Stewardship Plan
Snake River Conservation Project
New Hampton, New Hampshire

Prepared for:

New Hampton Conservation Commission

November 7, 2012

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1.0 INTRODUCTION

This report is intended to serve as the Stewardship Plan for the Snake River Conservation Project (Project). The Stewardship Plan was prepared by Abenaki Environmental Services (Abenaki) on behalf of the New Hampton Conservation Commission (NHCC).

The Project contains lands previously owned by Jacqueline E. Spear (Spear) and Elizabeth Clingan Baird (Baird) and consists of the Snake River, its associated wetlands, a forested upland buffer, and an undeveloped upland forest area which, combined, have been identified as ecologically important to the protection of habitat and water quality in this area of New Hampton, NH (Management Plan for the Waukewan Watershed, 2005).

The purchase of these lands and development of the Stewardship Plan is being funded by the Waukewan Shore Owners Association (WSOA) from donations, a New Hampshire Electric Cooperative (NHEC) Foundation Grant, Conservation Funds from the Towns of New Hampton and Meredith, in-kind contributions, and a grant from NH Department of Environmental Services (NHDES) Aquatic Resources Mitigation (ARM) fund. Details about funding of this Stewardship Plan are presented in Section 7.2.

This Stewardship Plan meets Land Trust Alliance (LTA) Standards and Practices as well as State of NHDES Wetlands Bureau "Aquatic Resource Compensatory Mitigation Fund" Rules (Env-Wt 807.14).

1.1 Location and General Description

The boundaries of this Project area are outlined on the Locus Map included in Appendix A. The Project, as depicted on this Locus Map, is located to the north-northeast of the State of NH Transportation Authority railroad corridor, and runs between the intersection of this corridor and Winona Road east-southeast to Waukewan Road. The rail corridor has on ownership (in fee simple) extending 37' from the centerline of the track, towards the Property.

Appendix B contains an aerial map of the Project, showing the Project extending to the thread of the Snake River at the town boundary between New Hampton and Center Harbor.

As a note, the Town of Center Harbor recently protected property across from this Project area on the northern side of the Snake River through a prime wetlands initiative and has protective covenants with landowners.

The Project is comprised of two abutting parcels of land: the first parcel is noted on New Hampton Tax Map R-7 as Lot 39 and is approximately 8.57 acres in size with approximately 2,841 feet of frontage on the Snake River. The second parcel is noted on New Hampton Tax Map R-7 as Lot 34 and is approximately 8.1 acres in size with approximately 1,560 feet of frontage on the Snake River. A New Hampton Town Tax Map is included in Appendix C.

As a note, the deed for parcel R-7-39 extends to the "thread" of the Snake River but the deed for R-7-34 notes this parcel terminates at the "edge" of the river. For the purposes of this report, as noted in Section 1.1, the Project extends to the thread of the river.

General land use characteristics in the vicinity of the Project consist of rural and undeveloped land with some residences and the railroad corridor. The rail currently hauls passengers, primarily for fall foliage tours, and occasionally hauls equipment for inspection and maintenance purposes. The railroad corridor is approved for off-highway recreational vehicles (OHRV) and snowmobile use between January and March each year.

Photo: Signage for OHRV on railroad

There are a number of tracts near the Project and within the Waukewan Watershed held in conservation use. A land conservation map is found in Appendix D: this map is an excerpt from the NHCC ARM Fund Application and was developed by the Town of Meredith.

1.2 History of the Parcels

Parcel R-7 Lot 39 was previously owned by Spear. This parcel was purchased by the NHCC in 2011. Parcel R-7 Lot 34 was previously owned by Baird and is in the process of being purchased by the NHCC with an anticipated closing date in 2013. For the purposes of this report, the parcels will hereinafter be collectively referred to as "Property".

The Property has been logged, used for early 20th century agricultural purposes, and passive recreational activities. This section of the Snake River is used regularly by kayakers, canoers, birders, fishermen and others ("Management Plan for the Waukewan Watershed" 2005).

The Baird parcel, previously owned by the New Hampton School, was used as a science education site. When the New Hampton School owned this parcel and during part of Baird's ownership (until 2006) it contained a protective covenant: it was assessed as unbuildable and was reserved for educational uses only.

During Phase I Environmental Site Assessment (ESA) processes completed for each parcel, Abenaki determined, although there was one fieldstone wall found on the Property, there were no indications of other historical development features (structures or buildings) on either parcel. The ESA research also determined there were no hazardous waste issues, past or present, on either parcel. As a note, there were efforts in 2011 and in 2012 by members of the WSOA and other volunteers, to clean up illegal discarded solid waste on both of the parcels. Waste removed included items such as tires, automobile parts, rusted through and unidentifiable metal objects, shingles, and a minor amount of discarded food and drink containers.

In September 2012, Licensed Land Surveyor Colin Brown of Central Land Surveying surveyed the boundaries of the Baird parcel: a copy of this boundary survey is included in Appendix E. Also included in Appendix E is a boundary survey for the Spear parcel, which was compiled in 1988 by Lepene Knowlton & Darbyshire Associates, Inc.

2.0 PURPOSE

2.1 Purpose of Property Conservation

The NHCC, along with the WSOA and the Meredith Conservation Commission (MCC), intend to conserve this Property as part of the overall protection of lands along the Snake River. This protection is important for a number of reasons.

The Snake River flows into Lake Waukewan, which is the largest drinking water supply for the Town of Meredith. The Snake River and associated wetlands have been identified as vital to the health of this lake for their ability to filter toxins, pollutants, sediment and road salt which is a documented problem in this area of New Hampton. They therefore play an important role in the protection of water quality, as well as the protection of available above and belowground water resources.

Permanent conservation of the Property will also help to achieve multiple public benefits by protecting open spaces for the scenic enjoyment, critical wildlife habitat, wetland functions and values, the overall watershed, and recreational and educational resources. Section 5.3 provides more details about the ecology along this section of the Snake River. Appendix F provides a copy of the watershed map for this region and includes the areas in and around the Snake River. This watershed map was prepared by the NHDES.

As a note, there are two separate conservation easements (hereinafter referred to as "Easements") for the Property: one for the Baird parcel and one for the Spear parcel. These Easements are included in the Appendix G. Sections 7.0 and 8.0 provide details outlining the management of the Property, the Stewardship Plan and the Easements and the funding of the Project.

2.2 Purpose of the Stewardship Plan

The purpose of developing this Stewardship Plan is to describe the intrinsic values of the Property and its resources, to provide guidance over the use and management of these resources, and to meet the provisions outlined by the Conservation Easements.

Specific sections of this Stewardship Plan provide:

Descriptions of the ecological characteristics of the Property;
Details of conservation goals & purposes;
Identification of the Stewardship Plan Manager;
Details of how the Stewardship Plan will be managed;
Descriptions of Stewardship Plan implementation & management funding;
Recommendations for land uses in keeping with the Easements & specific to recreational and educational purposes;
Details on annual Stewardship Plan monitoring and funding;
Details of enforcement procedures if necessary; and
Enforcement of funding options.

As noted, Sections 7.0 and 8.0 provide details on stewardship guidelines, Property management, funding, monitoring and reporting.

3.0 BACKGROUND RESEARCH

Prior to doing any fieldwork for the Stewardship Plan, Abenaki reviewed the previously completed ESA for the Baird and Spear parcels, a Natural Resource Inventory (NRI) conducted for the Spear parcel, and existing landscape and environmental information for this area of NH. This information not only provided an overall framework for the fieldwork but also helped to establish a basis for assessment of natural resources and features on and in the vicinity of the Property, history of land use, past issues that may have impacted the Property, and an understanding of the importance of this area of the Lakes Region from the perspective of the local communities.

For the purposes of establishing ecological data, Dr. Rick Van de Pol completed a functional wetland evaluation on the Baird parcel, an overall NRI for the Town of Meredith including general mapping of wetlands and prime wetlands (including the Baird parcel), and a prime wetlands inventory for the Town of Center Harbor. All of these studies were used as references in developing this Stewardship Plan.

A partial list of agencies and references relied upon by Abenaki for the fieldwork and for overall development of this Stewardship Plan includes:

Lakes Region Planning Commission
NHDES
NH Department of Resources and Economic Development (DRED)

NH Department of Fish and Game (NHFNG)
NH Transportation Authority Rail & Transit
NH GRANIT Geographic Information System (GIS)
NH Natural Heritage Bureau (NHB)
NH State Historic Preservation Office (SHPO)
NRI for Spear Parcel
State and Local Transportation Corridors (roads and railroads)
Studies conducted by private entities and environmental contractors
Town Tax Maps/ Political Boundaries
University of NH (UNH) Complex Systems Research Center
UNH Library
US Army Corps of Engineers
US Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS)
USDA National Agricultural Imagery Program (NAIP) Aerial Imagery
US Environmental Protection Agency (EPA)
US Fish and Wildlife Services (FWS)
United States (US) Geological Survey (USGS) Topographic Quads
WSOA

Found in Section 9.0 is a complete list of all resources relied upon as references for this Stewardship Plan.

4.0 FIELDWORK

4.1 Clearance for Property Access

The NHCC provided clearance for the all of the fieldwork completed on both parcels: Ralph Kirshner was Abenaki's primary contact for the NHCC.

4.2 Fieldwork Completed

Abenaki completed fieldwork on the parcels on the following dates:

July 9, 2010 ~ Spear Property for the ESA
August 29, 2010 ~ Spear Property for the ESA
November 12, 2010 ~ Vegetative & Wildlife Habitat Surveys for the NRI
March 25, 2011 ~ Vernal Pool Survey for the NRI
June 6, 2011 ~ Vegetative & Wildlife Habitat Surveys for the NRI
December 13, 2011 ~ Baird Property for the ESA
August 15, 2012 ~ Baird Property for the ESA
August 21, 2012 ~ Final fieldwork for development of Stewardship Plan

In addition, Abenaki met with NHCC and MCC members on October 9, 2012 to work out details related to the Stewardship Recommendations Section of this report.

4.3 Methodology

Although the methodology of the fieldwork was similar during all fieldwork on the Property, for the purposes of this Stewardship Plan, this Section will focus on the August 21, 2012 fieldwork.

Prior to going into the field, Abenaki reviewed the original NRI and previously compiled maps, surveys and reports developed by the entities listed in Section 3.0. Maps and surveys were also used in the field, along with a handheld recorder, GPS unit, and camera, for orientation, documentation, and planning purposes.

Abenaki parked at the Snake River bridge on Waukewan Road and walked the Property from east to west along three distinct transects: one along the scrub-shrub wetland edge, one mid-section of the Property and one at the base of the slope down from the railroad corridor. The objective during this reconnaissance was to identify features that would aid in developing this Stewardship Plan, and in particular, the Recommendations outlined in Section 7.0.

Abenaki kept the following goals in mind while walking these transects:

Property conservation
Public benefits
Protection of water quality
Protection of wildlife habitats
Public access
Recreation & Education
Aesthetics

4.4 Boundary Lines

As noted, the Property is located north-northeast of the NH Transportation Authority railroad corridor, between the intersection of this corridor and Winona Road east-southeast to Waukewan Road.

The boundaries of the two parcels were found to be well-delineated by the existing adjacent features (rail and road corridors and the river) and by blazing between the Spear and Baird parcels.

4.5 Existing Infrastructure & General Observations

There has been no development on the Property: no roadway, official trails, buildings or signs thereof, residential utilities, wells, etc. There is a high-tension line crossing the Spear parcel that also crosses over the railroad and over the Snake River.

Although there is currently no legal parking or access to this Property, observations were made of a pull-off along Winona Road, at the north-northwestern end of the Property. From this pull-off, a short footpath leads onto the Property and runs to the edge of the Snake River. Historically

this footpath has been utilized as an unauthorized access to unauthorized non-motorized boat launching. In addition, one short rogue footpath was found on the Property running east from the high-tension corridor, through a section of forested wetland, and running several hundred yards before dissipating. Human footprints were observed in this path during the August 2012 fieldwork.

Photo: Observed footpath

Throughout the Property, cleanly cut stumps were observed indicating past tree cutting activities. Shotgun shells and remains of a fishing line were observed on the Property. One fieldstone wall was observed on the Property, running southwest to northeast for roughly 50 yards.

Although the Property is located in one of the more quickly growing (population & development) regions of New Hampshire, the Property, which is sandwiched between the railroad and two town roads, appears to be part of a block of relatively unfragmented forest and riparian habitat.

4.6 Landscape

This Property is located in the northern section of the NH Lakes Region, just south of the White Mountains Region. It is within the EPA designated "Sebago-Ossipee Hills and Plains" eco-region, just east of the intersection of Sunapee Uplands Region and White Mountain Region. As a note, the EPA eco-region map was developed based on areas with similar geology, climate and landform and is intended for broad landscape characterization (Appendix H).

5.0 ECOLOGICAL FEATURES

This Section lays the groundwork relative to the significant ecological and natural resource features of the Property.

