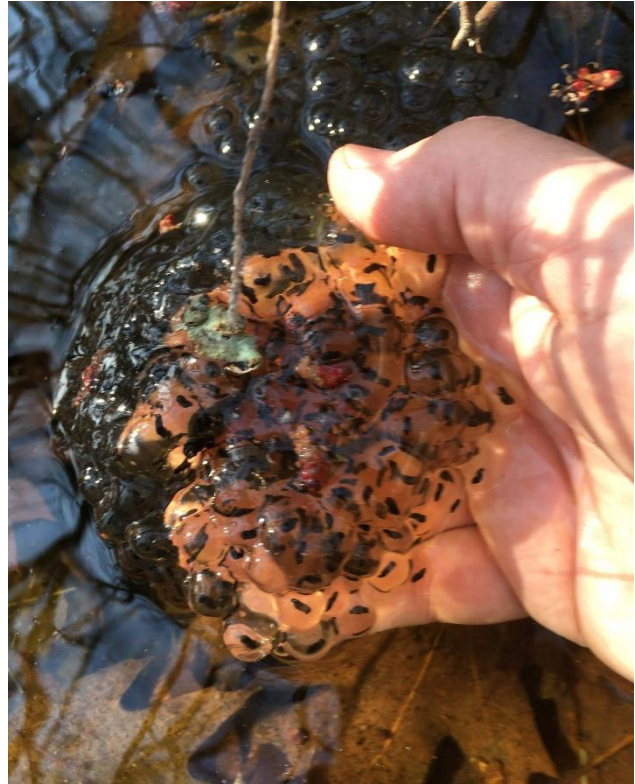


SECTION 5

Analysis of Conservation Priorities and Opportunities

“We do not inherit the Earth from our ancestors. We borrow it from our children.”

– Native American Proverb



In this section:

	Page
5.1 – Conservation Priorities for the Town of Atkinson	5-3
5.2 – Co-Occurrence Mapping - Analysis of Conservation Priorities	5-9
5.3 – Examples of How to Use These Maps	5-12
5.4 – Why These Maps Are Important	5-15

Map 15 – The Co-Occurrence Map



5.1 – Conservation Priorities for the Town of Atkinson

Section 4 of this Plan presented 14 Conservation Attribute Maps for the Town of Atkinson. These maps were based on available GIS data, and give a good high-level picture of Atkinson’s natural resources.

However, not all these maps contain information that can be used to differentiate the conservation values in various parts of town. Therefore, the following discussion explains which maps were included in the prioritization process, and why.

Map 1: Land Use 2015

Map1 shows a good snapshot of how our land was used in 2015, but it does not contain information that could guide our prioritization of future conservation projects. Therefore, it was not used in the prioritization process.

Map 2: Topography

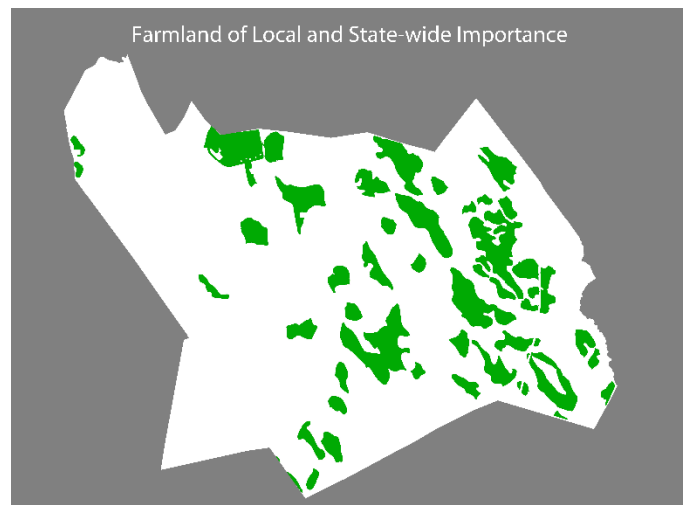
While Map 2 contains useful information about the contours of the Town’s land, this information is not of much use in setting priorities, and was not used in the prioritization process.

