags with exfoliating or defoliating bark, or containing cracks or crevices that could potentially be used by Indiana bats as a roost. The minimum diameter of roost trees observed to date is 2.5 inches for males and 4.3 inches for females. However, maternity colonies generally use trees greater than or equal to 9 inches dbh. Overall, roost tree structure appears to be more important to Indiana bats than a particular tree species or habitat type. Females appear to be more habitat specific than males presumably because of the warmer temperature requirements associated with gestation and rearing of young. As a result, they are generally found at lower elevations than males may be found. Roosts are warmed by direct exposure to solar radiation, thus trees exposed to extended periods of direct sunlight are preferred over those in shaded areas. However, shaded roosts may be preferred in very hot conditions. As larger trees afford a greater thermal mass for heat retention, they appear to be preferred over smaller trees.

Streams associated with floodplain forests, and impounded water bodies (ponds, wetlands, reservoirs, etc.) where abundant supplies of flying insects are likely found provide preferred foraging habitat for Indiana bats, some of which may fly up to 2-5 miles from upland roosts on a regular basis. Indiana bats also forage within the canopy of upland forests, over clearings with early successional vegetation (e.g., old fields), along the borders of croplands, along wooded fencerows, and over farm ponds in pastures. While Indiana bats appear to forage in a wide variety of habitats, they seem to tend to stay fairly close to tree cover.

Conclusion - This site is within range of a hibernacula for the Indiana bat a state and federal endangered species. The site contains suitable foraging habitat. About 1-2 acres of tree removal is anticipated and therefore a note will be placed on the plan set that states, the following "To avoid impacts to this species during construction tree-clearing will be completed between October 1st and March 31st so that the project is not likely to adversely affect this species". Additional conservation measures include:

- Lighting on the site if proposed will use Town of Wappinger Planning Board approved light fixtures that have tops that direct light down to minimize light pollution and not interfere with potential bat foraging activities;
- Implementing soil conservation and dust control best management practices, such as watering dry disturbed soil areas to keep dust down, and using staked, recessed silt fence and anti tracking pads to prevent erosion and sedimentation in surface waters on the site;
- Prior to clearing, the limits of proposed clearing will be clearly demarcated on the site with orange construction fencing (or similar) to prevent inadvertent overclearing, and;
- Stormwater pond/s, if required, will not be maintained with any chemicals that might adversely affect bats or insect populations on which they may feed.

These measures will result in minimizing potential adverse effects to Indiana bats as well as Northern long-eared bats that have a similar niche as the Indiana bat.

2.2 Northern long-eared bat

Winter Habitat: Same as the Indiana bat northern long-eared bats spend winter hibernating in caves and mines, called hibernacula. They typically use large caves or mines with large passages and entrances; constant temperatures; and high humidity with no air currents. Specific areas where they hibernate have very high humidity, so much so that droplets of water are often seen on their fur. Within hibernacula, surveyors find them in small crevices or cracks, often with only the nose and ears visible.

Summer Habitat: During summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on suitability to retain bark or provide cavities or crevices. It has also been found, rarely, roosting in structures like barns and sheds.

Feeding Habits: Northern long-eared bats emerge at dusk to fly through the understory of forested hillsides and ridges feeding on moths, flies, leafhoppers, caddisflies, and beetles, which they catch while in flight using echolocation. This bat also feeds by gleaning motionless insects from vegetation and water surfaces.

Conclusion - The conservation measures proposed for the Indiana bat are sufficient for the Northern long-eared bat so that the project is not likely to adversely affect this species.

2.3 Blanding's turtle

Characteristics that indicate core habitat are: shrubby pools with permanent or intermittent hydroperiod with little flow through; high water depths of 0.5–4.0 feet; tree canopy open or absent; tree fringe present; and a dense cover of shrubs, forbs, lemnids or nymphaeids, with coarse and fine organic debris. In addition to core wetlands it is known that Blanding's turtles use a complex of habitat types during different periods in their life cycle. According to the NYSDEC "Aquatic/wetland habitat usage by Blanding's turtles includes different types of freshwater systems such as emergent marshes, woodland pools, red maple swamps, buttonbush swamps, ponds, lakes, rivers, and streams. Juvenile Blanding's are normally associated with shallower water and more densely vegetated habitats as compared to that of adults". Core habitat is most likely located west of Route 9 or west of the southbound lanes of Route 9 which is a substantial barrier to this site.

