

CONSERVATION PRIORITY AREAS

**Near the
GREAT MEADOW
Tuftonboro, NH**

UPDATE REPORT



[Great Meadow looking up towards the Ossipee Mountains]

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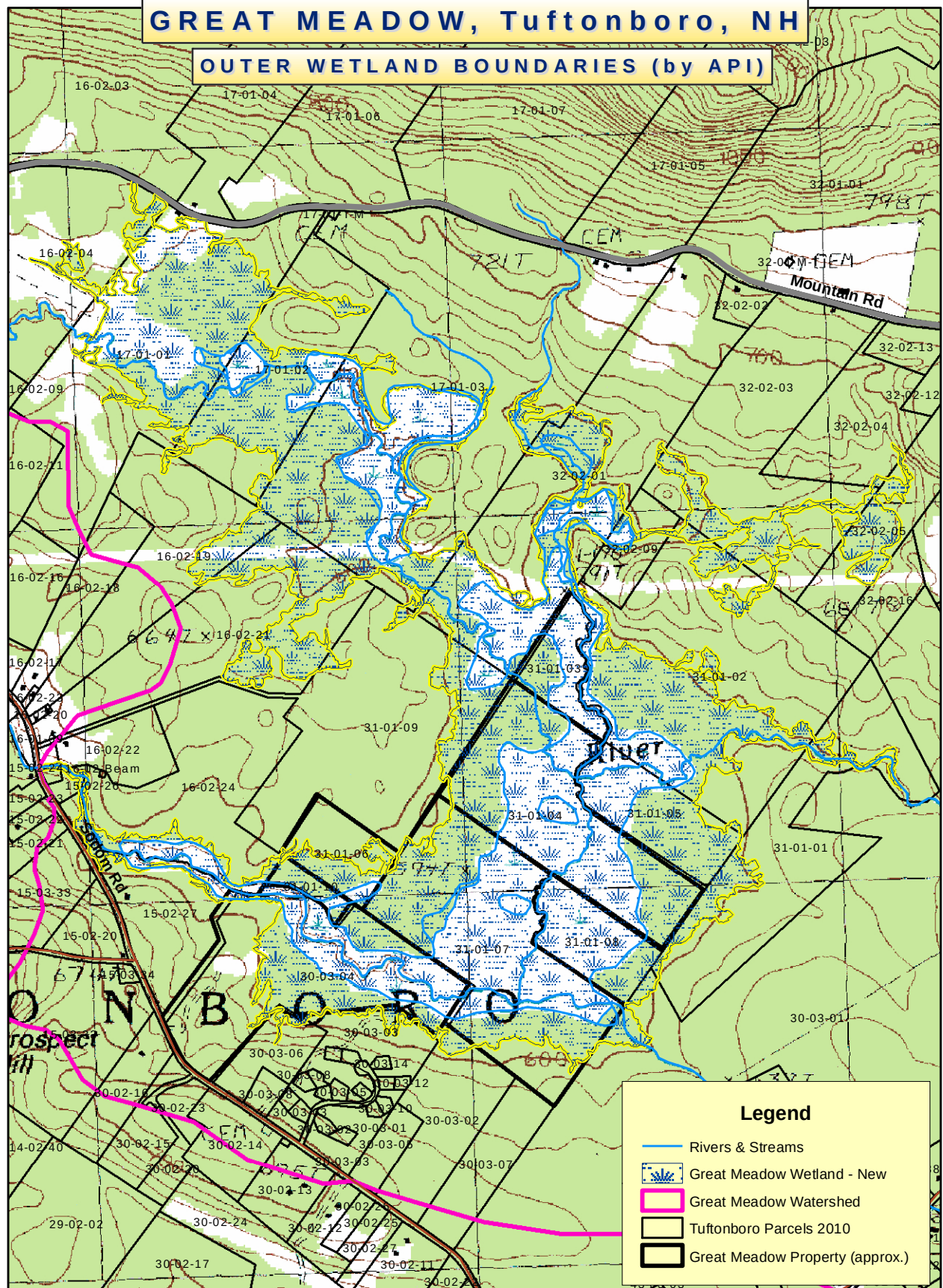
Tuftonboro Conservation Commission

February 29, 2016

1:15,000

GREAT MEADOW, Tuftonboro, NH

OUTER WETLAND BOUNDARIES (by API)



3,750 1,875 0 3,750 Feet

1,000 500 0 1,000 Meters

SUMMARY

In 2001-2002, a preliminary investigation of the Great Meadow in Tuftonboro was completed by the author under the auspices of the Tuftonboro Conservation Commission. This report included a field investigation that identified a variety of ecological attributes of the Town's portion of the Great Meadow. It also provided 9 months of water quality data from a series of four test wells that were established to answer the Commission's concerns about ground and surface water quality in the Great Meadow area. Finally, this report also provided a set of recommendations for further protecting the Great Meadow, which included the identification of selected, ecologically valuable parcels in the vicinity of the town land.

Since 2002, the Tuftonboro Conservation Commission has been slowly following the recommendations of the initial report by holding town-wide forums on this wetland complex, and by engaging the interest of the Lakes Region Conservation Trust in providing more permanent protection of the town's land and associated lands nearby. The latter has included the purchase of the Gale property, which sits immediately above and to the south of Great Meadow along Sodom Road.

The present study arose from further conversations with the Tuftonboro Conservation Commission, which intends to prioritize protection efforts for the Great Meadow wetland and its bordering upland properties. This study was completed entirely on the basis of remote information, although field data from the 2002 was also used to inform certain assessment parameters. This remote review included the consultation with the most current aerial photography for the area, plus a number of other natural resource data layers available through Complex Systems Research Center's GRANIT database at UNH, Durham.

A total of 77 parcels within or near the Great Meadow wetlands were assessed for 10 general and 20 specific attributes:

- 1) Size
- 2) Proximity to Conservation Land
- 3) Wetland Characteristics
- 4) Scenic Value
- 5) Water Quality, Water Quantity
- 6) Surface Water Resources - Streams
- 7) Forest Cover – Diversity & Quality
- 8) Wildlife – Open and Forested Uplands
- 9) Rare & Endangered Species & Exemplary Natural Communities
- 10) Access & Fragmentation

Based on attribute point ranges from 0 – 5, all 77 parcels were evaluated, summed, and mapped. A total of five parcels, three of which were town lands, scored in the highest tier (≥ 54 points), 19 parcels scored in the second highest tier (43 – 53 points), and the remaining 53 parcels scored in the three lowest tiers (13 – 42 points).

The following report describes the attribute assessment method (included in the Appendix), the procedure for determining which ecological attributes to include, as well as a detailed narrative on the findings relative to conservation priorities in the Great Meadow area.

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View of Great Meadow from Big Tate

CONSERVATION PRIORITY AREAS

Near the GREAT MEADOW Tuftonboro, NH

I. Introduction

The Great Meadow is a 433-acre wetland complex in the heart of Tuftonboro. It lies at the southwest base of the Ossipee Mountains on the south side of Mountain Road (Route 171) and the north side of Sodom Road. Largely formed by the upper Melvin River watershed, it has several perennial streams that descend from the slopes of the Ossipees into a broad basin filled with cat-tail marshes, wire sedge meadows, scrub-shrub swamps, and forested wetlands. The open marsh system in the center of the wetland complex is exceptional – nearly 200 acres of low vegetation complete with sphagnum fens, stunted spruce and tamaracks, and isolated hummocks of bouldery hemlocks provide stunning vistas. The early settlers in Tuftonboro utilized the swamp for marsh hay, and here and there are open water ditches that belie their former efforts at converting the soggy ground into productive farmland. These evidences are mostly long forgotten, however, and idle stone walls that line the edge of much of the Great Meadow are all that's left of this former agricultural hey-day.

