VQA Ontario

Niagara Peninsula

APPELLATION MAP

Appellation Overview

Diverse terroir, vine friendly micro climates, remarkably complex wines

The Niagara Peninsula has the largest planted area of all viticulture areas in Canada. Situated at approximately N43º latitude this prime and diverse appellation is characterized by rich, fertile soils and unique microclimates, which provide ideal conditions for producing wine grapes with more complexity and intense flavour than in many warmer climates.

The classic cool-climate varieties such as Riesling, Chardonnay, Gamay Noir, Pinot Noir and Cabernet Franc flourish here, and the region now boasts over 48 thriving varietals across 13,600 acres. The Niagara Peninsula continues to shape a rapidly expanding premium wine industry in Canada as the home to approximately 60% of Ontario's wineries.

NOTABLE FEATURES

One of the deepest of the Great Lakes, Lake Ontario's water mass moderates air temperatures year-round. In concert with the appellation's second notable feature, the Niagara Escarpment, this shapes the perfect climate to nurture grape vines.

STATISTICS

GROWING DEGREE DAYS (AVG.): **1590**
FROST FREE DAYS: **208 (-2º)**
JULY MEAN TEMPERATURE: **22.3°**
GROWING SEASON: **April to October**
PRECIPITATION: **546mm (grow season)**

COMMON VARIETALS: **Chardonnay, Riesling, Merlot, Cabernet Franc, Cabernet Sauvignon, Pinot Gris**
PRODUCTION (2020 REPORTING YEAR): **1,718,667 (9L cases)**
NUMBER OF APPROVED WINES: **1438**
NUMBER OF WINERIES: **97**

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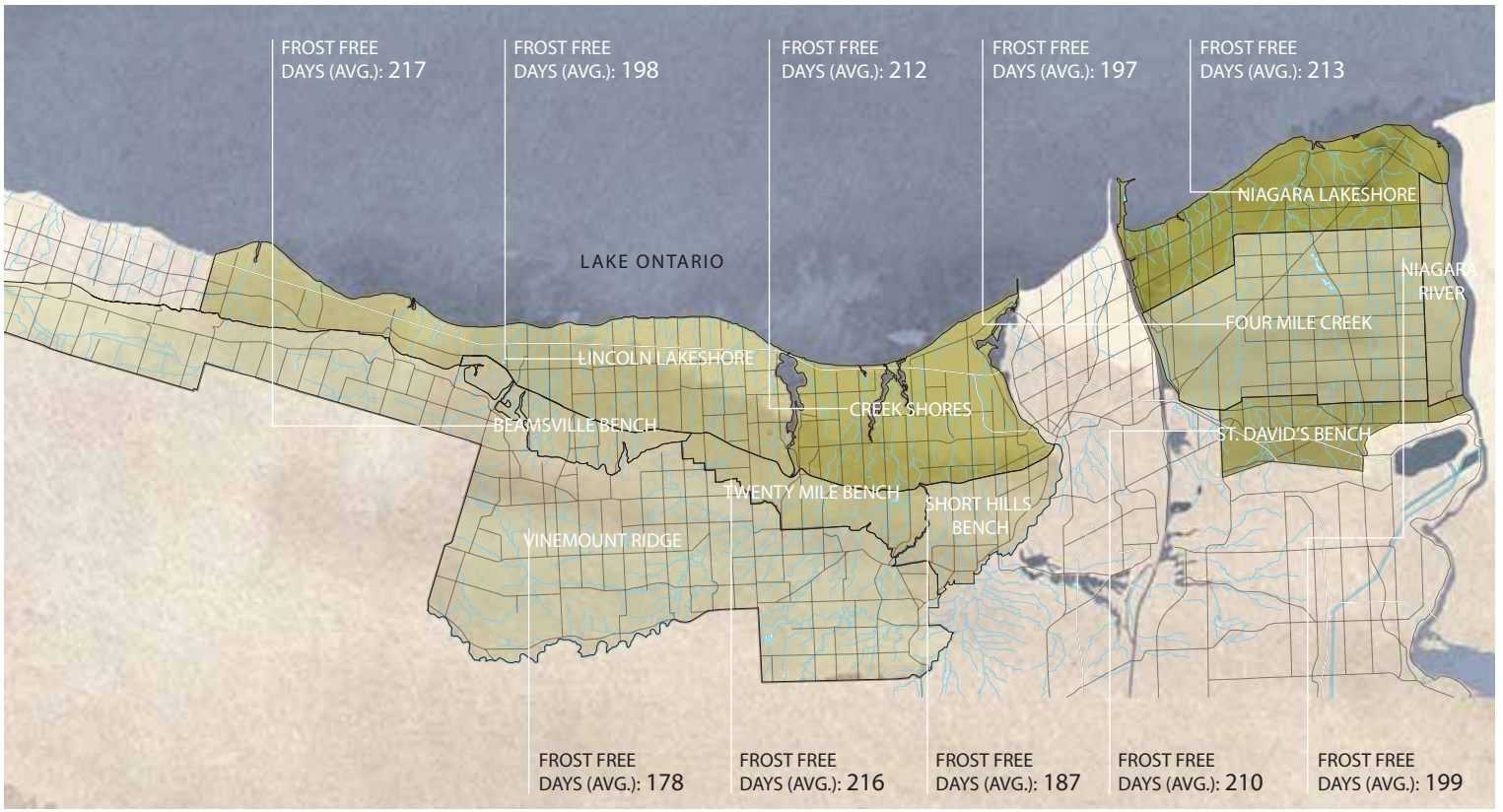
FROST FREE DAYS MAP

