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Isabella Martin
Stepping Stones Event Center
19 Putnam Road
Webster, NH, 03084

Visit date: Jul 13, 2021

Resource Evaluation for Isabella “Boo” Martin

Overview

Ms. Martin’s farm is an upland farm with meadows, shrubland, and wetlands. It was recently used as a therapeutic horseback riding facility, and during this time most of the fields away from the farmstead were not kept up. She hopes to bring the fields back into production, while protecting some of the more important areas of nesting and foraging habitat for wildlife.

Invasive species are a major problem throughout the fields. Some areas have nearly reverted to shrubland, but most of the shrubs are non-native species. A small waterway, not identified as a stream on USDA maps, passes through the farm, and is visible as a tree line between the two pastures on the east end of the farm.

The farm is located in the Hillsborough County town of Temple, at the intersection of Putnam Road and Webster Highway, near the Wilton town line. The terrain is hilly, sloping generally to the south and east.

Soils

The soils on the higher portions of the farm are upland till. The lower sections are sandy outwash soils. Textures in both sections are primarily fine sandy loam with a small proportion of gravelly sandy loam. Refer to attached soils map and report for details.

Operator goals

Return fields to productivity: Most of the pastures are suffering from invasion by Japanese bittersweet, glossy buckthorn, and multiflora rose. Fertility is unknown, but plant communities are typical of those that thrive in soils that are low in pH and potassium (goldenrod, cinquefoil, etc.) The fields would be difficult to manage in their current condition, as invasive species are

too large in some areas to allow safe access for farm equipment for field maintenance, fence construction and forage improvement.

The proposed use for the fields would be a small herd of beef cattle and/or sheep, which would be grazed through the summer and sold to the freezer trade in the fall or winter. The sheep might be kept over the winter; cattle will be purchased in the spring and sold in the fall or early winter.

Some of the areas that have nearly reverted to shrubland might be developed for wildlife habitat, focusing on the needs of songbirds, small mammals, and insects. Pollinator-friendly native plants are desired.

There is also an interest in keeping bees for pollination and honey production.

Resource concerns identified

During my site visit, I identified the following resource concerns, based on the NRCS planning criteria.

Plant pest pressure: Woody and herbaceous weeds are crowding out desirable plants.

Plant structure and composition: Pastures contain some desirable species, but these account for less than 50 percent of the biomass. Very few legumes were identified.

Plant productivity and health: Plants show signs of nutrient deficiency, perhaps related to low pH. Overall amount of biomass is low given the soil types and topography.

Feed and forage imbalance: The land in its current state is not producing forage of adequate quality or quantity to support the landowner's goals and objectives.

Inadequate water quality, quantity, and distribution: water is currently available only by allowing animals to drink from surface water or return to the farmstead for water.

Further investigation may reveal additional resource concerns related to soil health, terrestrial or aquatic wildlife habitat, and nutrient loss to surface water. I did not assess the farmstead for resource concerns, but did not see any major issues with manure storage, etc., as we passed through it on our way to visit the fields.

Ms. Martin reports that neighbors have expressed concern that an ancillary use of the property as a venue for weddings or other events might create an additional resource concern — petroleum, heavy metals, and other pollutants transported to groundwater — due to leaked materials from parked vehicles. They contend that a stratified drift aquifer flows under the farm

and provides drinking water for residents of Wilton. This question is beyond the scope of this resource evaluation. I do not know whether such an aquifer flows under the farm, or whether parked cars pose an increased risk of groundwater contamination. I do not have access to the geological data to determine the time of travel of groundwater from one point to another, nor the technical expertise to interpret it.

However, I have documented that the farm is not within the Source Water Protection Area established by NH Department of Environmental Services, the US Geological Survey, and US Dept. of Agriculture. See attached map showing the location of the farm and the extent of the Source Water Protection Area.

Management recommendations/next steps

Recommendation 1: Collect soil samples from each field or conservation management unit. NHACD can assist you in determining the most efficient soil sampling system. Have the soil samples analyzed by a certified soil laboratory, and obtain recommendations for inputs from UNH cooperative extension or a qualified certified crop adviser.

Recommendation 2: Where possible, consider mowing the fields to prevent herbaceous weeds from setting additional seed. Smaller woody invasives can also be controlled in this way.

Recommendation 3: Develop a business plan or fractional budget for the livestock enterprise to ensure that it fits with the overall enterprise mix of the farm and meets your goals and objectives. Seek assistance from UNH Cooperative Extension and your banker or other financial expert as needed. Business planning assistance may also be available from Land For Good, a non-profit organization based in Keene, or through the Hillsborough County Conservation District.

