# Long Island

A New American Viticultural Area

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# **Table of Contents**

Introduction	1
Origin and Evidence of Name	5
Historical and Current Boundaries	6
Boundary Description	7
Wine Region Recognition	9
Past Viticultural History	12
Present Viticultural Situation	14
Future Viticultural Outlook	16
Long Island Geology and Soils	18
Soils of Long Island	21
Geology of Surrounding Areas	37
Soils of Surrounding Areas	42
Soils of New Jersey	42
Westchester County and Upstate New York Geology	46
Soils and Soil Groups of Westchester and Upstate New York	48
Connecticut Geology	53
Connecticut Soils	55
Soil and Geologic Summary	60
Climate Data	62
Growing Degree Days	63
Heating Degree Days - Cooling Degree Days	65
Average Temperature	67
Precipitation	70
Frost-Free Days	71
Conclusion	73
Bibliography	78
Appendixes/Maps	

# Introduction

It is the objective of this paper to provide evidence that the geographical features and location of the region known as Long Island produce viticultural conditions which are distinguishable from the rest of New York State and the bordering areas of New Jersey and Connecticut. The differences are evident in both the climate and soil on Long Island, which because of its geologic history and maritime orientation, make it truly one of the most unique areas in the United States. The facts presented in the following pages have been accumulated from such respectable sources as Cornell University, the Geneva Agricultural Research Station in Geneva, N.Y., the National Oceanic Atmospheric Administration, the U.S.G.S. the U.S. Soil Conservation Service and the USDA. We feel that the data accumulated in this report clearly shows a need for the approval of a separate viticultural appellation termed "Long Island," an area unique within the United States.

Presently, there are 2 approved viticultural areas in existence on Long Island. "The North Fork of Long Island" was approved in 1986 and "The Hamptons, Long Island" in 1985. In both of these applications, it was shown through climate and soil data that these 2 microclimates were subtly different from the rest of the Long Island region. More recently, it has become evident that the effects of Long Island's geography extend well beyond the borders of these two existing appellations. In fact it is clear that the entire region consisting of Nassau and Suffolk Counties consists of weather conditions and soil types that exist nowhere else on the East Coast. This being the case, this paper will also show that the larger area of Long Island, taken as a whole, is vastly different in both climate and soil compared to neighboring regions. The fact alone that the area of Long Island is indeed an island says as much – it stands alone and is independent geologically and climatically from the rest of the state.

Historically, viticultural appellations have usually begun with a large area that encompasses many different microclimates. Over the years and with the accumulation of viticultural and winemaking experience, it is quite common to create smaller, more specific viticultural appellations out of this original larger region. This situation is in fact quite common among other viticultural areas in the United States. One of the most famous examples is the AVA district of Napa Valley in California.

The broad Napa Valley appellation also encompasses twelve smaller, albeit subtly different subappellations. These twelve are Spring Mountain, Mount Veeder, Howell Mountain, Stages Leap District, Atlas Peak, Wild Horse Valley, Chiles Valley, St. Helena, Yountville, Carneros, Rutherford and Oakville. 1 The famous, broader AVA district of Sonoma also includes the eight other smaller AVA districts of Sonoma Valley, Sonoma Mountain, Russian River Valley, Sonoma-Green Valley, Chalk Hill, Dry Creek Valley, Alexander Valley and Knights Valley. The AVA district, Carneros, is actually shared by both the Napa and Sonoma AVA districts.2 (This pattern is repeated in other areas and is essentially following the true purpose of the AVA designation – to classify and distinguish unique grape growing and wine producing areas. One can see this trend in France (the U.S. AVA model) as there are hundreds of smaller appellations located within broader, more general regions). This distribution of viticultural areas emphasizes the fact that even very small differences in climate and soil can change the character of the wines produced. It is well known that the wines of neighboring producers can differ dramatically, all else being equal, just from the differences in soil that can occur over very short distances.

It is understood that the most common history of AVAs in the United State begins with a larger AVA, which upon further experience are found to contain smaller pockets of climate and soil differences. However, there exists at least one precedent for approving a larger AVA which overlaps the boundaries of a pre-existing smaller AVA (*Fredricksburg in the Texas Hill Country* was approved prior to the approval of the larger, encompassing Texas Hill Country AVA).3 With adequate data at hand, the smaller districts can then be proven to be subtly different from the larger, parent area, subsequently giving the consumer another choice by highlighting these differences. By basing the approval process of AVAs clearly on strong climate and soil data, it must be shown that the soil and climate of a smaller district within a larger AVA boundary can qualify for AVA designation. Logically, it should also be observed (using good science) that the inverse of the AVA data presented must also hold true – that a larger viticultural area can also be found to be slightly different from the smaller districts which are found within its broader, distinct borders. Even with these subtle differences within a large appellation, the large appellation as a whole can be quite different in terms of climate and soil from the geographic areas that border it. It is our opinion that Long Island is a perfect example of this case.

<sup>1</sup> Ewing-Mulligan and McCarthy, Wine For Dummies, IDG Books Worldwide (1995).

<sup>2</sup> Ibid.

<sup>3</sup> Conversation with BATF, 4/1/00.

Long Island has now had over 26 years of commercial viticultural history. From the small beginnings of the Hargrave planting in Cutchogue in 1973, the wine region of Long Island today has grown to over 2,500 acres – almost all of these acres planted to the noble vinifera grapes of Europe. 4 The reason for this growth and success is simple – the geographic features of Long Island provide a mild climate and a soil that is unlike those of any other region on the East Coast. This region is in fact, one of the few regions east of the Mississippi River that can support the large-scale commercial culture of many vinifera grapes – the grape of the famous European winemaking regions. Due to the fact that Long Island juts 100 miles into the Atlantic Ocean, the climate is moderated year-round. Ancient glaciers have also left a valuable legacy of rich, sandy, glacial-till topsoil, which is well drained and suitable to growing just about any crop imaginable. In little over a quarter century, the wine industry on Long Island has grown to a multimillion dollar business, with positive critical reviews of Long Island wines found in every major food and wine publication. It has been said by many in the industry that the region of Long Island is one of the country's most exciting and new wine growing regions. Indeed due to the tremendous amounts of time, effort and capital provided over the last 26 years by the Long Island wine industry, the name Long Island is now greatly associated with high quality wine - in fact, the name of Long Island has become quite valuable to those within the industry and quite meaningful to the wine industry at large.

It is the intention of this paper to petition the BATF to approve a larger "Long Island" viticultural appellation or AVA, which would encompass the two existing appellations of the *North Fork* and *The Hamptons*, as well as the addition of the remaining areas of Suffolk and Nassau Counties. The reasons for this proposed appellation are as follows:

- 1) After 26 years of viticultural experience we understand that the climate and soil of Long Island differ substantially from that of New York City, the rest of New York State, and the bordering areas of New Jersey and Connecticut.
- 2) The name "Long Island" is popularly used to describe wines made from both *The North Fork* and *The Hampton's* districts on a local, national and international level. (See Appendix I).

<sup>4</sup> Charles Massoud, Pres., Long Island Wine Council, 3/1/00.

- 3) Presently there exists no clear labeling terminology for wines produced from a blend of both *The Hamptons* and *North Fork* AVA fruit. The only approved labeling terms would be either Suffolk County or New York State, both of which do not represent the wines properly as being from Long Island. The name Long Island is widely recognized on a local as well as a national level. (See Appendix I). A Long Island AVA would provide an additional option for local and national labeling and marketing.
- 4) Long Island vintners who wish to grow grapes and produce wines in viable growing areas located immediately outside the boundaries of the existing appellations would not be able to properly label the origin of their wines as being from Long Island.
- 5) The name "Long Island" is technically considered by current BATF label approval guidelines as a Fanciful Name and is presently unprotected as far as its use on wine labels is concerned. There is nothing to prevent a producer from any other region in New York or in the United States from using the name "Long Island" on their wine labels as a Fanciful Name. In addition, there is nothing to prevent a local wine producer or bottling plant from using the term "Long Island" as a Fanciful Name on wine or grapes that are imported from another region into the Long Island area.
- 6) Approval of the name "Long Island" as an AVA would not only allow further expansion of the Long Island wine industry, it would address the purity concerns of Long Island growers and winemakers as well as protect wine consumers from potential false advertising and fraudulent labeling.

# Origin and Evidence of the Name "Long Island"

In 1613-1614 Andrian Block, a Dutch explorer, became the first European man to sail around Long Island. In 1616 Block drew a map of the area and christened the land "Lange Eylandt," which translates into English as Long Island. The Dutch continued to use the name Lange Eylandt to refer to the area now known as Long Island. For instance, a map made of the area in 1635 by William Janszoon Blaeau, based on charts drawn after the 1613-1614 journey of Adrian Block, depicts the region as Lange Eylandt, as does a map drawn in 1656 by Nicholaes Visscher.6

In 1674 the first professional surveyor, Robert Ryder, an Englishman, drew a map of the area and called it Long Island. The Ryder map was followed by John Thornton, Part of New England, New York East New Iarsey, and Long Island, 1689, a famous nautical map, Robert Mordon, A Map of ye English Empire in the Continent of America, 1690, detailing whaling off the coast of Long Island, Johann Baptista Homann, New England in North America, 1710, containing detail showing and using the term Long Island, Cyprian Southack, A Map of the Coast of New England, 1730, containing detail showing and using the term Long Island, Thomas Jefferys, A Map of the Most Inhabited Part of New England, 1755, containing detail showing and using the term Long Island, Simeon De Witt, A Map of the State of New York, 1802, containing detail showing and using the term Long Island, F.W. Beers, Atlas of Long Island, New York, 1873, Hyde and Company, Map of Long Island, 1896 and United States Geological Survey, Topographical Map of Long Island, New York, 1913, among others. A recent National Geographic Society map of the entire United States entitled United States, The Physical Landscape, 1996 contained detail showing Long Island and using the term Long Island.

Thus, the name Lange Eylandt or Long Island has been in continuous use from 1616 to the present day. Additionally, there is tremendous current use of the name Long Island. There are approximately 620 business listings in Suffolk County using the term Long Island and 530 business listings in Nassau County using the term Long Island. A recent search by the New York Times for "Long Island" on the World Wide Web yielded more than 20,000 sites. The New York Times article is attached along with a

<sup>5</sup> Newsday, Inc., Long Island: Our Story, (1998).

<sup>6</sup> David Yehling Allen, <u>Long Island Maps and Their Makers: Five Centuries of Cartographic History</u>, Melville Library, Map Collection, SUNY Stony Brook (Amereon House 1997).

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

copy of a directory of Long Island web pages listing numerous sites devoted to Long Island. (See Appendix I).

## **Historical and Current Boundaries**

Geographically, Long Island has four counties, Kings (commonly known as Brooklyn), Queens, Nassau and Suffolk. We believe the appropriate boundaries for the appellation are Nassau and Suffolk Counties. As the Long Island Travel Guide states "because Brooklyn and Queens are part of the five-county City of New York, the Long Island reference is commonly known to mean Nassau and Suffolk Counties exclusively." For instance, the Long Island Almanac, published by the Long Island Business News, covers Nassau and Suffolk Counties only. 10 There are hundreds of business listings in Suffolk and Nassau Counties using the term Long Island, while in comparison the term Long Island is almost non-existent in Brooklyn and Queens to describe businesses located there.11

Additionally, commercial farms no longer exist in Brooklyn<sub>12</sub> or Queens <sub>13</sub>, which are densely populated urban counties. Any available farmland, including vineyards, is confined to Nassau and Suffolk Counties.

Limiting the geographic boundaries of the Long Island appellation to Nassau and Suffolk Counties is consistent with what the term "Long Island" is meant to reference by the people and businesses living and working on Long Island and with the practical geographic boundaries of the agricultural region of Long Island.

<sup>9</sup> Long Island Convention and Visitors Bureau, Long Island Travel Guide, (1997).

<sup>10</sup> Long Island Business News, 1999 Long Island Almanac, (33<sup>rd</sup> ed.).

<sup>11</sup> Bell Atlantic, White Pages Suffolk County, June 1999-May 2000; Bell Atlantic, White Pages Nassau County, June 1999-May 2000; Bell Atlantic, White Pages Brooklyn, September 1998-August 1999; Bell Atlantic, White Pages Queens, October 1999-September 2000.

<sup>12</sup> Newsday, Inc. <u>Long Island: Our Story</u>, (1998)("It is difficult to picture today, but there were working farms in Brooklyn until the early 1920s. Photographs show farmers plowing land while train platforms and apartment buildings rise in the background. There were small farms in parts of Queens for another generation after that. . .").

<sup>13</sup> In a telephone conversation with Martin Burnstein of the Borough of Queens' Assessor's Office, Real Property Division on November 23, 1999, Mr. Burnstein stated that commercial farms did not exist any longer in Queens and had not been present since the 1960s.

# **Boundary Description**

As the attached map shows, Nassau and Suffolk Counties are bounded by the City of New York on the west, Long Island Sound to the north, the Atlantic Ocean to the south and Block Island Sound and Fishers Island Sound to the east. The western boundary starts at Little Neck Bay at the Oueens County-Nassau County border on the north and travels for approximately 16 miles ending at Atlantic Beach on the south. This western border follows exactly the pre-existing border separating Queens and Nassau Counties. The southern boundary begins from the western point of Atlantic Beach (at the Queens County line) and travels east along the coast following the Atlantic Ocean, encompassing all inlets and barrier beaches, for approximately 100 miles ending at Montauk Point. The northern boundary begins in the west at the Queens County border at Little Neck Bay and runs east along the northern coastline of the Island bordering the Long Island Sound, ending approximately 84 miles later at Orient Point.14 The entire proposed Long Island AVA area runs in a northeasterly direction and encompasses Fire Island, Robins Island, Shelter Island, Gardiners Island, Plum Island and Fishers Island. In summary, the western boundary is the Queens County – City of New York boundary, the northern boundary is the Long Island Sound, the southern boundary is the Atlantic Ocean, and the eastern boundary is commonly known as Block Island Sound – a large waterway channel that connects the Long Island Sound to the Atlantic Ocean.

At Riverhead, which is 56 miles from the City of New York border, the area separates into two forks, the North Fork and the South Fork. 15 The eastern most point on the North Fork is Orient Point, which is 84 miles from the City of New York border and the eastern most point on the South Fork, is Montauk Point, which is 100 miles from the City of New York border. 16 The width of the area at its widest ranges from 12 to 16 miles. 17 There are 1,180 linear miles of shoreline. 18

Nassau County, which lies to the west of Suffolk County, is 285.4 square miles or 182,680 acres, while Suffolk County is 885.1 square miles or 566,466 acres. Combined Nassau and Suffolk Counties have 1,170.5 square miles or 749,146 acres.19

<sup>14</sup> LI Regional Planning Board.

<sup>15</sup> Long Island Business News, 1999 Long Island Almanac, 33<sup>rd</sup> edition, (1999).

<sup>16</sup> Ibid.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

<sup>19</sup> Ibid.

Nassau County has two cities (City of Glen Cove and City of Long Beach) and three townships (North Hempstead, Hempstead and Oyster Bay). The towns and villages of Nassau County include: Great Neck, Port Washington, Roslyn, Manhasset, New Hyde Park, Mineola, Westbury, Floral Park, Garden City, East Meadow, Elmont, Hempstead, Levittown, Franklin Square, Valley Stream, Wantagh, Lynbrook, Rockville Center, Bellmore, Woodmere, Hewlett, Baldwin, Merrick, Seaford, Inwood, Lawrence, Atlantic Beach, Island Park, Oceanside, Freeport, Bayville, Locust Valley, Sea Cliff, Oyster Bay East Norwich, Syosset, Greenvale, Jericho, Plainview, Hicksville, Bethpage, Farmingdale and Massapequa.20

Suffolk County has ten townships: Babylon, Brookhaven, East Hampton, Huntington, Islip, Riverhead, Shelter Island, Smithtown, Southampton and Southold. The towns and villages of Suffolk County include: Cold Spring Harbor, Huntington, Huntington Station, Dix Hills, Melville, Deer Park, Wyandanch, Lindenhurst, Amityville, Copaigue, Babylon, Centerport, Northport, Kings Park, Commack, St. James, Smithtown, Hauppauge, Brentwood, Bay Shore, Brightwaters, West Islip, Islip, Great River, Oakdale, Bayport, Sayville, Bohemia, Central Islip, Holbrook, Setauket, Stony Brook, Centereach, Lake Grove, Lake Ronkonkoma, Holtsville, Medford, Patchogue, Bellport, Brookhaven, Yaphank, Farmingville, Selden, Coram, Middle Island, Mount Sinai, Port Jefferson, Miller Place, Rocky Point, Shoreham, Ridge, Shirley, Mastic, Mastic Beach, Center Moriches, Calverton, Wading River, Roanoke, Eastport, Westhampton, Riverhead, Northville, Flanders, Quogue, Hampton Bays, Southampton, Watermill, North Sea, Noyack, Bridgehampton, Sag Harbor, East Hampton, Amagansett, Napeague, Montauk, North Haven, Orient, East Marion, Greenport, Southold, Peconic, Mattituck, Cutchogue, Jamesport and Aquebogue.21

Total population figures from 1790 to 1990 are attached. The 1998 population estimates for Nassau County is 1,290,557, for Suffolk County is 1,361,558 and combined is 2,652,115.22

<sup>20</sup> Ibid.

<sup>21</sup> Ibid.

<sup>22</sup> Ibid.

# Wine Region Recognition

The wineries in the area have formed an association called The Long Island Wine Council whose winery members come exclusively from Nassau and Suffolk Counties. The Long Island Wine Council publishes a quarterly guide entitled <a href="The Wine Press">The Wine Press</a> in conjunction with the Times/Review Newspapers which is subtitled "Your Guide to the Long Island Wine Country", cover attached.

Many writers visiting the area have used the phrase "Long Island wine" when penning articles about their visit. A recent search using a Dow Jones database called "ALLNEWS" on Westlaw, a legal research service, revealed 379 separate news articles using the phrase "Long Island" in conjunction with the word "wine". The list of articles is attached.

The New York Times now has a wine writer, Howard Goldberg, who regularly covers the Long Island wine region and has written articles too numerous to list. Newsday, the newspaper devoted to Long Island in particular, also has a wine writer, Peter Gianotti, who writes a regular column called "The Wines of Long Island".

Other recent articles appearing in such diverse sources as The Wall Street Journal, The Independent, a London, England newspaper, The Palm Beach Post, The Baltimore Sun, the San Francisco Chronicle and the Chicago Daily Herald include:

Dorothy J. Gaiter and John Brecher, <u>Tastings: Long Island Makes Good Wines</u>, <u>Honest</u>, The Wall Street Journal, 9/4/98

Anthony Rose, New York: An island of vine romance, Thirsty travelers beware; there's a lot more to drink in Long Island than Iced Tea, The Independent – London, 4/17/99

Gary Glancey, Long Island now a Grape Place to Visit Fine Wineries Uncork New Image for Area, The Palm Beach Post, 9/20/98

Long Island Wines Win More Respect, The Baltimore Sun, 4/13/97

Gerald D. Boyd, Lavish Wines of Long Island, The San Francisco Chronicle, 8/21/96

Mary Ross, Eastern Long Island, N.Y.: America's newest vineyard, Chicago Daily Herald, 6/10/98

Fred Lebrun, <u>Long Island's exclusive vineyards yield some of the nation's best wines</u>, Times Union – Albany, New York, 10/18/99

Robin Stansbury, The Grapes of Long Island, Buffalo News, 9/30/98

Richard Jay Scholem, <u>In Tasting</u>, L.I. Wines Hold Own vs. French, The New York Times, 8/16/98

T.J. Foderaro, <u>Quality of Long Island Wines belies their lack of experience or expense</u>, The Star-Ledger, Newark, New Jersey, 8/26/98

Robin Stansbury, <u>Premium Wine Country Long Island's Vineyards are a Sampler's Delight</u>, The Hartford Currant, 9/6/98

William Nesto, <u>Sound taste</u>, <u>Long Island climate enhances quality</u>, The Patriot Ledger, Quincy, Mass., 10/1/97

Additionally, major wine and food magazines have recognized Long Island as a distinct and unique wine region. Examples include:

Thomas Matthews, Long Island's Work in Progress, The Wine Spectator, 6/30/99

Dana Nigro and Thomas Matthews, <u>Long Island Land Rush Draws Investors</u>, The Wine Spectator, 9/30/99

Ted Loos, A Forkful of Fun: A Weekend in Long Island's Wine Country, The Wine Spectator, 7/31/96

Anthony Brandt, <u>France? Italy? California? Try Long Island, Home to Newest World-Class Merlots</u>, SmartMoney, 6/1/96

Gerald Asher, A Long Island Symposium (Long Island Winegrowers), Gourmet, 2/89

Alice Feiring, <u>Would You Believe Long Island</u>, The Vines are Young, but There is Promise of Great <u>Things to Come</u>, Connoisseur, 6/90

John Baxevanis, Merlot Barrel Samples from Long Island: Serious Wine for Serious Cellars, The Global Gourmet, Northeast Report, 2/96 (www.foodwine.com/food/wine/daily/feb96/John.html)

Commercial wine retailers are separating Long Island wines from the general category of wine and designating Long Island wines by their region. Examples include the fall catalogue from Sherry-Lehmann, the Manhattan retailer, which is attached, Pops Wine Store catalogue on the internet which has a Long Island section (popswine.com/LONG-ISLAND-WINES.html) and McAdam's Liquor Corp., which also features Long Island wine separately (Mcadam-buyrite.com).

Finally the Long Island wine region has inspired a book by Philip F. Palmedo and Edward Beltrami, <u>The Wines of Long Island: Birth of a Region</u>, (Waterline Books 1993) and monthly magazine, the <u>GrapeZine.23</u> Sample covers are attached.

<sup>23</sup> The GrapeZine is unfortunately defunct due to the untimely death of its publisher this past year.