Frost Free Days

The constant circulation of off-shore breezes between Lake Ontario and the Niagara Escarpment, profoundly moderate seasonal and diurnal temperatures across this appellation. In fall, breezes from the summer-warmed Lake waters, raise land temperatures, by preventing cold air from settling in lower-lying areas during threatening periods of frost.

As a result, first frost is delayed and the growing season extended. In spring, breezes from the winter-cooled Lake lower land temperatures, holding back the development of fruit buds until the danger of late spring frosts has passed. These lake effects vary considerably north to south, giving rise to remarkable flavour distinctions between grapes of lake- area sub- appellations and those from further inland.



FROST FREE DAYS (AVG.)

- 250
- 225
- 200
- 175
- 150

Frost free days are defined by the number of consecutive days in a year where the critical mean temperature was above -2° C. There are a number of factors that can influence the number of frost free days in an appellation such as elevation, vegetation, exposure to sunlight and proximity to bodies of water. If any of these factors are defining the landscape of the area, frost free days can vary from one plot of land to another microclimate. The fewer frost free days there are allows for a longer growing season.

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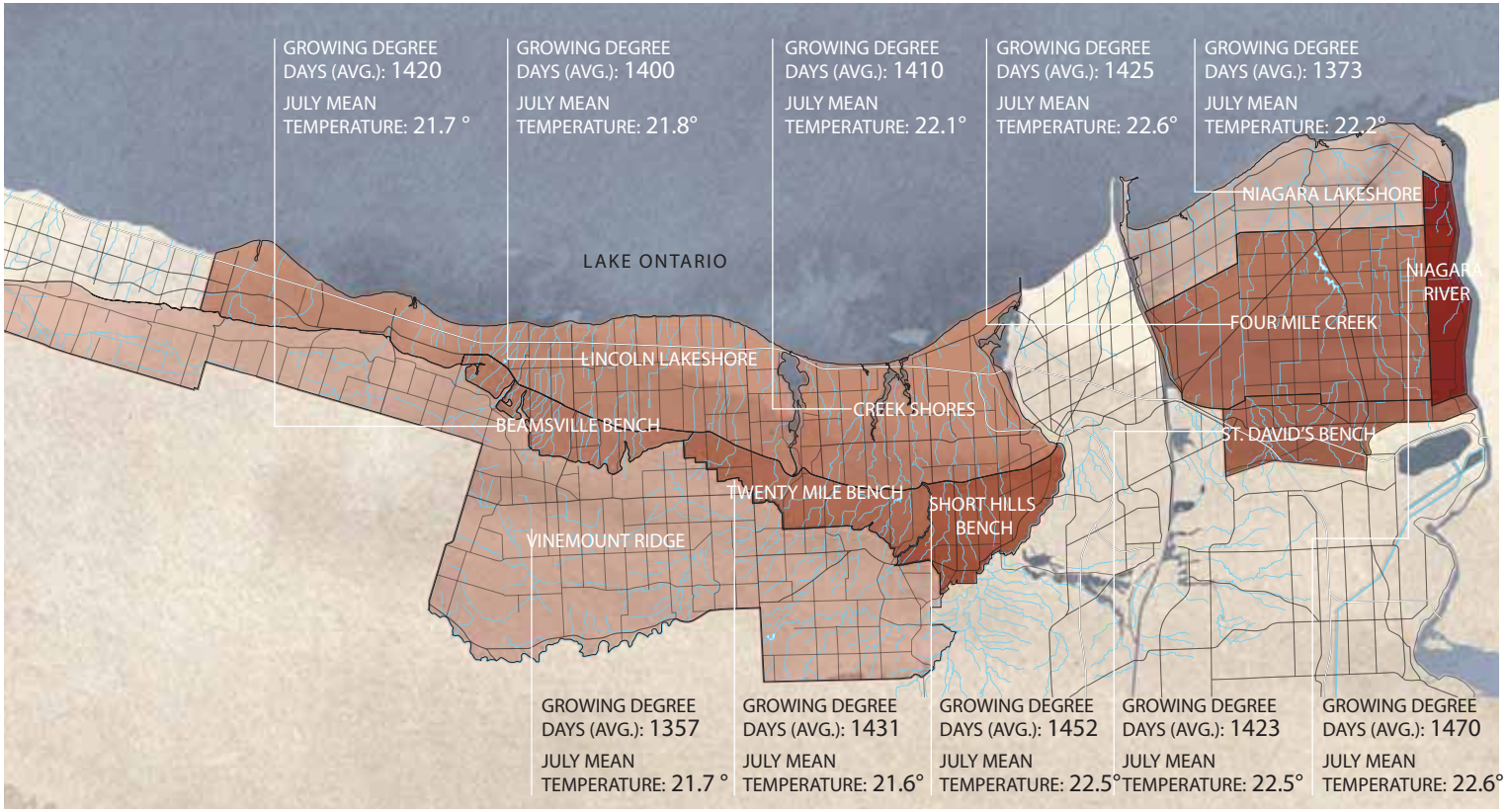
GROWING DEGREE DAYS MAP

Climate

The Niagara Peninsula is a cool-climate appellation ideally situated near N43° latitude, with relatively high shifts in day-night temperature and substantial sunshine during the growing season. This combination provides for the development of more complex and intense grape flavours during ripening than warmer climates can provide.

The constant circulation of off-shore breezes between Lake Ontario and the Niagara Escarpment, profoundly moderates seasonal temperatures across the appellation. In fall, breezes from the summer-warmed Lake waters raise land temperatures and prevent cold air from settling in lower-lying areas, and extend the growing season well into fall. In spring, breezes from the winter-cooled Lake slow down spring warming, holding back the development of fruit buds until the danger of late spring frosts has passed, ensuring an even start to the season. These lake effects vary considerably with distance from the lakeshore and topography, giving rise to remarkable flavour distinctions between grapes of lakeshore sub-appellations and those from further inland.



GROWING DEGREE DAYS (AVG.)

- 1500
- 1450
- 1400
- 1350
- 1300

NIAGARA RIVER	1470
SHORT HILLS BENCH	1452
TWENTY MILE BENCH	1431
FOUR MILE CREEK	1425
ST. DAVID'S BENCH	1423
BEAMSVILLE BENCH	1420
CREEK SHORES	1410
LINCOLN LAKESHORE	1400
NIAGARA LAKESHORE	1373
VINEMOUNT RIDGE	1357

Growing degree days (GDD) are used by the agricultural industry to estimate the growth and development of plants during the growing season based on the theory that a plants growth will begin at a certain temperature. Growing degree days are an estimation based on calculations using the mean daily temperature above a base of 10° C, determined as the temperature for the start of growth for grapes. The more degree days accumulated, the faster the rate of production.

