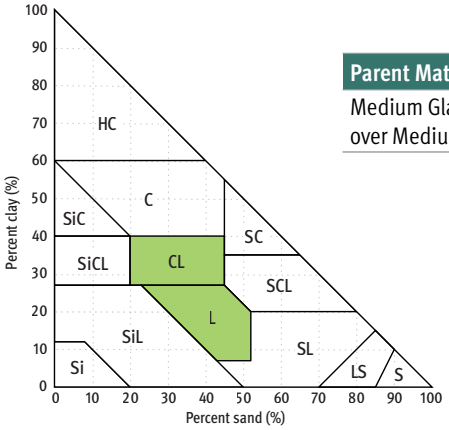
Guelph (GUP)

BRUNISOLIC GRAY BROWN LUVISOL

Taxonomic Subgroup Classification

Ontario Soil Series

DESCRIPTION AND INTERPRETATION



Parent Material
Medium Glaciolacustrine over Medium Till (Morainal)

Soil Properties

Drainage	Permeability	Available Moisture	Runoff
Very Rapid	Very Slow	Very Low	Very Fast
Rapid	Slow	Low	Fast
Well	**Moderate**	Moderate	**Moderate**
Moderately Well	Rapid	**High**	Slow
Imperfect	Very Rapid	Very High	Very Slow
Poor	—	—	—
Very Poor	—	—	—

Soil Profile

Example Landscape

Management Challenges

Land Development Requirements		
Stone Removal		Moderate
Surface Drainage		Moderate
Tile Drainage		Low
Soil Fertility		Low
Irrigation		Moderate

Tile Drainage Risks		
Bank Erosion		Moderate
Unearthing of Coarse Fragments		Moderate
Physical Clogging with Sediment		Low
Iron Clogging		Moderate

Land Management Risks		
Compaction		Moderate
Loss of Organic Matter		High
Acidification		Low
Water Erosion Potential		Moderate
Wind Erosion Potential		Moderate
Tillage Erosion Potential		High

CANADA LAND INVENTORY RATING FOR AGRICULTURE	1

Find more information on CLI and soil capability ratings at Soil Capability for Agriculture in Ontario.

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Physical Analyses

Soil Layers	Horizon	Texture Class[1]	Coarse Fragments by Volume (%)	Sand Fractions (%)					Sand (%)	Silt (%)	Clay (%)	Bulk Density (g/cm³)
				Very Coarse	Coarse	Medium	Fine	Very Fine				
Surface	Ap	L	10	3	7	12	11	8	41	49	10	1.32
Subsurface	Bt	CL	5	4	8	10	9	11	42	33	25	1.39
Parent Material	IICk	L	15	11	9	10	7	7	44	37	19	1.61

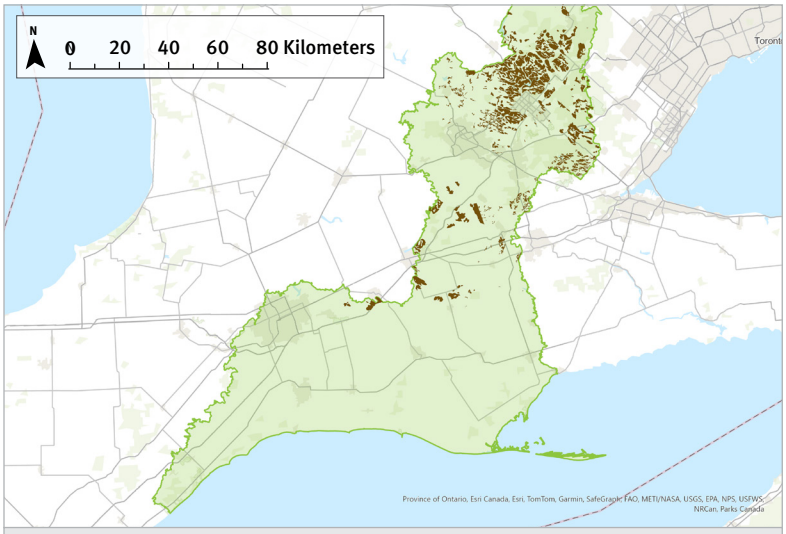
[1] Texture Class: L = Loam; CL = Clay Loam

Chemical Analyses

Soil Layers	Horizon	Horizon Thickness (cm)	pH (H_2O)	SOM (%)	CEC (meq/100 g)	Base Saturation (%)	$CaCO_3$ (%)
Surface	Ap	28	7.1	3.2	21	95	3
Subsurface	Bt	20	7.3	0.6	13	97	3
Parent Material	IICk	44	8.6	0.3	7	100	26

Legend: SOM = Soil Organic Matter; CEC = Cation Exchange Capacity; $CaCO_3$ = Calcium Carbonate

Geographic Distribution



Map outlining the Soil Region (light green shading) and geographic distribution of the soil series (solid brown).

Soil Correlation

Soil Family	Guelph
Similar Series (province wide)	Bennington, Brantford, Bryanston, Harrisburg, Harriston, Honeywood, Huron, Muriel, Waterloo, Wattford, Woolwich
Soil Region	St. Thomas
Catena Members (Drainage)	Guelph (MW), London (I), Parkhill (P)
Areal Extent	73,741 ha (182,214 acres)

Agricultural Production

Guelph soils are prime agricultural soils in Ontario. They are moderately well drained and retain adequate moisture levels for crop production in normal seasons. Based on crop information from 2021 to 2024, areas mapped as Guelph soils were predominantly in corn (28%), soybeans (21%), pasture and/or forage (18%) and native forest vegetation (14%). The Guelph series is the provincial soil.

This factsheet is intended for informational purposes only. Producers are advised to consult their own certified crop advisor or other production specialist.

For more information on the soil profile series, refer to the Ontario Soils GeoHub.

Ontario