Abenaki completed the NRI in July 2011 for the Spear parcel. During the field surveys for this Stewardship Plan, completed in the summer of 2012, Abenaki determined the overall natural resources on the Baird parcel were consistent with those on the Spear parcel. For this reason, this Ecological Features section will be brief: the NRI, too voluminous to attach hereto, is available from the NHCC. This Inventory is recognized by Abenaki as an overall reference for significant ecological and natural resources and features for the entire Property.

Prior to any fieldwork, remote research for this Stewardship Plan was completed. For instance, the Natural Resources Map for New Hampton, compiled by the Lakes Region Planning Commission (Appendix I) was reviewed. As with the original NRI, this research also followed a three-step process, coupled with the best professional judgment typically used during natural resource inventories:

1) Review of remote sensing and existing literature sources,
2) Qualitative and quantitative data collection, and
3) Data analysis and assessment.

As noted, Abenaki conducted one day of fieldwork for the NRI in the fall of 2010 and two days in the spring of 2011. In addition, two days of fieldwork were conducted in the summer of 2012. Access to the Property on all days was gained by parking along and walking onto the Property from Waukewan Road.

The following sections, along with the NRI, describe the ecological and natural resource features related to the Property based on the remote research and the fieldwork.

5.1 Topography and Geology

This area of NH is in a geologic region known as the Eastern New England Upland: a region running from northern Maine south to eastern Connecticut. New Hampshire is comprised of three distinct areas known as the Merrimack Valley, the Connecticut River Valley, and the Hills and Lakes Region: the Property is in the Hills and Lakes Region.

Topography in this general region of NH consists of hills and rolling terrain. Topography in the area of the Property ranges from relatively flat along the Snake River and associated emergent and scrub-shrub wetlands, to more steeply sloping in several sections, and very steeply sloping up to Waukewan Road and to the railroad bed. There are no natural slopes on the Property greater than 15%. Generally, topography on the Property ranges from between 543 to 583 feet above mean sea level. For reference a topographic map in included in Appendix J.

The Waukewan Watershed is underlain by Winnipesaukee Tonalite and Kinsman Granodiorite geologic features; with the latter underlying the more westerly end of the watershed. The Winnipesaukee Tonalite is comprised of tonalite, granodiorite and granite rock.

The Kinsman Granodiorite (Kinsman Quartz Monzonite of Billings, 1955) is comprised of foliated granite, granodiorite, tonalite, and minor quartz diorite; large megacrysts of potassium feldspar characteristic; with garnet being locally abundant.

For details about these geologic features, refer to the Mineral Resources Program of the USGS website (minerals.usgs.gov).

5.2 Soils

One of the goals in the Conservation Easements is maintenance of soil productivity. Mapped soil data was available on the NRCS website and the Belknap County Soil Survey. Soil descriptions were adapted from the statewide numerical soil legend. Site-specific soil information was derived from the NRI and 2012 fieldwork using a tile spade and soil auger.

The Snake River and its associated emergent and scrub-shrub wetlands are comprised of Catden mucky peat (CatbA) soils. These soils are generally located on slopes of 0 to 2 percent and tend to be very deep soils, located in very poorly drained areas. The parent material of this series is organic in nature.

There is a small section of the Monadnock-Becket-Skerry soil complex straddling the high-tension line corridor and extending in an easterly direction into the Property. This series is found along and downslope of the railroad, on 8 to 15 percent slopes.

The rest of the soils on the Property are comprised of the Tunbridge-Lyman-Becket complex. Slopes along this complex are generally 8 to 15 percent. These soils tend to be very stony. As a note, there are man-made disturbances to this soil complex along Winona Road at the entrances to the Property and over the railroad.

The table below outlines the size of each of the three soil types found on the Property as well as the percent of coverage. This table and the Soil Map found in Appendix K includes up to the thread of the Snake River.

Belknap County, New Hampshire			
Map Unit Symbol	**Map Unit Name**	**Acres**	**Percent Coverage**
194A	Catden mucky peat, 0 to 1 percent slopes, ponded	13.9	44.2%
380C	Tunbridge-Lyman-Becket complex, 8 to 15 percent slopes, very stony	14.8	46.9%
543C	Monadnock-Becket-Skerry complex, 8 to 15 percent slopes, very stony	2.8	8.9%
W	Water	0.0	0.0%
	Totals	31.5	100.0%

5.3 Watershed & Water Resources

The entire Property is within the Waukewan Watershed (Watershed Map Appendix F). This watershed encompasses over 8,000 acres, including parts of both Belknap and Grafton Counties (towns of Ashland, Center Harbor, Holderness, Meredith and New Hampton). This area

collectively contains sub-watersheds of the Winnipesaukee Watershed and is within the overall Merrimack River Major Watershed.

The Waukewan Watershed, in total, spans a stratified drift aquifer approximately 47-acres in size: the Property is within a 5-mile radius of Meredith's water intake (US EPA Public Water Supply ID# 1521010).

As described, the Snake River (referred to in the NRI as Winona Brook) runs along the northeastern section of the Property from Lake Winona to Lake Waukewan. It is a perennial waterbody with varied widths and depths throughout this watershed. The Snake River and associated wetland complex (See Section 5.4) is significant for its floodwater retention capacity and its ability to filter toxins and pollutants flowing from Winona Lake towards and into Lake Waukewan. NHDES Lakes and Ponds Inventory and NH GRANIT identify the Snake River as a second Order Stream (Watershed Map Appendix F).

In 2002, residents in and around the Snake River area contacted the NHDES Biology Bureau and expressed concern about possible water quality along this waterbody. A monitoring program through the Volunteer Lakes Assessment Program (VLAP) was set up to evaluate potential degradation of the water and wetlands of the Snake River: water quality samples have been collected annually since 2002. Results from 2006 to 2011 can be found online: des.nh.gov/organization/divisions/water/wmb/vlap.

Impacts to this waterbody from general development in this area of the Lakes Region have several sources. Point and non-point pollution from activities along the river corridor and the proximity to transportation corridors (with such issues as erosion, run-off and de-icing salt infiltration) are at the forefront of the water quality concerns.

5.4 Wetlands

The wetlands found on the Baird parcel during 2012 field reconnaissance surveys were consistent with those found on the Spear parcel and as described in the NRI. For this reason, this Stewardship Plan will reference the NRI during wetland descriptions.

Using the USFWS National Wetland Inventory (NWI) mapping program (Map Appendix L), Abenaki estimates there are 10.9 acres of wetland within the Property area. This includes the Palustrine forested, scrub-shrub and emergent wetlands as those described in the NRI, but excludes the Riverine ecology associated with the open waters of the Snake River.

As outlined in the ARM Application and confirmed by Abenaki during 2012 field surveys, the primary functions associated with the Palustrine forested, scrub-shrub and emergent wetlands on the Property are: sediment trapping, toxicant removal/nutrient transformation, and wildlife habitat, and to a lesser extent, flood storage protection.

A Functional Value Assessment (Dr. Richard Van de Poll, 2010) determined the Snake River section of the Property has the following functions and values using the NH Method Version 1, based on a progressive score of 0 to 1.0:

Ecological Integrity .83	Flood Control 1.0
Wetland Wildlife Habitat .84	Groundwater Use 1.0
Finfish Habitat – Rivers & Streams .83	Sediment Trapping .95
Finfish Habitat – Lakes & Ponds .68	Nutrient Attenuation .90
Educational Potential .74	Shoreline Anchoring 1.0
Visual/Aesthetic Quality .96	Historical Site 0.0
Water-based Recreation .98	Noteworthiness 1.0

In total, all of these functions will be protected on the Property portion of this stretch of land between Winona Lake and Lake Waukewan as a result of this conservation effort. In addition, as described in the Waukewan Management Plan (2005), protection of these wetland areas will aid in protection of municipal drinking water, given the Property is upstream of Lake Waukewan.

As outlined in Section 5.7, Abenaki conducted two rounds of NHB reviews on the Property. According to the NHB, the critically imperiled Back's sedge (Carex backii), a perennial grass, was identified just northwest of the Property. This sedge is considered critically imperiled due to its rarity and vulnerability.

5.5 Wildlife

Abenaki conducted a review of the NH Wildlife Action Plan (WAP). The WAP helps to identify species distribution and abundance (including low and imperiled populations), key habitat and community types essential for conservation, and potential barriers to conservation actions. WAP is also a guide for planning purposes relative to monitoring species and habitats, coordination, development, implementation, review, and revision of Strategy Plans. Lastly, the WAP encourages public involvement in development and implementation of resulting Plans. The WAP map for this area is included in Appendix M.

To protect species and populations that are indicative of the State's wildlife diversity, the WAP sets out to provide planners and conservation professionals with a tool to identify the most critical wildlife habitat locations. A statewide and regional ranking of the highest quality habitat has three categories:

1. Highest ranked habitat in NH;
2. Highest ranked habitat in biological region and;
3. Supporting landscapes.

According to the WAP review, this Project maintains a "supporting landscapes" designation and is within miles of large tracts with "highest ranked habitat" designation further surrounded by other "supporting landscapes" and "highest ranked habitat" lands.

As discussed in Section 5.7, Abenaki conducted two rounds of NHB reviews for the Property. According to the results, the state threatened Common Loon (*Gavia immer*) and Pied-billed Grebe (*Podilymbus podiceps*) are historically found utilizing the Snake River. Abenaki did not observe either of these species. Although the status of the Pied-billed Grebe is not known, two Common Loon nests with eggs were present in the area in 2011 according to the NHB results. As a note, there is a loon-nesting box currently on the edge of the open-water portion of the Snake River wetland along this Project corridor.

Photo: Beaver dams

As confirmed by the Functional Value Assessment (Van de Poll, 2010) described in Section 5.4, the Snake River is also important for fish habitat, fisheries, significant natural communities, and rare, threatened and endangered species.

As a note: surveys for fish were not part of this study or of the NRI research.

Because of the variety of ecosystems, this Property supports a valuable diversity of wildlife habitat. Direct observations of a number of wildlife species were made onsite.

Most obvious was a Canadian Beaver (*Castor canadensis*) dam spanning the river and two large beaver lodges. Evidence of recent beaver browsing on shrubs along the shore and a number of tracks through the emergent wetland area suggest beaver activity.

Abenaki observed signs (scat, tracks and markings) of wildlife including the American Black Bear (*Ursus americanus*), moose (*Alces alces*), White-tailed Deer (*Odocoileus virginianus*), Eastern Gray Squirrel (*Sciurus carolinensis*), and Eastern Chipmunk (*Tamias striatus*). Species observed by Dr. Van de Pol during fieldwork also included otter (*Lutra Canadensis*), mink (*Mustela vison)*, raccoon (*Procyon lotor*), North American Porcupine (*Erethizon dorsatum*), American Red Squirrel (*Tamiasciurus hudsonicus*), and Red Fox (*Vulpes vulpes*).

Additionally, wildlife known to frequent the types of habitat found on this Property include the Striped Skunk (*Mephitis mephitis*), and, in the adjacent riparian areas, muskrat (*Ondatra zibethicus*).

Observed avian included a variety of songbird and a Belted Kingfisher (*Megaceryle alcyon*) using the river corridor.

Additionally, a flock of Mallard Ducks (*Anas platyrhynchos*), a flock of Canada Geese (*Branta Canadensis*), and two Great Blue Heron (*Ardea* Herodias) were observed using the river corridor.

In the upland community, woodcock (*Scolopax minor*), a Pileated Woodpecker (*Dryocopus pileatus*), and a variety of songbirds were observed using the upland strip.

Many other bird species are likely to be attracted by the water and the food sources located on and adjacent to the Property. These include species that are likely to utilize the forested habitat, as well as those who would use the riverine corridor for fishing grounds such as transient raptors and diving birds.

Further, one section of hemlock forest contains seasonally ponded water and may function as a vernal pool, amphibian-breeding habitat. This potential was assessed during the NRI but signs of this function were not observed.

5.6 Forest Resources

Forest resources and their associated habitat were observed to be very healthy on this Property. These are described in detail in the NRI.

In general, the forest resources include an "acidic, primarily nutrient-poor forest" within the "Transition Hardwood-Conifer Zone" (NHB), particularly in the corridor between the riverine community and the railroad. The upland forest community observed contains mature to very mature forests with a dominance of hemlock (*Tsuga canadensis*), beech (*Fagus grandifolia*), Red Oak (*Quercus rubra*), Black Oak (*Quercus velutina*), White Oak (*Quercus alba)*, and White Pine (Pinus strobus). These upland forest areas are interrupted in places by sections of Red Maple (*Acer rubrum*) floodplain forests.

Also noted during fieldwork were hemlock dominated forested wetlands, at least one area of which could function as vernal wetland pool habitat as categorized by the NHB.

Other tree species documented onsite included: Big-toothed Aspen (*Populus grandidentata*), Yellow Birch (*Betula alleghaniensis*), White Birch (*Betula papyrifera*), and Gray Birch (*Betula populifolia*).