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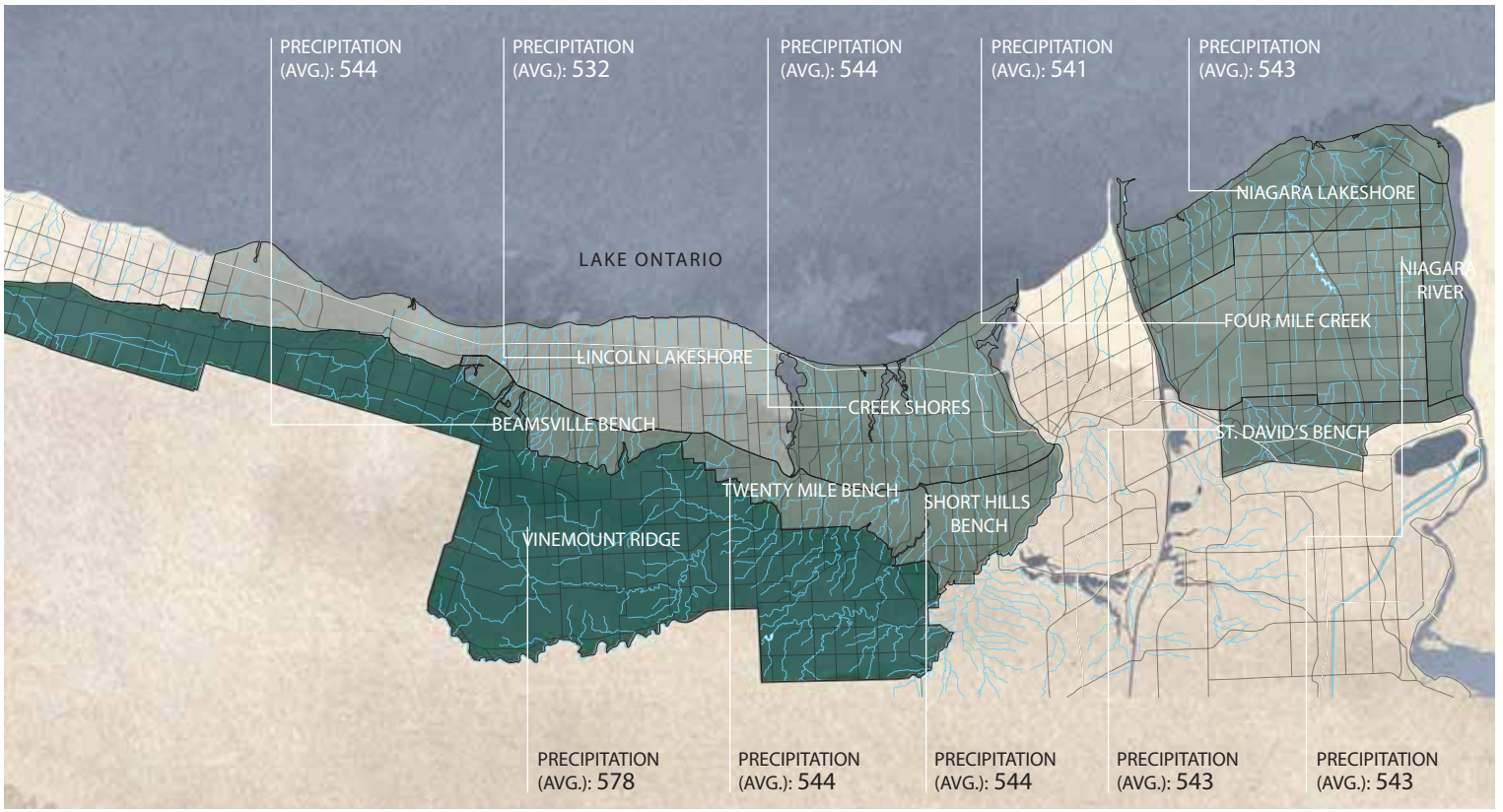
PRECIPITATION MAP

Precipitation

Snow and spring rains ensure that the soils of the Niagara Peninsula appellation receive an adequate amount of water in the spring at the beginning of the growing season. During the summer months this area experiences isolated convective systems which produce most of the precipitation allowing for a rather uneven distribution of rain water throughout the appellation.

Some areas may experience drier conditions in July and August. In the autumn, frontal systems begin to move back through the area with greater frequency recharging the soils with moisture.



PRECIPITATION (AVG. mm/yr)

- 600
- 575
- 550
- 525
- 500

Precipitation is measured as an average millimetre during the growing season. This average is calculated using rainfall, freezing rain, snow, ice pellets and hail. Different topographic features, location of the area to bodies of water and the creation of a microclimate all effect the appellations average growing season precipitation measurement.