# **Past Viticultural History**

The settlers trained the native grapes onto arbors behind their homes. Even today, many of the homes have grape arbors. This practice has been going on for as long as the settlers have been here. European wine grapes were not tried on Long Island until the Prince Nurseries started in the late 1700's.24 One of the earliest viticultural books written in the United States was by William R. Prince in 1830. His <a href="Treatise on the Vine">Treatise on the Vine</a> lists the most favorable soil to grape growing as "light and sandy." This is the soil type of Long Island. He also states "light soils ... when porous, fine, and friable in their composition ... are the most suitable for the plant and for the quality of the wine." More recently, the world renowned Australian viticulturist Dr. Richard Smart, on a rare trip to Long Island in February of 2000, stated that the soils of Long Island "are among the finest soils for grape growing that I have ever seen in the world." 25

Prince Nurseries was located in Flushing, Queens, on the western most end of Long Island and sold grapes and vine cuttings all way to the eastern end. The vinifera (European) grapes did not fare well in the Eastern United States during the 18<sup>th</sup> and 19<sup>th</sup> centuries due to the high humidity and disease problems that were inherent to the area.26 This disease problem has since been solved with advent of modern day fungicides and spraying equipment. The backyard arbors were pretty much the extent of grape growing on Long Island for most of the next 130 years (from the publication of Prince's book in 1830 to 1963). There were a few attempts at commercial grape growing but these, too, failed (most notably by a "Moses" Fournier who in the late 1800's planted quite a large vinifera vineyard near Mattituck).

The beginning of the successful commercial vineyards on Long Island was in March of 1963. It was then that John Wickham, a fruit farmer in Cutchogue, planted a selection of table grapes from Cornell University. So successful was one of the varieties that it was named "Suffolk Red," for the county in New York where it thrived. Wickham's Fruit Farm has since successfully grown grapes for over 35 years. Prior to his success, vinifera grapes did not survive because of a combination of diseases. The worst on Long Island (because of the high humidity) was black rot. It is Mr. Wickham's feeling that he succeeded because he used his orchard sprayer in combination with new, more effective fungicides. He

<sup>24</sup> Prince, William R., A Treatise on the Vine, T& J Swords, New York, (1830).

<sup>25</sup> Dr. Richard Smart, Seminar on Long Island, 2/21/2000.

stated, "It is the air-blast sprayer that has made grape-growing on Long Island possible."<sub>26</sub>

The success of John Wickham led others to Long Island. It started slowly but has continued at an accelerated pace the past few years. Professor John Tomkins of Cornell University held conferences in the area in 1968 and 1971. In the "Suffolk County Agricultural News," Volume LV, No. 5, p. 22, he wrote, "there are many good sites for grapes on Long Island. Some apple and dairy farmers are taking a real careful look at the opportunities in grape-growing." This was in May 1971.<sub>27</sub>

The June 1971 conferences given by Professor Tomkins were well attended. They were also well reported. Two major newspapers ran articles about grape growing on Long Island. It was also Professor Tomkins who steered Alex and Louisa Hargrave to Long Island. Hargrave Vineyard was planted in 1973. It was the first commercial vinifera vineyard on Long Island in the 20th Century. Its success has led to over 2,500 acres of grapes planted in the last 26 years. And they are just the beginning.28

It has taken over 350 years, from backyard arbors to create a multi-million dollar industry. But this success was foreseen by many. In the 1800s, Long Island grew many peaches. A Professor Nuttall of Harvard University is quoted by William Prince, "The Peach and the Vine being natural productions of the same region of the East, the opinion has been uniformly adopted, that a climate favorable to the one could not fail to be suitable to the other. And where, let me ask does the former thrive to a greater degree than in many other sections of our country? From the shores of Long Island ... the peach flourishes ... hence we may deduce the most sure prospects of an equal success for the vine."<sup>29</sup>

<sup>26</sup> Olsen-Harbich, Richard, North Fork of Long Island AVA petition (1985).

<sup>27</sup> Cornell Cooperative Extension, Ag. News, Riverhead, NY, (1971).

<sup>28</sup> Ibid.

<sup>29</sup> Prince, William R., A Treatise on the Vine, T&J Swords, New York, (1830).

# **Present Viticultural Situation**

The following is a list of producers and estimated amount of vineyard acreage on Long Island: 30

# Suffolk County – North Fork

Business Name	Туре	<b>Proprietor</b>
Bedell Cellars	Vineyard/Winery	Bedell Family
Bidwell Vineyards	Vineyard/Winery	Bidwell Family
Baiz Vineyards	Vineyard	Chis and Roz Baiz
Broadfields	Vineyard	Robin and Karen Meredith
Corey Creek	Vineyard/Winery	Michael Lynn
Dzugas-Smith	Vineyard/Winery	Donna Dzugas-Smith
Gristina Vineyards	Vineyard/Winery	Gristina Family
Hargrave Vineyards	Vineyard/Winery	Borghese Family
Jamesport Vineyards	Vineyard/Winery	Goerler Family
Laurel Lake Vineyards	Vineyard/Winery	
Lenz Vineyards	Vineyard/Winery	Carroll Family
Martha Clara Vineyards	Vineyard	Robert Entenmanns
Lieb Vineyards	Vineyard	Lieb Family
Manor Hill Vineyards	Vineyard	William Ackermann
Mcullough Vineyards	Vineyard	Mcullough Family
Miceli Vineyards	Vineyard	Miceli Family
Mudd's Vineyard	Vineyard	Mudd Family
Raphael	Vineyard/Winery	Petrocelli Family
Pfeifle Vineyards	Vineyard	Pfeifle Family
Silvernail	Vineyard	
Smith	Vineyard	Smith Family
Macari Winery	Vineyard/Winery	Macari Family

Marco Vineyards	Vineyard	Marco Family
McComb Vineyards	Vineyard	McComb Family
Osprey's Dominion	Vineyard/Winery	Kohler/Tyree
Palmer Vineyards	Vineyard/Winery	Robert Palmer
Paumanok	Vineyard/Winery	Massoud Family
Peconic Bay Winery	Vineyard/Winery	The Lowerre Family
Pelligrini Vineyards	Vineyard/Winery	Bob and Joyce Pelligrini
Pindar Vineyards	Vineyard/Winery	Dan Damianos
Pugliese Vineyards	Vineyard/Winery	Pugliese Family
Schneider Vineyards	Winery	Bruce and Chris Schneider
Ternhaven Cellars	Winery	

**Total Acreage Planted to Grapes on the North Fork:** 

2,400 acres

# The Hamptons

Business Name	Туре	Proprietor
Channing Daughters	Vineyard/Winery	Channing Family
Duckwalk Vineyards	Vineyard/Winery	Dan Damianos
Sag Pong Vineyards	Vineyard/Winery	Christian Wolffer

**Total Acreage Planted to Grapes in the Hamptons (South Fork):** 

110 acres

# **Rest of Long Island**

Business Name	Type	Proprietor
Banfi Vineyards	Vineyard	Villa Banfi
Loughlin Vineyards	Vineyard	Barney Loughlin

Total Acreage for remainder of Long Island:

70 acres

Total Vineyard Acreage Planted on Long Island:

2580 Acres 31

<sup>30</sup> Long Island Wine Council Information, January 2000.

<sup>31</sup> Ibid.

# **Future Viticultural Outlook**

In the last two decades, the Long Island wine industry has grown in leaps and bounds – both physically and critically. Long Island is now known internationally as one of the world's most exciting new wine regions. (see articles attached) There are presently 38 vineyard and/or winery businesses operating on Long Island. 32 There has also been a great deal of expansion that is actually too fast for these authors to report. However, withing the past 2 years, numerous new owners have purchased land with the intention of planting vineyards within the very near future. Due to the nature of this proprietary information, an exact figure cannot be given, but from information there is known it is quite probable than an additional 100-200 acres will be planted to vineyards in the year 2000, with another 150 acres planted in 2001. 33 By all likelihood, the total amount of vineyard acreage on Long Island will reach the 3,000-acre mark in as little as 2 years. It is not unreasonable to predict that by the year 2010, there will be over 4,000 acres of vineyards planted on Long Island, with over 50 different small wine producing businesses. Wine growing continues to be one of the few agriculturally based industries that has a viable future in the high-priced region of Long Island. The wine industry has in fact, been a major contributor to the preservation of agricultural open space and farmland on Long Island and consequently is a positive attribute to the region. Land preservation also helps to preserve the ever delicate aquifer system that is based underneath Long Island and serves to provide drinking water for millions of Long Island residents in Nassau and Suffolk Counties. The only factor that could limit the growth of the Long Island wine industry will be the eventual shortage of viable farmland. Presently, hundreds of undeveloped acres of farmland which are suitable for growing grapes are located in adjacent areas outside the boundaries of the current AVAs approved for Long Island. This acreage can become available to the prospective vintner under the Long Island AVA.

Most of the available farmland for the continued expansion of the Long Island wine industry is located in Suffolk County. According to the 1997 Census of Agriculture, there are presently 35,858 acres of farmland in Suffolk County; 5,858 of these acres are currently fallow or out of production. Out of the remaining cultivated farmland, 5,868 acres are planted to vegetables, 5,906 acres to potatoes and another 600 acres in orchards. (1997 Census of Agriculture). In theory, all of this farmland is currently

<sup>32</sup> Ibid.

<sup>33</sup> Ibid.

available to Long Island vineyards and could be planted to grapes in the future. Presently, there exists numerous large tracts of potential vineyard sites just to the west of the existing AVA boundaries. At least 500 acres are estimated to be available for vineyards in Nassau County, with an additional 1,000 acres and possibly more located in western Suffolk County. 34 As the Long Island wine industry continues to grow while other more traditional forms of agriculture slowly disappear, these areas could become very attractive to the prospective winegrower. Gathering all this information and allowing for adjustments made for development pressure and other future forms of agriculture, it is possible that the Long Island wine industry in both Nassau and Suffolk Counties, could grow to over 15,000 acres by the end of this century.

With the amount of tourism the area is promoting, and the number of summertime visitors, Long Island promises great returns on sales and promotion, as well as a good source of labor. Long Island wineries are also responsible for millions of dollars of Federal and State Excise taxes, as well as county sales tax revenues. Along with these advantages, there is some assistance available from both New York State and from Suffolk County to the prospective Long Island vintner. These include financing and tax abatements, financial assistance on machinery and new building facilities from the Suffolk Industrial Development Agency; New York's Job Development Agency, and the Federal Government's Small Business Administration. Suffolk County's Farm Land Preservation program may also assist the vintner, as well as keeping land available for future vineyard plantings. Also, the Long Island region benefits a great deal from the encouragement of an enthusiastic, progressive local government, which is intensely dedicated to preserving the area's agricultural status.

Long Island and its potential for producing high quality grapes and wine, represents a fantastic opportunity for the prospective vintner. The soil and climate are suited to vinifera grape production like no other area in the East. Great wines have already been consistently produced from red varietals such as Merlot and Cabernet Sauvignon. These red varietals have yet to be grown successfully on a commercial scale elsewhere in the East. Situated only 70 miles from one of the nation's greatest wine markets (New York City) and in the heart of the world's largest consumer market (Eastern Seaboard), Long Island has the potential to become one of the greatest wine regions in the United States. It deserves and needs to have its name and future protected.

# Long Island Geology and Soils

The following section is an excerpt from the book: Long Island: Our Story, Newsday, Inc. (1998).

In geological terms, Long Island was born only yesterday. The oversize sandbar called Long Island is only the latest, temporary example of a world that has been continuously reshaped by colliding continents, crumbling mountains, shifting sea level, waves and glaciers. Though Long Island is brand new by the time scale of history, there was a remarkable series of transformations that occurred there over hundreds of millions of years. Long Island was shaped by the great Canadian glaciers that came here at least twice. Thousands of waterfront homes teeter on the edge of disaster because of the erosion and rising sea level that have continued to make Long Island shimmy and shrink ever since the last ice sheet began retreating 22,000 years ago.

The bottom layer of Long Island is bedrock formed from a series of continental collisions that began 450 million years ago. The slab was covered by a thick wedge of sandy sediment deposited over hundreds of millions of years by streams that ran to the coast from the eroding Appalachians. But what finally created Long Island was a glacier. Like a bulldozer pushing together a sand pile, the ice scraped along the top edge of the sandy wedge to form the Island's fish shape.

For hundreds of millions of years, North America was located in the tropics, on or below the equator. The continent was rotated on its side so that the present-day East Coast faced south. Offshore, an arc of volcanic islands that resembled modern-day Japan slowly approached that coastline near the place where Long Island would take shape. That island chain collided with North America about 450 million years ago, and the volcanic rocks were pushed deep into the Earth's crust, where intense heat and pressure hardened them. That super-hard bedrock eventually moved closer to the surface, and today probably lies beneath much of Long Island.

An entire continent, Africa, loomed off the North American coast when the next key event began, roughly 300 million years ago. The two continents slowly ground into each other for the next 100 million years, buckling at their edges and pushing up a vast mountain range, the Appalachians, that was taller than

the present-day Rockies. Huge rivers swept down from the Appalachians into the swampy deltas of the area. One of those rivers carved the valley that would become Long Island Sound, and they all carried away huge volumes of sediment from the eroding Appalachians. That sand piled up on the eastern flank of the mountain range and gradually formed a thick wedge on top of the older bedrock. That wedge still survives on Long Island, where the porous sand performs the vital job of storing most of our underground water supply.

The Canadian ice sheet probably expanded and receded across the entire northern half of North America at least 16 times, lowering and raising sea level by hundreds of feet with each advance and retreat. Just 22,000 years ago, when the last major glaciation was at its zenith, sea level was more than 300 feet lower than it is now, and the Atlantic shoreline was 80 miles south of present-day Fire Island. Exactly how many times glaciers reached Long Island is uncertain. Most experts say there's no evidence the Island was glaciated more than twice, although some geologists think it happened five times or more. The first ice sheet was here either about 150,000 or 60,000 years ago, and the second 22,000 years ago, according to the majority view. Monumental in size and power, the ice sheets changed everything in the region, and effectively built Long Island.

Like a snowplow, the glacier's leading edge scraped away the sandy deposits of the coastal plain wedge and exposed the bedrock below, which is why so many outcroppings of bedrock are visible today in New England but not Long Island. Spreading south by perhaps one foot per day, the expanding ice sheet not only bulldozed the sandy debris; it also sheared and carried off boulders as it scraped across bedrock. Some smaller rocks were moved more than 250 miles.

Scooping up massive amounts of rock and sand as it moved through Connecticut, the glacier then widened and deepened the ancient river valley that would later become Long Island Sound, and also broadened the narrow stream beds that would become the finger harbors of Long Island's North Shore. The wide valley played another key role: It slowed the advancing ice sheet just before the world's climate grew warm enough to stop the glaciation.

By the time the glacier covered the northern half of Long Island, about 22,000 years ago, its edge was melting as fast as new ice was pushing down from Canada. More than 1,000 miles from where it began in Hudson Bay, the glacier finally stopped. Soon, the melting began to outstrip the production of new

ice, and the ice sheet, began to shrink. In its wake, the retreating glacier left behind a Long Island landscape that it had dramatically transformed. A hilly ridge, or moraine, now marked the line where the ice sheet stopped. Made of bulldozed rock mixed with sand and gravel dumped by streams running down from the melting glacier, that moraine is still visible as Long Island's elevated central spine, which extends from Brooklyn to Amagansett before curving offshore. The offshore portion of that moraine has since been destroyed by ocean erosion but may once have constituted a third East End fork below the present-day Montauk peninsula. The terminal morainal ridges stand out on any good map. An older more southerly moraine is called the Ronkonkoma Moraine which formed during the an early part of the Wisconsin Stage of the Pleistocene Epoch (prior to about 55,000 years ago). The Ronkonkoma Moraine forms most of the low rolling hills along an east-to-west transect generally on the south side of the LIE (Long Island Expressway). The higher, younger, more northerly morainal ridge is called the Harbor Hill Moraine. The Harbor Hill Moraine represents the terminal moraine of the most recent advance of Wisconsin Stage glacier which reached its most southward advance about 18,000 years ago (it was probably completely melted in the NYC area in the range of 13,000 to 12,000 years ago).

The south-flowing icewater streams, including the Connetquot and Carmans Rivers, fed short-lived glacial lakes where icebergs floated. The swollen rivers also shaped fertile flatlands south of the moraine -- most notably the Hempstead Plain, where the soil was rich with wind-blown silt that was also a gift of the glacier, since the fine powder came from rocks ground down by the ice sheet. As it receded slowly, the glacier did more sculpting. Additional hilly moraines formed along the North Shore and North Fork, marking places where the ice sheet paused. Chunks of ice that broke free from the glacier and did not immediately melt formed deep depressions in the soil that later filled in with groundwater. The region's two biggest lakes, Ronkonkoma and Success, and many others, were formed in these `kettleholes." The glacier also left behind thousands of boulders that the ice sheet had sheared off the bedrock farther north and carried to Long Island. That process began roughly 15,000 years ago when the rising sea began entering the valley, probably near Fisher's Island. A few thousand years later, the ocean probably broke through at the valley's western edge. Long Island finally earned its name about 11,000 years ago, or perhaps slightly later, when the rising ocean waters on the eastern and western edges of the ancient river valley finally joined to form Long Island Sound. Long Island's evolution continues today, because storm erosion and the rising sea are still reshaping the Island. 35

# Soils of Long Island

The soils of the Long Island region are unique from those found in other areas in New York State, as well as in the bordering areas of New Jersey and southern Connecticut. These soils include those type and associations that are found within the counties of Nassau and Suffolk. The soils of Queens County, which is geologically still part of Long Island but politically part of New York City, are not included in this discussion as Queens County has been excluded from the proposed AVA for all practical intents as there is no more open farmland available in this area.

One of the most distinctive features of Long Island geology is the vast quantity of sandy loam soil deposited during the Pleistocene Epoch of the Quaternary Period. This soil was deposited during the last 4 major glacial stages of this Epoch. From oldest to youngest they are: Nebraskan, Kansan, Illoian, and Wisconsin. Because of this, the area between the surface soil and bedrock areas is several hundred feet. The nearest surface bedrock only begins where the region of Long Island starts to end.near the Bronx, Queens border. From these areas, the bedrock dips dramatically downward to form a solid basement several hundred feet below Nassau and Suffolk Counties.36

#### Nassau County Soils

The following information is taken from the Soil Survey of Nassau County, NYS Soil Conservation Service, USDA (1987).

Nassau County comprises an area of 182,680 acres or approximately 285.4 square miles. Large tracts of privately held estate land make it difficult to estimate the number of acres available for vineyards, but it is estimated that over 500 acres could be available for wine growing. This figure includes land presently held in private estates, pasture and/or nursery production. Elevation the county ranges from sea level to about 340 feet above sea level near NY route 25. The landforms at the higher elevations were deposited by the last glacier as a terminal moraine. The landscape of Nassau County has changed dramatically over the last 70 years. Extensive housing developments, shopping centers, industrial complexes and business corridors now dominate in areas where there were once vast tracts of farmland. The main

<sup>35</sup> Newsday, Inc., Long Island; Our Story, (1998).

relatively undisturbed open areas are in the extreme northern and southern parts of the county. These included privately held horse and vegetable farms, abandoned farms and large estates. The potential available farmland left open for agriculture is estimated to be at least 500 acres.<sup>37</sup>

The soil units making up the area of Nassau County in western Long Island are as follows:

# 1) Ipswich-Udipsamments

These soils are dominant nearly level, very poorly drained, organic soils and nearly level, moderately well drained to excessively drained course-textured soils on tidal flats. This unit makes up approximately 6.9% of the county. The Ipswich soils are very poorly drained and are in flat areas inundated by salt-water at high tide. Most of the acreage of the Ipswich soils supports a cover of saltwater-tolerant grasses and reeds. The Udipsamments support a combination of brush and drought-tolerant grasses and weeds.38

#### 2) Montauk-Enfield

These soils are nearly level to strongly sloping, well-drained, medium textured and moderately coarse textured on knolls and hills. The Montauk soils have a surface layer of dark grayish brown silt loam or fine sandy loam. The subsoil is yellowish brown gravelly loam or sandy loam. The Enfield soils have a surface layer of dark brown silt loam. The subsoil is yellowish brown silt loam.39

<sup>36</sup> Soil Survey of Suffolk County, NYS Soil Conservation Service, USDA (1975).

<sup>37</sup> Cornell Cooperative Extension, Nassau County (2000).

<sup>38</sup> Soil Survey of Nassau County, NYS Soil Conservation Service, USDA (1987).

<sup>39</sup> Ibid.

# 3) Riverhead-Enfield-Urban Land

These soils are dominantly nearly level to strongly sloping, well-drained, moderately coarse textured and medium textured soils on low hills and ridges. These soils make up about 10 % of the county. The Riverhead soils have a surface layer of brown sandy loam. The subsoil is strong brown or yellowish brown sandy loam. The Enfield soils have a surface layer of dark brown silt loam. The subsoil is yellowish brown silt loam.40

# 4) Riverhead-Plymouth

These soils are dominantly moderately steeped, well drained and excessively drained, moderately coarse textured and coarse textured soils on hillsides. These soils make up about 4.2% of the county and are located mainly near drainageways and hillsides that generally are adjacent to bays and Long Island Sound. The Riverhead soils are well drained and dominantly moderately steep. They have a surface layer of brown sandy loam. The Plymouth soils are excessively drained and are located on hillcrests and steep side slopes. They have a surface layer of light brown loamy sand and subsoil of brown or yellowish brown loamy sand. They are very sandy and frequently require irrigation.41

# 5) Udipsamments-Beaches-Urban Land

These soils are dominantly nearly level or gently sloping excessively drained to moderately well drained, coarse textured soils. Many are located on barrier beaches. These soils make up about 3.5% of the county. The Udipsamment soils are thin, dark and grayish brown, with a surface layer of loamy sand. The beach soils are sandy areas subject to constant wave action mostly from the Atlantic Ocean.42

<sup>40</sup> Ibid.

<sup>41</sup> Ibid.

<sup>42</sup> Ibid.

# 6) Hempstead-Urban Land

These soils are nearly level, well drained, medium textured soils on plains. They make up approximately 10 % of the county. The Hempstead soils are in most open parks, lawns and open space areas. The soils have a surface layer of dark brown silt loam. The upper part of the subsoil is dark brown silt loam and the lower part is yellowish brown silt loam.43

# 7) Montauk-Riverhead-Urban Land

These soils are nearly level to strongly sloping, well-drained medium textured and moderately coarse textured soils on low hills. They make up about 9 percent of the county. The Riverhead soils have a surface layer of brown sandy loam with subsoil of strong brown and yellowish brown fine sandy loam. The Montauk soils have a surface layer of dark grayish brown silt loam with subsoil of yellowish brown gravelly loam and sandy loam. Most of this acreage is in urban use.44

#### 8) Riverhead - Urban Land

These soils are on dominantly urban land and are nearly level, well drained and moderately coarse textured located on plains. This unit makes up about 20.5 % of the county. The Riverhead soils occupy most of the open land and have a surface layer of brown sandy loam. The subsoil is strong brown and yellowish brown sandy loam.45

# 9) Udipsamments-Sudbury-Urban Land

These soils are dominantly urban land and nearly level, excessively well drained to moderately well drained coarse textured and moderately coarse textured soils on plains. This unit makes up about 11.2% of the county. The Sudbury soils are moderately well drained and are located in relatively undisturbed areas. They have a surface layer of brown fine sandy loam with a subsoil of yellowish

<sup>43</sup> Ibid.

<sup>44</sup> Ibid.

<sup>45</sup> Ibid.

brown sandy loam and a loamy sand that is mottled in the lower part. Most of this acreage is in urban use.46

# **Nassau County Soil Series**

The soils series located within the about soil unit areas of Nassau County on Long Island are listed (with their corresponding soil survey map symbol) as follows:

#### **Atsion Series**

Consists of very deep, poorly drained soils that formed in deposits of deep glacial outwash. Slopes range from 0-2%.

# **Berryland Series**

Consists of very deep, very poorly drained soils formed in deposits of sandy glacial outwash. The soils are in drainageways and swampy areas that are wet or waterlogged most of the year.

#### **Enfield Series**

Consists of very deep, well-drained soils that formed in a mantle of eolian or water-laid deposits that overlie deposits of gravel and sand. These silts are on side slopes and tops of outwash plains. Slopes range from 0-8%.

#### **Freetown Series**

Consists of very deep, very poorly drained soils that formed in deposits of well-decomposed organic material. Freetown soils are in broad depressions. Slope is less than 1%.

#### **Hempstead Series**

Consist of very deep, well-drained soils on outwash plains. The soils formed I a loamy mantle overlying stratified sand and gravel. Slope is from 0-3%.

# **Ipswich Series**

Consists of very deep, very poorly drained soils formed in partially decomposed organic material from salt-tolerant plants. These soils are in tidal marshes near the ocean. Slope is 0-1%.

#### Manahawkin Series

Consists of very deep, very poorly drained soils formed in organic deposits overlying sandy mineral material. These soils are located on broad depressions and in basin-like swamps.

#### **Matunuck Series**

Consist of very deep, very poorly drained soils that have a thin organic mantle overlying thick sandy deposits. These soils are near the ocean tidal marshes.

#### **Mineola Series**

Consist of very deep, moderately well drained soils on outwash plains. The soils are formed in a thin loamy mantle overlying stratified sand and gravel. Slopes range from 0-3%. 47

#### **Montauk Series**

Consist of very deep, well-drained soils on upland hills and ridges. These soils formed in loamy glacial till that is more compact than nearby glacial outwash deposits.

#### **Pawcatuck Series**

Consist of very deep, very poorly drained soils that formed in partially decomposed organic deposits derived from salt-tolerant plants. These soils are in tidal marshes. Slope is less than 1%.

# **Plymouth Series**

Consist of very deep, excessively drained soils that formed in sandy glacial outwash deposits. The Plymouth soils are on outwash plains and low morainic hills and ridges.

#### **Riverhead Series**

Consist of very deep, well-drained soils that formed in glacial outwash deposits. The soils are on crests and side slopes of low morainic hills and on the tops and sides of outwash plains. Slope ranges from 0-35%.

#### **Scio Series**

Consist of very deep, moderately well drained soils that formed in deposits with a large amount of silt or very fine sand. These soils are in basins that contained preglacial lakes. Slope ranges from 0-8%.

# **Sudbury Series**

Consist of very deep, moderately well drained soils on outwash plains. The soils formed in a thin loamy mantle and underlying deposits of sand and gravel outwash. Slope ranges from 0-3%.

#### **Udifluvents**

Consist of very deep, well-drained and moderately well drained soils that formed in recent alluvium. They are located on flood plains along the larger drainage channels, most of which drain toward the north shore. Slope ranges from 0-3%.48

#### **Udipsamments**

Consist of very deep, excessively drained to moderately well drained acid soils. The soils are mostly loamy sand or sand and are commonly in areas of manmade cuts or fills. Slope ranges from 0-60%.

## **Wallington Series**

Consist of very deep, somewhat poorly drained soils formed in water-laid deposits that have a high content of silt and very fine sand. The soils are in basins in small lake plains. Slope ranges from 0-3%.

# **Walpole Series**

RdC – Riverhead sandy loam

Consist of very deep, poorly drained and somewhat poorly drained soils on low outwash plains. These sols formed in a thin loamy mantle overlying water-deposited layers of sand and gravel. Slope ranges from 0-2%.

# Soil Types and their Symbols in Nassau County 49

At – Atison loamy sand - very deep and nearly level and poorly drained Bc – Beaches - strips of nearly level or sloping sand and gravel Bd – Berryland mucky loamy sand - very deep, nearly level and very poorly drained Du – Duneland-Udipsamment - mounds and knolls of wind-deposited sand EnA –Enfield Silt Loam - very deep, nearly level and well drained 0-3% slope EnB – Enfield Silt Loam - very deep gently sloping well drained 3-8% slope Fr – Freetown muck - very deep, level and very poorly drained He – Hempstead silt loam - deep and well drained, black silt loam Ip – Ipswich mucky peat - very poorly drained near tidal areas Ma – Manahawkin muck - very deep and poorly drained, dark gray muck Mc – Matunuck mucky peat - very deep and poorly drained in tidal areas MfA – Montauk fine sandy loam - very deep nearly level fine sandy loam 0-3% slope MfB – Montauk fine sandy loam - very deep gently sloping fine sandy loam 3-8% slope MfC – Montauk fine sandy loam - very deep strongly sloping sandy loam 8-15% slope MfD – Montauk fine sandy loam - very deep moderately steep dark gray loam 15-25% slope MkA – Montauk silt loam - very deep nearly level brown silt loam 0-3% slope MkB – Montauk silt loam - very deep gently sloping brown silt loam 3-8% slope Pa- Pawcatuck mucky peat - poorly drained muck near tidal marshes PiB- Plymouth loamy sand - deep and excessively drained 3-8% slope PiC – Plymouth loamy sand - deep strongly sloping loamy sand 8-15% slope PrD Plymouth –Riverhead complex - very deep and steep soils 15-35% slope RdA – Riverhead sandy loam - very deep nearly level sandy loam 0-3% slope RdB – Riverhead sandy loam - very deep gently sloping 3-8% slope

- very deep well drained sandy loam 8-15% slope

RdD – Riverhead sandy loam - very deep, moderately y steep sandy loam 15-25% slope

Sc – Scio silt loam - very deep nearly level dark gray loam 0-3% slope

SdA – Scio silt loam - very deep nearly level silt loam 0-3% slope

SdB – Scio silt loam - very deep and well drained silt loam 3-8% slope

Su – Sudbury sandy loam - very deep and well drained silt loam near drainageways

UdA – Udipsammanets, nearly level - manmade fills and borrow areas mostly grass covered

Uh – Urban land-Hempstead - black silt loam mostly in urban areas

Um – Urban land Mineola - black silt loam mostly urban areas

Wa – Wallington silt loam - very deep poorly drained grayish brown loam

Wd – Walpole fine sandy loam - very deep nearly level dark gray brown sandy loamso

# **Suffolk County Soils**

The following information was taken from the Soil Survey of Suffolk County, NYS Soil Conservation Service, USDA (1975).

Suffolk County occupies an area of approximately 566,466 acres or about 885.1 square miles. 51The county is approximately 86 miles long and 21 miles wide at its widest point. Presently Suffolk is the leading agricultural county in New York, based on the wholesale value of crops, with over 30,000 acres of farmland currently under cultivation. It is also estimated that an additional 5,858 acres of open and/or privately held estate land could also be used for agricultural production. The soils of Suffolk County were formed in the same way as those of Nassau County – from mineral materials, most of, which were deposited as a result of glaciation during the Wisconsin Age.

The mineral materials are derived mainly from granite and are largely quartz sand. Most of the material carried by the glaciers were sand and well-rounded gravel, which was redeposited on a broad plain in front of the terminal moraine. These stratified sand and gravel deposits make up the substratum of most of the soils in the county. The lightest soils are located at the extreme north and south borders near the Long Island Sound and the Atlantic Ocean respectively. The heaviest soils in Suffolk County as is also

<sup>49</sup> Ibid.

<sup>50</sup> Ibid.

<sup>51</sup> Long Island Business News, 1999 Long Island Almanac, (33<sup>rd</sup> ed.).

the case with Nassau, are located in the southern areas, and run in an east-west direction. The northern areas of Suffolk has soils that contain less silt and more sand in the loam complex. This difference is seen distinctly where the North and South Forks split at Riverhead. As outlined in the previous 2 AVA's of Long Island, the soils of the North Fork are lighter, more well-drained and require more irrigation than do the heavier soils of the South Fork which contain higher levels of silt and clay. Except for this difference, the soils of Long Island are fairly uniform in that they are predominately glacial till and glacial outwash in nature, are very low in organic matter and contain few if any large mineral deposits or exposed rock formations.

#### **Suffolk Soil Associations**

# 1) Carver-Plymouth-Riverhead Association

These soils make up 11 % of the county and are deep, rolling excessively well drained and well drained, coarse textured and moderately coarse textured located on moraines.

#### 2) Haven-Riverhead Association

These soils make up 26% of the county and consist of deep, nearly level to genbtly sloping areas, well-drained, medium textured and moderately coarse textured soils on outwash plains.

# 3) Plymouth-Carver Association, Rolling and Hilly

This association makes up 19% of the county and consist s of deep, excessively drained, coarse-textured soils on moraines

# 4) Riverhead-Plymouth-Carver Association

This association makes up 21% of the county and consist of deep, nearly level to gently sloping areas, well-drained and excessively well-drained, moderately coarse textured and coarse textured soils on southern outwash plains

# 5) Dune land-Tidal marsh-Beaches Association

This association makes up 4 % of the county and consists of sand dunes, tidal marshes and beaches of the barrier beach and south shore

# 6) Bridgehampton-Haven Association

This association makes up 5 % of the county and consists of deep, nearly level to gently sloping areas, well-drained to moderately well-drained, medium textured soils on outwash plains 52

## 7) Montauk-Haven-Riverhead Association

This association makes up 5 % of the county and consists of deep, nearly level to strongly sloping, well-drained to moderately well-drained, moderately coarse textured and medium-textured soils on moraines

# 8) Montauk, sandy variant-Plymouth Association

This association makes up 3 % of the county and consists of deep, rolling and hilly areas, excessively drained; coarse textured soils located on moraines.

# 9) Montauk-Montauk, sandy variant-Bridgehampton Association

This association makes up only 1 % of the county and consists of deep, rolling And hilly areas, excessively drained and moderately well drained to well drained, Medium textured to coarse-textured soils on moraines.

# 10) Plymouth-Carver Association, Nearly Level and Undulating

This association makes up 5 % of the county and consists of deep, excessively drained; coarse textured soils on outwash plains.53

# **Suffolk County Soil Series 54**

The soils series located within the about soil unit areas of Suffolk County on Long Island are listed (with their corresponding soil survey map symbol) as follows:

#### **Atison Series**

Consist of deep, level, somewhat poorly drained coarse textured soils formed in deep sandy outwash deposits. Located on plains adjacent to ponds, creeks and tidal areas.

## **Berryland Series**

Consist of deep, very poorly drained coarse textured soils formed in deep sandy outwash deposits.

# **Bridgehampton Series**

Consist of deep, well drained to moderately well drained medium textured soils that formed in thick silt deposits over coarse sand and gravel. Slope is 0-12%.

#### **Canadice Series**

Consist of deep, nearly level, poorly drained soils that have a medium textured surface layer and moderately fine textured subsoil. They have a high seasonal water table.

#### **Carver Series**

Consist of deep, excessively drained coarse-textured soils, nearly level to steep on rolling moraines and broad outwash plains. Slope ranges from 0-35%.

<sup>52</sup> Soil Survey of Suffolk County, NYS Soil Conservation Service, USDA (1975).

<sup>53</sup> Ibid.

<sup>54</sup> Ibid.

#### **Deerfield Series**

Consist of deep, moderately well drained coarse textured soils that formed in sand or loamy sand materials over deep layers of sand or gravel. Primarily an outwash plain.

# **Haven Series**

Consist of deep, well-drained medium textured soils that formed in a loamy or silty mantle over stratified sand and gravel. Slopes range from 0-12%.

#### **Montauk Series**

Consist of deep, well drained to moderately well drained soils that formed in fine sandy loam or in a mantle of silt and loam. They are on terminal moraines and slope ranges from 0-15%.

# **Plymouth Series**

Consist of deep, excessively well drained coarse textured soils formed in a mantle of loamy sand over thick; layers of sand and gravel. They have very low available moisture and frequently require irrigation.55

# **Raynham Series**

Consist of deep, poorly drained to somewhat poorly drained medium textured soils that formed in loam, very fine sandy loam or silt loam. Found around tidal marshes and creeks of the south shore.

#### **Riverhead Series**

Consist of very deep, well-drained soils that formed in glacial outwash deposits. The soils are on crests and side slopes of low morainic hills and on the tops and sides of outwash plains. Slope ranges from 0-35%.

#### Scio Series

Consist of very deep, moderately well drained soils that formed in deposits with a large amount of silt or very fine sand. These soils are in basins that contained preglacial lakes. Slope ranges from 0-8%.

#### **Sudbury Series**

Consist of very deep, moderately well drained soils on outwash plains. The soils formed in a thin loamy mantle and underlying deposits of sand and gravel outwash. Slope ranges from 0-3%.

#### **Wallington Series**

Consist of very deep, somewhat poorly drained soils formed in water-laid deposits that have a high content of silt and very fine sand. The soils are in basins in small lake plains. Slope ranges from 0-3%.

#### Walpole Series

Consist of very deep, poorly drained and somewhat poorly drained soils on low outwash plains. These sols formed in a thin loamy mantle overlying water-deposited layers of sand and gravel. Slope ranges from 0-2%.

#### Wareham Series

Consist of deep, somewhat poorly drained coarse textured soils. Found around tidal marshes and creeks along the south shore

#### **Whitman Series**

Consist of deep, very poorly drained moderately coarse textured soils that contain a fragipan at a depth of 10-20 inches. These soils are found at Montauk Point.56

#### Soil Types and their Symbols in Suffolk County 57

At - Atison sand

Bc - Beaches

Bd - Berryland Mucky sand

BgA - Bridgehampton silt loam, 0-2% slope

BgB - Bridgehampton silt loam, 2-6% slope

BhB - Bridgehampton silt loam, till substratum 2-6% slope

BhC - Bridgehampton silt loam, till substratum 6-12% slope

Bm - Bridgehampton silt loam, graded

Ca - Canadice silt loam

CpA - Carver and Plymouth sands, 0-3% slopes

CpC - Carver and Plymouth sands, 3-15% slope

CpE - Carver and Plymouth sands, 15-35% slope

CuB - Cut and fill land gently sloping

CuC - Cut and fill land sloping

CuE - Cut and fill land steep

De - Deerfield sand

Du - Dune land

Es - Escarpments

Fd - Fill land, dredged Material

Fs - Fill land sandy

HaA - Haven loam 0-2% slopes

HaB - Haven loam 2-6% slopes

HaC - Haven loam 6-12% slopes

He - Haven loam thick surface layer

MfA - Montauk fine sandy loam, 0-3% slopes

MfB - Montauk fine sandy loam, 3-8% slopes

MfC - Montauk fine sandy loam 8-15% slopes

MkA - Montauk silt loam 0-3% slopes

57 Ibid.

- MkB Montauk silt loam 3-8% slopes
- MkC Montauk silt loam 8-15% slopes
- MIB Montauk soils graded 0-8% slopes
- MIC Montauk sols graded 8-15% slopes
- MnA Montauk loamy sand, sandy variant, 0-3% slopes
- MnB Montauk loamy sand, sandy variant 3-8% slopes
- MnC Montauk loamy sand, sandy variant, 8-15% slopes
- MnE Montauk loamy sand, sandy variant 15-35% slopes
- Mu Muck
- PIA Plymouth loamy sand, 0-3% slopes
- PIB Plymouth loamy sand, 3-8% slopes
- PIC Plymouth loamy sand, 8-15% slopes
- PmB3 Plymouth gravelly loamy sand, 3-8% slopes eroded
- PmC3 Plymouth gravelly loamy sand, 8-15% slopes, eroded
- PsA Plymouth loamy sand, silt substratum, 0-3% slopes
- PsB Plymouth loamy sand, silty substratum, 3-8% slopes.
- Ra Raynham loam
- Rc Recharge basin
- RdA Riverhead sandy loam, 0-3% slopes
- RdB Riverhead sandy loam 3-8% slopes
- RdC Riverhead sandy loam 8-15% slopes
- ReB Riverhead very stony sandy loam, 3-8% slopes
- ReC Riverhead very stony sandy loam 8-15% slopes
- RhB Riverhead and Haven soils, 0-8% slopes
- RhC Riverhead and haven soils 8-15% slopes
- RpE Riverhead and Plymouth soils graded, 15-35% slopes
- ScB Scio silt loam, till substratum, 2-6% slopes
- SdA Scio silt loam, sandy substratum, 0-2% slopes
- SdB Scio silt loam, sandy substratum, 2-6% slopes
- Su Sudbury sandy loam
- Tm Tidal Marsh
- Ur Urban Land

Wa - Wallington silt loam, till substratum

Wd - Walpole sandy loam

We - Wareham loamy sand

Wh - Whitman sandy loam 58

The soils of the Long Island region share a common origin. This is evident in the fact that many of the soil series including the Wallington, Sudbury, Scio, Montauk, Plymouth and Riverhead Soil Series are common both in Nassau and Suffolk Counties. 59 The soils are all glacial in origin, having been deposited relatively recently in geologic terms. It is well understood by many in various agricultural fields, that Long Island contains some of the finest soil to be found anywhere in the world. It is also clear by the types of agriculture present, that these soils do not exist in the areas immediately removed from Long Island. As the following information will show, the origin of Long Island is completely unique and its geologic history quite different from the areas bordering it.

## **Geology of Surrounding Areas**

The following information was provided by the Brooklyn College Dept. of Geology (2000) and Hunter College Dept. of Geography (2000).

### The Highland Basin

The Highland Region is the area located immediately to the west-northwest of Long Island and encompasses the areas of northern New Jersey, the Hudson Highlands region of southern New York (including Manhattan, Westchester, the Bronx, and parts of Brooklyn and Staten Island), and upland parts of Connecticut. The region is a rugged, hilly to mountainous terrain, bearing the characteristic scars of Pleistocene glaciation. The rocky outcrops visible on hillsides and along stream banks consist mostly of ancient gneiss and schist (highly metamorphosed sedimentary and igneous rocks) that were once buried many miles below the earth's surface. 60

<sup>58</sup> Ibid.

<sup>59</sup> Ibid.

<sup>60</sup> Brooklyn College, Dept. of Geology - http://geography.hunter.cuny.edu/bight/highland (2000).

Current understanding is that the age of the earth is about 4.6 billion years old, with the oldest known rocks on Earth's surface dated at about 3.8 billion years. 61 The oldest rocks in the New York Bight region are found in surface outcrops throughout the Highlands region. These exposures of Precambrian rock have been estimated at 1.3 to 1.1 billion years old. 62 These rocks underlie younger rocks throughout much of the area, and have undergone a high degree of alteration since their formation. The early stages of alteration occurred in a mountain-building episode that affected the entire eastern margin of North America. This mountain-building episode is collectively known as the Grenville Orogeny, which ended roughly a billion years ago. During this period older rocks and sediments were subjected to deep burial and metamorphic alteration.

A long period of uplift and erosion followed the Grenville Orogeny; later periods of mountain building related to the formation of the Appalachian Mountains also contributed to the alteration and tectonic deformation of these rocks.

Before and during this orogeny, sedimentary deposits formed on the margins of both the North American continent, and within an intervening deep marine basin. Today, these sedimentary rocks form the core of the Taconic Mountains (east of the Hudson River, generally north of the Tappan Zee Bridge). As with most mountain-building episodes vulcanism occurred concurrently with tectonism. Igneous deposits occurred throughout the New England region. Heat and pressure associated with deep burial and tectonics converted sedimentary and igneous rocks to metamorphic rocks (marble, quartzite, phyllite, schist, and gneiss). 63

A second event, the Acadian Orogeny, began in early Devonian time (about 410 million years ago) and ended at the beginning of Mississippian time (about 350 million years ago). 64 This orogeny is also associated with the collision and accretion of a smaller landmass (the Avalon Terrane) in the northern New England region, however, tectonic deformation associated with this event (particularly faulting and folding) affected much of the entire New York Bight region. A final mountain building episode, called the Appalachian Orogeny, began about 310 million years ago, and was the result of continental collision between North America and Africa. This resulted in partial formation of the supercontinent

<sup>61</sup> Ibid.

<sup>62</sup> Ibid.

<sup>63</sup> Ibid.

<sup>64</sup> Ibid.

Pangaea.65 The Appalachian Orogeny (or Alleghany Orogeny) is responsible for the formation of the folded and faulted mountain belt that extends from southern New York southward into Alabama and beyond. The orogeny ended during the Permian Period (about 250 million years ago). The Appalachian mountain building event created a vast mountain range and further deformed and metamorphosed rocks previously altered by earlier mountain building episodes. Cambrian, Ordovician, and Silurian ages are represented. 66

#### The Newark Basin and Atlantic Basin

The Newark Basin and Atlantic Basin are the regions located directly to the northeast and south west of the Long Island region. The Newark Basin (New Jersey and Pennsylvania) and the Connecticut River Basin are both "aborted rift" basins (basins that are no longer actively widening via rift-style tectonism). Both basins contain characteristic sedimentary sandstones and mudrocks that usually bear a red or brownish appearance from an abundance of iron oxide minerals (hematite and limonite). Fossils are not abundant, but early Mesozoic dinosaur skeletons and trackways have been found. Freshwater shell material and poorly preserved fish and plant remains are also found in some areas. All of these geologic formations are nowhere to be found in the Long Island region.67

Both the Newark and Connecticut River basins contain "traprocks." Traprocks are mineral-rich volcanic rocks. Their resistance to erosion (relative to the surrounding sandstone and shale) produces elevated regions above the surrounding terrain. They form the core of gently dipping cuestas throughout the Mesozoic basins along the Atlantic Margin. The volcanic rocks formed in three ways:

- 1. The igneous material intruded upward between sedimentary layers forming sills and stocks, cooling in the subsurface. The classic example of a volcanic sill is the Palisades along the western side of the Hudson River.
- 2. The volcanic material extruded on the surface as surface flows. Most of the Watchung

  Mountains throughout central New Jersey are examples of extrusive igneous rocks, displaying

<sup>65</sup> Ibid.

<sup>66</sup> Ibid.

<sup>67</sup> Hunter College. Dept. of Geography - http://geography.hunter.cuny.edu/bight/newark (2000).

characteristic columnar jointing and stacked lava flows.

• 3. The volcanic material erupted beneath the surface of a lake or inland sea flooding the basin area. The lava spread as submerged flows, chilling quickly when in contact with water forming "pillows" and complex flow structures, similar to submarine flows on Hawaiian volcanos or along mid-ocean spreading centers. Examples of pillow lava flows include parts of the Watchungs, particularly in the vicinity of Paterson and Morristown, New Jersey. 68

Through Triassic into early Jurassic time sediments accumulated in the broad Newark rift valley, burying the broken and eroded surface of the Piedmont region. Along the western side of the Newark Basin a great fault system marks the western side of this ancient valley/basin. The largest of these, the Ramapo Fault, forms the western edge of the Newark Basin trending northeastward across northern New Jersey into New York. This fault is responsible for the separation between the sedimentary terrain of the Newark Basin and the ancient rocks that rise on the western side of the fault in the Atlantic Highland. While the Newark Basin was forming sediments were carried into the valley by streams (possibly intermittent streams during times of desert-like climate conditions). The sediments were deposited on alluvial fans and on shallow water deltas the spread from the surrounding upland areas into lakes that grew and shrank with changing climatic conditions. Volcanism occurred intermittently, both as intrusions in the subsurface and flows on the surface. Through time sediments accumulated to great depths. Today as much as 11,000 feet (or more) of sedimentary rock and volcanic material of Newark Basin probably exists beneath the western side of the basin. 69

Whereas the Newark Basin rift system became inactive in Jurassic time, the Atlantic Basin continued to grow wider, eventually becoming the Ocean Basin as it exits today. In the early stages of marine flooding in Latest Triassic time the Atlantic Basin was probably similar to the modern Red Sea. The margin of the widening ocean basin probably developed large fringing reefs. However, as the region began to become more humid from the influence of the widening ocean basin, and as river systems began to develop along the coastal margin, the reefs eventually were smothered by an ever-increasing supply of sediment. Today the Baltimore Canyon Trough, a great sedimentary basin that parallels the trend of the continental shelf. The Jurassic reefs existed along the ancient continental shelf, the edge of

<sup>68</sup> Ibid.

<sup>69</sup> Ibid.

the North American continental block adjacent to the deeper water of the Atlantic Ocean region. The reef is currently buried beneath many thousands of feet of Cretaceous, Tertiary, and Quaternary sediments, 70

The ridges of resistant volcanic rock of the Palisades and the Watchung Mountains display steep cliffs on their eastern flanks and gentle slopes on their western flanks. This is an indication of the gentle dipping character of the strata towards the deeper western side of the basin. When the sediments were originally deposited there were probably very nearly flat-lying. The structural dip of the rock probably developed through time as the basin continued to grow with the passage of time, even long after the youngest sediments of the basin were deposited. Mesozoic basins exist all along the eastern margin of North America. They may have been continuous or intermittently connected through time, similar to the basins in the Great Basin region of the western United States, however, late Mesozoic and younger structural changes and erosion has stripped away much of these deposits. The Newark and Connecticut River basins were probably part of the same large structural and sedimentary basin. 71

Clearly from the information understood in the formation of these regions, the areas to the north, west and south of Long Island were formed and developed through geologic processes that were far different from those that existed on, and gave birth to, the region of Long Island. 72

<sup>70</sup> Ibid.

<sup>71</sup> Ibid.

<sup>72</sup> Ibid.

### Soils of Surrounding Areas

#### Queens

The soils of Queens County, which directly borders the proposed Long Island AVA, are similar in type and series to those of western Nassau County, although it is in this area where the soils begin to become distinct. The area of bedrock under the subsurface becomes much closer to the surface. 73 This is evident in the larger rock formations, which are visible to the naked eye in many areas of Queens, but seen very rarely in Nassau and Suffolk Counties. Eventually, the soils become completely dissimilar as Queens drops off into the East River, where the areas of the Highland and Newark Basins all merge. The area of the tall, rocky Palisades cliffs, seen from the George Washington Bridge, is testament enough to the vast difference between this area and the rest of Long Island. Most of this discussion is however mute, as the region of Queens County (part of New York City) is completely urbanized and contains little if not any agricultural land. Agriculture is any form in Queens, is sadly a relic of the past; there is no prospect for any viticultural industry in this region. For all of the above reasons, this is the logical and most practical boundary for the Long Island AVA.

## Soils of New Jersey

The following information was provided by the New Jersey Geological Survey (2000).

Broadly defined, all of New Jersey's soils are podzolic soils; that is, they are acidic and contain fairly high amounts of iron oxides. The soils in northern New Jersey are irregular in quality and contain rock fragments and small stones deposited by the continental glaciers of the last Ice Age. The soils of the inner coastal plain, unaffected by glaciation, are the richest in the state, while those of the outer coastal plain are generally infertile. The newer soil classification system developed by the United States Department of Agriculture describes the state's Appalachian areas as inceptisols, while the coastal plain is characterized as ultisols, common to the Southeast United States.74

Many New Jersey soils, especially those in the northern region, have a close conformity to the underlying bedrock. Unlike Long Island soils, many of the soils of New Jersey were not entirely formed

<sup>73</sup> Soil Survey of Nassau County, NYS Soil Conservation Service, USDA, (1987).

<sup>74</sup> New Jersey Geological Survey http://www.state.nj.us/dep/njgs (2000).

from the movement of outside forces (re: glaciation). Glacial soils do predominate in many areas of the state, especially in the southern sections. Age of the glacial deposits are different from Long Island, particularly as limestone is widely prevalent, having been leached to depths of 2-3 feet. When limestone is preserved within the upper 2-3 feet of soil, it has a direct effect on the silt as well as the plants growing in them. 75

In the areas closest to Long Island in northern New Jersey, the soils show closer association with the underlying bedrock material and less association to glacial activity. For example, on the slate shale ridges, drift is comprised mainly of slately shale, and on red sandstone ridges it is of mainly red sandstone. Both of these minerals are not commonly found on Long Island. In valley areas, there is a tendency to have a mixture of materials derived from many kinds of rocks with stratified deposits.

The Passaic Basin is a low-lying area with rises of trap-rock and shale, with most of the soils tending to be wet and poorly drained. Moving south to Cape May, the soils of New Jersey tend to become more sandy loam and moderately to very well drained. Throughout the state however, there is a distinct difference between parent rock materials found there as compared to Long Island. The predominance of shale, slate and most particularly limestone highlight the major geologic difference between Long Island and New Jersey. This difference in parent material causes many of the New Jersey soils to be substantially more calcareous in nature, hence having a higher soil pH than Long Island soils. This geology also carried through to the areas of the Highland Basin in Westchester County, The Bronx and Yonkers, NY. The dominant character of these soils is not so much of glacial movement and formation as it as sedimentary upheaval and tectonic movement.

<sup>75</sup> Rutgers University, New Jersey Soils, New Jersey Agricultural Experiment Station, Circular 601, (2000).

## Soil Groups of New Jersey 76

The following notes give some indication of the nature of the Soil Groups of New Jersey and how they differ from their Long Island counter-parts:

Name	Surface Texture	Geologic Materials
1) Wallpack	Loams and stony loams	gray sandstone till; calcareous
2) Cattaraugus-wartswood	Sandy loam; stony sandy loam	Red/gray acid sandstone
3) Nassau-Dutchess	Loams and slaty loams	Gray acid, slaty-shale
4) Palmyra-Squires	Loam	Glacial drift high limestone
5) Rockaway	Sandy loam and stony areas	Glacial – crystalline rocks
6) Wethersfield	Loams	Acid red shale and sandstone
7) Holyoke	Silt loam and stony loam	Glacial till in dark crystalline rock
8) Muck	Organic	underlain by glacial deposits
9) Whippany	Silt loams to fine sandy loam	Acid, glacio-lacustrine outwash
10) Dunellen	Sandy Loam	Glacial outwash red shales
11) Annandale	Loam and stony loam	Acid glacial till
12) Washington	Loam and silt loam	Calcareous glacial drift
13) Norton	Loam and silt loam	Red acid shale and limestone
14) Penn	Loam and silt loam	Red shale and sandstone
15) Montalto	Silt loam and stony silt loam	Dark crystalline rock
16) Lansdale	Loams	Gray acid sandstone
17) Croton	Silt loam	Gray argillite and shale
18) Sassafras	Sandy loams/loams	Acid sandy textured deposits
19) Sassafras/Hammonton	Loamy sands	acid, coarse marine sands

<sup>76</sup> Ibid.

20) Sassafras/Cape May	Loamy sands and sandy loams	Coarse acid marine sands
21) Sassafras-Keyport	Sandy loams and silt clay loams	Acid sands and clays
22) Aura	Silt loam to fine sandy loam	Acid glacio-fluvial marine deposits
23) Greenwich	Fine sandy loam to silt loam	Acid glacio-fluvial marine deposits
24) Freehold-Collington	Loam and sandy loam	Acid marine sands
25) Lakewood	Sands	Very coarse marine deposits
26) St. Johns	Sand	Coarse acid sands
27) Colts Neck	Loam to sandy loam	Reddish iron-stained sands
28) Tidal Marshes	Organic 77	

Although the state of New Jersey shares some common glacial history with Long Island, it is clear from the data presented that the soil and geology of New Jersey is quite different from that of the region of Long Island. None of the soil types found on Long Island are found anywhere in New Jersey. The geologic history of the soil formation of New Jersey also differs in many ways from Long Island, most particularly in the degree of sedimentary rock and volcanic activity, which was not ever part of the geologic history of Long Island. Although some glacial soils are found in New Jersey, they are often layered over large bedrock areas and are often calcareous in nature – also differing greatly from the soils of Long Island.

<sup>77</sup> Ibid.

## **Westchester County and Upstate New York Geology**

As described earlier, the area of Westchester County is located in the Highland Basin region of southern New York and is the area nearest Long Island with the exception of New York City.

The following is an excerpt from, A Guide to the Geology of Westchester County, NY, SUNY Purchase, (1991).

The geologic history of Westchester County is largely the geologic history of the Manhattan Prong, which extends from New England through Westchester to the southern tip of Manhattan. The landscape and rock types of this region are a result of complex geologic processes that began more than 1.3 billion years ago and continue today. Rocks exposed in Westchester record at least three episodes of mountain building and two major periods of volcanic activity. Millions of years of continuing erosion by water, wind and ice extensively eroded each mountain range, so that only the deep roots of these mountains now remain. The hills and hollows of Westchester are largely a result of the rocks that underlie them. These rock formations are known as the New York City Series. The higher ground is composed of the Fordham Gneiss and the Manhattan Schist, both highly resistant to erosion. Inwood marble underlies many of the valleys, now occupied by our small rivers including much of the Croton, Bronx and Saw Mill rivers. These valleys made excellent locations for the dams built in the last century to impound fresh water for the growing city of New York. Even the island of Manhattan owes its isolation to the low resistance of the Inwood Marble. The oldest rock unit in the Manhattan Prong is the Fordham Gneiss, named after its type locality in the Fordham Heights section of the Bronx. Directly to the north of Westchester lies the Taconic Mountain area.78

The Taconic Mountains are located east of the Hudson River Valley and are huge slices of crust that were thrust into that area from the east. The earth's crust in this region was "telescoped" when a volcanic island arc collided with the edge of the continent, causing the Taconian orogeny. This collision compressed the layered rock and sediment of the intervening sea, thrusting them westward onto the continent as huge, stacked -slices. The slices, which generally dipped east in a shingled arrangement, were contorted considerably in the process. When completed, the stack extended from New England past

<sup>78</sup> McGuire, Thomas, A Guide to the Geology of Westchester County, NY, SUNY Purchase, (1991).

the western edge of the Hudson Valley. In the Catskill Mountains, the western edge of this transported rock remains buried beneath Devonian rock. Erosion has reduced the original thrust sheets to patches, creating windows to the rock beneath. From the map enclosed, one can see the difference in the amount of Tectonic activity in upper New York State, versus virtually no tectonic activity at all on Long Island and in northern New Jersey.79

The northeastern United States has undergone more violent tectonic events over a longer period of time than any other region of the country. The basement rocks in this region record a long, complex Proterozoic history beginning with crustal stretching, ocean formation and marine sedimentation about 1.3 billion years ago and ending with the Grenville orogeny about 1.0 billion years ago. Erosion followed for a very long period; then a sequence of plate tectonic events began that was to add considerable territory to North America. Major events were the Taconian orogeny, caused by a collision with a volcanic island arc 460-440 m.y. (million years) ago; the Acadian orogeny, caused by a collision with a microcontinent called Avalon 410-380 m.y. ago; and the Alleghanian orogeny, caused by a collision with West Africa 330-250 m.y. ago. 80 At this point, the earth's continents were assembled as a supercontinent, Pangea. About 220 m.y. ago, a stretching event began that split Pangea and eventually formed the Atlantic Ocean, which is still growing as the modem continents continue to separate. All of this activity occurred millions of years before the formation of Long Island. It is one of the reasons that few if any fossils are found in the Long Island region. 81

Upper New York State soils are formed from much older parent material and are usually heavier in clay and silt and reside over large areas of bedrock. It is also quite common for tile and other artificial drainage mechanisms to be utilized for agriculture in Upstate New York: this type of drainage problem is non-existent on Long Island.82

79 Ibid.

<sup>80</sup> Ibid.

<sup>81</sup> Ibid.

<sup>82</sup> Ibid.

## Soils and Soil Groups of Westchester and Upstate New York

Since all of the soil groups and series found in New York State would be too numerous to mention, a general list of many of the soils found in Upstate New York is provided below. Most of these soils contain large amounts of clay and silt and are substantially heavier than their Long Island counter-parts. They are also typically higher in pH, containing greater amounts of limestone than the soils of Long Island. These soils include the following subgroups and their descriptions.

Soil types and series found in Westchester County include the following: 83

Brookfield, Charlton, Narragansett, Paxton, and Hollis.

Five soil management groups are currently being used for fertility and management recommendations in New York. The five groups are classified according to the texture of the surface and the subsoil. The groups are then subdivided on the basis of the parent material.

The following information is from the Cornell Cooperative Extension website (2000).

#### Soil Management Group I

The soils of management group I are medium- to fine-textured soils developed from lake sediments. They are heavy-textured, generally wet soils formed from lake or marine sediments deposited in glacial lakes. They are characterized by a very slowly permeable subsurface of silty clay to clay. This group is divided into two subgroups:

#### Subgroup IA

Fine-textured soils developed from clayey lake sediments. These are the heavy, generally wet soils formed from lake or marine sediments with silty clay loam to clay surfaces over heavier silty clay to clay subsoils. They contain little or no sand or gravel. The slope is generally level or nearly level, and the topography is level to undulating. The very slowly permeable profile and nearly level slopes make soil drainage and water management difficult but very important. Land smoothing and open ditches with good outlets are recommended. Cultural practices such as fall plowing, the incorporation of organic matter, and timely fitting operations at proper moisture conditions should be used to maintain good soil tilth and to obtain near-optimal crop yields.

Examples of group IA clayey soils are the moderately well drained **Vergennes**, the somewhat poorly drained **Kingsbury**, and the very poorly drained **Livingston** soils. Large acreages of this group occur in northern New York with limited acres in eastern New York and the Hudson Valley. 84

#### Subgroup IB

Medium- to fine-textured soils developed from lake sediments. These soils are formed from glacial lake or marine deposits and have a permeable, very fine sandy loam, silt loam, or silty clay loam surface over a more slowly permeable, heavy silty clay loam to clay subsurface. They differ from subgroup IA because they have a more sandy surface and usually more permeable subsoil. They generally occur on nearly level to gently sloping or rolling landscapes of the lower elevations near the lakes and along the Hudson River. The more rolling landscape makes surface water control and drainage easier than on nearly level areas, but it increases the erosion hazard. Water control is important in managing these soils for crop production.85

The **Hudson**, **Odessa**, and **Schoharie** series are examples of the well-drained and moderately well drained soils of the group. Other examples are the somewhat poorly and poorly drained **Caneadea**, **Canadice**, and **Rhinebeck** soils and the very poorly drained **Lakemont** soils.86

#### Soil Management Group II

The soils of group II are medium-textured to moderately fine-textured soils developed from calcareous glacial till, calcareous glacial till mixed with shale, or recent alluvium. There are three subgroups within this group. They are separated depending upon the parent material. 87

#### Subgroup IIA

Medium- to fine-textured soils developed from calcareous glacial till. These soils are found in areas of undulating to gently rolling topography in the central plains of New York. They are formed from

<sup>83</sup> Ibid

<sup>84</sup> Cornell Cooperative Extension, Ithaca, NY - http://wwwscas.cit.cornell.edu/forage/recommends/soils (2000).

<sup>85</sup> Ibid.

<sup>86</sup> Ibid.

strongly calcareous glacial till. The soil profile is slightly acidic to slightly alkaline in the surface and slightly alkaline to strongly alkaline in the subsoil.

Some examples are the well drained to moderately well drained Cazenovia, Hilton, Honeoye, Lima, and Ontario series; the somewhat poorly drained Appleton, Kendaia, and Ovid series; and the poorly drained Lyons and Romulus series.88

#### Subgroup IIB

Medium-textured to moderately fine- textured soils developed from slightly calcareous glacial till mixed with shale. These soils generally have a very fine sandy loam or silt loam surface over a heavy silt loam or silty clay loam subsurface. These soils occur on nearly level or slightly undulating to rolling landscapes and are generally located in the transition zone to the higher lime soils. The sloping landscapes often show signs of erosion, and erosion control practices are generally necessary. On more level or concave topography and finer-textured soils, drainage is a problem.89

Some examples are the well drained to moderately well drained Conesus, Lansing, Mohawk, and Nunda series. The somewhat poorly or poorly drained members include the generally finer-textured Burdett, Darien, and Manheim series.90

#### Subgroup IIC

Medium-textured soils developed in recent alluvium. These soils have developed on nearly level first bottomlands and are subject to spring floods. The better-drained soils are intensively used and highly productive for a wide variety of crops. They have a water-holding capacity of 5 to 9 inches of available water. These are among the most fertile soils in New York. Crops grown on these soils respond to practices that improve soil tilth and minimize soil compaction. 91

Examples are the well-drained **Chagrin**, moderately well drained **Teel**, and somewhat poorly drained **Wayland**.

<sup>87</sup> Ibid.

<sup>88</sup> Ibid.

<sup>89</sup> Ibid.

<sup>90</sup> Ibid.

<sup>91</sup> Ibid.

#### Soil Management Group III

There are two subdivisions in soil management group III. They are similar in most of their management requirements but can differ in parent material, slope, tillage, and erosion control practices. The soil management group III soils are medium in potassium supplying power and are a medium-textured silt loam in both the surface and the subsoil. 92

#### Subgroup IIIA

Moderately coarse textured soil developed from glacial outwash and recent alluvium. These soils generally have a sandy loam, gravelly loam, or gravelly silt loam surface and gravelly loam, loam, sand, or gravel subsurface. They occur on gravelly outwash plains in the valleys or on glacial kames or eskers. The majority are level to nearly level and are well suited to a variety of crops. Erosion and soil structure are generally not a problem. These soils contain about 4 to 7 inches of available water in the soil profile. Irrigation may be required for vegetable production or during dry years for field crops. 93

Examples are the well drained to moderately well drained Barbour, Braceville, Chenango, Howard, Kars, Palmyra, Phelps, and Tioga series. The somewhat poorly drained soils include the Fredon, Holly, and Red Hook series.

#### Subgroup IIIB

Medium-textured acid soils developed on glacial till. These soils contain shale, sandstone, slate, or schist-type rocks with little or no lime. They have a silt loam surface and a more dense or compacted silt loam subsoil with fragipan or hardpan at various depths below the surface. The depth to the fragipan determines the soil drainage characteristics (the deeper the pan, the better drained the soil. The entire profile contains few to many angular and (or) flat stones of various sizes. 94

<sup>92</sup> Ibid.

<sup>93</sup> Ibid.

<sup>94</sup> Ibid.

These include the Mardin, Valois, Langford, and Tunkhannock soils. The well-drained Lordstown and Oquaga soils occur on steeper slopes and are moderately deep to bedrock. The somewhat poorly and poorly drained soils such as Camroden, Ellery, Erie, Marcy, Morris, and Volusia occur on the longer slopes of the hillsides, on concave slopes, and near the bases of the hills where water tends to collect from above. 95

#### Soil Management Group IV

There is no subdivision of soil management group IV. Group IV soils are low in potassium-supplying power and are coarse- to moderately coarse textured soils.

Examples of the well to moderately well drained soils of this group are Bombay, Broadalbin, Copake, Empeyville, Gloucester, Grenville, Hogansburg, Hoosic, Ira, Madrid, Moira, Parishville, Sodus, and Worth. 96

Somewhat poorly to poorly drained examples are Brayton, Fredon, Massena, Scriba, and Westbury.

#### Soil Management Group V

Coarse- to very coarse textured soils formed from gravelly or sandy glacial outwash or glacial lake beach ridges or deltas. The parent material for these soils has been reworked by water either as glacial outwash or by wave action from the glacial lakes, removing almost all the fine materials, silt, and clay and leaving usually deep deposits of sand and (or) gravel. The soils that form have similar textures, usually with little organic matter. The topography is nearly level to undulating.

Examples of the excessively to well-drained soils include Alton, Colonie, Colosse, Colton, Hinckley, and Windsor.

The moderately well-drained soils include Claverack and Elmwood. The somewhat poorly and poorly drained soils include Granby, Junius, and Swanton. 97

<sup>95</sup> Ibid.

<sup>96</sup> Ibid.

<sup>97</sup> Ibid.

### **Connecticut Geology**

There are four present landforms in Connecticut. There is a low coastal strip, which extends along the seacoast from New York to Rhode Island. It is the old rocky surface broken by small rivers and three large ones that have carved out valleys which reach the Long Island Sound. On the west the land is made up of many small hills and valleys that rises to a point of 2,315 feet in the northwest corner of the state. The Central Valley is quite low and it is about a hundred feet above sea level on the Connecticut River near Massachusetts. The valley has a number of trap rock ridges and most of the other rocks are sandstone and shales. 98

East of the Central Valley is the Eastern Upland which is a hilly region cut by many river valleys. The Western Upland is much higher than the eastern uplands. In this region, there are many areas, which reveal the metamorphic rock of the Western Uplands lying underneath Central Valley brownstone. Geologists call this spot the "Great Unconformity," because of the jarring discord between the rocks. At the bottom of the exposed layers are schists and above is brownstone. The schists stand on end, running vertically smack into horizontal beds of brownstone. Scattered throughout the brownstone are fragments of the underlying schists. At any place in the world, large gaps of time can occur between adjacent layers of rock. The Great Unconformity represents a gap of two hundred (200) million years in just a fraction of an inch. 99

Connecticut land is about one hundred miles east and west along the sound and fifty miles north to the Massachusetts line. Its area is 5,004 square miles counting the lakes. Major forces created these landforms such as ice riding over the hills, the volcanic eruption that gave Connecticut the trap rock and the rivers that leveled the mountains. Many years ago the landforms were quite different in Connecticut from what they are today. Over the years several forces have shaped what exists today. Some of Connecticut landforms rose to thousands of feet. Weather conditions produced brooks and rivers; flowing water which has a lot of power, wore away the surface. The material worn off the mountains was deposited in valleys and became soil. 100

<sup>98</sup> USDA, Connecticut NRCS - http://neirtnt.ct.nrcs.usda.gov/soils/catenas (2000).

<sup>99</sup> The Geology of Connecticut - http://library.thinkquest.org/12621 (2000).

<sup>100</sup> USGS, Connecticut - http://geology.er.usgs.gov/states/CT (2000).

In eastern Connecticut we find mostly metamorphic rocks such as gneiss, schist, and quartzite, with some igneous rock, granite. We also find metamorphic rocks mostly in the western part of the state. However, some limestone, a sedimentary rock exists along the western boundaries and particularly in the northwestern corner of the state. In the central part of the state is a low land, consisting of red sandstone and shale, both sedimentary rocks. Within this low land arise hills, consisting of the igneous rock, basalt, commonly called traprock.

There were small amounts of great many metals, but only in a few areas was there enough of any one metal worth mining.

Connecticut still has some minerals that are dug out and being used. The most important are the traprock, clay, and limestone. Traprock is found in ridges throughout the Central Valley. In addition, clay was found in the Central Valley; it was dug, mixed with sand and baked in huge kilns to make bricks. The third major minerals used in Connecticut were limestone and marble. The Connecticut Valley is also famous for fish fossils found in black shales. Plant impressions and insect tracks and burrows are also found.

Although Connecticut shares some geologic history with Long Island's glaciation, this area, much like the areas of Upstate New York and New Jersey, were formed mostly out of the actions of plate tectonics and volcanism, the effects of which were not seen on Long Island. The area of Connecticut was laid down millions of years before the oldest Cretaceous sediments of Long Island were formed. The existence of shales, limestone and schists, attest to the differences between the regions of Connecticut and Long Island, and reflect their vastly different geologic history.

#### **Connecticut Soils**

Parant Matarial

Thin, stony soils, which are generally infertile and unsuited for crop farming, cover most of Connecticut. Deeper soils, mainly loams, are found in the Connecticut, Housatonic, and Naugatuck River valleys. In addition, terraces on the sides of the Connecticut River valley, and other valleys, are covered with stone-free soils that can be farmed. Sandy soils predominate in the Seaboard Lowland and in the Connecticut Valley Lowland south of Middletown.

There are 94 major "types" of soils in Connecticut identified and named. 101 Each "type," or series, is named for the geographical area where it was first described. Each soil series has definite relationships to landscapes, regional geology, and parent materials. Related soils are of about the same age, are derived from similar parent material and occur under similar climatic conditions. These soils are classified into a sequence of increasing wetness. This sequence is called a soil catena.

The soil series of Connecticut have been arranged into the soil catena shown below.

Cail Trmo

Parent Material	Soil Type
Granite and Schist (sandy)	Glouchester
Schist and Granite Gneiss	Westminster, Millsite, Hollis, Chatfield, Charlton, Canton, Sutton, Bice, Schroon, Leister, Lyme, Paxton, Montauk, Woodbury, Ridgebury, Whitman
Parent Material	Soil Type
Mixed Limestone	Farmington, Stockbridge, Nellis, Georgia, Amenia, Massena,
	Alden

<sup>101</sup> USDA, Connecticut NRCS - http://neirtnt.ct.nrcs.usda.gov/soils/catenas (2000).

Brown Micaeous Schist Brimfield, Brookfield

Phyllite, Schist and Slate Taconic, Macomber, Bernardston, Lanesboro, Fullam, Brayton,

Shale, Sandstone, Basalt Broadbrook, Rainbow, Narragansett, Wapping

Acid, Crystilline Rock Hinckley, Merrimack, Sudbury, Walpole, Windsor, Deerfield,

Scarboro, Agawam, Ninigret, Enfield, Tisbury, Raypol

Acid Red Sandstone, Shale Branford, Ellington, Manchester, Hartford, Penwood

Mixed Limestone Groton, Copake, Hero, Fredon, Halsey,

Mixed Crystalline, Sedimentary Belgrade, Raynham, Elmridge, Shaker, Brancroft, Scitico,

Maybid, Berlin

Gneiss, Schist, Granite Suncook, Occum, Pootatuck, Rippowam, Hadley, Winooski, Bash,

Limerick Lim, Saco 103

#### Soils of Farfield County 104

**AfC** Agawam fine sandy loam, 8 to 15 percent slopes

**CfC** Charlton fine sandy loam, 8 to 15 percent slopes

**GgC** Georgia silt loam, 8 to 15 percent slopes

**HkB** Hinckley gravelly sandy loam, 3 to 8 percent

slopes

HkC Hinckley gravelly sandy loam, 8 to 15 percent

slopes

Lc Leicester fine sandy loam

**PbC** Paxton fine sandy loam, 8 to 15 percent slopes

<sup>102</sup> Ibid.

<sup>103</sup> Ibid.

<sup>104</sup> Ibid.

**Rb** Raypol silt loam

**Rd** Ridgebury fine sandy loam

**Ro** Rippowam fine sandy loam

**SnC** Stockbridge loam, 8 to 15 percent slopes

Wd Walpole fine sandy loam

WxC Woodbridge fine sandy loam, 8 to 15 percent slopes

#### Soils of New Haven County 105

AfC Agawam fine sandy loam, 8 to 15 percent slopes

**BoC** Branford silt loam, 8 to 15 percent slopes

**CfC** Charlton fine sandy loam, 8 to 15 percent slopes

**CsC** Cheshire fine sandy loam, 8 to 15 percent slopes

**De** Deerfield loamy fine sand

**HkA** Hinckley gravelly sandy loam, 0 to 3 percent slopes

**HkB** Hinckley gravelly sandy loam, 3 to 8 percent slopes

**HkC** Hinckley gravelly sandy loam, 8 to 15 percent slopes

Lc Leicester fine sandy loam

MgA Manchester gravelly sandy loam, 0 to 3 percent slopes

MgB Manchester gravelly sandy loam, 3 to 8 percent slopes

**MgC** Manchester gravelly sandy loam, 8 to 15 percent slopes

**PbC** Paxton fine sandy loam, 8 to 15 percent slopes

**PnA** Penwood loamy sand, 0 to 3 percent slopes

<sup>105</sup> Ibid.

**PnB** Penwood loamy sand, 3 to 8 percent slopes

Ra Raynham silt loam

**Rb** Raypol silt loam

**Rd** Ridgebury fine sandy loam

**Ru** Rumney fine sandy loam

Rv Rumney Variant silt loam

Wa Walpole sandy loam

WkC Wethersfield loam, 8 to 15 percent slopes

Wr Wilbraham silt loam

YaC Yalesville fine sandy loam, 8 to 15 percent slopes

#### Soils of Middlesex County 106

**BoC** Branford silt loam, 8 to 15 percent slopes

**CsC** Cheshire silt loam, 8 to 15 percent slopes

**HkC** Hinckley gravelly sandy loam, 3 to 15 percent slopes

**MgA** Manchester gravelly sandy loam, 0 to 3 percent slopes

**MgC** Manchester gravelly sandy loam, 3 to 15 percent slopes

**PbC** Paxton and Montauk fine sandy loams, 8 to 15 percent slopes

**PnA** Penwood loamy sand, 0 to 3 percent slopes

**PnB** Penwood loamy sand, 3 to 8 percent slopes

**Rb** Raypol silt loam

**Ru** Rumney fine sandy loam

**Rv** Rumney Variant silt loam

St Suncook loamy sand

Wd Walpole sandy loam

WkC Wethersfield loam, 8 to 15 percent slopes

Wr Wilbraham silt loam

WvA Windsor loamy sand, 0 to 3 percent slopes

WvB Windsor loamy sand, 3 to 8 percent slopes

YaC Yalesville fine sandy loam, 8 to 15 percent slopes

**AfA** Agawam fine sandy loam, 0 to 3 percent slopes

**AfB** Agawam fine sandy loam, 3 to 8 percent slopes

**BcA** Berlin silt loam, 0 to 5 percent slopes

**BoA** Branford silt loam, 0 to 3 percent slopes

**BoB** Branford silt loam, 3 to 8 percent slopes

**CbB** Canton and Charlton fine sandy loams, 3 to 8 percent slopes

**CsB** Cheshire silt loam, 3 to 8 percent slopes

**EfA** Ellington fine sandy loam, 0 to 5 percent slopes

**HfA** Hartford sandy loam, 0 to 3 percent slopes

**HfB** Hartford sandy loam, 3 to 8 percent slopes

**LpA** Ludlow silt loam, 0 to 3 percent slopes

**LpB** Ludlow silt loam, 3 to 8 percent slopes

**MyA** Merrimac sandy loam, 0 to 3 percent slopes

MyB Merrimac sandy loam, 3 to 10 percent slopes

**NnA** Ninigret fine sandy loam, 0 to 5 percent slopes

**PbB** Paxton and Montauk fine sandy loams, 3 to 8 percent slopes

**Ps** Podunk fine sandy loam

**SgA** Sudbury sandy loam, 0 to 5 percent slopes

**WkB** Wethersfield loam, 3 to 8 percent slopes

**WxA** Woodbridge fine sandy loam, 0 to 3 percent slopes

**WxB** Woodbridge fine sandy loam, 3 to 8 percent slopes

YaB Yalesville fine sandy loam, 3 to 8 percent 107

## Soil and Geologic Summary

As one can see from the enclosed data, there are many varied soil types found in the areas of Long Island, Upstate New York, New Jersey and Connecticut – very few of which are the same. In fact out of the hundreds of soil series listed, only 2 minor series from the region of Long Island are found in the regions of Upstate New York, New Jersey and Connecticut (the soils series of Scio and Walpole.)

There are clear and distinct differences between Long Island and its neighboring regions that take into account many different parameters. These include parent geology, geologic history and development, soil formation and soil deposition. By simple observational evidence alone, one can see vast differences in soil texture and soil color between the regions, not to mention the drastic geologic differences seen by simply driving off the Long Island region onto the mainland; it is almost a virtual wall of uplifted rock which separates the Long Island area from the border of New Jersey along the Hudson River. For the most part, mineral and pedological deposition is much older in areas located away from Long Island. Long Island is comparatively speaking, relatively new in geologic terms. Long Island geology shows little evidence of any geologic deposits dating older than the Cretaceous Period, while areas as little 100 miles to the west and 50 miles to the north and south, contain deposits that are exposed as far back as the Cambrian and Precambrian periods. 108

Long Island also contains few if any outcrops of any sedimentary rock and because of this, any real evidence of a fossil record. While the regions located to the north and west can illustrate clear geologic layers and hence, timetables throughout the soil profile, it is difficult to observe this geological

<sup>107</sup> Ibid.

<sup>108</sup> Ibid.

phenomenon on Long Island due to the Island's geologically recent glacial deposition and scarring. Long Island is also unique in that it lacks any real undulations, rock outcrops or muckland areas.

In general, the soils of Long Island contain a greater percentage of sand and gravel and a lower percentage of silt, loam and clay than in the soil associations and series found in the other areas. Long Island soils also lack any real percentage of natural limestone when compared to other regions; Long Island soils are then much more acidic and make an agricultural liming program indispensable to any vineyard operation. Because of this factor, the soils of Long Island are also slightly lower in natural fertility and water-holding capacity than these neighboring areas, and may require vastly different fertilization and irrigation programs. This difference in soil types leads to a very unique and distinct *Terrior* for Long Island – sandy loam soils will warm up faster, drain better and allow deeper root penetration that soils containing greater amounts of silt, clay and rock.

These and other differences associated with different soil types and series found on Long Island can have a profound affect on the growth of grapevines. The French have long shown the dramatic affects of soil series and type on wine quality; it has now become a well-known viticultural fact that particular soils may impart unique balances and/or combinations of various constituents found within grapes and wines made from those grapes. All else being equal, soils can affect sugar levels, pH, acid levels, and extractable components found with in the grape.

The data presented confirms what has long been known to be true – that no other region in the United States, let alone the east coast, has the same quality of soils and soil types that are found on Long Island. These soils, along with the unique maritime climate, have made the region of Long Island not only the most important agricultural producing area in the State of New York, but one of the most exciting wine producing areas in the United States. The obvious differences in soil types, series, geology, associations and topography found between Long Island and its surrounding areas, can impart distinct variations in the components of the grapes and wines made from these vastly different areas and is a major factor of why Long Island requires the approval of a separate and distinct American Viticultural Area.

#### **Climate Data**

The climate data presented on the following pages is pooled from a number of approved and official sources which include the National Oceanic and Atmospheric Administration, The National Environmental Satellite, Data and Information Service, The National Climatic Data Center in Asheville, N.C., Cornell University Long Island Horticultural Research Lab, Brookhaven Laboratories, Upton, NY, Weatherbase.com, Canty and Associates, The National Virtual Data System, and Worldclimate.com. This data goes back an average of 30 years and in some cases has been recorded at various weather stations for over a century.

Observations that were recorded and compared included average temperature, average maximum and minimum temperature as well as averages of temperature extremes, and precipitation. The Long Island data was collected from all available weather stations operating in the Long Island area. In order to determine what differences existed in the surrounding regions, the weather stations which were determined to be nearest the borders of the Long Island region were the ones used to tabulate the data from these areas. (Data from northern Connecticut and Upstate and Western New York were not used in order to maintain a fair and accurate comparison).

The climate of Long Island can be classified as "maritime" due to the fact that the region is in fact an island and is in very close proximity (around all of its borders in fact) to water. The maritime influence is very significant. The surrounding waters around Long Island extend the period of frost-free temperatures substantially, reduce the range of diurnal and annual temperatures and reduce the possibility of extreme winter temperatures.

As one can see from the data presented, there are numerous, distinct and compelling differences between the climate of Long Island and its neighboring regions. For the most part, these differences are due to the orientation of Long Island off the United States coastline. In fact, there exists no other area in the Western Hemisphere where a land mass as large as Long Island juts as far out into the Atlantic Ocean. It is truly a special and extremely unique area.

## **Growing Degree Days**

Most important for agricultural purposes is the use of Growing Degree-Days or GDD. Some authors also refer to this data as Heat Summation. According to Winkler, et.al. 1974, the one factor of climate that proved to be of predominant importance with regard to grape growing areas was heat summation; other factors such as rainfall, duration of sunshine and humidity are much more limited in their effect on grapes. 109 Growing degree-day accumulations involve the amount of accumulated heat required for plants to flourish. Growing degree-days are those days necessary for plants as well as other organisms to complete their growth and development. GDD takes into account the average daily temperature accumulations, which influence plant development; providing an estimate of the plant's development based on temperature measurements. 110 For each day that the average temperature is one degree above the base temperature, one-degree day has accumulated. The formulation of GDD calculations is developed from a general base of knowledge inherent to the environment. The temperature at which growth starts for woody plants in the north-eastern United States is approximately 45 F to 55F; to standardize the calculations used in determining a growing degree day, the base temperature has been arbitrarily set at 50 F. With this information, the calculations of the growing degree day for a 24-hour period require the following formula: Max. Temp + Min. temp. /2 -Base temp. (50)=GDD. For example: If on March 3 the maximum temperature is 60 and the minimum temperature is 50 the GDD for March 3 is 60+50/2 = 102/2 = 55F and 55F - 50F = 5 GDD. 111 If the average temperature is equal to or less than the base temperature, no degree-days are accumulated. The information provided by GDD is also used to delineate wine producing regions into clear climatic regions – termed Regions I – V. Some examples of base GDD data and the corresponding viticultural regions that have been measured include the following:

<sup>109</sup> Winkler, A.J., et.al. General Viticulture, University of California Press, Davis, CA. (1976).

<sup>110</sup> Ibid.

<sup>111</sup> Weather Underground - http://swedish.wunderground.com/about/faq/degreedays.asp (2000).

# (From Winkler, et.al. 1976)

## **Region I Locations:**

Region	<b>Growing Degree Days Averages</b>
Geisenheim, Germany	1790
Reims, France	1820
Beaune, France	2300
Geneva, NY	2400

# **Region II Locations**

Region	<b>Growing Degree Days Averages</b>
Auckland, New Zealand	2540
Budapest, Hungary	2570
Bordeaux, France	2750
Santa Barbara, CA	2820
Asti, Italy	2930

## **Region III Locations**

Region	<b>Growing Degree Days Averages</b>
Napa, CA	3100
Milan, Italy	3310
Hamadan, Iran	3280
Sonoma, CA	3190

## **Region IV Locations**

Region	Growing Degree Days Averages
Florence, Italy	3530
Sao Paulo, Brazil	3540
Sidney, Australia	3780
Mendoza, Argentina	3640

Generally speaking, fine wine production is limited to the Regions I-III, where a temperate and cooler climate allow for more desired levels of sugar and acid balance in the grapes, as well as a slower rate of ripening which preserves aromatics and ripens tannins. One can also note that variations of as little 100-degree days can separate areas with widely different climatic conditions.

Long Island is generally recognized as being at the high end of Region II and is in fact some years a Region III area. Long Island historically has an average of 166 more degree-days than Westchester/Downstate NY and as much as 324 more degree-days than Connecticut. Connecticut on average is a borderline Region II with some years having Region I conditions. New Jersey on the other hand, has considerably more degree-days on average (as much as 306 days) than Long Island. New Jersey is solidly classified as a Region III, with some locations approaching Region IV status in warmer years. The closest in terms of GDD to Long Island is the area of Westchester, also a Region II. However as one will see from the other data presented, there are much more significant differences between these two areas. 113

## **Heating Degree Days – Cooling Degree Days**

Heating and Cooling Degree-Days are also used for climate comparisons in this data. These data bases are used by the construction industry to calculate the amount of heat that must be added to a structure to maintain the temperature at a comfortable level usually using 65 degrees F. Consequently the heating degree days is the temperature below the base temperature. The Cooling Degree-Days are the temperature above the base temperature some form of cooling system. 114

Heating Degree-Days are indicators of household energy consumption for space heating. It was found that for an average outdoor temperature of 65 degrees Fahrenheit, most buildings require heat to maintain a 70-degree temperature inside. Similarly, for an average outdoor temperature of 65 degrees or more, most buildings require air-conditioning to maintain a 70-degree temperature inside. 115

<sup>112</sup> Winkler, A.J., et.al. General Viticulture, University of California Press, Davis, CA, (1976).

<sup>113</sup> Weatherbase.com - http://www.weatherbase.com/weather/city.php3?c=US&s=NY,(2000).

<sup>114</sup> Weather Underground - http://swedish.wunderground.com/about/faq/degreedays.asp (2000).

<sup>115</sup> Ibid.

In calculating Heating and Cooling Degree-Days, the high and low temperature for the day is averaged. For example, if the number is greater than 65 F, then it is measured as (Average temperature - 65) Cooling Degree-Days. If the average temperature is less than 65 degrees, then it is measured as (65 - Average temperature) Heating Degree-Days. Running totals are kept for these units over a time period of a year so fuel distributors and power companies can assess average demands. Once again, variations of as little as 30-degree days can indicate a significant difference in climate. 116

For Heating Degree-Days, the larger the number, the cooler the climate of that region. For Cooling Degree-Days, the larger the number, the warmer the climate of that region.

From this data, Long Island proves to be one of the warmer areas of the group. It is very similar to New Jersey in this regard, with Long Island and New Jersey separated by only 7 Heating Degree-Days. The regions of Westchester/Downstate NY and Connecticut however, prove to be substantially cooler, with 293 more days in Westchester and 376 more days in Connecticut than Long Island. This is seen in the additional average temperature data presented which shows Connecticut and Westchester to have much colder minimum temperatures during the winter months.

In terms of Cooling Degree-Days, Long Island once again proves to be the most moderate of all the areas. New Jersey is the warmest with 162 Cooling Degree-Days more than Long Island. Westchester is second with 59 more cooling days. This data indicates the importance of the maritime influence during the summer months, as the regions to the west and north west of Long Island are not benefiting from the cool, ocean breezes during the year. Connecticut on the other hand, proves to be the coolest area, with 205 Cooling Degree -Days less than Long Island. This is probably due to the combination of moderating maritime winds and the more northern latitude of Connecticut in relation to the other areas.

<sup>116</sup> **Ibid**.

<sup>117</sup> Weatherbase.com - http://www.weatherbase.com/weather/city.php3?c=US&s=NY, (2000).

## **Average Temperatures**

In interpreting long—term averages (30 years or more) of temperature data, it is important to realize that even small differences of one half a degree can be statistically significant in analyzing climate. (As an example, global warming climate models have consistently predicted a rise in temperature of 1-3 degrees F., which climatologists have stated would substantially alter current climate conditions sometimes with dramatic effects. With this in mind the averages of all the climate data presented show some significant differences in the climate of Long Island as compared to its neighboring regions.

The moderating influence of the Long Island's surrounding water is evident in the temperature data. In terms of average temperatures, the region of Long Island shows the highest average annual winter temperature compared to the surrounding regions. Long Island's average low temperature over 30 years is 43.5 degrees F., 2.5 degrees F warmer than the area of Westchester County and downstate New York, and 2.2 degrees F warmer annually than the average from New Jersey. 118 Long Island is also over 4 degrees F warmer on average than Connecticut. Winter extreme temperatures were also seen to be the most moderate on Long Island, with Long Island having only 0.44 days of temperatures under 0 degrees F. Long Island also had the least extreme winter low temperatures with the lowest average being -5.67 degrees F. New Jersey was 1.63 degrees colder at -7.3 F. 119 New York and Connecticut were seen to have winter low temperatures considerably colder than Long Island. Connecticut can experience temperatures as low as -13.5 degree F - 9.63 degrees F colder than Long Island. Westchester and Downstate proved to be the coldest with low temperatures reaching -15.3 in some years - 7.83 degrees F colder than Long Island. 120 Winkler states that most vinifera grapevines withstand but little winter injury at -4 degrees F. 121 Similar results have been reported for decades in Europe. However, many vineyards have been reportedly damaged severely and some virtually destroyed in some instances, from temperatures below -4 degrees F. 122 Bearing this in mind, it seems that the climate of these other regions, aside from Long Island, might pose great economic risk for commercial vineyard plantings. Low winter temperatures have historically been one of the main limiting factors involved in the viability of planting European, vinifera grapevines in the United States. The temperature data presented here

<sup>118</sup> Ibid.

<sup>119</sup> Ibid.

<sup>120</sup> Ibid.

<sup>121</sup> Winkler, A.J., et.al. <u>General Viticulture</u>, University of California Press, Davis, CA., (1976). 122 Ibid.

proves that Long Island can be one of the safer areas in the east that can safely and consistently produce fine wine grapes.

Average annual temperatures overall show Long Island to be different than all of the other areas. Long Island is on average 2.1 degrees F warmer annually than Connecticut and 0.5 degrees warmer than Westchester/Downstate NY. 123 Long Island also showed to be 0.8 degrees cooler annually than the average in New Jersey, which has less of a maritime influence. Average annual high temperatures were found to be less distinct on Long Island, however the moderating influence of the water is again evident in this data. Connecticut and Long Island are statistically similar along these lines, due to the maritime influence of both these areas; Long Island proved to be 1 degree F cooler than Westchester/Downstate NY and 2.7 degrees cooler than New Jersey. 124 Most important are the number of days Long Island went beyond 90 degrees F. Long Island is clearly the most moderate in this regard once again, with only 5.5 days annually over this temperature. Connecticut has 3.4 days over 90 degrees F, New Jersey has 15 days more over 90 degrees F and Westchester/Downstate NY has 7.5 more days. 125

To see a possible variation during the growing season months only, temperature averages were also taken for the period of April through October, the time period generally associated with the growing period for grapevines. During this period, Long Island again showed to be distinct; Long Island is 0.4 degrees warmer than Westchester/Downstate NY and as much as 2.1 degrees warmer than Connecticut. Not surprisingly, New Jersey was the warmest during this time frame, with an average that was 0.6 degrees F higher than Long Island. 126

The temperature data presented outlines the moderating influence of the waters surrounding Long Island. Long Island is slightly cooler during the hottest months of summer and significantly warmer during the coldest months of winter, with few extremes seen in either direction of the thermometer.

During the winter, winds come predominantly from the southwest and are warmed slightly by the Atlantic Ocean. In the winter, the sound, bay and ocean all have buffering effects due to their accumulation of heat from the summer and fall months. This wind will therefore buffer the temperature

<sup>123</sup> National Oceanic and Atmospheric Administration, National Climatic Data Center, Asheville, NC (2000).

<sup>124</sup> Ibid.

<sup>125</sup> Ibid.

<sup>126</sup> Ibid.

of Long Island as it passes over, however, by the time the wind passes over the cooler land of Long Island and Long Island Sound, it has lost some of its warmth and has less of a buffering effect on the temperatures of Connecticut. These breezes, however, along with those coming off the Long Island Sound, will almost always keep winter minimum temperatures high enough to prevent commercial vine damage. This maritime effect is not realized in New Jersey and rest of New York due to the fact that these landmasses lie downwind from the prevailing breezes and are in actuality receiving colder continental winds from the west.

By the time spring arrives, the ocean has cooled somewhat from the low winter temperatures. Breezes coming from the south at this time of year will therefore become cooled by the ocean, and will reduce temperatures as they pass over Long Island. Because of this maritime effect, Long Island often has long, cool springs, with many plants showing delayed growth as compared to their more inland counterparts. This is a big advantage for grapevines as well, as cooler spring temperatures delay the onset of growth and reduce the likelihood of an economically devastating spring freeze. During the summer months these same breezes coming in off the water will keep the average temperatures of Long Island slightly cooler than its more inland neighbors. One need only go to the seashore on a hot humid day to realize the wonderful cooling effects of ocean breezes in the summertime. Since plants and in particular, grapevines do not conduct photosynthesis at temperatures greater than 90 degrees F, these moderating winds can be very beneficial for healthy vine growth.

It is also true then that during the fall, Long Island call also expect slightly warmer temperatures than the surrounding regions. With the temperature of the ocean water rising throughout the summer months, Long Island can be protected well into the fall from freezing temperatures and has the benefit of enjoying a fall season consisting of a lot of sunshine and normal amounts of precipitation. The ocean effect, which alters the climates of Long Island, does not exist for New Jersey and Downstate NY and is also considerably reduced in Connecticut

# **Precipitation**

On an average annual basis, Long Island has the lowest levels of precipitation of all the areas studied with 42 inches annually of precipitation. This annual difference is 3.4 inches less than Westchester/Downstate NY, 3.8 inches less than New Jersey and 4.1 inches less than Connecticut. All other areas combined have an average of 3.7 inches more precipitation during the year - this amounts to as much as an extra average month of rainfall annually - a very significant difference. 127 Looking at just the growing season again, precipitation data was tabulated and averaged for the months of May through October - the time period that grapevines are most affected by rainfall. It is in this period of time - the growing season - which the differences in precipitation mainly occur. During the growing season, Long Island is once again seen to be significantly drier, having 3.2 inches less than Connecticut, 3.6 inches than Westchester/Downstate NY and 4.2 inches less than New Jersey. 128 All other areas combined have an average of 3.7 inches more of precipitation during the year. 129 Therefore, during just this 6-month period, the other regions can have as much as a whole additional month of rainfall. This is very significant to an agricultural business that requires intense fungal disease control and vine canopy management. It is also well known viticulturally that rainfall and the amount accumulated can significantly affect vine growth and fruit quality. More rain generally means a lower quality crop for winegrowers.

The reason for this difference is once again attributed to the moderating influence of the Long Island's surrounding water. Precipitation fronts and thunder storms are often diverted to the north and west during the months of the growing season due to the prevailing southwest winds blowing over Long Island. It is not uncommon (as one can easily follow most summers on TV news and weather channels) for New Jersey and Connecticut to be experiencing heavy downpours while the region of Long Island remains dry and sunny.

<sup>127</sup> Ibid.

<sup>128</sup> Ibid.

### **Frost Free Days**

Although the amount of sunshine and rainfall can have an effect on the length and quality of the growing season, the single most important factor in determining the commercial viability of a grape growing region is the number of days between the spring and fall frosts. This is the period most important for agricultural purposes as it is the length of time between the last episode of frost (32 degrees F) in the spring until the first episode of frost (32 degrees F) in the fall. This length of time is also known as the *growing season*, since most agricultural deciduous plants will not continue to grow once the temperature of 32 degrees F has been reached. It is also known as the *frost-free period*. 130

Winkler states that areas adjacent to large bodies of water, such as oceans, lakes and very large rivers – particularly areas located on the leeward side in the seasons of frost - are less subject to frost than areas farther removed. 131 Long Island bears this out to be true. With its location to the surrounding waters, Long Island historically benefits from an extremely long growing season – one of the longest in the northeast. Although springtime temperatures on Long Island usually delay the arrival of spring and plant growth, the average temperature usually remains above freezing after approximately the middle of April. Areas that are affected by warmer continental climates such as Westchester/Downstate and New Jersey, often experience earlier plant growth in the spring. It is in the fall however, that the maritime influence on Long Island really takes effect. During the fall, the temperatures of the ocean and sound around Long Island are at its warmest, having been warmed during the previous months of summer.

The prevailing winds that pass over Long Island in the fall are therefore often warmer than the air temperatures, creating a moderating effect that delays the onset of freezing temperatures. This maritime influence is even more pronounced on the East End of Long Island, where even more water is surrounding the two narrow peninsulas of the North Fork and The Hamptons. North Fork farmers are often blessed with growing seasons as long as 210-220 days on average. 132

<sup>130</sup> Winkler, A.J., et.al. General Viticulture, University of California Press, Davis, CA, (1976).

<sup>131</sup> Ibid.

<sup>132</sup> Olsen-Harbich, R., North Fork of Long Island AVA Petition (1985).

In analyzing the frost–free data, it becomes clear that the influence of the water on the Long Island climate becomes even more significant. Long Island on average experiences 204 frost-free days during the growing season.  $_{133}$  This is 31 days longer than New Jersey, 37 days longer than Westchester/Downstate NY and as much as 50 days longer than the Connecticut average. Long Island can therefore have as much as 4-7 weeks (1-2 months) more growing season than any of the other areas.  $_{134}$  This is clearly the most significant climate factor that separates Long Island from the surrounding land masses and makes it necessary to approve the region of Long Island as a separate AVA.

<sup>133</sup> National Oceanic and Atmospheric Administration, National Climatic Data Center, Asheville, NC (2000). 134 Ibid.

#### Conclusion

The region of Long Island is truly one of the most unique in the United States. In no other area of the United States does an island jut 100 miles out into the Atlantic Ocean. Due to this geologic phenomenon, Long Island has a very special environment, soil and climate, which is moderated by the surrounding waters. The use of the name Long Island goes back more than 300 years and is used today for literally thousands of businesses, groups, professional associations, and parks in the area - more than this petition could ever possibly document. The United States Postal Service recognizes this area as well by using the name Long Island in the postal stamp designating mail leaving its central office in Hicksville, N.Y. 135 Long Island has often times operated independently from the rest of New York State, both philosophically and physically – in fact many politicians from Upstate New York often humorously refer to Long Island as a separate state due to its geographic seclusion from the rest of New York State. The region of Long Island however, is not only known locally and statewide, it is known nationally. For decades, the name Long Island has been famously associated with potatoes and duck, Most recently, within the past 25 years, the region of Long Island has become well known for fine wine production. As one can see from the enclosed articles, there are now thousands of references to the wines of Long Island. It is not just by the names North Fork or The Hamptons that our wines are recognized; as a group and as a brand, both locally and nationally, the wines of the area are known as Long Island wines.

Indeed, it is not the object of this petition to supercede in any way, shape or form, the existing AVAs of North Fork of Long Island and The Hamptons, Long Island. The approval of the Long Island AVA would not interfere with the 2 existing AVAs already in use on Long Island. Growers and wine producers will probably still use the smallest and most exact AVA available to them to label their wines. The North Fork has and always will be the mecca for winegrowing on Long Island - where 95 percent or more of the wines of Long Island will be produced. 136 Clearly there are differences within the region itself - both forks of Long Island are unique areas in their own right as was demonstrated in the earlier AVA petitions classifying both of these areas as separate appellations. The North Fork is clearly the warmest of all the areas on Long Island, with the most frost-free days of any reporting area. The North Fork also contains the last large tract of agricultural land to be found on Long Island. With over 95

<sup>135</sup> United States Postal Service Hicksville, NY, (2000).

<sup>136</sup> Long Island Wine Council (2000).

percent of Long Island wine coming from the North Fork and the high quality associated with this area, it is obvious that the *North Fork* AVA would be the first choice for most producers in this area. The Hamptons, Long Island AVA also offers consumers another choice in the market, to appreciate the nuances of flavor and aroma that this area can exhibit in the wines produced there. However, as this petition has shown, the Long Island region, taken as a whole, is far different from those regions which border it. The approval of a Long Island AVA is the next logical next step for the area. The proposed Long Island AVA offers the local producer another quality marketing alternative and can expand the territory which makes up this very unique wine growing area.

Presently, the use of an AVA name on a wine label requires that the wine labeled as such contain at least 85 percent of the grapes grown in the AVA area. 137 Because of this requirement, under the present BATF regulations, a winery producing a wine from equal parts North Fork and Hamptons fruit may not utilize either of these two existing AVA designations. All that is allowable legally in this situation are the designations Suffolk County or New York, neither of which are very appealing to the Long Island wine producer. With the approval of a Long Island AVA, a vintner in this situation could label a wine of this nature with a Long Island AVA designation – an appellation which not only more accurately defines the product but also allows for greater marker appeal. Also, with hundreds of available acres located outside the present AVA's of the North Fork and The Hamptons, the possibility exists for greater expansion of the Long Island wine industry into these areas, perhaps encouraging landowners to consider winemaking instead of development. Many today would agree with the thinking that had the wine industry been established a hundred years earlier on Long Island, the landscape of the area would look quite different today. Even today with all the encroaching suburbanization, Suffolk County remains the largest revenue grossing agricultural county in the state of New York. With fine winegrapes one of the last viable options for agriculture in this high priced area, it can only be a benefit to expand the marketing possibilities of Long Island wine production and vineyard plantings into these other areas.

The determination of the boundaries for the Long Island region are quite simple to define. To the west, although the physical geography of Long Island includes the areas of Brooklyn and Queens, these areas are completely urbanized and are for all practical purposes, no longer agriculturally viable. The natural boundary would therefore be the Nassau County line, which also separates Nassau from the New York City line. It would make no sense to include for the sake of geology, a region that does not have a single

acre of commercial farmland available – one cannot grow grapes in blacktop. The other boundaries are self-explanatory – the water provides the cut-off for the AVA. Long Island's boundaries have in fact been in place for tens of thousands of years and provide a natural barrier to extremes of weather.

The geology, soil and climate data presented in this paper, backs up what many vintners, farmers and people from all walks of life, have for years taken for granted – that the region of Long Island has soil and climate that are different than any of the other areas which surround it. The influence of the water is immense and creates a moderate climate unlike any other in the eastern United States. Clearly, the regions located to the west of Long Island (Westchester and New Jersey) are more affected by continental climate conditions; the climate in these areas tends to be more extreme, both in the winter and summer seasons. To the north, the moderating effect of the water also diminishes, with the result of winter extreme temperatures that are often inhospitable (and commercially risky) to growing European grape varieties. As a result, the wine industry in these other locations have had to historically rely on the production of wine from the native Vitis labrusca and French Hybrid grape varieties, due to the fact that these varieties can survive lower winter temperatures. It is only because of the moderate climate and fine soil of Long Island and the ability to grow the classic wine grapes of Europe – the Vitis vinifera – that the region of Long Island has been able to develop a reputation for world-class, quality wine production.

The data presented shows that the region of Long Island is warmer in the winter, cooler in the summer, has more frost-free days, a moderate amount of growing degree days, and has less rainfall during the growing season than any of the other areas which surround it. The fact is, one needs to look across the Atlantic Ocean to Bordeaux, France, in order to find a grape-growing region with similar conditions to those found on Long Island. The combination of climate and soil imparting differences in the constituents of the grapes and wine, the necessity for different cultural practices (i.e. liming, training, spacing, fertilizing, irrigating) and the ability to grow, over-winter and ripen commercially, European (Vitis vinifera) wine grapes makes Long Island different from any other wine growing region in the East.

This information is old news for Long Island vintners. For years since Professor John Tompkins of Cornell University first recommended the planting of European grape varieties on Long Island, the industry has grown from the first acre planted by the Hargraves in 1973, to over 2500 acres today. 138 The industry would not exist were it not for the moderating climate and well-drained soils of Long Island. No other region in the eastern United States has the quality of soil, the length of growing season, the moderate winter temperatures and just the necessary amount of natural precipitation that Long Island has. As was stated earlier, the world-renowned viticulturist Dr. Richard Smart recently described Long Island as having "one of the finest soils for growing grapes that I have ever seen." A region such as this needs to be protected with an AVA.

Lastly, due to the recent fame garnered by many Long Island wine producers, and the rising popularity (and price) of Long Island wine, there exists the possibility that the name Long Island will be misused. History shows that in a business climate where demand outstrips supply the instances for consumer fraud increases. This is presently the case on Long Island where demand has never been higher, supply is limited and prices for both grapes and wine are rapidly increasing and are already at all-time highs. Indeed, as was recently reported in *The Wine Spectator*, fraud is not uncommon in the wine industry, with deceptive labeling listed as one of the more pervasive forms. 139 Under the present BATF labeling regulations, the name Long Island is technically a Fanciful Name, and could be used to label wine made from grape not grown on Long Island. Under these present conditions, a winery could theoretically set up business on Long Island, grow the minimum acreage of grapes necessary for appearances, and bottle an unlimited quantity of wine imported cheaply from other regions. These regions could be outside New York Sate or even outside of the United States. The possibility also exists for wine producers outside the Long Island area to label wine with a Fanciful Long Island name. No regulations presently exist that would prevent, for example, an Upstate New York or Connecticut winery from labeling one of their products with a Long Island name. With approval of a Long Island AVA, the name Long Island would be protected from misuse, and producers using the name Long Island, in any way, shape or form on their wine labels, would have to prove that 85 percent or more of that particular wine was produced from grapes grown within the boundaries of the Long Island AVA.140 The kind of name protection afforded by the AVA system of regulation is what the area of Long Island needs and deserves. Consumers could be assured, (just as they are when they buy wine from other important AVA regions such as Napa and Sonoma) that the Long Island wine they are purchasing, meets the requirements of the AVA designation on the label.

<sup>138</sup> Long Island Wine Council (2000).

<sup>139</sup> Suckling, James, A Taste of Deception The Wine Spectator, (5/31/98).

The reason wine is so appreciated, so studied, so analyzed and so romanticized, is because of the way wine reflects the soil and climate of the region in which it was grown. After all, wine is grown, not made. It is a mirror of a far away land; one can imagine the soil, climate and people of a given wine region as one sips and enjoys that regions wines. It is what makes wine so unique and different from any other beverage. It is not consistent from year to year, from place to place - it can be almost as diverse as we humans are. It is for this reason that the AVA system of regulation was adopted in the first place. The regulation of area of origin is an important factor in the development of a quality wine region. The French Appellation Controllee system was first begun in the 1930's – a system of regulations instituted after the turmoil and rioting over the importation of wine into France from Algeria due to the phylloxera blight. 141 Other countries followed suit, all trying to preserve and protect the *terrior* of their individual vineyard areas. The area of Long Island should be no exception.

Distinct climate and soil, a long regional history, consumer protection, national brand recognition, preservation of farmland, wine purity and quality, and the recognition and appreciation of a very special part of our country, are all reasons why the area of Long Island should be approved as an AVA. The climate and soil of a particular grape growing area have been the determining factor for deciding winegrowing appellations all over the world. The success of Long Island wines over the past 25 years leaves no doubt that the area of Long Island is one of the country's most exciting new wine regions. The differences in climate, soil and environment that Long Island exhibits in comparison to the surrounding areas described in this paper are indisputable. It is therefore important that Long Island be recognized and approved as an AVA and set apart from the other regions which surround it, as a unique and separate viticultural appellation.

<sup>140</sup> BATF Code of Federal Regulations \_ http://www.atf.treas.gov/regulations/27cfr9.(2000).

<sup>141</sup> Perdue, Lewis, The Wrath of Grapes, Spike ISBN, (1999)

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# Long Island Climate Data

Summary Data 1961- present

Aquebogue, New York

Elevation: 100 feet Latitude: 40 58N Longitude: 072 43W

Average Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  52.3 30.4 31.6 39.6 48.7 59.3 68.4 73.5 72.6 65.9 55.6 45.9 35.7

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 60.9 37.7 38.9 47.6 58.3 69.6 78.4 82.9 81.7 74.8 64.4 53.6 42.7

Average Low Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  43.6 23.1 24.4 31.5 39.1 49 58.3 64 63.5 56.9 46.7 38.1 28.6

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 45.3 4 3.6 3.9 4.1 3.8 3.7 3.4 3.8 3.2 3.5 4.3 4.1

Bohemia, New York

Elevation: 82 feet Latitude: 40 46N Longitude: 073 01N

Average	Temperature

Years on Record: 15

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 51 32 32 39 48 59 73 68 71 53 64 44 35

**Average High Temperature** 

Years on Record: 15

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Dec. Nov. °F 59 39 41 46 57 68 77 80 80 73 62 51 42

**Average Low Temperature** 

Years on Record: 15

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Dec. Nov. °F 42 24 26 32 39 48 59 66 64 55 44 35 28

**Average Precipitation** 

Years on Record: 15

Mar. Apr. YEAR Jan. Feb. May Jun. Jul. Aug. Sep. Oct. Dec. Nov. in 46.5 4.2 3.3 4.6 3.6 4.5 5 3 4 3.4 3.5 4 3.6

Bridgehampton, New York

Elevation: 60 feet Latitude: 40 56N Longitude: 072 18E

#### **Average Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 50.9 30 31.1 38.2 46.6 56.2 65.5 71.5 71 64.2 54 45 35.2

### **Average High Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 58.9 37.6 38.3 45.8 55 64.7 73.8 79.6 79.1 72.8 62.8 52.9 42.6

٥F	YEAR 42.8	Jan. 22.3	Feb. 23.9	Mar. 30.5	•	May 47.7	Jun. 57.2		Aug. 62.8	Sep. 55.5	Oct. 45.2	Nov. 37.1	De 27
Highest Recorded Temperature Years on Record: 67													
°F	YEAR 102	Jan. 66	Feb.	<b>M</b> ar. 79	Apr. 85	May 93	Jun. 95	. Jul. 102	•	•	Oct. 88	Nov. 73	. E
_owest Recorded Temperature Years on Record: 67													
°F	YEAR	Jan.	Feb.	Mar. 6	Apr. 14	<b>M</b> ay 29	Jun. 36	Jul. 46	Aug. 41	Sep.	Oct. 22	Nov. 10	D 1
/era	ge Pre	cipita	ition	***************************************		- <del> </del>			·	Υ	ears or	n Recor	d: 3
in	YEAR 45.6	Jan. 4.2	Feb. 3.9	Mar. 4.1	Apr.	•			-	•			Dec. 1.3
/era	ge Sno	owfall	18			·····	···			Y	ears or	n Recor	d: 3
	YEAR	Jan. 8.5	Feb. 8.5	Mar. 4.9	Apr. 0.5	May			Aug. \$	Sep. (			ec.

Days 2.7 0.1 0.4 1.3 0.7 0.1 ---

Average Number of Days Below 32F/0C Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 104 25 22 18 5.3 0.2 ---1.7 9.5 21

Average Number of Days Below 0F/-17C Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 0.2 0.1 0.1

**Brookhaven, New York**Elevation: 70 feet Latitude: 40 49N Longitude: 072 51W

Average Temperature Years on Record: 16													
°F	YEAR 50	Jan. 30	Feb. 31	Mar. 37	Apr. 47	May 56	Jun. 66	Jul. 71	Aug. 70	Sep.	Oct. 54	Nov. 44	Dec. 33
Avera	ge Hig	h Tem	perat	ture						Ye	ars on	Record	l: 16
°F	YEAR 58	Jan. 37	Feb. 39	Mar. 44	Apr. 55	May 64	Jun. 74	Jul. 79	Aug. 78	Sep.	Oct. 63	Nov. 52	Dec. 41
Average Low Temperature Years on Record: 16													
°F	YEAR 43	Jan. 23	Feb.	Mar.	Apr. 40	May 48	Jun. 58	Jul. 64	Aug.	Sep. 58	Oct. 46	Nov. 37	Dec. 26
Highest Recorded Temperature Years on Record: 16													
°F	YEAR 96	Jan. 57	Feb. 59	Mar. 70	Apr. 84	May 86	Jun. 96	Jul. 94	Aug. 96	Sep. 92	Oct. 80	Nov. 72	Dec. 62
owes	t Reco	rded	Temp	eratu	re				Western to one away	Ye	ars on	Record	: 16
°F	YEAR -2	Jan. -1	Feb.	Mar. 11	Apr. 16	May 33	Jun. 37	Jul. 46	Aug. 49	Sep. 37	Oct. 20	Nov. 17	Dec.
Avera	ge Pred	cipitat	ion					No 100 T		Y	ears or	n Recor	d: 3
					•	May J 3.1 2			.ug. Se	•		ov. De 7 2.0	
Averaç	ge Nun	nber c	f Day	s Abo	ve 90	)F/320	)			Ye	ars on	Record	: 16
YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 2.9 0.8 1.3 0.7 0.1													

Average	Number	of	Davs	Relow	32F/0C
MACIANC	MUIIIDGE	O1	Days	MCIOAA	JEITOU

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 105.5 26.6 22.8 18.1 4.4 --- --- --- 0.9 9.6 23.1

# Average Number of Days Below 0F/-17C

Years on Record: 16

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 0.4 0.3 0.1 --- --- --- --- --- --- --- --- ---

### Calverton, New York

Elevation: 100 feet Latitude: 40 57N Longitude: 072 42E

#### **Average Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  52.3 30.4 31.7 39.6 48.8 59.3 68.4 73.5 72.6 65.9 55.6 45.9 35.7

# **Average High Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 60.9 37.7 38.9 47.6 58.3 69.6 78.4 82.9 81.7 74.8 64.4 53.6 42.7

# **Average Low Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 43.6 23.1 24.4 31.5 39.2 49 58.3 64 63.5 56.9 46.7 38.1 28.6

# **Highest Recorded Temperature**

Years on Record: 49

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 100 68 68 80 92 96 98 100 98 98 88 80 69

# **Lowest Recorded Temperature**

Years on Record: 49

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Dec. Aug. Sep. Oct. Nov. °F -8 -8 -2 8 18 32 40 47 45 37 24 17 -1

Average	<b>Precipitation</b>
MACINAL	I ICCIDILATION

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 45.4 3.6 3.9 4 4.1 3.8 3.8 3.5 3.8 3.2 3.5 4.3 4.1

### Average Number of Days Above 90F/32C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 9.2 --- --- 0.1 0.5 2 3.9 2.3 0.5 --- --- ---

# Average Number of Days Below 32F/0C

Years on Record: 30

Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 97 25 22 17 3.8 0.1 ---0.7 7.6 20

### Average Number of Days Below 0F/-17C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 0.3 0.2 0.1 --- --- --- --- 0.1

# Carle Place, New York

Elevation: 125 feet Latitude: 40 43N Longitude: 073 36W

#### **Average Temperature**

Years on Record: 12

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 51 32 33 37 50 59 68 75 73 66 55 44 35

# **Average High Temperature**

Years on Record: 12

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59 37 41 44 59 68 77 82 80 73 64 51 41

### **Average Low Temperature**

Years on Record: 12

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 44 26 28 32 41 50 60 66 64 57 48 37 30

5.7

Nov. Dec.

2.6

Aug. Sep. Oct.

2.9

2.1

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. 3.3 in 40.4 2.8 3.2 4 3.6 2 3.4 5.1 2.9 3.1 3.4 3.6

**East Hampton, New York** 

**Average Precipitation** 

in. 34.4 2.8

YEAR Jan. Feb. Mar. Apr.

3.1

3.5

4

Elevation: 55 feet Latitude: 40 57N Longitude: 072 15W

						·								
A	vera	ige Ter	npera	ture				······································	18.6 A		Ye	ears on	Record	d: 16
-	۰F	YEAR 50	Jan. 30	Feb. 31	Mar. 37	Apr. 47	May 56	Jun. 66	Jul. 71	Aug. 70	Sep.	Oct. 54	Nov. 44	Dec.
A۱	/era	ge Hig	h Ten	npera	ture						Ve	are on	Record	i. 16
		303									1 0	ars on	Necord	1. 10
-	°F	YEAR 58	Jan. 37	Feb. 39	Mar. 44	Apr. 55	May 64	Jun. 74	Jul. 79	Aug. 78	Sep.	Oct. 63	Nov. 52	Dec.
A۱	Average Low Temperature Years on Record: 16													
-	°F	YEAR 43	Jan. 23	Feb. 24	Mar. 30	Apr. 40	May 48	Jun. 58	Jul. 64	Aug.	Sep. 58	Oct. 46	Nov. 37	Dec.
Hi	ghe	st Rec	orded	Tem	peratı	ıre					Υe	ars on	Record	l: 16
~	۰F	YEAR 96	Jan. 57	Feb. 59	Mar. 70	Apr. 84	May 86	Jun. 96	Jul. 94	Aug. 96	Sep. 92	Oct. 80	Nov. 72	Dec. 62
Lc	wes	st Reco	rded	Temp	eratu	re					Ye	ars on	Record	l: 16
			to the second of the second										:	
-	۰F	YEAR -2	Jan. -1	Feb. -2	Mar. 11	Apr. 16	May 33	Jun. 37	Jul. 46	Aug. 49	Sep. 37	Oct. 20	Nov. 17	Dec.

May Jun.

2.1

3.1

Jul.

1.3

1.2

Average	Number	of	Dave	Ahovo	90F/32C
Avelage	Mannel	OI.	Days	Above	30F/3ZC

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec Days 2.9 --- --- --- 0.8 1.3 0.7 0.1 --- --- ---

# Average Number of Days Below 32F/0C

Years on Record: 16

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 105.5 26.6 22.8 18.1 4.4 --- --- --- 0.9 9.6 23.1

# Average Number of Days Below 0F/-17C

Years on Record: 16

### **East Setauket, New York**

Elevation: 40 feet Latitude: 40 57N Longitude: 073 06E

# Average Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  52.6 30.6 32 39.8 49.3 59.2 68.2 73.5 72.7 66.2 56.1 46.5 36.1

# **Average High Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov Dec. °F 61.1 37.8 39.7 48.4 59.2 69.5 77.9 82.6 81.2 74.6 64.5 54 42.9

# **Average Low Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov Dec. °F 44.1 23.3 24.2 31.2 39.3 48.9 58.4 64.4 64.2 57.8 47.7 39 29.2

Hi	Highest Recorded Temperature  Years on Record: 71													
-	°F	YEAR 99	Jan. 67	Feb.	Mar. 83	Apr. 92	May 95	Jun. 96	Jul. 99	Aug 97	ı. Sep 96	. Oct. 91	Nov 81	. Dec.
Lo	wes	st Rec	orded	Tem	peratu	ire					Y	ears or	Reco	rd: 71
-	°F	YEAR -11	Jan. -4	Feb. -11	Mar. 7	Apr. 17	May 30	Jun. 38	Jul. 48	. Aug 44	ј. Sep 36	. Oct. 26	Nov 14	. Dec.
Av	era(	ge Pre	cipita	tion							Υ	ears on	Reco	rd: 30
-	in	YEAR 45.1	Jan. 3.6	Feb. 3.3		Apr. 4.1	•		Jul. 3.5	_	•			Dec. 1.1
Av	era	ge Sno	wfall								Y	ears on	Recor	d: 30
	in	YEAR 19.2	Jan. 6.7	Feb. 6.9		Apr. 0.3	May 、		Jul. 	Aug.			lov. [	Dec.
Av	eraç	ge Nun	nber	of Day	/s Abo	ove 9	0F/32	С			Y	ears on	Recor	d: 30
-	Day	YEAF s 6.6	R Jan 	ı. Feb	o. Mar. 	Apr.	Мау 0.3		Jul. 3.1	Aug. 1.5	Sep. 0.4	Oct.	Nov.	Dec.
Av	eraç	ge Nun	nber d	of Day	/s Bel	ow 32	2F/0C	· · · · · · · · · · · · · · · · · · ·			Ye	ears on	Recor	d: 30
-	Day	YEAR s 94	R Jan 24	. Feb	. Mar. 17	Apr. 3.7	Мау 0.1	Jun.	Jul.	Aug.	Sep.	Oct. 0.4	Nov. 6.5	Dec. 20

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct.

Years on Record: 30

Nov. Dec.

0.1

Average Number of Days Below 0F/-17C

0.2 0.2

Days 0.4

**Garden City, New York**Elevation: 96 feet Latitude: 40 43N Longitude: 073 37E

Avera	Average Temperature Years on Record: 30													
- °F	YEAR 52.8	Jan. 30.8	Feb. 32.2	Mar. 40.5	Apr. 49.1	May 59.1	Jun. 68.9	Jul. 74.3	Aug. 73.2	•	Oct. 55.5	Nov. 46.3		
Avera	ge Hig	h Ten	npera	ture	· · · · · · · · · · · · · · · · · · ·					Y	ears or	n Reco	rd: 30	
°F	YEAR 60.2	Jan. 36.7	Feb. 38.5	Mar. 47.6	Apr. 57.2	<b>M</b> ay 67.7		Jul. 82.5	Aug. 81.1	Sep. 73.8	Oct. 63.1	Nov. 52.7	Dec. 41.6	
Avera	Average Low Temperature Years on Record: 30													
°F	YEAR 45.4	Jan. 24.8	Feb. 25.8	Mar. 33.4	Apr. 41	May 50.5	Jun. 60.3	Jul. 66.1	Aug. 65.3	Sep. 58.1	Oct. 47.8	Nov. 39.9	Dec. 29.8	
Highe	Highest Recorded Temperature Years on Record: 49													
°F	YEAR 103	Jan. 68	Feb. 70	Mar. 85	Apr. 92	Мау 97	Jun. 101	Jul. 103	Aug. 102	Sep. 97	Oct. 89	Nov. 83	Dec. 67	
Lowes	st Reco	orded	Temp	eratu	re			er ti.		Y	ears on	Recor	d: 49	
°F	YEAR -4	Jan. -4	Feb. -1	Mar. 5	Apr. 13	May 34	Jun. 43	Jul. 50	Aug. 46	Sep.	Oct. 27	Nov. 18	Dec. -1	
Avera	ge Pre	cipita	tion		·	MAN MAN AND AND AND AND AND AND AND AND AND A				Υ	ears on	Recor	d: 30	
in	YEAR 43.6	Jan. 3.4	Feb. 3.2		Apr. 4.2	May 4	Jun. 3.6	Jul. 3.8	Aug. 3.5	Sep. 3.5	Oct. 3.4	Nov. 4.1	Dec. 3.7	
Avera	ge Nur	nber d	of Day	/s Ab	ove 9	0F/32	С			Y	ears on	Recor	d: 30	
Day	YEAF	R Jan 	. Feb	. Mar	. Apr.	Мау 0.4		Jul. 4.5		Sep. 0.7	Oct.	Nov.	Dec.	

<b>Average</b>	Number	of Days	<b>Below</b>	32F/0C

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 82 23 20 14 2.4 0.4 4.7 18

### Average Number of Days Below 0F/-17C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 0.2 0.1 0.1 --- --- --- --- --- --- --- ---

# **Great Neck, New York**

Elevation: 23 feet Latitude: 40 46N Longitude: 073 46W

#### **Average Temperature**

Years on Record: 51

YEAR Feb. Jan. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 51 32 33 41 50 59 69 75 73 66 55 46 37

# **Average High Temperature**

Years on Record: 51

YEAR Mar. Jan. Feb. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59 37 39 46 57 66 77 82 80 73 64 53 42

# **Average Low Temperature**

Years on Record: 51

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 46 26 28 33 42 51 60 68 66 59 48 39 32

# **Average Precipitation**

Years on Record: 51

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 41 3.4 2.9 3.6 3.7 3.9 3.4 3.7 3.6 2.8 3.1 3.3 3.6

# **Greenport, New York**

Elevation: 16 feet Latitude: 41 06N Longitude: 072 22W

Average	Temperat	ture

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 51.3 29.7 30.6 38 57.1 66 47 72.5 72 65.3 55.5 46.5 35.6

#### **Average High Temperature**

Years on Record: 30

Feb. Mar. Apr. YEAR Jan. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59.2 37.1 38.1 45.9 55.3 65.8 74.3 80.5 80 73.2 63.6 54 43.1 Average Low Temperature

Years on Record: 30

YEAR Feb. Mar. Apr. Jan. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 43.3 22.2 23.1 30.1 38.6 48.3 57.7 64.4 63.9 57.3 47.3 38.8 28.1

### Average Precipitation

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 45 3.7 3.5 3.7 4.1 3.7 3.7 3.4 4 3.2 3.5 4.4 4

# Islip, New York

Elevation: 85 feet Latitude: 40 48N Longitude: 073 06W

# **Average Temperature**

Years on Record: 12

	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
۰F	53	32	33	40	49	59	69	74	73	65	55	46	36

# **Average High Temperature**

Years on Record: 12

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°F 61	39	40	48	57	68	77	82	80	73	64	54	43

vera	ge Lov	v Ten	npera	ture						Υe	ears on	Record	d: 12
°F	YEAR 44	Jan. 24	Feb.	Mar. 31	Apr. 41	May 50	Jun. 60	Jul. 67	Aug.	Sep. 57	Oct. 46	Nov. 37	Dec 28
ighe	st Rec	orded	l Tem	peratı	ure	· · · · · · · · · · · · · · · · · · ·		twww.		Υe	ears on	Record	d: 12
°F	YEAR 101	Jan. 67	Feb.	Mar. 82	Apr. 86	May 95	Jun. 95	Jul. 101	Aug. 94	Sep. 91	Oct. 85	Nov. 78	Dec 66
owes	st Reco	orded	Tem	oeratu	ıre			Per de la como de la c		Ye	ears on	Record	d: 12
°F	YEAR -7	Jan. -7	Feb.	Mar.	Apr. 24	May 34	Jun. 46	Jul. 50	Aug. 45	Sep. 38	Oct. 28	Nov. 11	Dec.
vera	ge Pre	cipita	tion	***************************************				Works to "		Ye	ars on	Record	d: 12
in.	YEAR 44.6	Jan. 3.4	Feb. 3.1		Apr. 3.1	•		Iul. A	_	•		lov. D	ec. 6
/era	ge Sno	wfall			- · · · · · · · · · · · · · · · · · · ·		P			Ye	ars on	Record	l: 10
in.	YEAR 20.6	Jan. 6.2	Feb. 4.8		Apr. 0.3	May J	un. J 	lul. A	.ug. S 	ep. O		ov. Do	ec. 6
/era	ge Nur	nber	of Day	/s Abo	ove 9	0F/320				Ye	ars on	Record	l: 12
Day	YEAF	R Jan	ı. Feb	o. Mar 	. Apr	. May	Jun. 2	Jul. 3	Aug. 2	Sep.	Oct.	Nov.	Dec
/era	ge Nun	nber	of Day	/s Bel	ow 3	2F/0C		- Marie - Mari		Ye	ars on	Record	l: 12
Day	YEAF s 98	R Jan 25	. Feb	o. Mar. 17	. Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.		Dec. 21

**Melville, New York**Elevation: 98 feet Latitude: 40 47N Longitude: 073 06W

Avera	ige Ten	npera	ture						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Υe	ears on	Record	i: 16
°F	YEAR 50	Jan. 30	Feb.	Mar. 37	Apr. 47	May 56	Jun. 66	Jul. 71	Aug. 70	Sep.	Oct. 54	Nov. 44	Dec.
Avera	ge Hig	h Ten	npera	ture		4				Υe	ears on	Record	i: 16
°F	YEAR 58	Jan. 37	Feb.	Mar. 44	Apr. 55	May 64	Jun. 74	Jul. 79	Aug. 78	Sep.	Oct. 63	Nov. 52	Dec. 41
Avera	ge Lov	/ Tem	perat	ure	Yen.	the Mark of the Angle Indiana, glasses a				Ye	ars on	Record	l: 16
°F	YEAR 43	Jan. 23	Feb.	Mar. 30	Apr. 40	May 48	Jun. 58	Jul. 64	Aug.	Sep. 58	Oct. 46	Nov. 37	Dec. 26
Highe	st Rec	orded	Tem	oeratı	ıre				7 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Ye	ars on	Record	l: 16
°F	YEAR 96	Jan. 57	Feb. 59	<b>M</b> ar.	Apr. 84	May 86	Jun. 96	Jul. 94	Aug. 96	Sep. 92	Oct. 80	Nov. 72	Dec. 62
Lowes	st Reco	rded	Temp	eratu	re				· · · · · · · · · · · · · · · · · · ·	Ye	ars on	Record	: 16
°F	YEAR -2	Jan. -1	Feb.	Mar.	Apr. 16	May 33	Jun. 37	Jul. 46	Aug. 49	Sep. 37	Oct. 20	Nov. 17	Dec. 1
Avera	ge Pre	cipita	tion							Υ	ears or	n Recor	d: 3
in.					Apr.   4 :	•			.ug. Se	•		ov. De	
Avera	ge Nun	nber o	of Day	s Abo	ove 90	)F/32(	3			Ye	ars on	Record	: 16
Day	YEAR	R Jan 	. Feb	. Mar. 	Apr.	May 	Jun. 0.8	Jul. 1.3	Aug. 0.7	Sep. 0.1	Oct.	Nov.	Dec.

Average Number of Days Below 32F/0C

Years on Record: 16

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 105.5 26.6 22.8 18.1 4.4 --- --- --- 0.9 9.6 23.1

Average Number of Days Below 0F/-17C

Years on Record: 16

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 0.4 0.3 0.1 --- --- --- --- --- --- --- --- ---

Patchogue, New York

Elevation: feet Latitude: 40 45N Longitude: 073 00W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 51.7 29.4 31.1 39.2 48.1 58.1 67.3 73 72.3 65.2 54.6 45.1 34.8

Average High Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  61.4 38.3 40.1 48.8 58.7 68.8 77.6 82.8 82.1 75.5 65.1 54.2 43.3

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  41.9 20.5 22 29.5 37.5 47.3 56.9 63.2 62.4 54.9 44.1 35.9 26.3

Highest Recorded Temperature

Years on Record: 49

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Sep. Aug. Oct. Nov. Dec. °F 102 67 83 90 97 99 68 98 102 97 85 77 68

Lov	Lowest Recorded Temperature Years on Record: 49													
-	°F -	YEAR -13	Jan. -13	Feb. -6	Mar. -7	Apr. 12	May 28	Jun. 34	Jul. 46	Aug 40	. Sep.	. Oct.	. <b>N</b> ov	/. Dec. -6
Ave	erag	e Pre	cipita	ition							Υ	ears o	n Reco	ord: 30
-	in 4	YEAR 18.5	Jan. 3.9	Feb. 3.7	Mar. 4.2	Apr. 4.4	May 4	Jun. 4.1	Jul. 3.5	Aug. 4.4	Sep. 3.4	Oct. 3.7	Nov. 4.6	Dec. 4.3
Ave	erag	e Sno	owfall				······································			and the state of the	Υ	ears o	n Reco	ord: 30
-	in 2	YEAR 29.4	Jan. 10.1	Feb. 9.4	Mar. 5.1	Apr. 0.6	May	Jun. 	Jul.	Aug.	Sep. •			Dec. 4.6
Ave	erage	e Nur	nber (	of Day	ys Ab	ove 9	0F/32	C			Υ	ears o	n Reco	rd: 30
E	ays	YEAF	R Jan	ı. Feb	o. Mar 	. Apr.	. May	/ Jun. 1.4	Jul. 3.4	Aug. 2.1	Sep. 0.5	Oct.	Nov.	Dec.
Ave	erage	e Nur	nber	of Day	/s Be	low 3	2F/0C	,	······································		Y	ears o	n Reco	rd: 30
- D	<b>)</b> ays	YEAF	R Jan 25	n. Feb 22	o. Mar 19	. Apr. 6.8	. Мау 0.5	/ Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct.

Years on Record: 30

Nov. Dec.

0.1

Average Number of Days Below 0F/-17C

0.7 0.4

Days 1.3

**Riverhead, New York**Elevation: 67 feet Latitude: 40 50N Longitude: 072 37W

Aver	age Ter	npera	ture					ant		Υe	ears on	Record	d: 16
- °]	YEAR F 50	Jan. 30	Feb.	Mar. 37	Apr. 47	Мау 56	Jun. 66	Jul. 71	Aug. 70	Sep.	Oct. 54	Nov. 44	Dec.
Aver	age Hig	h Ten	npera	ture			North, Charles	tel Miles		Υe	ears on	Record	i: 16
- °]	YEAR F 58	Jan. 37	Feb.	Mar. 44	Apr. 55	May 64	Jun. 74	Jul. 79	Aug. 78	Sep.	Oct. 63	Nov. 52	Dec.
Aver	age Lov	v Tem	perat	ure	·					Ye	ars on	Record	l: 16
·	YEAR F 43	Jan. 23	Feb. 24	Mar.	Apr. 40	May 48	Jun. 58	Jul. 64	Aug. 63	Sep. 58	Oct. 46	Nov. 37	Dec. 26
High	est Rec	orded	Tem	oeratu	ire		<del>, i</del> umanu			Ye	ars on	Record	l: 16
°I	YEAR 96	Jan. 57	Feb.	<b>M</b> ar. 70	Apr. 84	May 86	Jun. 96	Jul. 94	Aug. 96	Sep. 92	Oct. 80	Nov. 72	Dec. 62
Lowe	est Reco	orded	Temp	eratu	re					Ye	ars on	Record	: 16
°F	YEAR ₹ -2	Jan. -1	Feb. -2	<b>M</b> ar.	Apr. 16	May 33	Jun. 37	Jul. 46	Aug. 49	Sep. 37	Oct. 20	Nov. 17	Dec. 1
Avera	age Pre	cipita	tion							Υ	ears or	n Recor	d: 3
in	YEAR . 34.4				Apr.   4	•			.2 2.	•		ov. De	
Avera	age Nun	nber d	of Day	s Abo	ve 90	)F/320	<b>)</b>			Ye	ars on	Record	: 16
Da	YEAF ys 2.9	R Jan 	. Feb	Mar.	Apr.	May 	Jun. 0.8	Jul. 1.3	Aug. 0.7	Sep. 0.1	Oct.	Nov.	Dec.

Average Number of Days Below 32F/0C

Years on Record: 16

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 105.5 26.6 22.8 18.1 4.4 --- --- --- 0.9 9.6 23.1

Average Number of Days Below 0F/-17C

Years on Record: 16

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 0.4 0.3 0.1 --- --- --- --- --- --- --- --- ---

Westhampton, New York

Elevation: 59 feet Latitude: 40 51N Longitude: 072 37W

**Average Temperature** 

Years on Record: 18

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Oct. Aug. Sep. Nov. Dec. °F 48 30 32 35 46 55 64 69 69 62 53 42 32

**Average High Temperature** 

Years on Record: 18

YEAR Mar. Jan. Feb. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 57 35 37 42 53 62 73 78 77 71 62 51 41

**Average Low Temperature** 

Years on Record: 18

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 41 23 24 30 37 46 57 62 60 55 44 35 26

**Average Precipitation** 

Years on Record: 18

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 43.4 3.6 3.6 4.4 3.5 3.3 2.1 3.1 4.6 3.4 3.3 4.1 4.5

# **Connecticut Climate Data**

**Bridgeport, Connecticut**Elevation: 26 feet Latitude: 41 10N Longitude: 073 08W

Avera	Average Temperature Years on Record: 47												
°F	YEAR 52	Jan. 30	Feb. 31	<b>Ma</b> r. 39	<b>Apr</b> . 49	<b>May</b> 59	Jun. 68	Jul. 74	Aug. 73	Sep. 66	Oct. 56	<b>Nov</b> . 46	Dec. 35
Avera	ige Hig	jh Tei	mpera	ture						,	Years	on Rec	ord: 47
°F	<b>YEAR</b> 60	Jan. 37	Feb. 38	<b>Ma</b> r. 46	Apr. 57	May 67	Jun. 77	Jul. 82	Aug. 81	Sep. 74	Oct. 64	Nov. 53	Dec. 41
Avera	ige Lo	w Ten	npera	ture							Years	on Rec	ord: 47
°F	YEAR 44	Jan. 23	Feb. 24	<b>Ma</b> r. 31	Apr. 40	<b>May</b> 50	Jun. 59	Jul. 66	Aug. 65	Sep. 57	Oct. 47	Nov. 38	Dec. 27
Highe	st Rec	orde	d Tem	perat	ure						Years	on Rec	ord: 47
°F	YEAR 103	Jan. 65	Feb. 67	<b>M</b> ar. 84	<b>Apr</b> . 91	<b>May</b> 92	<b>Jun</b> . 96	Jul. 103	Aug. 100	<b>Se</b> p. 99	Oct. 85	Nov. 78	Dec. 65
Lowe	st Rec	ordec	l Tem	perat	ure						Years (	on Rec	ord: 47
°F	YEAR -7	Jan. -7	Feb. -5	Mar. 4	Apr. 18	<b>May</b> 31	Jun. 41	<b>Jul</b> . 49	Aug. 44	Sep. 36	Oct. 26	<b>Nov</b> . 16	Dec. -4
Avera	ige Pre	cipita	ation							·	Years	on Rec	ord: 47
in.	YEAR 41.1	Jan. 3.2	Feb. 2.9	Mar. 3.8	Apr. 3.7	•	Jun.	Jul. 3.5	Aug. 3.8	Sep. 3.1	Oct. 3.2	Nov. 3.8	Dec. 3.5
Avera	ige Sn	owfal									Years (	on Reco	ord: 45
in.	YEAR 24.9	Jan. 7.3	Feb. 7.3	<b>Mar.</b> 4.8	Apr. 0.4	May	Jun.	Jul.	Aug.	Sep.	Oct.	<b>Nov.</b> 0.6	Dec. 4.5

Average Number of Days Above 90F/32C

Years on Record: 47

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 7 --- --- 1 3 2 --- --- ---

Average Number of Days Below 32F/0C

Years on Record: 47

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 100 26 23 17 3 --- --- --- 1 8 22

**Burlington, Connecticut** 

Elevation: 510 feet Latitude: 41 48N Longitude: 072 56W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 47.8 23.6 25.5 35.1 46.3 57 65.6 70.7 68.9 61.2 50.5 40.7 28.9

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  58.6 33.5 35.8 45.3 57.4 68.8 77 82 80 72.6 62.2 50.4 37.8

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 37.1 13.5 15.3 24.9 35.1 45.2 54.2 59.5 57.8 49.7 38.8 31 19.9

**Average Precipitation** 

Years on Record: 30

May Jun. Jul. YEAR Jan. Feb. Mar. Apr. Aug. Sep. Oct. Nov. Dec. in 49.3 4.2 4.5 3.8 3.5 4.2 4.3 4.5 4.1 3.9 4.3 3.9 4.2

Coventry, Connecticut

Elevation: 480 feet Latitude: 41 48N Longitude: 072 21W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  46.4 22.5 24.8 34.7 44.8 55.1 63.6 68.5 67 59.1 48.6 39.8 28.2

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  58.3 33.8 35.9 45.4 56.7 68.1 76.2 81 79.3 72.2 62.1 50.7 38.4

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 34.4 11.2 13.6 24 32.9 42 51 56 54.5 45.9 35 28.9 17.9

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Aug. Sep. Oct. Jul. Nov. Dec. in 47.6 3.6 3.1 3.7 4.3 4.2 4.2 3.9 4 4.1 4 4.5 4

**Danbury, Connecticut** 

Elevation: 457 feet Latitude: 41 22N Longitude: 073 29W

**Average Temperature** 

Years on Record: 18

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 49 27 29 36 48 57 66 71 69 62 54 42 30

**Average High Temperature** 

Years on Record: 18

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Dec. Nov. °F 60 35 38 46 59 69 78 83 81 74 66 52 39

Aver	Average Low Temperature Years on Record: 19												
٥J	YEAF F 39	R Jan. 19	Feb.	Mar. 27	Apr. 37	<b>May</b> 46	Jun. 54	Jul. 60	Aug. 58	<b>Sep.</b> 50	Oct. 42	Nov. 32	Dec. 22
High	est Re	corde	d Ten	nperat	ure						Years	on Rec	ord: 18
٥]	YEAF F 100	R Jan. 71	Feb.	<b>M</b> ar. 80	Apr. 91	<b>May</b> 94	Jun. 97	Jul. 99	Aug. 100	Sep. 100	Oct. 91	Nov. 82	Dec. 68
Low	est Re	corde	d Tem	perati	ure					,	Years	on Rec	ord: 19
	YEAF F -16	R Jan. -16	Feb. -16	Mar. -4	Apr. 15	May 25	Jun. 35	Jul. 40	Aug. 37	Sep. 23	Oct. 19	Nov.	Dec.
Aver	rage Pi	ecipit	ation								Years	on Rec	ord: 20
ir	YEAF 1. 48.8	R Jan. 3.6	Feb. 3.2	Mar. 4	Apr. 4.1	May 4.3	Jun. 3.4	Jul. 4.9	Aug. 4.8	Sep. 3.8	Oct. 3.8	<b>Nov</b> . 4.9	Dec. 4.1
Aver	rage Si	nowfa								,	Years	on Rec	ord: 19
ir	YEAF 1. 38.6	R Jan. 9.8	Feb. 8.5	Mar. 8.3	Apr. 1.7	May 	Jun.	Jul.	Aug.	Sep.	Oct.	Nov. 2.1	Dec. 8.2
Aver	rage N	umber	of Da	ıys Ab	ove 9	0F/3	2C				Years	on Rec	ord: 10
Da	YE ays 9.3	AR Jar		o. Mar 	. Apr.	<b>Ma</b> y	Jun. 2	Jul. 4	Aug. 2	Sep.	Oct.	Nov.	Dec.

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 132 28 24 24 7 1 --- --- 1 6 15 26

Years on Record: 10

Average Number of Days Below 32F/0C

Falls Village, Connecticut

Elevation: 550 feet Latitude: 41 57N Longitude: 073 22W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 47.6 22.7 25.4 35.2 46.1 57.8 66 70.7 68.8 61.1 50 39.8 28

Average High Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59.6 33.6 36.4 46.3 59.1 71.7 79.3 83.8 81.4 73.6 62.7 50.1 37.6

Average Low Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 35.6 11.8 14.3 24 33.1 43.8 52.6 57.5 56.1 48.5 37.1 29.4 18.4

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 42.6 3 2.8 3.1 3.7 4 4.3 3.7 4.4 3.5 3.3 3.7 3.4

Gaylordsville, Connecticut

Elevation: 260 feet Latitude: 41 39N Longitude: 073 29W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 48.4 23.8 26.5 36.2 47 57.9 66.4 71.3 69.7 62.1 50.8 40.4 28.9

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 60 34.3 37.2 47.3 59.6 71.1 79 83.6 81.6 74.1 63.5 50.8 38.4

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 36.7 13.2 15.8 25 34.3 44.7 53.7 58.8 57.7 50.1 38.1 30.1 19.4

# **Average Precipitation**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 44.5 3 3.1 3.5 4.1 4.1 3.8 4.2 3.8 3.6 3.6 4 3.7

# Groton, Connecticut

Elevation: 10 feet Latitude: 41 19N Longitude: 072 02W

#### **Average Temperature**

Years on Record: 17

Mar. YEAR Jan. Feb. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 50 29 31 37 48 57 66 72 71 64 54 43 32

# **Average High Temperature**

Years on Record: 17

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59 37 39 45 57 75 66 81 80 74 64 52 40

# **Average Low Temperature**

Years on Record: 17

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 42 22 23 30 39 48 57 62 55 45 35 25 64

# **Highest Recorded Temperature**

Years on Record: 17

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 100 74 60 60 83 96 100 100 91 84 74 86 62

# **Lowest Recorded Temperature**

Years on Record: 17

Feb. YEAR Jan. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F -8 -8 -5 1 17 32 40 47 25 14 46 33 -3

Ave	Average Precipitation Years on Record: 17													
·	in.	YEAR 44.4	<b>Ja</b> n. 3.7	Feb. 3.2	Mar. 4.3	Apr. 4.1	May 4			•	•	Oct. 3.5		Dec. 4.1
Ave	erag	ge Sno	owfall									Years	on Red	ord: 17
•	in.	YEAR 34.5	<b>Jan</b> . 8.9	Feb.	<b>M</b> ar. 7.1	Apr. 0.9	May 	Jun. 	Jul.	Aug.	Sep.	Oct.	<b>Nov</b> . 0.9	Dec. 7.7
Ave	eraç	ge Nur	nber	of Da	ys Ab	ove 9	00F/32	2C				Years	on Rec	ord: 12
Γ	Day	YEAF s 3	R Jan. 	Feb	. Mar. 	Apr.	May 			•	Sep. 0.2	Oct.	Nov.	Dec.
Ave			_					_						
	era	ge Nur	nber (	of Da	ys Be	low 3	2F/00	<b>;</b>				Years	on Rec	ord: 12

0.1

Aug. Sep. Oct.

Average Number of Days Below 0F/-17C

0.2

0.6

Days 0.9

YEAR Jan. Feb. Mar. Apr. May Jun. Jul.

Hartford, Connecticut
Elevation: 160 feet Latitude: 41 56N Longitude: 072 41W

A	vera	ige Te	mper	ature								Years	on Re	cord: 47
	°F	YEAR 50	<b>Jan</b> . 26	Feb. 28	Mar. 37	Apr. 49	<b>May</b> 60	Jun. 69	Jul. 74	Aug 72	. Sep	. Oct	. Nov 42	7. Dec.
A	/era	ige Hig	gh Te	mpera	ature							Years	on Re	cord: 47
	°F	YEAR 60	Jan. 34	Feb.	Mar. 46	Apr.	<b>May</b> 71	Jun. 80	Jul. 85	Aug. 82	Sep.	. Oct 64	. Nov 51	v. Dec.
A۱	/era	ige Lo	w Ter	mpera	ture							Years	on Red	cord: 47
	°F	YEAR 40	Jan. 17	Feb. 19	<b>M</b> ar. 28	Apr. 38	<b>May</b> 47	Jun. 57	Jul. 62	<b>Aug</b> . 60	Sep. 52	Oct 41	. Nov	v. Dec.
Hi	ghe	st Rec	orde	d Tem	perat	ure						Years	on Red	cord: 47
	°F	YEAR 102	<b>Jan</b> . 66	Feb. 73	<b>Mar.</b> 87	<b>Apr</b> . 96	<b>May</b> 97	Jun. 101	<b>Jul</b> . 102	<b>Aug</b> . 101	Sep. 101	Oct. 91	Nov 83	7. Dec.
Lo	we	st Rec	orded	d Tem	perati	ure						Years	on Red	cord: 47
	°F	YEAR -26	Jan. -26	Feb. -21	<b>Ma</b> r. -8	Apr. 9	<b>May</b> 28	Jun. 37	Jul. 44	Aug. 36	Sep. 27	Oct. 17	Nov 1	Dec.
Av	era	ge Pre	ecipita	ation								Years	on Red	ord: 47
	in.	YEAR 44.2	Jan. 3.4	Feb. 3.1	<b>Mar.</b> 3.9	Apr. 3.9	<b>May</b> 3.7			Aug. 4	Sep. 3.8	Oct. 3.6	Nov. 4.1	Dec. 3.9
Av	era	ge Sn	owfal									Years	on Red	ord: 39
	in.	YEAR 47.3	Jan. 12	Feb. 11.4	<b>Ma</b> r. 9.9	<b>Apr</b> . 1.6	May 	Jun.	Jul.	Aug.	•	Oct. 0.1	Nov. 2	Dec. 10.3

Average Number of Days Above 90F/32C

Years on Record: 47

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 18 --- --- 1 4 8 4 1 --- --- ---

Average Number of Days Below 32F/0C

Years on Record: 47

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 134 28 25 22 8 1 --- --- 6 16 27

Meriden, Connecticut

Elevation: 369 feet Latitude: 41 33N Longitude: 072 43W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. . Dec °F 50.3 27.1 29.2 37.9 48.3 58.9 67.8 72.8 70.9 63.1 52.8 43.3 32

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59.5 34.9 37.3 46.5 58.3 69.7 78.6 83.3 80.6 72.6 62 51.2 39.3

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  41.1 19.2 21 29.3 38.2 47.9 57 62.3 61 53.4 43.5 35.4 24.7

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 49.7 3.9 3.5 4.1 4.4 4.6 4.1 3.8 4 4.3 4.2 4.5 4.2

New Haven, Connecticut
Elevation: 14 feet Latitude: 41 15N Longitude: 072 53W

Aver	age Te	mper	ature								Years	on Rec	ord: 17
°I	YEAR F 50	<b>Jan</b> . 29	Feb.	<b>Ma</b> r. 37	Apr. 48	<b>May</b> 57	Jun. 66	Jul. 72	<b>Aug</b> . 71	Sep. 64	Oct. 54	Nov. 43	Dec. 32
Aver	age Hiç	gh Te	mpera	ature							Years	on Rec	ord: 17
۰I	YEAR 59	Jan. 37	Feb. 39	Mar. 45	Apr. 57	<b>May</b> 66	Jun. 75	Jul. 81	<b>Aug</b> . 80	Sep. 74	Oct. 64	Nov. 52	Dec. 40
Avera	age Lo	w Ter	npera	ture							Years	on Rec	ord: 17
۰I	YEAR F 42	Jan. 22	Feb. 23	<b>Ma</b> r. 30	<b>Apr</b> . 39	May 48	Jun. 57	Jul. 64	Aug. 62	<b>Sep.</b> 55	Oct. 45	Nov. 35	Dec. 25
High	est Rec	corde	d Tem	perat	ture						Years (	on Reco	ord: 17
°F	<b>YEAR</b> 100	<b>Jan.</b> 60	Feb. 60	Mar. 74	Apr. 83	May 86	<b>Jun</b> . 96	<b>Jul</b> . 100	<b>Aug</b> . 100	<b>Se</b> p. 91	Oct. 84	Nov. 74	Dec. 62
Lowe	st Rec	ordec	l Tem	perat	ure						Years (	on Reco	ord: 17
°F	YEAR	Jan. -8	Feb. -5	Mar. 1	Apr. 17	May 32	Jun. 40	Jul. 47	<b>Aug</b> . 46	Sep. 33	Oct. 25	Nov. 14	Dec. -3
Avera	age Pre	ecipita	ation							`	Years (	on Reco	ord: 17
in	YEAR . 44.4	Jan. 3.7	Feb. 3.2		Apr. 4.1	-	Jun. 2.6		Aug. 4.1	Sep. 3.4	Oct. 3.5	Nov. 4.4	Dec. 4.1
Avera	age Sn	owfal								`	Years (	n Reco	ord: 17
in	YEAR . 34.5	<b>Jan</b> . 8.9	<b>Feb</b> .	<b>M</b> ar. 7.1	<b>Apr.</b> 0.9	May 	Jun.	Jul.	Aug.	Sep.	Oct.		Dec. 7.7

Average	Number	of	Days	Ahove	90F/32C
n n a con cot col co		<b>U</b>	way o	MNO A C	JULIUEU

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 3 --- --- --- 0.5 1.6 0.7 0.2 --- --- ---

Average Number of Days Below 32F/0C

Years on Record: 12

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 110.4 26.2 22.8 20.3 3.8 0.1 --- --- 1.6 11.3 24.3

Average Number of Days Below 0F/-17C

Years on Record: 12

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 0.9 0.6 0.2 --- --- --- 0.1

#### **New London, Connecticut**

Elevation: 40 feet Latitude: 41 21N Longitude: 072 03W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 49.9 27.7 29.4 37.6 46.7 56.4 65.4 71.4 70.7 63.3 53 43.9 33

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59.2 36.9 38.5 46.6 56.4 66 75 80.7 79.9 73.1 63 52.9 41.7

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 40.5 18.5 20.3 28.5 37 46.7 55.7 62.1 61.3 53.5 43 34.8 24.3

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 48.2 4.2 3.8 4.3 4.3 4.1 3.5 3.3 3.7 3.6 3.9 4.9 4.7

#### Norfolk, Connecticut

Elevation: 1337 feet Latitude: 41 58N Longitude: 073 13W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 44.1 19.1 20.7 30.6 42.3 54.1 62.6 67.6 65.7 58 47 36.9 24.6

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Cor. Nov. 9 53.3 27.4 29.5 39.6 52.4 64.8 72.8 77.5 75.4 67.6 56.4 44.4 32

Average Low Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 34.8 10.8 11.9 21.5 32.2 43.3 52.4 57.5 55.9 48.3 37.7 29.3 17.2

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 51.5 4 3.9 4.2 4.5 4.6 4.6 4.2 4.6 4.1 3.9 4.6 4.4

Norwalk, Connecticut

Elevation: 37 feet Latitude: 41 07N Longitude: 073 25W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 50.5 27.5 29.3 38.3 48.3 57.8 67.3 72.9 71.6 64 52.7 43.7 32.5

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 60.9 37 38.9 48 58.9 68.8 78.3 83.5 82.3 75.2 64.4 53.6 41.5

#### **Average Low Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 40 17.9 19.6 28.6 37.7 46.7 56.3 62.2 60.7 52.6 40.8 33.7 23.5

#### **Average Precipitation**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 46.8 3.6 3.1 3.9 4.3 4.6 3.9 3.9 3.7 3.9 3.7 4.3 4

#### