

2023 CSSS Conference Soils Tour

Agenda

Saturday:	8:30	Leave Truro
	9:45	Stop 1 – Granite Soil (Pockwock Watershed)
	11:00	Leave Stop 1
	11:30	Lunch in Windsor (Subway)
	12:30	Leave Windsor
	12:45	Stop 2 – Gypsum Soil (Tim Marsh Farm)
	2:00	Leave Stop 2
	2:45	Stop 3 – Dykeland Soil (Wolfville)
	4:00	Leave Stop 3
	4:15	Check in to Residence Rooms (Acadia)
	6:00	Dinner <i>Church Brewing Company</i>
		Evening on Your Own
Sunday:	8:00	Breakfast in Wolfville (Subway)
	8:45	Leave Wolfville
	9:30	Stop 4 – Basalt Soil (Blomidon Provincial Park)
	10:45	Leave Stop 4
	11:45	Lunch at <i>Lightfoot and Wolfville</i> Winery
	12:45	Stop 5 – Vineyard Soil (<i>Lightfoot and Wolfville</i>)
	2:00	Leave Stop 5
	2:30	Stop 6 – Glaciofluvial Soil (Kentville)
	3:45	Leave Stop 6
	5:45	Arrive in Truro

Stop 1

Granite Till Soil (Gibraltar Series):

Gibraltar soils are derived from granite tills and have sandy loam texture that approaches loamy sand in some profiles. The soils are generally shallow (about 60 cm), stony, porous, and have low moisture-holding capacity. A characteristic feature of Gibraltar soils is the frequency and size of granite (granodiorite) boulders that litter the surface. These erratics can be quite large and sometimes cover up to 90% of the ground surface. Partial or full cementation (Orstein development) is also fairly common in Gibraltar soils.

Gibraltar Soil Profile: Halifax County Soil Survey (1963)

L-H: 4-0 inches; black semi-decomposed, fibrous, greasy mor.

Ae: 0-4 inches; pinkish grey (7.5YR 6/2); sandy loam; structureless; very friable and porous.

Bfh: 4-5 inches; very dark greyish brown (10YR 3/2) sandy loam; firm; porous; weakly developed platy structure; stony.

Bfhc: 5-12 inches; brown (7.5YR 4/4) sandy loam; strongly cemented; stony.

C: 12+ inches; pale brown (10YR 6/3) gravelly sandy loam; porous; stony.

Tour Profile:

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Stop 2

Clay Loam Till Soil (Falmouth Series):

Queens catena soils (of which Falmouth series is the well drained associate) are developed from a reddish-brown clay loam till derived principally from red shales and mudstone. The till may also contain fragments and stones of red and brown sandstone in varying proportions.

In Hants County, well-drained Falmouth soils occurs principally in the Windsor district where the till has been mixed with and deposited over gypsum. Under forest vegetation, Falmouth soils often have a 1-inch layer of fairly well-decomposed organic matter mixed with mineral material. This is underlain by a pinkish-grey sandy loam A2 horizon that varies in depth from a trace to about two inches. The B1 horizon, which is three to five inches below the surface, is a yellowish-red sandy loam or loam. It is firm, but friable when crushed, and contains fragments of sandstone. This grades into the B2 horizon at a depth of 10 to 15 inches. The B2 horizon is reddish-brown and has a clay loam texture, exhibiting a well-developed blocky structure and is usually quite firm in place. The clay loam parent material which occurs below a depth of 20 to 22 inches also has a coarse blocky structure and is dark reddish-brown in colour. It is firm and usually contains numerous sandstone fragments. Streaks of black carbonaceous material run through it and small particles of gypsum are found in it. The till often rests on the gypsum bedrock at a depth of 8 to 15 feet below the surface.

Falmouth Soil Profile: Hants County Soil Survey (1954)

- A1:** ½ - 2 ½ inches; dark grey (10 YR 4/1); sandy loam; medium nuciform structure; loose; porous; numerous roots; pH 5.0.
- A2:** 2 ½ - 3 inches; pink (5 YR 7/3); sandy loam; weak platy structure; moderately cohesive; friable; numerous roots; variable in depth; pH 5.2.
- B1:** 2 ½ - 14 inches; yellowish-red (5 YR 5/6); sandy loam; fine nuciform structure; friable; firm in place; small fragments of sandstone and slate; some roots; pH 5.2.
- B2:** 14 -23 inches; reddish-brown (2.5 YR 4/4); clay loam; coarse blocky structure; firm; few roots; some sandstone fragments.
- C:** 23+ inches; dark reddish-brown (2.5 YR 3/4); clay loam; weakly developed coarse blocky structure; firm; pervious carbonaceous streaks; slightly micaceous; pH 6-0.

