



Vernal Pool Survey Report

Vernal Pool Survey Report

**A Technical Report in Support of the
Environmental Impact Statement for the
Disposal and Reuse of NAS Brunswick
Naval Air Station Brunswick
Brunswick, Maine**

June 2009

Prepared for:

**U.S. Department of Navy
BRAC Project Management Office - Northeast
Philadelphia, Pennsylvania**

Prepared by:

**ECOLOGY AND ENVIRONMENT, INC.
368 Pleasant View Drive
Lancaster, New York 14086**



Table of Contents



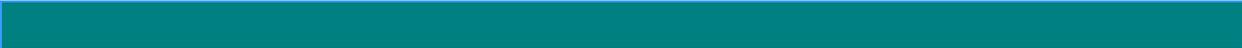
| Section | | Page |
|-----------------|--|-------------|
| 1 | Introduction | 1-1 |
| 2 | Site Description | 2-1 |
| 3 | Methodology | 3-1 |
| 4 | Results | 4-1 |
| 5 | TRC Report | 5-1 |
| 6 | Regulatory Requirements..... | 6-1 |
| 7 | References | 7-1 |
| Appendix | | |
| A | Photolog..... | A-1 |
| B | Vernal Pool Documentation Forms | B-1 |



List of Tables



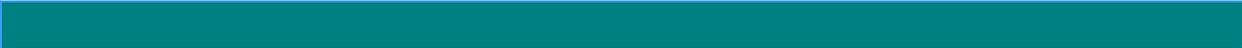
| Table | Page |
|--|-------------|
| 3-1 Presence and Abundance Criteria for Determining Significant Vernal Pool Status in Maine | 3-2 |
| 4-1 Pooled Areas Detected within NAS Brunswick | 4-1 |
| 5-1 Types of Pooled Areas Identified by TRC during the 2008 Studies..... | 5-1 |



List of Figures



| Figure | Page |
|---|-------------|
| 2-1 NAS Brunswick and Outlying Properties, Brunswick, Maine | 2-3 |
| 4-1 Pooled Areas at NAS Brunswick, Brunswick, Maine | 4-7 |
| 4-2 Significant Vernal Pools and Vernal Pools at NAS Brunswick, Brunswick, Maine..... | 4-9 |
| 4-3 Significant Vernal Pools and Vernal Pools at NAS Brunswick, Brunswick, Maine..... | 4-11 |
| 4-4 Significant Vernal Pools and Vernal Pools at NAS Brunswick, Brunswick, Maine..... | 4-13 |
| 4-5 Significant Vernal Pools and Vernal Pools at NAS Brunswick, Brunswick, Maine..... | 4-15 |
| 4-6 Significant Vernal Pools and Vernal Pools at NAS Brunswick, Brunswick, Maine..... | 4-17 |
| 4-7 Significant Vernal Pools and Vernal Pools at NAS Brunswick, Brunswick, Maine..... | 4-19 |
| 4-8 Significant Vernal Pools and Vernal Pools at NAS Brunswick, Brunswick, Maine..... | 4-21 |
| 4-9 Significant Vernal Pools and Vernal Pools at NAS Brunswick, Brunswick, Maine..... | 4-23 |
| 5-1 Pooled Areas Mapped by TRC at NAS Brunswick, Brunswick, Maine | 5-3 |



List of Abbreviations and Acronyms

| | |
|-------|--|
| AMSL | above mean sea level |
| E & E | Ecology and Environment, Inc. |
| EIS | Environmental Impact Statement |
| GPS | Global Positioning System |
| MEDEP | Maine Department of Environmental Protection |
| NAS | Naval Air Station |
| NRPA | Natural Resources Protection Act |
| TRC | TRC Environmental Corporation |

1

Introduction

This report has been prepared to support the Environmental Impact Statement (EIS) for the disposal and reuse of Naval Air Station (NAS) Brunswick in Brunswick, Maine. The Navy contracted with Ecology and Environment, Inc. (E & E) to survey vernal pools at NAS Brunswick and its outlying properties in the spring of 2009.

Vernal pools are considered important resources in the state of Maine. According to the Maine Department of Environmental Protection (MEDEP):

*“a vernal pool, also referred to as a seasonal forest pool, is a natural, temporary to semi-permanent body of water occurring in a shallow depression that typically fills during the spring or fall and may dry during the summer. Vernal pools have no permanent inlet and no viable populations of predatory fish. A vernal pool may provide the primary breeding habitat for wood frogs (*Rana sylvatica*), spotted salamanders (*Ambystoma maculatum*), blue-spotted salamanders (*Ambystoma laterale*), and fairy shrimp (*Eubranchipus* sp.), as well as valuable habitat for other plants and wildlife, including several rare, threatened, and endangered species” (06-096 CMR Chapter 335).*

If a vernal pool supports a certain abundance of vernal pool indicator species (wood frogs, spotted salamander, blue-spotted salamander, or fairy shrimp) or supports a threatened, endangered, or rare species for a critical part of its life history, the pool is considered a “significant” vernal pool by the state of Maine. To be deemed a significant vernal pool, the abundance of wood frog, spotted salamander, and blue-spotted salamander egg masses must reach at least 40, 20, and 10, respectively, within the pool area. Only a single species must meet its critical level for the pool to be considered significant. The presence of fairy shrimp at any life stage meets the requirements for significant vernal pool status.

Significant vernal pools may also provide valuable habitat for other plants and wildlife, including several rare, threatened, and endangered species, such as Blanding’s turtle (*Emydoidea blandingii*), spotted turtle (*Clemmys guttata*), wood turtle (*Glyptemys insculpta*), ringed boghaunter dragonfly (*Williamsonia linteri*), and ribbon snake *Thamnophis sauritus*). Significant vernal pool habitat, including

critical terrestrial habitat around the vernal pool depression within a 250-foot radius, is protected under the Maine Natural Resources Protection Act (NRPA).

With the exception of the vernal pool survey conducted by TRC in 2008 (see section 5 of this report), no previous formal vernal pool surveys had been conducted at NAS Brunswick. The following report provides a brief site description, an overview of the methodology used to identify and categorize vernal pools, and a discussion of the survey results.

2

Site Description

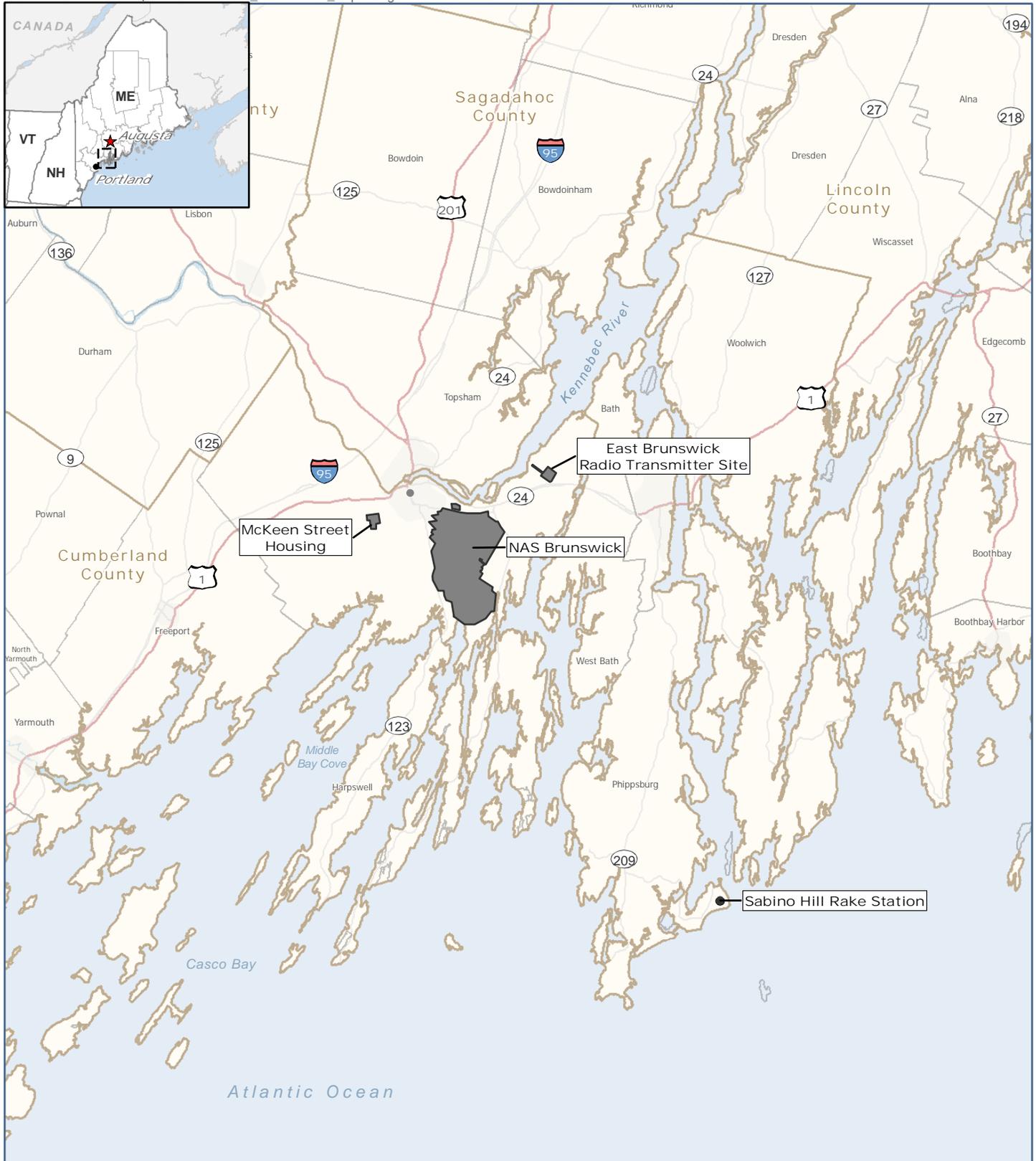
NAS Brunswick is located on approximately 3,117 acres in the town of Brunswick, Cumberland County, Maine (see Figure 2-1). Three outlying properties (the McKeen Street Housing Annex, East Brunswick Radio Transmitter Site, and Sabino Hill Rake Station) that are being reviewed in the EIS were initially included as part of this study; however, these properties do not support vernal pool habitat. The East Brunswick Radio Transmitter Site and Sabino Hill Rake Station are characterized entirely as upland communities and neither site supports habitat that could be considered vernal pool. The McKeen Street Housing Annex does support limited wetland habitat on the south end of the property; however, no vernal pool habitat was identified during the site survey conducted by E & E biologists in April 2009. Therefore, these three properties are not discussed further in this report.

NAS Brunswick is located within the Central Maine Coastal and Interior Ecoregion. This area is comprised of glacially scoured and dissected peneplain, which slopes toward the coast and exhibits glacial features such as kames, eskers, and terraces. The topography is relatively flat to gently rolling, with elevations ranging from sea level to 1,000 feet above mean sea level (AMSL). Forests are the dominant vegetation type and consist of northern hardwood, northern hardwood-spruce, northern coastal spruce-fir, and spruce-fir-northern hardwood communities. Coastal pitch pine communities are known to occur in this ecoregion but are now uncommon. Open communities such as grasslands and tidal marshes also occur, but they do not comprise a large percentage of the overall land cover of this ecoregion (McNab and Avers 1994).

The land surrounding NAS Brunswick is predominantly residential with areas of undeveloped forests and wetlands. Upland forests are the dominant vegetation community on the installation, covering approximately 1,242 acres (41%) of the total land area (E & E 2008). Large forested communities are located on the western, southern, and eastern portions of the base. These forested communities are interspersed with wetlands, ponds, and streams. Other vegetation communities at NAS Brunswick include a variety of grasslands, wetlands, and maintained lands. Developed areas occupy the central and north-central portions of the installation. Much of the eastern and western portions of the installation are forested and interspersed with wetlands, streams, and ponds. The southern and sou-

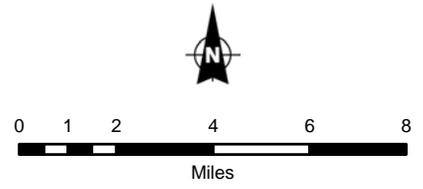
theastern portions of the base are characterized by forest and tidal wetlands associated with Harpswell Cove and Buttermilk Cove.

NAS Brunswick is located within four watersheds: the Mere Brook/Harpswell Cove watershed, Buttermilk Cove watershed, Middle Bay watershed, and the Androscoggin River watershed. The installation is located within 0.5 mile of the Androscoggin River and Casco Bay. The installation is bisected by Mere Brook, which eventually drains into Harpswell Cove. Numerous streams, wetlands, and permanent freshwater ponds are scattered throughout the installation. Approximately 465 acres of wetlands are present on NAS Brunswick, 71% of which are freshwater and 29% are tidal (E & E 2008).



-  NAS Brunswick
-  Municipal Boundary
-  County Boundary

Figure 2-1
NAS Brunswick and
Outlying Properties
Brunswick, Maine



3

Methodology

The vernal pool survey was conducted by E & E according to methodologies recommended by the Maine DEP for vernal pool surveys (Maine DEP 2009). The significance of a vernal pool must be determined and documented by an individual qualified by sufficient experience and training in either wetland ecology or wildlife ecology. In order to successfully identify vernal pools, field surveys must be conducted during the amphibian breeding season in early spring. In southern Maine, the MEDEP recommends conducting surveys for wood frogs between April 7 and April 21 and spotted salamanders between April 20 and May 21 (MEDEP 2009).

Prior to conducting the field survey, a desktop analysis was conducted to identify potential vernal pools at NAS Brunswick. The desktop analysis included a review of recent aerial photographs and previously mapped wetlands.

The field portion of the vernal pool survey was completed in three phases:

Phase 1: Initial survey to locate pooled areas (April 2-10)

Phase 2: Initial round of egg mass counts (April 13-17)

Phase 3: Second round of egg mass counts (April 28-30)

The installation was divided into seven search zones to facilitate the survey schedule and assist with data management. During the initial survey period, each search zone was walked in transects to ensure complete coverage of the area. Any pooled areas containing standing water several inches deep were identified as “Potential Vernal Pools.” Each pool location was photographed, and a single Global Positioning System (GPS) point was taken with a Trimble GeoXH unit. In addition, information about the habitat within 250 feet surrounding the pool was recorded on standardized datasheets.

During the second phase of the survey, all of the previously identified potential vernal pools were revisited. If the sites were dry, they were recorded as such and were not revisited during the third phase. If the pool contained standing water, the pool was checked for the presence of vernal pool indicator species. The number of species and/or egg masses was recorded, and an assessment was made to determine whether the pool was significant based on the MEDEP criteria (see Table 3-1).

Table 3-1 Presence and Abundance Criteria for Determining Significant Vernal Pool Status in Maine

| Species | Abundance Criterion |
|-------------------------|-----------------------------------|
| Wood frog | Presence of 40 or more egg masses |
| Spotted salamander | Presence of 20 or more egg masses |
| Blue-spotted salamander | Presence of 10 or more egg masses |
| Fairy shrimp | Presence in any life stage |

Source: MEDEP 2009.

Pools identified as significant during the second phase were not revisited during the third phase. If the count was lower than the abundance criteria for determining a pool as a significant vernal pool, the site was revisited during the third phase of surveys. Pools visited during the third phase were assessed further to determine whether they were significant.

Specific characteristics of each vernal pool and significant vernal pool (i.e., water depth, water temperature, pool dimensions, and dominant vegetation) were recorded on standardized datasheets. The perimeter of each pool was delineated using the Trimble GeoXH GPS unit. The photolog and datasheets for the vernal pools and significant vernal pools are provided in Appendix A and Appendix B, respectively.

4

Results

During the initial search period, 169 pooled areas were identified (see Figure 4-1 and Table 4-1). Of these, 27 were identified as vernal pools, and 20 of these were identified as significant vernal pools using the criteria set by the MEDEP (MEDEP 2009). Blue-spotted salamander egg masses or fairy shrimp were not observed within any of the vernal pools. The delineated boundaries of vernal pools and significant vernal pools are identified on Figures 4-2 through 4-9.

Pool 119 contained a significant number of wood frog and spotted salamander egg masses (≥ 47 and ≥ 89 , respectively) but was determined to be permanent; therefore, this pool was not included in the total significant vernal pool count. According to MEDEP Chapter 335, vernal pools are temporary to semi-permanent. While permanent ponds may provide habitat for vernal pool breeding amphibians, they are not designated as vernal pools by the state of Maine (06-096 CMR Chapter 335).

Table 4-1 Pooled Areas Detected within NAS Brunswick

| Pool Identification Number | Total Egg Mass Count | | Presence of Fairy Shrimp | Pool Classification |
|----------------------------|----------------------------------|----------------------|--------------------------|---------------------|
| | Wood Frog | Spotted Salamander | | |
| | Significant Vernal Pool Criteria | | | |
| | ≥ 40 egg masses | ≥ 20 egg masses | Yes/No | |
| Pool 1 | No egg masses detected | | No | Pooled Area |
| Pool 2 | No egg masses detected | | No | Pooled Area |
| Pool 3 | No egg masses detected | | No | Pooled Area |
| Pool 4 | No egg masses detected | | No | Pooled Area |
| Pool 5 | No egg masses detected | | No | Pooled Area |
| Pool 6 | No egg masses detected | | No | Pooled Area |
| Pool 7 | No egg masses detected | | No | Pooled Area |
| Pool 8 | 4 | 0 | No | Vernal Pool |
| Pool 9 | No egg masses detected | | No | Pooled Area |
| Pool 10 | 9 | 0 | No | Vernal Pool |
| Pool 11 | No egg masses detected | | No | Pooled Area |
| Pool 12 | No egg masses detected | | No | Pooled Area |
| Pool 13 | No egg masses detected | | No | Pooled Area |
| Pool 14 | 37 | 0 | No | Vernal Pool |

Final Environmental Impact Statement
Disposal and Reuse of NAS Brunswick, Maine

Table 4-1 Pooled Areas Detected within NAS Brunswick

| Pool Identification Number | Total Egg Mass Count | | Presence of Fairy Shrimp | Pool Classification |
|----------------------------|----------------------------------|--------------------|--------------------------|-------------------------|
| | Wood Frog | Spotted Salamander | | |
| | Significant Vernal Pool Criteria | | | |
| | ≥40 egg masses | ≥20 egg masses | Yes/No | |
| Pool 15 | 2 | 0 | No | Vernal Pool |
| Pool 16 | No egg masses detected | | No | Pooled Area |
| Pool 17 | No egg masses detected | | No | Pooled Area |
| Pool 18 | No egg masses detected | | No | Pooled Area |
| Pool 19 | No egg masses detected | | No | Pooled Area |
| Pool 20 | No egg masses detected | | No | Pooled Area |
| Pool 21 | No egg masses detected | | No | Pooled Area |
| Pool 22 | No egg masses detected | | No | Pooled Area |
| Pool 23 | No egg masses detected | | No | Pooled Area |
| Pool 24 | No egg masses detected | | No | Pooled Area |
| Pool 25 | 4 | 12 | No | Vernal Pool |
| Pool 26 | No egg masses detected | | No | Pooled Area |
| Pool 27 | No egg masses detected | | No | Pooled Area |
| Pool 28 | No egg masses detected | | No | Pooled Area |
| Pool 29 | No egg masses detected | | No | Pooled Area |
| Pool 30 | No egg masses detected | | No | Pooled Area |
| Pool 31 | No egg masses detected | | No | Pooled Area |
| Pool 32 | 0 | ≥ 20 | No | Significant Vernal Pool |
| Pool 33 | 11 | 1 | No | Vernal Pool |
| Pool 34 | No egg masses detected | | No | Pooled Area |
| Pool 35 | 3 | 27 | No | Significant Vernal Pool |
| Pool 36 | ≥ 40 | 10 | No | Significant Vernal Pool |
| Pool 37 | No egg masses detected | | No | Pooled Area |
| Pool 38 | No egg masses detected | | No | Pooled Area |
| Pool 39 | 0 | 3 | No | Vernal Pool |
| Pool 40 | No egg masses detected | | No | Pooled Area |
| Pool 41 | No egg masses detected | | No | Pooled Area |
| Pool 42 | No egg masses detected | | No | Pooled Area |
| Pool 43 | No egg masses detected | | No | Pooled Area |
| Pool 44 | No egg masses detected | | No | Pooled Area |
| Pool 45 | No egg masses detected | | No | Pooled Area |
| Pool 46 | No egg masses detected | | No | Pooled Area |
| Pool 47 | No egg masses detected | | No | Pooled Area |
| Pool 48 | 69 | 0 | No | Significant Vernal Pool |
| Pool 49 | No egg masses detected | | No | Pooled Area |
| Pool 50 | No egg masses detected | | No | Pooled Area |
| Pool 51 | 0 | 17 | No | Vernal Pool |
| Pool 52 | 74 | 0 | No | Significant Vernal Pool |
| Pool 53 | 2 | 0 | No | Vernal Pool |

Final Environmental Impact Statement
Disposal and Reuse of NAS Brunswick, Maine

Table 4-1 Pooled Areas Detected within NAS Brunswick

| Pool Identification Number | Total Egg Mass Count | | Presence of Fairy Shrimp | Pool Classification |
|----------------------------|----------------------------------|--------------------|--------------------------|-------------------------|
| | Wood Frog | Spotted Salamander | | |
| | Significant Vernal Pool Criteria | | | |
| | ≥40 egg masses | ≥20 egg masses | Yes/No | |
| Pool 54 | 44 | 0 | No | Significant Vernal Pool |
| Pool 55 | No egg masses detected | | No | Pooled Area |
| Pool 56 | No egg masses detected | | No | Pooled Area |
| Pool 57 | No egg masses detected | | No | Pooled Area |
| Pool 58 | No egg masses detected | | No | Pooled Area |
| Pool 59 | No egg masses detected | | No | Pooled Area |
| Pool 60 | No egg masses detected | | No | Pooled Area |
| Pool 61 | No egg masses detected | | No | Pooled Area |
| Pool 62 | No egg masses detected | | No | Pooled Area |
| Pool 63 | No egg masses detected | | No | Pooled Area |
| Pool 64 | No egg masses detected | | No | Pooled Area |
| Pool 65 | No egg masses detected | | No | Pooled Area |
| Pool 66 | No egg masses detected | | No | Pooled Area |
| Pool 67 | No egg masses detected | | No | Pooled Area |
| Pool 68 | No egg masses detected | | No | Pooled Area |
| Pool 69 | No egg masses detected | | No | Pooled Area |
| Pool 70 | No egg masses detected | | No | Pooled Area |
| Pool 71 | No egg masses detected | | No | Pooled Area |
| Pool 72 | No egg masses detected | | No | Pooled Area |
| Pool 73 | No egg masses detected | | No | Pooled Area |
| Pool 74 | No egg masses detected | | No | Pooled Area |
| Pool 75 | 7 | 4 | No | Vernal Pool |
| Pool 76 | No egg masses detected | | No | Pooled Area |
| Pool 77 | No egg masses detected | | No | Pooled Area |
| Pool 78 | 0 | 1 | No | Vernal Pool |
| Pool 79 | 0 | 3 | No | Vernal Pool |
| Pool 80 | 161 | 2 | No | Significant Vernal Pool |
| Pool 81 | No egg masses detected | | No | Pooled Area |
| Pool 82 | No egg masses detected | | No | Pooled Area |
| Pool 83 | ≥ 40 | 6 | Yes | Significant Vernal Pool |
| Pool 84 | No egg masses detected | | No | Pooled Area |
| Pool 85 | 57 | 0 | No | Significant Vernal Pool |
| Pool 86 | No egg masses detected | | No | Pooled Area |
| Pool 87 | No egg masses detected | | No | Pooled Area |
| Pool 88 | No egg masses detected | | No | Pooled Area |
| Pool 89 | No egg masses detected | | No | Pooled Area |
| Pool 90 | No egg masses detected | | No | Pooled Area |
| Pool 91 | No egg masses detected | | No | Pooled Area |
| Pool 92 | No egg masses detected | | No | Pooled Area |

Final Environmental Impact Statement
Disposal and Reuse of NAS Brunswick, Maine

Table 4-1 Pooled Areas Detected within NAS Brunswick

| Pool Identification Number | Total Egg Mass Count | | Presence of Fairy Shrimp | Pool Classification |
|----------------------------|----------------------------------|--------------------|--------------------------|-------------------------|
| | Wood Frog | Spotted Salamander | | |
| | Significant Vernal Pool Criteria | | | |
| | ≥40 egg masses | ≥20 egg masses | Yes/No | |
| Pool 93 | No egg masses detected | | No | Pooled Area |
| Pool 94 | 3 | 5 | No | Vernal Pool |
| Pool 95 | No egg masses detected | | No | Pooled Area |
| Pool 96 | No egg masses detected | | No | Pooled Area |
| Pool 97 | 0 | 14 | No | Vernal Pool |
| Pool 98 | 2 | 12 | No | Vernal Pool |
| Pool 99 | No egg masses detected | | No | Pooled Area |
| Pool 100 | 51 | 0 | No | Significant Vernal Pool |
| Pool 101 | No egg masses detected | | No | Pooled Area |
| Pool 102 | No egg masses detected | | No | Pooled Area |
| Pool 103 | No egg masses detected | | No | Pooled Area |
| Pool 104 | No egg masses detected | | No | Pooled Area |
| Pool 105 | No egg masses detected | | No | Pooled Area |
| Pool 106 | No egg masses detected | | No | Pooled Area |
| Pool 107 | No egg masses detected | | No | Pooled Area |
| Pool 108 | No egg masses detected | | No | Pooled Area |
| Pool 109 | No egg masses detected | | No | Pooled Area |
| Pool 110 | No egg masses detected | | No | Pooled Area |
| Pool 111 | 4 | 4 | No | Vernal Pool |
| Pool 112 | No egg masses detected | | No | Pooled Area |
| Pool 113 | No egg masses detected | | No | Pooled Area |
| Pool 114 | 12 | 3 | Yes | Significant Vernal Pool |
| Pool 115 | No egg masses detected | | No | Pooled Area |
| Pool 116 | No egg masses detected | | No | Pooled Area |
| Pool 117 | No egg masses detected | | No | Pooled Area |
| Pool 118 | 54 | 8 | No | Significant Vernal Pool |
| Pool 119 (permanent) | ≥ 47 | ≥ 89 | No | Permanent Pool |
| Pool 120 | 47 | 35 | No | Significant Vernal Pool |
| Pool 121 | No egg masses detected | | No | Pooled Area |
| Pool 122 | 14 | 0 | No | Vernal Pool |
| Pool 123 | ≥ 50 | 0 | No | Significant Vernal Pool |
| Pool 124 | 14 | 0 | No | Vernal Pool |
| Pool 125 | No egg masses detected | | No | Pooled Area |
| Pool 126 | No egg masses detected | | No | Pooled Area |
| Pool 127 | No egg masses detected | | No | Pooled Area |
| Pool 128 | 2 | 5 | No | Vernal Pool |
| Pool 129 | No egg masses detected | | No | Pooled Area |
| Pool 130 | No egg masses detected | | No | Pooled Area |

Final Environmental Impact Statement
Disposal and Reuse of NAS Brunswick, Maine

Table 4-1 Pooled Areas Detected within NAS Brunswick

| Pool Identification Number | Total Egg Mass Count | | Presence of Fairy Shrimp | Pool Classification |
|----------------------------|----------------------------------|--------------------|--------------------------|-------------------------|
| | Wood Frog | Spotted Salamander | | |
| | Significant Vernal Pool Criteria | | | |
| | ≥40 egg masses | ≥20 egg masses | Yes/No | |
| Pool 131-1 | No egg masses detected | | No | Pooled Area |
| Pool 131-2 | No egg masses detected | | No | Pooled Area |
| Pool 132 | No egg masses detected | | No | Pooled Area |
| Pool 133 | No egg masses detected | | No | Pooled Area |
| Pool 134 | No egg masses detected | | No | Pooled Area |
| Pool 135 | No egg masses detected | | No | Pooled Area |
| Pool 136 | No egg masses detected | | No | Pooled Area |
| Pool 137 | No egg masses detected | | No | Pooled Area |
| Pool 138 | 0 | 8 | No | Vernal Pool |
| Pool 139 | No egg masses detected | | No | Pooled Area |
| Pool 140 | No egg masses detected | | No | Pooled Area |
| Pool 141 | No egg masses detected | | No | Pooled Area |
| Pool 142 | 96 | 10 | No | Significant Vernal Pool |
| Pool 143 | 6 | 0 | No | Vernal Pool |
| Pool 144 | ≥ 28 | ≥ 22 | No | Significant Vernal Pool |
| Pool 145 | No egg masses detected | | No | Pooled Area |
| Pool 146 | 19 | ≥62 | Yes | Significant Vernal Pool |
| Pool 147 | No egg masses detected | | No | Pooled Area |
| Pool 148 | No egg masses detected | | No | Pooled Area |
| Pool 149 | 0 | 11 | No | Vernal Pool |
| Pool 150 | No egg masses detected | | No | Pooled Area |
| Pool 151 | No egg masses detected | | No | Pooled Area |
| Pool 152 | No egg masses detected | | No | Pooled Area |
| Pool 153 | 1 | 6 | No | Vernal Pool |
| Pool 154 | 2 | 1 | No | Vernal Pool |
| Pool 155 | No egg masses detected | | No | Pooled Area |
| Pool 156 | No egg masses detected | | No | Pooled Area |
| Pool 157 | No egg masses detected | | No | Pooled Area |
| Pool 158 | 4 | 49 | No | Significant Vernal Pool |
| Pool 159 | No egg masses detected | | No | Pooled Area |
| Pool 160 | No egg masses detected | | No | Pooled Area |
| Pool 161 | No egg masses detected | | No | Pooled Area |
| Pool 162 | 17 | 0 | No | Vernal Pool |
| Pool 163 | 36 | 23 | No | Significant Vernal Pool |
| Pool 164 | No egg masses detected | | No | Pooled Area |
| Pool 165 | No egg masses detected | | No | Pooled Area |
| Pool 166 | 11 | 0 | No | Vernal Pool |
| Pool 167 | 104 | 1 | No | Significant Vernal Pool |
| Pool 168 | 0 | 8 | No | Vernal Pool |

Table 4-1 Pooled Areas Detected within NAS Brunswick

| Pool Identification Number | Total Egg Mass Count | | Presence of Fairy Shrimp | Pool Classification |
|---------------------------------|----------------------------------|--------------------|--------------------------|---------------------|
| | Wood Frog | Spotted Salamander | | |
| | Significant Vernal Pool Criteria | | | |
| | ≥40 egg masses | ≥20 egg masses | Yes/No | |
| Totals | | | | |
| Pooled Areas | | | | 121 |
| Vernal Pools | | | | 27 |
| Significant Vernal Pools | | | | 20 |
| Permanent Pools | | | | 1 |

Blue = Significant Vernal Pool

Note: Values for wood frog and spotted salamander egg masses reflect the maximum number detected over three potential visits for each species.

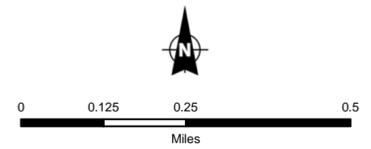
Approximately 75% of the significant vernal pool habit identified at NAS Brunswick was located within mixed forest communities. Dominant tree species identified at these locations included white pine (*Pinus strobus*), red maple (*Acer rubrum*); and balsam fir (*Abies balsamea*). The remaining 25% of the significant vernal pool habitat was identified within successional shrubland or grassland communities.

