

# **BRENTWOOD RECREATION CENTER STEWARDSHIP PLAN**

Prepared for:  
**Brentwood Conservation Commission**



**JEFFRY LITTLETON**

---

*Moosewood Ecological LLC  
Innovative Conservation Solutions for New England  
PO Box 9 — Chesterfield, NH 03443-0009  
(603) 831-1980*

# BRENTWOOD RECREATION CENTER STEWARDSHIP PLAN

Prepared for:  
**Brentwood Conservation Commission**

**JEFFRY N. LITTLETON**  
*Principal Ecologist*



Moosewood Ecological LLC  
*Innovative Conservation Solutions  
for New England*

PO Box 9  
Chesterfield, NH 03443  
(603) 831-1980  
Jeff@moosewoodecological.com  
www.moosewoodecological.com

**March 2016**

**Cover photograph** – Vernal pool within a larger complex of associated wetlands and vernal pools.

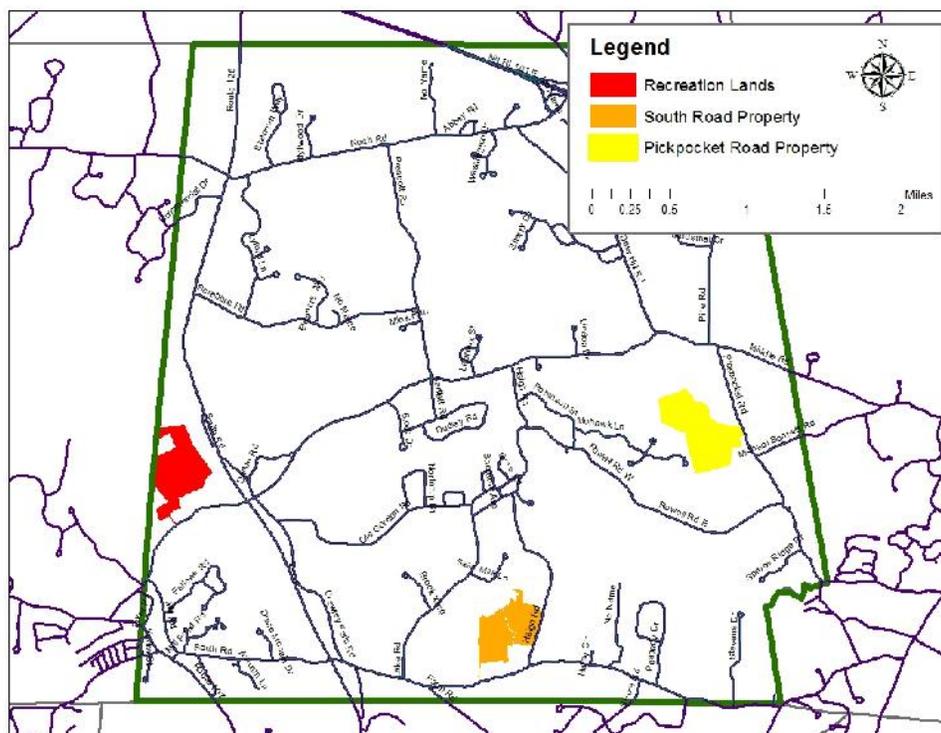
# TABLE OF CONTENTS

|  | Page |
|--|------|
| <b>PROPERTY DESCRIPTION</b> .....                      | 1    |
| <b>Location</b> .....                                  | 1    |
| <br>   |      |
| <b>ECOLOGICAL AND CULTURAL FEATURES</b>                |      |
| <b>Soil Resources</b> .....                            | 3    |
| <b>Wildlife Habitats and Natural Communities</b> ..... | 5    |
| <b>Rare Elemental Occurrences</b> .....                | 10   |
| <b>Invasive Plants</b> .....                           | 10   |
| <b>Landscape Context</b> .....                         | 10   |
| <b>Cultural Features</b> .....                         | 11   |
| <br>   |      |
| <b>MANAGEMENT RECOMMENDATIONS</b> .....                | 11   |
| <br>   |      |
| <b>LITERATURE RESOURCES</b> .....                      | 13   |
| <br>   |      |
| <b>APPENDIX</b>  |      |
| A – NH Natural Heritage Bureau Report.....             | 14   |