There were a number of cavity trees (right) observed onsite, which aid in bio-diversity on the Property in that they provide habitat and nesting opportunities for many mammals and birds.

In addition, a healthy layer of dead and down woody material including logs, stumps, branches, upturned roots, and tree falls was observed throughout. These materials are critical as they provide wildlife habitat, nurse logs for regenerating plants, and aid in nutrient cycling. Decaying wood supports insects and other invertebrates in their life cycles, which in turn are food for shrew, woodpecker, and black bear, and habitat for fungi, lichens, and bryophytes. Species including mice, voles, salamanders, snakes, chipmunks, red squirrels, weasels, and black bear will also use these materials for cover and denning areas.

Fallen logs and other woody debris at the forested wetland / Snake River wetland boundary are important for this aquatic ecosystem: snake, aquatic mammals and other wildlife will hunt among these woody debris areas.

5.7 Rare Species and Exemplary Natural Communities

Abenaki conducted the NHB review on November 29, 2010. A second NHB review was conducted in August 2012 and included both parcels (Appendix N).

As discussed, the state threatened Common Loon and Pied-billed Grebe were found to utilize the Snake River and the critically imperiled Back's Sedge, a perennial grass, was identified just northwest of the Property. Results of the NHB review are provided in Appendix N.

6.0 HISTORIC, ARCHEOLOGICAL & CULTURAL RESOURCES

Abenaki contacted the SHPO in early October 2012, and provided SHPO a map of the Property to review known onsite historic, archeological or cultural resources. A letter from the SHPO with results of the review is provided in Appendix O. The SHPO review noted the area "is considered extremely sensitive for Native American archaeological sites" and recommended, if ground disturbances are planned on this site, archaeological investigations should be performed.

6.1 Historic Resources

According to a review completed by the SHPO, although there are no known historic features on the Property, this area has not been mapped.

6.2 Archeological Resources

According to a review completed by the SHPO, although there are no known archaeological resources on the Property, this area has not been mapped.

6.3 Cultural Resources

According to a review completed by the SHPO, there are no reported cultural resources on the Property. During fieldwork, one fieldstone wall was observed as pictured here. As a note: this area has not been mapped for Cultural Resources.

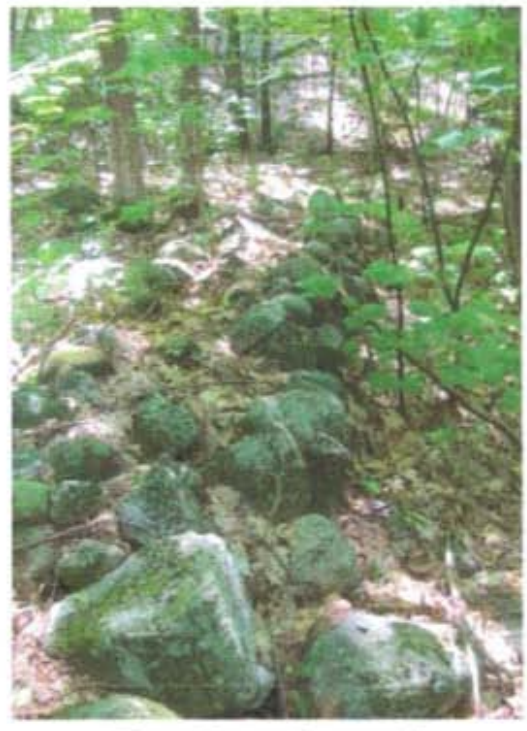

Photo: Observed stonewall

7.0 STEWARDSHIP GUIDELINES & RECOMMENDATIONS

This section outlines the general and more specific guidelines for the Stewardship Plan and includes recommendations for resource management, recreational, and educational opportunities on the Property. This section follows the framework of the Easements as well as LTA Standards and Practices and NHDES Rule Env Wt 807.14.

7.1 Management

As noted, the Town of Meredith, acting through its Conservation Commission, has been granted Conservation Easements for the Property and shall be responsible for ongoing stewardship of the conservation interest of the Property.

Managing the Stewardship Plan and the overall Property will be the responsibility of the NHCC, with assistance from the Town of Meredith (MCC), the WSOA and potentially other entities interested in conservation in this area of the Lakes Region. Overall management shall be to provide visitor access to enjoy the Property while protecting, in perpetuity, the quality of onsite natural resources and open spaces.

The NHCC will enforce onsite uses and prohibitions of the Property, as outlined by the Easements. For instance, the NHCC will be responsible for maintaining boundary markings: repainting blazes every 7-10 years or as necessary.

The NHCC is responsible for managing the Property and working to implement the outlined objectives: all management will be in concert with the Deed, Easements, and this Stewardship

Plan. The Town of New Hampton and/or the NHCC will administer all management decisions, and legal and fiduciary responsibilities for the Property.

In the event the NHCC is no longer able or willing to fulfill the stewardship responsibilities as described, the stewardship responsibilities will become the responsibility of another qualified organization within the meaning of Section 107(h)(3) of the U.S. Internal Revenue Code (1986, as amended).

7.2 Funding

There is a stewardship endowment specifically for the Baird parcel that will be entirely funded by the MCC. The MCC, for instance, has dedicated a $10,000 stewardship endowment from its Conservation Fund for these purposes.

The NH Electric Cooperative (NHEC) Foundation Grant awarded $10,000.00 to the WSOA for this Project: these funds are partly for development and implementation of this Stewardship Plan. In addition, these NHEC funds will be applied to public awareness efforts including trail design and construction, parking facilities, kiosk, other signage etc., brochures and other promotional documents, webpage development and similar outreach. Lastly, the WSOA has committed to raising additional funds, matching money, and in-kind services where needed.

7.3 Parking and Trail

Parking

There is currently a small wood road with a cable gate leading onto the Property off Winona Road but this is not the recommended access to the Property. In fact it is recommended a second cable or large boulders be added or trees planted near this gate, along the toe of the railroad, to prevent vehicles accessing the Property over the rail corridor.

Photo: Proposed parking site for day-use access

The fieldwork conducted in 2012 determined the safest and most logical place to provide a parking area and day-use access to the Property is just east of the railroad crossing on Waukewan Road. This location could accommodate several automobiles. Trees will need to be removed and existing grades either filled with gravel or cut to construct a parking and trailhead location. No toilet facilities or trash containers will be offered at this location.

Trail

There is one loop trail proposed for the Property, with not all but a portion of this trail handicap accessible. Appendix P contains a copy of a map of the proposed location of this trail. This trail should be constructed using the fourth edition of the Appalachian Mountain Club's (AMC) "Complete Guide to Trail Building and Maintenance" (AMC 2008) as well as the "Best Management Practices For Erosion Control During Trail Maintenance and Construction State of New Hampshire" (DRED 2010). State permits may be required for trail construction. The Conservation Easements require the NHCC to provide the MCC with a written notice 45 days prior to any construction of a permitted structure.

Photo: Proposed area for beginning of trail

The proposed trail leaves the parking area in a northerly direction, then forms an "S" curve to lessen the grade from the proposed parking area down to the woodlands. This curve will help to provide ease of access for the public and the opportunity to construct an Americans with Disabilities Act (ADA) compliant trail.

The trail will follow the contour of the forest floor and weave in generally a northwesterly direction, 10 to 50 feet from the forest-wetland edge. Several hundred feet into the Property along this trail, a vista opportunity is encountered followed by an emergent wetland. It is proposed that a nonskid boardwalk be constructed over this wetland, allowing for up-close viewing of this wetland for interpretive and educational purposes and for handicap accessibility. At the westerly end of the proposed boardwalk is a mature hemlock forest with the opportunity to create another scenic vista, towards the Snake River. This would be a good place to terminate ADA accessibility.

This trail will continue northwest, passing both ecological and geologic features of interest. It will pass over the former boundary delineating the Spear and Baird parcels, and soon encounter a fieldstone wall running southwest to northeast. It is proposed that the trail loop through an existing opening in this stonewall, then loop around to a point on the former Spear parcel where a forested wetland runs between the toe of the railroad bed to the open waters of the Snake River. At this point, it is recommended the trail loop and then double back in a southeasterly direction. In the future, there may be an opportunity for this trail to run through this wetland, all the way to Winona Road.

There are at least four locations along this trail for overlooks, possibly with benches, for general enjoyment and viewing the Snake River as well as for wildlife viewing. Establishing scenic

opportunities at locations along this trail will help to meet the Conservation Easement goal of conserving scenic quality.

As described, this trail is proposed to be a one-way recreational and educational loop, with several prominent viewing spots designed to provide visitors with a valuable outdoor experience. ADA requirements include constructing the trail: 36 inches wide (at a minimum); with a firm and stable surface; with ease of access from the trailhead; with passing areas every 1,000 feet if the trail is less than 60 inches wide; and providing resting at least 60 inches long and as wide as the trail is when approaching rest areas.

Photo: Potential overlook

The slope of an ADA trail should be no more than a 5 percent, minimizing obstacles such as tree roots, tree stumps 2-inches tall or less and signage with handicap symbols at handicap access point. During the early trail planning stages, if it is determined the primary trail will not accommodate handicapped accesses, a shorter loop trail outfitted with ADA requirements is recommended.

The final trail location should be agreed upon in the field and shall be planned and constructed to minimize ecological changes. Examples of techniques to minimize ecological changes include thinning of trees and saplings, limbing trees, routing around small wetland habitat, and crossing moderate width wetland locations by installing stepping-stones and pungeons (short wooden planks). The previously reference AMC and DRED guidelines provide more detail on the preferred trail construction and maintenance techniques.

7.4 Habitat & Resource Management

One of the primary goals of the Easements is conservation of native plant and animal species and their habitat. Focusing on this goal will result in an evolution of many educational opportunities on this Property. For instance, a complete list of habitats and wildlife species utilizing this Property could be developed using each season as a springboard for data collection over a period of several years. This is the ideal approach to catalogue wildlife species and overall habitat in order to develop a wildlife management plan. This type of effort could be accomplished using a volunteer force in conjunction with local ecologists.

As noted in Section 1.1, there are a number of other conservation lands near the Property (Map Appendix D): habitat and resource management by way of land conservation is common in the Waukewan Watershed.

Forest Management

Although there is nothing to suggest either parcel has a forest management plan, Abenaki observed signs consistent with past tree cutting such as cleanly cut stumps. The NHCC has no plans to manage the forest resources of the Property, since this activity is prohibited in the Easements. Tree removal will be limited to that necessary for parking and trail construction, safety (such as in the case of snag trees), to enhance or protect wildlife habitat and to reasonably provide for educational and recreational opportunities. In addition, limited, occasional tree maintenance for forest health may be conducted to address issues such as fire control, disease, and insect outbreaks etc.

Non-native forest pests are a concern across NH. Periodic monitoring for the presence of pests such as Hemlock Woolly Adelgid, Asian Long Horned Beetle and other pests (possibly the Emerald Ash Borer) will be part of the management and educational plan for this Property. Silvicultural prescriptions to remove diseased trees and to control non-native species, in concert with a Licensed Forester, will be necessary.

Wetlands

Some of the primary goals of the Conservation Easements are to:

-protect water quality, wetlands, and riparian zones
-maintain the integrity of onsite wetlands and the riparian corridor
-provide the broadest positive ecological benefits & protect plant and animal habitat
-provide corridors for species on the move or those that use the Property as part of range
-help maintain the health of Lake Waukewan & protect that water supply
-provide educational opportunities about healthy functioning wetland systems

It is recommended the conditions and health of the onsite wetlands be accessed every ten years in concert with the review and update of the Stewardship Plan. This would provide educational data about ecological processes such as vegetative succession, about non-native or invasive species, and climate change that may affect the Property.

Wildlife Habitat Management

Enhancement of wildlife habitats, where practicable, is one of the Conservation Easements' goals. Since the Property is located between Lakes Winona and Waukewan, it is ideal to support the movement of wildlife within the corridor. As noted, the Property is untouched by development, contains a mature forest, and is part of a relatively unbroken forest ecosystem in spite of abutting town roads and a railroad. These characteristics make the Property ideal for supporting wildlife dependent on the types of habitat onsite. In addition, as noted, there is at least one excellent opportunity for a boardwalk through a wetland area that would provide ADA access as well as wildlife viewing where interpretive signage could be placed for educational purposes.

The Property will be passively managed for wildlife habitat. Considering the diversity of habitats existing on the Property as described in the NRI, manmade habitat alterations should be kept to a minimum. Minimizing impact to wildlife habitat will be one of the considerations when locating, constructing and maintaining the parking area, trail, and scenic vistas.

Annual collection of wildlife data can become a critical component of ongoing stewardship efforts and can add an active and participatory element to an environmental education program. The goal of wildlife monitoring is to collect population information to see how management (or lack of management) of specific habitats is affecting wildlife populations over time.

Rare Species & Exemplary Natural Communities

Protection of unique or fragile natural areas and species is one of the stated goals in the Conservation Easements. Protection of the Property will directly provide overall protection to the rare and threatened species recorded by the NHB in this area of NH.