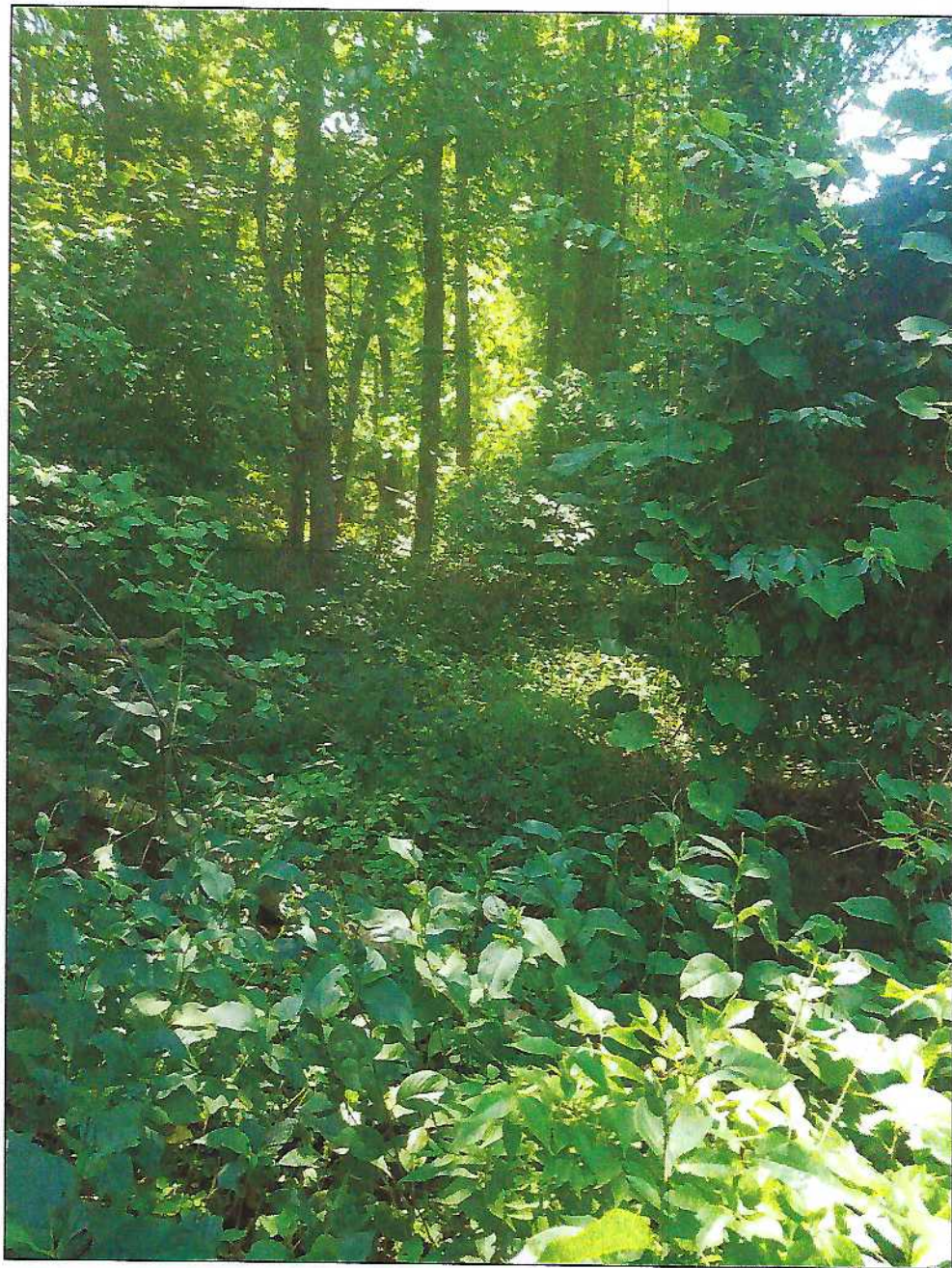
Blanding's turtle individual/s are known to move 0.6 miles from core wetland habitat. The subject site has substantial barriers on all sides that effectively remove this site from being considered potential habitat or being utilized by this species for any purpose.

The field assessment examined the upland habitat on the parcel for potential use by nesting females. There is an affinity between nesting females and Hoosic gravelly loam soils especially in low growing field areas or disturbed areas because females dig nests in loose soil. Egg development depends on strong sunlight and high temperatures which is attained in open field areas. The site contains 5 acres of upland hardwood forest and dry forested wetland along Old Route 9 with no Hoosic gravelly loam soil and no potential nesting habitat. Access to the site would have to occur from across Route 9 to reach this site.