## Property Description

### Location

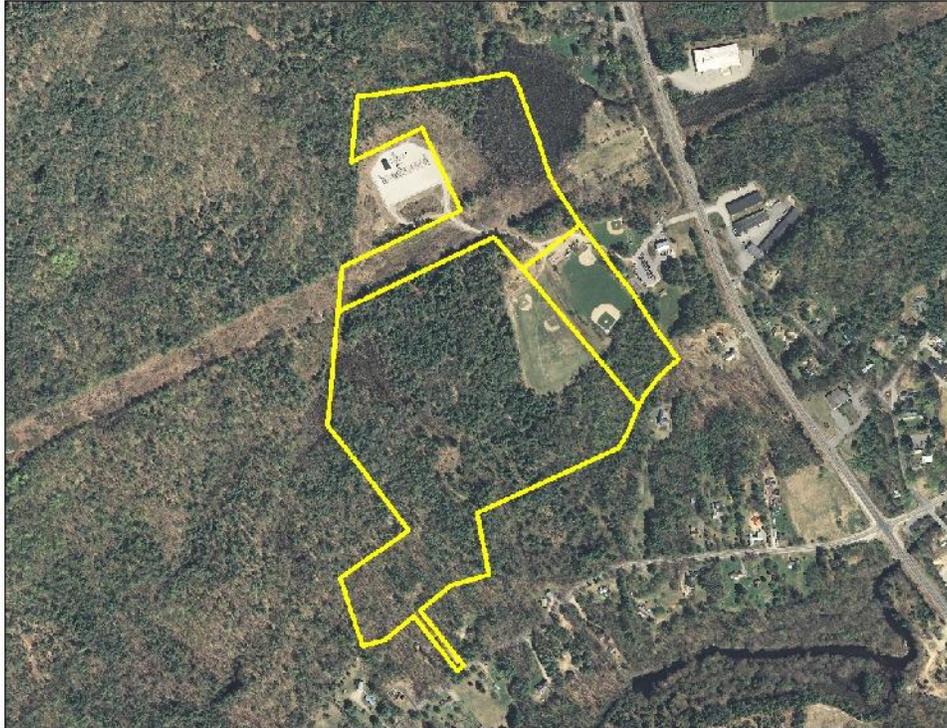
The 81.6-acre Recreational Lands property is located in the western section of Brentwood, New Hampshire, along the boundary with Fremont (Figure 1). This property comprises three parcels: Tax Map 216 Lots 30 and 32 and Tax Map 217 Lot 103. Currently, there is no formal conservation easement on the property. The primary goal for land management is for recreation with a secondary focus on wildlife. The existing trail system, critical and diverse habitats, species of conservation concern, and limited area for forestry in the southern section of the property were the main factors that were used to form these management goals. The existing trail system is part of a larger network of trails located in Fremont.



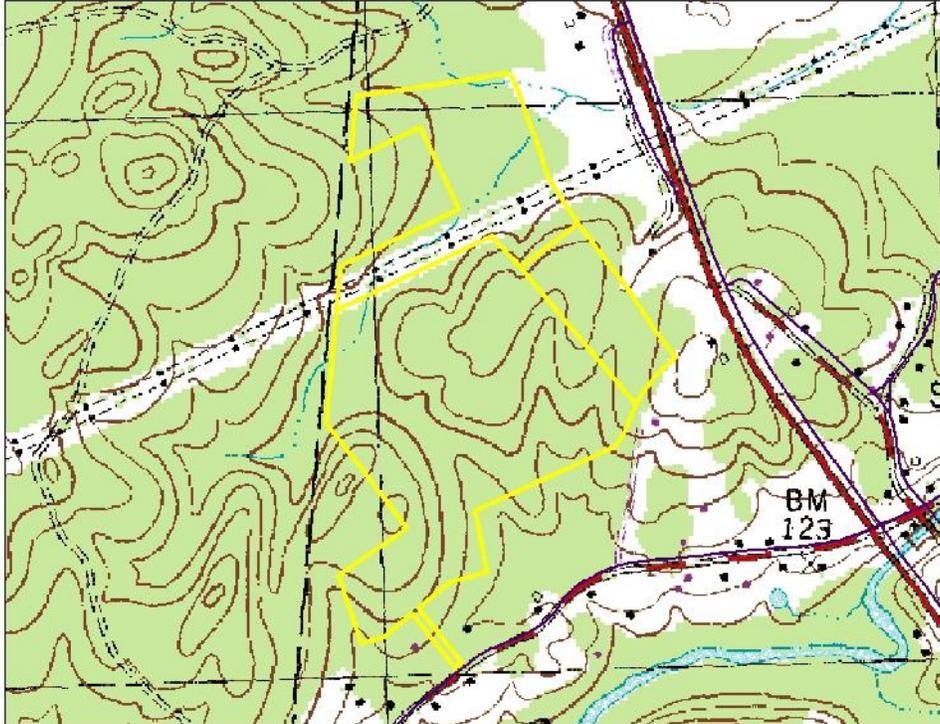
**Figure 1** Locus map of three town-owned properties.