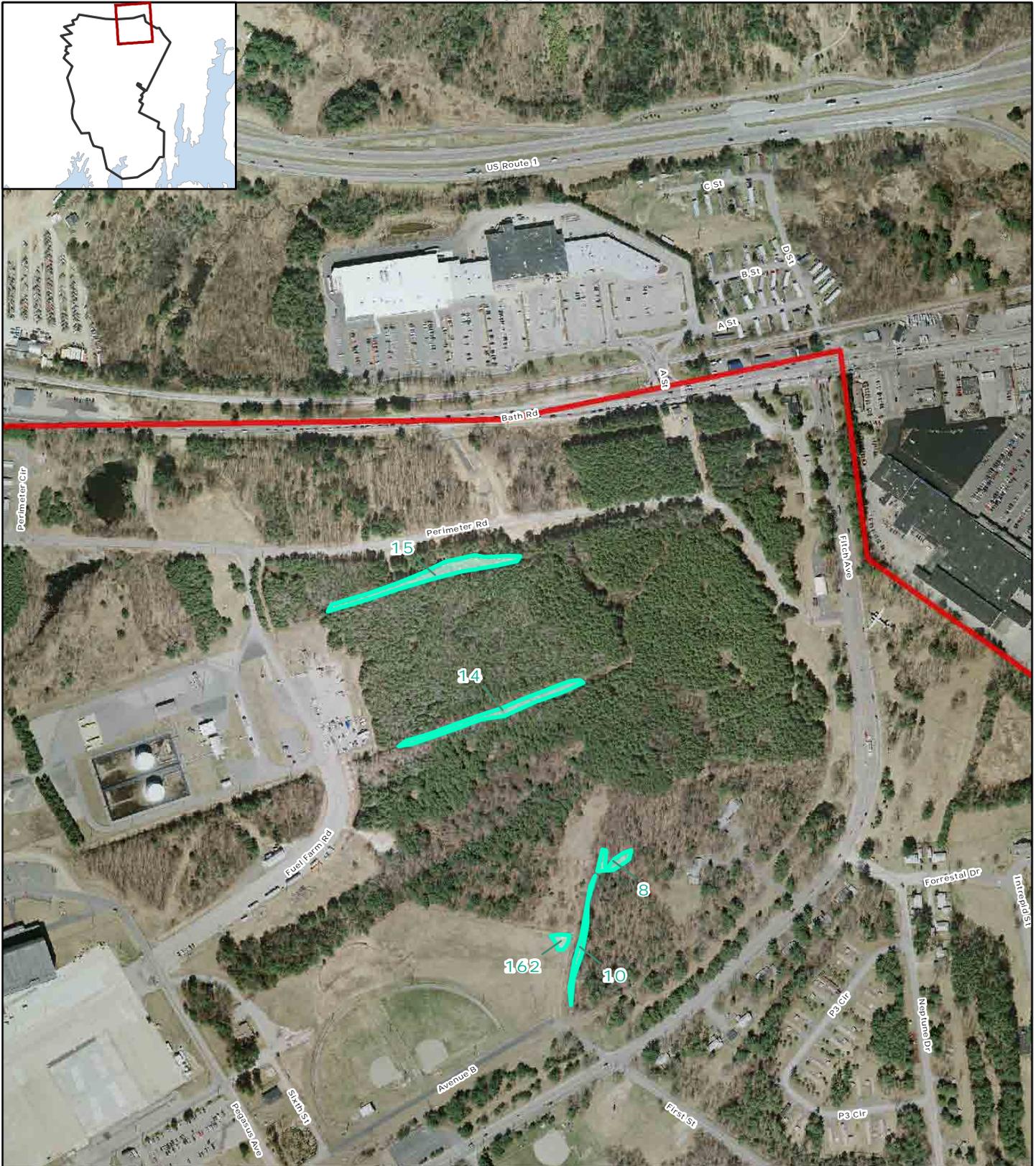
Significant vernal pools ranged in length from 41 to 239 feet and had an average length of 136.9 feet. These pools ranged in width from 10 to 137 feet and had an average width of 47.6 feet. Significant vernal pool depth ranged from 4 to greater than 48 inches and averaged 14.6 inches. Pool temperatures at these locations ranged from 38 to 68 degrees Fahrenheit and had a mean temperature of 52.1 degrees Fahrenheit.



- Pooled Area Point
- ▭ NAS Brunswick Property Boundary

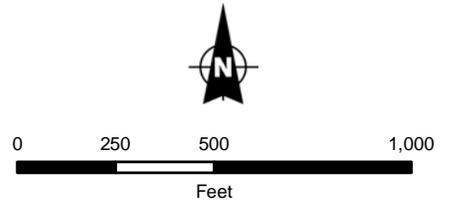
Figure 4-1
Pooled Areas at
NAS Brunswick
Brunswick, Maine

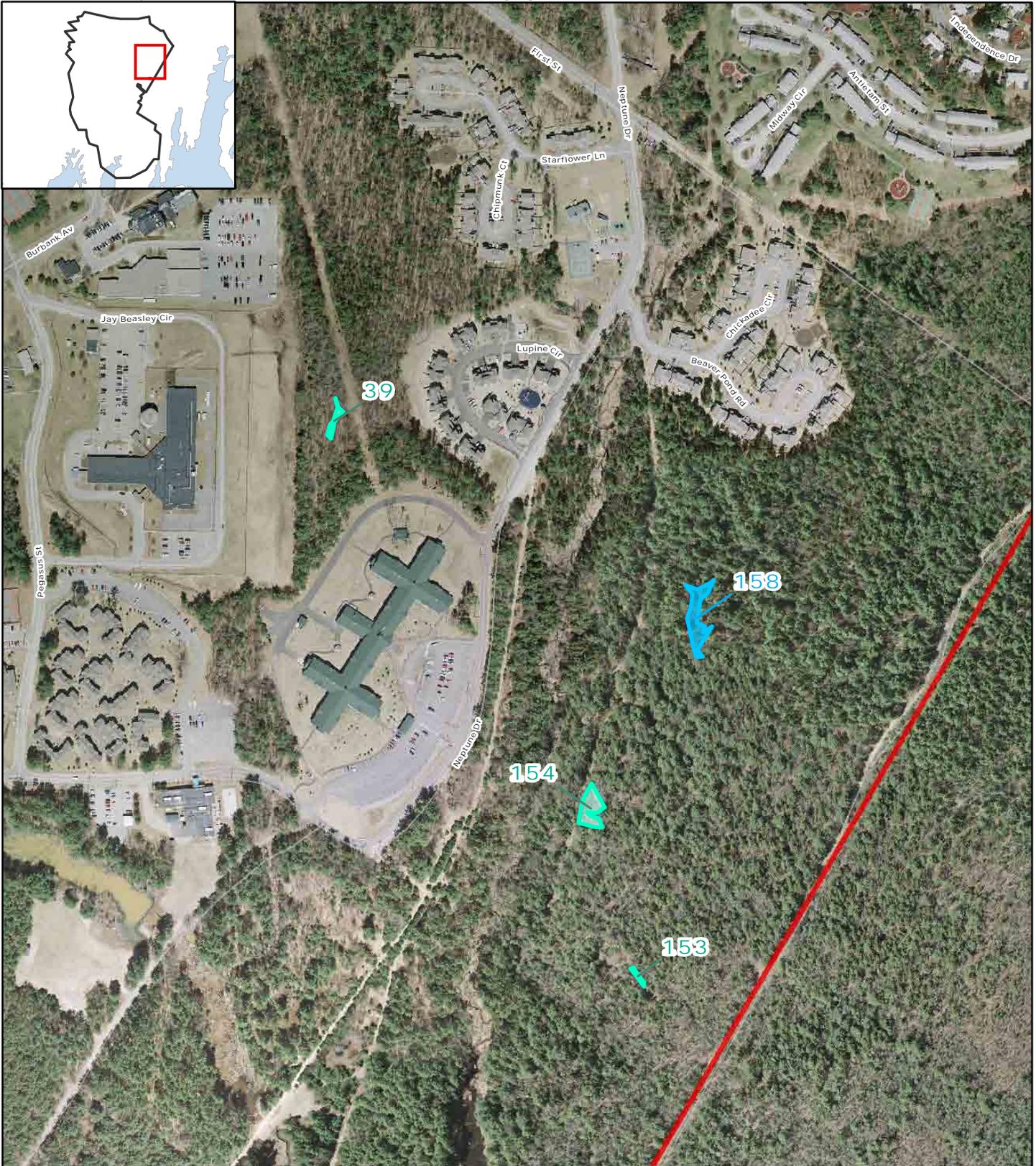




-  Vernal Pool
-  Significant Vernal Pool
-  NAS Brunswick Property Boundary

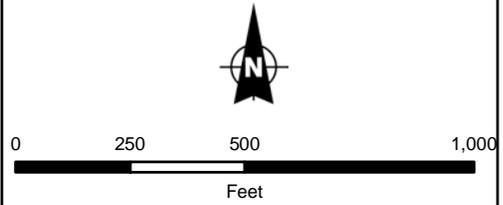
Figure 4-2
Significant Vernal Pools and
Vernal Pools at
NAS Brunswick
Brunswick, Maine

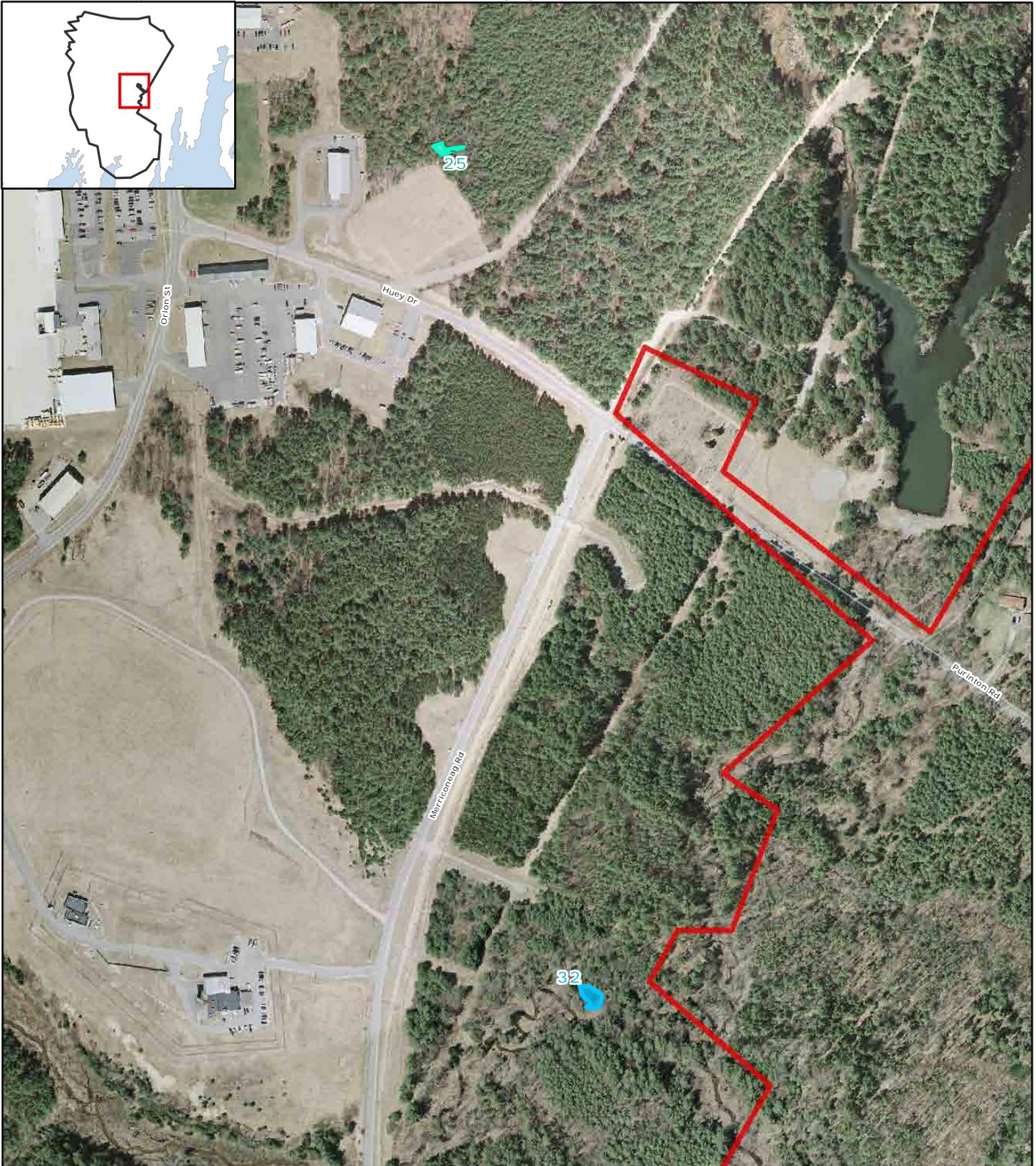




-  Vernal Pool
-  Significant Vernal Pool
-  NAS Brunswick Property Boundary

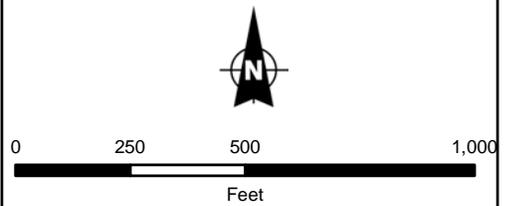
**Figure 4-3
Significant Vernal Pools and
Vernal Pools at
NAS Brunswick
Brunswick, Maine**

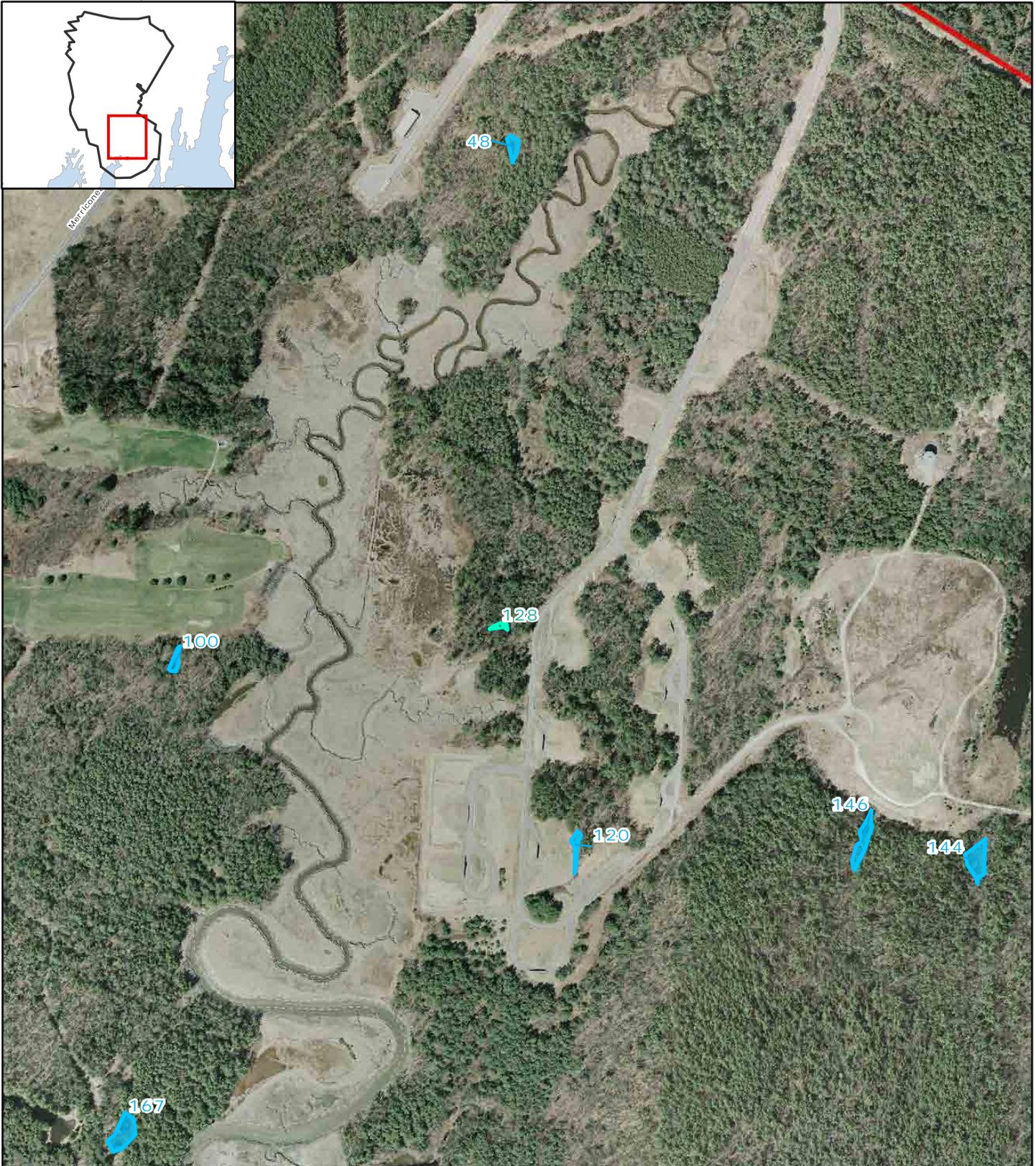




-  Vernal Pool
-  Significant Vernal Pool
-  NAS Brunswick Property Boundary

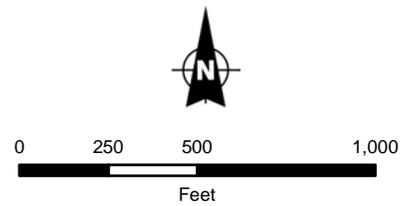
Figure 4-4
Significant Vernal Pools and
Vernal Pools at
NAS Brunswick
Brunswick, Maine





-  Vernal Pool
-  Significant Vernal Pool
-  NAS Brunswick Property Boundary

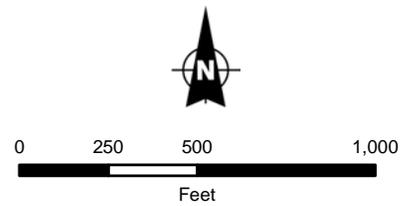
Figure 4-5
Significant Vernal Pools and
Vernal Pools at
NAS Brunswick
Brunswick, Maine

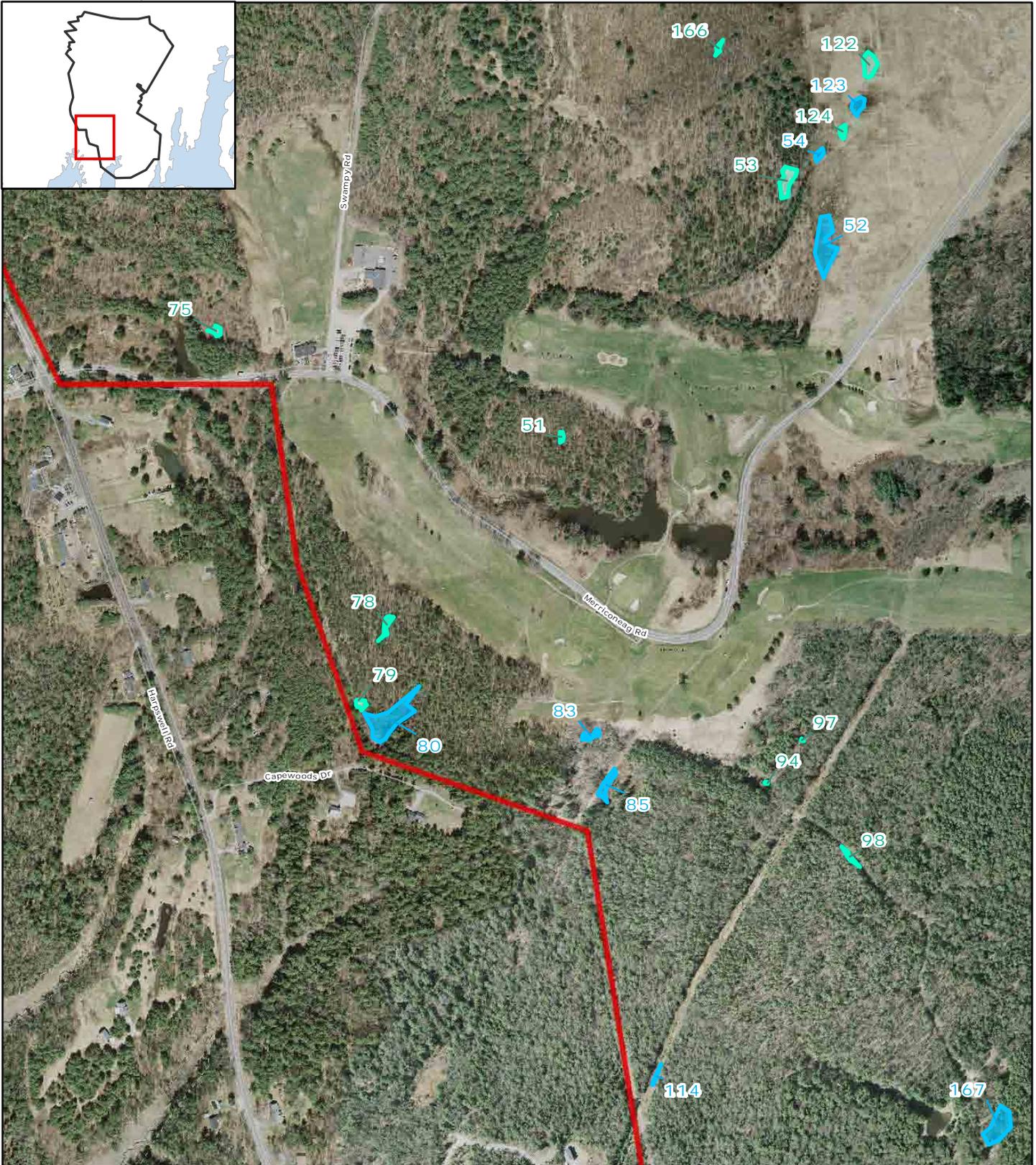




-  Vernal Pool
-  Significant Vernal Pool
-  NAS Brunswick Property Boundary

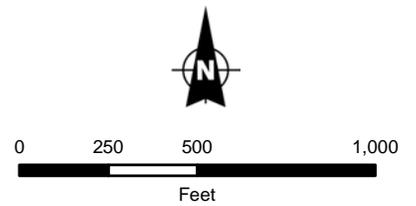
Figure 4-6
Significant Vernal Pools and
Vernal Pools at
NAS Brunswick
Brunswick, Maine





-  Vernal Pool
-  Significant Vernal Pool
-  NAS Brunswick Property Boundary

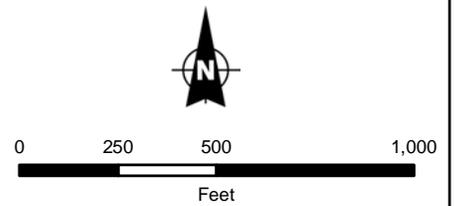
Figure 4-7
Significant Vernal Pools and
Vernal Pools at
NAS Brunswick
Brunswick, Maine





-  Vernal Pool
-  Significant Vernal Pool
-  NAS Brunswick Property Boundary

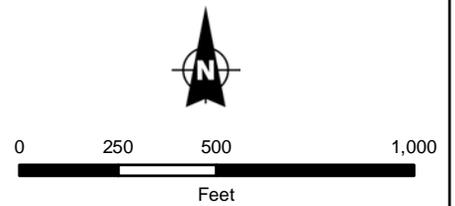
Figure 4-8
Significant Vernal Pools and
Vernal Pools at
NAS Brunswick
Brunswick, Maine





-  Vernal Pool
-  Significant Vernal Pool
-  NAS Brunswick Property Boundary

Figure 4-9
Significant Vernal Pools and
Vernal Pools at
NAS Brunswick
Brunswick, Maine



5

TRC Report

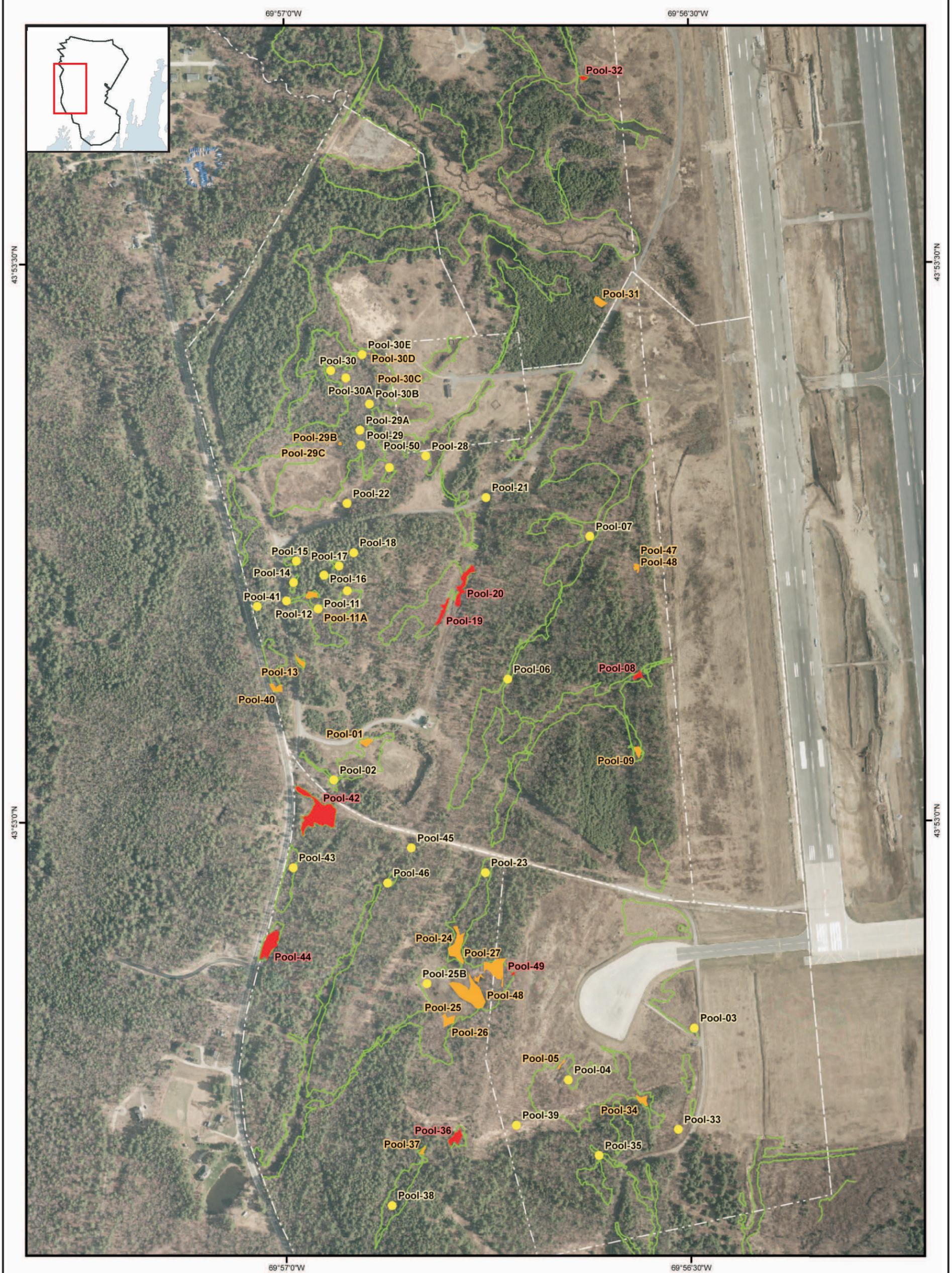
In spring 2008, TRC Environmental Corporation (TRC) conducted a comprehensive vernal pool survey on the western portion of NAS Brunswick (see Figure 5-1). During this survey, the presence/absence of vernal pool habitat was documented. TRC conducted three rounds of vernal pools visits (April 10-11, and 14; April 22-23; and May 7-8) (TRC 2008). Data were collected using established methods utilized by various state and federal agencies and recorded on standardized datasheets. In addition to the data collected, the areal extents of the vernal pools were delineated and each pool was photo-documented.

TRC documented a total of 59 pools during the 2008 survey (see Figure 5-1). Each pool was classified in accordance with the Maine DEP standards (see Table 5-1). Eight of these pools met the MEDEP criteria for significant vernal pools (TRC 2008).

Table 5-1 Types of Pooled Areas Identified by TRC during the 2008 Studies

| Type of Pooled Area | Number of Pools |
|--------------------------|-----------------|
| Pooled Areas | 32 |
| Vernal Pools | 19 |
| Significant Vernal Pools | 8 |
| Total | 59 |

Source: TRC 2008.

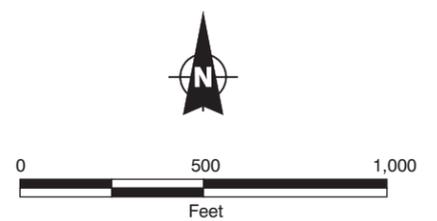


LEGEND

- Pools Surveyed
- Vernal Pools
- Significant Vernal Pools
- Wetland Boundaries
- NAS Brunswick Project Boundary

**Figure 5-1
Pooled Areas Mapped by TRC
at NAS Brunswick,
Brunswick, Maine**

Source: TRC, 2008



6

Regulatory Requirements

As of September 1, 2007, significant vernal pool habitat is protected under the Maine NRPA. An activity in, on, over, or adjacent to a significant vernal pool must avoid unreasonable impacts on the significant vernal pool habitat and obtain approval from the DEP, through a Permit by Rule or individual NRPA approval. Significant vernal pools may be created for the purposes of compensatory mitigation, provided they meet the outlined criteria (06-096 CMR Chapter 335).

7

References

- Calhoun, A.J.K., T.E. Walling, S.S. Stockwell, and M. McCollough. 2003. Evaluating Vernal Pools as a Basis for Conservation Strategies: A Maine Case Study. *Wetlands*. 23:70-81.
- Ecology and Environment, Inc. 2008. *Ecological Communities and Wetland Resource Report for the Environmental Impact Statement for the Disposal and Reuse of NAS Brunswick*. Prepared for Naval Air Station Brunswick, Brunswick, Maine. December 2008.
- Maine Department of Environmental Protection (MEDEP). 2009. Significant Wildlife Habitat: Significant Vernal Pools. Web site accessed at <http://www.maine.gov/dep/blwq/docstand/nrpa/vernalpools/index.htm> April 2009.
- McNab, W. H., and E. A. Avers. 1994. *Ecological Subregions of the United States*. Washington, DC: USDA Forest Service, Washington Office.
- TRC Environmental Corporation (TRC). 2008. Naval Air Station Brunswick Vernal Pool Summary Report. Prepared for Bowdoin College, May 2008.

