



Londonderry Open Space Task Force

Tuesday, February 3, 2011

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1 Present: Mike Speltz, Chair and Conservation Commission Representative; Lynn Wiles, Secretary and
2 Planning Board Representative; Art Rugg, Heritage Commission Representative; Marty Srugis, Solid
3 Waste Advisory Committee Representative; George Herrmann, School Board Representative; Bob Saur,
4 Londonderry Trailways Representative; Jeff Locke, At-Large Representative; and Tim McKenney, At-
5 Large Representative

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7 Also present: John Vogl, GIS Manager; and Jaye Trottier, Administrative Assistant

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9 Absent: Dana Coons, Vice Chair and Planning Board Alternate Representative; Bill Manning, Recreation
10 Commission Representative; John Curran, Budget Representative; Lisa Whittemore, Budget Committee
11 Alternate Representative

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13 M. Speltz called the meeting to order at 7:05 PM. He asked members for comments or corrections
14 regarding the minutes of the December 2, 2010 meeting. Seeing none, he entertained a motion to
15 accept the minutes. A. Rugg so moved. M. Srugis seconded. The motion was approved, 8-0-0. He then
16 asked for comments or corrections regarding the minutes of the January 6, 2011 meeting. Seeing none,
17 he entertained a motion to accept the of the January 6, 2011 minutes. A. Rugg so moved. B. Saur
18 seconded. The motion was approved, 8-0-0.

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20 At the January 6 meeting, J. Vogl presented a series of maps showing those places in town most likely to
21 provide the resources previously deemed the most valuable, i.e. plant and animal diversity; flood
22 storage; large forest blocks; history/culture; scenic resources; steep slopes and erodible soils;
23 agricultural soils; and drinking water quality/quantity. M. Speltz explained that the Task Force would
24 examine those same maps in more detail at this meeting and evaluate the methods used to create them.
25 Doing so will verify whether they can accurately represent the desired level of the benefits of each
26 resource over the long term. A standard overlay was supplied for use on each map to show how those
27 same areas are currently being used, whether they are developed, partially protected or fully conserved.
28 The next step would be to use a Delphi process to prioritize the resources, which will in turn provide
29 direction for future purchases of open space and/or development of regulatory limitations. Background
30 was provided to members of the six resources identified in the 2005/6 Open Space Task Force, showing
31 the current acreage of each in town, followed by the number of acres already protected, be it fully or
32 partially. M. Speltz asked members, however to review each map as though all parcels were available,
33 regardless of what is presently conserved or what funding currently exists.

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35 The maps were reviewed as follows:

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37 1. Plant and animal diversity; Using the NH Fish & Game Wildlife Action Plan (WAP), the seven
38 types of habitat found in Londonderry were identified (see attached), including both larger areas known
39 as matrix habitats (e.g. forests and grasslands) as well as small and uncommon patch habitats (e.g. pine
40 barrens, rocky ridges/talus slopes, and peatlands). Each type has been rated by NH Fish & Game
41 according to their condition and those results were applied to this map. The highest ranked habitat (top
42 10-15%) are thus distinguished from those of the coastal plain bioregion and the "supporting
43 landscapes" whose significance lies in their ability to protect areas of the highest condition. When
44 adding the aforementioned layer of land already protected, two areas highly rated in the WAP were



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45 noted: one in the northeast corner where residential development is impending and the other in the
46 northwest which is slated for Industrial/Commercial use. M. Speltz stated that the latter was not
47 targeted in the previous Open Space Plan because only residential areas were considered at that time.
48 He added that protection, either full or partial, is not out of the question in either area. Working with a
49 developer to avoid impacting sensitive areas, for example, can be a conservation goal when the outright
50 purchase of land or an easement is not possible.

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52 2. Flood storage; The 100 and 500-year flood plains are identified on this map, which M. Speltz
53 noted are vital to protect in order to preserve their ability to absorb water without the impediment of
54 impervious surface. Although the chance of a 500-year flood event equates to only .2% every year, he
55 noted that the precipitation data used to identify floodplains is fifty years old. In the time since those
56 standards were set, climate change has brought warmer weather, which increases evaporation, resulting
57 in heavier and more frequent precipitation events. This may be evidenced by the fact that this area has
58 experienced two 100-year events in the last four years. Maps printed out at the January meeting
59 displayed parcels in watersheds with greater than 15% impervious surfaces. Preserving a portion of
60 these lands could be an opportunity to mitigate future development. M. Speltz said that since
61 protecting the significant amount of acreage in Londonderry's watershed is impractical, a bonus can be
62 added to land chosen during the Delphi process that lies within watersheds impacted by 10% impervious
63 surface or more. L. Wiles asked if protection of the watersheds in town is prioritized in any way. M.
64 Speltz replied that it would be open to interpretation since one could value more the need to protect
65 the investments of developed areas from flooding or the need to preserve those least disturbed to
66 preserve such resources as water quality.

