Exercise 2: Soil Survey Report

1. What soil map unit symbol covers the largest area within the map? (Hint: look at percent in AOI) 84B

2. How many acres does this soil map unit cover in the AOI? 42.9

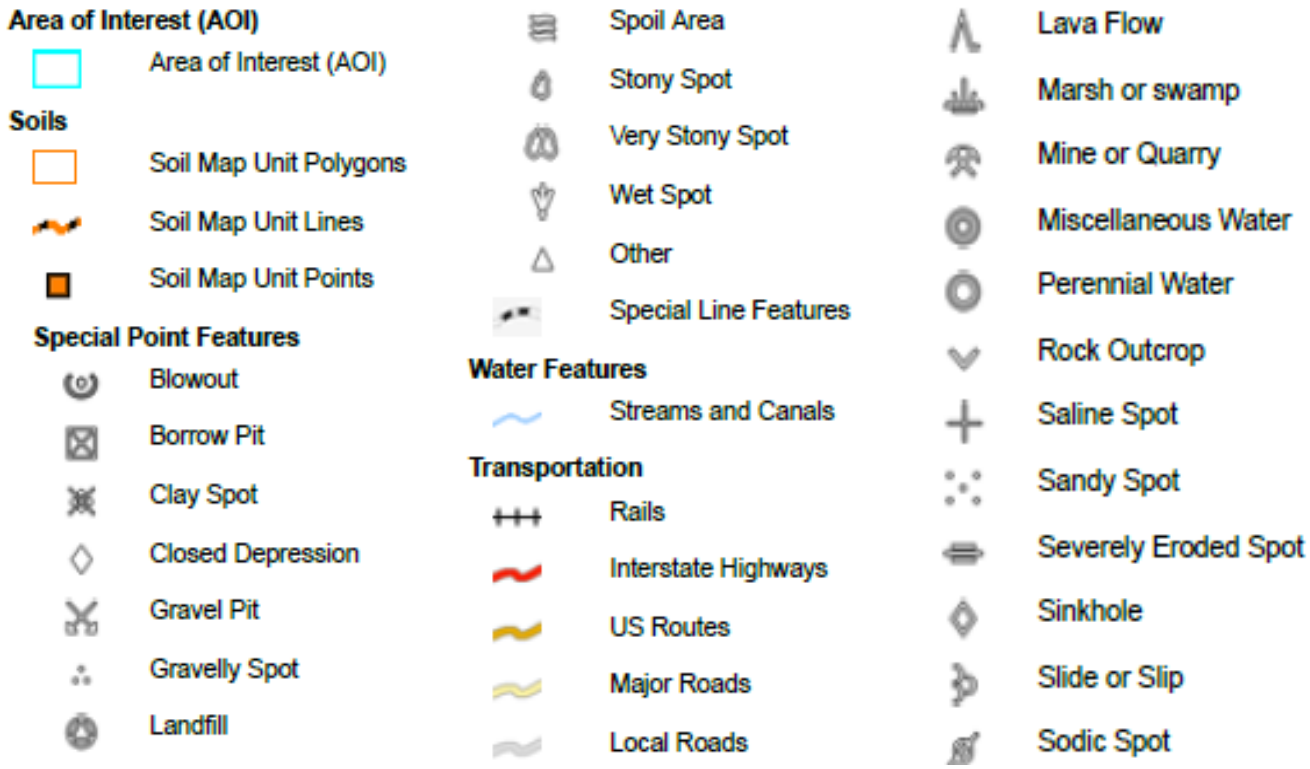
3. What is the soil map unit name?
   Paxton and Montauk fine sandy loams, 3 to 8 percent slopes

4. Looking at the soil map, is the 60C soil map unit mostly forested or open fields? Forested

5. On the soil map, circle soil map unit 704A. What does the white symbols represent? Wet spots

6. What is the polygon in the south east corner of the soils map labeled as W? Water

Map Legend



Map Scale: 1:8,340 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 100 200 400 600