A

Photolog



Photo 32 Significant Vernal Pool 32 (facing north)



Photo 35 Significant Vernal Pool 35 (facing north-northwest)



Photo 36 Significant Vernal Pool 36 (facing north)



Photo 48 Significant Vernal Pool 48 (facing north)



Photo 52 Significant Vernal Pool 52 (facing north)



Photo 54 Significant Vernal Pool 54 (facing north)



Photo 79 Significant Vernal Pool 80 (facing north)



Photo 82 Significant Vernal Pool 83 (facing north)



Significant Vernal Pool No. 85 – Photo 84 North



Significant Vernal Pool No. 100 – Photo 99 North



Significant Vernal Pool No. 114 – Photo 113 North northeast



Significant Vernal Pool No. 118 – Photo 117 Northeast



Significant Vernal Pool No. 120 – Photo 119 North



Significant Vernal Pool No. 123 – Photo 123 North



Significant Vernal Pool No. 142 – Photo 144 North



Significant Vernal Pool No. 144 – Photo 146 North



Significant Vernal Pool No. 146 – Photo 148 North



Significant Vernal Pool No. 158 – Photo 158 West



Significant Vernal Pool No. 163 – Photo 163 North



Significant Vernal Pool No. 167 – Photo 178 North



Vernal Pool No. 8 – Photo 8 North



Vernal Pool No. 10 – Photo 10 North



Vernal Pool No. 14 – Photo 14 North



Vernal Pool No. 15 – Photo 15 North



Vernal Pool No. 25 – Photo 25 North



Vernal Pool No. 33 – Photo 33 North



Vernal Pool No. 39 – Photo 39 North



Vernal Pool No. 51 – Photo 51 North northwest



Vernal Pool No. 53 – Photo 53 North



Vernal Pool No. 75 – Photo 74 North



Vernal Pool No. 78 – Photo 77 North



Vernal Pool No. 79 – Photo 78 North



Vernal Pool No. 94 – Photo 93 North



Vernal Pool No. 97 – Photo 96 North



Vernal Pool No. 98 – Photo 97 North



Vernal Pool No. 111 – Photo 110 North



Vernal Pool No. 122 – Photo 121 North



Vernal Pool No. 124 – Photo 124 North



Vernal Pool No. 128 – Photo 128 South southeast



Vernal Pool No. 138 – 139 Northeast



Vernal Pool No. 143 – Photo 145 Northeast



Vernal Pool No. 149 – Photo 181 North



Vernal Pool No. 153 – Photo 154 North



Vernal Pool No. 154 – Photo 155 West



Vernal Pool No. 162 – Photo 162 North



Vernal Pool No. 166 – Photo 173 Northeast



Vernal Pool No. 168 – Photo 182 West

B

Vernal Pool Documentation Forms

Pool ID: PVP 8
Zone 1

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/2/09 Time of Observation: 1318 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 8/N

Significant Vernal Pool? Yes No

Why or why not? 3 wood frog egg masses found during 1st round of VRA's; 4/13; 4 wood frog egg masses found during 3rd round of visit (4/28).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: - (9.9)234 Latitude/Northing: 43.90257

Model of GPS Unit: Trimble GeoXH

Check one:

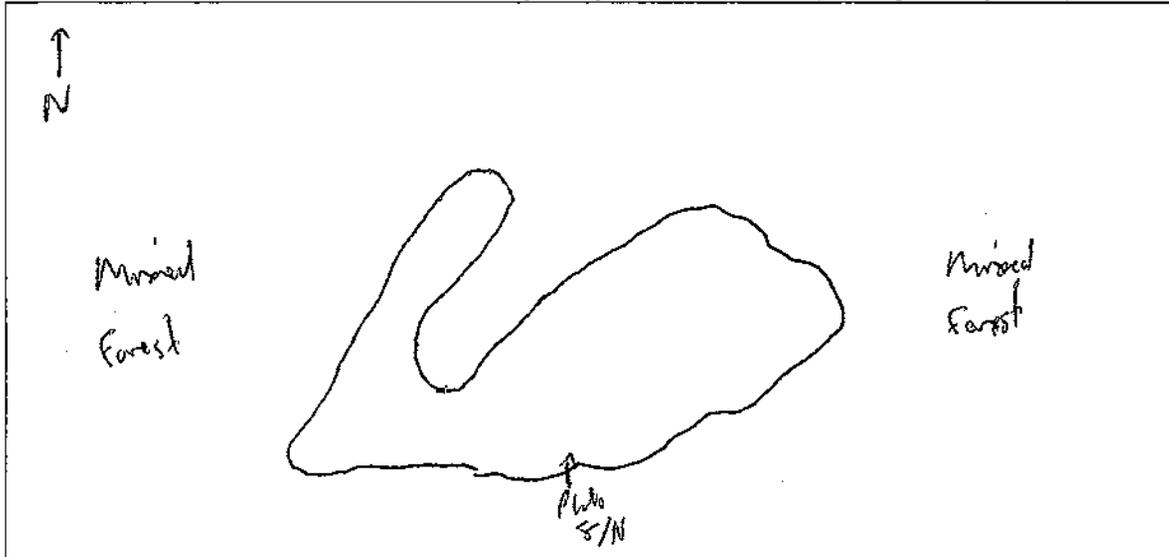
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 4 (in) feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: _____

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 85 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- | | |
|---|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input checked="" type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|

- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|

- 15 % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures *(reverting)*
 - Lawn
 - Other

— % Residential

— % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 160' Maximum width: 43'

Water Depth (inches): Maximum when observed: 8" Estimated spring maximum: 10"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

List the percent cover of dominant vegetation by height strata within the pool:

| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
|----------------------------|----------------|---|
| Tree (5m and above) | 4 | Red maple, White pine, Balsam Fir |
| Shrub (0.5m to <5m) | 2 | Unknown Shrub |
| Herb/Emergent (0 to <0.5m) | 2 | Unknown Grasses |
| Floating /Submerged | — | — |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

Check the palustrine types that best apply to this pool or wetland:

| | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

Check all surrounding habitat types within 250 feet of the pool:

| | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland (mowing field) | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown

If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|--|--|
| <input type="checkbox"/> Permanent | |
| <input checked="" type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | <i>skunk cabbage, buttressed roots, etc.</i> |
| <input type="checkbox"/> Ephemeral (drying out during the growing season in most years) | |

Maximum depth at the time of survey: 8 (in) / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>4</u> | <u>S, H</u> | <u>3</u> | <u>✓, S</u> | <u>3</u> | _____ | _____ |
| <i>Spotted Salamander</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| <i>Blue-spotted Salamander</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| <i>Fairy Shrimp</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 55 (°F) / °C (circle one)

Rarity Criteria *(check all boxes that apply)*:

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------------------|--------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|------------------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ | Other: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A – GENERAL INFORMATION

Date: 4/1/09 Time of Observation: 1334 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 10/N

Significant Vernal Pool? Yes No

Why or why not? 9 egg masses (Wood Frog) detected during 2nd round of visits; 4/13.
9 egg masses / no Green Salamanders detected during 3rd round of visits; (4/28).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B – VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:
Longitude/Easting: -69.92305 Latitude/Northing: 43.90139
Model of GPS Unit: Trimble GeoXH

Check one:

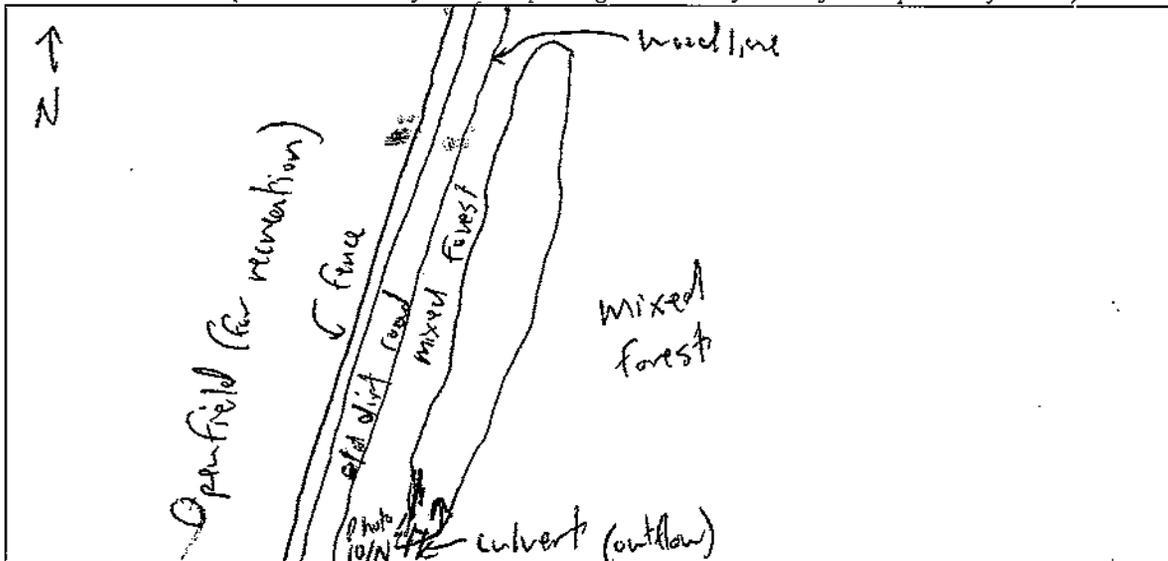
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 30 m/feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: _____

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 50 % **Woodland** (check most dominant type) → **For woodland habitat, is the overstory?**
- Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)
 - Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)

- % **Utility ROW** (check most dominant type) → **For Utility ROW, ID dominant vegetation type?**
- Pipeline
 - Electric
 - Other
 - Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground

- 40 % **Open Land** (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other

— % **Residential**

10 % **Roads** ← old dirt road

— % **Other**

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 373' Maximum width: 13'

Water Depth (inches): Maximum when observed: 18" Estimated spring maximum: 19"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | 4 | <i>Paper Birch, white pine, Red Maple</i> |
| Shrub (0.5m to <5m) | 2 | <i>Unknown Shrub</i> |
| Herb/Emergent (0 to <0.5m) | 0 | — |
| Floating /Submerged | — | — |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub-swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input checked="" type="checkbox"/> Other: <i>Forested ditch</i> |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway <i>Old dirt road</i> |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland <i>Recreation Area</i> | <input checked="" type="checkbox"/> Other: <i>Forested ditch</i> |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|--|-------------------------------|
| <input type="checkbox"/> Permanent | |
| <input checked="" type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | <i>Semi-permanent outflow</i> |
| <input type="checkbox"/> Ephemeral (drying out during the growing season in most years) | |

Maximum depth at the time of survey: 18 (in) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks; see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|---|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 9 | S | 3 | — | — | — | — |
| <i>Spotted Salamander</i> | | — | — | — | — | — | — |
| <i>Blue-spotted Salamander</i> | | — | — | — | — | — | — |
| <i>Fairy Shrimp</i> | | — | — | — | — | — | — |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 54 (°F) / °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|-------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Bogwartner</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Other: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID. VP14
Zone 1

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/2/09 Time of Observation: 1415 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 14/N

Significant Vernal Pool? Yes No

Why or why not? 37 Wood Frog eggs, masses detected; (4/13)
Wood Frog Egg masses have 'lost' cover & difficult to count; (recorded during
3rd visit; 4/13)

161/N (during 2nd vernal visit; 4/13)
(W.F.E.M.)

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools: _____

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.92403 Latitude/Northing: 43.90374

Model of GPS Unit: Trimble GaxII

Check one:

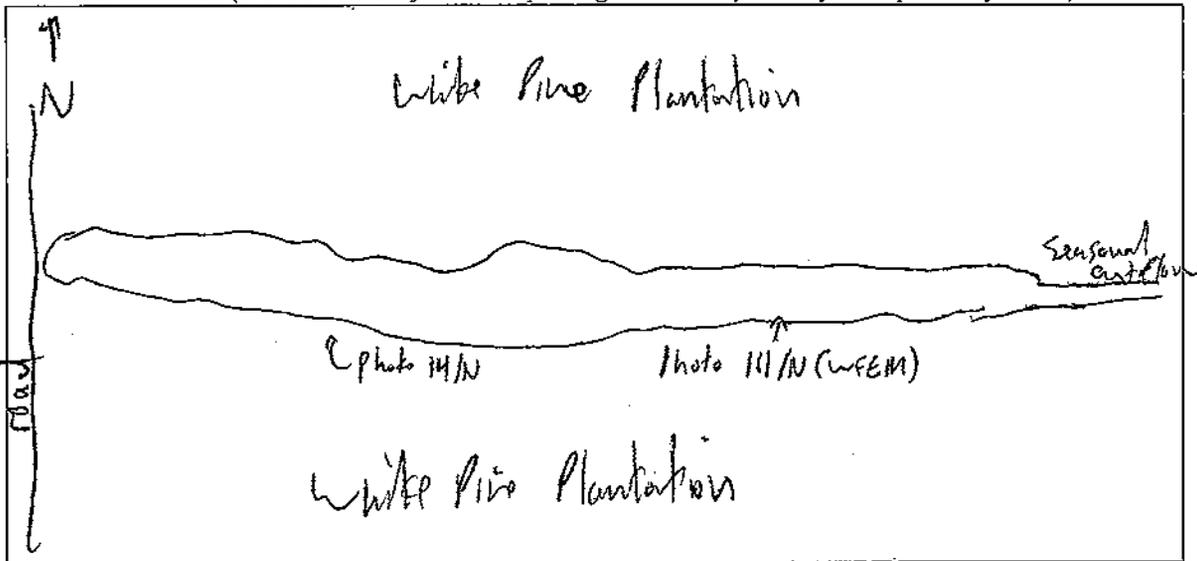
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 3 @/feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: _____

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- | | |
|---|--|
| <p><u>90%</u> % Woodland (check most dominant type) →</p> <ul style="list-style-type: none"> <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input checked="" type="checkbox"/> Mixed (all others) | <p>For woodland habitat, is the overstory?</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
| <p><u>—</u> % Utility ROW (check most dominant type) →</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <p>For Utility ROW, ID dominant vegetation type?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
| <p><u>—</u> % Open Land (check most dominant type)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Active agriculture <input type="checkbox"/> Fields/pastures <input type="checkbox"/> Lawn <input type="checkbox"/> Other | |
| <p><u>—</u> % Residential</p> | |
| <p><u>10%</u> % Roads</p> | |
| <p><u>—</u> % Other</p> | |

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 1052' Maximum width: 19'

Water Depth (inches): Maximum when observed: 13" Estimated spring maximum: 16"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other drainage Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | <u>5</u> | <u>White Pine, Paper Birch</u> |
| Shrub (0.5m to <5m) | <u>3</u> | <u>Unknown shrub</u> |
| Herb/Emergent (0 to <0.5m) | <u>3</u> | <u>Unknown grasses</u> |
| Floating /Submerged | <u>3</u> | <u>Algae</u> |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|---|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input checked="" type="checkbox"/> Other: <u>forested drainage</u> |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input checked="" type="checkbox"/> Other: <u>forested drainage</u> |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown

If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|--|-------------------------------------|
| <input type="checkbox"/> Permanent | |
| <input checked="" type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | <u>water overflow, algae growth</u> |
| <input type="checkbox"/> Ephemeral (drying out during the growing season in most years) | |

Maximum depth at the time of survey: 13 in / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|-----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>37</u> | <u>S</u> | <u>3</u> | — | — | — | — |
| <i>Spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Blue-spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Fairy Shrimp</i> | — | — | — | — | — | — | — |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 53 F / °C (circle one)

Rarity Criteria *(check all boxes that apply)*:

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <i>Wood Turtle</i> | <input type="checkbox"/> |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <i>Ribbon Snake</i> | <input type="checkbox"/> |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <i>Other:</i> | <input type="checkbox"/> |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: 0VP15
Zone 1

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/2/09 Time of Observation: M54 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 15/N

Significant Vernal Pool? Yes No

Why or why not? No egg masses present (2nd round of visits; 4/13). No Fairy Shrimp
1 wood frog egg masses detected during 3rd round of visit (4/28).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.92445 Latitude/Northing: 43.90530

Model of GPS Unit: Trimble GeoXH

Check one:

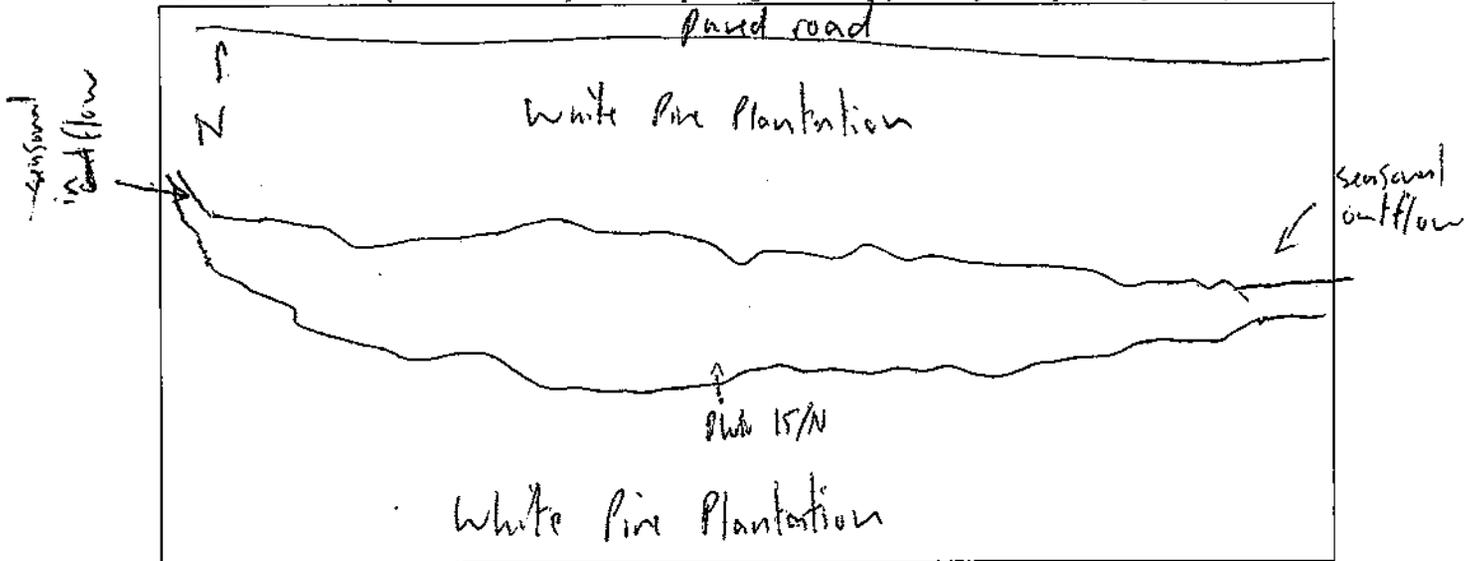
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 4 (m) feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: _____

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 80 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- | | |
|---|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input checked="" type="checkbox"/> Softwood (>75% coniferous) <input type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|
- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|
- 10 % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other
- % Residential
- 10 % Roads
- % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 588' Maximum width: 21'

Water Depth (inches): Maximum when observed: 9" Estimated spring maximum: 11"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested Shrub/Scrub Emergent Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

List the percent cover of dominant vegetation by height strata within the pool:

| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
|----------------------------|----------------|--|
| Tree (5m and above) | 5 | White Oak |
| Shrub (0.5m to <5m) | 4 | unknown shrubs. |
| Herb/Emergent (0 to <0.5m) | 2 | unknown grass, sphagnum |
| Floating /Submerged | — | — |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

Check the palustrine types that best apply to this pool or wetland:

| | | |
|---|---|---|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input checked="" type="checkbox"/> Other: forested ditch |

Check all surrounding habitat types within 250 feet of the pool:

| | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|--|-----------------------------------|
| <input type="checkbox"/> Permanent | |
| <input checked="" type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>shallow pool with no water</i> |

Maximum depth at the time of survey: 9 ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|---|---|
| <input type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input checked="" type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>2</u> | <u>S</u> | <u>3</u> | _____ | _____ | _____ | _____ |
| <i>Spotted Salamander</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| <i>Blue-spotted Salamander</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| <i>Fairy Shrimp</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 49 °F / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <i>Wood Turtle</i> | <input type="checkbox"/> |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <i>Ribbon Snake</i> | <input type="checkbox"/> |
| <i>Ringed Bogwartter</i> | <input type="checkbox"/> | <i>Other:</i> | <input type="checkbox"/> |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/6 Time of Observation: 1147 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 25/N

Significant Vernal Pool? Yes No

Why or why not? 4 wood frog & 4 spotted salamander egg masses found during 3rd round of visits of 4/13. No wood frog egg masses or fairy shrimp, but 11 spotted salamander egg masses found during 3rd round of visits (4/13).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools: _____

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.92593 Latitude/Northing: 43.88922

Model of GPS Unit: Trimble GeoXH

Check one:

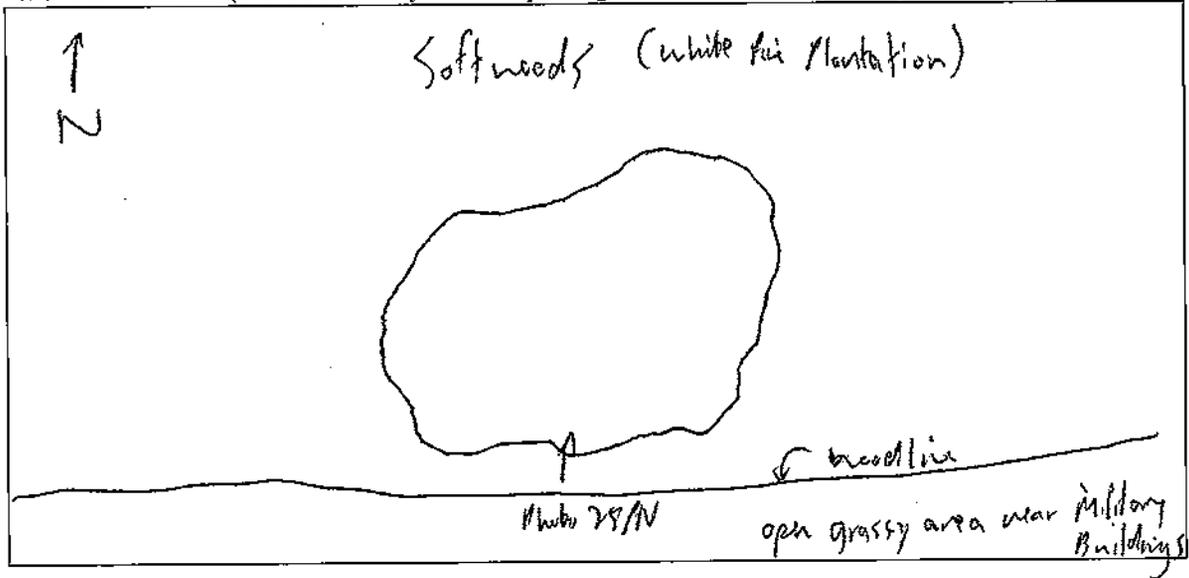
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 10 feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: Location is close to woodline, ~~where~~ where there is a field & some building far off to the east on the other side.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 60 % Woodland (check most dominant type) →
- Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)

- For woodland habitat, is the overstory?
- Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)

- % Utility ROW (check most dominant type) →
- Pipeline
 - Electric
 - Other

- For Utility ROW, ID dominant vegetation type?
- Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground

- 40 % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other

- % Residential
- % Roads
- % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <u>no inflow/outflow or oblique species</u> |

Maximum depth at the time of survey: 6 (in) ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No
 Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|--------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>4 (a)</u> | <u>S</u> | <u>3</u> | _____ | _____ | _____ | _____ |
| <i>Spotted Salamander</i> | <u>0 (1)</u> | <u>S</u> | <u>3</u> | _____ | _____ | _____ | _____ |
| <i>Blue-spotted Salamander</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| <i>Fairy Shrimp</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 49 (F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.
 Signature: _____ Date: _____

Pool ID: VP 33
zone 3

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/6 Time of Observation: 1431 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 33/N

Significant Vernal Pool? Yes No

Why or why not? 11 Wood Frog egg masses found during 2nd round of visits; (4/13)
1 Wood Frog & 1 spotted Salamander egg masses found south of the NASB property boundary during
3rd round of visits; (4/19).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.92799 Latitude/Northing: 43.86126

Model of GPS Unit: Trimble GeoXH

Check one:

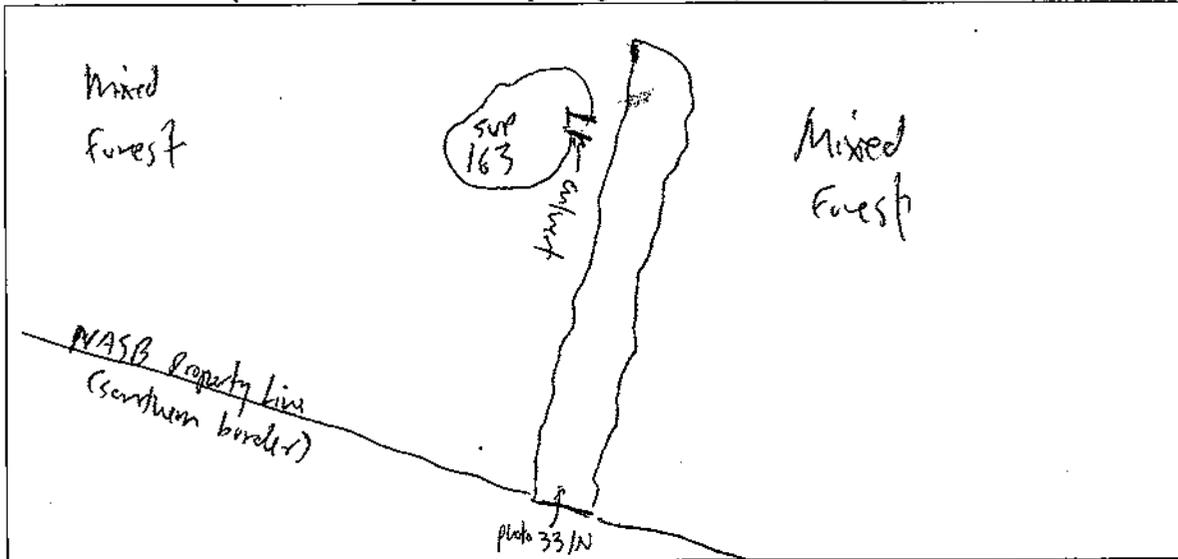
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 10 @/feet (circle one) in the compass direction of 8 N degrees from the above GPS point.

Additional notes of GPS location: location is ~ 20 m North of the
NAS property line.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

100 % **Woodland** (check most dominant type) →

- Hardwood (>75% deciduous)
- Softwood (>75% coniferous)
- Mixed (all others)

For woodland habitat, is the overstory?

- Heavy (>50% canopy cover of trees and shrubs >6' tall)
- Moderate (25-50% canopy cover of trees/shrubs >6' tall)
- Sparse (<25% canopy cover of trees/shrubs >6' tall)

 % **Utility ROW** (check most dominant type) →

- Pipeline
- Electric
- Other

For Utility ROW, ID dominant vegetation type?

- Shrubs
- Grass/forb
- Mixed-shrub/grass/forb
- Bare ground

 % **Open Land** (check most dominant type)

- Active agriculture
- Fields/pastures
- Lawn
- Other

 % **Residential**

 % **Roads**

 % **Other**

Vernal Pool Documentation Form

SECTION D - WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 75' Maximum width: 7'

Water Depth (inches): Maximum when observed: 8" Estimated spring maximum: 10"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland - isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | 4 | Red Maple, White Pine |
| Shrub (0.5m to <5m) | 2 | Speckled Alder |
| Herb/Emergent (0 to <0.5m) | | |
| Floating /Submerged | | |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|---|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input checked="" type="checkbox"/> Other: <u>forested drainage</u> |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway <u>old overgrown dirt road</u> |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|----------------------------------|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no delugent spp. present.</i> |

Maximum depth at the time of survey: 8 ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|---|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 1 | S | 3 | | | | |
| <i>Spotted Salamander</i> | 1 | S | 3 | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 48 °F / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------|--------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: VP39
Zone 2

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/6 Time of Observation: 1731 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 39/N

Significant Vernal Pool? Yes No

Why or why not? No egg masses were detected during 2nd round of visits (4/14).
3 ~~Spotted Salamanders~~ egg masses & no fairy shrimp found during
3rd round of visits (4/28).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:
Longitude/Easting: -69.92115 Latitude/Northing: 43.89576
Model of GPS Unit: Trimble 6000

Check one:

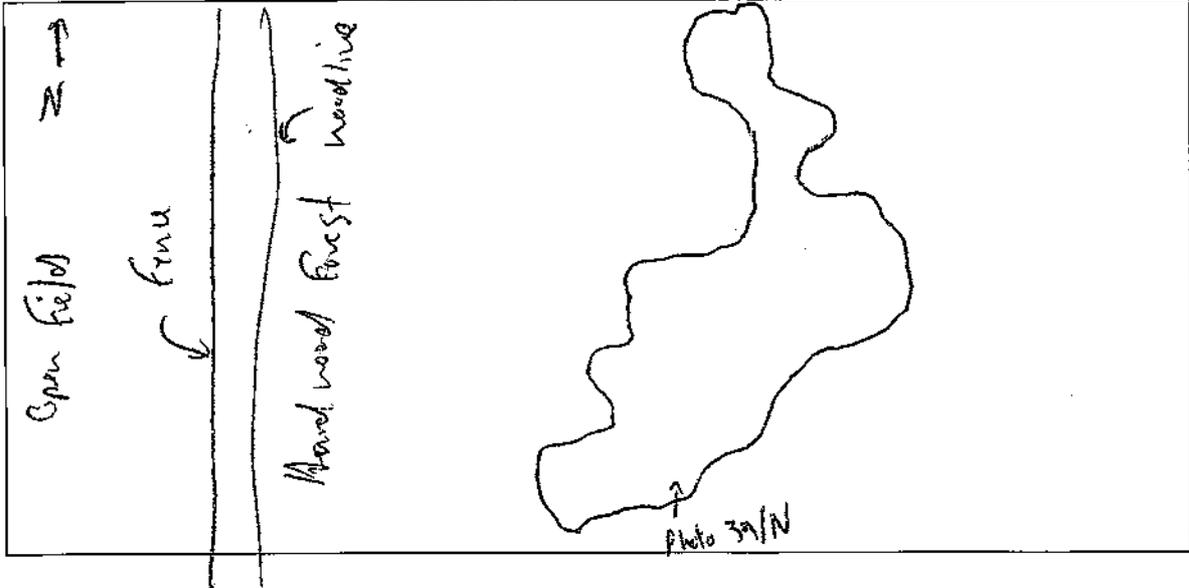
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 15 feet (circle one) in the compass direction of NIX degrees from the above GPS point.

Additional notes of GPS location: ~ 25m east of a field

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%)*

70 % Woodland (check most dominant type) →

- Hardwood (>75% deciduous)
- Softwood (>75% coniferous)
- Mixed (all others)

For woodland habitat, is the overstory?

- Heavy (>50% canopy cover of trees and shrubs >6' tall)
- Moderate (25-50% canopy cover of trees/shrubs >6' tall)
- Sparse (<25% canopy cover of trees/shrubs >6' tall)

— % Utility ROW (check most dominant type) →

- Pipeline
- Electric
- Other

For Utility ROW, ID dominant vegetation type?

- Shrubs
- Grass/forb
- Mixed-shrub/grass/forb
- Bare ground

30 % Open Land (check most dominant type)

- Active agriculture
- Fields/pastures
- Lawn
- Other

— % Residential

— % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 109' Maximum width: 37'

Water Depth (inches): Maximum when observed: 8" Estimated spring maximum: 10"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

Forested Shrub/Scrub Emergent Open water

Site Type:

Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

List the percent cover of dominant vegetation by height strata within the pool:

| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
|----------------------------|----------------|--|
| Tree (5m and above) | 4 | Red Maple, White Pine Balsam Fir |
| Shrub (0.5m to <5m) | 2 | Speckled Alder |
| Herb/Emergent (0 to <0.5m) | 1 | Unknown Grass |
| Floating /Submerged | _____ | _____ |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

Check the palustrine types that best apply to this pool or wetland:

| | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

Check all surrounding habitat types within 250 feet of the pool:

| | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--------------------------|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <u>no inflow/outflow</u> |

Maximum depth at the time of survey: 8 (iii) / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No
 Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | | | | | | | |
| <i>Spotted Salamander</i> | <u>3</u> | <u>S</u> | <u>3</u> | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 58 (°F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: VP 51
zone 4

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/17 Time of Observation: 1304 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: S1/NW

Significant Vernal Pool? Yes No

Why or why not? No egg masses detected during the 2nd round of visits; (4/14).
17 Spotted Salamander egg masses detected during 3rd round of visits; (4/30).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools: _____

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.94033 Latitude/Northing: 43.87348

Model of GPS Unit: Trimble GeoXH

Check one:

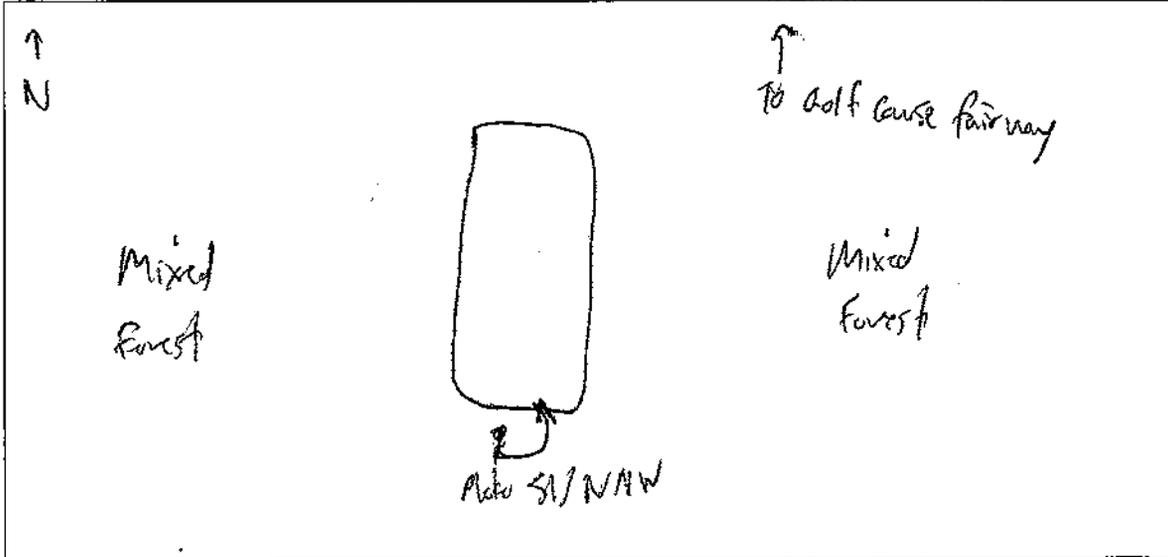
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 7 feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: ~ 40m SW of woodline where golfcourse is on other side.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 80 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- | | |
|---|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input checked="" type="checkbox"/> Mixed (all others) | <input checked="" type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|

- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|

- 20 % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn → golf course
 - Other

— % Residential

— % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 35' Maximum width: 12'

Water Depth (inches): Maximum when observed: 30" Estimated spring maximum: 34"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | <u>5</u> | <u>Red Oak, White Pine, & Paper Birch</u> |
| Shrub (0.5m to <5m) | _____ | |
| Herb/Emergent (0 to <0.5m) | _____ | |
| Floating /Submerged | _____ | |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

Check the palustrine types that best apply to this pool or wetland:

| | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input checked="" type="checkbox"/> Other: <u>barrow pit in forest</u> |

Check all surrounding habitat types within 250 feet of the pool:

| | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland <u>Golf course</u> | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown

If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no inflow/outflow, no definite years</i> |

Maximum depth at the time of survey: 30 (in) / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | | | | | | | |
| <i>Spotted Salamander</i> | 17 | S | 3 | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 55 °F. / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Other: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: VP53
Zone 4

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/9 Time of Observation: 111 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 53/N

Significant Vernal Pool? Yes No

Why, or why not? 2 Wood Frog egg masses were found during 1st round of visit; (4/14). 1 Wood Frog egg mass (post-hatching) found during 3rd round of visit; (4/30).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.9386 Latitude/Northing: 43.87631

Model of GPS Unit: Trimble GeoXH

Check one:

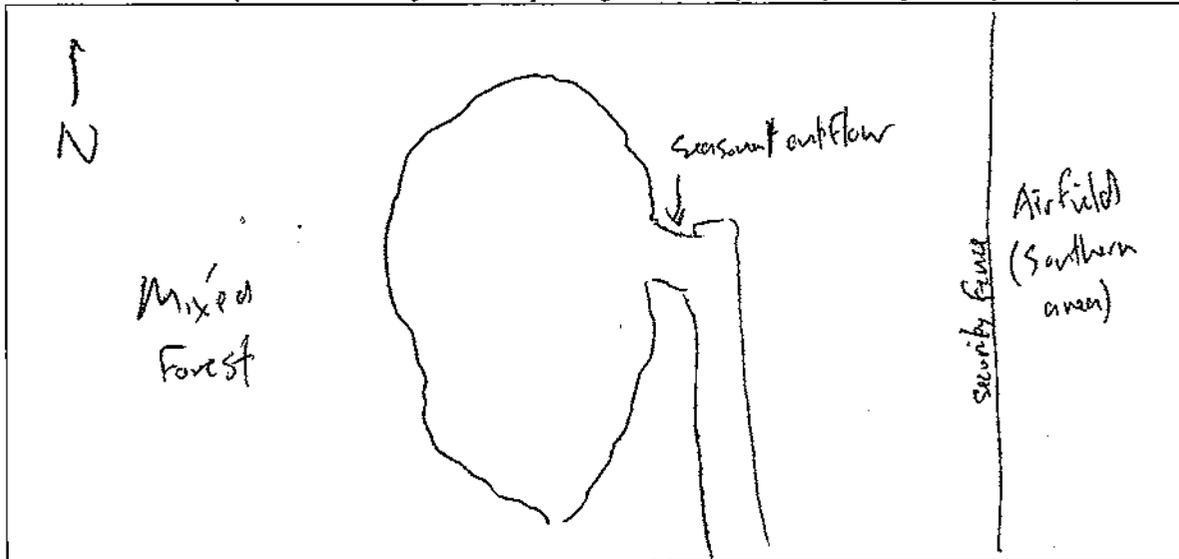
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 20 feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: ~30 m west of the airfield security fence

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION (continued)

Pool Location: (Provide a sketch of the vernal pool together with any local reference points or features.)



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: (Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)

60 % **Woodland** (check most dominant type) →

- Hardwood (>75% deciduous)
- Softwood (>75% coniferous)
- Mixed (all others)

For woodland habitat, is the overstory?

- Heavy (>50% canopy cover of trees and shrubs >6' tall)
- Moderate (25-50% canopy cover of trees/shrubs >6' tall)
- Sparse (<25% canopy cover of trees/shrubs >6' tall)

— % **Utility ROW** (check most dominant type) →

- Pipeline
- Electric
- Other

For Utility ROW, ID dominant vegetation type?

- Shrubs
- Grass/forb
- Mixed-shrub/grass/forb
- Bare ground

40 % **Open Land** (check most dominant type)

- Active agriculture
- Fields/pastures Airfield
- Lawn
- Other

— % **Residential**

— % **Roads**

— % **Other**

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 131' Maximum width: 57'

Water Depth (inches): Maximum when observed: 9" Estimated spring maximum: 10"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | 4 | Red Maple, White Pine Paper Birch |
| Shrub (0.5m to <5m) | 2 | Unknown shrub |
| Herb/Emergent (0 to <0.5m) | ————— | |
| Floating /Submerged | ————— | |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland → South portion of Airfield | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>Seasonal outflow, no inflow to no obligate species</i> |

Maximum depth at the time of survey: 9 (in) ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|---|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input checked="" type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|-------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>2(1)</u> | <u>S</u> | <u>3</u> | | | | |
| <i>Spotted Salamander</i> | | | | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 6 (°F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: M 75
2004

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/8 Time of Observation: 09:21 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 74/IV

Significant Vernal Pool? Yes No

Why or why not? 3 Wood Frog & 2 Spotted Salamander egg masses detected during 2nd round of visits (4/14). 7 Wood Frog & 4 Spotted Salamander egg masses found during 3rd round of visits

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.94540 Latitude/Northing: 43.87455

Model of GPS Unit: Trimble GeoXH

Check one:

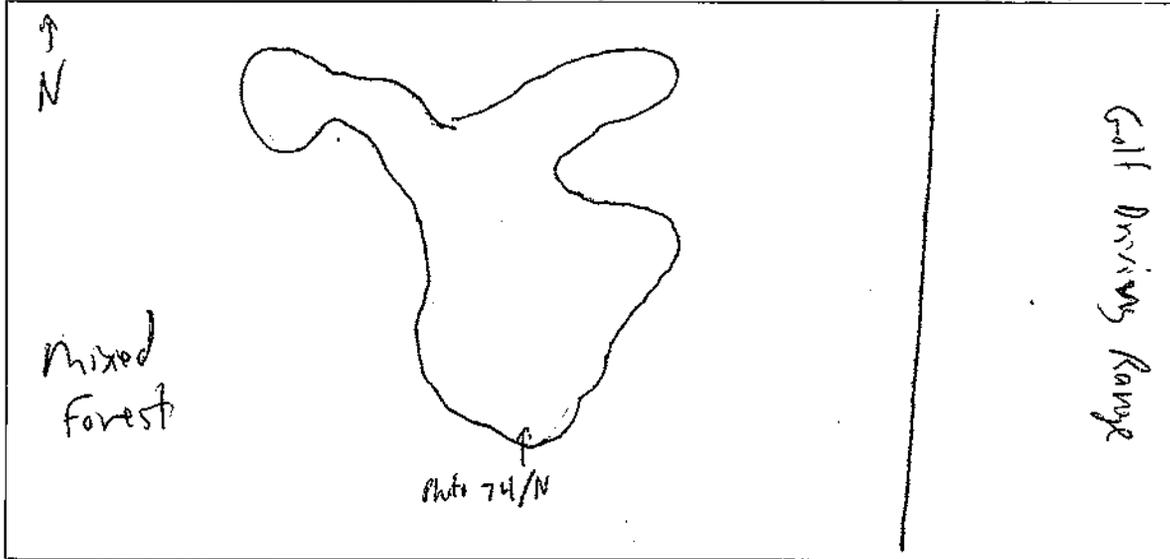
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 3 (circle one) feet in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: ~ 5m east of security fence; 50m east of road into base & 60m west of driving range/lawn.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%)*

- 70 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- | | |
|---|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input checked="" type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|

- 0 % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|

15 % Open Land (check most dominant type)

- Active agriculture
- Fields/pastures
- Lawn → driving range
- Other

 % Residential

5 % Roads

 % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 48' Maximum width: 46'

Water Depth (inches): Maximum when observed: 6" Estimated spring maximum: 9"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | 4 | Red Maple, Paper Birch |
| Shrub (0.5m to <5m) | 2 | Speckled Alder |
| Herb/Emergent (0 to <0.5m) | 1 | unknown grass |
| Floating /Submerged | _____ | _____ |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland <u>golf driving range</u> | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown

If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no inflow/outflow or obligate spp.</i> |

Maximum depth at the time of survey: 6 in / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|---|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 7 | S | 3 | S | 3 | — | — |
| <i>Spotted Salamander</i> | 4 | S | 3 | — | — | — | — |
| <i>Blue-spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Fairy Shrimp</i> | — | — | — | — | — | — | — |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 65 °F / °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <i>Wood Turtle</i> | <input type="checkbox"/> |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <i>Ribbon Snake</i> | <input type="checkbox"/> |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <i>Other:</i> | <input type="checkbox"/> |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/8 Time of Observation: 1010 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 78/N

Significant Vernal Pool? Yes No

Why or why not? No egg masses found during 2nd round of visit; (4/15).
1 spotted Salamander egg mass found during 3rd round of visit; (4/29).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.94283 Latitude/Northing: 43.87155

Model of GPS Unit: Trimble GeoXT

Check one:

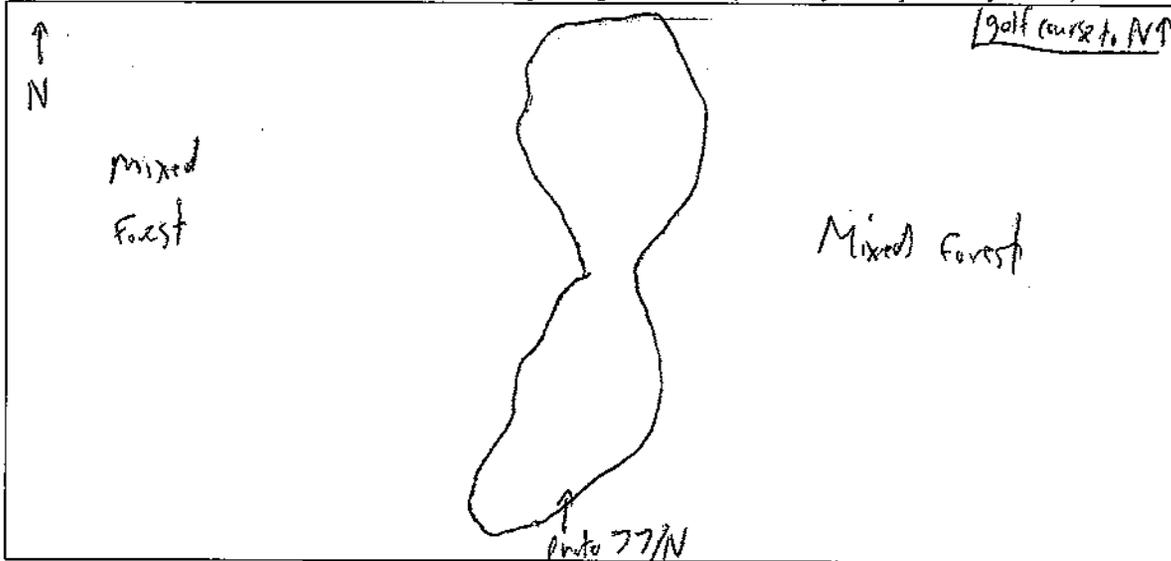
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 15 feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: Location is ~ 60 m west of golf course.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 85 % **Woodland** (check most dominant type) → **For woodland habitat, is the overstory?**
- Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)
 - Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)
- % **Utility ROW** (check most dominant type) → **For Utility ROW, ID dominant vegetation type?**
- Pipeline
 - Electric
 - Other
 - Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground
- 15 % **Open Land** (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn → golf course
 - Other
- % **Residential**
- % **Roads**
- % **Other**

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 100' Maximum width: 16'

Water Depth (inches): Maximum when observed: 9" Estimated spring maximum: 11"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

Forested Shrub/Scrub Emergent Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | 3 | Balsam Fir, Red Maple |
| Shrub (0.5m to <5m) | 2 | Speckled Alder |
| Herb/Emergent (0 to <0.5m) | 3 | Unknown grasses |
| Floating /Submerged | _____ | _____ |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland golf course | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>See no obligate species & no inflow/outflow</i> |

Maximum depth at the time of survey: _____ in / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No
 Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|---|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | | | | | | | |
| <i>Spotted Salamander</i> | 1 | S | 3 | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 54 °F / °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: VP 79
2015

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/4 Time of Observation: 1018 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 78/N

Significant Vernal Pool? Yes No

Why or why not? No egg masses observed during 1st round of visits; (4/10).
3 spotted salamander egg masses found during 3rd round of visits; (4/29).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools: _____

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -6994522 Latitude/Northing: 4387063

Model of GPS Unit: Trimble GeoXH

Check one:

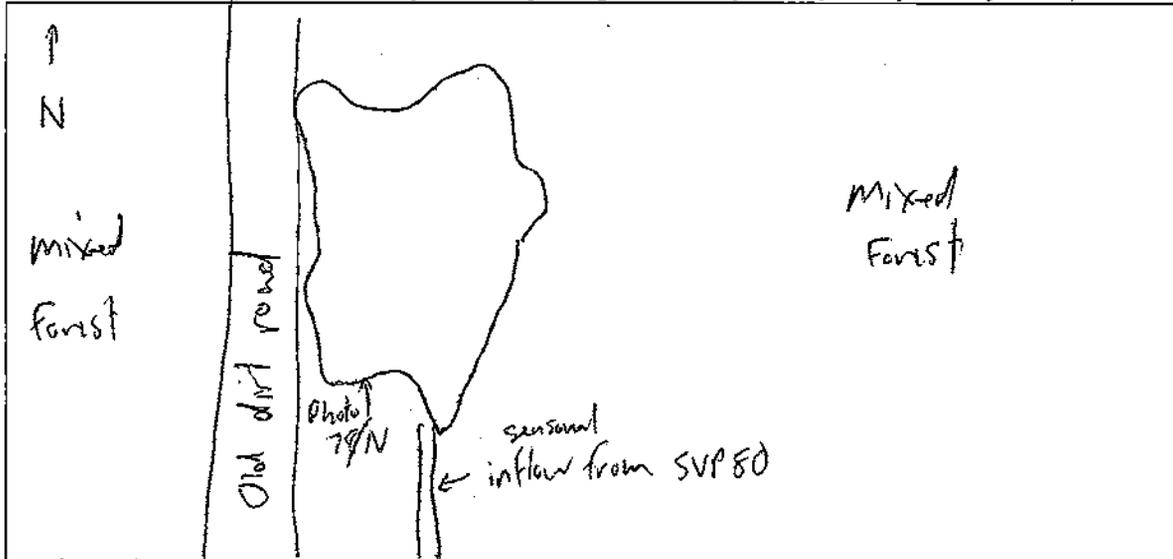
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 5 (m) feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: ~ 2m east of wooded service (dirt) road.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 96 % Woodland (check most dominant type) → **For woodland habitat, is the overstory?**
- | | |
|---|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input checked="" type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|
-
- % Utility ROW (check most dominant type) → **For Utility ROW, ID dominant vegetation type?**
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|
-
- % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other
- % Residential
- 10 % Roads → dirt road.
- % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 10' Maximum width: 5'

Water Depth (inches): Maximum when observed: 5" Estimated spring maximum: 8"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | 3 | Red Maple, Red Spruce, White Pine |
| Shrub (0.5m to <5m) | 2 | Meadow Sweet |
| Herb/Emergent (0 to <0.5m) | 3 | Juncus, Cinnamom fern |
| Floating /Submerged | _____ | _____ |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway <u>old dirt road</u> |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | no obligate species, no inflow/outflow |

Maximum depth at the time of survey: 5 / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|---|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input checked="" type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|---|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | | | | | | | |
| <i>Spotted Salamander</i> | 3 | S | 3 | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 54 / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: VP 94
zone 5

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/8 Time of Observation: 1247 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 99/N

Significant Vernal Pool? Yes No

Why or why not? 1 Wood Frog Egg mass detected during the 2nd round of visits; (4/15).
3 wood frog & 5 spotted Salamander egg masses found during 3rd round
of visits; (4/30).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.93716 Latitude/Northing: 43.86982

Model of GPS Unit: Trimble GeoXH

Check one:

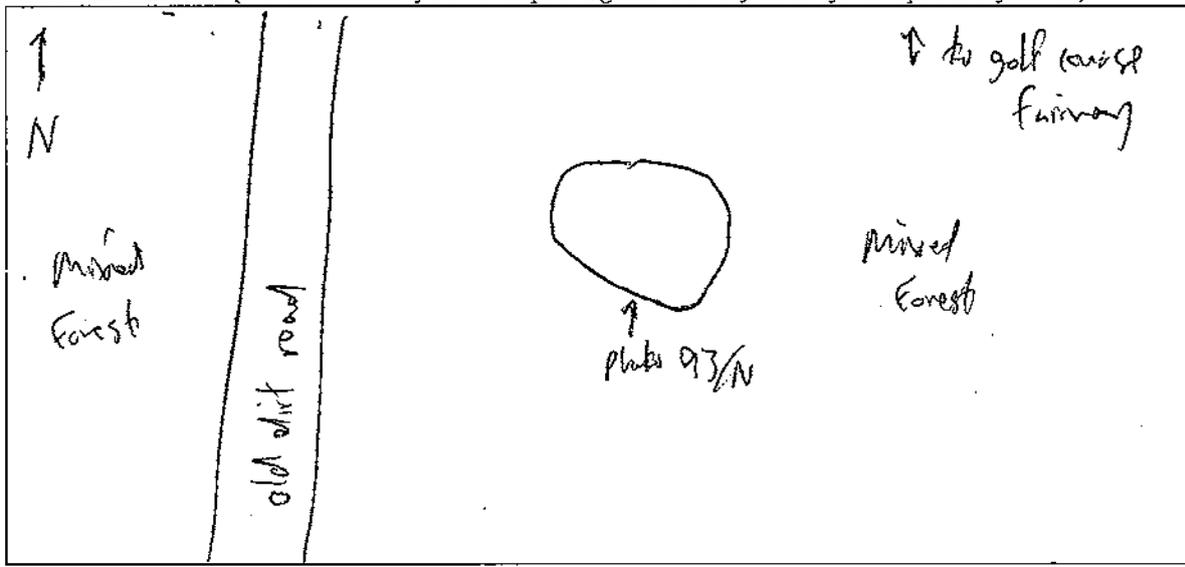
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 4 (m) feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: ~ 1 m north of dirt rd.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 80 % **Woodland** (check most dominant type) → **For woodland habitat, is the overstory?**
- Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)
- Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)

- % **Utility ROW** (check most dominant type) → **For Utility ROW, ID dominant vegetation type?**
- Pipeline
 - Electric
 - Other
- Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground

- 10 % **Open Land** (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn *golf course*
 - Other

— % Residential

10 % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 12' Maximum width: 8'

Water Depth (inches): Maximum when observed: 5" Estimated spring maximum: 7"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | 4 | White Pine |
| Shrub (0.5m to <5m) | 5 | Speckled Alder, hudson sedge + sedge grass |
| Herb/Emergent (0 to <0.5m) | 4 | Unknown grasses, moss + some juncus |
| Floating /Submerged | _____ | _____ |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input checked="" type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland (golf course) | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. Natural Origin Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. Hydrology Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no inflow/outflow & no obligate species</i> |

Maximum depth at the time of survey: 5 (in) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No
 Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|---|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 3 | S | 3 | S | 3 | — | — |
| <i>Spotted Salamander</i> | 5 | S | 3 | — | — | — | — |
| <i>Blue-spotted Salamander</i> | | — | — | — | — | — | — |
| <i>Fairy Shrimp</i> | | — | — | — | — | — | — |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 60 (°F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/9 Time of Observation: 1357 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 96/N

Significant Vernal Pool? Yes No

Why or why not? No egg masses detected during the 2nd round of visits; (4/15).
No spotted salamander and no fairy shrimp detected during the 3rd round of visits; (4/30).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: 769.93601 Latitude/Northing: 4387027

Model of GPS Unit: Trimble GeoXH

Check one:

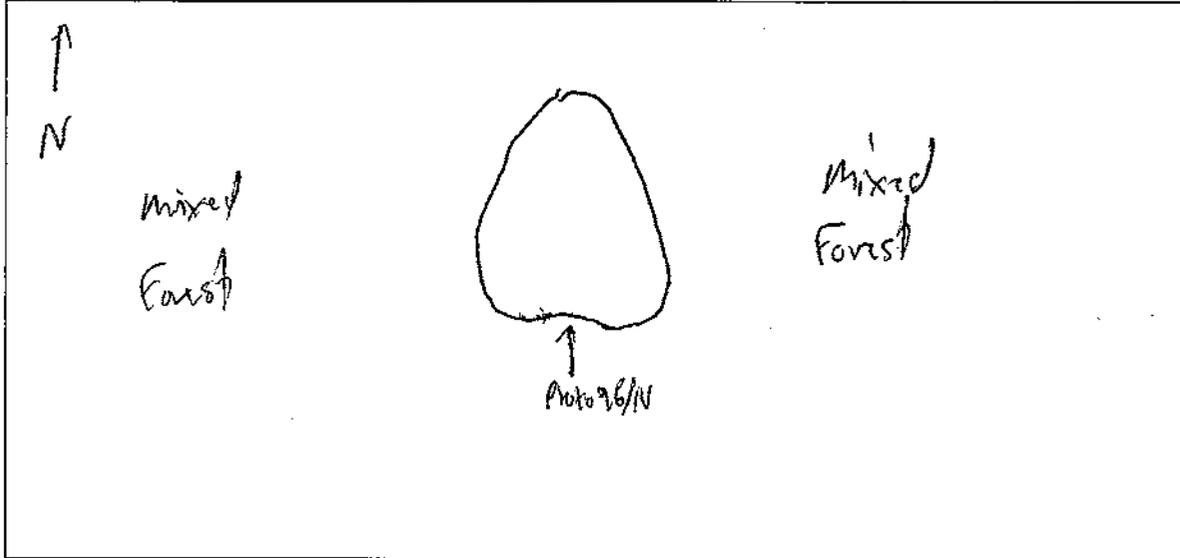
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 4 feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: _____

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 106 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- | | |
|---|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input checked="" type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|
-
- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|
-
- % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other
- % Residential
- % Roads
- % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no inflow/outflow or obligate species</i> |

Maximum depth at the time of survey: 7 in / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|-----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | | <hr/> | | <hr/> | | <hr/> | |
| <i>Spotted Salamander</i> | <u>14</u> | <u>S</u> | <u>3</u> | <hr/> | | <hr/> | |
| <i>Blue-spotted Salamander</i> | | <hr/> | | <hr/> | | <hr/> | |
| <i>Fairy Shrimp</i> | | <hr/> | | <hr/> | | <hr/> | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 53 F / C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Bogwumper</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Other: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/8 Time of Observation: 1313 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 98/N

Significant Vernal Pool? Yes No

Why or why not? No egg masses found during 2nd round of visits; (4/15).
I heard cry of 1 spotted salamander egg masses collected during 3rd round of
visits; (4/30).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools: _____

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.93593 Latitude/Northing: 43.86908

Model of GPS Unit: Trimble GeoXH

Check one:

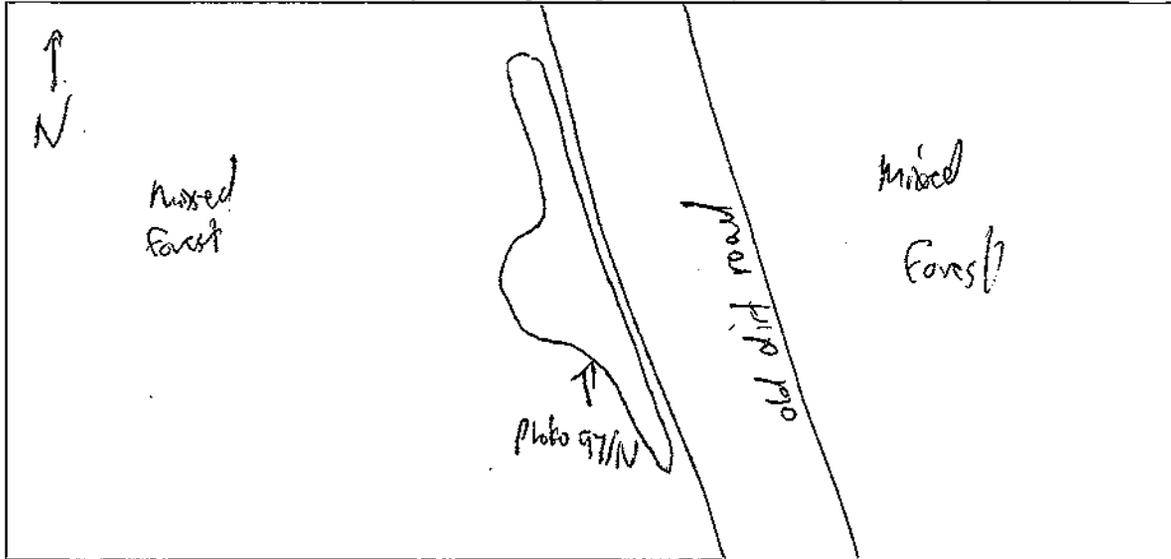
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 2 feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: on south side of dirt road (ditch).

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 90 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)
 - Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)

- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- Pipeline
 - Electric
 - Other
 - Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground

- % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other

 % Residential

10 % Roads *dirt road*

 % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 108' Maximum width: 11'

Water Depth (inches): Maximum when observed: 12" Estimated spring maximum: 14"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | <u>3</u> | <u>Balsam Fir & White Pine</u> |
| Shrub (0.5m to <5m) | <u>2</u> | <u>Unknown shrub, American Sweet</u> |
| Herb/Emergent (0 to <0.5m) | _____ | _____ |
| Floating /Submerged | _____ | _____ |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway <u>old dirt road</u> |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>Inflow/outflow probably only during rain events. No drainage ditches</i> |

Maximum depth at the time of survey: 12 ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|-----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>2</u> | S | 3 | | | | |
| <i>Spotted Salamander</i> | <u>12</u> | S | 3 | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 49 °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: AVP III
Zone 5

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/8 Time of Observation: 1702 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 110/N

Significant Vernal Pool? Yes No

Why or why not? 4 wood frog + 3 spotted salamander egg masses found during 2nd round of visits; (4/15). wood frogs were vocalizing during this visit. 4 wood frog + 4 spotted salamander egg masses detected during 3rd round of visits; (4/30).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.93835 Latitude/Northing: 43.86402
Model of GPS Unit: Trimble Geo XT

Check one:

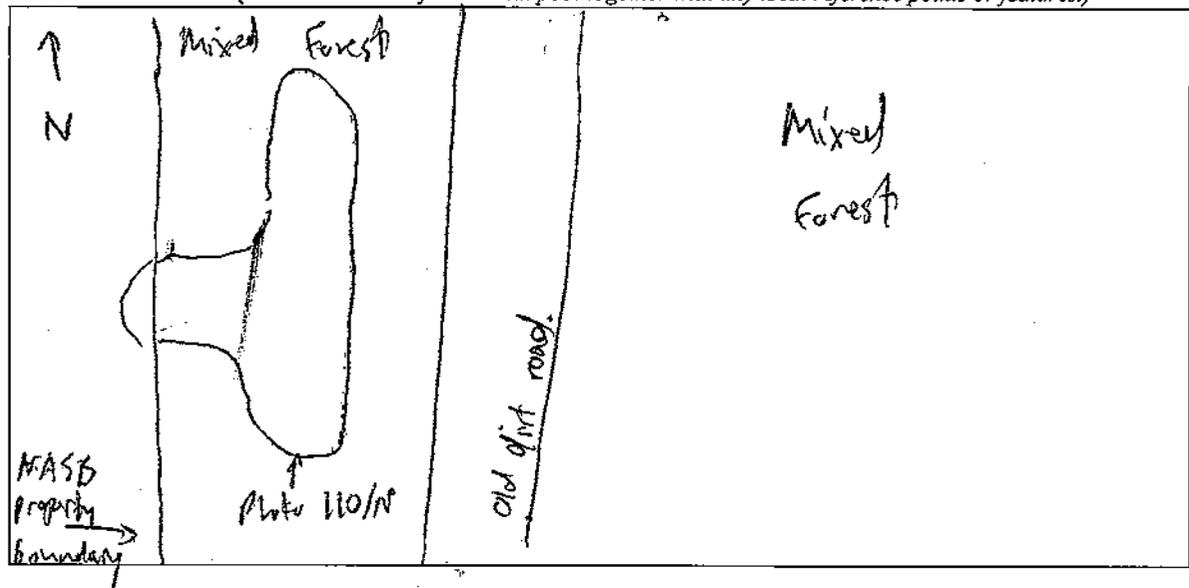
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 13 m/feet (circle one) in the compass direction of SW degrees from the above GPS point.

Additional notes of GPS location: a 1 m south of dirt road (which is at the southern terminus of the NAS property).

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 90 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
 - Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)
 - Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)

- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
 - Pipeline
 - Electric
 - Other
 - Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground

- % Open Land (check most dominant type)
 - Active agriculture
 - Fields/pastures
 - Lawn
 - Other

- % Residential

- 10 % Roads → *dirt road*

- % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 35' Maximum width: 28'

Water Depth (inches): Maximum when observed: 8" Estimated spring maximum: 10"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | 4 | <i>Red Maple, White Pine & Balsam Fir</i> |
| Shrub (0.5m to <5m) | 3 | <i>Speckled Alder, nodular sedge</i> |
| Herb/Emergent (0 to <0.5m) | 4 | <i>Sensitive fern, bottle brush, hair known grasses</i> |
| Floating /Submerged | _____ | _____ |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway <i>old dirt road</i> |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no inflow/outflow, no obligate species</i> |

Maximum depth at the time of survey: 8 ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No
 Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|-----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>40</u> | <u>S</u> | <u>3</u> | | | | |
| <i>Spotted Salamander</i> | <u>4</u> | <u>S</u> | <u>3</u> | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 58 °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: VP 172
Zawny

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/9 Time of Observation: 12/4 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 182/10

Significant Vernal Pool? Yes No

Why or why not? I used frog egg masses detected during the first round of visits; (4/17). I did not find frog egg masses that have hatched and tadpoles found during 2nd round of visits; (4/30). No fairy shrimp detected during 2nd round.

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools: _____

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.93572 Latitude/Northing: 43.87742

Model of GPS Unit: Trimble GeoXH

Check one:

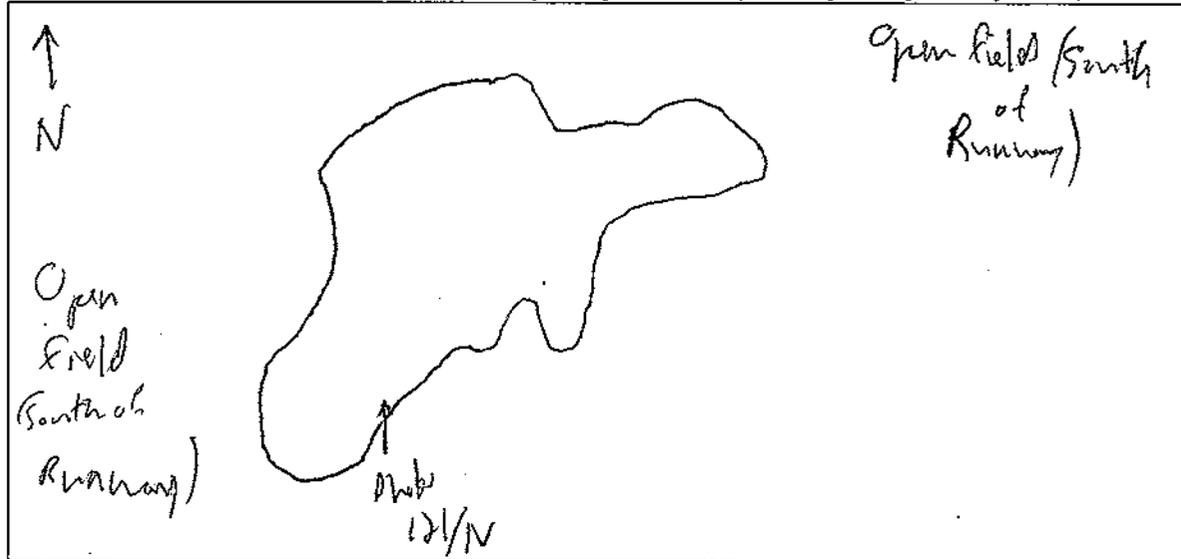
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 4 m/feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: ~ 150 m south of end of NAS runway's southern terminus

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- | | |
|---|---|
| <p><u> </u> % Woodland (check most dominant type) →</p> <p><input type="checkbox"/> Hardwood (>75% deciduous)</p> <p><input type="checkbox"/> Softwood (>75% coniferous)</p> <p><input type="checkbox"/> Mixed (all others)</p> | <p>For woodland habitat, is the overstory?</p> <p><input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall)</p> <p><input type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall)</p> <p><input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall)</p> |
| <p><u> </u> % Utility ROW (check most dominant type) →</p> <p><input type="checkbox"/> Pipeline</p> <p><input type="checkbox"/> Electric</p> <p><input type="checkbox"/> Other</p> | <p>For Utility ROW, ID dominant vegetation type?</p> <p><input type="checkbox"/> Shrubs</p> <p><input type="checkbox"/> Grass/forb</p> <p><input type="checkbox"/> Mixed-shrub/grass/forb</p> <p><input type="checkbox"/> Bare ground</p> |
| <p><u>100</u> % Open Land (check most dominant type)</p> <p><input type="checkbox"/> Active agriculture</p> <p><input checked="" type="checkbox"/> Fields/pastures → <i>field south of runway.</i></p> <p><input type="checkbox"/> Lawn</p> <p><input type="checkbox"/> Other</p> | |
| <p><u> </u> % Residential</p> | |
| <p><u> </u> % Roads</p> | |
| <p><u> </u> % Other</p> | |

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 12' Maximum width: 47'

Water Depth (inches): Maximum when observed: 6" Estimated spring maximum: 9"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|------------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | _____ | _____ |
| Shrub (0.5m to <5m) | _____ | _____ |
| Herb/Emergent (0 to <0.5m) | <u>4</u> | <u>Cranberries, unknown grasses, Juncus</u> |
| Floating /Submerged | _____ | _____ |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input checked="" type="checkbox"/> Emergent marsh (cranberry bog) | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|---|--|
| <input type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland (airfield area) | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>in inflow/outflow, w. emergent species</i> |

Maximum depth at the time of survey: 6 (in) ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|---------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>14</u> (6) | <u>S</u> | <u>3</u> | <u>S</u> | <u>3</u> | <u>S</u> | <u>3</u> |
| <i>Spotted Salamander</i> | | | | | | | |
| <i>Blue-spotted Salamander</i> | <u>5</u> | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 60 (°F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: 0V124
zone 4

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/9 Time of Observation: 12:27 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 124/N

Significant Vernal Pool? Yes No

Why or why not? M wood frog egg masses collected during 2nd round of visits; (4/17).
No egg masses or fairy shrimp found during 3rd round of visits; (4/30).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.93613 Latitude/Northing: 43.87674

Model of GPS Unit: Trimble GeoXH

Check one:

- The above GPS point is at the center of the pool.
- The center of the pool is approximately 7 feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: ~270 m south of southern terminus
of runway.