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SOIL CHARACTERISTICS MAP

Soil Characterisitics

Over the last 200,000 years, the Niagara Peninsula experienced several glacial and interglacial events that eroded and shaped the layers of sedimentary rock and ancient reef structures of the Niagara Escarpment. This extensive glacial history in the region also gave way to complex soil compositions in the area between the Escarpment and Lake Ontario, where thick layers of clay are permeated with silts and sands.

Variation in soil composition and drainage across the appellation allows for many different varietals to thrive and produces distinctive sub-appellation terroirs that contribute their own character to root development and, in turn, to vine and grape development and to the nature and personality of the wine.

ONTARIO INSTITUTE OF PEDOLOGY. 1989. GENERALIZED SOIL MAP REGIONAL MUNICIPALITY OF NIAGA

COMMON PROPERTIES OF SOIL MAP GROUPS

- LACUSTRINE SILTY CLAY
- LACUSTRINE HEAVY CLAY
- REDDISH-HUED LACUSTRINE HEAVY CLAY
- CLAY LOAM TILL
- LACUSTRINE SILT LOAM
- LACUSTRINE SILTY CLAY OVER CLAY LOAM TILL
- SANDY OR LOAMY SEDIMENTS OVER LACUSTRINE CLAYS OR LOAMS
- LACUSTRINE VERY FINE SANDY LOAM, LOAMY SAND & SAND
- EOLIAN SANDS, SOMETIMES DUNED
- REDDISH-HUED COARSE SANDY LOAM & GRAVELLY SAND
- VARIABLE ALLUVIAL DEPOSIT ON FLOODPLAINS
- SHALLOW SOILS OVER DOLOSTONE BEDROCK
- ORGANIC SOILS
- REDDISH-HUED SILTY CLAY OVER QUEENSTON SHALE BEDROCK
- MISC. NATURAL LAND UNITS
- MISC. MAN-MODIFIED LAND UNITS