As noted, two state threatened species are known to utilize the riparian corridor between Lake Winona and Waukewan: the Common Loon and Pied-billed Grebe. First reported in 2000, the Common Loon has periodically maintained nests along Winona Brook. As of 2011, two nests with eggs were present. The Pied-billed Grebe was first reported to be nesting in the Winona Brook area in 1988, but its status is unknown. Although no rare, threatened or endangered species were surveyed on site, the Property maintains the ability to support them.

The current condition of the Back's Sedge, a critically imperiled perennial grass, is unknown despite specimens collected within 1.5 miles northwest of the Property in 1969 along the railroad line. The potential for rare vegetation to exist along the shoreline of the Property exists but requires further study.

As noted in the Section 5.5, a hemlock dominated forested wetland of roughly 1/10 acre exhibited potential vernal pool characteristics. However, vernal pool indicators such as fairy shrimp or wood frog egg masses were not observed during surveys. This area of the forest and other portions of the Property could provide significant educational opportunities related to vernal pool, plant, wildlife, or exceptional natural community habitat.

The habitat for many species will be protected because of this conservation Project: the existence of these species provides excellent opportunities for education, data collection, and research. Providing public access, an interpretive trail, and wetland boardwalk areas will aid in these efforts.

7.5 Education and Environmental Stewardship

Many of the overlapping educational, environmental stewardship, and volunteer-based opportunities afforded by this conservation Project have been mentioned in the above text. A brief list is outlined below:

Education

-Study of naturally functioning ecosystems
-Study of geologic & weathering processes
-Water quality monitoring
-Interpretive signage & formal nature walks

Environmental Stewardship

-Surveying & monitoring ecological features
-Monitoring for erosion or other issues
-Annual monitoring events for Property integrity

Volunteer-Based Opportunities

-Trail clearing & maintenance
-Establishing scenic overlooks
-Periodic trash cleanup efforts

These opportunities will evolve over time as the NHCC and the MCC begin to develop the public access and use portion of this Stewardship Plan. Engaging the public, whether they be volunteers, students, teachers or other individuals, in helping to monitor habitat for instance, or to gather information on vegetative or fungal communities found on the Property is key. Activities could range from surveys with plots or transects, to more rigorous monitoring events.

Photo: Fungal community observed onsite

Periodic trash pick-up efforts, particularly along the roadways and at the northern section where dumping of waste has been a historic issue, will serve to engage the public in the stewardship aspect of the Property and give them ownership of Property conservation efforts.

Supporting the water quality monitoring (VRAP) and biological monitoring (VBAP) of the Snake River and offering the Property as a gathering place for initiation of these efforts would help to move water quality protection forward in this community.

Informational and interpretive signs could include information about onsite mycology, geology and soils, ecology, landscape topography, wetlands and water resources, wildlife, and vegetation. A primary kiosk will be located at the proposed parking area and will serve to provide the public with a history of the Project, information that would serve to further conservation and habitat management, funding acknowledgments, trail maps, a list of allowed and prohibited uses, and other educational materials. Signage should include trash carry in/carry out policies, importance of staying on the trails, and similar Property use ethics.

It is recommended that another kiosk be erected at the northerly end of the described trail, with small interpretive signage at sites along the trail and boardwalks. The NHCC could apply for a moose plate grant to cover future costs of kiosk, signs, and other educational materials, if needed. Interpretive signage opportunities along the proposed trail could include information about geologic features such as glacial erratics, signs of weathering effects such as fractured boulders, tree identifiers (particularly mature specimens), cavity trees and nesting sites, mushroom and lichen colonies, plant communities, and signs of wildlife.

Photo: Weathered glacial erratic

The SHPO has identified this Property as being extremely sensitive for containing Native American sites. One of the stated goals of the Conservation Easements is protection of unique historic and cultural features. For this reason, it is recommended the Property be considered for future archeological surveys.

Lastly, it is recommended this Stewardship Plan be added to the Meredith, Center Harbor and New Hampton town websites to provide more opportunities for people to learn about the Project as well as the overall watershed. Websites are an excellent place to post notices for activities, volunteer opportunities and educational events.

7.6 Recreation

Management for recreational use is identified under the Easements as appropriate for the Property. Similarly, the Easements stipulate a need for public access. With this in mind, Abenaki recommends managing the loop trail as not only an educational, environmental interpretive path but also one managed for recreational purposes. Appropriate use would be for hiking, bird watching, mountain biking, winter sports such as snowshoeing, and similar non-motorized activities such as motorbikes, dirt bikes, three- or four-wheelers, ATVs. This trail could also provide some fishing access to the Property. As a note, there is a place near the

bridge on Waukewan Road where the public has historically launched non-motorized boats into the Snake River.

As noted above, Abenaki recommends a loop recreational trail, the easterly portion of which could service visitors with handicapped needs. When investment in the ADA portion of this trail becomes cost prohibitive, for reasons such as steeper terrain in mid-section of the trail, the ADA portion could double back to the parking area: the ADA portion would include at least two scenic overlooks.

7.7 Prohibitions

The NHCC will monitor public access to and use of the Property and enforcement prohibitions. The Easements contain Property use prohibitions, examples of which are listed below:

-Industrial or commercial use or subdivision of the Property;
-Trapping, camping and fires;
-Constructing structures or improvements (i.e., building a watercraft launch ramp) other than necessary in the accomplishment of conservation and habitat management;
-Motorized vehicle or equipment use unless in connection with any improvements pursuant to and consistent with Easement provisions; and
-Forestry activities not related to trail construction and maintenance, for pest control, and to ensure safe use of the Property.

If public access or other use issues develop, management options including using game cameras for enforcement, posting to limit access, or moving trails could be considered. If needed, assistance from the NHFNG or the NH Police Department for enforcement could be sought.

Group use of this Property is encouraged for foot passage or educational purposes: group use for other purposes would require special permission, liability waivers, and/or insurance.

8.0 **EASEMENT MONITORING & REPORTING**

Monitoring and reporting will be completed to ensure consistency with the Conservation Easements provisions and applicable policies and guidelines, such as LTA Standards and Practices and those under NHDES Rule Env-Wt 807.14.

By agreeing to hold the Easements for the Property, the Town of Meredith, acting through the MCC, agrees to enforce the restrictions and prohibitions of the Easements and will be responsible for annual monitoring of the Property. Annual monitoring will be the responsibility of the MCC or a paid consultant and will meet LTA standards. This will include at the very least:

-Periodic monitoring for trash, erosion or other issues;
-Periodic monitoring of signage integrity;
-Annual monitoring for trail and boundary line integrity ; and
-Review and update of the Stewardship Plan every ten years or as necessary

In order to carry out these responsibilities, the Town of Meredith shall have reasonable access to the Property.

Funding for monitoring will be through the MCC's dedicated stewardship fund program. To fulfill its obligations under the terms of the Easements, an annual monitoring report will be prepared by the MCC and submitted to the Town of Meredith, the Town of New Hampton, and NHDES. This report will include:

a. a description of the status of compliance with the terms of the Easements;
b. a description of the annual site inspection;
c. confirmation that the MCC contacted the landowner prior to inspection and confirmed the landowners obligations under the Easements;
d. a description of any physical changes to the Property;
e. a description of conditions that violate the intent of the conservation interest;
f. a description of violations witnessed, remedial steps taken, and the current status and/or actions necessary for compliance;
g. confirmation of Property boundary inspection and that they are being maintained; and
h. evidence that the Property is being appropriately protected according to the terms of the conservation interest.

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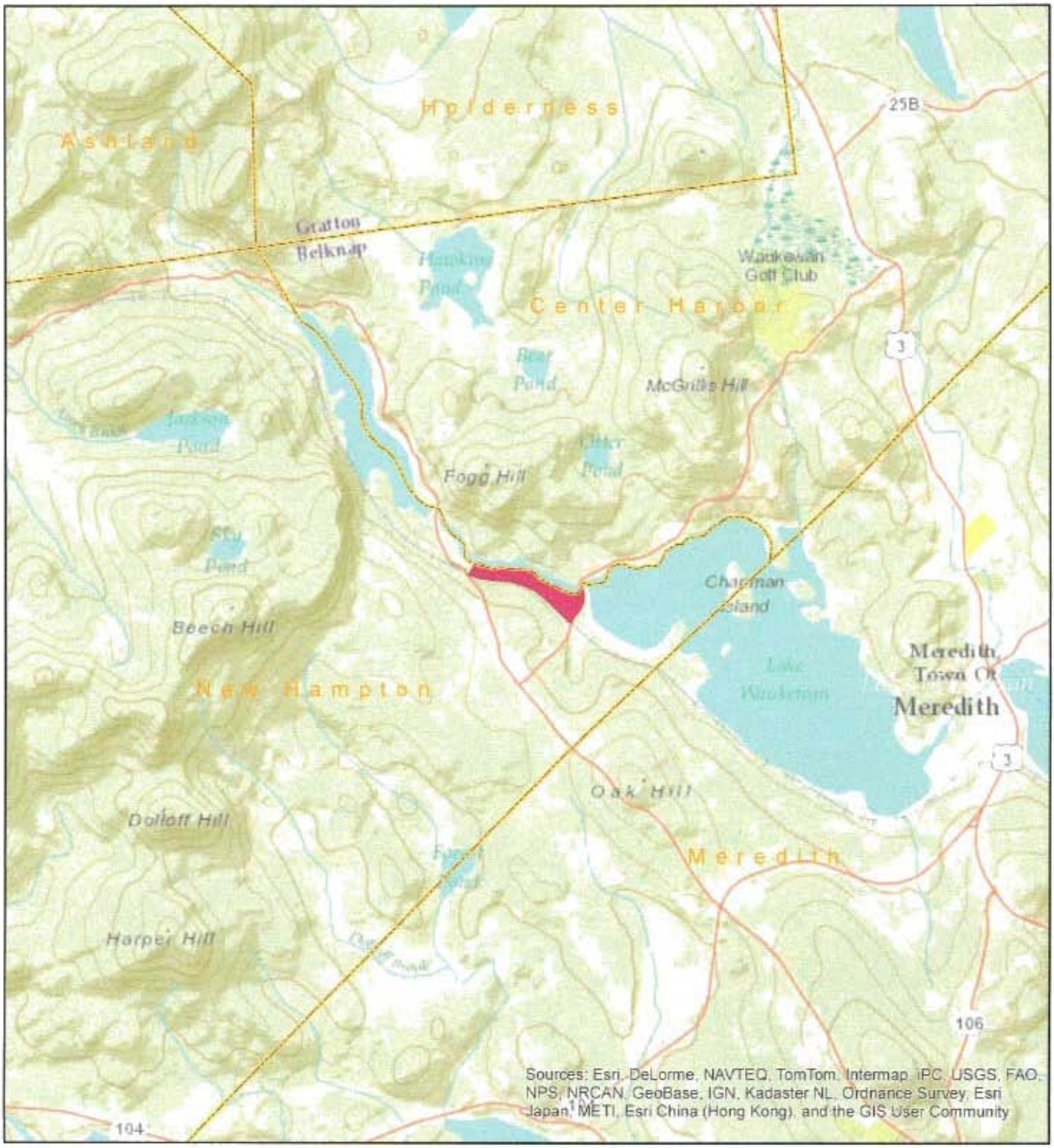
Appendix A