In the eighteenth century, Great Meadow was suitably dubbed as “Great,” as it was and still is the largest wetland complex in town. The nearby Cops Pond wetland forms a somewhat distant second with nearly 300 acres to its credit. The Great Meadow also overlies the largest and most productive stratified drift aquifer in town. Composed of sand, gravel, and compact silts several tens of feet thick, this drinking water supply has estimated yields of over 4,000 acre-feet per day according to the Department of Environmental Services. A drop of over two thousand feet from the summit of Black Snout helps pressurize the groundwater that discharges freely into this basin at the foot of the Ossipee Mountains. Even in drought years, as was experienced during the initial water study in 2001 – 2002, springs and seeps flow continuously into the basin even during the driest time of year.

The center of the Great Meadow is comprised of seven lots owned by the Town of Tuftonboro. The wetland itself, however, includes all or part of an additional 26 separate lots. Forty-four more lots lie within 500 feet of the wetland's edge or contain surface waters that feed directly into the Great Meadow. Aside from the seven town lots and the two current town transfer lots, nearly all of the remaining 70 lots lack any kind of restrictive easement or covenant to protect them from being developed. Even the nine town lots could be sold and developed, at least in theory. Over the past two hundred years, only the wet soils and flooding has prevented settlers and subsequent developers from building homes and businesses within and at the edge of the Great Meadow. With increasing pressure from the sales of second homes, the gradual increase in traffic along the bordering roads, and the expanding business and industry sector, this *de facto* protection can no longer be assumed for the future.

It is under these circumstances that in late 2015, the Town of Tuftonboro hired Ecosystem Management Consultants of Sandwich, NH to expand upon its prior study of the Great Meadow in order to target conservation priorities and provide a 'roadmap' for protection over the next two decades. The current project built upon the 2001-2002 water resource study that first identified the extent of the Great Meadow and studied its ecological attributes. At that time, four groundwater monitoring wells were established to look at the water levels and water quality of the (mostly) groundwater in the basin. The findings were not surprising: Great Meadow had a steady supply of groundwater in most areas even during the drought season of the 2001-2, and the water quality was very good to excellent. The only slight tarnish to an otherwise excellent rating was the slightly elevated conductivity and TDS readings below the former dump along Sodom Road. Otherwise, the waters of the Great Meadow appeared to be fairly pristine.

The 2002 report also made recommendations for establishing some protective covenants on the seven town parcels, as well as suggested additions to these public lands for the purposes of protecting this invaluable surface water asset. Over the next ten years or so, the Tuftonboro

Conservation Commission made some headway in engaging the Lakes Region Conservation Trust (LRCT) to seek further protection of critical parcels in the Great Meadow area. In 2009, the LRCT succeeded in obtaining the 95-acre Gale property across Sodom Road from the Great Meadow. Further conversations were also initiated with other residents in the area, but to date, very little has been secured in a permanent way. Wishing to continue this initiative, the Commission solicited this study in order to highlight where the most sensitive and ecologically important lands are that could be added to the existing protected areas. The following report outlines the way in which this task has been achieved, and provides further context for a protection effort that was begun over 15 years ago.

II. Methods

Initially, Ecosystem Management Consultants (EMC) was requested to provide a review of the past work that was completed at the Great Meadow in 2001-2002. This was completed in the form of a slide show that was presented to the Selectmen and Conservation Commission on December 14, 2015.¹ At this meeting, it was decided that further analysis of the abutting properties to the Great Meadow was needed. This was to be done using remote sensing data only, and a timeline and contract was established for its completion.

The principal task in this GIS-based review was the updating of existing natural resource data files that were available for the Great Meadow area. These were obtained from the NH GRANIT GIS database maintained by Complex Systems Research Center at UNH, Durham. Using an ARCGIS 10.x platform, all of the pertinent data layers were either reviewed and/or updated from the NH GRANIT web site (<http://www.granit.unh.edu/>). These included the following layers:

<u>Resource Layer</u>	<u>Date</u>	<u>Description</u>
Digital Elevation Models	1987	From USGS topographic sources
Digital Orthophoto Quads (DOQ)	1998	Historical aerial photo data
Digital Raster Graphics (DRG)	1987	USGS topographic maps
Landsat land use coverage	2001	Latest satellite imagery of cover types
NAIP aerial photography	2003,9	Statewide coverage of leaf-on condition

¹ The contents of the slide show are included as an Appendix to this report.

Conservation Priorities Near the Great Meadow

National Wetlands Inventory (NWI)	1987	USFWS Wetlands Inventory Data
NH Hydrography	2010	Streams & rivers, and other surface waters
NH Wildlife Action Plan (WAP)	2015	Wildlife habitat & condition ranking
Parcel Map for Tuftonboro	2010	Lakes Region Planning Commission
Political boundaries	1996	UNH CSRC
Public Roads	2010	NH DOT
Railroads	1993	UNH CSRC
Soil units, especially hydric	2005	NRCS (also available through Web Soil Survey)
Tagged Vector Contours (TVC)	1998	20-foot contour intervals (USGS)
USGS Color infra-red photography	2010	Published: Jan 2011, 1-foot pixel
Watershed boundaries	2002	UNH CSRC

Each of the above data layers were uploaded, clipped to the Great Meadow area, and converted into separate shapefiles. Once this was complete, the 2010 color infrared aerial photograph was used as a base map for interpreting the location of the Great Meadow wetland. Although this was done in 2002, the new aerial photos had greater resolution and the distinct advantage of containing an infrared layer.² A new wetland boundary was established at a 1:1250 scale using this data as well as the topography and soils data noted above. A 500-foot buffer line was then created around the entire wetland complex. This was used to determine which parcels may have an immediate influence on the Great Meadow itself. Additional parcels were tagged if they contained surface waters that were directly connected (i.e. contiguous) to the Great Meadow and fell within the Great Meadow watershed.³ Selected other parcels were tagged for evaluation if they were also within the Great Meadow watershed and had potential roadside access to the Great Meadow.

The second principal task was the development of an **attribute assessment model** for the evaluation of each of the parcels that was tagged for the reasons described above. An attribute assessment model is simply an evaluation tool that recognizes salient environmental characteristics that contribute to the ecological integrity⁴ of a given area. For the Great Meadow, the attribute assessment model that was used was adapted from one that EMC used

² In general, wet soils looker darker on these photographs.

³ The end point for the watershed was set at the Sodom Road bridge over the Melvin River.

⁴ For wetland areas, "Ecological Integrity describes the condition of a wetland where (1) the stability, structure and function of the ecosystem are intact and not impaired by human-caused stressors; (2) there is an abundance and diversity of native plant species, and (3) supporting processes are characteristic of an unstressed system" (NH Method 2015).

in Meredith for critical wetland habitat areas. It was originally developed in 2000 by EMC for use in a town-wide parcel assessment for the town of Nelson. The model uses ecological attributes that underscore the importance of the Great Meadow wetland in terms of its functional value for the citizens of Tuftonboro, as well as the ecological services it provides for the entire region. The following ten attributes were evaluated as a part of this model:

- 1) Size
- 2) Proximity to Conservation Land
- 3) Wetland Characteristics
- 4) Scenic Value
- 5) Water Quality, Water Quantity
- 6) Surface Water Resources - Streams
- 7) Forest Cover – Diversity & Quality
- 8) Wildlife – Open and Forested Uplands
- 9) Rare & Endangered Species & Exemplary Natural Communities
- 10) Access & Fragmentation

Each attribute contained a range of point values that were assigned to each parcel being evaluated. For example, for Size, the following point values were employed:

- (1) 0-2 ac. (2) 2-10 ac. (3) 10-35 ac. (4) 35-99 ac. (5) >100 ac

The point value ranges for Size were based on the statistical quartile ranks of parcel sizes for all of Tuftonboro, as determined by analyzing the parcel attribute table associated with the GIS shapefile obtained from LRPC. All of the remaining nine attribute point ranges were similarly adapted for use in Tuftonboro. For some attributes, there were several criteria that composed the attribute. For example, under Wetland Characteristics, there were four:

- A. Great Meadow Presence or Absence
- B. Other Contributing Wetland Presence or Absence
- C. Number of Wetland Classes (NWI)
- D. Proximity to 500-foot Buffer to Great Meadow

In general, the point values ranged from 0 – 5, with “0” assigned for an absence of value, and “5” for a characteristic that fully supported the parcel attribute relative to the Great Meadow.⁵ A full description of each attribute, the rationale for the values assigned to each attribute, and the individual criteria that make up each attribute is included in Appendix B.