Soils Map

Client(s): ISABELLA MARTIN
Location: Putnam Road and Webster Highway, Temple, NH
Merrimack County, New Hampshire
Approximate Acres: 28.30



Assisted By: Bill Fosher
NH Association of Conservation Districts
Milford Service Center
Hillsborough County Conservation District

Land Units: Tract 284, Fields 2,3,4,5,6



Prepared with assistance from USDA-Natural Resources Conservation Service

0 376 Feet

	Practice Schedule PLUs
Soils	
	Soil Mapunit



Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, provide information on the composition of map units and properties of their components.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

Hillsborough County, New Hampshire, Western Part

Map Unit: 22B--Colton gravelly sandy loam, 3 to 8 percent slopes

Component: Colton (85%)

The Colton component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. This component is on outwash deltas on outwash plains. The parent material consists of sandy-skeletal glaciofluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 3s. This soil does not meet hydric criteria.

Component: Adams (10%)

Generated brief soil descriptions are created for major soil components. The Adams soil is a minor component.

Component: Sheepscot (3%)

Generated brief soil descriptions are created for major soil components. The Sheepscot soil is a minor component.

Component: Croghan (2%)

Generated brief soil descriptions are created for major soil components. The Croghan soil is a minor component.

Map Unit: 22C--Colton gravelly sandy loam, 8 to 15 percent slopes

Component: Colton (85%)

The Colton component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. This component is on outwash terraces on outwash plains. The parent material consists of sandy-skeletal glaciofluvial deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Component: Adams (10%)

Generated brief soil descriptions are created for major soil components. The Adams soil is a minor component.

Component: Sheepscot (3%)

Generated brief soil descriptions are created for major soil components. The Sheepscot soil is a minor component.

Component: Croghan (2%)

Generated brief soil descriptions are created for major soil components. The Croghan soil is a minor component.

Map Unit: 76B--Marlow fine sandy loam, 3 to 8 percent slopes

Component: Marlow (85%)

The Marlow component makes up 85 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills on glaciated uplands, mountains on glaciated uplands. The parent material consists of loamy lodgment till derived from granite and/or loamy lodgment till derived from mica schist and/or loamy lodgment till derived from phyllite. Depth to a root restrictive layer, densic material, is 20 to 39 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 7 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Peru (7%)

Generated brief soil descriptions are created for major soil components. The Peru soil is a minor component.

Component: Monadnock (3%)

Generated brief soil descriptions are created for major soil components. The Monadnock soil is a minor component.

Component: Pillsbury (3%)

Generated brief soil descriptions are created for major soil components. The Pillsbury soil is a minor component.

Component: Tunbridge (2%)

Generated brief soil descriptions are created for major soil components. The Tunbridge soil is a minor component.

Map Unit: 77C--Marlow fine sandy loam, 8 to 15 percent slopes, very stony

Component: Marlow, very stony (85%)

The Marlow, very stony component makes up 85 percent of the map unit. Slopes are 8 to 15 percent. This component is on hills on glaciated uplands, mountains on glaciated uplands. The parent material consists of loamy lodgment till derived from granite and/or loamy lodgment till derived from mica schist and/or loamy lodgment till derived from phyllite. Depth to a root restrictive layer, densic material, is 20 to 41 inches (depth from the mineral surface is 20 to 39 inches). The natural

drainage class is well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 85 percent. Below this thin organic horizon the organic matter content is about 13 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Peru, very stony (6%)

Generated brief soil descriptions are created for major soil components. The Peru, very stony soil is a minor component.

Component: Berkshire, very stony (4%)

Generated brief soil descriptions are created for major soil components. The Berkshire, very stony soil is a minor component.

Component: Tunbridge, very stony (3%)

Generated brief soil descriptions are created for major soil components. The Tunbridge, very stony soil is a minor component.

Component: Pillsbury, very stony (2%)

Generated brief soil descriptions are created for major soil components. The Pillsbury, very stony soil is a minor component.

Map Unit: 104--Podunk fine sandy loam, 0 to 3 percent slopes, frequently flooded

Component: Podunk (86%)

The Podunk component makes up 86 percent of the map unit. Slopes are 0 to 3 percent. This component is on flood plains on river valleys. The parent material consists of coarse-loamy alluvium derived from schist and/or coarse-loamy alluvium derived from quartzite and/or coarse-loamy alluvium derived from granite and gneiss. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, April, May. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Rumney (5%)

Generated brief soil descriptions are created for major soil components. The Rumney soil is a minor component.

Component: Ondawa (4%)

Generated brief soil descriptions are created for major soil components. The Ondawa soil is a minor component.

Component: Sunday (2%)

Generated brief soil descriptions are created for major soil components. The Sunday soil is a minor component.

Component: Medomak (2%)

Generated brief soil descriptions are created for major soil components. The Medomak soil is a minor component.

Component: Charles (1%)

Generated brief soil descriptions are created for major soil components. The Charles soil is a minor component.