The property is surrounded by private lands, and its main access is from Route 125 (Figures 2 and 3). There is small gated access from Middle Road as well. The upland forest is a mixture of hardwoods and softwoods comprised of hemlock-hardwood-pine forest ecosystem.

Slight variations exist in the topography, and the trails system is characterized as easy to moderate. Wetlands exist mainly in the western and northern portion of the property and several vernal pools are scattered around.



**Figure 2** Aerial photography (2010) of the Recreational Lands property.



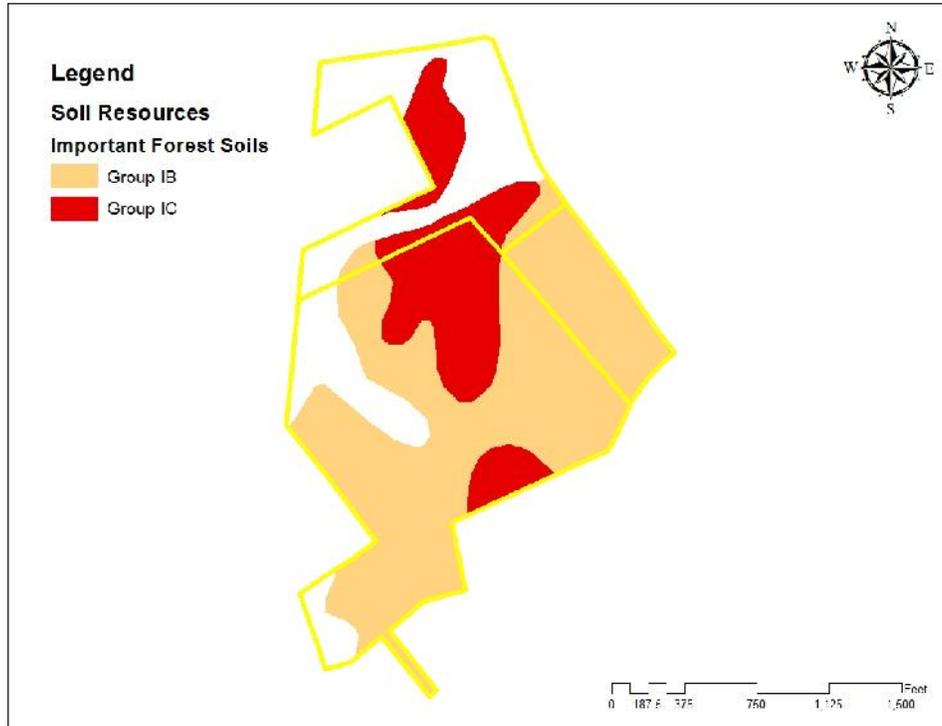
**Figure 3** USGS topographic map of the Recreational Lands property.

## **Ecological and Cultural Features**

### **Soil Resources**

Significant soil resources on the property include productive forest soils and hydric soils. These significant soil resources have been mapped by the US Department of Agriculture Natural Resources Conservation Service (NRCS).

The NRCS has mapped the distribution of important forest soils and has classified them according to their capacity to grow trees. These soils signify areas that provide the most productive lands for timber production. The NRCS has identified three soil groups within this category. Soil groups IA and IB represent productive soils for hardwoods, and soil group IC are productive for softwoods. Approximately 61 acres (75% of the property) have been identified as productive forest soils (Figure 4). The majority of this area (44 acres) represents soils that are productive for hardwoods. About 17 acres were identified as being productive for softwoods.



**Figure 4** Productive forest soils.

Hydric soils represent areas most likely characterized as wetlands. These include poorly drained and very poorly drained soils identified by the NRCS. Poorly drained soils represent approximately 2 acres, while very poorly drained soils make up 13.5 acres (Figure 5). Together, they comprise nearly 20% of the property.



**Figure 5** Hydric soils.

### **Wildlife Habitats and Natural Communities**

The NH Fish and Game Department, in cooperation with other agencies, organizations, and individuals, produced the first edition of the NH Wildlife Action Plan (WAP) in 2005 and revised it in 2015. This document was designed as a planning and educational tool for federal, state, and municipal governing bodies, conservation commissions, land trusts and other conservation organizations, and private landowners, as well as the general public, to promote the conservation and management of NH’s biological diversity. The WAP provides a resource for developing informed land use decisions and land management planning. The intent was to ensure an adequate representation of various wildlife habitats are maintained across our landscape, keeping common species common in NH and working to prevent the loss of our rare and endangered species.

Highest ranked wildlife habitats and wildlife habitat land cover data were produced as part of the WAP. Highest ranked habitats represent some of the most critical locations for the entire state, as well as for biological regions. Supporting landscapes were also identified, which represent other areas of critical importance. The habitat ranking map in Figure 6 provides an

opportunity to understand how the South Road property and its surrounding landscape have been ranked by the WAP.



**Figure 6** WAP highest ranked habitats.

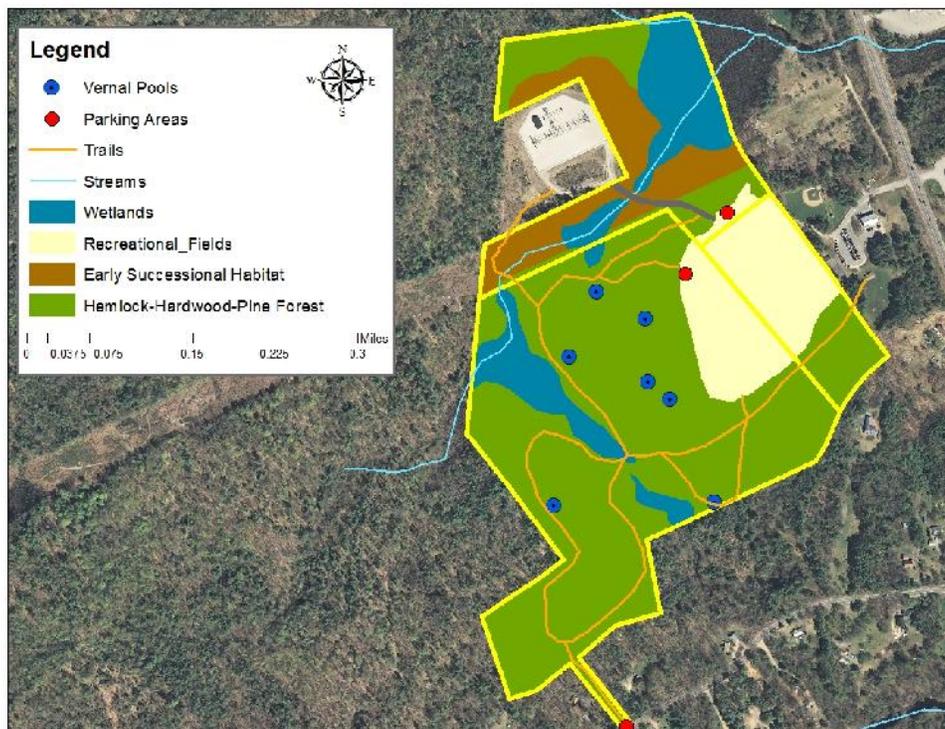
Wildlife habitats and basic natural communities were identified on the property (Figure 7). Wildlife habitat land cover classifications follow that of the NH Wildlife Action Plan (2015). Wildlife habitats included 10.5 acres of open and wooded wetlands characterized as shrub and forest swamps, as well as 71.1 acres of upland forests, shrublands, and recreational fields.

The majority of the 10.5 acres of wetlands is characterized as shrub and forest swamps. The wetland complex in the western part of the property forms a slow drainage that flows to the northeast. This wetland complex is a combination of a highbush blueberry-winterberry thicket (Figure 8) and open emergent marsh with some open water (Figure 9). This wetland complex drains into the red maple swamp in the northern part of the property. The other wetlands include a small emergent marsh/shrub swamp along the same drainage within the utility right of way and vernal pools. This small wetland and two of the vernal pools were documented with adults and/or egg masses from vernal pool obligate species, including wood frogs and spotted salamanders

(Figure 10). These wetlands can host a variety of wildlife such as reptiles, amphibians, beaver, and waterfowl, as well as other wetland-related birds.

The 49.6 acres upland forests are best characterized as hemlock-hardwood-pine forest ecosystem. The central part of the property is dominated by hemlocks while the southern portion is dominated by a mixture of white pine, red maple, and red oak. A few species remnant of Appalachian oak-pine forests were observed in very low numbers, including white oak, shagbark hickory, and pitch pine. The forest in the southern portion of the property was recently logged within the past 10-15 years. Good access for forest management is afforded from Middle Road. Critical wildlife habitats, such as wetlands and vernal pools, and species of conservation concern present obstacles for forest management in the central and northern portions of the property.