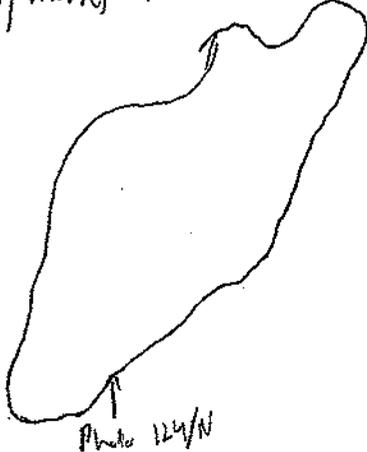
Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*

4/9 - 13 Wood Frog egg masses found in this VP

Open Field
(South of Airfield)



Open Field
(South of Airfield)

SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- | | |
|--|---|
| <p><u> </u> % Woodland (check most dominant type) →</p> <ul style="list-style-type: none"> <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input type="checkbox"/> Mixed (all others) | <p>For woodland habitat, is the overstory?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
| <p><u> </u> % Utility ROW (check most dominant type) →</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <p>For Utility ROW, ID dominant vegetation type?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
| <p><u>100</u> % Open Land (check most dominant type)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Active agriculture <input checked="" type="checkbox"/> Fields/pastures <i>airfield</i> <input type="checkbox"/> Lawn <input type="checkbox"/> Other | |
| <p><u> </u> % Residential</p> | |
| <p><u> </u> % Roads</p> | |
| <p><u> </u> % Other</p> | |

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 54' Maximum width: 27'

Water Depth (inches): Maximum when observed: 5" Estimated spring maximum: 8"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

List the percent cover of dominant vegetation by height strata within the pool:

| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
|----------------------------|----------------|--|
| Tree (5m and above) | _____ | _____ |
| Shrub (0.5m to <5m) | _____ | _____ |
| Herb/Emergent (0 to <0.5m) | 5 | <i>Indigo grasses, Ranunc, some cranberries</i> |
| Floating /Submerged | _____ | _____ |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

Check the palustrine types that best apply to this pool or wetland:

| | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input checked="" type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: |

Check all surrounding habitat types within 250 feet of the pool:

| | |
|--|--|
| <input type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland (<i>Arfield</i>) | <input type="checkbox"/> Other: _____ |

Comments:

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no mtlan/outlet or obligate species</i> |

Maximum depth at the time of survey: 15 (in) / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|---------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>14 (0)</u> | <u>S</u> | <u>3</u> | <u>S</u> | <u>3</u> | | |
| <i>Spotted Salamander</i> | | | | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 62 (F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: VP 128
zone 6

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/9 Time of Observation: 1407 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 1291 SSE

Significant Vernal Pool? Yes No

Why or why not? 2 Wood Frog egg masses collected during 1st round of visits; (4/15). 1 wood frog spotted 5/11. 1 salamander egg mass found during 3rd round of visits; (5/11)

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:
Longitude/Easting: -69.93829 Latitude/Northing: 43.87112
Model of GPS Unit: Trimble GeoXH
Check one:

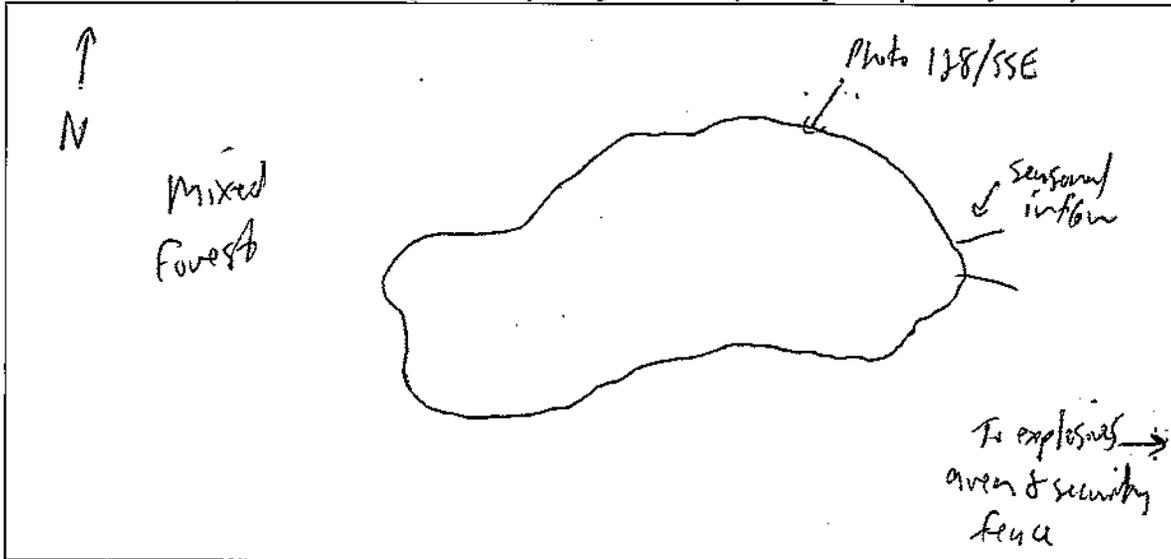
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 5 feet (circle one) in the compass direction of SSE degrees from the above GPS point.

Additional notes of GPS location: ~ 30 m west of security fence.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 80 % **Woodland** (check most dominant type) → **For woodland habitat, is the overstory?**
- | | |
|--|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|--|--|
-
- % **Utility ROW** (check most dominant type) → **For Utility ROW, ID dominant vegetation type?**
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|
-
- 20 % **Open Land** (check most dominant type)
- | | |
|---|--|
| <input type="checkbox"/> Active agriculture <input checked="" type="checkbox"/> Fields/pastures → <i>explosives field</i> <input type="checkbox"/> Lawn <input type="checkbox"/> Other | |
|---|--|
- % **Residential**
- % **Roads**
- % **Other**

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 68' Maximum width: 14'

Water Depth (inches): Maximum when observed: 6" Estimated spring maximum: 9"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | 4 | Balsam Fir, Red Maple, Paper Birch |
| Shrub (0.5m to <5m) | 2 | Mallow swat, Unknown shrub. |
| Herb/Emergent (0 to <0.5m) | 3 | Unknown grasses, Juncus Scripus |
| Floating /Submerged | _____ | _____ |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland <u>openness field</u> | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/10 Time of Observation: 1010 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 139/NE

Significant Vernal Pool? Yes No

Why or why not? No eggs masses found during the 2nd round of visits; (4/16).
8 spotted salamander egg masses found during the 3rd round of visits; (4/29).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools: _____

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.92470 Latitude/Northing: 43.86289

Model of GPS Unit: Trimble GeoXH

Check one:

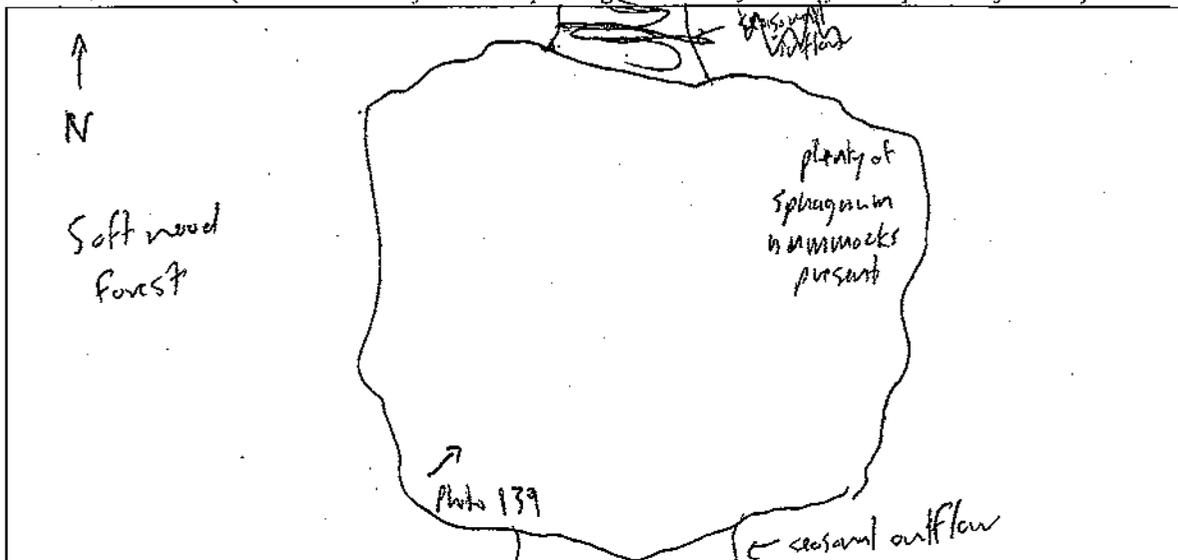
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 20 m/feet (circle one) in the compass direction of NE degrees from the above GPS point.

Additional notes of GPS location: _____

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- | | |
|---|--|
| <p><u>100</u> % Woodland (check most dominant type) →</p> <ul style="list-style-type: none"> <input type="checkbox"/> Hardwood (>75% deciduous) <input checked="" type="checkbox"/> Softwood (>75% coniferous) <input type="checkbox"/> Mixed (all others) | <p>For woodland habitat, is the overstory?</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
| <p><u> </u> % Utility ROW (check most dominant type) →</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <p>For Utility ROW, ID dominant vegetation type?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
| <p><u> </u> % Open Land (check most dominant type)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Active agriculture <input type="checkbox"/> Fields/pastures <input type="checkbox"/> Lawn <input type="checkbox"/> Other | |
| <p><u> </u> % Residential</p> | |
| <p><u> </u> % Roads</p> | |
| <p><u> </u> % Other</p> | |

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 214' Maximum width: 157'

Water Depth (inches): Maximum when observed: 8" Estimated spring maximum: 11"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <small>(list up to 3 for each strata)</small> |
| Tree (5m and above) | <u>5</u> | <u>Redwood Fir, Led Spruce</u> |
| Shrub (0.5m to <5m) | _____ | _____ |
| Herb/Emergent (0 to <0.5m) | <u>1</u> | <u>Wetland grasses</u> |
| Floating /Submerged | _____ | _____ |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no m flow, no obligate spp. present.</i> |

Maximum depth at the time of survey: 8 (in) / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|---|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input checked="" type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|---|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | | _____ | | _____ | | _____ | |
| <i>Spotted Salamander</i> | 8 | S | 3 | _____ | | _____ | |
| <i>Blue-spotted Salamander</i> | | _____ | | _____ | | _____ | |
| <i>Fairy Shrimp</i> | | _____ | | _____ | | _____ | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 48 (°F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Other: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: VP 143
2017

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/16 Time of Observation: 1151 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 145/NE

Significant Vernal Pool? Yes No

Why or why not? 4 wood frog egg masses found during the 2nd round of visits; (4/16).
6 wood frog egg masses found during 3rd round of visits; (4/18).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools: _____

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69-91936 Latitude/Northing: 43.86844

Model of GPS Unit: Tcimble GeoXH

Check one:

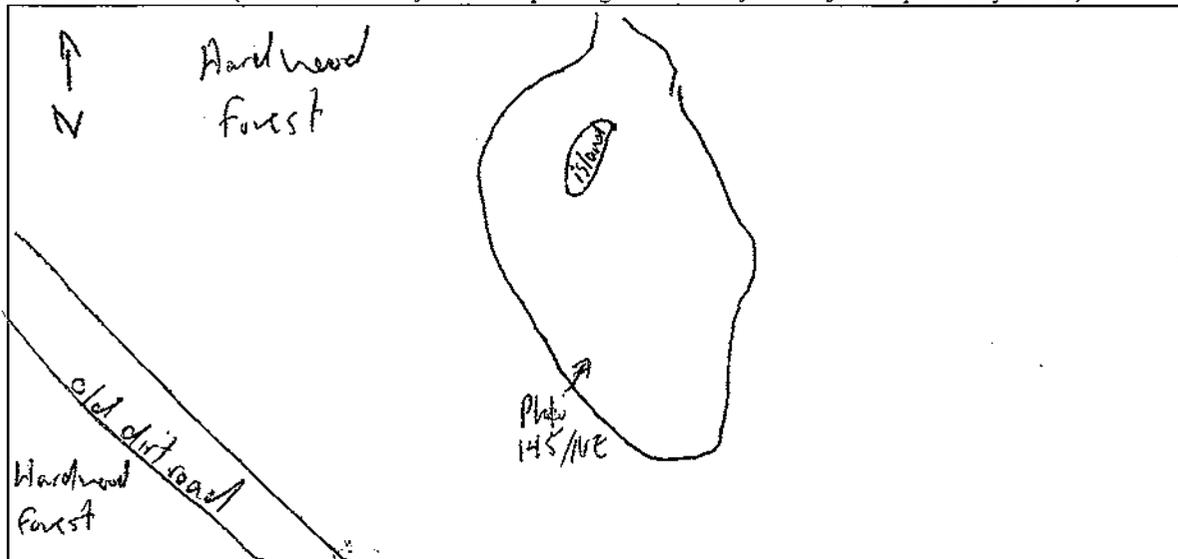
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 7 feet (circle one) in the compass direction of NE degrees from the above GPS point.

Additional notes of GPS location: ~40 m east of ditch road separating
zone 7 & zone 5. There are wood frogs calling in this VVP & one wood
frog egg mass was detected on 4/16.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 95 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- | | |
|---|--|
| <input checked="" type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|
-
- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|
-
- / % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other
- % Residential
- 5 % Roads → old dirt road
- % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no oblique species or inflow/outflow</i> |

Maximum depth at the time of survey: 1 (m) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|---|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 6 | S | 3 | S | 3 | — | — |
| <i>Spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Blue-spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Fairy Shrimp</i> | — | — | — | — | — | — | — |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 55 (F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/10 Time of Observation: 1254 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 181/N

Significant Vernal Pool? Yes No

Why or why not? No eggs masses detected during 2nd round of visit; (4/16).
11 spotted Salamanders egg masses detected during 3rd round of visit; (4/29).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.92463 Latitude/Northing: 43.86089

Model of GPS Unit: Trimble GeoXH

Check one:

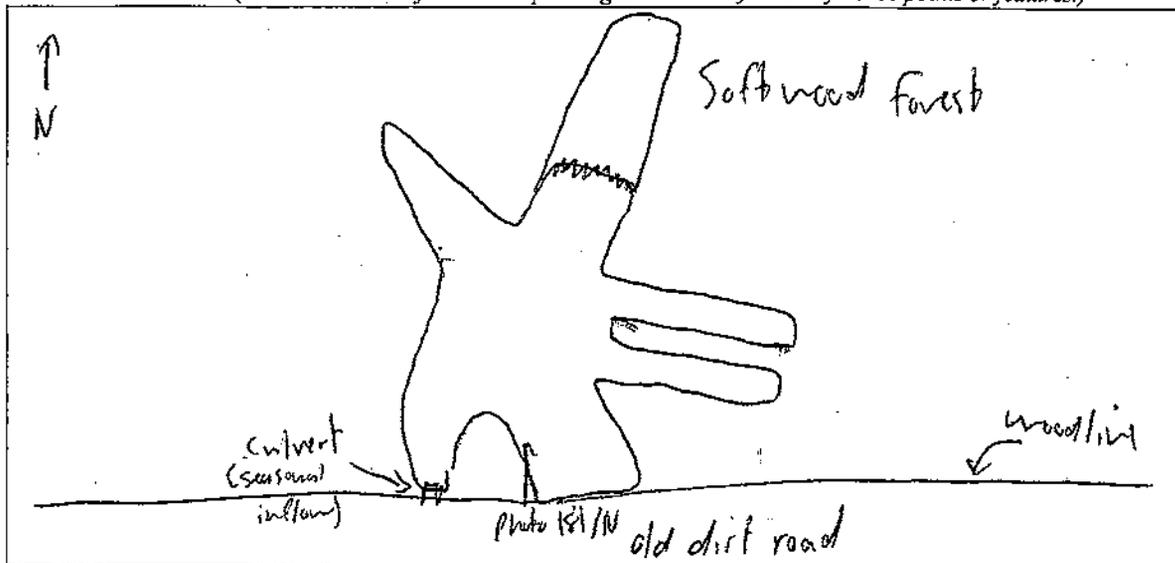
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 4 feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: location is just north of the security fence on the perimeter of the NAS property.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

85 % Woodland (check most dominant type) →

- Hardwood (>75% deciduous)
- Softwood (>75% coniferous)
- Mixed (all others)

For woodland habitat, is the overstory?

- Heavy (>50% canopy cover of trees and shrubs >6' tall)
- Moderate (25-50% canopy cover of trees/shrubs >6' tall)
- Sparse (<25% canopy cover of trees/shrubs >6' tall)

— % Utility ROW (check most dominant type) →

- Pipeline
- Electric
- Other

For Utility ROW, ID dominant vegetation type?

- Shrubs
- Grass/forb
- Mixed-shrub/grass/forb
- Bare ground

— % Open Land (check most dominant type)

- Active agriculture
- Fields/pastures
- Lawn
- Other

— % Residential

15 % Roads → dirt road

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 117' Maximum width: 70'

Water Depth (inches): Maximum when observed: 5" Estimated spring maximum: 6"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested Shrub/Scrub Emergent Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | 3 | White Pine, Red Maple |
| Shrub (0.5m to <5m) | 3 | Speckled Alder |
| Herb/Emergent (0 to <0.5m) | 2 | unknown grasses |
| Floating /Submerged | _____ | |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway <u>old dirt road</u> |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>even with inflow area is shallow with no oblique aquatic species</i> |

Maximum depth at the time of survey: 9 5 (m) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input checked="" type="checkbox"/> Other: <i>inlet from wetland across road but doesn't seem to be permanent inflow</i> |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|-----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | | | | | | | |
| <i>Spotted Salamander</i> | <u>11</u> | <u>S</u> | <u>3</u> | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 47 (°F) / °C (circle one)

Rarity Criteria *(check all boxes that apply)*:

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/10 Time of Observation: 1440 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 154 / N

Significant Vernal Pool? Yes No

Why or why not? No egg masses detected during 2nd round of visits; (4/14), 6 spotted salamanders & 1 wood frog egg mass detected during 3rd round of visits; (4/29).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.91749 Latitude/Northing: 43.89073

Model of GPS Unit: Trimble GeoXH

Check one:

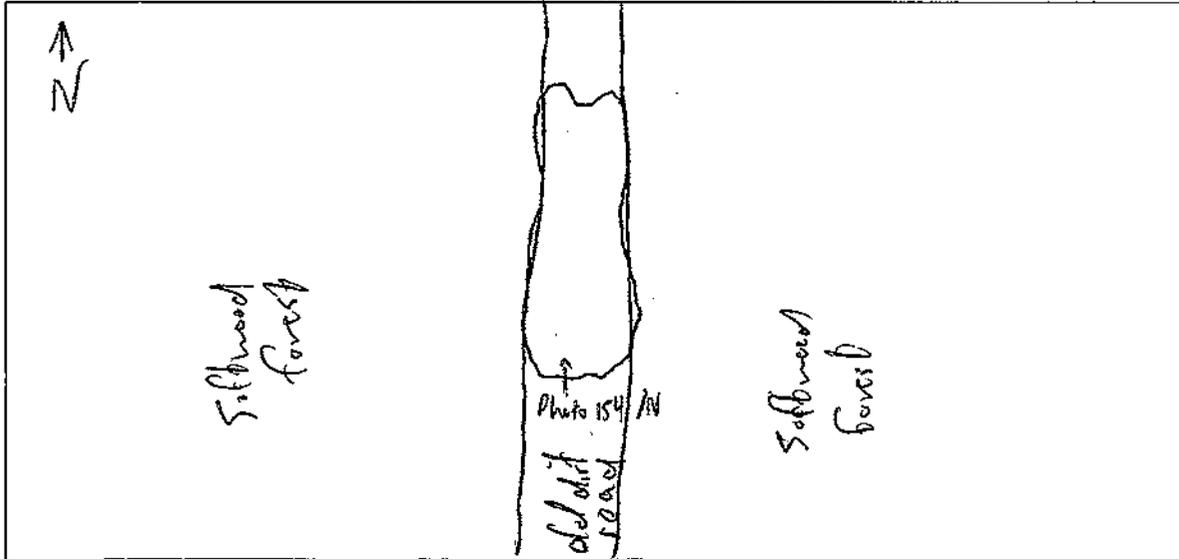
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 7 feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: within old dirt road.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 90 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)
- Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)
- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- Pipeline
 - Electric
 - Other
- Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground
- % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other
- % Residential
- 10 % Roads → old dirt road
- % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 68' Maximum width: 10'

Water Depth (inches): Maximum when observed: 10" Estimated spring maximum: 12"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested Shrub/Scrub Emergent Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | 4 | Red Spruce, White Pine, Red maple |
| Shrub (0.5m to <5m) | 2 | Unknown shrub |
| Herb/Emergent (0 to <0.5m) | 1 | Unknown grass |
| Floating /Submerged | _____ | _____ |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway <u>old dirt road</u> |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. Natural Origin Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. Hydrology Select the pool's likely hydroperiod AND give evidence.

| | |
|---|-------------------------|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <u>in bottom/center</u> |

Maximum depth at the time of survey: 10 (in) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>1</u> | <u>S</u> | <u>3</u> | _____ | _____ | _____ | _____ |
| <i>Spotted Salamander</i> | <u>7</u> | <u>S</u> | <u>3</u> | _____ | _____ | _____ | _____ |
| <i>Blue-spotted Salamander</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| <i>Fairy Shrimp</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 56 (F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A – GENERAL INFORMATION

Date: 4/10 Time of Observation: 1452 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 155/W

Significant Vernal Pool? Yes No

Why or why not? No egg masses detected during 2nd round of visits; (4/14).
2 wood frog & 2 spotted salamander egg masses during 3rd round of visits; (4/24).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B – VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.91795 Latitude/Northing: 43.89221

Model of GPS Unit: Trimble GeoXH

Check one:

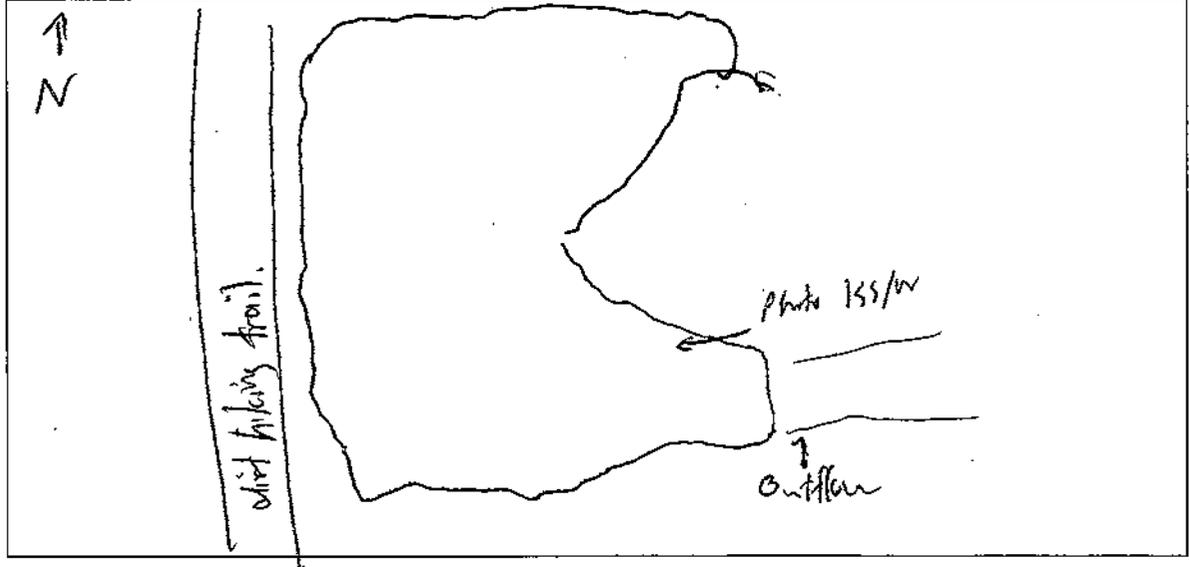
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 10 @/feet (circle one) in the compass direction of W degrees from the above GPS point.

Additional notes of GPS location: location ~ 2 m east of old dirt road.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

90 % Woodland (check most dominant type) →

- Hardwood (>75% deciduous)
- Softwood (>75% coniferous)
- Mixed (all others)

For woodland habitat, is the overstory?

- Heavy (>50% canopy cover of trees and shrubs >6' tall)
- Moderate (25-50% canopy cover of trees/shrubs >6' tall)
- Sparse (<25% canopy cover of trees/shrubs >6' tall)

— % Utility ROW (check most dominant type) →

- Pipeline
- Electric
- Other

For Utility ROW, ID dominant vegetation type?

- Shrubs
- Grass/forb
- Mixed-shrub/grass/forb
- Bare ground

— % Open Land (check most dominant type)

- Active agriculture
- Fields/pastures
- Lawn
- Other

— % Residential

10 % Roads → dirt hiking trail

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 126' Maximum width: 82'

Water Depth (inches): Maximum when observed: 28" Estimated spring maximum: 31"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | 4 | <i>Red Maple, Red Spruce + white pine</i> |
| Shrub (0.5m to <5m) | 2 | <i>Speckled Alder</i> |
| Herb/Emergent (0 to <0.5m) | — | — |
| Floating /Submerged | — | — |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|---|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway → <i>hiking trail</i> |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown

If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|------------------------------------|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no inflow, seasonal outflow</i> |

Maximum depth at the time of survey: 28 (in) / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>2</u> | <u>S</u> | <u>3</u> | _____ | _____ | _____ | _____ |
| <i>Spotted Salamander</i> | <u>1</u> | <u>S</u> | <u>3</u> | _____ | _____ | _____ | _____ |
| <i>Blue-spotted Salamander</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| <i>Fairy Shrimp</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 56 (°F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|-------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/13 (2nd round of visits) Time of Observation: 1011 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 162/N

Significant Vernal Pool? Yes No

Why or why not? 17 wood frog egg masses found during 1st visit to this vernal pool (during 2nd round of visits; 4/13). No egg masses found during 3rd round of visits; (4/28) for fairy shrimp

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools: _____

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.92328 Latitude/Northing: 43.90148

Model of GPS Unit: Trimble GeoXH

Check one:

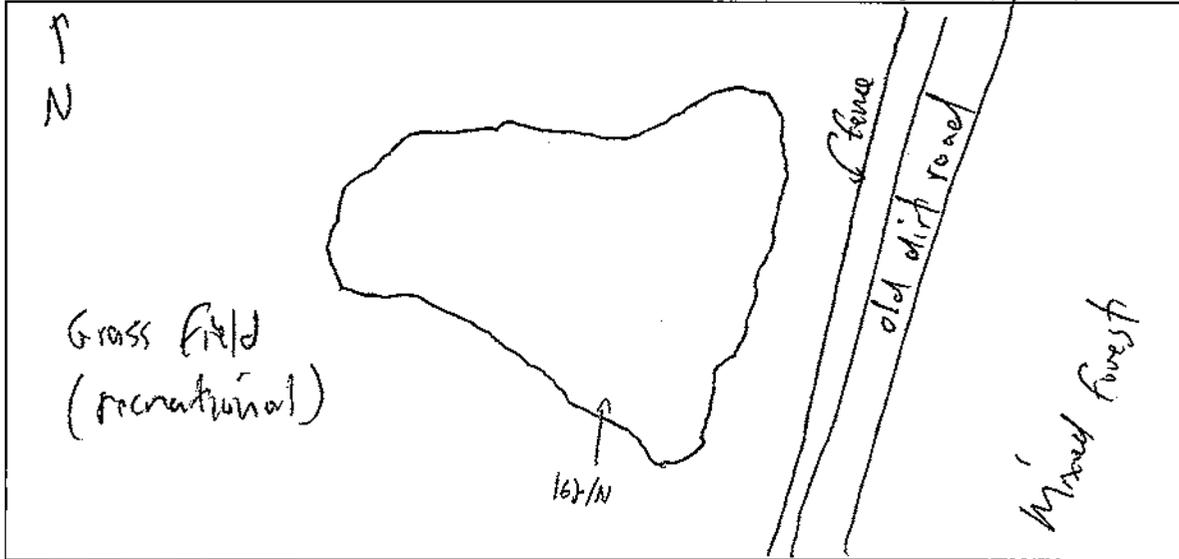
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 4 (circle one) feet in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: Location is NE corner of field that is connected to a baseball field.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%)*

70 % Woodland (check most dominant type) →

- Hardwood (>75% deciduous)
- Softwood (>75% coniferous)
- Mixed (all others)

For woodland habitat, is the overstory?

- Heavy (>50% canopy cover of trees and shrubs >6' tall)
- Moderate (25-50% canopy cover of trees/shrubs >6' tall)
- Sparse (<25% canopy cover of trees/shrubs >6' tall)

— % Utility ROW (check most dominant type) →

- Pipeline
- Electric
- Other

For Utility ROW, ID dominant vegetation type?

- Shrubs
- Grass/forb
- Mixed-shrub/grass/forb
- Bare ground

30 % Open Land (check most dominant type)

- Active agriculture
- Fields/pastures *recreational field*
- Lawn
- Other

— % Residential

— % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 59' Maximum width: 57'

Water Depth (inches): Maximum when observed: 12" Estimated spring maximum: 15"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | _____ | _____ |
| Shrub (0.5m to <5m) | _____ | _____ |
| Herb/Emergent (0 to <0.5m) | <u>5</u> | <u>Carex, Junco</u> |
| Floating /Submerged | _____ | _____ |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input checked="" type="checkbox"/> Other: <u>Recreational Field</u> |

| Check all surrounding habitat types within 250 feet of the pool: | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland <u>Recreational Field</u> | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--------------------------|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <u>no inflow/outflow</u> |

Maximum depth at the time of survey: 12 (in) / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks; see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|-----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>17</u> | <u>S</u> | <u>3</u> | <u>S</u> | <u>3</u> | <u>S</u> | <u>3</u> |
| <i>Spotted Salamander</i> | | | | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 64 (°F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: VP 166
Zone 4

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/14 Time of Observation: 1442 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 173/NE

Significant Vernal Pool? Yes No

Why or why not? 11 Wood Frog egg masses found during 2nd round of visits; (4/14).
8 wood frog egg masses found during 3rd round of visits; (4/30).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.93797 Latitude/Northing: 43.87768

Model of GPS Unit: Trimble GeoX

Check one:

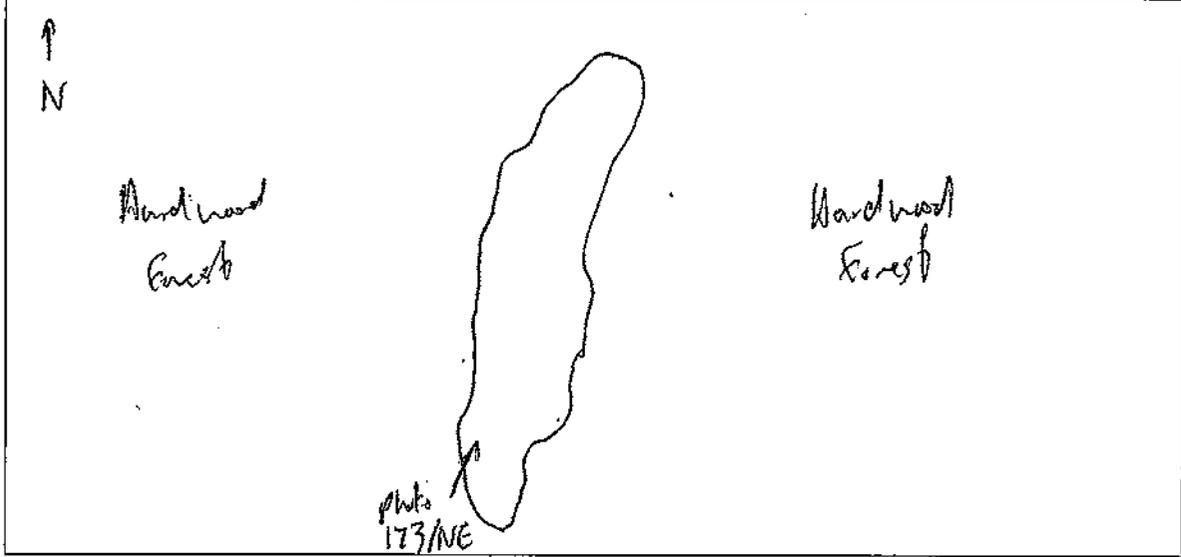
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 10 m/feet (circle one) in the compass direction of NE degrees from the above GPS point.