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68 3. Large forest blocks: Plant and animal habitat and connections between habitat patches are
69 supported by larger forested areas. Blocks are separated on this map into four sizes, from 50-100-acre
70 pieces to over 500 acres. Larger blocks, M. Speltz noted, are necessary for some species that will only
71 inhabit their interior because they require a significant surrounding buffer of protection. These same
72 areas can also feature recreational trail networks (e.g. the Musquash Conservation Area) and support
73 the "10 to 10" ideal where all residents are within a ten minute walk of ten acres or more of conserved
74 land. A bonus can be added in the Delphi process to those parcels that would contribute to this goal.
75 Forest blocks are also valued as expanses that are not compromised by impervious surfaces. Another
76 factor to consider is whether blocks continue into surrounding towns. This map also illustrates the
77 gravity model where potential corridors link existing conservation areas with those of similar size. M.
78 Speltz asked members if they considered the lowest category, (50-100 acres) worth pursuing. The
79 consensus was those areas would be if they also feature other resources. J. Vogl said he could assist
80 members in the Delphi process by adding the number of parcels within each size category.

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82 4. Cultural resources/Community heritage; This map includes Apple Way and the parcels which
83 abut it as well as the town's trail network and historic properties compiled by the Historic Properties
84 Preservation Task Force. Historic structures are surrounded by a 500-foot buffer with the intent being
85 that their cultural value is protected and enhanced by limiting development around them. Since
86 preservation of the historic structures depends greatly on their being inhabited and maintained, buying
87 the land the structures occupy is not the ultimate goal. Another bonus will instead be given to those
88 parcels that support community heritage by enhancing those historic structures.



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5. Scenic views; Those identified were derived from input taken during the 2005 OSTF. Rather than limiting choices to the Task Force, the impending public opinion survey will be relied upon to make those determinations. Outdoor recreation would naturally be a driving force in those opinions of residents. J. Locke asked if the various recreational uses discussed at this meeting (camping, hiking, biking, etc) could be applied to those properties currently protected. J. Vogl replied that he could gather that data, but noted much of it is already displayed on maps of the town's trail network.

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6. Steep slopes & erodible soils; Preventing soil erosion aids in preserving the natural function of streams and brooks by limiting the sediment that can block them. Areas with highly erodible soils are featured on this map, including slopes greater than 25%. Those slopes are also prized for their scenic values, their ridges that act as paths for wildlife, and their relatively rare occurrence in Londonderry. Londonderry regulations also limit development on slopes in excess of 25%. Some members expressed interest in seeing a version of the map with slopes between 15-25%. J. Vogl will add that layer.

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7. Soils; Three agricultural soils are included on this map; prime agricultural soils, statewide significant soils and locally significant soils. Only 6% of New Hampshire is covered by prime agricultural soils and is one of the main reasons why New Hampshire grows less than 4% of its own food. While Londonderry is fortunate in having a higher percentage of good agricultural soil, the majority of it has already been covered by development. M. Speltz noted that with an average distance of 1,500 miles for imported food to travel, rising fuel prices will make local agriculture become increasingly important. Soils of both statewide and local significance, while not as valuable as prime agricultural soils, are still vital in producing native NH and local crops respectively. A discussion ensued regarding the practicality of saving agricultural land in Londonderry when the amount available today would not make farming an economically viable occupation. M. Speltz and T. McKenney suggested that when ranking the importance of this category, one could follow that logic or conversely argue that having so little of an important resource gives just as much reason to conserve it. M. Speltz added that because conserved agricultural land can provide a financial return, it essentially "pays for itself."

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8. Drinking water quality and quantity; Currently, Londonderry zoning regulations protect most streams and wetlands from new development with a 50-foot buffer or a 100-foot buffer if it is a named stream or wetland. M. Speltz presented a graph showing how large a buffer streams and wetlands require to remove a sufficient amount of sediment based on different soil types (see attachment). This indicates that a 250-foot buffer would be needed for those water bodies to remove virtually all sediment from sandy soils, approximately 75% from silty soils and under 10% of clay soils. He also offered a chart demonstrating how many wildlife species depend on a buffer greater than 250 feet along streams and wetlands. This information can also be used later in the OSTF process when discussing possible areas of connection between larger open spaces because it identifies wildlife which use corridors 600 feet wide or more for travel. Aquifers in Londonderry are also depicted on this map, showing there are few that provide a dependable transmissivity greater than 2,000 feet squared per day. M. Speltz added that much of those areas have already been compromised by development.