Locus Map



0 1.25 2.5 5 Miles

Location Map

Spear and Baird Conservation Project
New Hampton, NH

October 2012

N

Town Boundary

Spear and Baird Conservation Area

Appendix B

Aerial Map

0 0.25 0.5 1 Miles

Aerial Photo Map

Spear and Baird Conservation Project
New Hampton, NH

October 2012

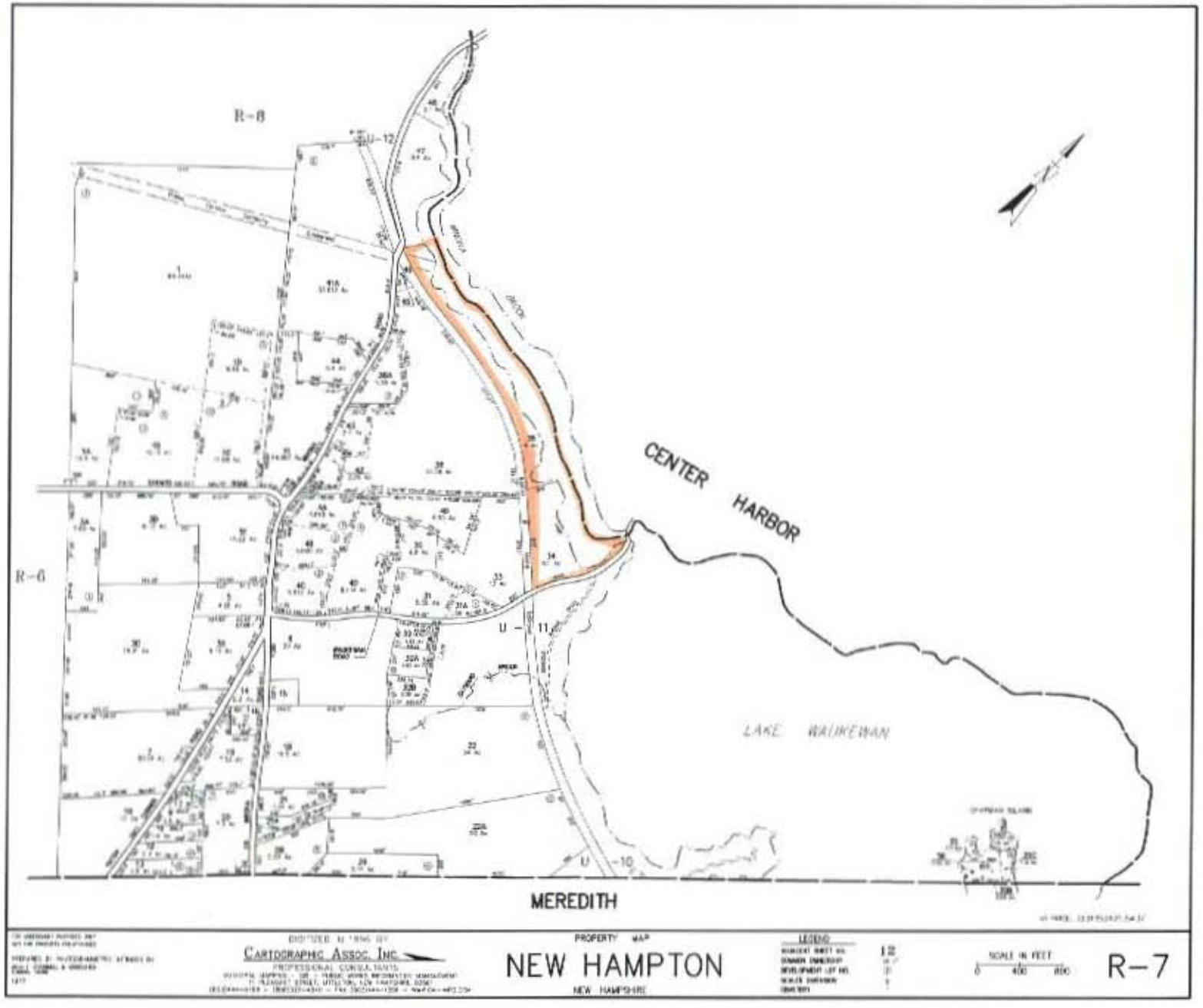
N

Spear and Baird Conservation Area

Town Boundary

Appendix C

Tax Map


R-8
R-6
U-12
U-11
U-10
CENTER HARBOR
LAKE WINNIPESAUKEE
MEREDITH
PROPERTY MAP
NEW HAMPTON
NEW HAMPSHIRE
CARTOGRAPHIC ASSOC. INC.
PROFESSIONAL CONSULTANTS
LEGEND
SCALE IN FEET
0
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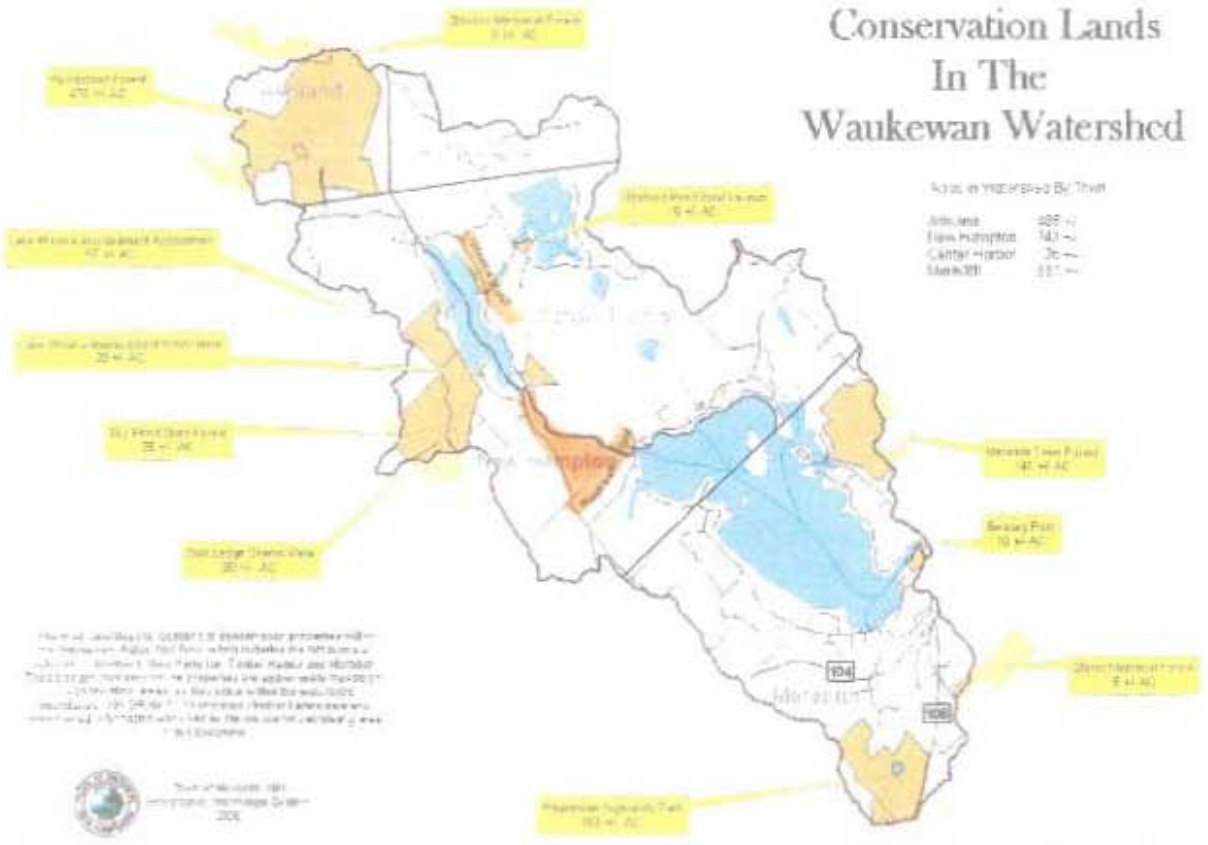
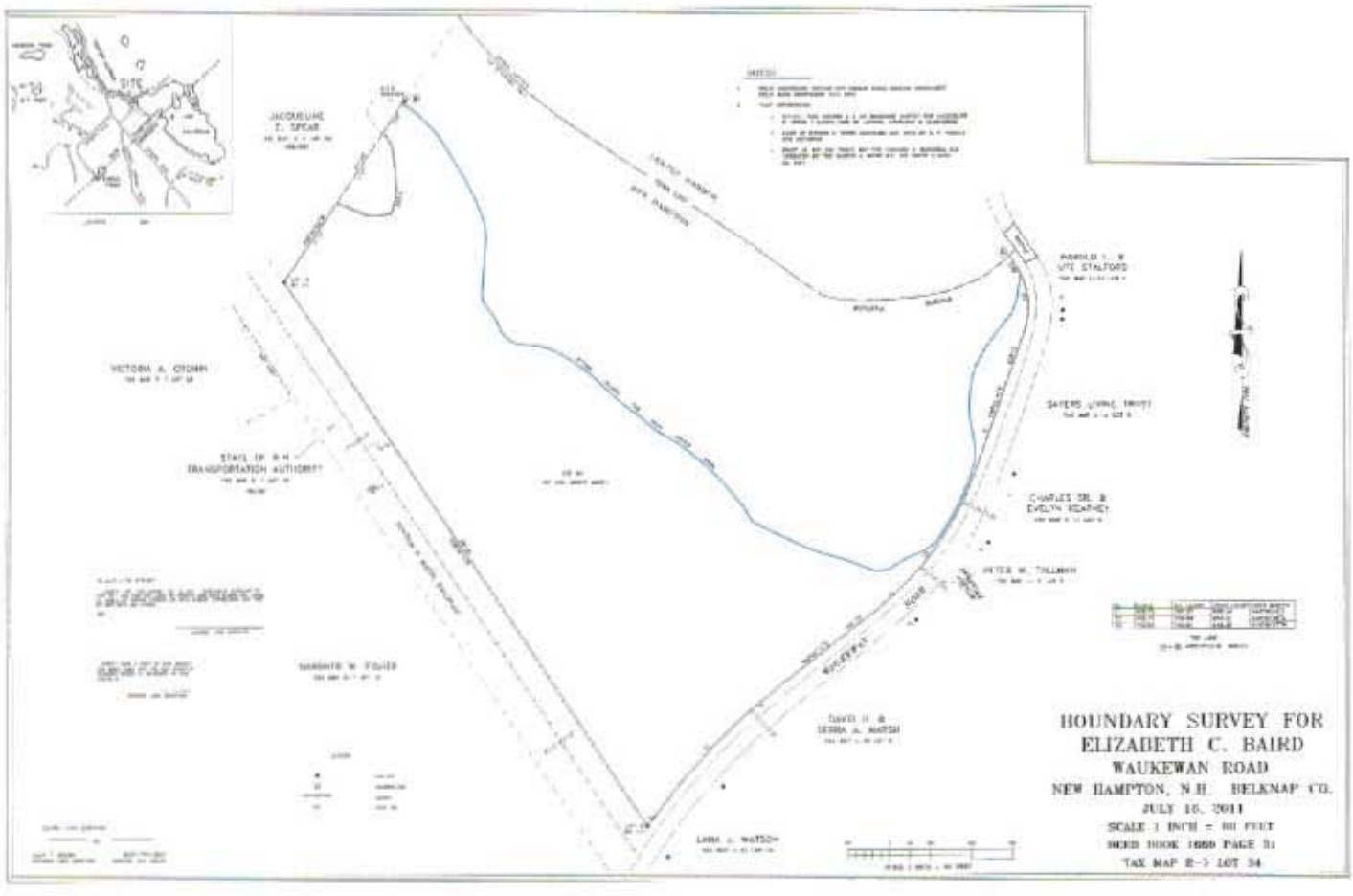
Appendix D