Conclusion - There is no core habitat or potential nesting habitat on the site. Blanding's turtle individual/s could not disperse to the site unimpeded from across Route 9 because of the heavy fast moving traffic even they are known to move 0.6 miles from core wetland habitat. The site has substantial barriers on all sides that effectively remove this site from being considered potential habitat or being utilized by this species for any purpose.

3.0 PHOTOGRAPHS

Proposed Development Area



Proposed Development Area



Figure 1 Location Map

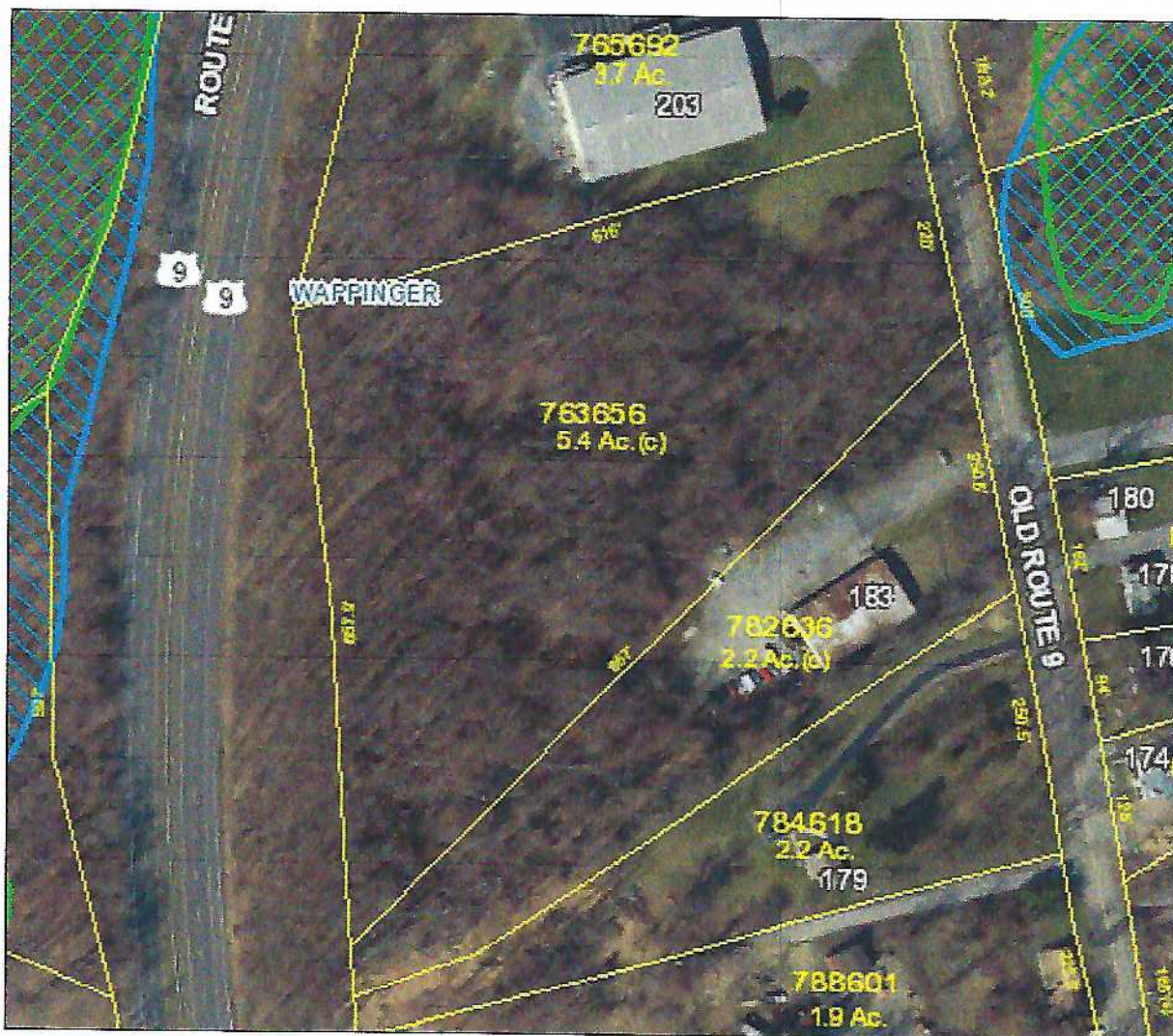


Figure 2 NYSDEC Map