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J. Vogl next provided an update on the public opinion survey that will be used to assess the viewpoints, opinions, and needs of residents regarding the values and benefits of nature. The intention was to



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133 provide an online version available to all residents (along with the ability to limit responses from a single
134 IP address), while a randomized mail version would provide a statistically valid estimate of the online
135 results. The UNH Survey Center has provided as estimate of approximately \$4,300 to \$6,500 to produce
136 and mail 2,000 surveys to random households and then provide data gathering and analysis. The cost is
137 largely dependent upon the number of surveys to be mailed and the number of pages included in the
138 mailing, and can be reduced if some features offered by the Survey Center are not deemed necessary or
139 would be less expensive if done by Town staff. The Conservation Commission has committed \$500 to
140 mail survey and the Planning Department and the Town's General Fund can provide some assistance as
141 well. The lowest project cost, however, is more than double what was originally thought would be
142 required. Following some discussion, it was decided that it would be cost prohibitive to hire the UNH
143 Survey Center and that even performing the work in-house would not decrease the bottom line
144 significantly. Instead, it was thought that extensive advertising should be used, particularly through the
145 Londonderry Times, and that further consideration could produce other less expensive approaches.

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147 Before the next meeting, Task Force members were asked to use the parameters discussed at this
148 meeting and fill out a tally sheet provided to weigh the importance of each resource. Results will not be
149 reviewed until the March meeting. Wherever a consensus is not evident, further discussion about that
150 resource will take place until some agreement is reached. J. Vogl can then apply that information to
151 map those priorities are on the ground so that the recommendations of the Task Force can begin to take
152 shape.

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154 The meeting adjourned at approximately 9:25 PM. The next meeting will take place on March 3, 2011.

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156 Respectfully submitted,

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159 Jaye Trottier
160 Secretary

Background: Benefits Protected to Date

<u>Category</u>	<u>Acres in Town</u>	<u>Acres Protected</u>
Agricultural soils	6,639	1,393
Unfragmented forests	15,762	7,023
Water resources	14,446	6,424
Scenic views	5,372	2,695
Schools/Athletic fields	395	395
Historic sites	673	46

Acres of Habitat Type in Londonderry

	Hemlock- hardwood- pine	Grasslands over 25 acres	Pine barrens (known and predicted)	Rocky ridges and talus slopes	Floodplain forest	Wet meadow/ shrub wetland	Peatland
Appalachian oak-pine	8,840.3	3,319.3	38.1	15.1	296.4	1,330.2	752.3

Appalachian Oak-Pine Forests

Appalachian oak-pine forests are found mostly below 900 feet elevation in southern New Hampshire and along the Connecticut River in western New Hampshire. The nutrient-poor, dry, sandy soils and warm, dry, climate influences the typical vegetation including oak, hickory, mountain laurel, and sugar maple. Many wildlife species use these forests for part or all of their life cycle including whip-poor-wills, black bears, northern myotis, and state endangered eastern hognose snakes. Traditionally, Appalachian oak-pine forests are influenced by frequent fires, which change the age structure of the forest. The diverse age and structure of the forest help to promote wildlife diversity. Intense development pressure particularly in the southeast corner of New Hampshire has dramatically reduced naturally occurring fires and increased fragmentation of this forest type. Incorporating habitat conservation into local land use planning, protecting unfragmented blocks, and adopting sustainable forestry are a few examples of conservation strategies for Appalachian oak-pine forests. [Click here to read the Appalachian oak-pine Habitat Profile in NH's Wildlife Action Plan \(PDF, 134 KB\).](#)

Hemlock-Hardwood-Pine Forests

Hemlock-hardwood-pine forests are comprised of mostly hemlock, white pine, beech, and oak trees. Since this is a transitional forest, it can occur at different elevations and over different types of soil and topography, so the composition of vegetation can be variable. This forest type is the most common in New Hampshire and covers nearly 50% of the state and provides habitat for numerous wildlife species such as the cerulean warbler, eastern pipistrelle, and bobcat. Many of the species that use this habitat type require large blocks of unfragmented forest such as the northern goshawk and black bear. Since this forest type is so common, it is sometimes overlooked in conservation efforts. Development and fragmentation is a huge threat to the continued existence of hemlock-hardwood-pine forest. Some conservation strategies for hemlock-hardwood-pine forests are incorporating habitat conservation into local land use planning, protecting unfragmented blocks of land, and educating landowners. [Click here to read the Hemlock-Hardwood-Pine Forest Habitat Profile in NH's Wildlife Action Plan \(PDF, 133 KB\).](#)

Grassland

Grasslands are comprised of grasses, sedges, and wildflowers with little to no shrubs and trees. The most common grassland habitats are airports, capped landfills, wet meadows, and agricultural fields such as hayfields, pastures and fallow fields. Pre-colonial grasslands in New Hampshire were probably only maintained by beaver and fires started by lightning and Native Americans. The numerous agricultural lands maintained by early European settlers provided ideal habitat for some wildlife species that need grassland habitat. As these agricultural lands were abandoned, these populations began to decline and are now on the state endangered list such as the eastern hognose snake, northern harrier, upland sandpiper and on the state threatened list

important for Jefferson salamanders, northern leopard frog, wood turtles, and state endangered Blanding's turtles. Since these species, like most wildlife species, use a variety of habitats, not only is a floodplain forest important but the adjacent upland is also crucial for these species. Floodplain forests with their rich soils have been converted to open farmland for centuries, so many floodplains are no longer forested wildlife habitat. Other human activities have threatened these habitats including residential and commercial development along rivers and the installation of dams which have altered the natural flooding regime. Floodplain habitats are particularly vulnerable to invasive plants because the frequent disturbances from flooding give aliens opportunities to establish, and because these species tend to thrive in the nutrient rich soils characteristic of floodplains. Annual flooding can control these invasives, if the natural flood regime is not altered. Some conservation strategies for maintaining this unique habitat type in the state are managing river impoundments to simulate natural water flows, removing dams where possible, and protecting the highest quality sites. Many floodplain forests are on private land and landowners can help restore and conserve them. [Click here to read the Floodplain Forest Habitat Profile in NH's Wildlife Action Plan \(PDF, 159 KB\).](#)

Peatlands

Peatland habitats are extremely important for carbon sequestration on a local and global scale. The water in peatlands has low nutrient content and typically high acidity caused by limited groundwater input and surface runoff. These environmental conditions are such that plant and animal material take a very long time to decompose. This organic material contains carbon and other nutrients, storing it away and slowly releasing it into the atmosphere. Drainage and destruction of peatlands releases this carbon into the atmosphere quicker, increasing greenhouse gases today. Conservation of the 11 different natural communities that comprise peatlands is also vital to the continued existence of many rare plant and wildlife species in New Hampshire. The state endangered ringed bog haunter uses peatlands and the surrounding uplands in the southern part of the state. The northern bog lemming inhabits burrows in the sphagnum moss and associated grasses. Typical vegetation in a peatland includes sphagnum moss, leather leaf, northern white cedar, and American larch. Threats to peatland habitats are development, altered hydrology (amount and flow of water), and unsustainable forest harvesting. Non-point source pollutants, such as road salt, lawn fertilizers, and pesticides, also threaten this habitat by altering the acidity and nutrients. Establishing buffers around this habitat is one conservation strategy that will help minimize the threats to peatland habitats. [Click here to read the Peatland Habitat Profile in NH's Wildlife Action Plan \(PDF, 168 KB\).](#)

Shrublands

Shrubland habitats are shrub-dominated areas with scattered forbs and grasses. These habitats are typically the result of some disturbance and include dry shrublands, utility rights-of-way, old agriculture fields, and reverting gravel pits. Shrublands and other woody early-successional habitats are declining in New Hampshire and throughout the Northeast as are the associated wildlife species. Patch size is a key component of shrublands as wildlife habitats. For example, Golden-winged warblers occupy patches that are at least 10 hectares, whereas state endangered New England cottontails occupy patches in southeastern New Hampshire ranging from 0.2 to 15 hectares. Vegetation structure is also very important to shrubland habitat as some species require thick understory such as the New England cottontail and other species require dense canopy cover

New Hampshire WILDLIFE HABITAT LAND COVER 2010

Locations of known and potential critical wildlife habitat in the state.