⁵ All attributes were weighted equally in this model except for one: whether or not the parcel comprised part of the Great Meadow itself. For this criterion, the values were doubly weighted. See model for full details.

III. Results / Discussion of Findings

A. Wetland Mapping

Based on the 2002 Great Meadow Report, the size of the Great Meadow wetland was 509 acres. Upon closer review and after using better aerial photographs with color infrared, the size was determined to be 433 acres. The largest change was the elimination of the wetland unit north of Mountain Road, which was determined to be a separate wetland unit according to the NH Method guidelines for identifying WEU's or wetland evaluation units.⁶ Additional acreage was cut out along much of the northwestern periphery based on color infrared indicators near the old air strip, which was formerly identified as being wet. Most other areas of the Great Meadow wetland remained the same, with the termination of unconnected units replicating what had been determined 14 years earlier.⁷ The complete wetland map can be seen in the Frontispiece (USGS base) and in Appendix A (color infrared aerial photo base).

B. Significant Ecological Attributes

As noted in the introduction, the Great Meadow forms the largest surface water resource in the central part of Tuftonboro. It was created post-glacially by the flat topography at the base of the Ossipee Mountains, where several perennial streams – including the headwaters of the Melvin River, flow into a broad flat basin. Deep, interbedded layers of stratified sands and gravels that were deposited by glacial meltwater form the underlying aquifer that supplies much of the groundwater to the Great Meadow. Tiered benches of finer silts and clays elevate the water table in certain areas, and provide artesian pressure to the innumerable seeps and springs at the edge of the Great Meadow. The water quality remains high, as was discovered during the water quality analysis completed in 2002, although up-to-date readings were not taken for this report.

The watershed above the outflow of the Melvin River at Sodom Road is roughly 6967 acres in extent. It extends along the north side of Sodom Road to near its junction with Mountain Road,

⁶ See <http://drupal.nhmethod.org/nh-method-manual/sections-1-5>, section 2.D.

⁷ Note that the wetland cover class map was not updated as this was not within the scope of this project.

then crosses Mountain Road at Bald Peak Farm and rises to the summit of Black Snout (South). The watershed then descends along the Tate Ridge and easterly as far as Oak Hill and the Ledges at Camp Sentinel, where it descends past Melvin Pond, crosses Durgin Road and reaches Mountain Road again. From here, the watershed divide continues southwesterly, crosses Ledge Hill Road, and heads westerly across Dame Road and back to the slopes above the Melvin River on the south side of Sodom Road before the bridge. It includes the two principal, second-order streams of Field Brook, which descends from Mount Shaw and Black Snout, and the Melvin River, which rises at Melvin Pond. From Sodom Road, the now third order stream drops rapidly for roughly two miles to Melvin Bay in Lake Winnepesaukee.

Over 50% of the Great Meadow is open marsh. This includes a variety of sedge and grass meadows, cat-tail beds, meandering stream channels, and sphagnum-dominated

fens. In the extreme western end there are some low nutrient bog-type mats where tamaracks and black spruce suffer a stunted tree or two. Along the eastern and southern edges, however, the nutrient base is significantly higher. This was where the water table pH ranged above 7.0 at all four of the groundwater monitoring well stations established in 2002. This above average pH level is largely a result of the calcium-rich bedrock in the vicinity, notably the Kingsley Formation basalt and other mafic rocks in the Ossipee Mountain Range.

Most of the marshy portions of the Great Meadow are edged by a dense thicket of scrub-shrubs. Speckled alder, winterberry holly, meadowsweet, and mountain holly dominate much of this border, although certain willows and rhododendrons can be found as well. This shrub zone gives way to forested swamps as the water table gets closer to the surface. At least one third of the Great Meadow basin is composed of tree-dominated swamps, with hemlock, red spruce, red maple, yellow birch, and white pine being commonly found. In the above-



**Above: groundwater monitoring well
B-2 below old transfer station**



Above: Northern Hardwood-Black Ash-Conifer Seepage Swamp

mentioned 'sweeter' soil areas, many of these species intermix with black ash and form what is known as the Northern Hardwood-Black Ash-Conifer Swamp.⁸ This somewhat rare swamp type relies on groundwater seeps of a relatively high pH in order to produce the characteristic mix of dense herbs and moderately sized trees. Aside from some of the extensive peatlands that because of their location off of the town property were not fully explored, this wetland type is the rarest and most significant *known* natural community associated with the Great Meadow.

Great Meadow is also home to a number of wildlife species. Perhaps the most notable during the previous study were moose and black bear. As a large basin wetland system, its connection to the high, wintering grounds of moose in the Ossipee Mountains is well-known to local residents. The vast forested tracts associated with the Great Meadow were at that time filled with moose sign, although their recent disappearance has caused this to no longer be the case. Warmer winter temperatures and increasing populations of winter tick have caused a regional crash in the moose population that appears to have affected their density at the Great Meadow as well. Their smaller cousins, white-tailed deer, are not as badly afflicted with parasitic ticks and as a consequence their populations have mostly flourished in and around the Great Meadow. Black bear are residential in the Great Meadow area and are no doubt still optimizing the abundance of berries, acorns, beechnuts, and spring sedges that abound at the edge of the swamp.

In terms of wildlife, of increasing concern are several species of vertebrates that make their home in the Great Meadow wetland complex. During the 2001-2002 study, both northern rough-winged swallow and rusty blackbird were observed in the Great Meadow. Although they were not confirmed as breeders, the fact that they occurred in an area of optimal habitat

⁸ See Sperduto and Kimball (2011) p. 199 for a description of this swamp type.

suggests that the Great Meadow may still provide a valuable locale if not for breeding, then certainly for migratory feeding and resting sites. Another listed species of greatest conservation concern (SGCN), the blue-spotted salamander, was recently seen near the outlet of the Melvin River. Although vernal pools were not documented during the earlier study, it is very likely that several exist adjacent to the Great Meadow, and could provide breeding habitat for this declining species. Finally, the open marsh system provides perfect habitat for the southern bog lemming, another SGCN species that has been declining statewide. Further fieldwork in summer could very easily determine their presence since they leave very characteristic tunnels, grass nests, and bright green scat piles as evidence of their residency.



Above: excellent habitat for rusty black birds and swallow species exist at Great Meadow

C. Parcel Attribute Assessment

A total of 77 parcels were assessed using the above-described Attribute Assessment Model that was developed for this project. Of the total possible 110 points included in this model, a total of five parcels achieved the highest rank of 54 – 65 points, 19 parcels reached the second highest tier of 43 – 53 points, 28 parcels fell within the third tier of 33 – 42 points, 15 parcels were within the fourth tier of 24 – 32 points, and the remaining 10 parcels had point values of between 13 – 23.⁹ The total point values for each parcel according to each attribute is summarized in Appendix C. The Parcel Attribute Map can be found in Appendix A.

⁹ The five tiers were determined according to the Jenks natural breaks optimization method (see https://en.wikipedia.org/wiki/Jenks_natural_breaks_optimization)

In looking at both the parcel summary table and the parcel attribute map, it is clearly evident that those parcels that include the core of the Great Meadow wetland complex scored the highest number of points. While this may appear self-evident, it is also important to note that not all of these core parcels scored in the top tier. The northernmost town-owned parcel (31-01-03) and the Berry parcel (31-01-08) actually scored in the second tier, largely on account of the absence of forest cover and the fact that they were both *within* the wetland and therefore lacked any upland buffer habitat. Other parcels in the northeast part of the Great Meadow scored low on account of the high level of human disturbance on these lands. This included the current town transfer stations and the associated gravel pit lots.

