USDA icon **Natural Resources Conservation Service**

Major Land Resource Area 142X
St. Lawrence-Champlain Plain

Accessed: 05/10/2026

Ecological site keys

MLRA 142X Determination Key

I. These soils will have a mean annual temperature is between 0 and 8°C and the difference between mean summer (June, July, August) and mean winter (December, January, February) soil temperatures is 6°C or more either at a depth of 50cm below the soil surface or at root restriction, whichever is shallower (USDA Keys to Soil Taxonomy, 13th Edition).

II. These soils will have a mean annual soil temperature 8°C or higher but lower than 15°C and the difference between mean summer (June, July, August) and mean winter (December, January, February) soil temperatures is 6°C or more either at a depth of 50cm below the soil surface or at root restriction, whichever is shallower (USDA Keys to Soil Taxonomy, 13th Edition).

MLRA 142 - Frigid Soil Temperature Regime (St. Lawrence Valley and Upper Champlain Valley)

I. Site periodically flooded during the growing season, adjacent to a river or stream [Medomak, Sloan, Redwater] ... F142XA001NY – Low Floodplain Frigid

II. Site not periodically flooded during the growing season, not adjacent to a river or stream

A. Substrate mostly organic (Histosols)

1 pH greater 4.5; swamps, fens, and marshes landforms [Wonsqueak, Markey, Dorval] ... F142XA002NY – Mucky Depression Frigid LRU

2 pH less than 4.5, bog landforms [Wonsqueak, Loxley, Knob Lock, Dawson, Churubusco] ... F142XA003NY – Acidic Peaty Depression

B. Substrate mostly mineral (Alfisols, Inceptisols, Spodosols, Entisols)

1 Parent material glacial outwash, soils coarse textured (sands) to moderately coarse textured (sandy loams)

i. Soils excessively- to well-drained

a. pH of upper 50 cm less than 5.5, low base saturation (acidic)

1) Soils shallow (< 50cm) to root restricting ortstein layer (iron cementation) [Constable, Wallace] ... F142XA004NY – Acidic Shallow Sandy Outwash

2) Soils very deep (>150cm) to bedrock [Stetson, Ondawa, Colosse, Adams, Melrose] ... F142XA005NY – Acidic Sandy Outwash

b. pH of upper 50 cm greater than greater than 5.5, higher base saturation (rich) [Missisquoi, Champlain, Waddington, Raquette, Trout River] ... F142XA022NY – Rich Dry Outwash Frigid

ii. Soils moderately well- to very poorly- drained

a. pH of upper 50 cm less than 5.5, low base saturation (acidic), water table 25-100 cm deep (moderately well- or somewhat poorly- drained) [Lovewell, Occur, Coveytown, Duane, Au Gres, Wainola, Naumburg] ... F142XA006NY – Acidic Moist Outwash Frigid

b. pH of upper 50 cm greater than 5.5, higher base saturation (rich)

1) Water table 25-100 cm deep (moderately well- or somewhat poorly- drained) [Mooers, Sheddenbrook, Fahey, Flackville, Sciota, Northway, Eelweir] ... F142XA007NY – Rich Moist Outwash Frigid

2) Water table <25 cm deep (poorly- drained) [Searsport, Deinache, Stockholm, Cook, Coveytown, Deford, Munuscong, Pinconning] ... F142XA008NY – Wet Outwash Depression

2 Parent material glacial till or glaciolacustrine, soils coarse textured (sandy loams) to fine textured (clays)

i. Parent material glaciolacustrine, soils moderately coarse textured to fine textured

a. Soils well- to somewhat poorly- drained

1) pH of upper 50 cm less than 5.5, low base saturation (acidic) [Salmon, Nicholville] ... F142XA010NY – Acidic Lacustrine Terraces Frigid

2) pH of upper 50 cm greater than 5.5, higher base saturation (rich) [Buxton, Heuvelton, Depeyster, Elmwood, Muskellunge, Matoon, Hailsboro] ... F142XA012NY – Rich Lacustrine Terraces Frigid

b. Soils poorly- to very poorly- drained [Adjidaumo, Guff, Wegatchie, Swanton, Whately] ... F142XA014NY – Wet Lacustrine Depression

ii. Parent material glacial till, soils moderately coarse textured to medium textured

a. Soils poorly- to very poorly- drained) [Hannawa, Lyonmounten, Runeberg] ... F142XA021NY – Wet Till Depression

b. Soils excessively- to somewhat poorly- drained

1) pH of upper 50 cm less than 5.5, low base saturation (acidic)

a) Soils shallow and well- to excessively- drained (< 50cm) to bedrock [Ricker, Woodstock, Taconic, Success, Lyman, Hubbardton, Hogback, Irona, Insula, Quetico, Abram, Conic] ... F142XA015NY – Shallow Acidic Till Upland Frigid

b) Soils shallow to very deep; somewhat poorly- to well- drained [Berkshire, Monadnock, Worth, Turnbridge, Rawsonville, Parishville, Mundalite, Millsite, Macomber, Gretor, Sunapee, Westbury, Skerry, Ampersand, Chazy, Topknot, Moira, Schroon] ... F142XA019NY – Acidic Moist Till Frigid

2) pH of upper 50 cm greater than 5.5, higher base saturation (rich)

a) Soils shallow (< 50cm) to bedrock [Gouverneur, Summerville/Kings Falls] ... F142XA016NY – Shallow Rich Till Upland

b) Soils moderately deep to very deep (> 50cm) to bedrock or densic horizon

(1) Soils well- drained [Stowe, Marlow, Grenville, Pyrities, Nehasne, Neckrock, Galway cool] ... F142XA018NY – Rich Till Upland Frigid

(2) Soils moderately well- or somewhat poorly- drained [Peru, Hogansburg, Kalurah, Ogdensburg, Malone, Brayton, Peasleeville] ... F142XA020NY – Rich Moist Till Frigid

MLRA 142 - Mesic Soil Temperature Regime (Eastern Ontario Plain and Lower Champlain Valley)

I. Substrate mostly organic (Histosols) [Aquents, Palms, Willette/Whallonsburg] ... F142XB001NY – Mucky Depression

II. Substrate mostly mineral (Mollisol, Alfisols, Inceptisols, Spodosols, Entisols)

A. Landform a floodplain

1 Soils somewhat poorly- to somewhat excessively- drained [Reserved]

2 Soils poorly- or very poorly- drained [Reserved]

B. Landform not a floodplain

1 Parent material glacial outwash, soils coarse textured (sands) to moderately coarse textured (sandy loams)

i. Soils poorly- to very poorly- drained [Scarboro, Rumney, Saco, Rippowam, Limerick, Gougeville, Enosburg] ... F142XB004VT – Wet Outwash Depression

ii. Soils somewhat poorly- to excessively- drained

a. Soils well- to excessively- drained [Warwick, Tioga, Occum, Hamlin, Hadley, Kars, Factoryville, Hinesburg, Bonapart, Agawam, Arkport, Colonie, Copake, Grattan, Groton, Howard, Merrimac, Plainfield, Windsor] ... F142XB002VT – Dry Outwash

b. Soils moderately well- or somewhat poorly- drained [Teel, Podunk, pootatuck, phelps, Lobdell, Herkimer, Castile, Wareham, Eldridge, Covertfalls, Northway, Cosad, Deerfield, Homer, Pipestone] ... F142XB003VT – Moist Outwash

2 Parent material glacial till or glaciolacustrine, soils coarse textured (sandy loams) to fine textured (clays)

i. Parent material glaciolacustrine, soils medium textured to fine textured

a. Soils somewhat poorly- to well- drained

1) Soils fine to very fine texture (clay, clay loam, silty clay loam) [Vergennes, Wilpoint Cayuga, Hudson, Chaumont, Churchville, Kingsbury, Rhinebeck] ... RX142X00B005 – Clayplain

2) Soils coarse-silty, coarse loamy over clayey, sandy over clayey (silt loam, fine sandy loam, sandy loam, loamy fine sand) [Unadilla, Hartland, Belgrade, Claverack, Elmridge, Munson, Niagara, Stafford, Tonawanda] ... F142XB018VT – Moist Lake Plain

b. Soils very poorly- to poorly- drained [Covington, Guffin, Binghamville, Livingston, Madalin, Panton] ... F142XB007VT – Wet Clayplain Depression

ii. Parent material glacial till, soils moderately coarse textured to medium textured

a. Soils excessively- to well- drained

1) pH of upper 50 cm less than 5.5, low base saturation (acidic)

a) Soils shallow to very shallow (< 50cm) to bedrock [Hollis, Galoo acid phase] ... F142XB019NY – Shallow Acidic Till Upland

b) Soils moderately deep to very deep (> 50cm) to bedrock or densic horizon [Paxton, Charlton, Chatfield, Duchess, Lordstown, St. Albans] ... F142XA009NY – Steep Acidic Lacustrine Slope Frigid

2) pH of upper 50 cm greater than 5.5, higher base saturation (rich)

a) Soils shallow to very shallow (< 50cm) to bedrock [Benson, Galoo, Farmington] ... F142XB010NY – Shallow Rich Till Upland

b) Soils moderately deep to very deep (> 50cm) to bedrock or densic horizon [Madrid, Nellis, Lowville, Galway, Gardenisle, Dover, Pittsfield, Stockbridge, Palatine, Farmington -moderately deep phase] ... F142XB012VT – Rich Till Upland

b. Soils moderately well- to very poorly- drained

1) Soils moderately well- to somewhat poorly- drained [Amenia, Angola, Bombay, Empeyville, Georgia, Kendaia, Massena, Newstead] ... F142XB013NY – Moist Till Upland

2) Soils poorly- to very poorly- drained

a) pH of upper 50 cm less than 5.5, low base saturation (acidic) [Ridgebury, Whitman] ... F142XB021NY – Acidic Wet Till Depression

b) pH of upper 50 cm greater than 5.5, higher base saturation (rich) [Lyons, Sun] ... F142XB014NY – Rich Wet Till Depression