Tour Profile:

Horizon	Thickness	Notes

Stop 3**Dykeland Soil (Acadia Series):**

Acadia soils are mainly found along rivers draining into Minas Basin. Sediments eroded from the land and scoured from the sea bottom were mixed and deposited by tides onto floodplains (salt marshes) along these rivers. The sediments accumulated to a considerable thickness and were dyked by French Acadian settlers to protect them from further flooding and enable their use for farming. Each dyke (aboiteau in French) was comprised of a square or round sluice made of wood planks (or a hollowed-out tree trunk) up to 6m long and capped by a cribwork made of stakes and branches. Sloped slightly toward the sea or a river, the sluice was installed in the bottom of a creek running through the dyke and was fitted with a clapper valve that allowed rainwater to run off at low tide but prevented salt water from infiltrating at high tide. If the land had little or no natural slope, a network of canals and trenches was built to carry the water to the creek leading to the sluice.

Colour varies in Acadia soils and usually is greyer, commonly even bluish grey, with depth. Buried peat layers can also be found in some soils. Soil development has been hindered by tidal flooding and there is little or no horizon development observable below the cultivated Ap horizon. However, depositional and gleyed layers of different colors and textures may be encountered. Soil textures are commonly silt loam to silty clay loam, but can be as heavy as silty clay or as light as fine sandy loam. Textural changes can occur vertically within the profile and also within and between dykeland bodies.

Acadia Soil Profile: Kings County Soil Survey (1965)

The profile of a moderately well drained, cultivated Acadian soil is described below.

Ap: 0-6 inches; dark reddish-brown (5YR 3/4); silty clay loam; medium granular structure; friable; plastic; numerous roots; pH 5.0.

Cg1: 6-22 inches; reddish-brown (5YR 4/3); silty clay loam; medium and coarse blocky structure; plastic; mottling along root channels; pH 6.4.

Cg2: 22-36 inches; reddish-brown (5YR 4/4); silty clay loam; massive; plastic; breaking into coarse blocks; prominently mottled; pH 6.8.

Cg3: 36+ inches; reddish-grey (5YR 5/2); silty clay loam; massive; prominently mottled; pH 7.4.

Tour Profile:

Horizon	Thickness	Notes

Stop 4

Basalt Soil (Rossway Series):

Rossway soils have developed from dark-brown or dark yellowish-brown sandy loam till derived almost entirely from underlying basaltic rock. Mineralogy of this rock provides inherent fertility to Rossway soils that is not often found in Nova Scotia forests. However, many Rossway soils are also stony and/or shallow to bedrock limiting their use for agriculture.

Rossway Soil Profile: Kings County Survey (1965)

The profile of a Rossway soil under forest cover is described below:

- L-H:** 3-0 inches; black, granular organic matter; numerous roots: very friable; pH 5.1.
- Ae:** 0-2 inches; weak red (2.5YR 5/2); silt loam; medium granular structure; friable; porous: pH 5.3.
- Bh:** 2-12 inches; dark reddish-brown (5YR 3/4); silt loam; moderate, fine granular structure; friable; porous; numerous roots; stone fragments; pH 5.5.
- Bfh:** 12-24 inches; yellowish-red (5YR 4/6); sandy loam; massive; friable; a few roots; some stones and cobbles; pH 5.7.
- C:** 24+ inches; dark brown (7.5YR 4/2); sandy loam; firm; gravelly; porous; pH 5.9.

Tour Profile:

Horizon	Thickness	Notes

Stop 5

Vineyard Soil (Morristown Series):

Morristown soils have developed from a reddish-brown shaly loam till high in slate. These soils are often stony and sometime shallow. Where shallow, shale and flaggy stones are common throughout the profile.

Morristown Soil Profile: Kings County Soil Survey (1965)

The profile of a Morristown soil under cultivation is described below.

Ap: 0-4 inches; very dark grayish-brown (10YR 3/2); loam; fine, subangular blocky structure; friable; some shale fragments; roots; pH 4.6.

Bfh1: 4-10 inches; yellowish-red (5YR 4/6); loam; coarse granular structure: friable; slightly firm; shale fragments; pH 4.9.

Bfh2: 10-22 inches; reddish-brown (5YR 4/4); sandy loam; medium granular structure; moderately firm; pH 4.9.

BC: 22-36 inches; reddish-brown (5YR 4/4); sandy loam; firm; granular; faint mottling; some shale fragments; pH 5.0.

C: 36+ inches; reddish-brown (5YR 4/3); loam; firm; granular; some stones and shale fragments; pH 5.3.

Tour Profile:

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Stop 6

Glaciofluvial Soil (Cornwallis Series):

Cornwallis soils have developed from yellowish-red to yellowish-brown glaciofluvial sand deposits. The ratio of coarse to fine sand in the parent material varies somewhat and affects water holding capacity. Lenses of finer sand may also occur in the profile. Drainage ranges from moderately rapid to excessive.