- Floodplain Forest
- Grassland
- Pine barren
- Cliff
- Rocky ridge or Talus slope
- Coastal Island
- Dune
- Salt marsh
- Peatland
- Wet meadow/
Shrub wetland
- Alpine

Matrix forest

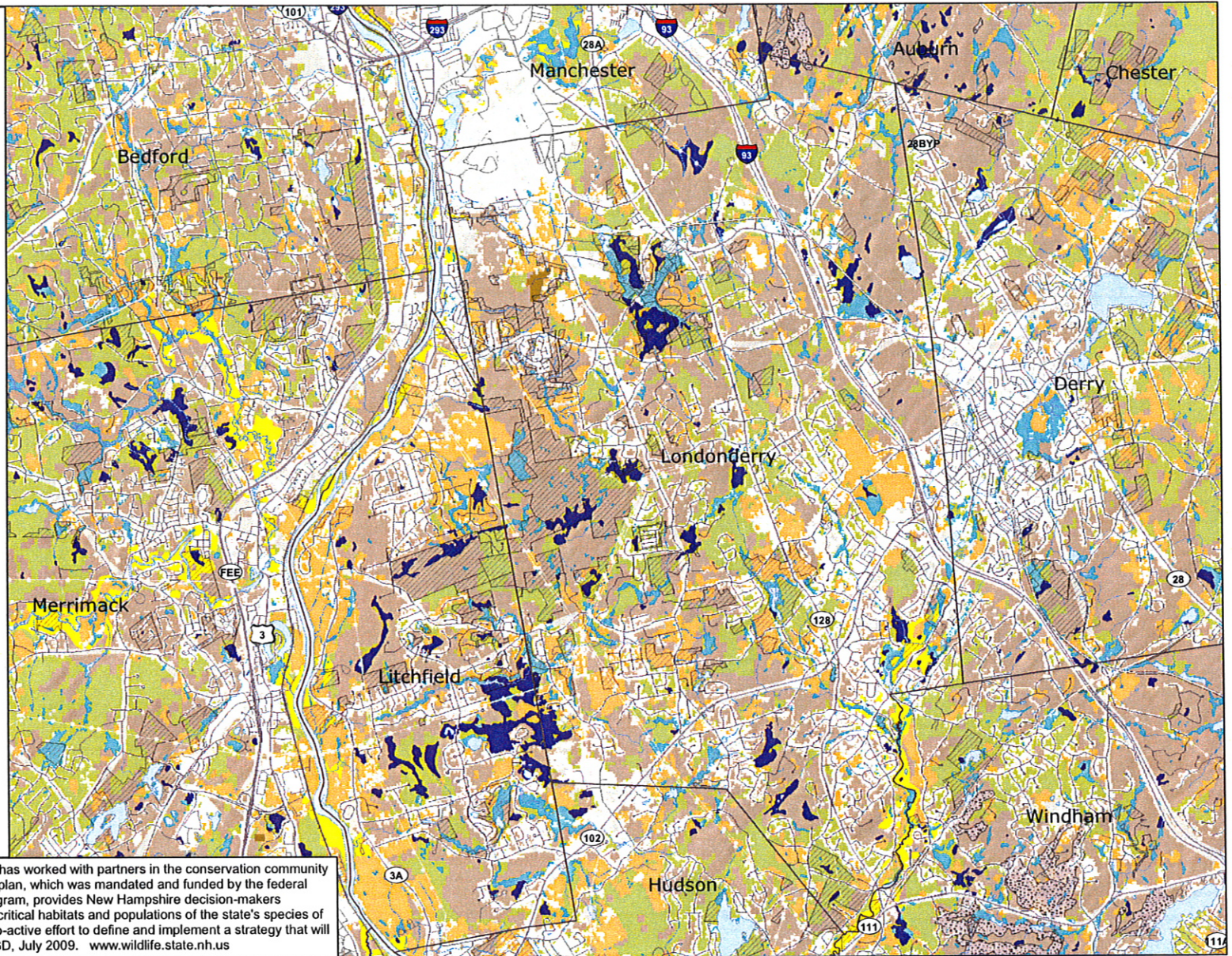
- High-elevation Spruce-fir
- Lowland Spruce-fir
- Northern hardwood-conifer
- Appalachian oak-pine
- Hemlock-hardwood-pine