Map Unit: 142B--Monadnock fine sandy loam, 3 to 8 percent slopes**Component:** Monadnock (80%)

The Monadnock component makes up 80 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills on glaciated uplands, mountains on glaciated uplands. The parent material consists of loamy supraglacial meltout till derived from phyllite and/or granite and gneiss and/or mica schist over sandy and gravelly supraglacial meltout till derived from phyllite and/or granite and gneiss and/or mica schist. Depth to a root restrictive layer, strongly contrasting textural stratification, is 15 to 30 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 6 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Component: Berkshire (11%)

Generated brief soil descriptions are created for major soil components. The Berkshire soil is a minor component.

Component: Skerry (6%)

Generated brief soil descriptions are created for major soil components. The Skerry soil is a minor component.

Component: Cabot (2%)

Generated brief soil descriptions are created for major soil components. The Cabot soil is a minor component.

Component: Tunbridge (1%)

Generated brief soil descriptions are created for major soil components. The Tunbridge soil is a minor component.

Map Unit: 143C--Monadnock fine sandy loam, 8 to 15 percent slopes, very stony**Component:** Monadnock, very stony (79%)

The Monadnock, very stony component makes up 79 percent of the map unit. Slopes are 8 to 15 percent. This component is on mountains on glaciated uplands, hills on glaciated uplands. The parent material consists of loamy supraglacial meltout till derived from phyllite and/or granite and gneiss and/or mica schist over sandy and gravelly supraglacial meltout till derived from phyllite and/or granite and gneiss and/or mica schist. Depth to a root restrictive layer, strongly contrasting textural stratification, is 18 to 36 inches (depth from the mineral surface is 17 to 31 inches). The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 85 percent. Below this thin organic horizon the organic matter content is about 2 percent. Nonirrigated land capability classification is 6s. This soil does not meet hydric criteria.

Component: Becket, very stony (11%)

Generated brief soil descriptions are created for major soil components. The Becket soil is a minor component.

Component: Skerry, very stony (5%)

Generated brief soil descriptions are created for major soil components. The Skerry soil is a minor component.

Component: Tunbridge, very stony (4%)

Generated brief soil descriptions are created for major soil components. The Tunbridge soil is a minor component.

Component: Lyme, very stony (1%)

Generated brief soil descriptions are created for major soil components. The Lyme soil is a minor component.

Map Unit: 214A--Naumburg fine sandy loam, 0 to 3 percent slopes

Component: Naumburg (90%)

The Naumburg component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on outwash terraces. The parent material consists of sandy outwash derived mainly from granite, gneiss and schist. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 9 inches during January, February, March, April, December. Organic matter content in the surface horizon is about 5 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Component: Croghan (10%)

Generated brief soil descriptions are created for major soil components. The Croghan soil is a minor component.

Data Source Information

Soil Survey Area: Hillsborough County, New Hampshire, Western Part

Survey Area Data: Version 21, May 29, 2020

Soils Inventory Report

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
284	2	104	Podunk fine sandy loam, 0 to 3 percent slopes, frequently flooded	0.1	2%
284	2	142B	Monadnock fine sandy loam, 3 to 8 percent slopes	0.0	0%
284	2	143C	Monadnock fine sandy loam, 8 to 15 percent slopes, very stony	0.0	0%
284	2	214A	Naumburg fine sandy loam, 0 to 3 percent slopes	4.0	89%
284	2	22B	Colton gravelly sandy loam, 3 to 8 percent slopes	0.4	9%
Total				4.5	100%

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
284	3	142B	Monadnock fine sandy loam, 3 to 8 percent slopes	4.4	80%
284	3	214A	Naumburg fine sandy loam, 0 to 3 percent slopes	0.3	5%
284	3	22B	Colton gravelly sandy loam, 3 to 8 percent slopes	0.6	11%
284	3	77C	Marlow fine sandy loam, 8 to 15 percent slopes, very stony	0.2	4%
Total				5.5	100%

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
284	4	104	Podunk fine sandy loam, 0 to 3 percent slopes, frequently flooded	0.0	0%
284	4	214A	Naumburg fine sandy loam, 0 to 3 percent slopes	0.1	1%
284	4	22C	Colton gravelly sandy loam, 8 to 15 percent slopes	8.8	99%
Total				8.9	100%

Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
284	5	22C	Colton gravelly sandy loam, 8 to 15 percent slopes	1.3	100%
Total				1.3	100%