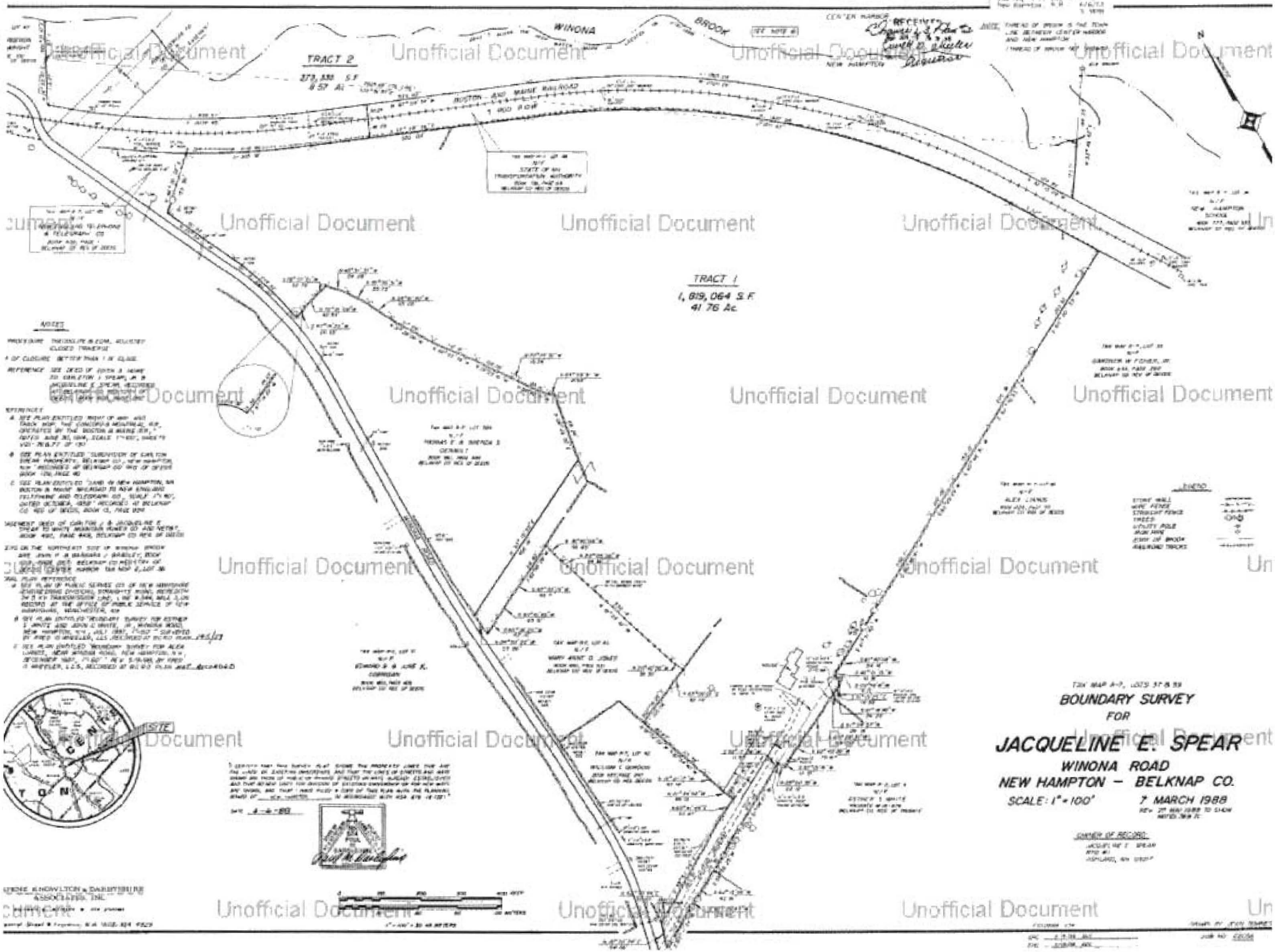
Conservation Lands: Waukewan Watershed


Conservation Lands
In The
Waukewan Watershed
104
106

Appendix E

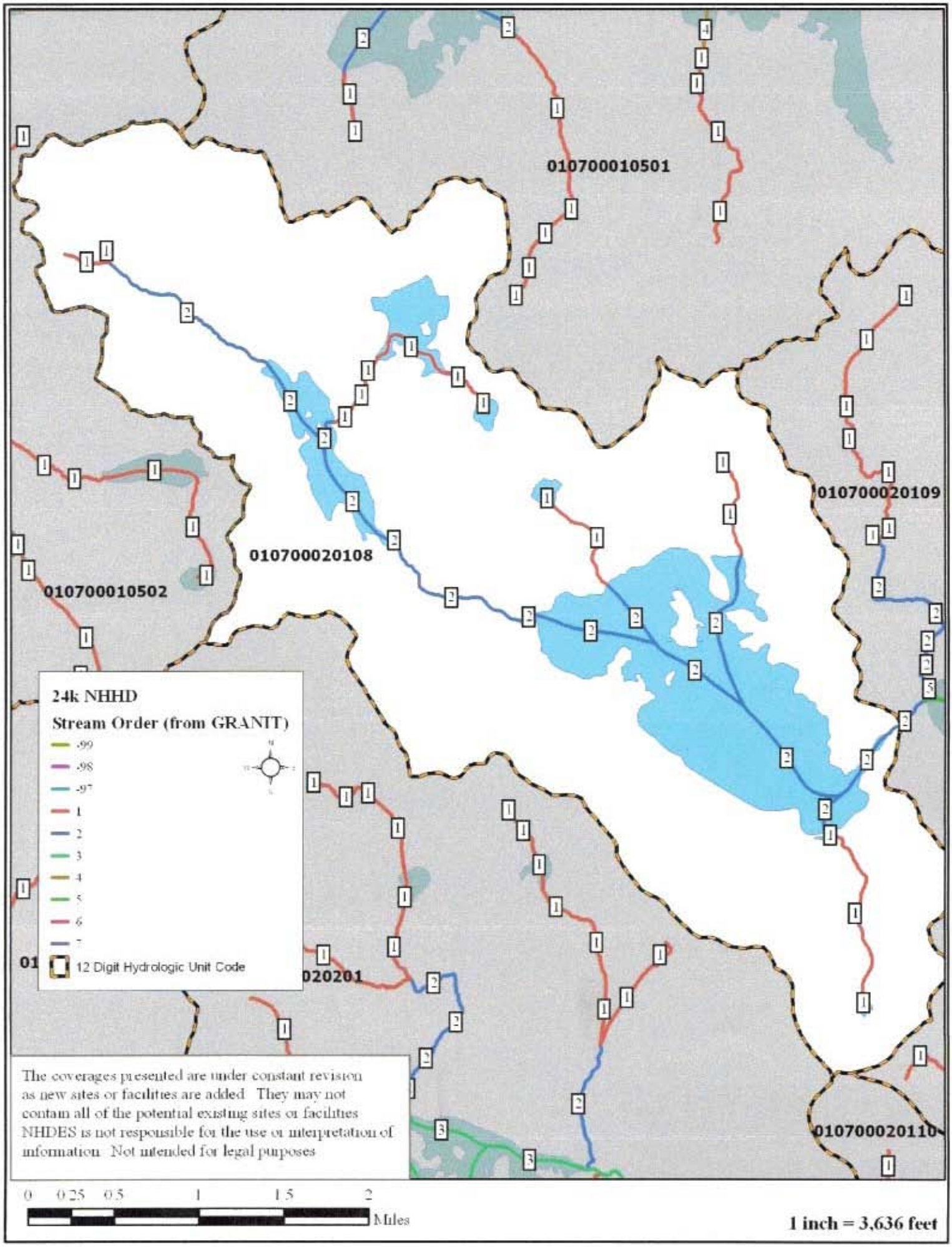
Boundary Surveys


BOUNDARY SURVEY FOR
ELIZABETH C. BAIRD
WAUKEWAN ROAD
NEW HAMPTON, N.H. BELKNAP CO.
JULY 15, 2011
SCALE 1 INCH = 80 FEET
DEED BOOK 1660 PAGE 31
TAX MAP R-3 LOT 34



Appendix F

Waukewan Watershed Map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24k NHHD
Stream Order (from GRANIT)
-99
-98
-97
1
2
3
4
5
6
7
12 Digit Hydrologic Unit Code
020201
010700020110
The coverages presented are under constant revision as new sites or facilities are added. They may not contain all of the potential existing sites or facilities. NHDES is not responsible for the use or interpretation of information. Not intended for legal purposes
0 0.25 0.5 1 1.5 2
Miles
1 inch = 3,636 feet

Appendix G

Conservation Easements

Conservation Easements: Will be available from

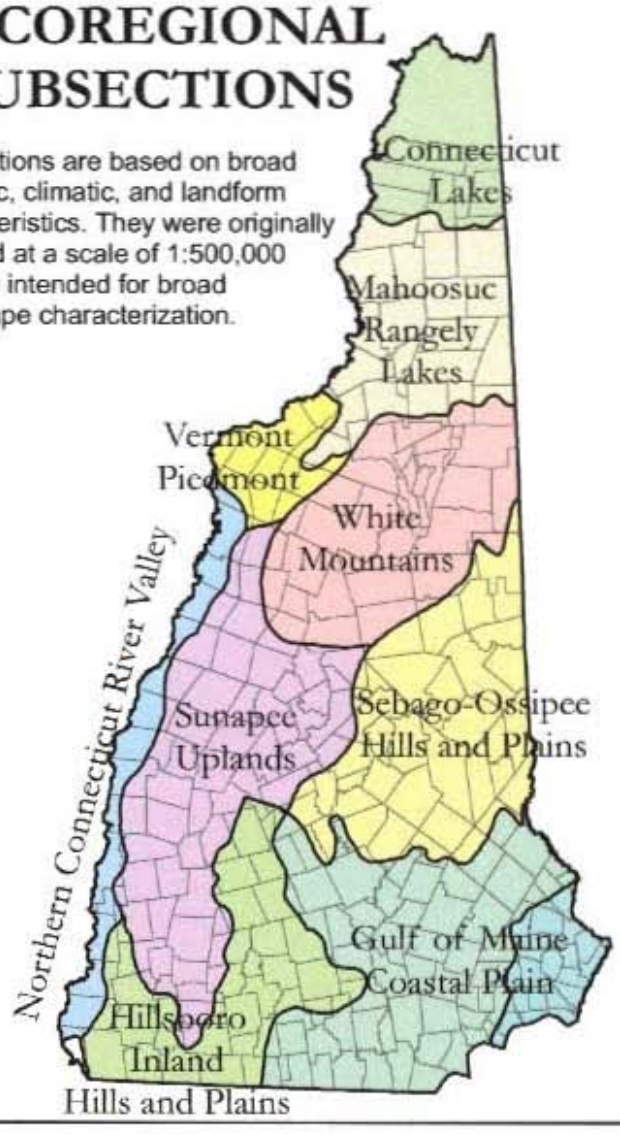
New Hampton Conservation Commission

Appendix H

EPA Eco-Region Map

ECOREGIONAL SUBSECTIONS

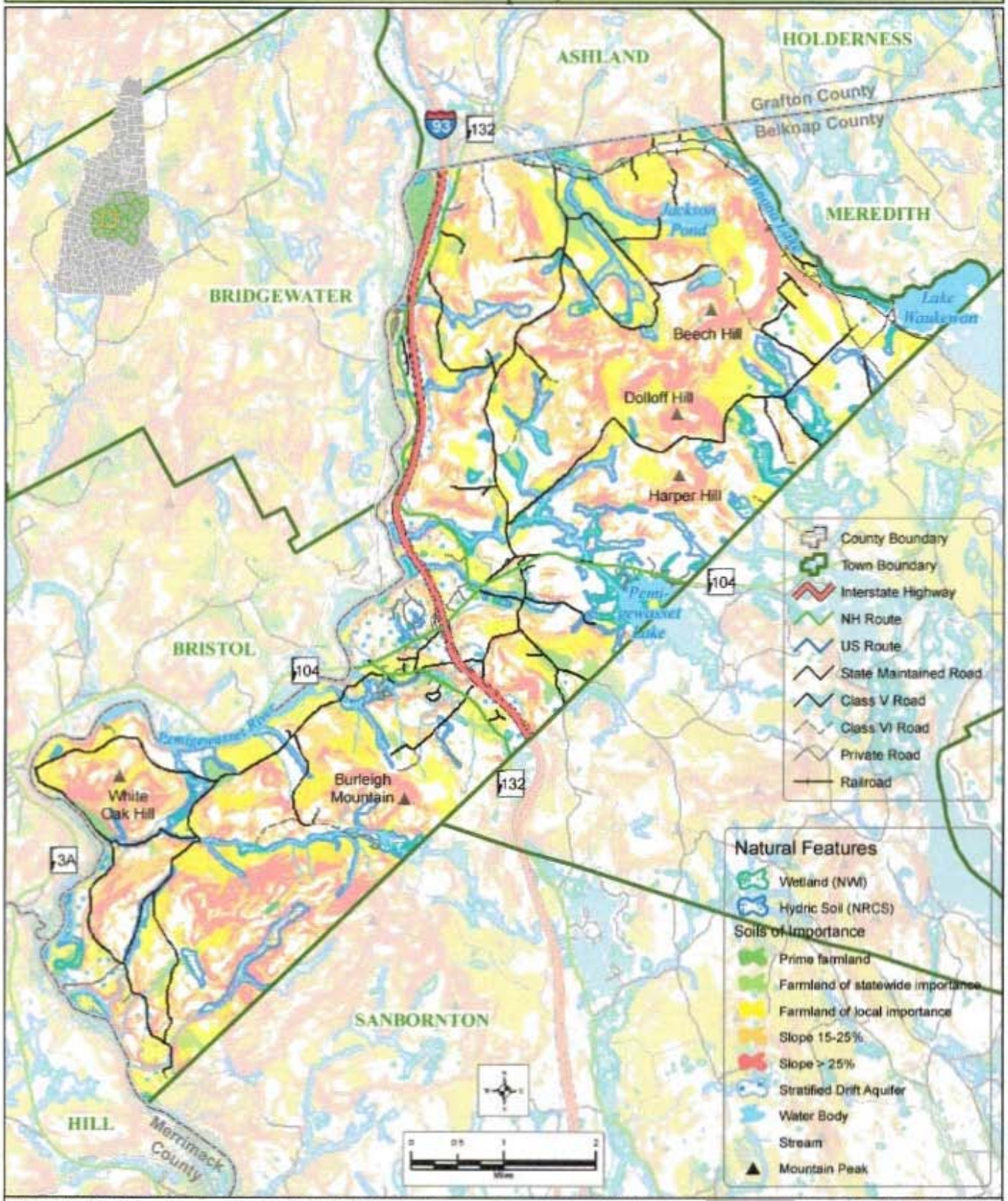
Subsections are based on broad geologic, climatic, and landform characteristics. They were originally mapped at a scale of 1:500,000 and are intended for broad landscape characterization.