Map 3: Soils (NRCS 1994)

Likewise, Map 3 does not contain information that would be useful in differentiating the conservation value of various parts of town, and therefore was not used in the prioritization process.

Map 4: Agricultural Soils

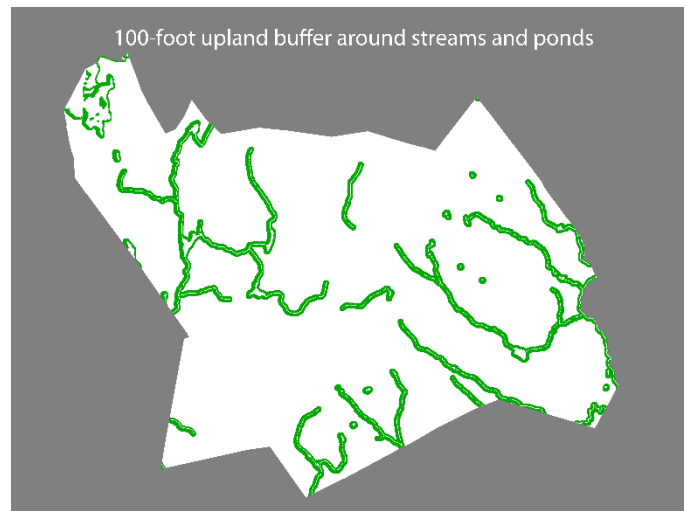
Map 4 depicts agricultural soils of local and statewide importance. Agricultural soils are of interest in setting priorities for conservation projects, because farms are valued for their scenic and environmental qualities and help to preserve the rural character of the Town. Since most of Atkinson has soils that are well suited for farming, in order to be selective in



setting priorities we have included in the prioritization process only the soils of local and state-wide importance.

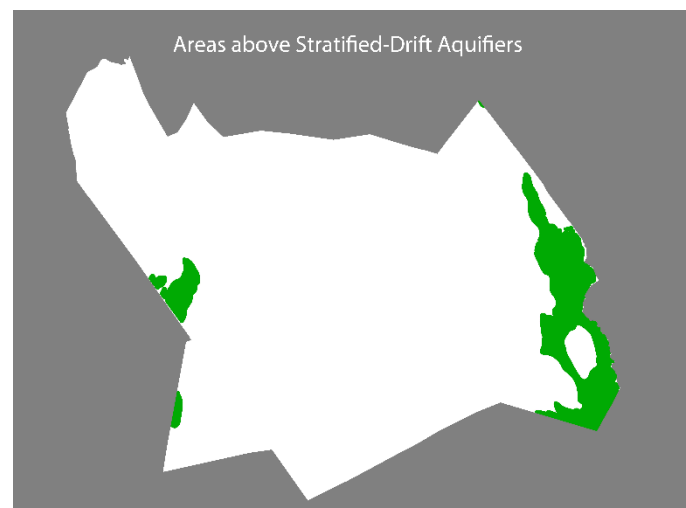
Map 5: Surface Water, Watersheds, and FEMA Flood Hazard Areas

Map 5 combines several surface water, watershed and flood hazard areas. Knowing the various watersheds in Town does not help in setting conservation priorities, so these were not used in the prioritization process. Furthermore, Atkinson’s FEMA flood hazard areas are situated in wetlands which are already protected by State regulations and local zoning, so these hazard areas are not helpful in setting priorities. However, ponds and streams are worthy of protection, and we have selected a 100-foot upland buffer around these surface waters as priority areas when considering future conservation projects.