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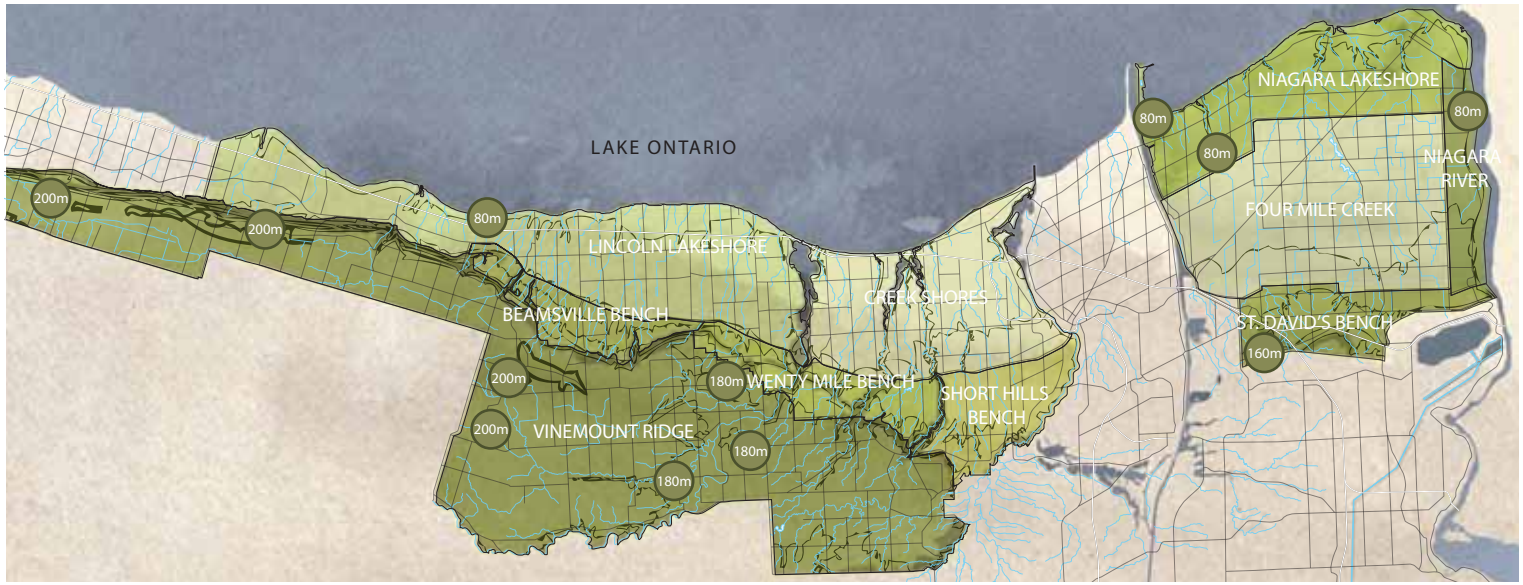
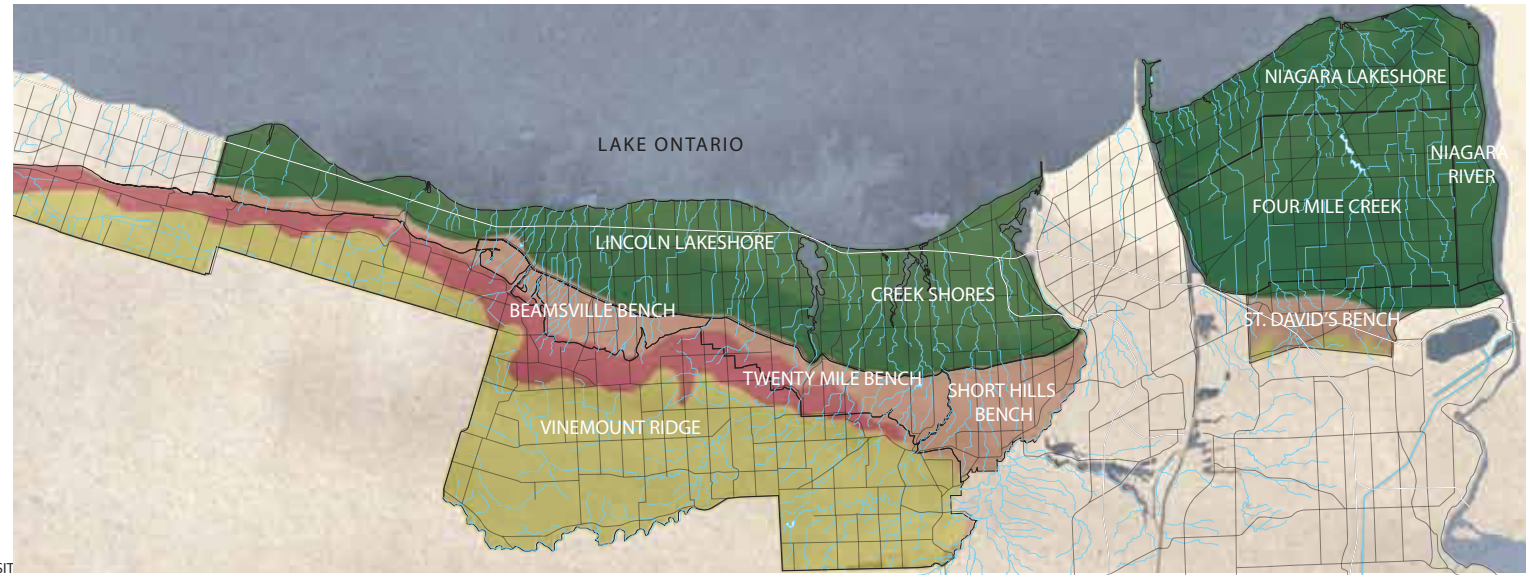
TOPOGRAPHIC & PHYSIOGRAPHIC MAPS

Topography/Physiography

Bordered by Lake Ontario on the north, the Niagara River on the east and the Welland River and Hamilton to the south and west, the Niagara Peninsula is the largest and most diverse Viticultural Area in Canada.

The Niagara Peninsula can be divided into three broad physiographic areas: the Lake Iroquois Plain; the Niagara Escarpment; and the Haldimand Clay Plain. Passing directly through the appellation is the Niagara Escarpment, rising to some 335m (575ft.) above sea level. This north-facing cliff formation is the essence of the appellation, providing the slopes (determining sunlight) and elevations (determining the influence of breeze and lake effects) that distinguish unique sub-appellations and a diverse range of grape-growing conditions.





PHYSIOGRAPHIC MAP

- LAKE IROQUOIS PLAIN
- LAKE IROQUOIS BENCH
- HALDIMAND CLAY PLAIN
- VINEMOUNT MORAINE

COURTESY OF TONY B. SHAW, DEPARTMENT OF GEOGRAPHY, BROCK UNIVERSIT