Other upland habitats include approximately 11.6 acres of recreational fields and 10 acres of early successional/shrubland habitat found in the utility right-of-way and to the north surrounding the power substation (Figure 11). This early successional habitat/shrubland area provides good habitat for reptiles and birds.



**Figure 7** Wildlife habitats and existing trail system.



**Figure 8** Highbush blueberry-winterberry shrub swamp.



**Figure 9** Emergent marsh with open water.



**Figure 10** Wood frog egg masses (attached to the stick and on top of the water in the middle of the picture) and spotted salamander egg masses (whitish globular masses) in a vernal pool.



**Figure 11** Early successional/shrubland habitat in the utility right-of-way.

## Rare Elemental Occurrences

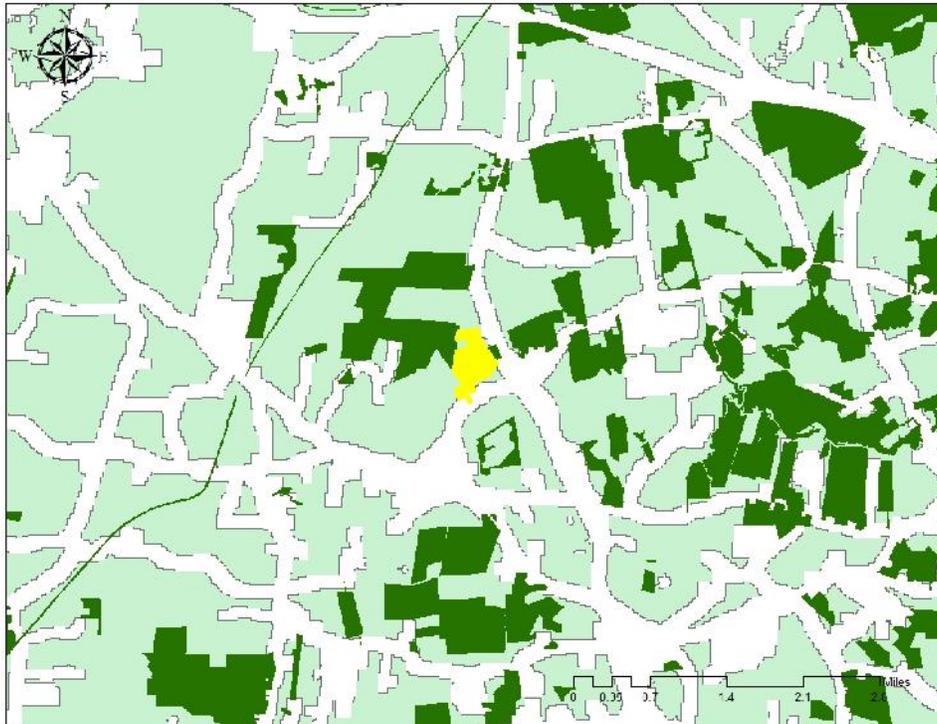
There were no rare plants or natural communities observed during the field assessments. However, there was a state-threatened reptile documented on the property in April 2015. In addition, the NH Natural Heritage Bureau has an existing record of a different state-threatened reptile, northern black racer, which was documented in 2012 (Appendix A).

## Invasive Plants

There was no formal survey conducted for invasive plants. However, none were observed during site visits. There is a strong possibility that a few individuals may be present on the property, particularly in the utility right-of-way, along forest edges, and within the area of the most recent logging operation.

## Landscape Context

The property is part of a 3,235-acre unfragmented block of forests and wetlands (Figure 12). Approximately 567 acres of this block is conserved. It is situated within the Exeter River watershed.