Additional notes of GPS location: _____

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%).*

- | | |
|---|---|
| <p><u>100</u> % Woodland (check most dominant type) →</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input type="checkbox"/> Mixed (all others) | <p>For woodland habitat, is the overstory?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
| <p><u> </u> % Utility ROW (check most dominant type) →</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <p>For Utility ROW, ID dominant vegetation type?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
| <p><u> </u> % Open Land (check most dominant type)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Active agriculture <input type="checkbox"/> Fields/pastures <input type="checkbox"/> Lawn <input type="checkbox"/> Other | |
| <p><u> </u> % Residential</p> | |
| <p><u> </u> % Roads</p> | |
| <p><u> </u> % Other</p> | |

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 70' Maximum width: 26'

Water Depth (inches): Maximum when observed: 8" Estimated spring maximum: 10"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | 4 | Grey Birch |
| Shrub (0.5m to <5m) | 2 | Sleep Laurel, Meadow Sweet, |
| Herb/Emergent (0 to <0.5m) | _____ | _____ |
| Floating /Submerged | _____ | _____ |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>We collect/borrowed of obligate species</i> |

Maximum depth at the time of survey: 4 in / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No
 Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|--------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>1 (S)</u> | <u>S</u> | <u>3</u> | | | | |
| <i>Spotted Salamander</i> | | | | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 65 °F / °C (circle one)

Rarity Criteria *(check all boxes that apply)*:

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/16 Time of Observation: 1049 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 182 N

Significant Vernal Pool? Yes No

Why or why not? 1-spotted Salamander egg mass found during 2nd round of visits; (4/16).
8-spotted Salamander egg masses found during 3rd round of visits; (4/29).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:
Longitude/Easting: -69.91700 Latitude/Northing: 43.89400
Model of GPS Unit: Trimble GeoXH

Check one:

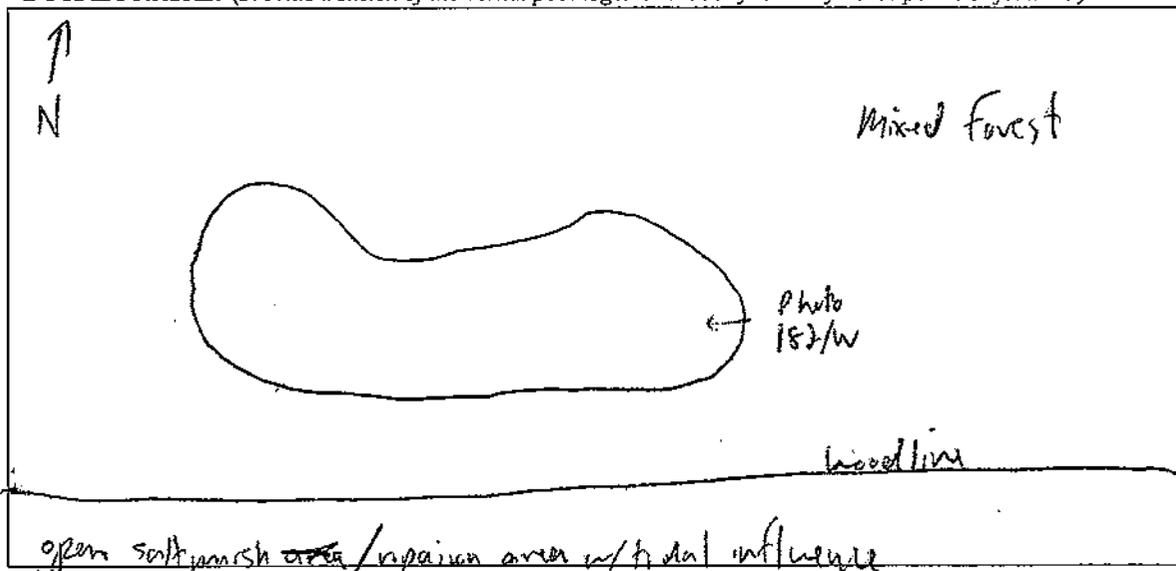
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 5 feet (circle one) in the compass direction of W degrees from the above GPS point.

Additional notes of GPS location: Location is just north (~2m) of a riparian inflow area.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%)*

- 70 % **Woodland** (check most dominant type) → **For woodland habitat, is the overstory?**
- | | |
|---|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input checked="" type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|

- % **Utility ROW** (check most dominant type) → **For Utility ROW, ID dominant vegetation type?**
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|

- 30 % **Open Land** (check most dominant type)
- | | |
|--|--|
| <input type="checkbox"/> Active agriculture <input type="checkbox"/> Fields/pastures <input type="checkbox"/> Lawn <input checked="" type="checkbox"/> Other → open riparian area with tidal influence (estuarine). | |
|--|--|

— % Residential

— % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown

If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>No inflow/outflow; no oblique ^{vertical} vegetation</i> |

Maximum depth at the time of survey: 14 (in) ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|---|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 1 | | | | | | |
| <i>Spotted Salamander</i> | 8 | S | 3 | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 55 (°F) / °C (circle one)

Rarity Criteria *(check all boxes that apply)*:

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: VP32
zone 3

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/6 Time of Observation: 1348 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 32/N
255/W (SSEM)

Significant Vernal Pool? Yes No

Why or why not? 13 spotted salamander egg masses detected during 2nd
round of visits; (4/13). 20+ spotted salamander egg masses found during
3rd round of visits; (4/19). Also noted 1 snapping turtle & Green Frog.

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -67.92442 Latitude/Northing: 43.88206

Model of GPS Unit: Trimble GeoXH

Check one:

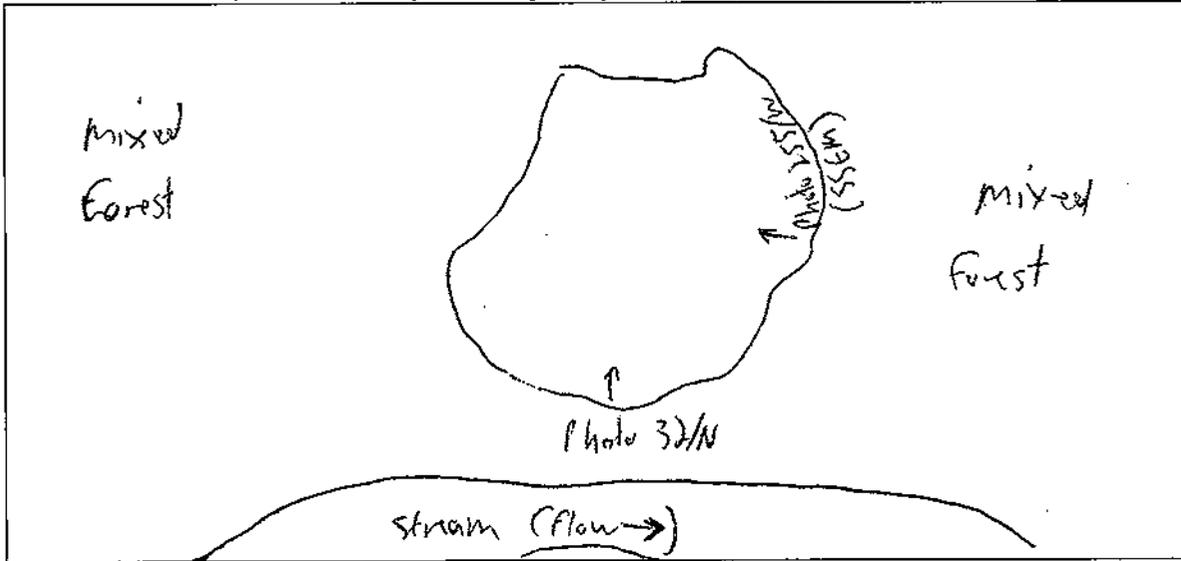
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 10 feet (circle one) in the compass direction of 8 N degrees from the above GPS point.

Additional notes of GPS location: location within ^{inside} oxbow of ~~winding~~ creek
curvature.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

100 % Woodland (check most dominant type) →

- Hardwood (>75% deciduous)
- Softwood (>75% coniferous)
- Mixed (all others)

For woodland habitat, is the overstory?

- Heavy (>50% canopy cover of trees and shrubs >6' tall)
- Moderate (25-50% canopy cover of trees/shrubs >6' tall)
- Sparse (<25% canopy cover of trees/shrubs >6' tall)

— % Utility ROW (check most dominant type) →

- Pipeline
- Electric
- Other

For Utility ROW, ID dominant vegetation type?

- Shrubs
- Grass/forb
- Mixed-shrub/grass/forb
- Bare ground

— % Open Land (check most dominant type)

- Active agriculture
- Fields/pastures
- Lawn
- Other

— % Residential

— % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 87' Maximum width: 40'

Water Depth (inches): Maximum when observed: 14" Estimated spring maximum: 16"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat) → an oxbow
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | <u>2</u> | <u>Red maple, Red spruce, & white pine</u> |
| Shrub (0.5m to <5m) | <u>2</u> | <u>Meadow sweet</u> |
| Herb/Emergent (0 to <0.5m) | <u>2</u> | <u>Unknown grasses, Sensitive Fern, juncus</u> |
| Floating /Submerged | _____ | _____ |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|---|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input checked="" type="checkbox"/> Other: <u>oxbow</u> |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no inflow/overflow, or obligate spring.</i> |

Maximum depth at the time of survey: 14 in / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks; see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | | | | | | | |
| <i>Spotted Salamander</i> | <u>20+</u> | <u>S, P (255)</u> | <u>3</u> | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 58 °F / °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: SV35
Zone 3

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/6 Time of Observation: 1501 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: NNW/35

Significant Vernal Pool? Yes No 253/NW (SSEM)

Why or why not? 3 Wood Frog egg masses were detected during the 1st round of visits; (4/13). 3 Wood Frog & 27 Spotted Salamander egg masses detected during 3rd round of visits; (4/29).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.91810 Latitude/Northing: 43.8635

Model of GPS Unit: Trimble GeoXH

Check one:

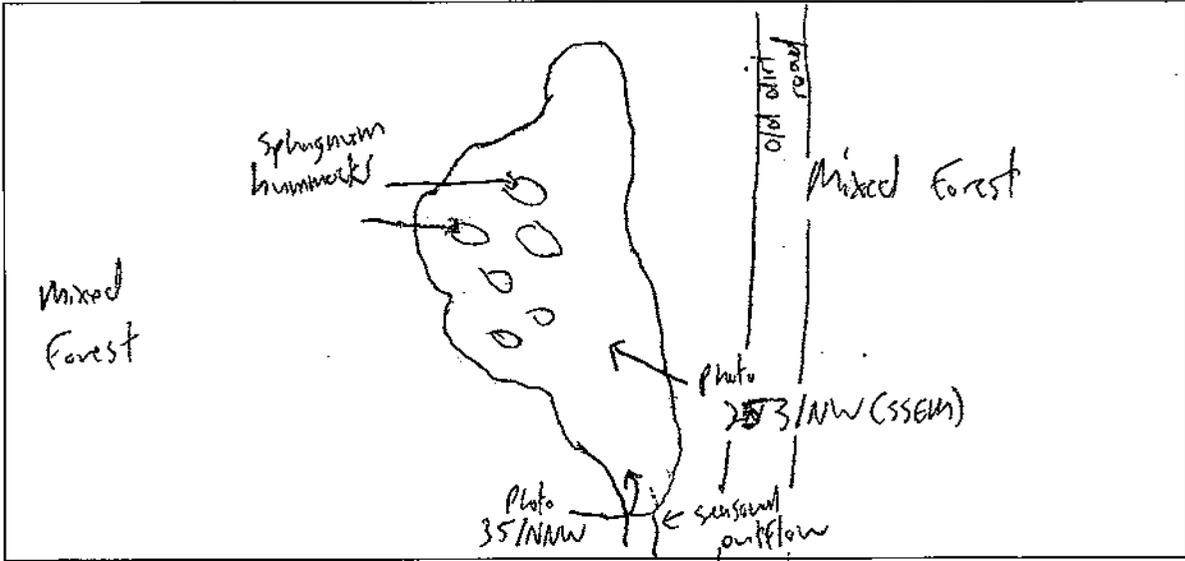
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 20 (m) feet (circle one) in the compass direction of SSE NW degrees from the above GPS point.

Additional notes of GPS location: _____

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION (continued)

Pool Location: (Provide a sketch of the vernal pool together with any local reference points or features.)



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: (Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)

90% % Woodland (check most dominant type) →

- Hardwood (>75% deciduous)
- Softwood (>75% coniferous)
- Mixed (all others)

For woodland habitat, is the overstory?

- Heavy (>50% canopy cover of trees and shrubs >6' tall)
- Moderate (25-50% canopy cover of trees/shrubs >6' tall)
- Sparse (<25% canopy cover of trees/shrubs >6' tall)

— % Utility ROW (check most dominant type) →

- Pipeline
- Electric
- Other

For Utility ROW, ID dominant vegetation type?

- Shrubs
- Grass/forb
- Mixed-shrub/grass/forb
- Bare ground

— % Open Land (check most dominant type)

- Active agriculture
- Fields/pastures
- Lawn
- Other

— % Residential

10 % Roads old dirt road

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 118' Maximum width: 99'

Water Depth (inches): Maximum when observed: 14" Estimated spring maximum: 16"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested Shrub/Scrub Emergent Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | 4 | White Pine, Red Maple, Balsam Fir |
| Shrub (0.5m to <5m) | 1 | Unknown shrub |
| Herb/Emergent (0 to <0.5m) | _____ | _____ |
| Floating /Submerged | _____ | _____ |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown

If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>low obligate species, no inlets</i> |

Maximum depth at the time of survey: 14 (1) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 3 | S | 3 | S | 3 | — | — |
| <i>Spotted Salamander</i> | 27 | S, P (253) | 3 | — | — | — | — |
| <i>Blue-spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Fairy Shrimp</i> | — | — | — | — | — | — | — |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 53 (°F) / °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: ⁵ VP36
zone 3

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/6 Time of Observation: 15:27 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 36/N
254/W (WF+SS6m)

Significant Vernal Pool? Yes No

Why or why not? 13 wood frog egg masses, as well as several wood frogs
calling during 1st round of visits; (4/13). 40+ wood frog & 10 spotted
 Salamander egg masses observed during 3rd round of visits; (4/19).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69-91733 Latitude/Northing: 43-57451

Model of GPS Unit: Trimble GeoXH

Check one:

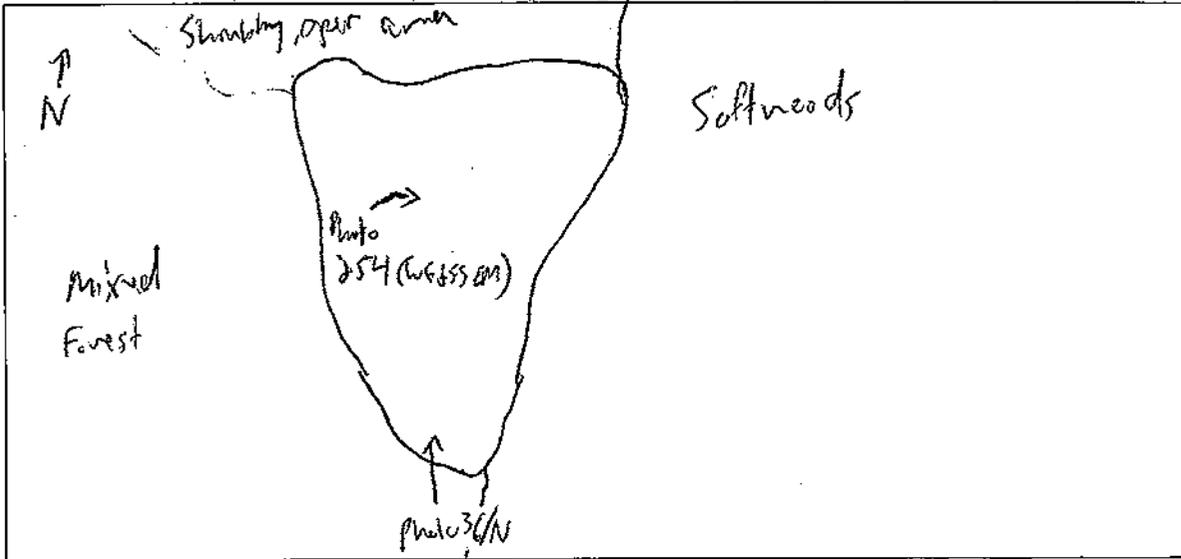
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 30 @/feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: in location in mixed forest with
red pine planted in groves to the north.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 80 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)
- Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)

- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- Pipeline
 - Electric
 - Other
- Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground

- 20 % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other → *shrubby, open area*

 % Residential

 % Roads

 % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 99' Maximum width: 51'

Water Depth (inches): Maximum when observed: 11" Estimated spring maximum: 14"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | <u>2</u> | <u>Red Maple, white Pine</u> |
| Shrub (0.5m to <5m) | <u>5</u> | <u>Sleepy bush.</u> |
| Herb/Emergent (0 to <0.5m) | <u>3</u> | <u>Unknown grasses</u> |
| Floating /Submerged | _____ | _____ |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input checked="" type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input checked="" type="checkbox"/> Other: <u>Shrubby, open areas</u> |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no oblique spp. or inflow/outflow</i> |

Maximum depth at the time of survey: _____ 11 (in) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|-----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 40+ | S, P (254) | 3 | 5 | 3 | — | — |
| <i>Spotted Salamander</i> | 10 | S, P (254) | 3 | — | — | — | — |
| <i>Blue-spotted Salamander</i> | | — | — | — | — | — | — |
| <i>Fairy Shrimp</i> | | — | — | — | — | — | — |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 54 (F) / °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|-------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Bogwumper</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: SVP 44
Zone 4

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/7 Time of Observation: 10:52 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 48/N

Significant Vernal Pool? Yes No 174/N WFEM

Why or why not? 69 Wood Frog Egg Masses were detected during the 1st round of visits; (4/15).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.92803 Latitude/Northing: 43.87663

Model of GPS Unit: Trimble GeoXH

Check one:

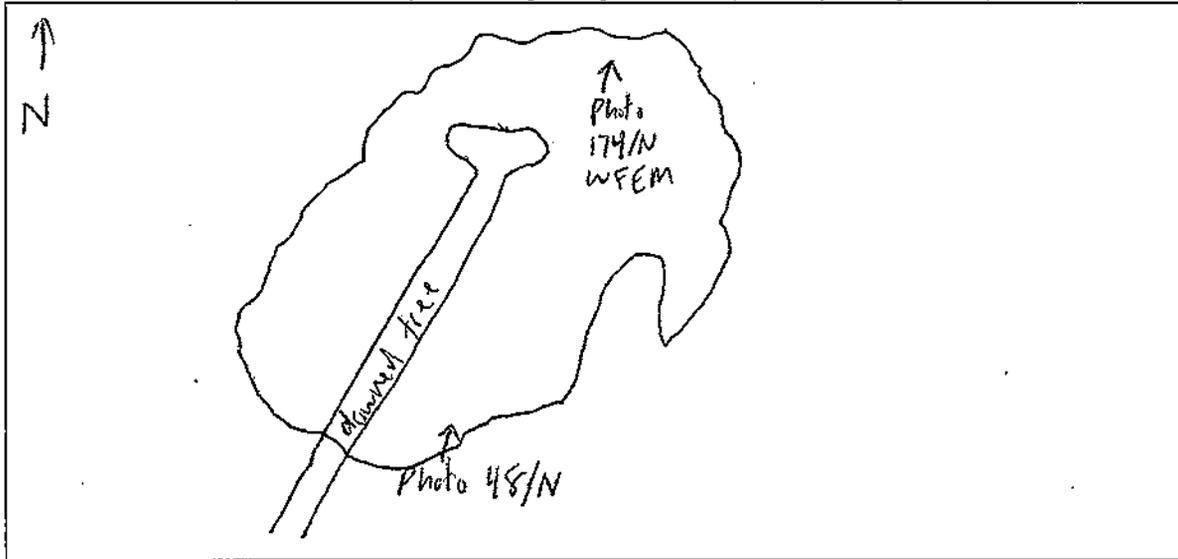
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 12 @/feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: _____

Vernal Pool Documentation Form

SECTION B -- VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%)*

100 % Woodland (check most dominant type) →

- Hardwood (>75% deciduous)
- Softwood (>75% coniferous)
- Mixed (all others)

For woodland habitat, is the overstory?

- Heavy (>50% canopy cover of trees and shrubs >6' tall)
- Moderate (25-50% canopy cover of trees/shrubs >6' tall)
- Sparse (<25% canopy cover of trees/shrubs >6' tall)

— % Utility ROW (check most dominant type) →

- Pipeline
- Electric
- Other

For Utility ROW, ID dominant vegetation type?

- Shrubs
- Grass/forb
- Mixed-shrub/grass/forb
- Bare ground

— % Open Land (check most dominant type)

- Active agriculture
- Fields/pastures
- Lawn
- Other

— % Residential

— % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 80' Maximum width: 43'

Water Depth (inches): Maximum when observed: 12" Estimated spring maximum: 15"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested Shrub/Scrub Emergent Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | <u>2</u> | <u>red oak, red maple</u> |
| Shrub (0.5m to <5m) | <u>2</u> | <u>shrub</u> |
| Herb/Emergent (0 to <0.5m) | <u>3</u> | <u>grasses & mosses</u> |
| Floating /Submerged | <u>—</u> | <u>—</u> |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>No inflow & no obligate species were detected.</i> |

Maximum depth at the time of survey: 1.5 ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 69 | S, P (174) | 3 | — | — | — | — |
| <i>Spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Blue-spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Fairy Shrimp</i> | — | — | — | — | — | — | — |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 38 / °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|-------------------------------------|-------------------------|--------------|--------------|--------------|--------------|--------------------------------|-------------------------|--------------|--------------|--------------|--------------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | □ | □ | □ | □ | □ | <i>Wood Turtle</i> | □ | □ | □ | □ | □ |
| <i>Spotted Turtle</i> | □ | □ | □ | □ | □ | <i>Ribbon Snake</i> | □ | □ | □ | □ | □ |
| <i>Ringed Boghaunter</i> | □ | □ | □ | □ | □ | <i>Other:</i> | □ | □ | □ | □ | □ |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: ⁵VP52
Zone 4

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/7 Time of Observation: 1403 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: S2/N
171/E WFEM

Significant Vernal Pool? Yes No

Why or why not? 7th Woud Frog egg masses were detected during the 2nd
round of visit (4/14).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.93639 Latitude/Northing: 43.87525

Model of GPS Unit: Trimble GeoXH

Check one:

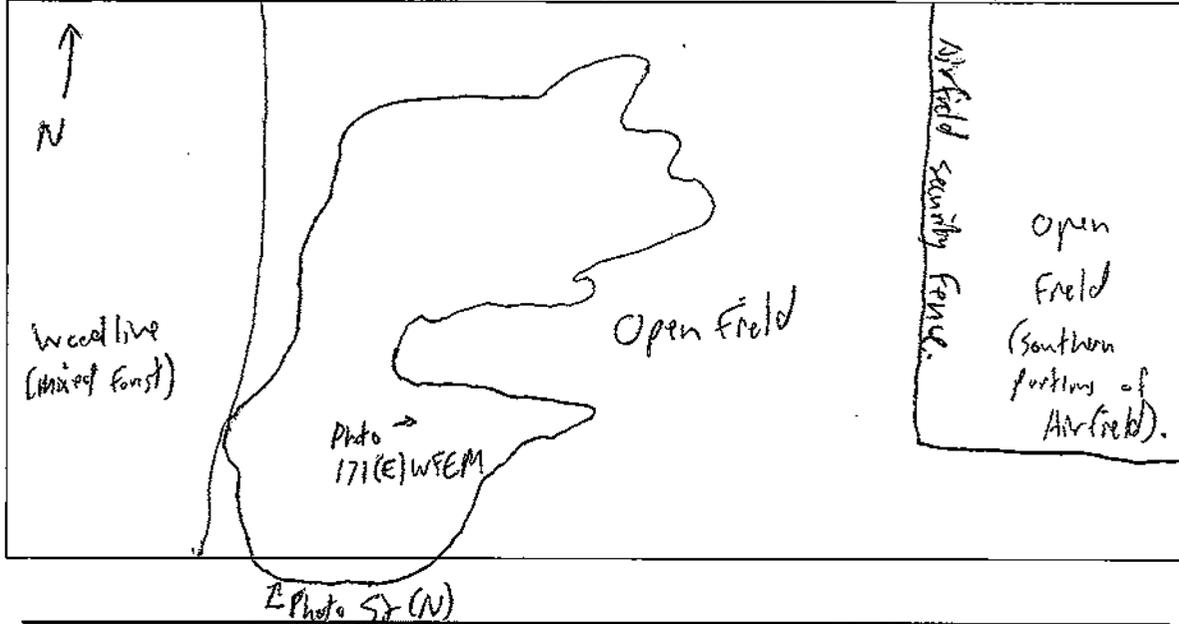
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 40 ft/feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: Location is large, with some of the
pool parking over to inside the airport's security fence to the east.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

50 % Woodland (check most dominant type) →

- Hardwood (>75% deciduous)
- Softwood (>75% coniferous)
- Mixed (all others)

For woodland habitat, is the overstory?

- Heavy (>50% canopy cover of trees and shrubs >6' tall)
- Moderate (25-50% canopy cover of trees/shrubs >6' tall)
- Sparse (<25% canopy cover of trees/shrubs >6' tall)

— % Utility ROW (check most dominant type) →

- Pipeline
- Electric
- Other

For Utility ROW, ID dominant vegetation type?

- Shrubs
- Grass/forb
- Mixed-shrub/grass/forb
- Bare ground

50 % Open Land (check most dominant type)

- Active agriculture
- Fields/pastures → Airfield
- Lawn
- Other

— % Residential

— % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 208' Maximum width: 62'

Water Depth (inches): Maximum when observed: 13" Estimated spring maximum: 15"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

List the percent cover of dominant vegetation by height strata within the pool:

| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
|----------------------------|----------------|--|
| Tree (5m and above) | — | — |
| Shrub (0.5m to <5m) | 4 | Slack Laurel, Rubus |
| Herb/Emergent (0 to <0.5m) | 5 | Cranberry, undrunk moss |
| Floating /Submerged | — | — |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

Check the palustrine types that best apply to this pool or wetland:

| | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input checked="" type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: |

Check all surrounding habitat types within 250 feet of the pool:

| | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland | <input checked="" type="checkbox"/> Other: <u>Scrub/shrub.</u> |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>water level has dropped & there is no inflow since last visit</i> |

Maximum depth at the time of survey: 13 in / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No
 Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 74 | S, P (171) | 3 | — | — | — | — |
| <i>Spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Blue-spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Fairy Shrimp</i> | — | — | — | — | — | — | — |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 66 °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-----------------|--------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-----------------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | CL** | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | CL** |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | CL** | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | CL** |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | CL** | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | CL** |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: SVPS4
zone 4

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/7 Time of Observation: 1415 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 34/N
172/E → WFEM

Significant Vernal Pool? Yes No

Why or why not? 44 Wood Frog Egg masses detected during 2nd round
of visits; (4/14).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.93652 Latitude/Northing: 43.87650

Model of GPS Unit: Trimble GeoXH

Check one:

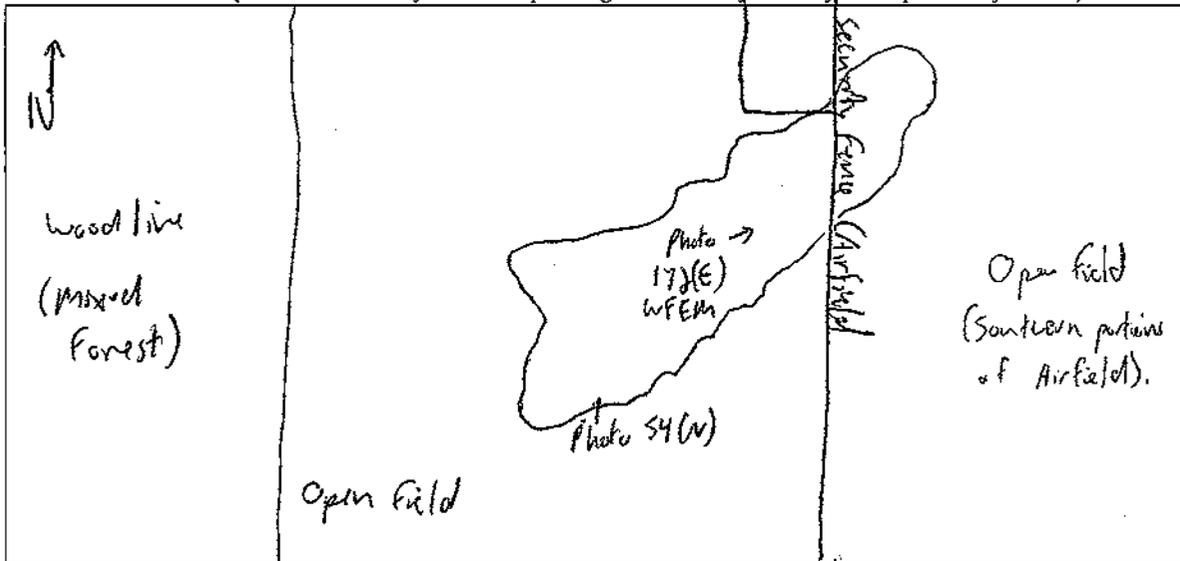
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 7 m/feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: 1/3 of this pool is on the other (east)
side of the infield's security fence.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION (continued)

Pool Location: (Provide a sketch of the vernal pool together with any local reference points or features.)