Appendix I

New Hampton Natural Resources Map

Natural Resources
New Hampton, NH

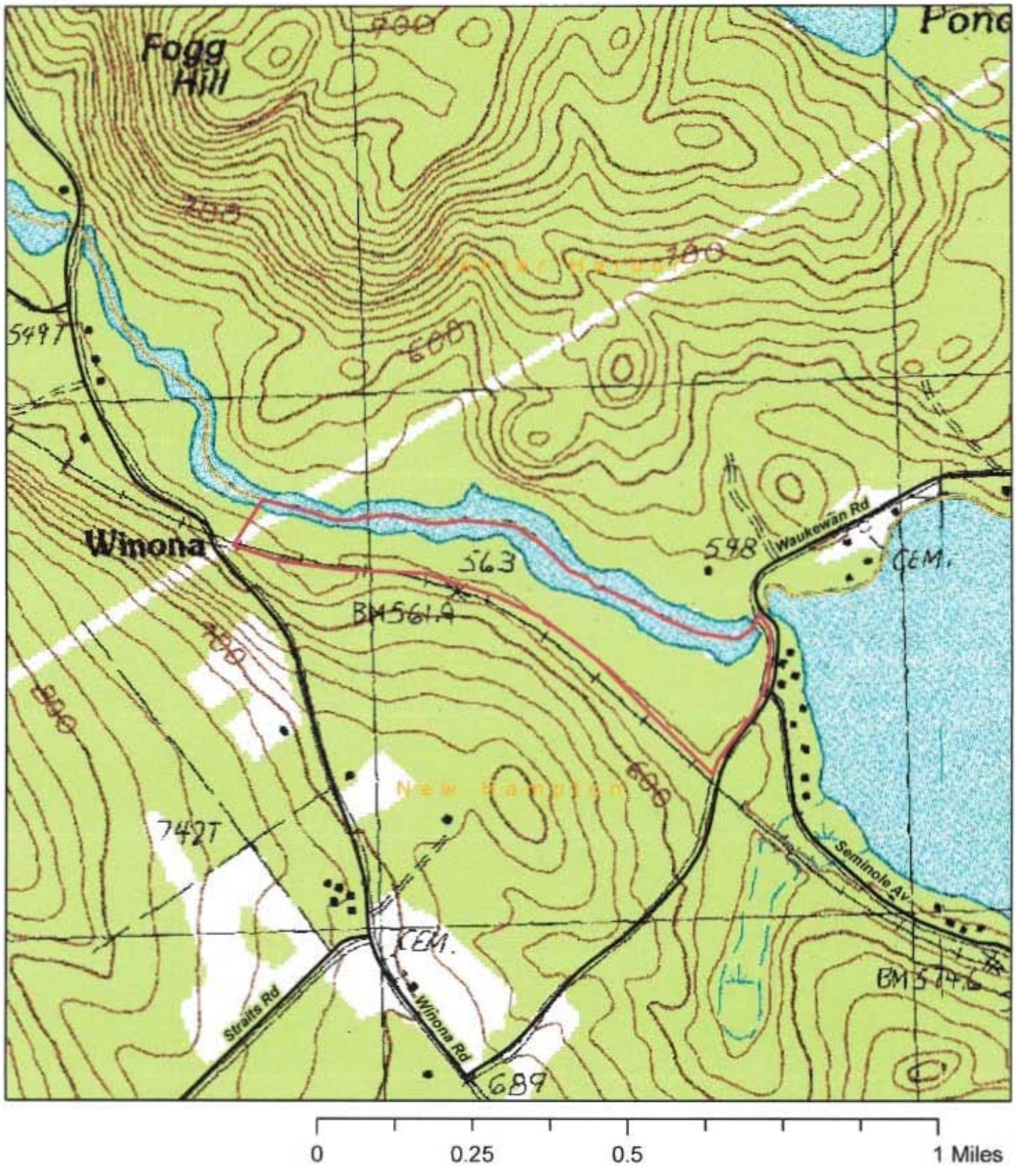


Wetland (NWI) from GRANIT. Slope from SPNHF. Aquifer from NH DES. Soils of Importance and Hydric Soil from NRCS. Mountain Peak from ESRI. Road centerline dataset is from NH Department of Transportation. Base feature datasets, including hydrography, and political boundaries, provided through NH GRANIT at Complex Systems Research Center (CSRC). Neither LRPC nor CSRC make any claim to the validity or reliability or to any implied uses of these data.

Lakes Region Planning Commission
103 Main St. Ste. #3
Meredith, NH 03253
603.279.8171 : lakesrpc.org

Appendix J

Topographic Map



Aerial Photography Map

Spear and Baird Conservation Project
New Hampton, NH

October 2012

Spear and Baird Conservation Area

Town Boundary

Appendix K

Soil Map

Soil Map—Merrimack and Belknap Counties, New Hampshire
(Spear & Baird Conservation Project)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:5,800 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 19N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Merrimack and Belknap Counties, New Hampshire
Survey Area Data: Version 17, Oct 27, 2009

Date(s) aerial images were photographed: 9/10/2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Merrimack and Belknap Counties, New Hampshire (NH609)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
194A	Catden mucky peat, 0 to 1 percent slopes, ponded	13.9	44.2%
380C	Tunbridge-Lyman-Becket complex, 8 to 15 percent slopes, very stony	14.8	46.9%
543C	Monadnock-Becket-Skerry complex, 8 to 15 percent slopes, very stony	2.8	8.9%
Totals for Area of Interest		**31.5**	**100.0%**

Appendix L

National Wetland Inventory Map

U.S. Fish and Wildlife Service

National Wetlands Inventory

Oct 4, 2012

Wetlands

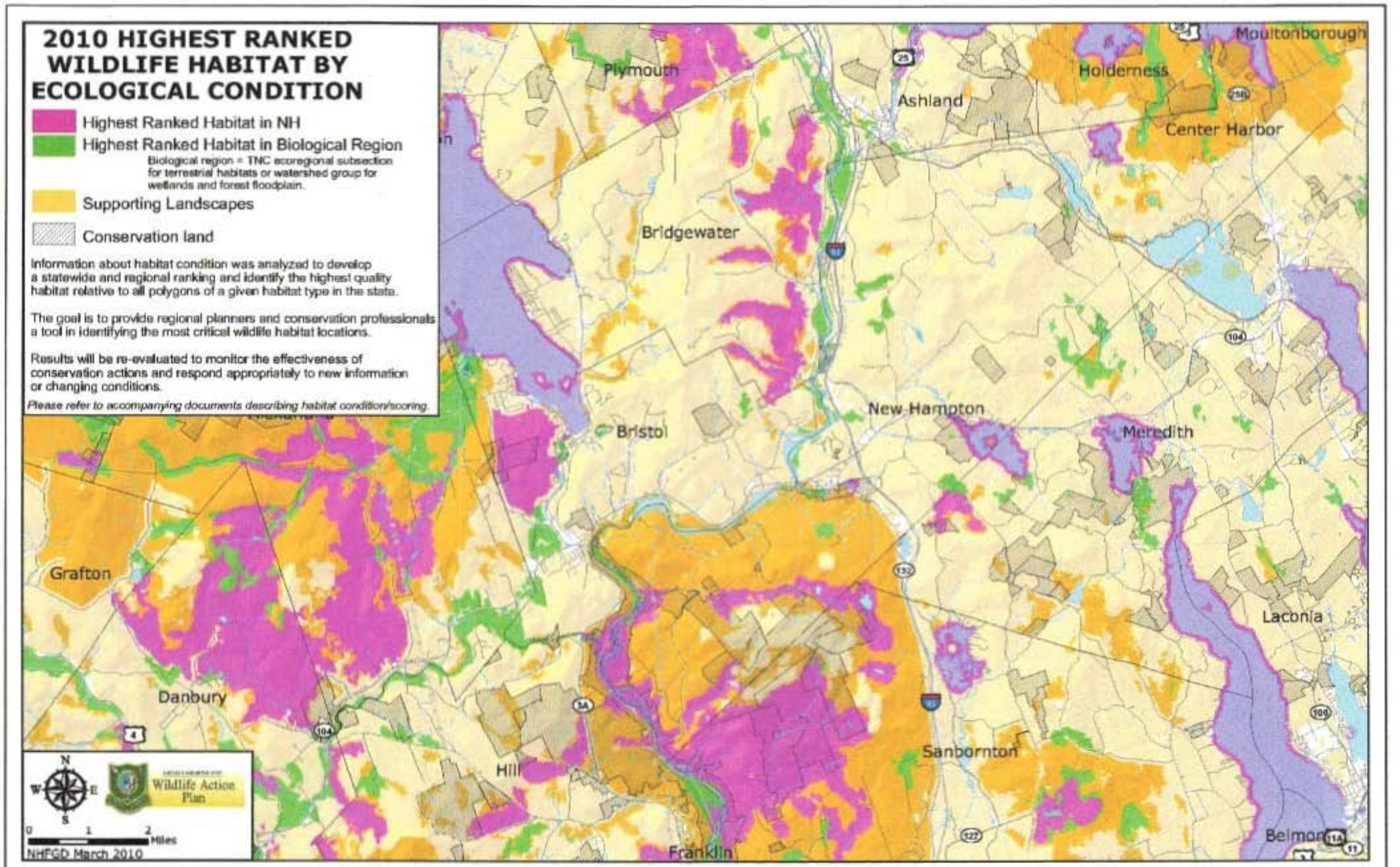
- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

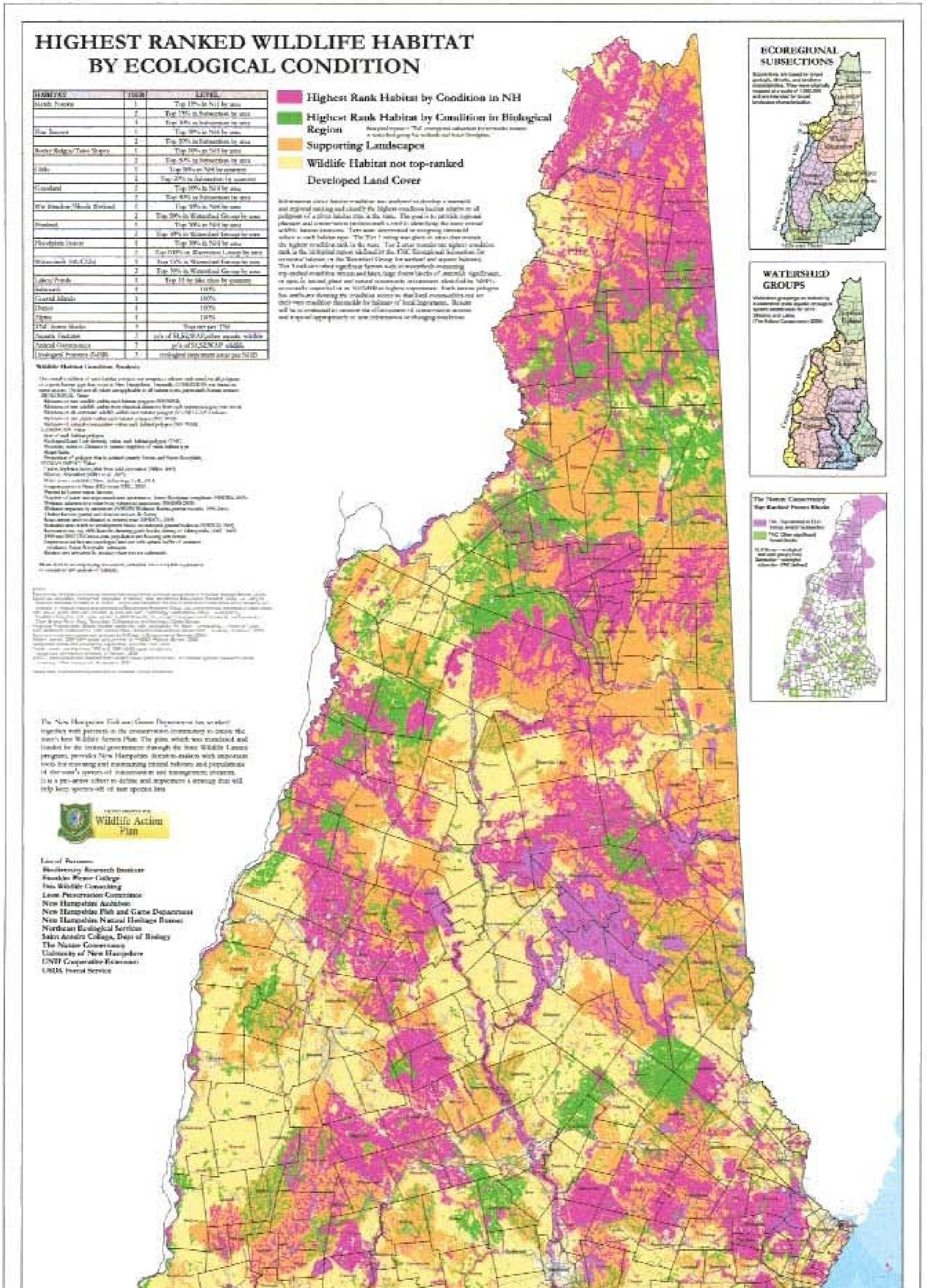
User Remarks:

Snake River Conservation Project ~ Spear & Baird Parcels ~ New Hampton, New Hampshire