**Figure 12** Unfragmented landscape associated with the Recreational Lands property (yellow polygon).

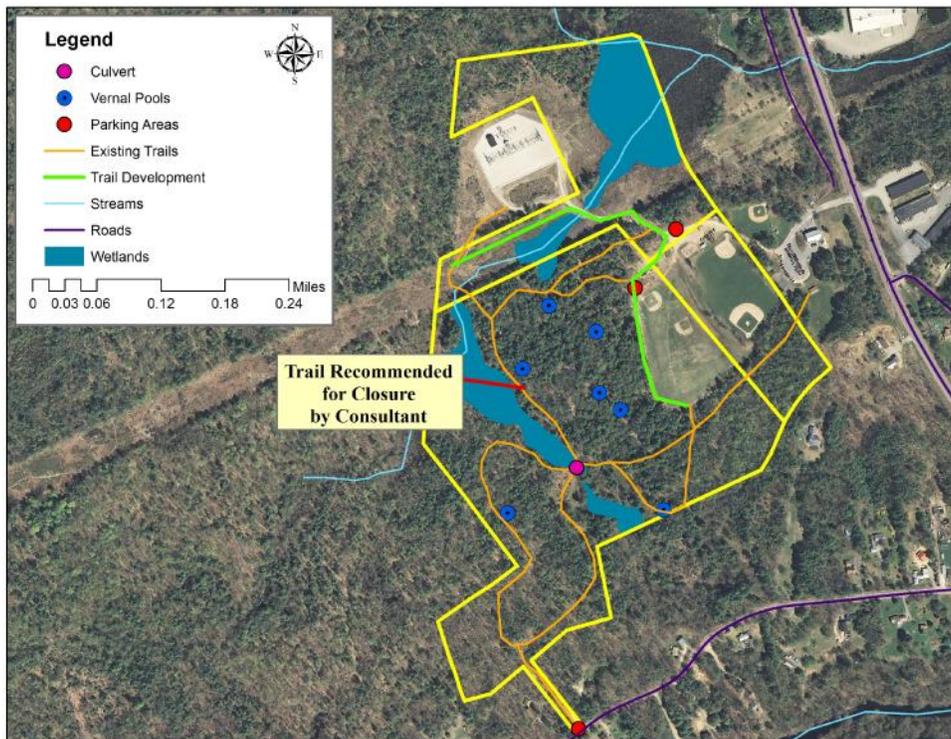
## **Cultural Features**

Recreational fields are maintained in the eastern portion of the property. The remainder of the property is mostly forested except the utility right-of-way. A variety of trails traverse the property. The existing trail system is part of a larger network of trails located in the Freemont Glen Oaks Town Forest. Also, a short loop trail just south of the recreation fields is used for archery. Other cultural features include stonewalls.

## **Management Recommendations**

The primary goal of land management is for recreation. The following provides recommendations for land management activities. As such, these are the main recommendations at this point. However, management plans should always be adapted as needed based on current objectives for land management, as these may be revised over time.

- The archery loop should be clearly identified and separated from the other trails. A kiosk should be placed on the property that also clearly identifies the archery loop. Also, since the property is easily accessed by residents it provides a great opportunity to develop this loop for individuals with disabilities. When designing or upgrading these trails the Town should adhere to the Americans with Disabilities Act (ADA) guidelines for accessibility.
- Clearly mark all trails.
- Develop a loop trail through the utility right-of-way using the driveway to the substation. This driveway is currently marked with no trespassing signs so this issue would have to be resolved first. This trail can then continue south along the forest edge to access the trails in the south part of the property. In doing so, the Town should close the trail segment in the west that's located between the large wetland and the vernal pool complex, running north-south. This is an ecologically sensitive area and the wildlife in this area would benefit from reducing use in this area. A conceptual trail is noted in Figure 13.
- The Conservation Commission should work in cooperation with the Brentwood Trails Committee and Archery Club to 1) decide future management of existing trails to coexist with sensitive natural resources and 2) to develop a yearly maintenance plan.
- Install a larger culvert at the wetland crossing to allow for better drainage. Note the location of this culvert in Figure 13.



**Figure 13** Map showing a conceptual trail design and the culvert to be replaced.

- Limit ATV activity to the utility right-of-way. However, consider no ATV activity in the right-of-way from mid-May through August to help prevent mortality during reptile nesting and hatching of the young. If ATV activity is allowed on the property it should be by permission only.
- Maintain the early successional/shrubland habitat north of the utility right-of-way using a brush hog or a hand-held brush cutter.
- Document the vernal pools using *Identification and Documentation of Vernal Pools in New Hampshire* by Anne Tappan and Mike Marchand (2004, second edition). This requires 2 visits to the pools; one in the spring and another in the summer.
- Maintain the hemlock forest around the vernal pools. This vernal pool complex is very sensitive to changes in forest structure, and this complex is significant for wildlife such as amphibians and reptiles. If forest management is to occur on the property then

appropriate buffers should be designed for all wetlands and vernal pools in consultation with a qualified ecologist.