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: (Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)

- 45 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)
 - Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)

- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- Pipeline
 - Electric
 - Other
 - Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground

55 % Open Land (check most dominant type)

- Active agriculture
- Fields/pastures → air field
- Lawn
- Other

— % Residential

— % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 54' Maximum width: 20'

Water Depth (inches): Maximum when observed: 9" Estimated spring maximum: 11"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | — | — |
| Shrub (0.5m to <5m) | 1 | <i>Steeple Bush</i> |
| Herb/Emergent (0 to <0.5m) | 5 | <i>Cranberry, unknown moss</i> |
| Floating /Submerged | — | — |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input checked="" type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>water level was dropped since last visit & there is no bottom</i> |

Maximum depth at the time of survey: 9 (in) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No
 Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|-----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>44</u> | <u>S, P (17)</u> | <u>3</u> | — | — | — | — |
| <i>Spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Blue-spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Fairy Shrimp</i> | — | — | — | — | — | — | — |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 68 (°F) / °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____

Date: _____

Pool ID: 501P80
Zone 5

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/8 Time of Observation: 10:00 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 79/N

180/5 WFEM

Significant Vernal Pool? Yes No

Why or why not? 161 wood frog egg masses & 2 spotted salamander egg masses detected during 2nd round of visits; (4/16).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.94301 Latitude/Northing: 43.87026

Model of GPS Unit: Trimble GeoXH

Check one:

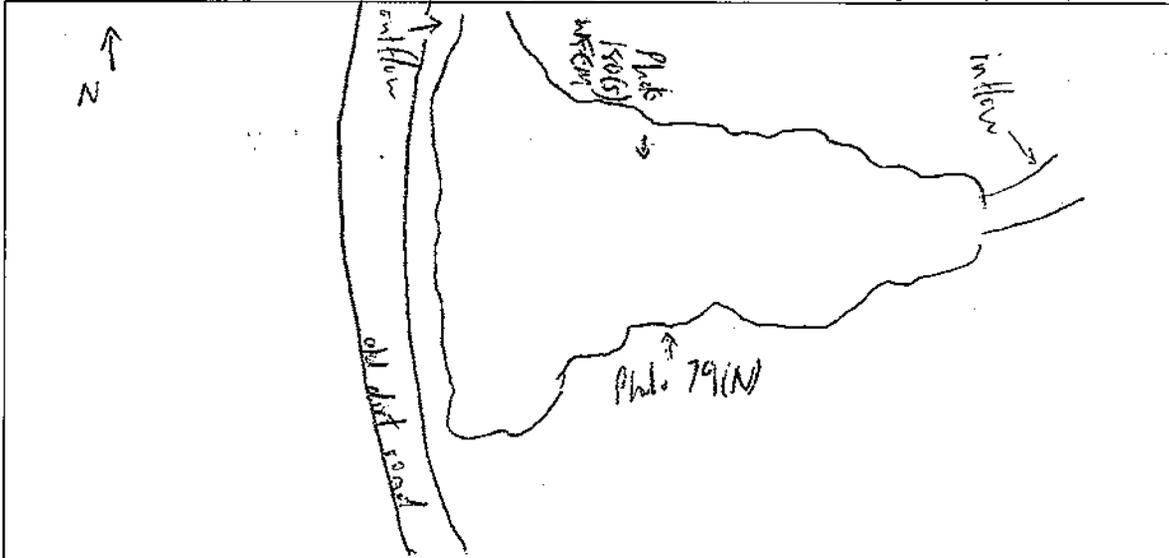
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 15 (m) feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: Just east of the dirt road

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- | | |
|--|---|
| <p><u>90</u> 100 % Woodland (check most dominant type) →</p> <p><input type="checkbox"/> Hardwood (>75% deciduous)</p> <p><input type="checkbox"/> Softwood (>75% coniferous)</p> <p><input checked="" type="checkbox"/> Mixed (all others)</p> <p><u> </u> % Utility ROW (check most dominant type) →</p> <p><input type="checkbox"/> Pipeline</p> <p><input type="checkbox"/> Electric</p> <p><input type="checkbox"/> Other</p> <p><u> </u> % Open Land (check most dominant type)</p> <p><input type="checkbox"/> Active agriculture</p> <p><input type="checkbox"/> Fields/pastures</p> <p><input type="checkbox"/> Lawn</p> <p><input type="checkbox"/> Other</p> <p><u> </u> % Residential</p> <p><u>10</u> % Roads → dirt road.</p> <p><u> </u> % Other</p> | <p>For woodland habitat, is the overstory?</p> <p><input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall)</p> <p><input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall)</p> <p><input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall)</p> <p>For Utility ROW, ID dominant vegetation type?</p> <p><input type="checkbox"/> Shrubs</p> <p><input type="checkbox"/> Grass/forb</p> <p><input type="checkbox"/> Mixed-shrub/grass/forb</p> <p><input type="checkbox"/> Bare ground</p> |
|--|---|

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 237' Maximum width: 137'

Water Depth (inches): Maximum when observed: 24" Estimated spring maximum: 28"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | 2 | Buckeye, white pine |
| Shrub (0.5m to <5m) | 3 | Spaced Alder, unknown shrubs |
| Herb/Emergent (0 to <0.5m) | 4 | Cattail, grasses |
| Floating /Submerged | — | — |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input checked="" type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway <u>old dirt road</u> |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. Natural Origin Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. Hydrology Select the pool's likely hydroperiod AND give evidence.

| | |
|--|---|
| <input type="checkbox"/> Permanent | |
| <input checked="" type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | <u>Slight inflow/outflow, cattails present.</u> |
| <input type="checkbox"/> Ephemeral (drying out during the growing season in most years) | |

Maximum depth at the time of survey: 24 in / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|---|--|
| <input type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRS 480-B)) |
| <input checked="" type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>161</u> | <u>S, P (180)</u> | <u>3</u> | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> |
| <i>Spotted Salamander</i> | <u>2</u> | <u>S</u> | <u>3</u> | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> |
| <i>Blue-spotted Salamander</i> | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> |
| <i>Fairy Shrimp</i> | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 43 (E) °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/8 Time of Observation: 1050 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 82/N
261/N (WFEW & tadpoles)

Significant Vernal Pool? Yes No

Why or why not? 25 Wood Frog egg masses and Fairy Shrimp found
2nd round of visits; (4/15). 408 Wood Frog & 6 spotted Salamander egg masses found
water during 3rd round of visits; (4/30).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:
Longitude/Easting: -69.93964 Latitude/Northing: 4387030
Model of GPS Unit: Trimble GeoXH

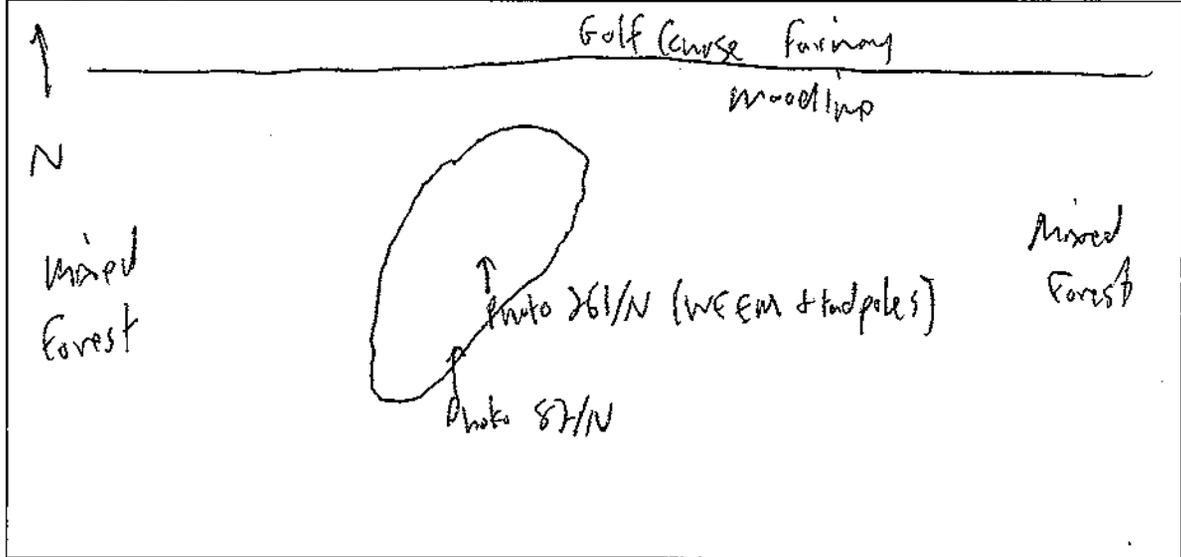
- Check one:
- The above GPS point is at the center of the pool.
 - The center of the pool is approximately 10 m/feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: ~ 3 meters west of the golf course.

Vernal Pool Documentation Form

SECTION B - VERNAL POOL LOCATION INFORMATION (continued)

Pool Location: (Provide a sketch of the vernal pool together with any local reference points or features.)



SECTION C - VERNAL POOL SETTING

Habitat Around the Pool: (Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)

55 % Woodland (check most dominant type) →

- Hardwood (>75% deciduous)
- Softwood (>75% coniferous)
- Mixed (all others)

For woodland habitat, is the overstory?

- Heavy (>50% canopy cover of trees and shrubs >6' tall)
- Moderate (25-50% canopy cover of trees/shrubs >6' tall)
- Sparse (<25% canopy cover of trees/shrubs >6' tall)

— % Utility ROW (check most dominant type) →

- Pipeline
- Electric
- Other

For Utility ROW, ID dominant vegetation type?

- Shrubs
- Grass/forb
- Mixed-shrub/grass/forb
- Bare ground

45 % Open Land (check most dominant type)

- Active agriculture
- Fields/pastures
- Lawn → golf course
- Other

— % Residential

— % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 41' Maximum width: 14'

Water Depth (inches): Maximum when observed: 6" Estimated spring maximum: 10"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

Forested Shrub/Scrub Emergent Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

List the percent cover of dominant vegetation by height strata within the pool:

| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
|----------------------------|----------------|--|
| Tree (5m and above) | 3 | Red Maple, Paper Birch & Balsam Fir |
| Shrub (0.5m to <5m) | 4 | Unknown shrub, mountain laurel, sprigged alder |
| Herb/Emergent (0 to <0.5m) | 2 | Juncus, sensitive fern, Unknown grasses |
| Floating /Submerged | | |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

Check the palustrine types that best apply to this pool or wetland:

| | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

Check all surrounding habitat types within 250 feet of the pool:

| | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland (golf course) | <input type="checkbox"/> Other: _____ |

Comments:

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. Natural Origin Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. Hydrology Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>no inflow/outflow, no obligate species</i> |

Maximum depth at the time of survey: 8 (in) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|-----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 40+ | S, P (61) | 3 | S, P (26) | 3 | | |
| <i>Spotted Salamander</i> | 6 | S | 3 | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 60 (F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

"Significant Wildlife Habitat" Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/8 Time of Observation: 1102 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 84/N

Significant Vernal Pool? Yes No 179/N WFEM

Why or why not? 57 Wood Frog Egg masses found during 2nd round of visits 4/15.

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:
Longitude/Easting: -69.93951 Latitude/Northing: 4386959
Model of GPS Unit: Trimble GeoXH

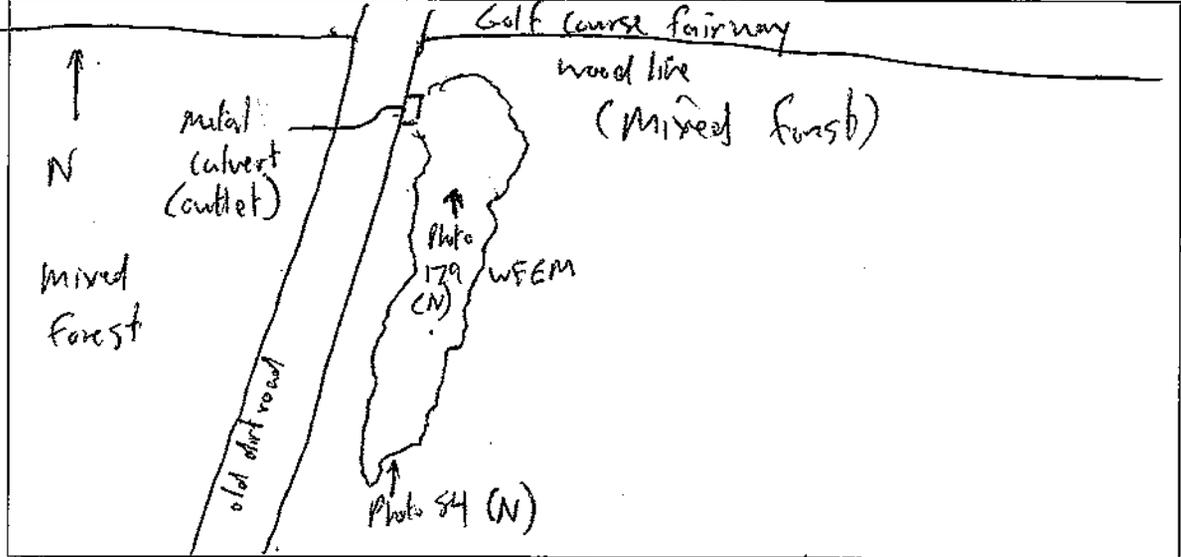
- Check one:
- The above GPS point is at the center of the pool.
 - The center of the pool is approximately 2 @feet (circle one) in the compass direction of N degrees from the above GPS point. ~ 1m away.

Additional notes of GPS location: location runs parallel to dirt road, which runs perpendicular to golf course.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 75 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
 - Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)
 - Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)
- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
 - Pipeline
 - Electric
 - Other
 - Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground
- 10 % Open Land (check most dominant type)
 - Active agriculture
 - Fields/pastures
 - Lawn
 - Other
- % Residential
- 15 % Roads
- % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 170' Maximum width: 21'

Water Depth (inches): Maximum when observed: 8" Estimated spring maximum: 11"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | <u>2</u> | <u>Grey Birch</u> |
| Shrub (0.5m to <5m) | <u>3</u> | <u>Spotted Alder, Pussy Willow</u> |
| Herb/Emergent (0 to <0.5m) | <u>5</u> | <u>Grasses</u> |
| Floating /Submerged | — | — |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input checked="" type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway <u>old dirt road</u> |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. Natural Origin Select the pool's origin: Natural Unnatural Unknown → with anthropogenic alteration (center)
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. Hydrology Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---------------------|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>shallow pool</i> |

Maximum depth at the time of survey: 8 (8) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No
 Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 57 | S, P (179) | 3 | - | - | - | - |
| <i>Spotted Salamander</i> | - | - | - | - | - | - | - |
| <i>Blue-spotted Salamander</i> | - | - | - | - | - | - | - |
| <i>Fairy Shrimp</i> | - | - | - | - | - | - | - |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 60 (60) °F / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: ⁵ 01/100
zone 8

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/4 Time of Observation: 1328 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 99 / N

Significant Vernal Pool? Yes No

Why or why not? 51 Wood frog egg masses found during the 2nd round of visits; (4/15). 176/SE Wood Frog Egg Masses

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.93365 Latitude/Northing: 43.87115

Model of GPS Unit: Trimble GeoXT

Check one:

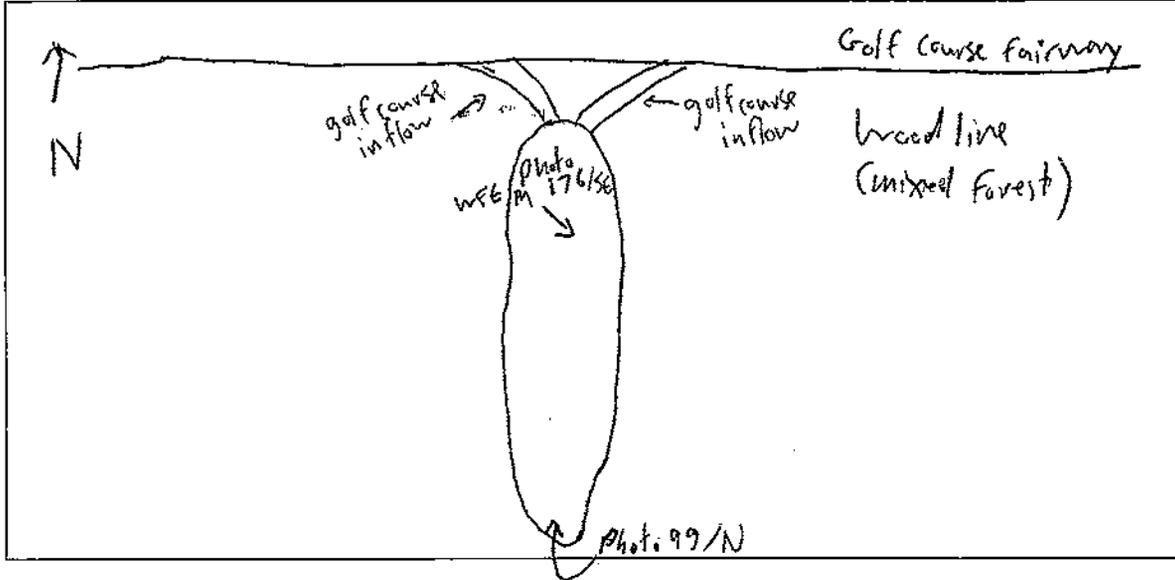
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 20 feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: located just to the south of the golf course fairway.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%)*

- 55 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- | | |
|---|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input checked="" type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|

- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|

45 % Open Land (check most dominant type)

- Active agriculture
- Fields/pastures
- Lawn → golf course
- Other

— % Residential

— % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 119' Maximum width: 25'

Water Depth (inches): Maximum when observed: 22" Estimated spring maximum: 22"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | 2 | Balsam fir, Paper Birch |
| Shrub (0.5m to <5m) | - | - |
| Herb/Emergent (0 to <0.5m) | - | - |
| Floating /Submerged | - | - |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland (<u>golf course</u>) | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

natural, but hydrology is influenced by the nearby golf course facility.

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|--|--|
| <input type="checkbox"/> Permanent | |
| <input checked="" type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | Inflow to the north of the vernal pool deep enough to maintain persistent water during normal - wet years. |
| <input type="checkbox"/> Ephemeral (drying out during the growing season in most years) | |

Maximum depth at the time of survey: 22 (in) / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|---|--|
| <input type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 M RSA 480-B)) |
| <input checked="" type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 51 | S, P (176) | 3 | - | - | - | - |
| <i>Spotted Salamander</i> | - | - | - | - | - | - | - |
| <i>Blue-spotted Salamander</i> | - | - | - | - | - | - | - |
| <i>Fairy Shrimp</i> | - | - | - | - | - | - | - |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 44 (F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------|--------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: SVP 114
zone 5

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 9/8 Time of Observation: 1722 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 113 / NNE

Significant Vernal Pool? Yes No

Why or why not? 7 Wood Frog egg masses and individuals found during 2nd round of visits; (4/15). Fairy shrimp also collected during 2nd round. 1 new frog & 3 spotted salamander egg masses found during 3rd round of visits (4/30).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.93880 Latitude/Northing: 43.86656

Model of GPS Unit: Trimble GeoXH

Check one:

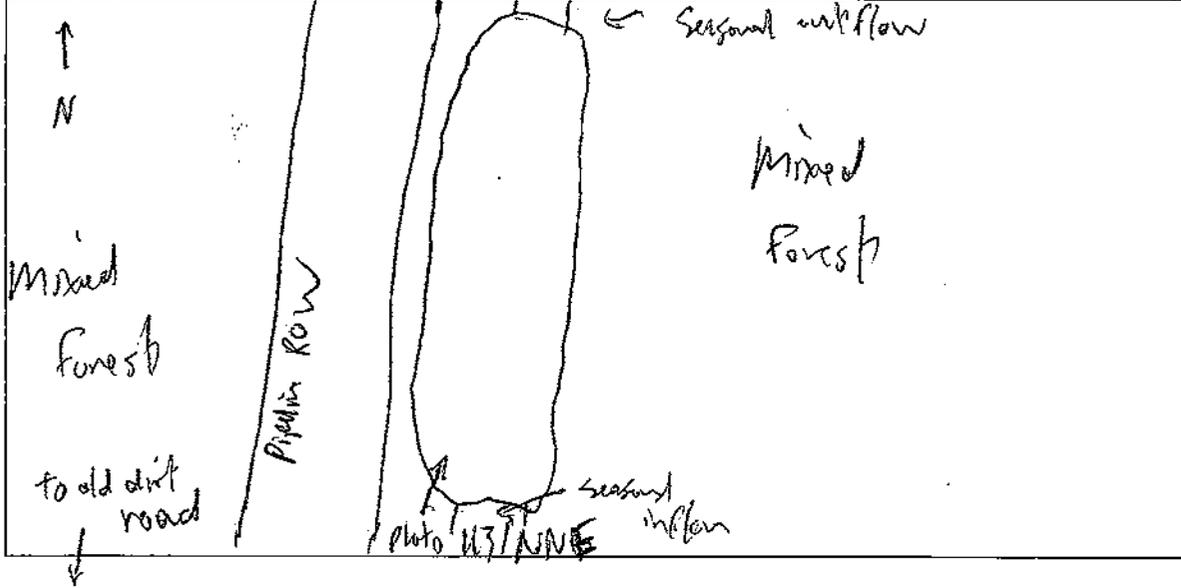
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 20 feet (circle one) in the compass direction of NNE degrees from the above GPS point.

Additional notes of GPS location: within and to the east of the ROW (pipeline).

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- | | |
|---|---|
| <p><u>50</u> % Woodland (check most dominant type) →</p> <ul style="list-style-type: none"> <input type="checkbox"/> Hardwood (>75% deciduous) <input checked="" type="checkbox"/> Softwood (>75% coniferous) <input checked="" type="checkbox"/> Mixed (all others) | <p>For woodland habitat, is the overstory?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
| <p><u>10</u> % Utility ROW (check most dominant type) →</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <p>For Utility ROW, ID dominant vegetation type?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
| <p><u> </u> % Open Land (check most dominant type)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Active agriculture <input type="checkbox"/> Fields/pastures <input type="checkbox"/> Lawn <input type="checkbox"/> Other | |
| <p><u> </u> % Residential</p> | |
| <p><u> </u> % Roads</p> | |
| <p><u> </u> % Other</p> | |

Vernal Pool Documentation Form

SECTION D - WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 77' Maximum width: 110'Water Depth (inches): Maximum when observed: 4" Estimated spring maximum: 7"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested Shrub/Scrub Emergent Open water

Site Type:

- Upland - isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

List the percent cover of dominant vegetation by height strata within the pool:

| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
|----------------------------|----------------|--|
| Tree (5m and above) | 2 | Red Maple & Suburban Fir |
| Shrub (0.5m to <5m) | 2 | meadow Sweets, Catclaws |
| Herb/Emergent (0 to <0.5m) | 5 | SCIRPUS spp. / Juncus, |
| Floating /Submerged | | |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

Check the palustrine types that best apply to this pool or wetland:

| | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input checked="" type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: |

Check all surrounding habitat types within 250 feet of the pool:

| | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input checked="" type="checkbox"/> ROW clearance (Pipeline). |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway old dirt road |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments:

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|--|----------------------------|
| <input type="checkbox"/> Permanent | |
| <input checked="" type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | <i>Continued presently</i> |
| <input type="checkbox"/> Ephemeral (drying out during the growing season in most years) | |

Maximum depth at the time of survey: 4 (in) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|---|---|
| <input type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input checked="" type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 12 | S | 3 | _____ | | | |
| <i>Spotted Salamander</i> | 3 | S | 3 | _____ | | | |
| <i>Blue-spotted Salamander</i> | | _____ | | | | | |
| <i>Fairy Shrimp</i> | | _____ | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 58 (°F) / °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: 0VP118
zone 6

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/9 Time of Observation: 0940 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 118/NE

Significant Vernal Pool? Yes No

188/SE WFEM

Why or why not? 54 land frog & 8 Spotted Salamander Egg masses found during the 2nd round of visits; (4/17).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.91978 Latitude/Northing: 43.87172

Model of GPS Unit: Trimble GeoXH

Check one:

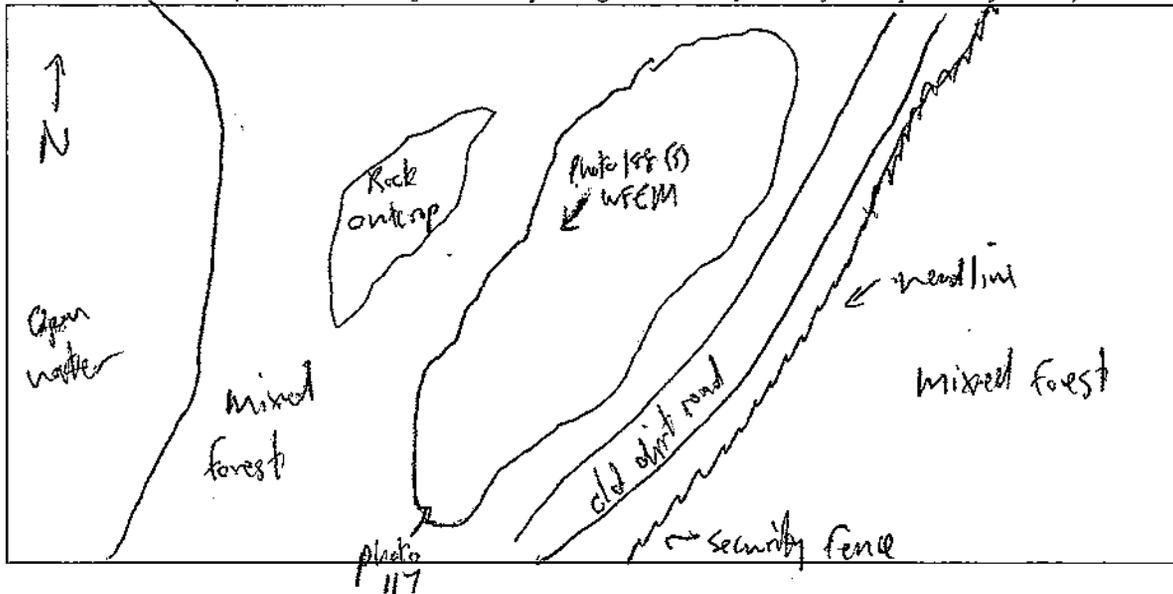
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 20 feet (circle one) in the compass direction of NE degrees from the above GPS point.

Additional notes of GPS location: location 1m west of dirt road & 4m west of security fence. It is also ~20m east of the larger waterbody (that is obvious on the map).

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 50 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- | | |
|---|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input checked="" type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|

- 10 % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input checked="" type="checkbox"/> Other → <u>standby fence</u> | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|

- % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other

 % Residential

15 % Roads

25 % Other → open water

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 165' Maximum width: 28'

Water Depth (inches): Maximum when observed: 14" Estimated spring maximum: 17"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | 2 | <i>Hemlock, white pine, Quaking Aspen</i> |
| Shrub (0.5m to <5m) | 5 | <i>Speckled Alder</i> |
| Herb/Emergent (0 to <0.5m) | 2 | <i>grasses</i> |
| Floating /Submerged | — | — |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input checked="" type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland <i>Open area</i> | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>Shallow & no inflow/outflow.</i> |

Maximum depth at the time of survey: 14 in / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 59 | S, P (18%) | 3 | — | — | — | — |
| <i>Spotted Salamander</i> | 8 | S | 3 | — | — | — | — |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 44 F / °C (circle one)

Rarity Criteria *(check all boxes that apply)*:

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: 5 OVP 120
zone 6

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/9 Time of Observation: 1042 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 1190/N

Significant Vernal Pool? Yes No 187, 15 WF EM

Why or why not? 47 Wood Frog + 35 Spotted Salamander egg masses
detected during last round of surveys; (4/17).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:
Longitude/Easting: -69.92701 Latitude/Northing: 43.86930
Model of GPS Unit: Trimble GeoXH

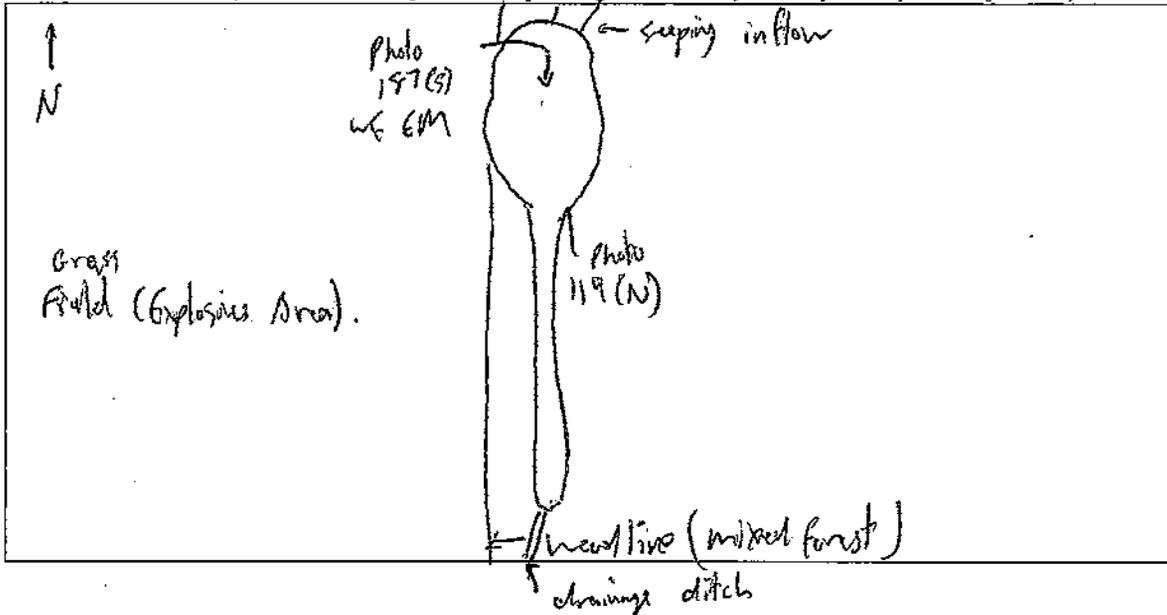
Check one:
 The above GPS point is at the center of the pool.
 The center of the pool is approximately 8 feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: on the border of the woodline and
field where explosives are stored.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 55 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)
 - Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)

- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- Pipeline
 - Electric
 - Other
 - Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground

- 45 % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn → *explosives area*
 - Other

— % Residential

— % Roads

— % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 166' Maximum width: 21'

Water Depth (inches): Maximum when observed: 14" Estimated spring maximum: 17"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <small>(list up to 3 for each strata)</small> |
| Tree (5m and above) | 3 | <u>Red maple, White Pine</u> |
| Shrub (0.5m to <5m) | 2 | <u>Spotted Alder</u> |
| Herb/Emergent (0 to <0.5m) | 4 | <u>Cattails, grasses</u> |
| Floating /Submerged | — | — |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input checked="" type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway <u>paved road.</u> |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland <u>Explosives area</u> | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. Natural Origin Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. Hydrology Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <u>Shallow & inlet is ephemeral.</u> |

Maximum depth at the time of survey: 14 (in) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|---|---|
| <input type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks; see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input checked="" type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|-----------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>47</u> | <u>S, P (187)</u> | <u>3</u> | — | — | — | — |
| <i>Spotted Salamander</i> | <u>35</u> | <u>S, P (187)</u> | <u>3</u> | — | — | — | — |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 41 (°F) / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: 5 VP 123

Zone 4

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/9 Time of Observation: 1220 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 123/N (of wood frog egg masses)

Significant Vernal Pool? Yes No 123/N of vernal pool.

Why or why not? Found 50+ wood frog egg masses.