Feet
0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	17.1	4.7%
12	Raypol silt loam	4.1	1.1%
15	Scarboro muck, 0 to 3 percent slopes	2.2	0.6%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	11.2	3.0%
34A	Merrimac fine sandy loam, 0 to 3 percent slopes	3.1	0.8%
34C	Merrimac fine sandy loam, 8 to 15 percent slopes	2.0	0.5%
38C	Hinckley loamy sand, 3 to 15 percent slopes	2.8	0.8%
38E	Hinckley loamy sand, 15 to 45 percent slopes	14.0	3.8%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	9.7	2.7%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	33.1	9.0%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	6.9	1.9%
60C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes	10.7	2.9%
60D	Canton and Charlton soils, 15 to 25 percent slopes	21.0	5.7%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	18.3	5.0%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	14.5	3.9%
71E	Nipmuck-Brimfield-Rock outcrop complex, 15 to 45 percent slopes	8.0	2.2%
72C	Nipmuck-Brookfield complex, 3 to 15 percent slopes, very rocky	36.2	9.9%

84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	42.9	11.7%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	10.3	2.8%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	23.0	6.3%
101	Occum fine sandy loam	8.0	2.2%
102	Pootatuck fine sandy loam	18.5	5.0%
107	Limerick and Lim soils	4.2	1.2%
306	Udorthents-Urban land complex	3.3	0.9%
308	Udorthents, smoothed	1.8	0.5%
704A	Enfield silt loam, 0 to 3 percent slopes	30.4	8.3%
W	Water	9.5	2.6%
Totals for Area of Interest		**366.9**	**100.0%**

Use the soil map unit descriptions and land classification information below to complete the following:

1. Draw a circle around the farmland classification of soil map units 15, 46B, and 84C.

2. Draw a rectangle around the soil parent material of soil map units 15, 46B, and 84C.

3. Under the typical profile, is there an O horizon described for soil map units 15, 46B, and 84C? 46B and 15

4. What soil map unit has the highest water table? 15

5. What soil map unit has a moderate rating for available water storage in the profile? 15

6. What soil map unit has the steepest slope? 84C

7. What soil map unit has a negligible rating for runoff class? Why? 15. This is a hydric soil with frequent ponding. Runoff does not apply when you have ponding.

8. Draw a circle around the soil map units on the **Inland Wetlands table and map** that are CT Inland Wetlands.

84C—Paxton and Montauk fine sandy loams, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2w67b
Elevation: 0 to 1,550 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Paxton and similar soils: 55 percent
Montauk and similar soils: 30 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton

Setting

Landform: Ground moraines, drumlins, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 8 inches: fine sandy loam
Bw1 - 8 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: fine sandy loam
Cd - 26 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Drainage class: Well drained

Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Description of Montauk

Setting

Landform: Recessional moraines, drumlins, hills, ground moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 4 inches: fine sandy loam
Bw1 - 4 to 26 inches: fine sandy loam
Bw2 - 26 to 34 inches: sandy loam
2Cd - 34 to 72 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 39 inches to densic material
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C
Ecological site: F144AY007CT - Well Drained Dense Till Uplands
Hydric soil rating: No

Minor Components

Woodbridge

Percent of map unit: 6 percent
Landform: Drumlins, hills, ground moraines
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Charlton

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury

Percent of map unit: 3 percent
Landform: Hills, depressions, drumlins, drainageways, ground moraines
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Stockbridge

Percent of map unit: 1 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

46B—Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2t2qr
Elevation: 0 to 1,440 feet

Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Woodbridge, very stony, and similar soils: 82 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Woodbridge, Very Stony

Setting

Landform: Hills, ground moraines, drumlins
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 9 inches: fine sandy loam
Bw1 - 9 to 20 inches: fine sandy loam
Bw2 - 20 to 32 inches: fine sandy loam
Cd - 32 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 0 to 8 percent
Surface area covered with cobbles, stones or boulders: 1.6 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 19 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C/D
Ecological site: F144AY037MA - Moist Dense Till Uplands
Hydric soil rating: No

Minor Components

Paxton, very stony

Percent of map unit: 10 percent
Landform: Drumlins, hills, ground moraines
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Ridgebury, very stony