- Property boundaries should be blazed or marked appropriately so adjacent landowners are aware of these boundaries.
- Revise the management plan every 5-10 years as needed to reflect management activities completed to-date and adapted to current management objectives as they may change.

### **Literature Resources**

New Hampshire Fish and Game Department 2015. New Hampshire Wildlife Action Plan. Concord, New Hampshire.

Sperduto, D.D. 2005. Natural Community Systems of New Hampshire. New Hampshire Natural Heritage Bureau, Concord, NH.

Sperduto, D.D. and W.F. Nichols. 2011. Natural Communities of New Hampshire. New Hampshire Natural Heritage Bureau, Concord, NH. Pub. UNH Cooperative Extension, Durham, NH.

APPENDIX A  
NH Natural Heritage Report



# NEW HAMPSHIRE NATURAL HERITAGE BUREAU

DRED - DIVISION OF FORESTS & LANDS  
PO Box 1856 -- 172 PEMBROKE ROAD, CONCORD, NH 03302-1856  
PHONE: (603) 271-2214 FAX: (603) 271-6488

**To:** Jeffry Littleton, Moosewood Ecological LLC  
PO Box 9  
Chesterfield NH 03443

**From:** Sara Cairns, NH Natural Heritage Bureau

**Date:** 4/8/2015

**Re:** Review by NH Natural Heritage Bureau of request dated 4/1/2015

**NHB File ID:** 2114

**Town:** Brentwood

**Project type:** Landowner Request

**Location:** Middle Rd (Tax Map 216.030, 216.032,, 217.103)

I have searched our database for records of rare species and exemplary natural communities on the property(s) identified in your request. Our database includes known records for species officially listed as Threatened or Endangered by either the state of New Hampshire or the federal government, as well as species and natural communities judged by experts to be at risk in New Hampshire but not yet formally listed.

NHB records on the property(s):

|  | Mapping Precision | % within tract | Last Reported | Listing Status |    | Conservation Rank |       |
|--|-------------------|----------------|---------------|----------------|----|-------------------|-------|
|  |                   |                |               | Federal        | NH | Global            | State |
| <b>Vertebrate species (For more information, contact Kim Tuttle, NH F&amp;G at 271-6544)</b> |                   |                |               |                |    |                   |       |
| Northern Black Racer ( <i>Coluber constrictor constrictor</i> )                              | Good              | 34             | 2012          | --             | T  | T5                | S2    |

NHB records within one mile of the property(s):

|  | Last Reported | Listing Status |    | Conservation Rank |       |
|--|---------------|----------------|----|-------------------|-------|
|  |               | Federal        | NH | Global            | State |
| <b>Vertebrate species (For more information, contact Kim Tuttle, NH F&amp;G at 271-6544)</b> |               |                |    |                   |       |
| Blanding's Turtle ( <i>Emydoidea blandingii</i> )  | 2013          | --             | E  | G4                | S1    |
| <b>Natural Community</b>   |               |                |    |                   |       |
| Medium level fen system  | 2002          | --             | -- | --                | S3    |
| <b>Invertebrate Species</b>  |               |                |    |                   |       |
| Ringed Boghaunter ( <i>Williamsonia lintneri</i> )   | 2011          | --             | E  | G3                | S2    |
| Brook Floater ( <i>Alasmidonta varicosa</i> )  | 1953          | --             | E  | G3                | S1    |

**NOTE:** This review *cannot* be used to satisfy a permit or other regulatory requirement to check for rare species or habitats that could be affected by a proposed project, since it provides detailed information only for records actually on the property.



## NEW HAMPSHIRE NATURAL HERITAGE BUREAU

DRED - DIVISION OF FORESTS & LANDS

PO Box 1856 -- 172 PEMBROKE ROAD, CONCORD, NH 03302-1856

PHONE: (603) 271-2214 FAX: (603) 271-6488

| Plant species   |      | Federal | NH | Global | State |
|---|------|---------|----|--------|-------|
| tufted yellow-loosestrife ( <i>Lysimachia thyrsiflora</i> ) | 1927 | --      | T  | G5     | S2    |
| weak stellate sedge ( <i>Carex seorsa</i> )                 | 2002 | --      | E  | G4     | S1    |
| green adder's-mouth ( <i>Malaxis unifolia</i> )             | 1943 | --      | T  | G5     | S2    |

Listing codes: T = Threatened, E = Endangered SC = Special Concern

Rank prefix: G = Global, S = State, T = Global or state rank for a sub-species or variety (taxon)

Rank suffix: 1-5 = Most (1) to least (5) imperiled. "--", U, NR = Not ranked. B = Breeding population, N = Non-breeding, H = Historical, X = Extirpated.

