

*Threatened and Endangered Species  
Habitat Suitability Assessment Report*

Pomegranate Solutions, LLC Site  
Davidson Drive  
Town of Chester  
Orange County, NY

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## 1.0 INTRODUCTION

The Applicant is proposing the construction of a 120,000 sf light industrial building and approximately 6,000 sf of office space and associated infrastructure on 4 parcels totaling 8.73 acres located on Davidson Drive Road in the Town of Chester, Orange County, New York (Figure 1).

A Habitat Suitability Assessment was completed for four listed species including the small whorled pogonia (*Isotria medeoloides*), Indiana bat (*Myotis sodalis*), Northern long-eared bat (*Myotis septentrionalis*), and bog turtle (*Glyptemys mühlenbergii*) as part of the environmental review for the project including the US Fish and Wildlife Service species list for the site and New York State Department of Environmental Conservation (NYSDEC) Resource Mapper (Attachment 1 and 2). A field assessment was completed on October 15, 2020 to determine whether suitable habitat for these species is present on the site. The project area is mixed upland forest, upland meadow, and man made drainage ditch along Davidson Drive.

Habitat cover types were also observed and are described below.

**TABLE 1  
COVER TYPES IDENTIFIED ON THE SITE**

<b>HABITAT COVER TYPES</b>			
<b>NO.</b>	<b>DESCRIPTION</b>	<b>COVERAGE (ACRES)</b>	<b>DISTURBANCE (ACRES)</b>
1	Drainage Ditch	0.17	0.09
2	Upland Meadow	4.23	4.23
3	Mixed Upland Forest	4.50	4.50

Detailed descriptions of each natural cover type are outlined below.

Drainage Ditch - There is a man made drainage ditch along Davidson Drive that functions as part of the road drainage system. This ditch is vegetated and has not been maintained.

Mixed Upland Forest – The site contains a young mixed upland forest with eastern red cedar, sumac, black cherry, white ash, and aspen. Trees are mainly in the 2-5 inch dbh range. There were no trees observed that contained deadwood, exfoliating bark, crevices, and holes.

Upland Meadow - About half of the site is previously impacted upland meadow. Common species include goldenrods, white wood aster, ragweed, and grasses and forbs.

## 2.0 HABITAT SUITABILITY ASSESSMENT/CONCLUSION

### 2.1 Small whorled pogonia

The small whorled pogonia is a member of the orchid family. It usually has a single grayish-green stem that grows about 10 inches tall when in flower and about 14 inches when bearing fruit. The plant is named for the whorl of five or six leaves near the top of the stem and beneath the flower. The leaves are grayish-green, somewhat oblong and 1 to 3.5 inches long. The single or paired greenish-yellow flowers are about 0.5 to 1 inch long and appear in May or June. The fruit, an upright ellipsoid capsule, appears later in the year. This orchid grows in older hardwood stands of beech, birch, maple, oak, and hickory that have an open understory. Sometimes it grows in stands of softwoods such as hemlock. It prefers acidic soils with a thick layer of dead leaves, often on slopes near small streams.

**Conclusion** - There is no potential habitat for this species since there is no old growth forest on this site.

### 2.2 Indiana and Northern long-eared bats

The bats typically hibernate 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 and Northern long-eared 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 these bats appear to forage in a wide variety of habitats, they seem to tend to stay fairly close to tree cover.

**Conclusion** – The 4.5 acres of young forest area will be cleared for the project. These trees do not offer roosting or maternal colony habitat. However, since the NYSDEC mapper indicated that the site is within the range of the threatened/endangered bats, the Applicant will incorporate the

following conservation measures to ensure no impact occurs to this species. The Applicant will avoid, minimize, and mitigate impacts to this species by:

Conducting all clearing during winter months when bats will be in hibernation off site. Proposed clearing for the project will remove  $\pm 4.5$  acres of forested habitat. The project will avoid impacts by

- Implementing tree clearing for site activities during timeframes when bats are not resident on the site November 1 – to March 31.

### 2.3 Bog turtle

According to the U.S. Fish and Wildlife Service, in the 2001 Bog Turtle (*Clemmys muhlenbergii*), Northern Population Recovery Plan. Hadley, Massachusetts. 103 pp. last revised on April 13, 2006 bog turtle habitat is recognized by three criteria:

1. **Suitable hydrology.** Bog turtle wetlands are typically spring-fed with shallow surface water or saturated soils present year-round, although in summer the wet area(s) may be restricted to near spring head(s). Typically these wetlands are interspersed with dry and wet pockets. There is often subsurface flow. In addition, shallow rivulets (less than 4 inches deep) or pseudo-rivulets are often present.

2. **Suitable soils.** Usually a bottom substrate of permanently saturated organic or mineral soils. These are often soft, mucky-like soils (this does not refer to a technical soil type); you will usually sink to your ankles (3-5 inches) or deeper in muck, although in degraded wetlands or summers of dry years this may be limited to areas near spring heads or drainage ditches. In some portions of the species' range, the soft substrate consists of scattered pockets of peat instead of muck.

3. **Suitable vegetation.** Dominant vegetation of low grasses and sedges (in emergent wetlands), often with a scrub-shrub wetland component. Common emergent vegetation includes, but is not limited to: tussock sedge (*Carex stricta*), soft rush (*Juncus effusus*), rice cut grass (*Leersia oryzoides*), sensitive fern (*Onoclea sensibilis*), tearthumbs (*Polygonum spp.*), jewelweeds (*Impatiens spp.*), arrowheads (*Sagittaria spp.*), skunk cabbage (*Symplocarpus foetidus*), panic grasses (*Panicum spp.*), other sedges (*Carex spp.*), spike rushes (*Eleocharis spp.*), grass-of-Parnassus (*Parnassia glauca*), shrubby cinquefoil (*Dasiphora fruticosa*), sweet-flag (*Acorus calamus*), and in disturbed sites, reed canary grass (*Phalaris arundinacea*) or purple loosestrife (*Lythrum salicaria*). Common scrub-shrub species include alder (*Alnus spp.*), red maple (*Acer rubrum*), willow (*Salix spp.*), tamarack (*Larix laricina*), and in disturbed sites, multiflora rose (*Rosa multiflora*). Some forested wetland habitats are suitable given hydrology, soils and/or historic land use. These forested wetlands include red maple, tamarack, and cedar swamps.

**Conclusion** - The area delineated on the site is a man made drainage ditch along Davidson Drive. No groundwater seeps or rivulets were observed on the site. Soils on the site are non-calcareous Mardin gravelly silt loam (*Figure 2*). Bog turtles require stable groundwater hydrology, mucky soils, and open canopy wetland which does not occur on this site. There is no potential bog turtle habitat on or in the immediate vicinity of the site.

### 3.0 PHOTOGRAPHS

Davidson Drive - with ditch, meadow, and forest area in rear of site



Drainage ditch



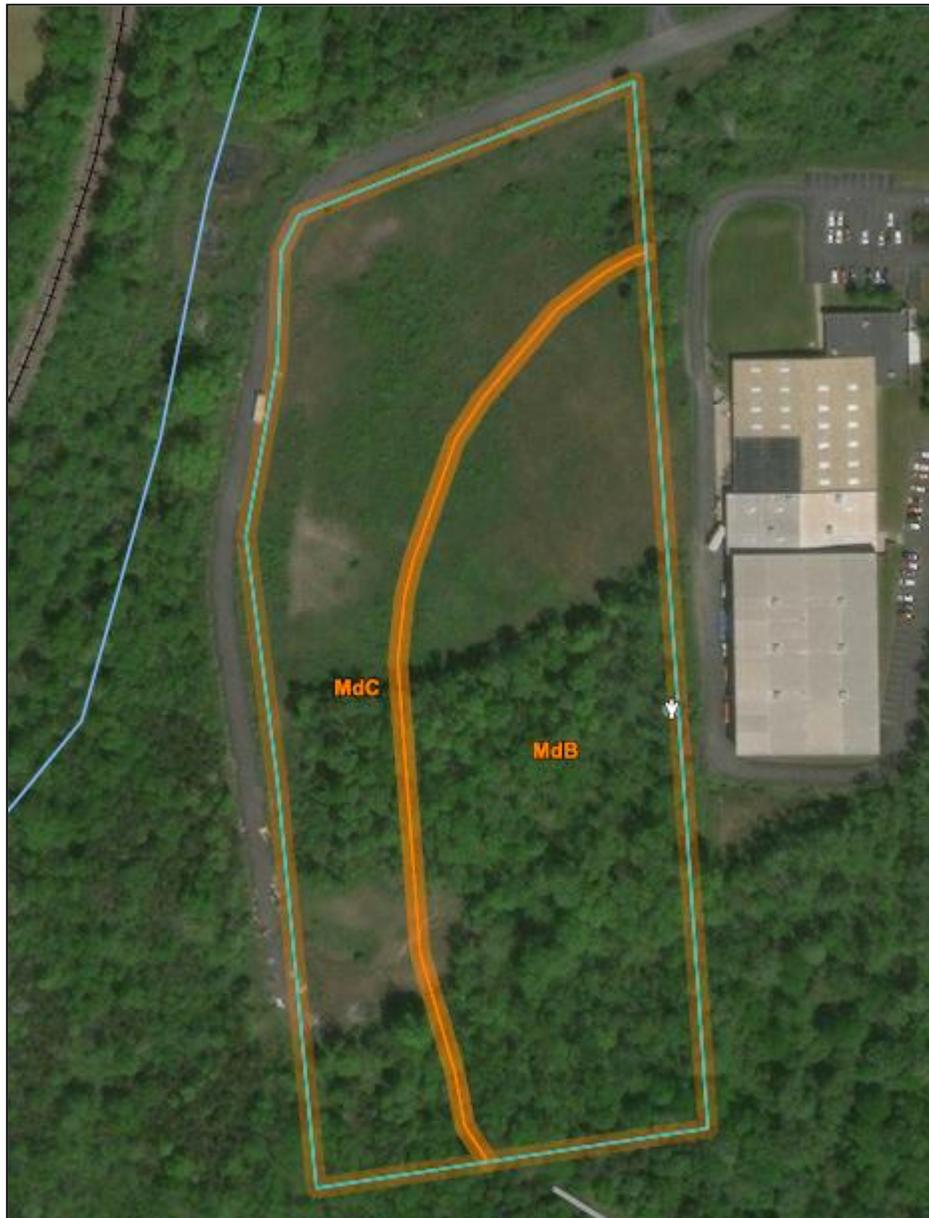
Front of site



Figure 1 - Location Map



Figure 2 - Soil Map



Map Unit Symbol	Map Unit Name
MdB	Mardin gravelly silt loam, 3 to 8 percent slopes
MdC	Mardin gravelly silt loam, 8 to 15 percent slopes

## Attachment 1 - USFWS List

## Attachment 2 - NYSDEC Mapper