Percent of map unit: 8 percent
Landform: Ground moraines, depressions, drumlins, drainageways, hills
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

15—Scarboro muck, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkt
Elevation: 0 to 1,350 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Scarboro and similar soils: 80 percent
Minor components: 20 percent

Description of Scarboro

Setting

Landform: Outwash deltas, depressions, drainageways, outwash terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave, linear
Parent material: Sandy glaciofluvial deposits derived from schist and/or gneiss and/or granite

Typical profile

Oa - 0 to 8 inches: muck
A - 8 to 14 inches: mucky fine sandy loam

Cg1 - 14 to 22 inches: sand
Cg2 - 22 to 65 inches: gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 0 to 2 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water capacity: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F144AY031MA - Very Wet Outwash
Hydric soil rating: Yes

Minor Components

Timakwa

Percent of map unit: 10 percent
Landform: Swamps
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Linear, concave
Across-Slope shape: Linear, concave
Hydric soil rating: Yes

Walpole

Percent of map unit: 8 percent
Landform: Deltas, outwash terraces, depressions, outwash plains, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Deerfield

Percent of map unit: 2 percent
Landform: Outwash plains, terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear

Across-slope shape: Concave
Hydric soil rating: No

Table—Inland Wetlands (CT) (Spring Manor)

Map unit symbol	Map unit name	Rating	Component name (percent)	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	CT wetland	Ridgebury, extremely stony (40%) Leicester, extremely stony (35%) Whitman, extremely stony (17%) Swansea (2%)	17.1	4.7%
12	Raypol silt loam	CT wetland	Raypol (80%) Walpole (2%) Scarboro (2%)	4.1	1.1%
15	Scarboro muck, 0 to 3 percent slopes	CT wetland	Scarboro (80%) Timakwa (10%) Walpole (8%)	2.2	0.6%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	CT nonwetland	Agawam (85%) Hinckley (5%) Sudbury (5%) Merrimac (3%) Windsor (2%)	11.2	3.0%
34A	Merrimac fine sandy loam, 0 to 3 percent slopes	CT nonwetland	Merrimac (85%) Hinckley (5%) Sudbury (5%) Agawam (3%) Windsor (2%)	3.1	0.8%
34C	Merrimac fine sandy loam, 8 to 15 percent slopes	CT nonwetland	Merrimac (85%) Sudbury (5%) Windsor (5%) Hinckley (5%)	2.0	0.5%
38C	Hinckley loamy sand, 3 to 15 percent slopes	CT nonwetland	Hinckley (85%) Windsor (5%) Merrimac (5%) Agawam (3%) Sudbury (2%)	2.8	0.8%
38E		CT nonwetland	Hinckley (85%)	14.0	3.8%