- shrubland; cleared; or light residential development
- Developed land cover

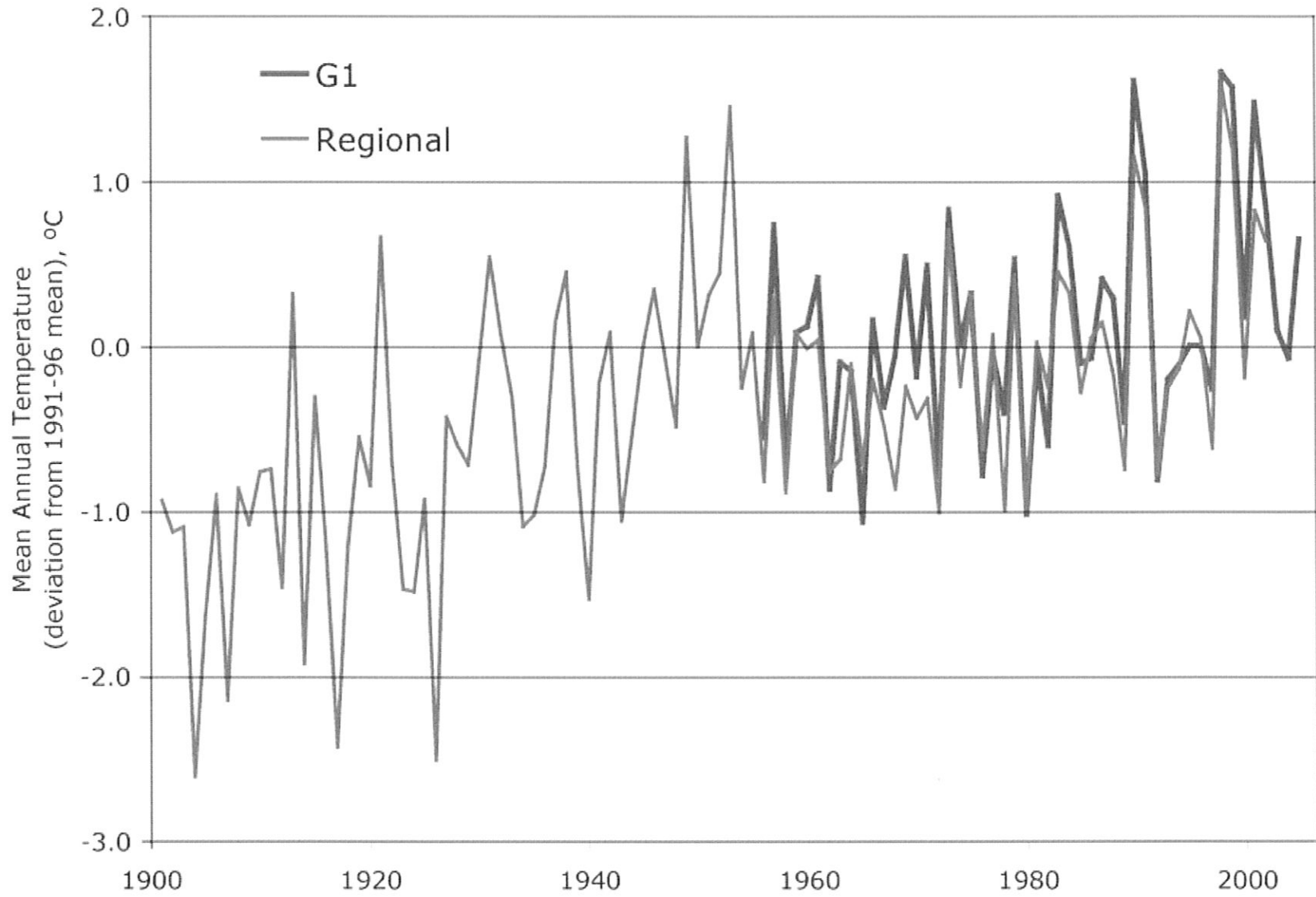


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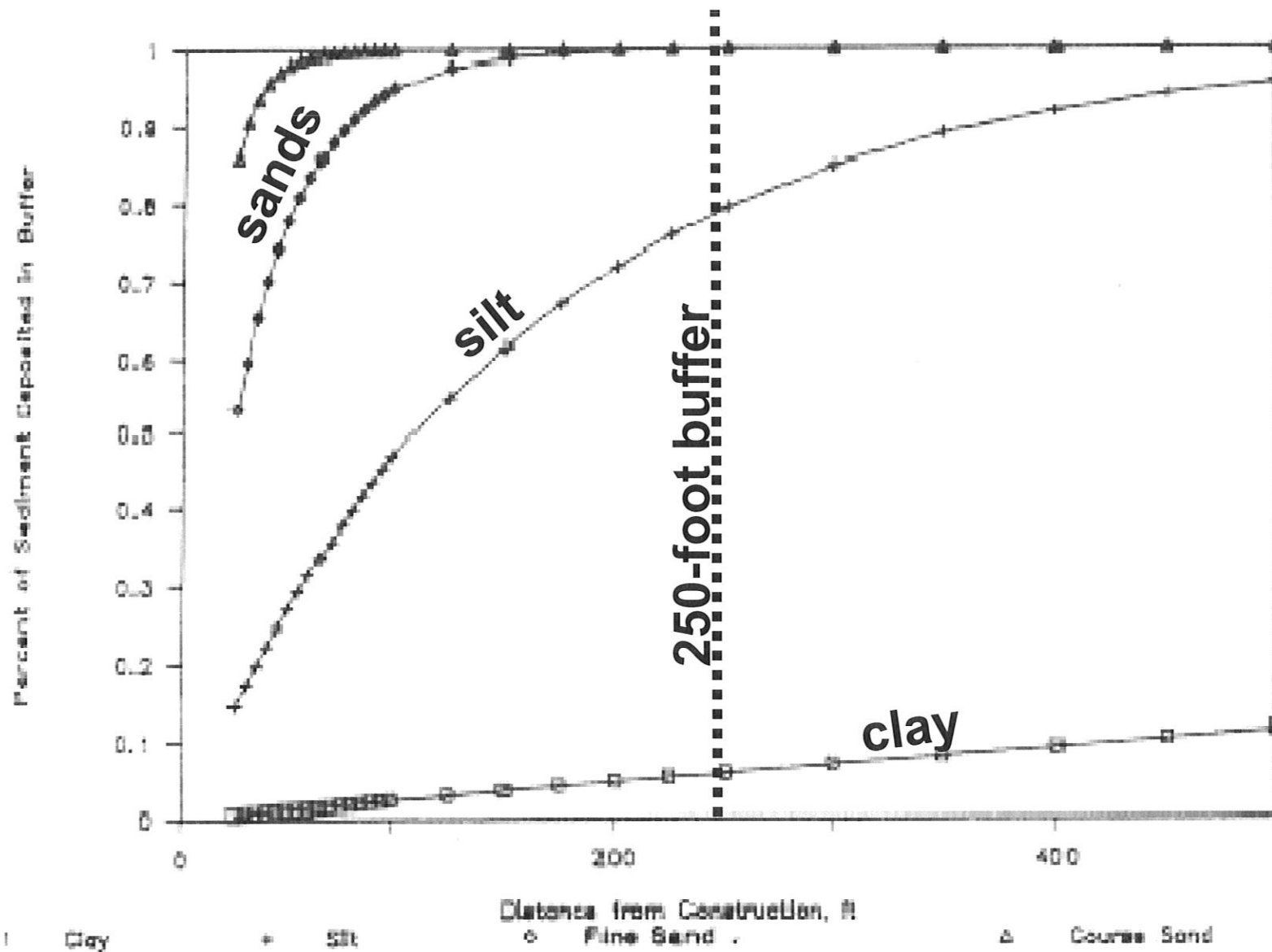
The New Hampshire Fish and Game Department has worked with partners in the conservation community to create the state's first Wildlife Action Plan. The plan, which was mandated and funded by the federal government through the State Wildlife Grants program, provides New Hampshire decision-makers with important tools for restoring and maintaining critical habitats and populations of the state's species of conservation and management concern. It is a pro-active effort to define and implement a strategy that will help keep species off of rare species lists. NHFGD, July 2009. www.wildlife.state.nh.us