Map 6 – Groundwater and Aquifers

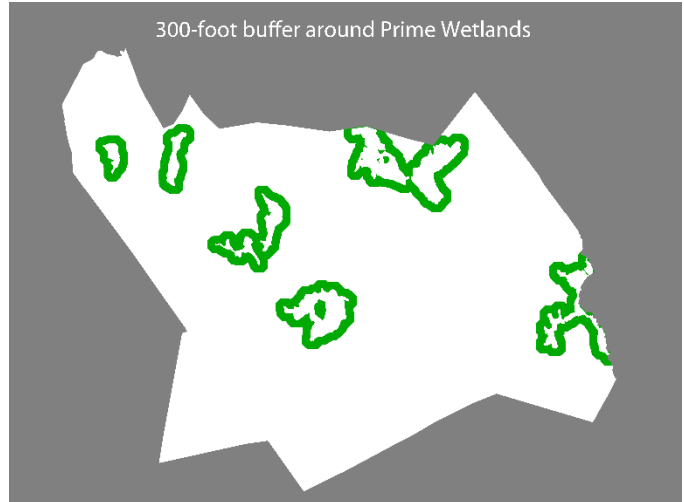
Map 6 depicts groundwater aquifers composed of shallow surficial sand and gravel deposits. The wellhead protection areas around public wells are too numerous and widespread to provide much differentiation in setting priorities, and, furthermore, individual private wells are important for protection as well. Therefore, the wellhead protection areas were not included in our prioritization process. And while potential sources of groundwater contamination may be important in



considering protections for drinking water supplies, in general they do not influence decisions concerning protections for wildlife habitat, wetland and surface waters, or opportunities for passive recreation or environmental education, so these were not included in the prioritization process either. However, stratified-drift aquifers are important sources of drinking water that deserve consideration when contemplating future conservation projects, so areas above these aquifers were included in our prioritization process.

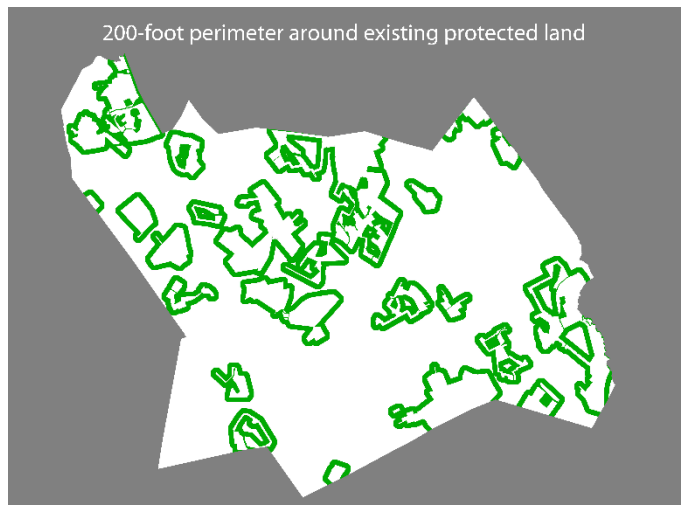
Map 7 – Wetlands

Map 7 depicts the distribution of large wetland complexes designated as Prime Wetlands at the local and state levels. While the protection of areas in and around wetlands is always an important consideration when evaluating a conservation opportunity, most of Atkinson’s wetlands are too numerous and widespread to allow us to significantly differentiate various areas of the Town. Furthermore, as mentioned in Section 4, the exact location of wetlands must always be checked by qualified soil or wetland scientists, and the wetlands depicted in available GIS data does not always tell the complete story of what currently exists. However, the location and value of the Town’s prime wetlands is well documented by the 2002 Prime Wetland Study, and these areas are recognized as important ecological areas. Since the conservation commission has a long-standing policy of not buying “swamp land,” and since the best way to protect a wetland is to conserve the area around it, we have chosen to include a 300-foot area around the Town’s prime wetlands to be part of the prioritization process.



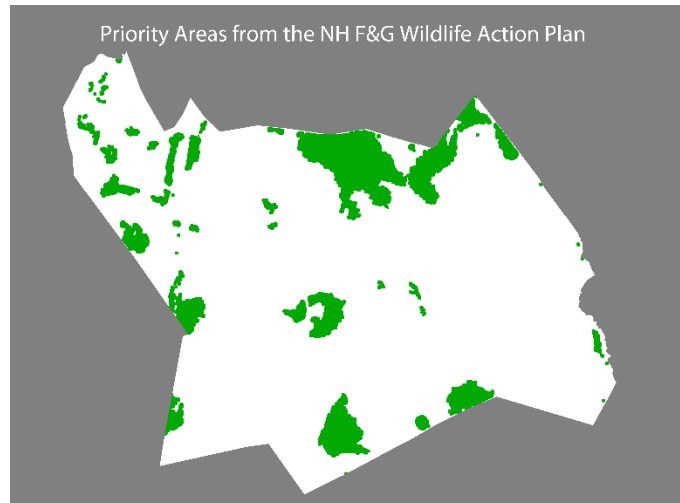
Map 8: Open Space

Map 8 depicts the location of open space lands. Continuity of protected open space is a high priority for conservation-related organizations, including the Atkinson Conservation Commission. In Atkinson, protected open space includes the town-owned conservation land shown in green on Map 8, the dedicated open space for cluster developments shown in salmon on Map 8, and privately-owned land that is protected by conservation easements, shown as white with either blue or red dots on Map 8. Since this open space land is already protected, and since our priority is to protect land that abuts existing open space, we have included a 200-foot area around existing protected open space as a priority in our study.



Map 9 – Wildlife Habitat Features

Map 9 depicts the occurrence of sensitive, rare and threatened wildlife and plant habitats. As mentioned in Section 4, Map 9 contains data from two separate wildlife studies. Since the cross-hatched data from the Merrimack Conservation Plan includes water quality and recreational considerations in addition to wildlife habitat potential, and since much of the cross-hatched areas are in parts of town that are mostly developed, we chose not to include those areas in our prioritization process.



On the other hand, the more recent Wildlife Action Plan conducted by NH Fish and Game paints a more realistic picture of the important wildlife areas in Atkinson, so we did include those areas in our prioritization process.

Map 10 – Aerial Photograph

While of historical interest, the 2015 aerial photograph of the Town does not contain information that would help with prioritizing potential conservation projects.

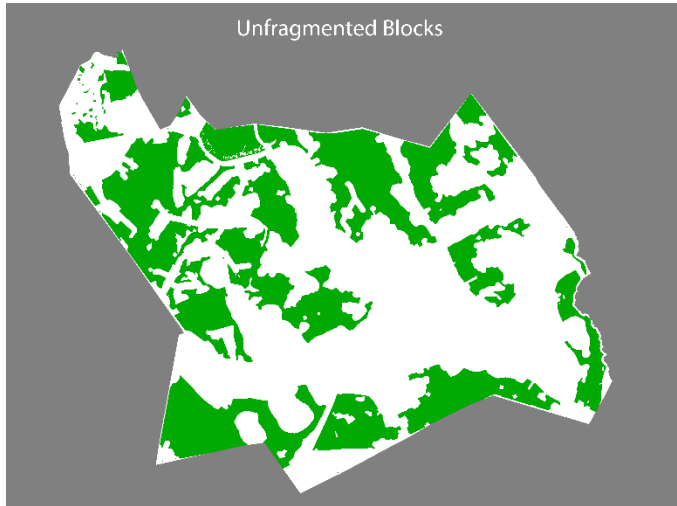
Map 11 – Impervious Surfaces

While the impervious surface map of Atkinson gives a good historical snapshot of conditions in 2015, it does not help with setting priorities for conservation projects. However, this map could be useful when evaluating the need for buffers to development project applications.



Map 12: Unfragmented Blocks

Map 12 depicts large unfragmented blocks of land. As mentioned earlier, preserving unfragmented open areas where wildlife can travel without encountering roads or other human impediments is one of the top conservation goals for the Town. Therefore, the unfragmented blocks shown on Map 12 were included in the prioritization process.



Map 13: Forest Resource Potential

While maintaining healthy forests is important to the Town, the soils-based Forest Resource Potential areas shown on Map 14 are too numerous and widespread to provide much differentiation between various areas of town, and were not included in the prioritization process.

Map 14: Wildlife Corridors and Blocks

While the data behind the wildlife corridors and blocks shown on Map 14 may be somewhat redundant with the data used to produce the Wildlife Action Plan priority areas shown on Map 9, we consider the preservation of wildlife and their habitat to be important enough that we have chosen to include the wildlife corridors and blocks from the Nature Conservancy and Southeast Land Trust study shown on Map 14.