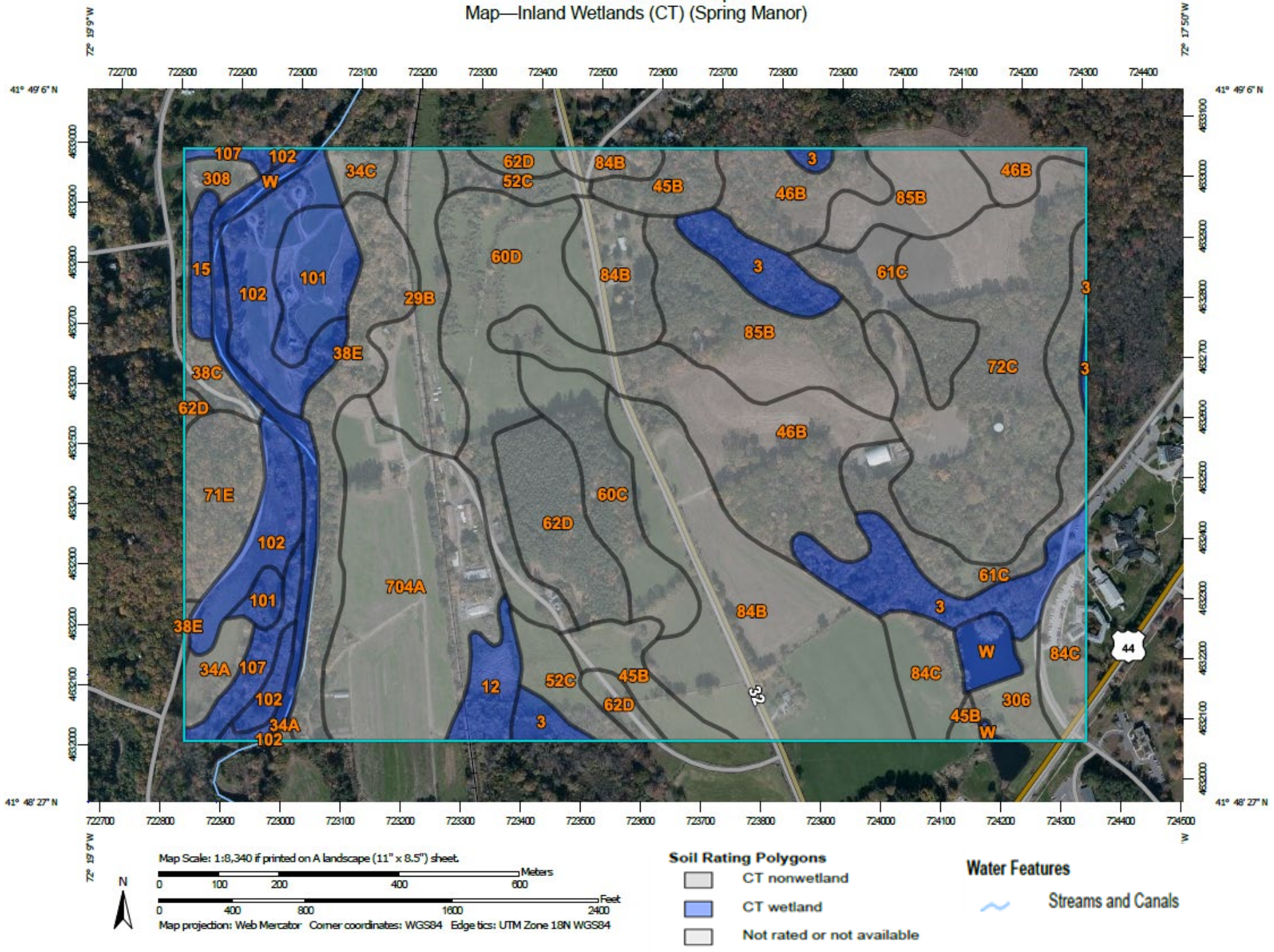
	Hinckley loamy sand, 15 to 45 percent slopes		Merrimac (5%) Windsor (5%) Agawam (3%) Sudbury (2%)		
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	CT nonwetland	Woodbridge, fine sandy loam (82%) Paxton (10%)	9.7	2.7%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	CT nonwetland	Woodbridge, very stony (82%) Paxton, very stony (10%)	33.1	9.0%
52C	Sutton fine sandy loam, 2 to 15 percent slopes, extremely stony	CT nonwetland	Sutton, extremely stony (80%) Woodbridge, extremely stony (7%) Canton, extremely stony (5%) Charlton, extremely stony (5%)	6.9	1.9%
60C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes	CT nonwetland	Canton (50%) Charlton (35%) Chatfield (5%) Sutton (5%)	10.7	2.9%
60D	Canton and Charlton soils, 15 to 25 percent slopes	CT nonwetland	Canton (45%) Charlton (35%) Hollis (5%) Sutton (5%) Chatfield (5%)	21.0	5.7%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	CT nonwetland	Canton, very stony (50%) Charlton, very stony (35%) Chatfield, very stony (5%) Sutton, very stony (5%)	18.3	5.0%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	CT nonwetland	Canton, extremely stony (55%) Charlton, extremely stony (30%)	14.5	3.9%