NH is Warming



Buffer Required to Remove Sediment

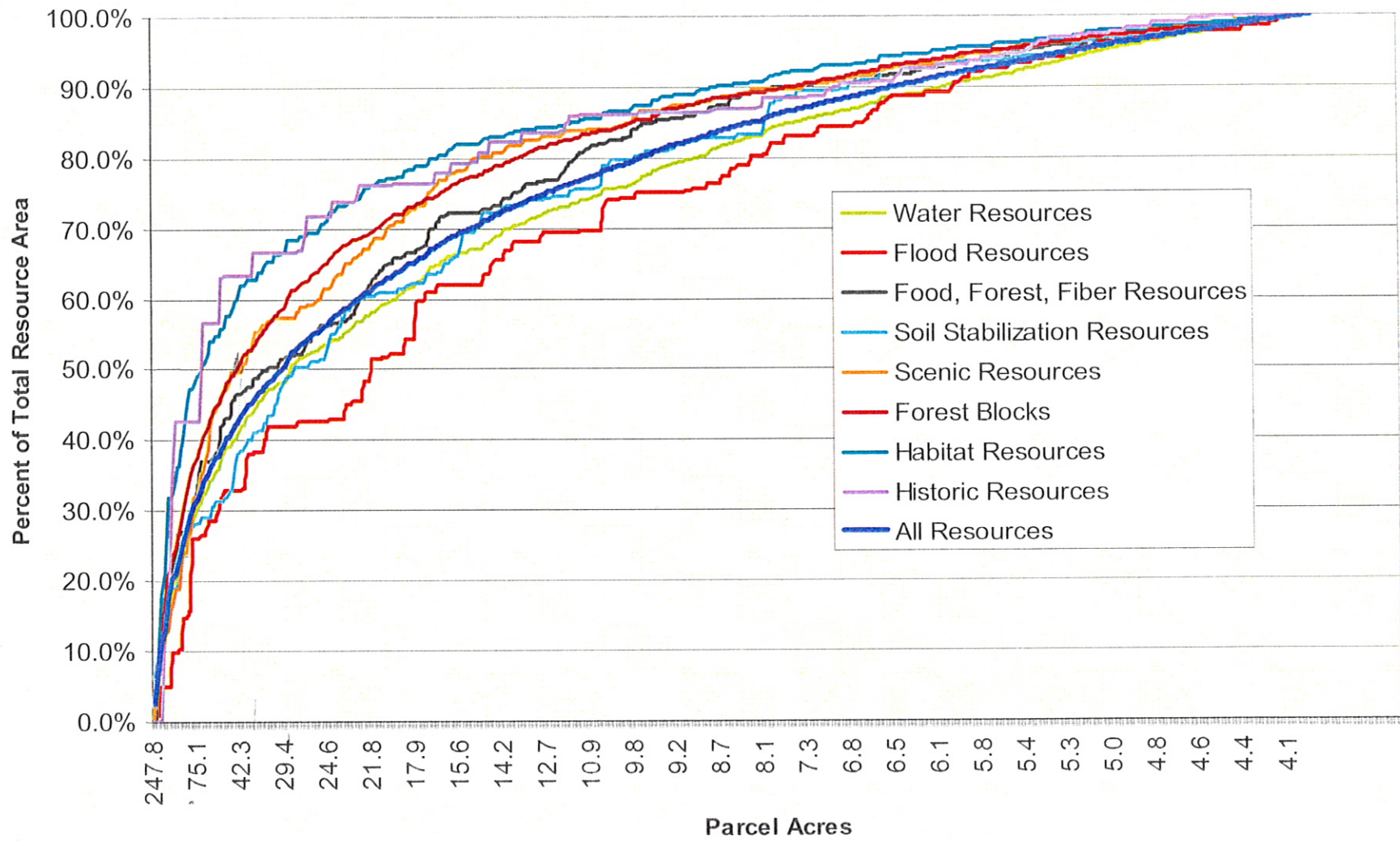


Species Needing > 250' Buffer



300 ft	waterfowl nesting
300-330 ft	beaver, mink, dabbling ducks
330 ft	furbearers: coyote, bobcat, red fox, fisher, marten, beaver, otter, mink, muskrat
330 ft	beaver feeding habitat
330 ft	mink den sites and habitat for most activity; use habitat up to 600 ft from water
330 ft	area-sensitive forest birds
330 ft	forest interior birds, small mammals, reptiles, amphibians
450 ft	common loon (nesting), pileated woodpecker
575 ft	breeding bird communities in uplands adjacent to streams
660 ft	songbird community
660 ft	breeding bird communities
660 ft	travel corridors for all wildlife but black bears
600 ft	bald eagle (nesting, roosting, perching); cavity nesting ducks (wood duck, bufflehead, goldeneye, hooded merganser), heron rookery
600 ft	wood duck - most nests within this distance from water
840 ft	average distance of blue-winged teal nests from water

Percent of Resources on Vacant or Underdeveloped Parcels, by parcel size



TALLY SHEET

Round 1 Round 2 Round 3 Round 4

Water Resources

Wellhead Protection Areas				
Aquifer Transmissivity 0 - 2,000 ft ³ /day				
Aquifer Transmissivity > 2,000 ft ³ /day				
Named wetlands and perennial streams & 250' buffer				
Unnamed wetlands and intermittent streams & 100' buffer				
<i>Group Total Score</i>				

Flooding

100 year floodplain				
500 year floodplain				
<i>Group Total Score</i>				

Food, Forest and Fiber

Prime Agricultural Soils				
State Agricultural Soils				
Local Agricultural Soils				
Active Farms				
<i>Group Total Score</i>				

Slopes

Slopes > 25%				
Highly Erodible Soils				
<i>Group Total Score</i>				

Scenic Views

Scenic Views				
<i>Group Total Score</i>				

Forest Blocks

Unfragmented Areas > 100 acres				
Unfragmented Areas > 250 acres				
Unfragmented Areas > 500 acres				
<i>Group Total Score</i>				

Habitat

Highest Ranked Habitat in NH				
Highest Ranked Habitat in Biological Region				
Supporting Landscapes				
<i>Group Total Score</i>				

Historic

Historic Sites				
Parcels Abutting Apple Way				
<i>Group Total Score</i>				