Appendix M

WAP Map


2010 HIGHEST RANKED WILDLIFE HABITAT BY ECOLOGICAL CONDITION
Highest Ranked Habitat in NH
Highest Ranked Habitat in Biological Region
Biological region = TNC ecoregional subsection for terrestrial habitats or watershed group for wetlands and forest floodplain.
Supporting Landscapes
Conservation land
Information about habitat condition was analyzed to develop a statewide and regional ranking and identify the highest quality habitat relative to all polygons of a given habitat type in the state.
The goal is to provide regional planners and conservation professionals a tool in identifying the most critical wildlife habitat locations.
Results will be re-evaluated to monitor the effectiveness of conservation actions and respond appropriately to new information or changing conditions.
Please refer to accompanying documents describing habitat condition/scoring.
Plymouth
Ashland
Holderness
Moultonborough
Center Harbor
Bridgewater
Bristol
New Hampton
Meredith
Grafton
Laconia
Danbury
Hill
Sanbornton
Franklin
Belmont
N
W
E
S
Wildlife Action Plan
0 1 2 Miles
NHFGD March 2010


HIGHEST RANKED WILDLIFE HABITAT
BY ECOLOGICAL CONDITION
Highest Rank Habitat by Condition in NH
Highest Rank Habitat by Condition in Biological Region
Supporting Landscapes
Wildlife Habitat not top-ranked
Developed Land Cover
ECOREGIONAL SUBSECTIONS
WATERSHED GROUPS
Wildlife Action Plan
New Hampshire Audubon
New Hampshire Fish and Game Department
New Hampshire Natural Heritage Bureau
Northeast Ecological Services
The Nature Conservancy
University of New Hampshire
UNH Cooperative Extension
USDA Forest Service

Appendix N

Natural Heritage Bureau Documents

Memo

NH Natural Heritage Bureau
NHB Datacheck Results Letter

To: Irene Garvey
812 Texas Hill Road
Plymouth, NH 03264

From: Melissa Coppola, NH Natural Heritage Bureau
Date: 9/10/2012 (valid for one year from this date)
Re: Review by NH Natural Heritage Bureau
NHB File ID: NHB12-2435 Town: New Hampton, Center Harbor Location: Tax Maps: R-7, 34&39
Description: Stewardship Plan
cc: Kim Tuttle

As requested, I have searched our database for records of rare species and exemplary natural communities, with the following results.

Comments:

Plant species	**State**[1]	**Federal**	**Notes**
Back's Sedge (*Carex backii*)*	E	--	Primarily vulnerable to habiat impacts.

Vertebrate species	**State**[1]	**Federal**	**Notes**
Common Loon (*Gavia immer*)	T	--	Contact the NH Fish & Game Dept (see below).
Pied-billed Grebe (*Podilymbus podiceps*)*	T	--	Contact the NH Fish & Game Dept (see below).

[1]Codes: "E" = Endangered, "T" = Threatened, "--" = an exemplary natural community, or a rare species tracked by NH Natural Heritage that has not yet been added to the official state list. An asterisk (*) indicates that the most recent report for that occurrence was more than 20 years ago.

Contact for all animal reviews: Kim Tuttle, NH F&G, (603) 271-6544.

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

Department of Resources and Economic Development
Division of Forests and Lands
(603) 271-2214 fax: 271-6488

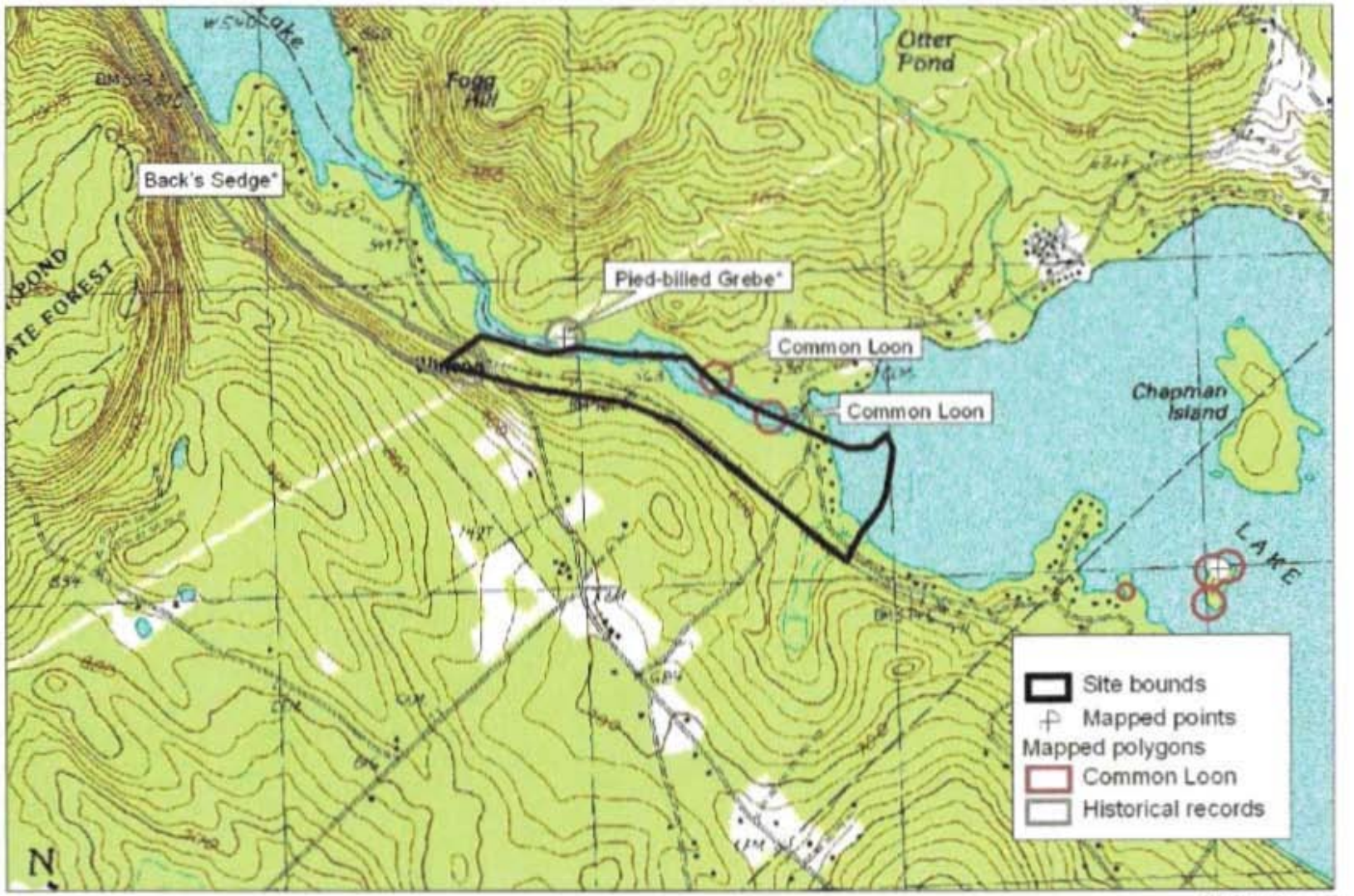
DRED/NHB
PO Box 1856
Concord NH 03302-1856

NHB12-2435

NH NATURAL HERITAGE BUREAU

Known locations of rare species and exemplary natural communities

Note: Mapped locations are not always exact. Occurrences that are not in the vicinity of the project are not shown.



*Historical record

1:18000

Valid for one year from this date 10 Sep 2012

New Hampshire Natural Heritage Bureau - Plant Record

Back's Sedge (*Carex backii*)

Legal Status

Federal: Not listed
State: Listed Endangered

Conservation Status

Global: Apparently secure but with cause for concern
State: Critically imperiled due to rarity or vulnerability

Description at this Location

Conservation Rank: Historical records only - current condition unknown.
Comments on Rank:

Detailed Description: 1969: Specimen collected.
General Area: 1969: Ledge shelf in rocky woods.
General Comments:
Management Comments:

Location

Survey Site Name: Winona
Managed By: Bald Ledge Scenic Vista

County: Belknap
Town(s): New Hampton
Size: 45.2 acres

USGS quad(s): Holderness (4307165)
Lat, Long: 434017N, 0713408W
Elevation:

Precision: Within 1.5 miles of the area indicated on the map (location information is vague or uncertain).

Directions: 1969: Rocky woods at Winona near railroad line.

Dates documented

First reported: 1969-06-19
Last reported: 1969-06-19

New Hampshire Natural Heritage Bureau - Animal Record

Common Loon (*Gavia immer*)

Legal Status

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Not ranked (need more information)

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2011: Nest 3: Nest and eggs present, no chicks hatched.2010: Nest 3: 1 chick hatched, 1 chick survived.2009: Nest 3: 2 chicks hatched, 1 chick survived.2008: Nest 3: 1 chick hatched, 1 chick survived.2007: Nest 2: 1 chick hatched, 0 chicks survived.2006: Nest 2: pair, 2 chicks hatched, 1 chick survived.2005: 3 adults2004: pair.2003: Nest 1: pair, nest and eggs.2002: pair.2000-2001: Nest 1: pair, nest and eggs.

General Area:
General Comments: LPC territory NHT0001.
Management Comments:

Location

Survey Site Name: Lake Waukewan
Managed By:

County: Belknap
Town(s): Meredith
Size: 5.0 acres

USGS quad(s): Holderness (4307165)
Lat, Long: 433952N, 0713106W
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions:

Dates documented

First reported: 2000
Last reported: 2011

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Common Loon (*Gavia immer*)

Legal Status

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Not ranked (need more information)

Description at this Location

Conservation Rank: Not ranked
Comments on Rank:

Detailed Description: 2011: Nest 5: Nest and eggs present, no chicks hatched.2010: Nest 4: Nest and eggs present, no chicks hatched.2009: Nest 3: Nest and eggs present, no chicks hatched.2005: pair.2004: Nest 1: pair, nest attempt.2002-2003: pair.2001: Nest 2: pair, nest and eggs.2000: 1 adult.
General Area:
General Comments: LPC territory NHT0197.
Management Comments:

Location

Survey Site Name: Lake Waukewan - Mosquito Bridge
Managed By:

County: Belknap
Town(s): Meredith
Size: 7.5 acres

USGS quad(s): Holderness (4307165)
Lat, Long: 433936N, 0713144W
Elevation:

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions:

Dates documented

First reported: 2001-05-24
Last reported: 2011

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

New Hampshire Natural Heritage Bureau - Animal Record

Pied-billed Grebe (*Podilymbus podiceps*)

Legal Status

Federal: Not listed
State: Listed Threatened

Conservation Status

Global: Demonstrably widespread, abundant, and secure
State: Not ranked (need more information)

Description at this Location

Conservation Rank: Historical records only - current condition unknown.
Comments on Rank:

Detailed Description: 1988: Nesting.
General Area:
General Comments:
Management
Comments:

Location

Survey Site Name: Winona River
Managed By:

County: Belknap
Town(s): Center Harbor
Size: 2.8 acres

USGS quad(s): Holderness (4307165)
Lat, Long: 434000N, 0713318W
Elevation: 540 feet

Precision: Within (but not necessarily restricted to) the area indicated on the map.

Directions: New Hampton. Winona River.

Dates documented

First reported: 1988
Last reported: 1988-05-10

Foss, Carol. Audubon Society of New Hampshire.

The New Hampshire Fish & Game Department has jurisdiction over rare wildlife in New Hampshire. Please contact them at 11 Hazen Drive, Concord, NH 03301 or at (603) 271-2461.

Appendix O

State Historic Preservation Office Documents

Date: 10/9/12

The Aquatic Resource Mitigation (ARM) Fund was established to provide wetland permit applicants the opportunity to provide funds into a watershed account as a form of wetland compensation. The Corps requires a preliminary review by NH Division of Historic Resources (DHR). The property which is described below and whose approximate boundaries are shown on the enclosed excerpt from the USGS map is under review by DES.

Does this area contain historical, cultural, or archaeological resources, or any other need for special concern?

Applicant: Grace Gravey, Abenaki Services

Project Description: Project Title: Conservation Project Stewardship Plan

Acreage:

Location: New Hampton - Center Harbor

Return Prior to: _____(usually a month from the time you sent it in)

FOR MORE INFORMATION CONTACT:
TELEPHONE:

Technical Comments

COMMENTS: Please check one. Additional comments should be included on a separate sheet.

___ There are no known properties of architectural, historical, archaeological, engineering, or cultural significance within the project area.

___ There is a known archaeological site located on the parcel, the Division will provide DES with measures that will be necessary for this site area or archaeological investigations may be required.

✓ Historic and/or Native American archaeological sites may be located within the parcel. If plans for restoration include ground disturbing activities, then the need for archaeological investigations to identify potential resources may be required.

This area has never been surveyed, it is considered extremely sensitive for Native American archaeological sites.

ADDITIONAL COMMENTS:

Should you have any questions regarding our comments, please feel free to contact Richard Boisvert, State Archaeologist, at 271-6433 or Edna Feighner, Review and Compliance Coordinator, 271-2813.

Date: 10/2/12

Edna Feighner

Edna Feighner
Review and Compliance Coordinator, Archaeologist
NH Division of Historical Resources

Appendix P

Proposed Trail Map

Snake River Stewardship Plan: Proposed Recreational Trail