			Sutton, extremely stony (5%)		
			Chatfield, extremely stony (5%)		
			Hollis, extremely stony (5%)		
71E	Nipmuck-Brimfield- Rock outcrop complex, 15 to 45 percent slopes	CT nonwetland	Nipmuck (45%)	8.0	2.2%
			Brimfield (35%)		
			Rock outcrop (10%)		
			Brookfield (10%)		
72C	Nipmuck-Brookfield complex, 3 to 15 percent slopes, very rocky	CT nonwetland	Nipmuck (50%)	36.2	9.9%
			Brookfield (40%)		
			Brimfield (5%)		
			Rock outcrop (5%)		
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	CT nonwetland	Paxton (55%)	42.9	11.7%
			Montauk (30%)		
			Woodbridge (5%)		
			Charlton (5%)		
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	CT nonwetland	Paxton (55%)	10.3	2.8%
			Montauk (30%)		
			Woodbridge (6%)		
			Charlton (5%)		
			Stockbridge (1%)		
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	CT nonwetland	Paxton, very stony (55%)	23.0	6.3%
			Montauk, very stony (30%)		
			Woodbridge, very stony (8%)		
			Charlton, very stony (3%)		

			Stockbridge, very stony (1%)		
101	Occum fine sandy loam	CT wetland	Occum (80%) Rippowam (5%) Suncook (5%) Pootatuck (5%)	8.0	2.2%
102	Pootatuck fine sandy loam	CT wetland	Pootatuck (80%) Occum (5%) Suncook (5%) Rippowam (3%) Lim (3%) Limerick (2%) Saco (2%)	18.5	5.0%
107	Limerick and Lim soils	CT wetland	Limerick (50%) Lim (30%) Saco (8%) Rippowam (5%) Winooski (3%) Hadley (2%) Bash (2%)	4.2	1.2%
306	Udorthents-Urban land complex	CT nonwetland	Udorthents (50%) Urban land (35%) Unnamed, undisturbed soils (8%) Rock outcrop (2%)	3.3	0.9%
308	Udorthents, smoothed	CT nonwetland	Udorthents (80%) Unnamed, undisturbed soils (7%)	1.8	0.5%

			Urban land (5%)		
			Rock outcrop (1%)		
704A	Enfield silt loam, 0 to 3 percent slopes	CT nonwetland	Enfield (85%)	30.4	8.3%
			Tisbury (5%)		
			Haven (5%)		
			Agawam (3%)		
W	Water	CT wetland	Water (100%)	9.5	2.6%
Totals for Area of Interest				**366.9**	**100.0%**

Custom Soil Resource Report
Map—Inland Wetlands (CT) (Spring Manor)



Exercise 3: Web Soil Survey

Launch Web Soil Survey by clicking the green 'Start WSS' button 

On the left-hand of the screen under "quick navigation" click the down arrow next to "latitude and longitude or current location" and enter the coordinates (**41.81218, -72.30917**).

Create an AOI (area of interest) using either the polygon tool 

, or the rectangle tool 

.
You should see a defined hatched area.

The next few steps will require navigating the tabs.

Click the Soil Map tab and observe the map unit legend. Scroll down the legend and click on Canton and Charlton fine sandy loams, 8 to 15 percent slopes and read the Description of Charlton.

1. Under Settings, what are the three landforms Canton and Charlton soils are formed on?
   Hills, ground moraines and ridges
2. Under properties and qualities, does this soil map unit flood or pond?
   No
3. Under the Typical Profile, how many horizons are described?
   3 soil horizons

Click on the **Soil Data Explorer** tab, **Soil Properties and Qualities** tab, **Soil Health Properties tab, Soil Health – Organic Matter**, and **View Rating**. Open the **legend** tab to see what the colors represent. Below the map is the interpretation report – view the soil organic matter ratings (percent) for each soil map unit.

1. Why are some soils much higher in organic matter than others? Could it be that some soils are forested, and others are cropped? Some soil profiles have an O horizon and are higher in organic matter than the Ap horizons. Yes, the areas with the O horizons on the surface are most likely forested.

Click on **Soil Qualities and Features, Parent Material Name**, and **View Rating**. Read the summary rating by soil map unit below the map.

What are some of the soil map unit symbols of the soils formed in eolian deposits?
12, 29B, 704A

- If you have time, locate what soils are mapped at your school or home.