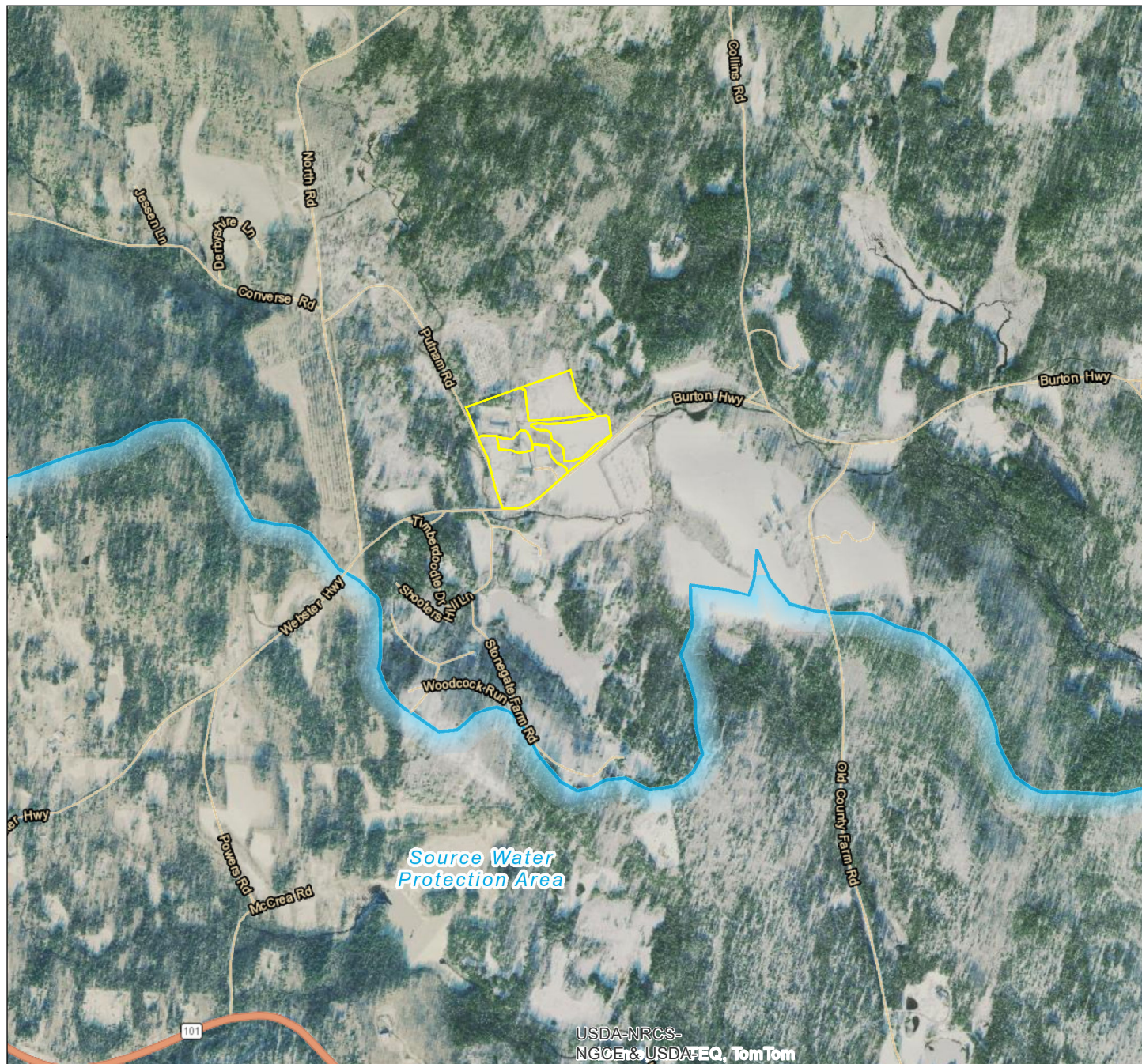
Tract	Land Unit	Map Unit Symbol	Map Unit Name	Acres	Percent
284	6	104	Podunk fine sandy loam, 0 to 3 percent slopes, frequently flooded	0.1	1%
284	6	142B	Monadnock fine sandy loam, 3 to 8 percent slopes	0.3	4%
284	6	214A	Naumburg fine sandy loam, 0 to 3 percent slopes	1.6	20%
284	6	22B	Colton gravelly sandy loam, 3 to 8 percent slopes	0.7	9%
284	6	22C	Colton gravelly sandy loam, 8 to 15 percent slopes	1.4	17%
284	6	76B	Marlow fine sandy loam, 3 to 8 percent slopes	0.8	10%
284	6	77C	Marlow fine sandy loam, 8 to 15 percent slopes, very stony	3.2	40%
Total				8.1	100%
Grand Total				28.3	100%

Source Water Protection Area Map

Client(s): ISABELLA MARTIN
Location: Putnam Road and Webster Highway, Temple, NH
Merrimack County, New Hampshire
Approximate Acres: 28.30


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NH Association of Conservation Districts
MILFORD SERVICE CENTER
HILLSBOROUGH COUNTY CONSERVATION DISTRICT

Land Units: Tract 284, Fields 2,3,4,5,6



Prepared with assistance from USDA-Natural Resources Conservation Service



 Practice Schedule
PLU