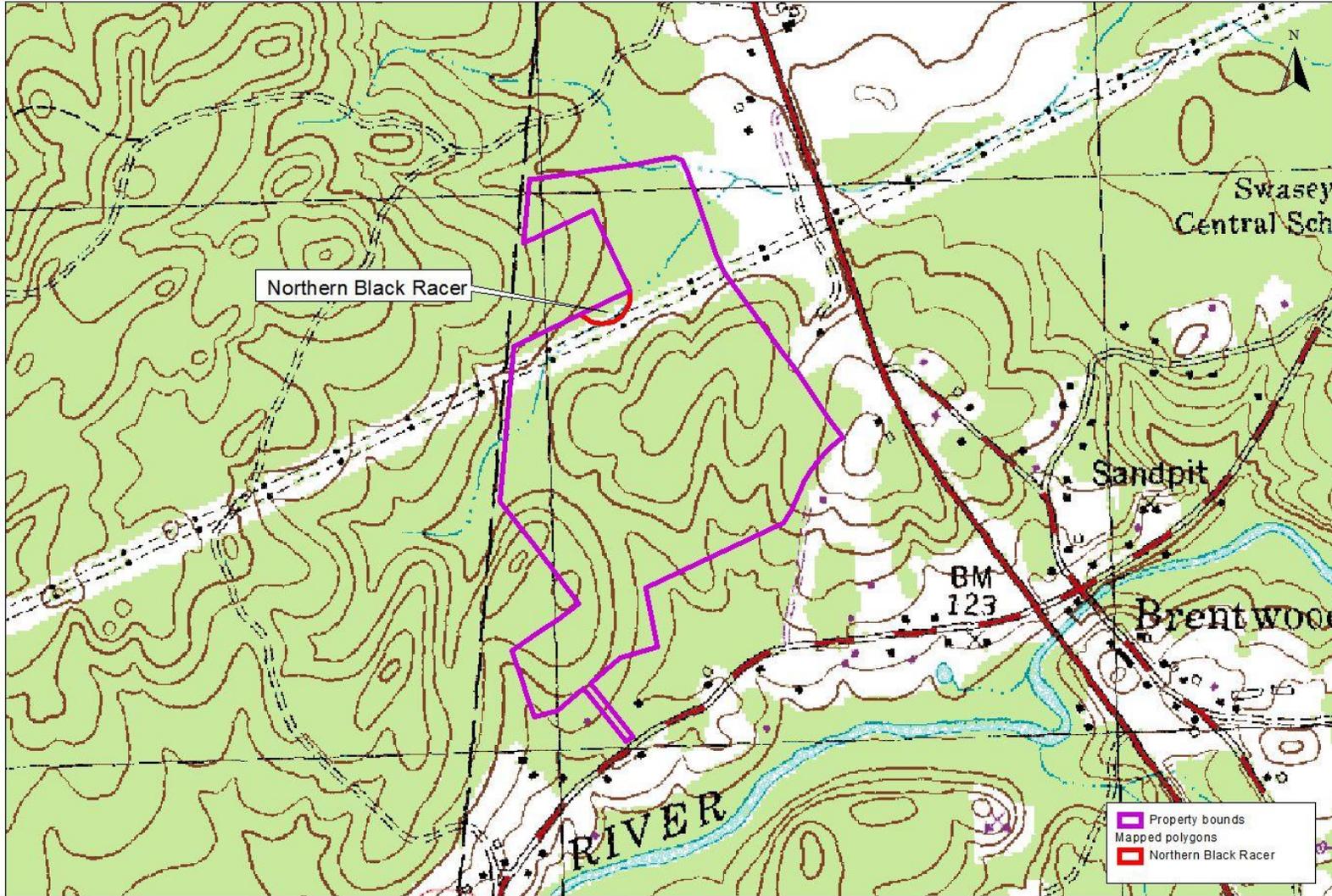
A negative result (no record in our database) does not mean that no rare species are present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

**NOTE: This review *cannot* be used to satisfy a permit or other regulatory requirement to check for rare species or habitats that could be affected by a proposed project, since it provides detailed information only for records actually on the property.**



### Known locations of rare species and exemplary natural communities

Sensitive species are labelled but not mapped. All other records are clipped to the property boundaries.  
Occurrences not on the property are not shown.



**Property: Town of Brentwood**