5.2 – Co-Occurrence Mapping - Analysis of Conservation Priorities

The Co-Occurrence map was produced using the 8 priority maps identified in Section 5.1. These eight selected priority maps give a good “first impression” of the location of conservation attributes that are important to the Town. Obviously, the more attributes that occur in an area of town, the more environmentally important that land is, and the higher priority it should receive when considering future conservation projects.

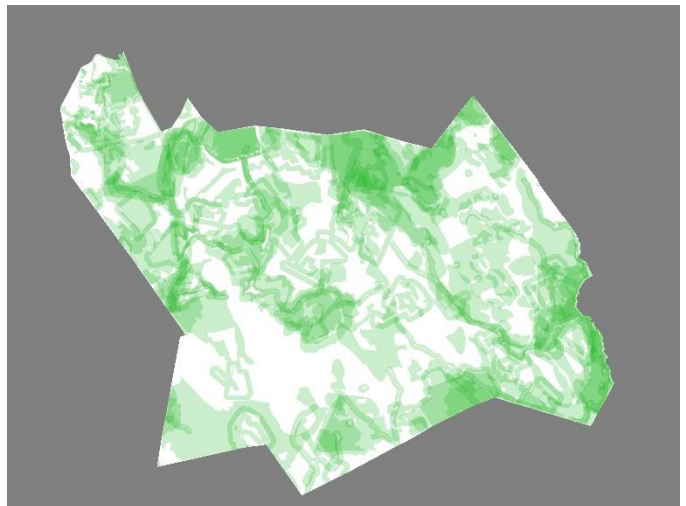
To visually display these priorities, we have created a “Co-Occurrence Map,” with priorities indicated by colors, cooler colors, such as green and yellow, indicating lower numbers of co-occurring attributes, and warmer colors, such as orange and red, indicating a higher number of co-occurring attributes. The following narrative gives a brief description of how the final Co-Occurrence Map was produced.

Co-Occurrence Mapping Process

First, the eight priority maps from Section 5.1 were combined into one file, with each of the 8 maps placed in its own layer. That produced the rather uninteresting map shown here, in which the green areas indicate the presence of one or more conservation attributes.

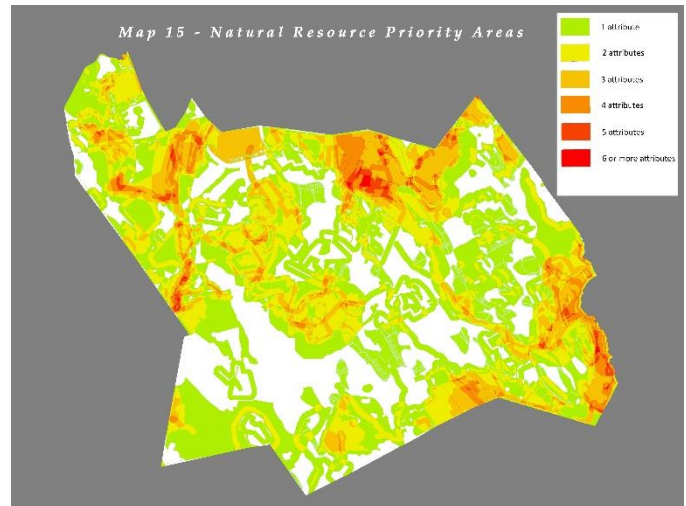


Next, each of the green layers was made semitransparent, so that, visually, the darker the green appears at a location, the more attributes are present there. This produced the map shown here.