The highest scoring parcels included the three largest town lots associated with the lower Great Meadow (30-03-04, 31-01-04, 31-01-04), and two parcels along Mountain Road (17-01-01, 17-01-03). These parcels scored at 65, 61, 60, 58, and 55 points, respectively. With the exception of the three core lots noted above and lot 17-01-02, they include the greatest area of the Great Meadow on a percentage basis. They also included critical upland buffer habitat for the wetland complex. These lots are joined by lot 17-01-02 and lot 16-02-04 as having very high ecological value as well as a potentially significant influence on the integrity of the Great Meadow. All of these Mountain Road lots include inflowing streams and surface run-off, wherein any detrimental contributions of salt, sediment, or other toxicants could irreparably harm the long-term health of the Great Meadow.

Other important parcels to consider are the three lots that form the interior “core” of the forested buffer along the east side of the Great Meadow. Lots 30-03-01, lot 31-01-01, and lot 31-01-02 include roughly 445 acres of unfragmented wildlife habitat that directly supports the pristine quality of the Great Meadow protected lands. Each of these lots has been timber harvested since the initial study was done, and is unclear as to whether or not these activities have impacted the very high water quality recorded in this vicinity. Nonetheless, they provide

an undeveloped buffer to the Great Meadow, add significant forested habitat, and could provide access to the Great Meadow in the future should that be of interest to the town.¹⁰

The third area of conservation concern relative to the Great Meadow was noted to be the large lots uphill of the wetland complex on the slopes of the Ossipee Mountains (04-01-12, 05-01-01, 16-02-03, 17-01-04, 17-01-05, 17-01-06, and 17-01-07). These large lots total nearly 900 acres and each of them provide upland forest buffer protection for streams and surface run-off that lead across Mountain Road into the Great Meadow. Lots 04-01-12 and 05-01-01 are especially important in that they contain a significant stretch of Field Brook. This waterway is the longest and highest velocity waterway above the Great Meadow and carries great potential for delivering pollutants into the system. These two lots are also direct abutters to the Castle-in-the-Clouds property owned by the LRCT, and if protected would add significant acreage to the largest conservation property in the Ossipee Mountains.¹¹



Melvin River in the middle of the Great Meadow

¹⁰ The northernmost lot currently provides access to the only recreational trail that crosses the Great Meadow that originates at the town transfer station. At least in 2002, this trail was being regularly used by ATV's and snowmobiles along the powerline right-of-way.

¹¹ While the wetland value of all seven of these upland lots is low, many contain rare upland habitats along with several species of state-listed plants.

IV. SUMMARY

The 433-acre Great Meadow wetland complex offers the Town of Tuftonboro one of the greatest natural resource assets within the town borders. It is the largest wetland in town and overlies the most productive stratified drift aquifer. Lying directly below the Ossipee Mountains, the Great Meadow receives its greatest surface and groundwater inputs from this part of the mountain range, and other than periodic traffic flows on Mountain Road, has a direct and significant overland connection to it. Field Brook drains this sub-watershed and is joined by the Melvin River to form the core of the waterway through the Great Meadow proper. The third order Melvin River then descends through the lower portion of the Great Meadow and drops rapidly roughly two miles to Lake Winnepesaukee at Melvin Bay.

The proximity of the Great Meadow to Lake Winnepesaukee and the Ossipee Mountains makes it one of the premier flyways for migratory waterfowl, raptors, and passerine birds in the region. The diversity of cover types – from open marsh, to scrub-shrub swamp, to forested wetland – offer unparalleled habitat opportunities for a wide variety of vertebrate and invertebrate wildlife species. Over three-quarters of the upland habitat surrounding Great Meadow is ranked as either the highest quality habitat in the state or in the biological region according to the 2015 Wildlife Action Plan ranking.¹² Several rare habitats and species have been documented to occur in the Great Meadow or immediately adjacent to it.

Of the 77 parcels that were assessed using an adapted Attribute Assessment Model, 24 parcels scored within the top two tiers of ranking. While most of these included the core of the Great Meadow proper, several upland buffer parcels also ranked high to very high on account of their contribution to the health and integrity of the wetland complex. Over 85% of the 6967-acre watershed above the Great Meadow is undeveloped, and this includes the 2600+-acre unfragmented block within which the Great Meadow lies, and the 38,000+-acre unfragmented

¹² See Appendix A for the WAP map.

block of the Ossipee Mountains. Roughly one-third of the evaluated parcels fell within the latter unfragmented block, with the remainder lying within the Great Meadow unfragmented area.

The above findings suggest the three zones where conservation priorities have been recognized: the two highest ranking properties off of Mountain Road, the large unfragmented lots east of the Great Meadow, and the side slope lots of the Ossipee Mountain Range. This report also suggests that very few of the “outlier” parcels within the attribute assessment area have low contributory value relative to protecting the Great Meadow. For the protection of the integrity of this wetland complex to be successful, several strategies may indeed be possible. Each falls within the general goal of protecting the water quality, hydrologic integrity, and wildlife habitat value of the Great Meadow. In terms of specific conservation actions, there are several recommended steps that could be taken:

- 1) Review this report and identify priority conservation properties in the area
- 2) With permission, conduct needed field inventories to identify the exact extent of the contiguous wetland, rare species, and critical conservation zones
- 3) Initiate conversations with abutting landowners about easement protection options, including ones where the back land is put under easement
- 4) Secure funding for additional easement protection actions
- 5) Encourage adjacent property owners to voluntarily cooperate in protecting lands above and within the aquifer and wetland areas
- 6) Establish protective legislation for both the aquifer and the wetland area – consider conservation zoning of these resources
- 7) Continue a long-term monitoring program of the Great Meadow aquifer
- 8) Establish protective easements or covenants on remaining parcels owned by the Town

The conservation imperative that the town engaged in back in 2002 now has a clear “roadmap” to enhance the protective status of the Great Meadow for generations to come. It is now up to the citizens of Tuftonboro to carry this out.

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Appendices

A) MAPS

- 1. Wetland Map – Infrared Aerial**
- 2. Aquifer Map**
- 3. Wildlife Action Plan Map**
- 4. Parcel Attribute Map**

B) ATTRIBUTE ASSESSMENT MODEL

C) PARCEL SUMMARY TABLE

D) GREAT MEADOW SLIDE SHOW – Dec. 14, 2015

TOWN OF TUFTONBORO – GREAT MEADOW ATTRIBUTE ASSESSMENT MODEL

For Use in the Parcel Assessment of Highly-Valued Land Areas
[Name] in brackets indicate the GIS Field name

ATTRIBUTE 1 – SIZE [Size]

Value range: 1 – 5

Based on: mean, min/max parcel sizes in the Great Meadow area

Rationale: larger parcels provide greater potential for protection of
natural resource attributes

Point ranks:

(1) 0-2 ac. (2) 2-10 ac. (3) 10-35 ac. (4) 35-99 ac. (5) >100 ac

ATTRIBUTE 2 – STATUS / PROXIMITY TO CONSERVATION LAND [Cons, Prox]

Based on: A) current status as conservation land; and
B) proximity to conservation land

Rationale: * Conservation land contains greater long-term potential
for protection of all natural resources, especially as they
affect the Great Meadow
* Conservation status is not equal, that is, some lands
contain more stringent restrictions against development
* Existing conservation status may not be sufficient for
long-term protection of a particular natural resource
* Close proximity to conservation land allows the parcel to
act as a buffer to the protected area
* Distance intervals are based on 2010 conservation data
layer from NH GRANIT, and spatial analysis of conservation
property distribution in Great Meadow area

Point ranks:

Value range: 1 – 5

(A) Current Status of Parcel

(1) Unprotected – parcel not under any conservation protection

- (2) Somewhat Protected – parcel under public or private open space restriction (e.g. current use), but could convert to development in the future
- (3) Moderately Protected – parcel in public or private trust (e.g. Town Land or private common land), but does not have permanent development restriction attached to deed
- (4) Highly Protected – parcel under some form of restrictive covenant, but can be developed for public or private use (e.g. recreational trails, timber harvest)
- (5) Forever Wild – parcel under public or private permanent restriction that prevents purposeful alteration of any natural resources

(B) Proximity of Parcel to Conservation Land

Point ranks:

Value range: 1 – 5

(1) > 2 mi. (2) 1.5 – 2 mi. (3) .5 – 1.5 mi. (4) < .5 mi. (5) adjacent

ATTRIBUTE 3 – WETLAND CHARACTERISTICS [Wet_A, Wet_B, Wet_C, Wet_D]

Based on:

- (A) Presence/absence of Great Meadow wetland on property
- (B) Presence/absence of other wetlands on parcel and total wetland percent of parcel
- (C) Number of wetland classes present on parcel
- (D) Proximity to the 500-foot buffer to Great Meadow

Rationale:

- * Wetlands are of tremendous value in terms of providing natural resources that are beneficial to humans
- * Wetlands provide value for -
 - Gw recharge sites for future drinking water supplies
 - Flood storage
 - Wildlife habitat
 - Educational and scenic resources
 - Nutrient and sediment attenuation
 - Hunting, fishing & water-based recreation
 - Shoreline anchoring
 - Rare & endangered species
- * Parcels that contain part of the Great Meadow wetland have the highest natural resource value for protecting the Great Meadow wetland (note that this attribute is double-weighted)

- * Parcels that have other wetlands that contribute to the Great Meadow have higher value than those without such wetlands
- * Parcels that have higher cover class diversity have greater functional value for the great Meadow wetland
- * Parcels that contain upland habitat in the 500-foot buffer zone of the Great Meadow have higher value than those outside of the 500-foot buffer zone

[Note: wetland values directly associated with wildlife – i.e. wetland buffer zones, are addressed under wetland wildlife below]

3A Great Meadow Presence or Absence – percent of total parcel that includes the Great Meadow wetland

Point rank:

Value Range 1 – 5

- (0) Parcel does not contain any part of the Great Meadow
- (2) Parcel is comprised of less than 20% of the Great Meadow
- (4) Parcel is comprised of 20-40% of the Great Meadow
- (6) Parcel is comprised of 40-60% of the Great Meadow
- (8) Parcel is comprised of 60-80% of the Great Meadow
- (10) Parcel is composed of > 80% of the Great Meadow

3B Other Contributing Wetland Presence or Absence –percent of total parcel that contains one or more contributing wetlands to the Great Meadow (exclusive of the Great Meadow itself)

Point rank:

Value Range 1 – 5

- (1) Parcel does not contain any contributing wetlands
- (2) Parcel is comprised of less than 10% contributing wetland
- (3) Parcel is comprised of 10-20% contributing wetland
- (4) Parcel is comprised of 20-50% contributing wetland
- (5) Parcel is comprised of >50% contributing wetland

3C Number of Wetland Classes – based on the Cowardin et al. (1979) system of wetland classification used in the National Wetlands Inventory (NWI); parcel assessment based on revised NWI map from 2010 digital aerial photography (NH GRANIT), soils, and USGS hydrography (all wetlands included in this ranking)

Point rank:

Value Range 0 – 5

- (0) Parcel does not contain any wetlands
- (1) Parcel is comprised of one wetland class
- (2) Parcel is comprised of 2-3 wetland classes that are not interspersed
- (3) Parcel is comprised of 2-3 wetland classes that are highly interspersed
- (4) Parcel is comprised of >3 wetland classes that are not interspersed
- (5) Parcel is comprised of >3 wetland classes that are highly interspersed

3D Proximity to 500-foot Buffer to Great Meadow – based on higher value if wholly or partly contained within 500-foot buffer to Great Meadow

Point rank: **Value Range 0 – 5**

- (0) Parcel is not within the 500-foot buffer zone of the Great Meadow
- (1) Parcel is < 10% within the 500-foot buffer to Great Meadow
- (2) Parcel is 10 - 25% within the 500-foot buffer to Great Meadow
- (3) Parcel is 25 - 50% within the 500-foot buffer to Great Meadow
- (4) Parcel is 50 - 75% within the 500-foot buffer to Great Meadow
- (5) Parcel is > 75% within the 500-foot buffer to Great Meadow

ATTRIBUTE 4 – SCENIC VALUE [Scen]

Based on: aesthetic attributes of parcel relative to Great Meadow

Rationale:

- * Scenic resources are highly valued in Town
- * Higher value exists on parcels with a diversity of landscape structure, as well as visual wholeness or integrity
- * Direct views of the Great Meadow enhance the value of this wetland for the community

Point ranks: **Value range: 1 – 5**

- 1) Parcel not easily visible from trail, road, or residence, and does not contain a view of the Great Meadow
- 2) Parcel somewhat visible from trail, road, or residence but of ordinary quality, and without any features that demonstrate variety or integrity (wholeness); or parcel has partial but limited view of the Great Meadow
- 3) Parcel easily visible from trail, road, or residence and containing aesthetically pleasing but limited views of the Great Meadow such as brilliant fall foliage, open marsh, the Melvin River, dramatic landscapes, remnant historical features, etc.; parcel outside of critical viewshed area
- 4) Parcel contains one or more significant views of the Great Meadow that is only privately accessible

- 5) Parcel contains one or more significant views of the Great Meadow and is publicly accessible

ATTRIBUTE 5 – WATER QUALITY, WATER QUANTITY [Aqu_SD, H2O, PCT, Aqu_BR]

Based on:

- (A) Presence/absence stratified drift aquifers beneath the parcel and their transmissivity rates
- (B) Presence/absence drinking water supplies
- (C) Presence/absence known or potential contaminant threats
- (D) Bedrock aquifer potential

Rationale:

- * Drinking water supplies are of paramount importance to the residents of the Town
- * Parcels that overlie stratified drift aquifers have higher value as recharge sites for future drinking water supplies
- * Parcels that have current drinking water supplies have higher natural resource value, with greater value placed on larger yield, public systems
- * Parcels that have known or potential contaminant threats have less value than those that do not
- * Parcels that have higher yield probabilities for bedrock aquifers have higher value than those that do not

5A Stratified Drift Aquifers – present or absent, low or medium transmissivity; based on NHDES aquifer map information

Point rank: **Value Range 0 – 5**

- (0) No stratified drift aquifer present beneath the parcel
- (1) Stratified drift aquifer present, of ≤ 1000 ac-ft/day
- (2) Stratified drift aquifer present, of 1000 – 2000 ac-ft/day
- (3) Stratified drift aquifer present, of 2000 – 4000 ac-ft/day
- (4) Stratified drift aquifer present, of 4000 – 9999 ac-ft/day
- (5) Stratified drift aquifer present, of ≥ 9999 ac-ft/day

5B Drinking Water Supply - based on the presence/absence of private or public wells on the parcel and/or the proximity of the parcel to such well

Point rank: **Value Range 1 – 5**

- (1) Parcel without current drinking water supply well and/or $> \frac{1}{2}$ mile from public drinking water supply well

- (2) Parcel with private drinking water supply well and > ½ mile from public drinking water supply well
- (3) Parcel with private drinking water supply well and < ½ mile from public drinking water supply well
- (4) Parcel with or without private well, but within wellhead protection zone (1/4 mile) of public drinking water supply well

5C Potential Contaminant Threat – present or absent on parcel

Point rank:

Value Range –5 - 0

- (-5) Parcel with known contaminant threat
- (-3) Parcel within potential contaminant threat area but without known contaminant threat
- (0) Parcel without known or potential contaminant threat

5D Bedrock Aquifer Yield Probability – based on bedrock aquifer yield probability map from the USGS

Point rank:

Value Range 1 - 5

- (1) Bedrock aquifer yield probability averages 0 – 2
- (2) Bedrock aquifer yield probability averages 3 – 5
- (3) Bedrock aquifer yield probability averages 6 – 7
- (4) Bedrock aquifer yield probability averages 8 – 10
- (5) Bedrock aquifer yield probability averages > 99

ATTRIBUTE 6 – SURFACE WATER RESOURCES – Streams [Stream]

Based on: (A) Presence/absence of surface water resources on or adjacent to parcel that contributes to the Great Meadow, plus the size and position of surface water resources on parcel

Rationale:

- * Surface waters that contribute to the Great Meadow are of paramount importance to the residents of the Town
- * Parcels that contain surface water resources have more value than those without
- * Parcels that contain a portion of the Melvin River mainstem have more value than those with smaller tributaries

6A Surface Water Resources - Streams – based on presence/absence and size of streams on parcel that directly contributes to the Great Meadow

Point rank:

Value Range 0 – 5

- (0) No contributing stream or river within or bordering the parcel
- (1) Parcel only containing intermittent stream or portion of 100-foot buffer area of any perennial stream that contributes to the Great Meadow
- (2) Parcel containing intermittent stream and significant portion of the 100-foot buffer to a perennial stream that contributes to the Great Meadow
- (3) Parcel containing a first order perennial stream that directly contributes to the Great Meadow
- (4) Parcel containing a portion of the second order Field Brook or Melvin River that contributes to the Great Meadow
- (5) Parcel containing a portion of the third order Melvin River on or adjacent to the Great Meadow

ATTRIBUTE 7 – FOREST COVER [For_Div, For_Qua]

Based on:

- (A) Presence/absence of forests on the parcel, plus forest cover type(s) on the parcel (mostly from lansat imagery, with additional data from aerial photographs)
- (B) Quality of forest cover on the parcel and ability to produce timber resources

Rationale:

- * Parcels with a predominance of forest cover have a greater opportunity to contribute to the ecological integrity of the Great Meadow
- * Forests are an invaluable resource for long-term environmental, cultural and socio-economic stability
- * Parcels containing a higher number of forest cover types are more valuable than those with a single forest cover type
- * Parcels with mature, uncut timber offer a higher value of protection to Great Meadow than those that have been cut within the last 25 years.

7A Forest Cover Type Diversity – based on discernible cover type diversity from lansat and aerial photograph data

Point rank:

Value Range 0 – 5

- (0) No mapped or observable forest present on parcel
- (1) Parcel with a single forest type of < 10 acres
- (2) Parcel with a single forest type of > 10 acres, or parcel with two forest types and < 10 acres
- (3) Parcel with two forest types and > 10 acres or parcel with three or more forest types and < 10 acres
- (4) Parcel with three or more forest types and > 10 acres
- (5) Parcel with three or more forest types and > 50 acres

7B Forest Quality - based on current use status, and level of timber harvest activity as noted in intent-to-cut files, aerial photograph interpretation, or direct knowledge of forest history on property

Point rank:

Value Range 0 – 5

- (0) No mapped or observable forest present on parcel
- (1) Parcel not in current use and < 10 acres in size, or has < 10 acres of forest
- (2) Parcel not in current use and > 10 acres of forest, but has been cut heavily in the last ten years
- (3) Parcel not in current use and > 10 acres of forest, and has been not been cut in the last ten years, or Parcel in current use, but without stewardship plan or active management
- (4) Parcel in current use, with active stewardship plan, and forest has been harvested in last 10 years
- (5) Parcel in current use, with active stewardship plan, and forest has not been harvested in last 10 years

[Note: forest cover values directly associated with wildlife are addressed under wildlife below]

ATTRIBUTE 8A – WILDLIFE – Open Uplands [Wld_Open]

Based on:

- * Presence of open land and forested buffers on the parcel
- * Size of open area on or adjacent to the parcel
- * Level of habitat fragmentation on or adjacent to the parcel

Rationale:

- * Open land near the Great Meadow, including agricultural land, old fields, “gentlemen farms,” abandoned gravel pits, gardens, golf courses, airports, powerlines, and utility rights-of-way, offer unique habitat opportunities for a variety of vertebrate and invertebrate wildlife

* Parcels that also contain undisturbed, forested buffer zones adjacent to Great Meadow have higher value than those without such buffers

Point rank: **Value Range 0 – 5**

- (0) Parcel contains no open upland habitat within 500 feet of the Great Meadow wetland
- (1) Parcel contains < 1 acre of open upland habitat within 500 feet of the Great Meadow wetland with a forested buffer of < 100 feet in width,
- (2) Parcel contains < 1 acre of open upland habitat within 500 feet of the Great Meadow wetland with a forested buffer of ≥ 100 feet in width
- (3) Parcel contains > 1 acre of open upland habitat within 500 feet of the Great Meadow wetland with a forested buffer of < 100 feet in width,
- (4) Parcel contains > 1 acre of open upland habitat within 500 feet of the Great Meadow wetland with a forested buffer of ≥ 100 feet in width
- (5) Parcel contains 1 or more open upland habitats totaling > 5 acres within 500 feet of the Great Meadow wetland

ATTRIBUTE 8B – WILDLIFE – Forested Uplands [Wld_For]

Based on: *Presence/absence of upland forest habitat and level of forest fragmentation
* Diversity of upland forest cover types

Rationale: * Presence of unfragmented, forested uplands provide essential habitat for a wide variety of wildlife species
* A higher diversity of upland forest cover types has higher value than areas with low upland forest cover diversity

Point rank: **Value Range 0 – 5**

- (0) Parcel contains < 5 acres of upland forest habitat, and is directly connected to unfragmented forested tracts of < 25 acres
- (1) Parcel contains < 5 acres of upland forest habitat, but is directly connected to unfragmented forested tracts of > 25 acres
- (2) Parcel contains 5 - 50 acres of upland forest habitat, and is directly connected to unfragmented forested tracts of < 250 acres
- (3) Parcel contains 5 - 50 acres of upland forest habitat, and is directly connected to unfragmented forested tracts of > 250 acres
- (4) Parcel has > 50 acres of upland forest habitat, and is connected to < 1000 acres of unfragmented forested tracts

- (5) Parcel has > 50 acres of upland forest habitat, and is connected to > 1000 acres of unfragmented forested tracts

ATTRIBUTE 9 – RARE & ENDANGERED SPECIES, EXEMPLARY NATURAL COMMUNITIES
[R_E_]

Based on:

- * Presence/absence of rare or endangered species or exemplary natural communities as determined from NH Natural Heritage Bureau data
- Level of threat or endangerment

Rationale:

- * Rare and endangered species represent the most critically imperiled types of biodiversity
- * High biodiversity implies greater stability in almost all ecosystem types, and often reflects an absence of human disturbance over time
- * Exemplary natural communities with high quality examples of plants, animals and their natural habitats are more valuable than low quality or significantly disturbed natural habitats

Point rank: Value Range 0 – 5

- (0) No known or documented rare and endangered species or exemplary natural community is present on the parcel
- (1) No documented rare or endangered species or exemplary natural community is recorded, but habitat and/or anecdotal evidence suggests one or more is present on the parcel
- (2) Documented state-listed special concern species or natural community is present on the parcel
- (3) Documented state-listed threatened species or natural community is present on the parcel
- (4) Documented state-listed endangered species or natural community is present on the parcel
- (5) Documented federally-listed threatened or endangered species is present on the parcel

ATTRIBUTE 10 – ACCESS & FRAGMENTATION [Access, Frag]

Based on: (A) Current or potential accessibility by pedestrian and/or motorized traffic

(B) Level of parcel fragmentation by roads or development

Rationale:

- *Parcels that contain trails or byways that potentially could provide access to Great Meadow have greater potential for use by the general public than parcels that lack such features
- * Parcels that are crossed or bordered by Class I, II, III or IV roads have less value to the ecological integrity of the Great Meadow than interior, roadless parcels

10A Access – based on accessibility to the Great Meadow by the public

Point rank:

Value Range 1 – 5

- (1) Parcel landlocked and posted, or otherwise inaccessible by general public
- (2) Parcel occurs along a roadside but is posted or otherwise inaccessible by the public, or parcel is landlocked, not posted, private and trail-less
- (3) Parcel has roadside access, is not posted, but is owned privately, or parcel is publicly owned but landlocked and trail-less
- (4) Parcel has roadside access, is not posted, is owned publicly, but does not have defined trails that access Great Meadow for the purpose of public recreation
- (5) Parcel has roadside access (although it may be landlocked), is owned privately or publicly, and has defined trails for the purpose of access to the Great Meadow

10B Fragmentation – based on fragmentation of parcel by roads

Point rank:

Value Range 1 – 5

- (1) Parcel < 10 acres and bordered or fragmented by Class II road
- (2) Parcel > 10 acres and bordered or fragmented by Class II road
- (3) Parcel < 10 acres and bordered or fragmented by Class V or private road
- (4) Parcel > 10 acres and bordered or fragmented by Class V or private road
- (5) Parcel of any size, but landlocked and unfragmented

GREAT MEADOW - PARCEL ATTRIBUTE ASSESSMENT SUMMARY																							
ID	Parcel ID	Acres Tax	Owner1	Owner2	OwnerAddr1	OwnerAddr2	OwnerCity	OwnerStat	OwnerZip	OwnerZip4	ParcelCuCr	Size	Cons	Prox	Wet_A	Wet_B	Wet_C	Wet_D	Scen	Aqu_SD	H2O	PCT	Aqu_BR
1	30-03-04	140.0	TUFTONBORO, TOWN OF		PO BOX 98	240 MIDDLE RD	CTR. TUFTONBORO	NH	3816	0	0	5	3	0	8	2	4	4	5	1	2	-5	1
2	17-01-01	85.0	THOMPSON, RICHARD B. II	THOMPSON,	820 NORTHLINE RD		CTR TUFTONBORO	NH	3816	0	0	4	0	0	8	2	4	5	4	2	2	0	1
3	17-01-03	153.5	BRUCE, BEVERLY TRUST		300 MOUNTAIN RD		TUFTONBORO	NH	3816	0	873600	5	0	0	4	2	5	4	4	1	2	0	1
4	31-01-07	61.5	TUFTONBORO, TOWN OF		PO BOX 98	240 MIDDLE RD	CTR. TUFTONBORO	NH	3816	0	0	4	3	0	10	2	5	0	5	1	1	0	1
5	17-01-02	40.0	FABIAN FAMILY REV TRUST	C/O PAUL FA		16114 CHAMPION DR	SPRING	TX	77379	0	90266	4	0	0	8	2	5	5	2	2	1	0	1
6	31-01-02	90.0	SARGENT, FRED		PO BOX 94		MELVIN VILLAGE	NH	3850	0	0	4	0	5	4	1	5	0	4	1	1	0	1
7	15-02-27	25.0	LYON, VICTORIA		104 SODOM RD		TUFTONBORO	NH	3816	0	48618	3	0	5	2	2	4	3	1	1	0	1	
8	31-01-04	47.0	TUFTONBORO, TOWN OF		PO BOX 98	240 MIDDLE RD	CTR. TUFTONBORO	NH	3816	0	0	4	3	0	10	1	5	0	5	1	1	0	1
9	16-02-21	50.0	BEAN, EDWARD		107 SODOM RD		TUFTONBORO	NH	3816	0	0	4	0	0	4	2	2	4	3	1	2	0	1
10	16-02-24	45.0	LOVETT, ALISON		105 SODOM RD		TUFTONBORO	NH	3816	0	95907	4	0	5	2	2	4	5	2	1	1	0	1
11	31-01-01	50.0	PHELPS, MICHAEL T. TRUST	PHELPS, MIC	P. O. BOX 51		TUFTONBORO	NH	3816	0	27450	4	0	5	2	2	2	0	4	1	1	0	1
12	16-02-04	78.5	BLAZICK, ALLEN	BLAZICK, JAN	3357 SUTTON LOOP		FREEMONT	CA	94536	0	49800	4	0	0	2	3	4	3	5	1	2	0	1
13	32-02-01	85.0	LINDBLAD, FAMILY IRREV LIFE INS	ERSKINE, MA	30 HIGHLAND STREET		WORCESTER	MA	1609	0	146057	4	0	5	4	2	2	0	3	1	1	0	1
14	5/1/2001	115.0	BLAZICK, ALLEN	BLAZICK, JAN	3357 SUTTON LOOP		FREEMONT	CA	94536	0	76525	5	0	5	1	2	1	0	2	0	1	0	2
15	16-02-03	281.0	BLAZICK, ALLEN	BLAZICK, JAN	3357 SUTTON LOOP		FREEMONT	CA	94536	0	112345	5	0	5	1	2	2	1	4	0	2	0	1
16	31-01-09	63.0	LOVETT, ALISON		105 SODOM RD		TUFTONBORO	NH	3816	9706	46050	4	0	5	2	2	4	0	4	1	1	0	1
17	31-01-05	16.0	FABIAN FAMILY REV TRUST	C/O PAUL FA		16114 CHAMPION DR	SPRING	TX	77379	0	10075	3	0	0	10	1	5	0	5	1	1	0	1
18	31-01-10	3.6	TUFTONBORO, TOWN OF		PO BOX 98	240 MIDDLE RD	CTR. TUFTONBORO	NH	3816	0	0	2	3	0	10	1	4	0	5	1	1	0	1
19	4/1/2012	100.0	HUNTER, JEFFREY TRUST	PHYLLIS HUN	P. O. BOX 47		MELVIN VILLAGE,	NH	3850	0	228653	5	0	5	1	2	1	0	2	0	1	0	2
20	30-03-01	5.1	PHELPS, MICHAEL T. TRUST	PHELPS, MIC	P. O. BOX 51		TUFTONBORO	NH	3816	0	295600	2	0	5	2	3	3	0	1	2	2	0	1
21	17-01-07	117.3	RAM PROPERTIES LIMITED PARTNER		9 FANARAS DRIVE		SALISBURY	MA	1952	1444	0	5	0	5	1	2	2	0	4	0	1	0	1
22	15-03-33	88.3	LAKES REGION CONSERVATION TRST		156 DANE ROAD (ROUTE 25)	PO BOX 766	CENTER HARBOR	NH	3226	0	0	4	4	0	1	2	2	1	3	1	1	0	1
23	16-02-19	45.0	BEAN, MELVIN		PO BOX 143		MELVIN VILLAGE	NH	3850	0	0	4	0	0	2	2	3	0	2	2	1	0	1
24	31-01-06	12.0	TUFTONBORO, TOWN OF		PO BOX 98	240 MIDDLE RD	CTR. TUFTONBORO	NH	3816	0	0	3	3	0	6	2	4	0	4	1	1	0	1
25	17-01-06	117.3	THOMPSON, DOLLY		PO BOX 48		MELVIN VILLAGE	NH	3850	0	65500	5	0	5	1	2	2	1	2	0	1	0	1
26	31-01-08	14.0	BERRY, STEVEN		26 UNION WHARF RD		MIRROR LAKE	NH	3853	9718	0	3	0	0	10	1	4	0	5	1	1	0	1
27	32-02-06	82.0	SARGENT, FRED	SARGENT, EL	P. O. BOX 94		MELVIN VILLAGE	NH	3850	0	0	4	0	0	1	3	4	0	4	2	1	0	1