Cornwallis Soil Profile: Kings County Soil Survey (1965)

The profile of a Cornwallis soil under forest cover is described below:

L-F: 2-0 inches; L-layer mainly needles and moss; F-layer black (5YR 2/1), felty, semi-decomposed litter; pH 4.3.

Ae: 0-7 inches; gray (5 YR 6/1); sand; single-grained; loose: pH 4.2.

Bhf: 7-15 inches; yellowish-red (5YR 4/6); medium sand; single-grained; very friable; some roots; pH 5.0.

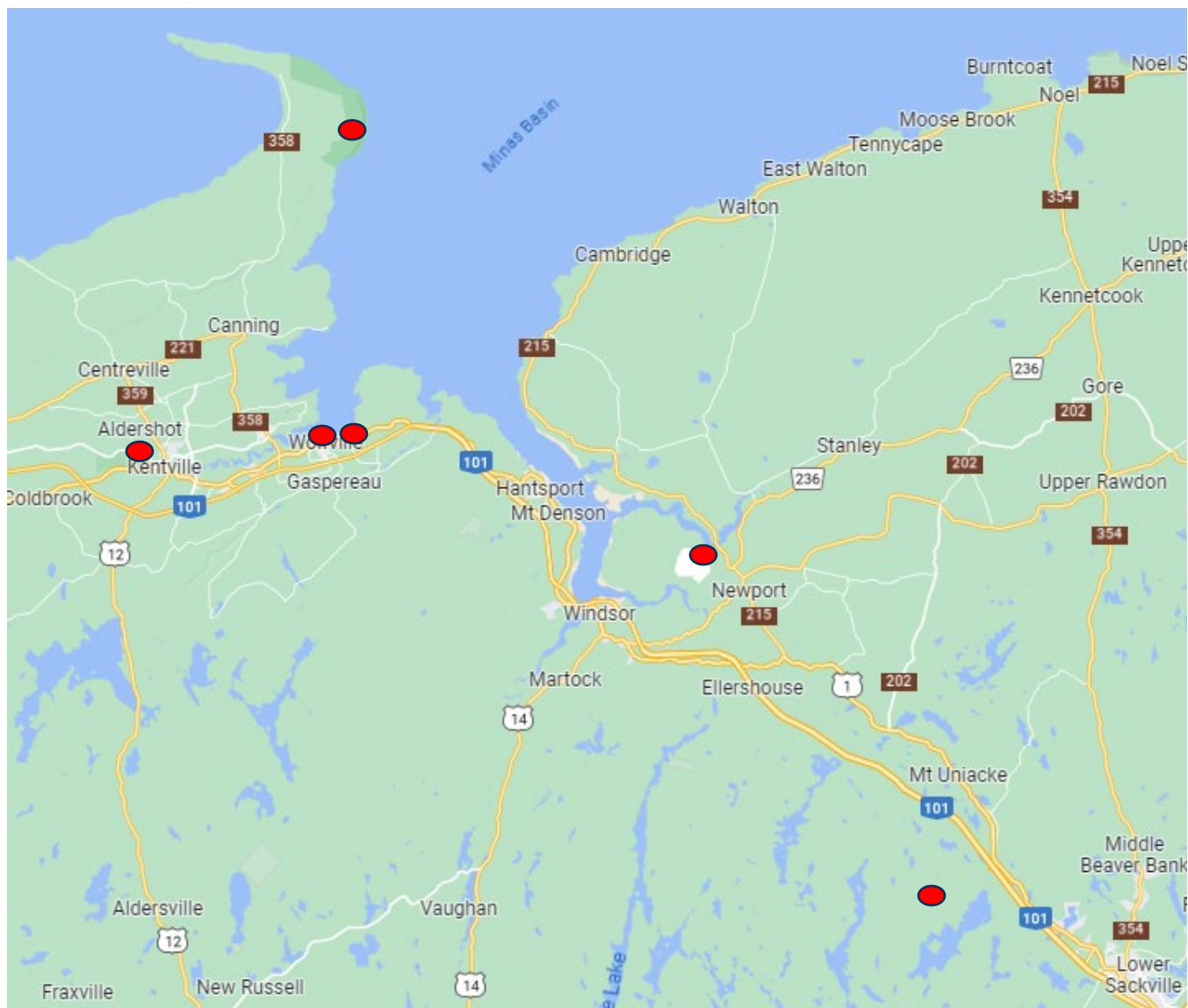
Bhfcj: 15-24 inches; dark reddish-brown (5YR 3/4); fine sand; firm; weakly cemented; massive; pH 5.1.

C1: 24-30 inches; reddish-brown (5YR 4/4) fine sand; single-grained; loose; pH 5.0.

C2: 30+ inches; reddish-brown (5YR 4/4) fine sand; single-grained; very friable; pH 5.0.

Tour Profile:

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Soil tour locations ●