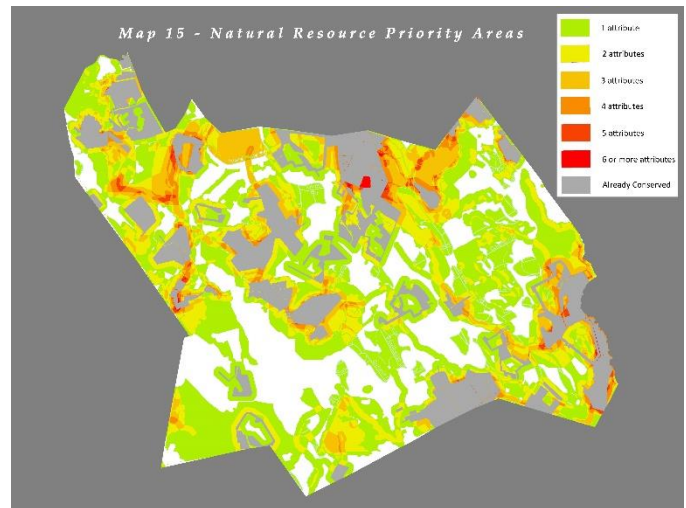


Section 5 – Analysis of Conservation Priorities and Opportunities

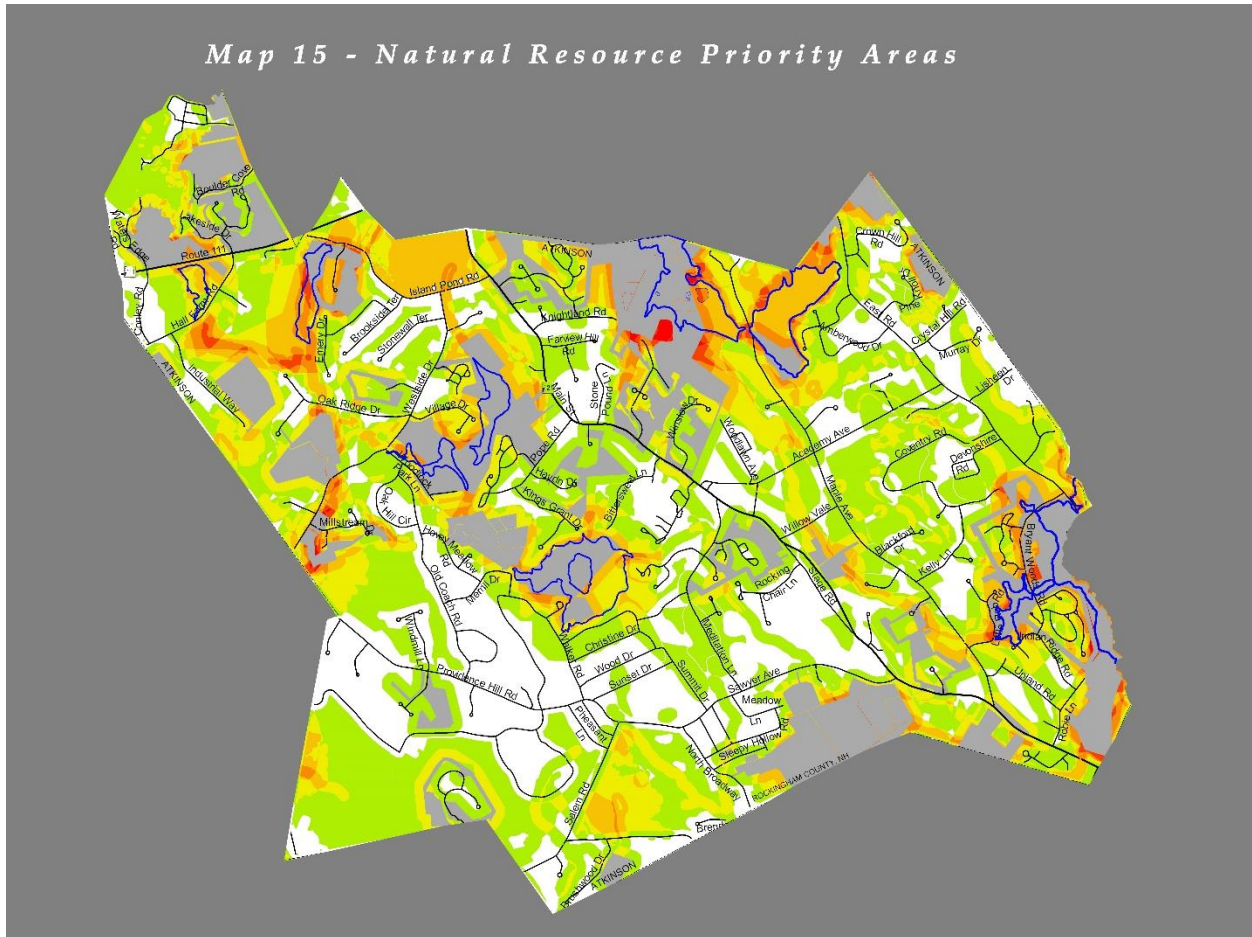
Since it is difficult for the human eye to perceive slight changes in the shades of green, each of the different shades of green was then assigned a color on the spectrum from “cool” to “warm.”



