

*Threatened and Endangered Species  
Habitat Suitability Assessment Report*

BONAVENIA ENTERPRISES  
Clapp Hill and East Noxon Road  
Town of Union Vale, New York

July 28, 2021

Prepared by:

Michael Nowicki  
Ecological Solutions, LLC  
121 Leon Stocker Drive  
Stratton, VT 05360  
(203) 910-4716

|  |          |
|--|----------|
| <b>1.0 INTRODUCTION .....</b>                              | <b>3</b> |
| TABLE 1 COVER TYPES IDENTIFIED ON THE SITE .....           | 3        |
| <b>2.0 HABITAT SUITABILITY ASSESSMENT/CONCLUSION .....</b> | <b>5</b> |
| <b>2.1 Indiana bat.....</b>                                | <b>5</b> |
| <b>3.0 PHOTOGRAPHS.....</b>                                | <b>6</b> |
| Figure 1 Location Map (Parcel 437115) .....                | 9        |

## 1.0 INTRODUCTION

Ecological Solutions, LLC completed a threatened and endangered species habitat suitability assessment on the 45.83 acres BONAVENTIA ENTERPRISES site (437115) located on Clapp Hill and East Noxon Road in the Town of Union Vale, Dutchess County, New York (Figure 1). The site contains mowed field and wetlands and the Applicant seeks to create a residential subdivision on the site.

The New York State Department of Environmental Conservation (NYSDEC) Environmental Assessment form indicates that the Indiana bat (*Myotis sodalis*) may be located in the vicinity of the site. This assessment was completed to determine if suitable habitat exists on the site for this species and determine potential impacts to suitable habitat and recommends measures to mitigate the impacts that can not be avoided or minimized.

Habitat observed on the site on July 26, 2021 is listed in Table 1.

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

|   |                             |
|---|-----------------------------|
| 1 | Upland Meadow               |
| 2 | Forested Wetland/Wet Meadow |
| 3 | Upland Hardwood Forest      |

Upland Meadow - The general area of the site is mowed upland meadow. Characteristic herbs include goldenrods (*Solidago altissima*, *S. nemoralis*, *S. rugosa*, *S. juncea*, *S. canadensis*, and *Euthamia graminifolia*), bluegrasses (*Poa pratensis*, *P. compressa*), timothy (*Phleum pratense*), quackgrass (*Agropyron repens*), smooth brome (*Bromus inermis*), sweet vernal grass (*Anthoxanthum odoratum*), orchard grass (*Dactylis glomerata*), common chickweed (*Cerastium arvense*), common evening primrose (*Oenothera biennis*), oldfield cinquefoil (*Potentilla simplex*), calico aster (*Aster lateriflorus*), New England aster (*Aster novae-angliae*), wild strawberry (*Fragaria virginiana*), Queen-Anne's lace (*Daucus carota*), ragweed (*Ambrosia artemisiifolia*), hawkweeds (*Hieracium* spp.), dandelion (*Taraxacum officinale*), and ox-tongue (*Picris hieracioides*). Shrubs are present, but collectively they have less than 50% cover in the community. Characteristic shrubs include gray dogwood (*Cornus foemina* ssp. *racemosa*), silky dogwood (*Cornus amomum*), arrowwood (*Viburnum recognitum*), raspberries (*Rubus* spp.), sumac (*Rhus typhina*, *R. glabra*), and eastern red cedar (*Juniperus virginiana*).

Wetland - There is a small wetland/ponded area located adjacent to Clapp Hill Road. This wetland is generally surrounded by upland mowed field area. The wetland is dominated by tall shrubs that occur as a transition zone to the red maple hardwood swamp. The substrate is mineral soil with some muck. The wetland on the site is codominated by a mixture of species, such as red osier dogwood (*Cornus sericea*), silky dogwood (*C. amomum*), gray dogwood (*Cornus foemina* ssp. *racemosa*), smooth alder (*Alnus*

*serrulata*), spicebush (*Lindera benzoin*), willows (*Salix bebbiana*, *S. discolor*, *S. lucida*, *S. petiolaris*), and arrowwood (*Viburnum recognitum*).

Upland Hardwood Forest - There are small areas of upland hardwood forest on the site with small trees in the 5-12 inch dbh range with some larger trees located on the site. Some of the trees (sugar maple, black locust, and black oak contain exfoliating bark, crevices, or solar exposure.

## 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 proposed project will require about +-5.0-6.0 acres of grubbing and earth moving in upland meadow area. The disturbance activities will not result in adverse to this species since tree loss is minimal. If clearing is necessary it will occur when bats are not on site between October 1 and March 31 or as approved by the NYSDEC (Emergence survey) outside this clearing timeframe. Generation of dust and noise, potential for changes to surface water quality, and increased lighting on the site may cause an impact to foraging bats but can be mitigated as per below.

The site owner proposes to avoid, minimize, and mitigate for effects by:

- Site lighting on the site will use 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, and;
- Stormwater pond/s 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 avoiding adverse effects to Indiana bats.

### 3.0 PHOTOGRAPHS

Existing wetland/upland meadow boundary.



Upland Meadow on the site.



Site.





Figure 1 Location Map (Parcel 437115)