28	16-02-09	39.1	BUESSER TRUST	BUESSER, LU	149 SODOM ROAD		TUFTONBORO	NH	3816	0	173328	4	0	0	1	3	3	1	2	3	2	0	1
29	4/1/2010	13.8	HODGDON FAMILY REV TRUST		P. O. BOX 56		MELVIN VILLAGE	NH	3850	0	151870	3	0	0	1	3	5	0	2	1	1	0	1
30	32-02-03	60.0	GARABEDIAN, MARTIN & BARBARA		279 MOUNTAIN RD		TUFTONBORO	NH	3816	0	228692	4	0	0	2	2	3	0	3	1	1	0	1
31	31-01-03	9.6	TUFTONBORO, TOWN OF		PO BOX 98	240 MIDDLE RD	CTR. TUFTONBORO	NH	3816	0	0	2	3	0	5	1	5	0	5	1	1	0	1
32	45-01-17	85.0	WILLIAMS, ROGER	WILLIAMS, B	293 MIDDLE RD		TUFTONBORO	NH	3816	0	0	4	0	0	1	2	3	0	1	1	1	0	1
33	30-03-07	14.1	BRADLEY, HELEN		PO BOX 122		CTR TUFTONBORO	NH	3816	0	0	3	0	5	1	2	1	0	3	1	1	0	1
34	32-02-05	28.0	CARLETON TRUST, MICHAEL & LISA	CARLETON, N	C/O WATER INDUSTRIES, INC	PO BOX 218	ALTON	NH	3809	0	0	3	0	0	4	2	4	0	3	1	1	0	1
35	30-03-02	20.5	MANCUSO, PATRICK	MANCUSO, R	39 SODOM RD		TUFTONBORO	NH	3816	0	0	3	0	5	2	2	2	0	3	0	2	0	1
36	17-01-05	50.0	BRUCE, BEVERLY TRUST		300 MOUNTAIN RD		CTR TUFTONBORO	NH	3816	0	212300	4	0	0	1	2	1	0	4	0	1	0	1
37	16-02-08	20.0	HUNTER, PHILIP		159 SODOM RD		MOULTONBORO	NH	3254	0	115432	3	0	0	1	2	2	0	2	1	2	0	1
38	30-03-03	20.9	MEADOW LANE ESTATES CONS LLC		2 MEADOW LANE		TUFTONBORO	NH	3816	0	0	3	0	5	2	2	2	0	3	0	1	0	1
39	32-02-09	10.0	NORMIE'S POND 2010 REV TRUST	VITTUM, NO	207 MOUNTAIN RD		TUFTONBORO	NH	3816	0	0	3	0	0	4	2	2	0	3	1	1	0	1
40	32-02-08	22.0	BROWN, ROBERT	BROWN, DO	1096 W ELGIN ST		CHANDLER	AZ	85224	0	0	3	0	0	1	3	4	0	1	1	1	0	1
41	45-01-39	118.4	HOLMES, WILLIAM		PO BOX 58		TUFTONBORO	NH	3816	0	0	5	0	0	1	2	3	0	1	1	1	0	1
42	16-02-18	14.0	TERWILLIGER, JOHN JR		39 STEVENSON HILL RD		TAMWORTH	NH	3886	0	0	3	0	0	1	2	2	1	2	2	2	0	1
43	16-02-22	9.7	LOVETT, ALISON		105 SODOM RD		TUFTONBORO	NH	3816	0	0	2	0	0	2	1	1	4	3	1	2	0	1
44	32-02-15	18.2	TUFTONBORO, TOWN OF	TRANSFER ST	PO BOX 98		CTR. TUFTONBORO	NH	3816	0	0	3	3	0	1	2	2	0	5	2	2	-3	1
45	32-02-16	9.0	TUFTONBORO, TOWN OF		PO BOX 98	240 MIDDLE ROAD	CTR. TUFTONBORO	NH	3816	0	0	2	3	0	2	1	0	0	4	1	1	-3	1
46	32-02-07	13.0	PARSONS DAVID E	PARSONS LI	228 MOUNTAIN RD		TUFTONBORO	NH	3816	0	9122	3	0	0	1	4	5	0	2	2	1	0	2
47	17-01-04	37.3	THOMPSON, RICHARD B. II	THOMPSON,	820 NORTHLINE RD		CTR TUFTONBORO	NH	3816	0	63224	4	0	0	1	2	3	2	2	0	1	0	0
48	44-01-40	25.0	GILLUM, DENIS	GILLUM, AN	38 DAME ROAD		TUFTONBORO	NH	3816	0	0	3	0	0	1	2	2	0	2	0	2	0	1
49	15-02-24	20.0	DOWNING, VICTORIA D.	DOWNING, L	104 SODOM RD		TUFTONBORO	NH	3816	0	31171	3	0	5	1	1	2	0	3	0	1	0	1
50	4/1/2011	15.0	SMITH, KRISTIE H	SMITH, DAVI	P. O. BOX 237		MELVIN VILLAGE	NH	3850	0	143773	3	0	0	1	3	3	0	5	1	2	0	1
51	16-02-11	25.0	FAZ NOMINEE TRUST		251 PAWTUCKET BOULEVA		TYNGSBOROUGH	MA	1879	0	0	3	0	0	1	1	3	0	2	3	1	0	1
52	30-03-06	8.3	HONEYCUTT, STEVEN	HONEYCUTT,	61 SODOM RD		CTR TUFTONBORO	NH	3816	357	0	2	0	5	2	1	3	0	2	0	2	0	1
53	16-02-16	15.0	CRAM, ANNETTE		PO BOX 10		MELVIN VILLAGE	NH	3850	0	24420	3	0	0	1	1	0	0	2	3	2	0	1
54	32-02-04	22.9	SARGENT, FRED		PO BOX 94		MELVIN VILLAGE	NH	3850	0	0	3	0	0	2	2	2	0	2	1	1	0	1
55	33-01-07	13.5	BOGGS, JEFFREY O.		PO BOX 7		CTR TUFTONBORO	NH	3816	0	79887	3	0	0	1	2	3	0	2	2	2	0	1
56	15-02-23	10.5	LYON, VICTORIA		104 SODOM RD		TUFTONBORO	NH	3816	0	15832	3	0	5	1	1	0	0	2	0	1	0	1
57	46-03-15	15.4	HOLDERMAN, CAROL	HOLDERMAN	2136 SAFEGUARD STREET	QUARTERS K	HONOLULU	HI	96818	0	58430	3	0	0	1	2	1	0	2	2	1	0	1
58	46-03-07	33.5	NORMIE'S POND 2010 REV TRUST	VITTUM, NO	207 MOUNTAIN RD		TUFTONBORO	NH	3816	0	152791	3	0	0	1	2	2	0	2	1	1	0	1
59	16-02-06	3.5	WOLFE, RICHARD S	HULL, KIM	15 MAPLE STREET		PAXTON	MA	1612	0	0	2	0	0	1	4	4	0	2	1	2	0	1
60	15-02-20	5.0	CONANT, USA B.		PO BOX 28		CTR TUFTONBORO	NH	3816	0	0	2	0	5	1	2	2	0	3	1	1	0	1
61	15-02-26	1.3	LYON, VICTORIA		104 SODOM RD		TUFTONBORO	NH	3816	0	41926	1	0	0	2	1	2	0	3	1	1	0	2
62	45-01-18	16.5	HASTINGS, BRIAN	HASTINGS, A	24 OLD WOODS RD		TUFTONBORO	NH	3816	0	0	3	0	0	1	3	2	0	1	0	2	0	1
63	15-02-21	5.4	LYON FAMILY REVOCABLE TRUST	WILLIAM &	98 SODOM RD		TUFTONBORO	NH	3816	0	0	2	0	5	1	1	1	0	2	0	2	0	1
64	16-02-25	0.5	NH FISH & GAME		SODOM RD		TUFTONBORO	NH	3816	0	0	1	0	0	2	1	1	5	3	1	1	0	1
65	15-02-25	0.5	LYON, VICTORIA		104 SODOM RD		TUFTONBORO	NH	3816	0	40468	1	0	0	2	1	1	0	3	1	1	0	2
66	32-02-12	5.0	SARGENT, MARY JANE		PO BOX 132		MELVIN VILLAGE	NH	3850	0	0	2	0	0	1	3	2	0	2	1	1	0	1
67	45-01-19	10.0	SUTHERLAND, GLENN	SUTHERLAND</																			

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