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.93592 Latitude/Northing: 4387699

Model of GPS Unit: Tribble GeoXH

Check one:

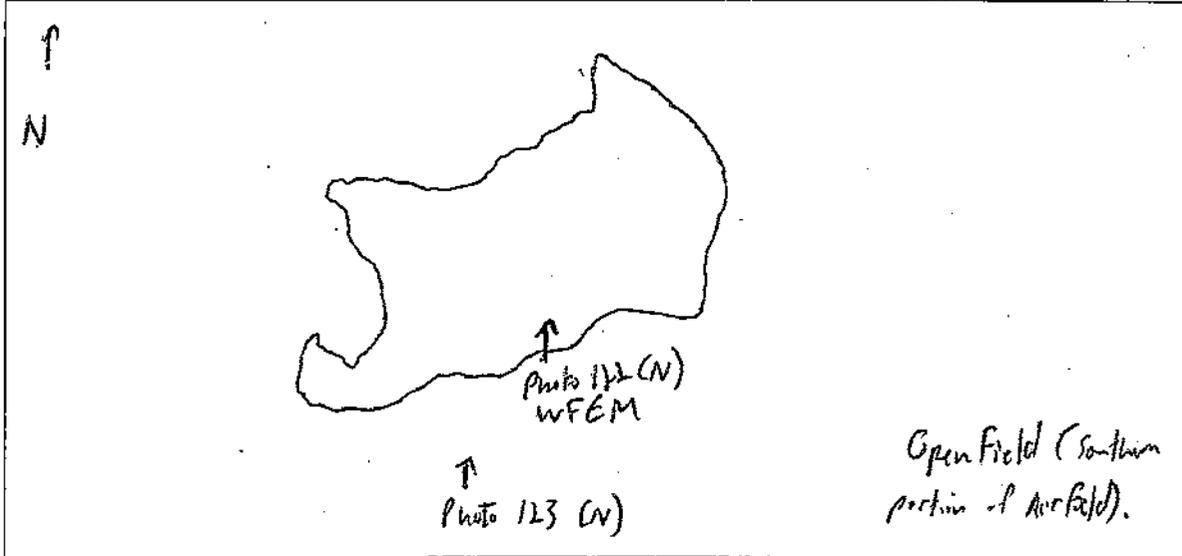
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 5 (m) feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: ~ 200 m south of southern runway terminus.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- | | |
|--|--|
| <p><u> </u> % Woodland (check most dominant type) →</p> <p><input type="checkbox"/> Hardwood (>75% deciduous)</p> <p><input type="checkbox"/> Softwood (>75% coniferous)</p> <p><input type="checkbox"/> Mixed (all others)</p> | <p>For woodland habitat, is the overstory?</p> <p><input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall)</p> <p><input type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall)</p> <p><input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall)</p> |
| <p><u> </u> % Utility ROW (check most dominant type) →</p> <p><input type="checkbox"/> Pipeline</p> <p><input type="checkbox"/> Electric</p> <p><input type="checkbox"/> Other</p> | <p>For Utility ROW, ID dominant vegetation type?</p> <p><input type="checkbox"/> Shrubs</p> <p><input type="checkbox"/> Grass/forb</p> <p><input type="checkbox"/> Mixed-shrub/grass/forb</p> <p><input type="checkbox"/> Bare ground</p> |
| <p><u>100</u> % Open Land (check most dominant type)</p> <p><input type="checkbox"/> Active agriculture</p> <p><input checked="" type="checkbox"/> Fields/pastures → <i>air field</i></p> <p><input type="checkbox"/> Lawn</p> <p><input type="checkbox"/> Other</p> | |
| <p><u> </u> % Residential</p> | |
| <p><u> </u> % Roads</p> | |
| <p><u> </u> % Other</p> | |

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 64' Maximum width: 34'

Water Depth (inches): Maximum when observed: 6" Estimated spring maximum: 8"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | _____ | |
| Shrub (0.5m to <5m) | _____ | |
| Herb/Emergent (0 to <0.5m) | 5 | <i>Cornulacris, grasses</i> |
| Floating /Submerged | _____ | |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input checked="" type="checkbox"/> Emergent marsh <i>Cornulacris bog</i> | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: |

*100, →
100 feet*

| Check all surrounding habitat types within 250 feet of the pool: | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland <i>airfield</i> | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown

If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|---|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>Stilling, no inflow/outflow, cranberries within pool</i> |

Maximum depth at the time of survey: 6 (in) / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>50+</u> | <u>S, P (122)</u> | <u>3</u> | <u>-</u> | <u>-</u> | <u>-</u> | <u>-</u> |
| <i>Spotted Salamander</i> | | | | | | | |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 53 (F) / °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Pool ID: 3 VP 142
zone 7

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/10 Time of Observation: 1140 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 143/N → WF egg masses photo

Significant Vernal Pool? Yes No 144/N → VP photo

Why or why not? Over 40 wood frog egg masses (during 1st round of visits).
10 Spotted Salamander egg masses & 196 wood frog egg masses found during 2nd round
of visits (4/16).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.91982 Latitude/Northing: 43.86821

Model of GPS Unit: Trimble GeoXH

Check one:

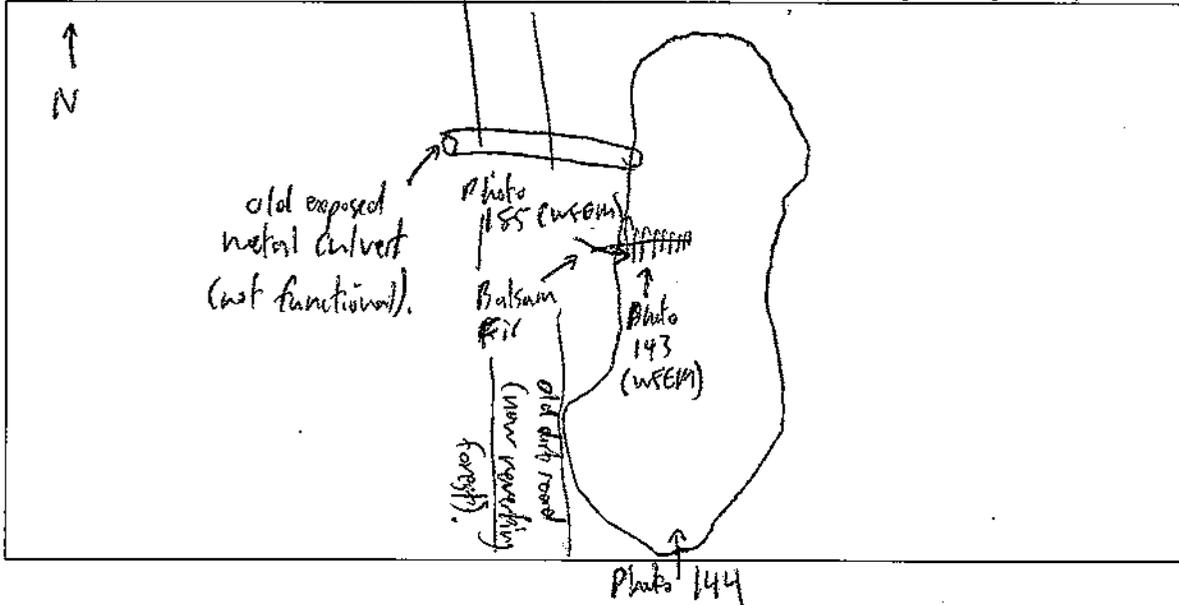
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 20 (m) feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: Location is on the dirt road separating
zone 7 from zone 3.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 85 % **Woodland** (check most dominant type) → **For woodland habitat, is the overstory?**
- | | |
|---|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input checked="" type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|

- % **Utility ROW** (check most dominant type) → **For Utility ROW, ID dominant vegetation type?**
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|

- % **Open Land** (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other

- % **Residential**
- 15 % **Roads** *old dirt road.*

- % **Other**

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 198' Maximum width: 21'

Water Depth (inches): Maximum when observed: 8" Estimated spring maximum: 11"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|---|
| STRATA | % COVER CLASS* | DOMINANT SPECIES <i>(list up to 3 for each strata)</i> |
| Tree (5m and above) | <u>3</u> | <u>Spunked Alder, white pine & Red Oak</u> |
| Shrub (0.5m to <5m) | <u>2</u> | <u>Spunked Alder</u> |
| Herb/Emergent (0 to <0.5m) | <u>—</u> | <u>—</u> |
| Floating /Submerged | <u>—</u> | <u>—</u> |
| * % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75% | | |

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|---|--|
| <input type="checkbox"/> Permanent | |
| <input type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | |
| <input checked="" type="checkbox"/> Ephemeral (drying out during the growing season in most years) | <i>No inflow/outflow, relatively shallow pool.</i> |

Maximum depth at the time of survey: 18 (18) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No
Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 96 | S, P(185) | 3 | — | — | — | — |
| <i>Spotted Salamander</i> | 10 | S | 3 | — | — | — | — |
| <i>Blue-spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Fairy Shrimp</i> | — | S | 3 | — | — | — | — |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 54 (54) / °C (circle one)

Rarity Criteria *(check all boxes that apply):*

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------|--------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____

Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/10 Time of Observation: 1203 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 146/N
252/N SSEM

Significant Vernal Pool? Yes No

Why or why not? 25 wood frog & 9 spotted salamander egg masses found during the 2nd round of visits; (4/16).
12 spotted & 28 wood frog egg masses found during 3rd round of visits; (4/29).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.902099 Latitude/Northing: 43.81901

Model of GPS Unit: Trimble GeoXT

Check one:

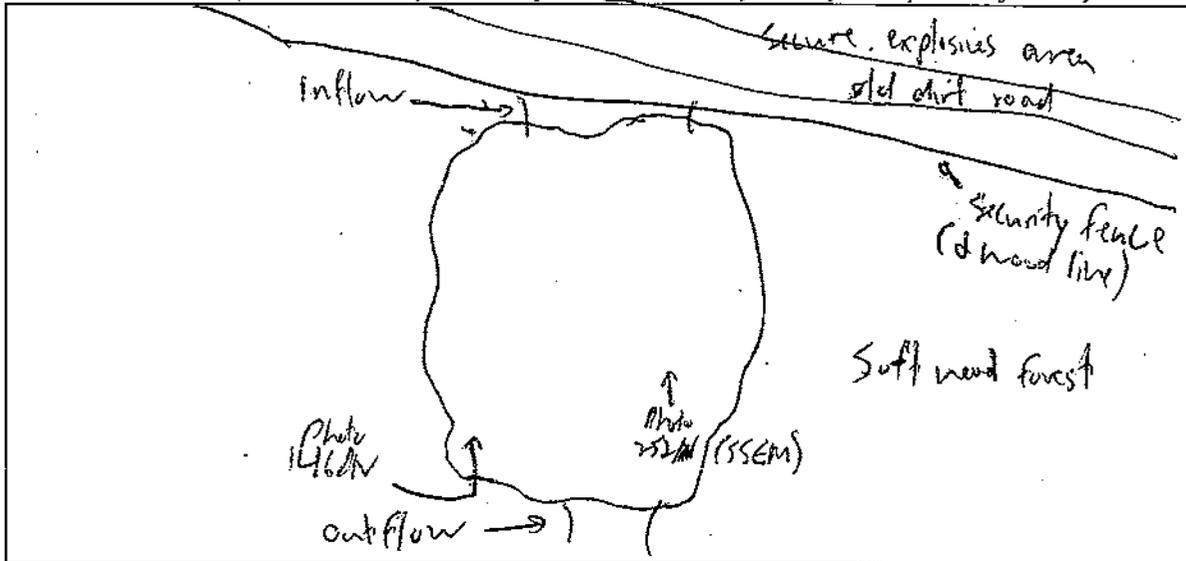
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 10 @/feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: Several wood frogs are calling at this location, although egg masses were not detected.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 90% % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)
- Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)
- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- Pipeline
 - Electric
 - Other
- Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground
- % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other
- % Residential
- 10 % Roads *old dirt road*
- % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 175' Maximum width: 93'

Water Depth (inches): Maximum when observed: 10" Estimated spring maximum: 13"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested
 Shrub/Scrub
 Emergent
 Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | 2 | Balsam fir, White Pine |
| Shrub (0.5m to <5m) | 5 | Speckled Alder |
| Herb/Emergent (0 to <0.5m) | 2 | Cattails |
| Floating /Submerged | — | — |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input checked="" type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland <i>cyprusus area</i> | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|--|--------------------------------|
| <input type="checkbox"/> Permanent | |
| <input checked="" type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | Cattail growth, inflow/outflow |
| <input type="checkbox"/> Ephemeral (drying out during the growing season in most years) | |

Maximum depth at the time of survey: 10 ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|---|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input checked="" type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No
 Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|-------------------------|-----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| Wood Frog | 18+ | S | 3 | S | 3 | S | 3 |
| Spotted Salamander | 22+ | S, P(25) | 3 | | | | |
| Blue-spotted Salamander | | | | | | | |
| Fairy Shrimp | | | | | | | |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 48 °F / °C (circle one)

Rarity Criteria (check all boxes that apply):

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|-------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| Blanding's Turtle | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Wood Turtle | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Spotted Turtle | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Ribbon Snake | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| Ringed Boghaunter | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Other: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)
 **Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/10 Time of Observation: 12:15 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 148 / N
173 / NW (SSEM)

Significant Vernal Pool? Yes No

Why or why not? 19 Wood Frog & 12 Spotted Salamander eggs, masses (as well as Fairy Shrimp) were detected during the first round of visits (4/16). Also heard wood frogs calling ~~from the visit, (4/16)~~ & wood frog & 6 Spotted Salamander eggs masses found during 3rd round of visit; (5/4).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:
Longitude/Easting: -69.92273 Latitude/Northing: 43.86938
Model of GPS Unit: Trimble GeoXH

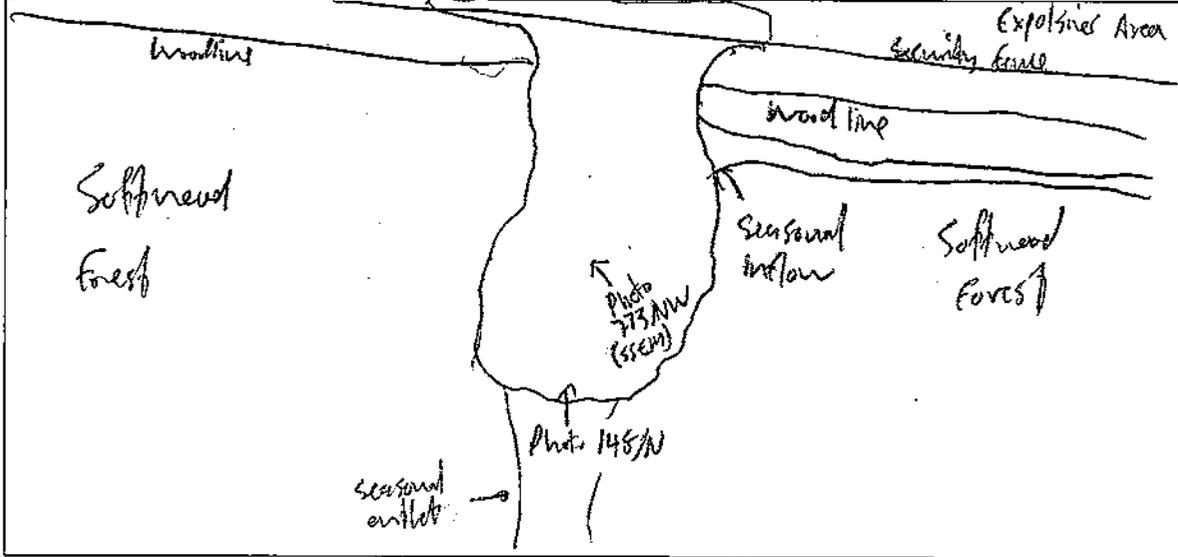
- Check one:
- The above GPS point is at the center of the pool.
 - The center of the pool is approximately _____ feet (circle one) in the compass direction of _____ degrees from the above GPS point.

Additional notes of GPS location: edge of vernal pool ~ 50m south of Security Fence & explosives area on the other side.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%)*

- 70 % **Woodland** (check most dominant type) → **For woodland habitat, is the overstory?**
- Hardwood (>75% deciduous)
 - Softwood (>75% coniferous)
 - Mixed (all others)
 - Heavy (>50% canopy cover of trees and shrubs >6' tall)
 - Moderate (25-50% canopy cover of trees/shrubs >6' tall)
 - Sparse (<25% canopy cover of trees/shrubs >6' tall)
- % **Utility ROW** (check most dominant type) → **For Utility ROW, ID dominant vegetation type?**
- Pipeline
 - Electric
 - Other
 - Shrubs
 - Grass/forb
 - Mixed-shrub/grass/forb
 - Bare ground
- 30 % **Open Land** (check most dominant type)
- Active agriculture
 - Fields/pastures → *explosives area*
 - Lawn
 - Other
- % **Residential**
- % **Roads**
- % **Other**

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 239' Maximum width: 57'

Water Depth (inches): Maximum when observed: 6" Estimated spring maximum: 9"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested Shrub/Scrub Emergent Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | <u>4</u> | <u>Red Spruce, Red Maple, White Pine</u> |
| Shrub (0.5m to <5m) | <u>3</u> | <u>Unbrann shrub</u> |
| Herb/Emergent (0 to <0.5m) | <u>2</u> | <u>unbrann grasses & cattails</u> |
| Floating /Submerged | _____ | _____ |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input checked="" type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input checked="" type="checkbox"/> Agriculture/grassland <u>exploded area</u> | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown

If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|--|------------------------------|
| <input type="checkbox"/> Permanent | |
| <input checked="" type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | <i>Some cattails present</i> |
| <input type="checkbox"/> Ephemeral (drying out during the growing season in most years) | |

Maximum depth at the time of survey: 6 (in) / ft / cm / m (circle one)

3. **Inlet Permanency**

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|---|---|
| <input type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input checked="" type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. **Fishless**

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|------------------|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | <u>2+</u> | <u>S</u> | <u>3</u> | _____ | _____ | _____ | _____ |
| <i>Spotted Salamander</i> | <u>6+</u> | <u>S</u> | <u>3</u> | _____ | _____ | _____ | _____ |
| <i>Blue-spotted Salamander</i> | _____ | _____ | _____ | _____ | _____ | _____ | _____ |
| <i>Fairy Shrimp</i> | _____ | _____ | _____ | _____ | _____ | <u>S</u> | <u>3</u> |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): _____ °F / °C (circle one) *← unable to record.*

Rarity Criteria *(check all boxes that apply)*:

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <i>Wood Turtle</i> | <input type="checkbox"/> |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <i>Ribbon Snake</i> | <input type="checkbox"/> |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <i>Other:</i> | <input type="checkbox"/> |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A – GENERAL INFORMATION

Date: 4/10 Time of Observation: 1516 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 158/W
158

Significant Vernal Pool? Yes No

Why or why not? No egg masses collected during 2nd round of visits. A significant portion of the pooled area is still blanketed by ice (~30% 4/14). 4 spotted salamanders & 4 brown frog egg masses found during 3rd round of visits; (4/28).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B – VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.91673 Latitude/Northing: 43.89412

Model of GPS Unit: Trimble GeoXH

Check one:

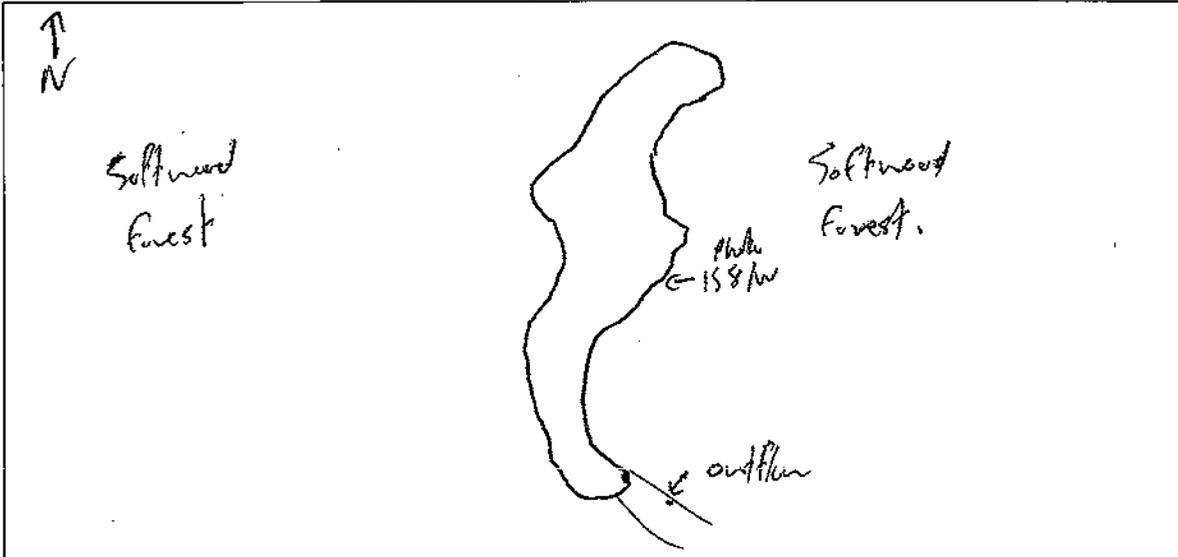
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 17 feet (circle one) in the compass direction of W degrees from the above GPS point.

Additional notes of GPS location: _____

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- | | |
|---|---|
| <p><u>100</u> % Woodland (check most dominant type) →</p> <ul style="list-style-type: none"> <input type="checkbox"/> Hardwood (>75% deciduous) <input checked="" type="checkbox"/> Softwood (>75% coniferous) <input type="checkbox"/> Mixed (all others) | <p>For woodland habitat, is the overstory?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
| <p><u>—</u> % Utility ROW (check most dominant type) →</p> <ul style="list-style-type: none"> <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <p>For Utility ROW, ID dominant vegetation type?</p> <ul style="list-style-type: none"> <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
| <p><u>—</u> % Open Land (check most dominant type)</p> <ul style="list-style-type: none"> <input type="checkbox"/> Active agriculture <input type="checkbox"/> Fields/pastures <input type="checkbox"/> Lawn <input type="checkbox"/> Other | |
| <p><u>—</u> % Residential</p> | |
| <p><u>—</u> % Roads</p> | |
| <p><u>—</u> % Other</p> | |

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 238 Maximum width: 40'

Water Depth (inches): Maximum when observed: 15" Estimated spring maximum: 17"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

- Forested Shrub/Scrub Emergent Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

| List the percent cover of dominant vegetation by height strata within the pool: | | |
|---|----------------|--|
| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
| Tree (5m and above) | <u>4</u> | <u>Red Spruce, White Pine & Red Maple</u> |
| Shrub (0.5m to <5m) | _____ | _____ |
| Herb/Emergent (0 to <0.5m) | _____ | _____ |
| Floating /Submerged | _____ | _____ |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

| Check the palustrine types that best apply to this pool or wetland: | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

| Check all surrounding habitat types within 250 feet of the pool: | |
|--|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input type="checkbox"/> Permanent road/driveway |
| <input type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION A – GENERAL INFORMATION

Date: 4/13 Time of Observation: 1411 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 163/N

Significant Vernal Pool? Yes No

164/E (wood frog egg masses)
165/W (spotted salamander egg masses)

Why or why not? 23 spotted salamander egg masses & 36 wood frog egg masses
found during 1st round of visits; (4/13).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B – VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.92341 Latitude/Northing: 43.86174

Model of GPS Unit: Trimble GeoXH

Check one:

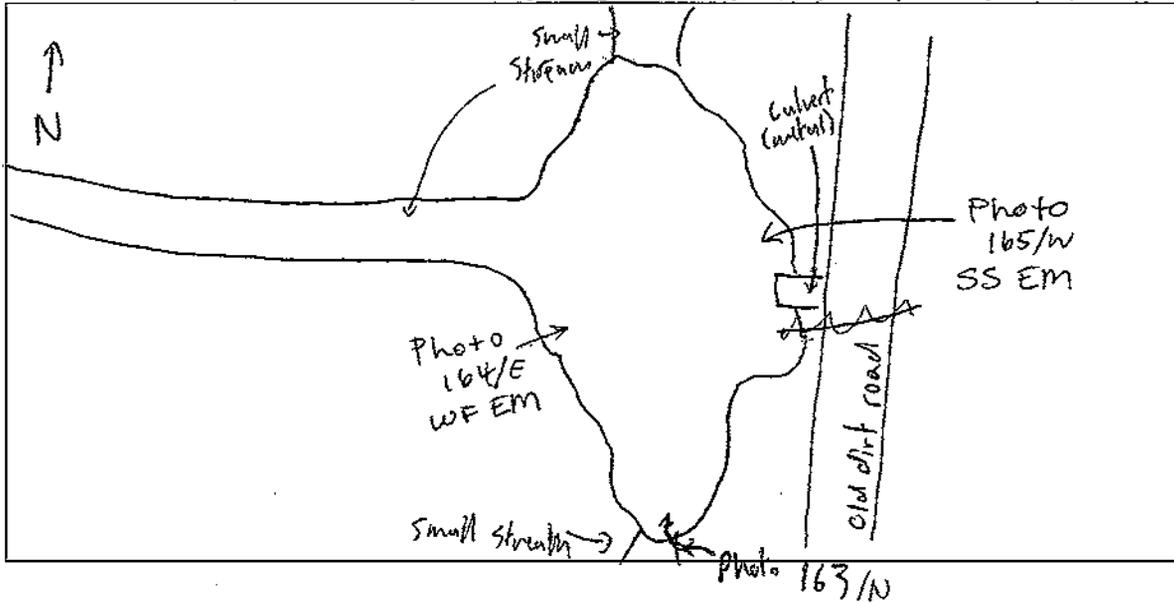
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 5 (m) feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: location is just west of an old dirt road.

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 90 % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- | | |
|---|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input type="checkbox"/> Softwood (>75% coniferous) <input checked="" type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|
- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|
- % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other
- % Residential
- 10 % Roads
- % Other

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 42' Maximum width: 29'

Water Depth (inches): Maximum when observed: >48" Estimated spring maximum: >48"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

Forested Shrub/Scrub Emergent Open water

Site Type:

- Upland – isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

List the percent cover of dominant vegetation by height strata within the pool:

| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
|----------------------------|----------------|--|
| Tree (5m and above) | — | — |
| Shrub (0.5m to <5m) | 2 | unknown |
| Herb/Emergent (0 to <0.5m) | — | — |
| Floating /Submerged | — | — |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

Check the palustrine types that best apply to this pool or wetland:

| | | |
|---|---|--|
| <input type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input checked="" type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: _____ |

Check all surrounding habitat types within 250 feet of the pool:

| | |
|---|--|
| <input type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|--|---|
| <input type="checkbox"/> Permanent | |
| <input checked="" type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | stream inflow and great depth exhibited by this pool. |
| <input type="checkbox"/> Ephemeral (drying out during the growing season in most years) | |

Maximum depth at the time of survey: > 48 (in) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input type="checkbox"/> No inlet | <input checked="" type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) <u>metal culvert</u> |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 36 | S, H, P (104) | 3 | — | — | — | — |
| <i>Spotted Salamander</i> | 23 | S, H, P (165) | 3 | — | — | — | — |
| <i>Blue-spotted Salamander</i> | | | | | | | |
| <i>Fairy Shrimp</i> | 5 | | | — | — | 5 | 3 |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses ~3-5 inches below surface): 50 °F / °C (circle one)

Rarity Criteria *(check all boxes that apply)*:

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghauntex</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | Other: | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____

Vernal Pool Documentation Form

SECTION A - GENERAL INFORMATION

Date: 4/15 Time of Observation: 1250 Town: Brunswick, ME

Weather Conditions: Sunny Partly Sunny Overcast Raining Snowing

Photos Taken? Yes No Photo # & Direction: 177/E (WFEM)
178/N

Significant Vernal Pool? Yes No

Why or why not? 104 Wood Frog + 1 Spotted Salamander found during 2nd round of visit; (4/15).

Observers: Amy Goodstine & Chris Akios

Credentials:

- Please check all that apply:
 - Professional Herpetologist and/or Ecologist
 - Professional Wetland Scientist
 - Professional Biologist (concentration: _____)
 - Trained Citizen Scientist
 - Self-informed Naturalist
 - Other: _____
- Please indicate your professional education, training, or certification that qualifies you to conduct biological surveys of vernal pools:

SECTION B - VERNAL POOL LOCATION INFORMATION

GPS location of vernal pool:

Longitude/Easting: -69.93400 Latitude/Northing: 43.86600

Model of GPS Unit: Trimble GeoXH

Check one:

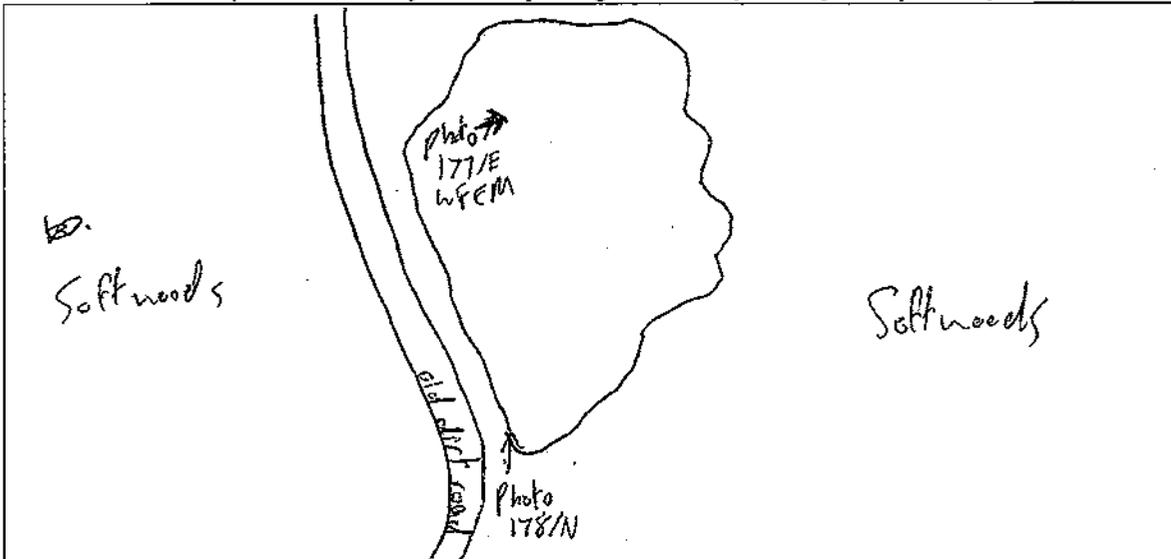
- The above GPS point is at the center of the pool.
- The center of the pool is approximately 15 (m) feet (circle one) in the compass direction of N degrees from the above GPS point.

Additional notes of GPS location: Location just to the east of old dirt road

Vernal Pool Documentation Form

SECTION B – VERNAL POOL LOCATION INFORMATION *(continued)*

Pool Location: *(Provide a sketch of the vernal pool together with any local reference points or features.)*



SECTION C – VERNAL POOL SETTING

Habitat Around the Pool: *(Estimate % of each within 250 feet of the pool, excluding cover directly over the pool. Estimates should total 100%.)*

- 85 ~~90~~ % Woodland (check most dominant type) → For woodland habitat, is the overstory?
- | | |
|---|--|
| <input type="checkbox"/> Hardwood (>75% deciduous) <input checked="" type="checkbox"/> Softwood (>75% coniferous) <input type="checkbox"/> Mixed (all others) | <input type="checkbox"/> Heavy (>50% canopy cover of trees and shrubs >6' tall) <input checked="" type="checkbox"/> Moderate (25-50% canopy cover of trees/shrubs >6' tall) <input type="checkbox"/> Sparse (<25% canopy cover of trees/shrubs >6' tall) |
|---|--|
-
- % Utility ROW (check most dominant type) → For Utility ROW, ID dominant vegetation type?
- | | |
|--|---|
| <input type="checkbox"/> Pipeline <input type="checkbox"/> Electric <input type="checkbox"/> Other | <input type="checkbox"/> Shrubs <input type="checkbox"/> Grass/forb <input type="checkbox"/> Mixed-shrub/grass/forb <input type="checkbox"/> Bare ground |
|--|---|
-
- % Open Land (check most dominant type)
- Active agriculture
 - Fields/pastures
 - Lawn
 - Other
- % Residential
- 15 % Roads → old dirt road
- % Other

Vernal Pool Documentation Form

SECTION D - WETLAND HABITAT CHARACTERIZATION

Vernal Pool Survey Information

Pool Dimensions (feet): Maximum length: 172' Maximum width: 87'

Water Depth (inches): Maximum when observed: 32" Estimated spring maximum: 34"

Type of Wetland: (Classify by vegetation in tallest class that covers 30% or more of the pool.)

Forested Shrub/Scrub Emergent Open water

Site Type:

- Upland - isolated (pool not part of a larger wetland)
 Wetland complex (pool associated with a larger wetland habitat)
 Bottomland-isolated
 Other Describe: _____

List the percent cover of dominant vegetation by height strata within the pool:

| STRATA | % COVER CLASS* | DOMINANT SPECIES (list up to 3 for each strata) |
|----------------------------|----------------|--|
| Tree (5m and above) | 2 | White Pine |
| Shrub (0.5m to <5m) | 1 | unknown |
| Herb/Emergent (0 to <0.5m) | 1 | grasses |
| Floating /Submerged | - | - |

* % Cover Class: 1 = 0-5%; 2 = 6-25%; 3 = 26-50%; 4 = 51-75%; 5 = >75%

Check the palustrine types that best apply to this pool or wetland:

| | | |
|---|---|--|
| <input checked="" type="checkbox"/> Forested swamp | <input type="checkbox"/> Wet meadow | <input type="checkbox"/> Slow stream |
| <input type="checkbox"/> Shrub swamp | <input type="checkbox"/> Shallow pond | <input type="checkbox"/> Floodplain overflow |
| <input type="checkbox"/> Peatland (acidic fen or bog) | <input type="checkbox"/> Abandoned beaver flowage | <input type="checkbox"/> Headwater seepage |
| <input type="checkbox"/> Emergent marsh | <input type="checkbox"/> Active beaver flowage | <input type="checkbox"/> Other: |

Check all surrounding habitat types within 250 feet of the pool:

| | |
|---|--|
| <input checked="" type="checkbox"/> Unmanaged upland forest | <input type="checkbox"/> ROW clearance |
| <input type="checkbox"/> Recently harvested forest | <input checked="" type="checkbox"/> Permanent road/driveway <u>old dirt road</u> |
| <input checked="" type="checkbox"/> Forested wetland | <input type="checkbox"/> Non-intensive development (<20% habitat conversion) |
| <input type="checkbox"/> Other wetland type(s): _____ | <input type="checkbox"/> Intensive development (>25% habitat conversion) |
| <input type="checkbox"/> Agriculture/grassland | <input type="checkbox"/> Other: _____ |

Comments: _____

Vernal Pool Documentation Form

SECTION D – WETLAND HABITAT CHARACTERIZATION *(continued)*

Confirmation of Vernal Pool Status Under the Natural Resources Protection Act (NRPA):

1. **Natural Origin** Select the pool's origin: Natural Unnatural Unknown
 If unnatural or unknown, describe any modern or historic anthropogenic impacts or modifications to the wetland:

2. **Hydrology** Select the pool's likely hydroperiod AND give evidence.

| | |
|--|------------------------------|
| <input type="checkbox"/> Permanent | |
| <input checked="" type="checkbox"/> Semi-permanent (drying partially in all years and completely in drought years) | <i>Relatively deep pool.</i> |
| <input type="checkbox"/> Ephemeral (drying out during the growing season in most years) | |

Maximum depth at the time of survey: 32 (in) / ft / cm / m (circle one)

3. Inlet Permanency

Type of inlet (an inlet is a seasonal or permanent channel providing water flowing into the pool):

| | |
|--|---|
| <input checked="" type="checkbox"/> No inlet | <input type="checkbox"/> Permanent inlet (channel between well-defined banks: see NRPA definition of river, stream, or brook (38 MRSA 480-B)) |
| <input type="checkbox"/> Ephemeral inlet | <input type="checkbox"/> Other: _____ |

4. Fishless

Were fish observed? Yes No & Were fish sampled? Yes No

Describe the methods used for observing/sampling fish, and list the species observed: _____

SECTION E – VERNAL POOL BIOLOGICAL DATA

Indicator Species Status – Abundance Criteria

| Indicator Species | # | Egg Masses | | Tadpoles/Larvae | | Adults | |
|--------------------------------|-----|--------------------------|--------------------|--------------------------|--------------------|--------------------------|--------------------|
| | | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** | Methods of Verification* | Confidence Level** |
| <i>Wood Frog</i> | 104 | S, P (17) | 3 | — | — | — | — |
| <i>Spotted Salamander</i> | 1 | S | 3 | — | — | — | — |
| <i>Blue-spotted Salamander</i> | — | — | — | — | — | — | — |
| <i>Fairy Shrimp</i> | — | — | — | — | — | — | — |

* Method of Verification: S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

Water temperature (around egg masses/~3-5 inches below surface): 44 (°F) / °C (circle one)

Rarity Criteria *(check all boxes that apply)*:

| Species | Method of Verification* | | | | | Species | Method of Verification* | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|---------------------|--------------------------|--------------------------|--------------------------|--------------------------|------|
| | V | S | H | P | CL** | | V | S | H | P | CL** |
| <i>Blanding's Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Wood Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Spotted Turtle</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Ribbon Snake</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| <i>Ringed Boghaunter</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | | <i>Other:</i> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

* Method of Verification: V = Vouchered; S = Seen; H = Handled; P = Photographed (Photo #)

**Confidence level in observation: 1 = <60%; 2 = 60-95%; 3 = >95%

“Significant Wildlife Habitat” Criteria Met? Yes No

Observer Signature: I hereby certify that the information contained in this report is true and complete to the best of my knowledge.

Signature: _____ Date: _____