Next, since there is no need to prioritize lands that are already protected (Town-owned conservation land, cluster development open space, or private lands with conservation easements), these lands were “grayed out” on the map, as shown here.



Finally, to help orient users of the map, two additional layers were added, one showing the roads in town in black, and one showing the locations of the prime wetlands, in blue, as shown here. This is the co-occurrence map, *Map 15: Natural Resource Priority Areas*, which can be found in more detail at the end of this section.





5.3 – Examples of How to Use These Maps

Using the electronic version of the maps presented in Sections 4 and 5 and local knowledge, it is fairly easy to evaluate and list the conservation attributes at various places in town. Members of the Commission used the electronic form of the maps in Section 4 to identify the conservation attributes at each of those points shown on the map below. The result of this investigation is shown in Table 5.1 on the following page.

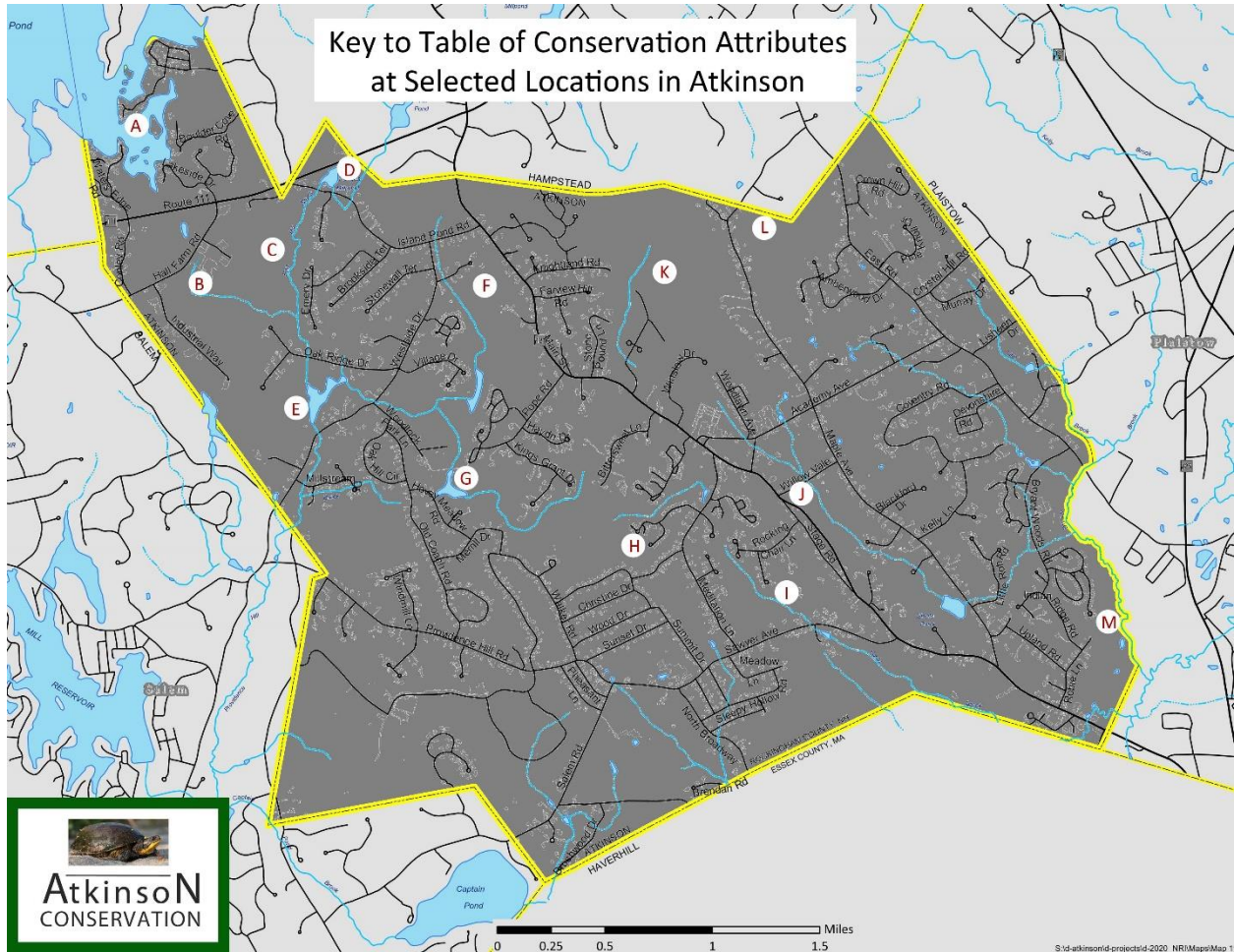


Table 5.1 - Examples of how to use the Conservation Attribute Maps (Maps 1 - 14)

Conservation Attributes located within selected areas of Atkinson	Area Name - see map key													
	A - Shoreland along Island Pond See Note 1	B - Uplands abutting wetlands on both sides of Hall Farm road	C - Uplands near Hog Hill Brook	D - Upland near Hodges Mill Pond	E - Uplands along Providence Hill Brook south of Oak Ridge Drive	F - Uplands between Westside Drive and Main Street	G - Upland north of Merrill Drive See Note 2	H - Upland north of Summit Drive See Note 3	I - Upland along Foote Brook on either side of Sawyer Avenue	J - Willow Vale and Stage Road	K - Upland near Sawmill Swamp, between Koghtland Road and Maple Avenue	L - Upland around prime wetlands between Maple Avenue and Amberwood Drive	M - Shoreland along Bryant Brook See Note 4	
Map 4 - Contains Agricultural Soils					X	X			X	X	X	X	X	X
Map 5 - Protects Surface Waters	X	X	X	X	X			X	X					
Map 6 - Above a Stratified Drift Aquifer		X												
Map 6 - Wellhead Protection Area	X		X		X									
Map 7 - Upland protecting a Prime Wetland			X											
Map 7 - Contains Hydric Soils (wetlands)		X	X	X	X	X	X	X	X	X	X	X	X	X
Map 8 - Within 200' of protected land	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Map 9 - Contains valuable Wildlife Habitat	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Map 12 - Part of an Unfragmented Block	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Map 13 - Contains Productive Forest Soils	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Map 14 - Part of a Wildlife Corridor	X	X	X	X	X	X	X	X	X	X	X	X	X	X

- Note 1 -** This area is already conserved or developed, and there are no opportunities for further conservation
- Note 2 -** This area is the Chadwick Town Forest, and is already protected
- Note 3 -** This area is already developed (it is part of the Centerview Hollow cluster development)
- Note 4 -** This area is the Caroline Orr Town Forest, and is already protected

5.4 – Why These Maps Are Important

When considering opportunities for future conservation projects, the Atkinson Conservation Commission will use these maps as a starting point for understanding the conservation priority of a parcel of land. This “proactive conservation methodology” enables the town to be prepared for opportunities for land conservation when they arise.

It is important to note that the maps in Sections 4 and 5 do not contain tax map property boundaries, because it is not the intention of this commission to “target” a landowner’s property. After a landowner initiates a dialog with us, it is possible to use tax map boundaries in our analysis, but this level of analysis is done only after a willing landowner initiates the conversation with the Conservation Commission.

Also, as stated in Section 4, it is important to remember that these maps are just part of the decision process in considering a conservation project or investment. While they are a good first impression of the value of an area of town, there are other factors that are not mapped, such as scenic vistas, features of historical importance, vernal pools, and willing landowners.

Nevertheless, when applying for grants to help fund a conservation project, this Land Conservation Plan and the data and maps it contains will give Atkinson a strong advantage in competing for grant funding, because we will be able to justify, with objective data, the priority we place on conserving the land in question.

The Conservation Commission also intends to use this Plan to improve the public’s familiarity and appreciation of Atkinson’s natural areas and to encourage landowners to consider conservation of their land.

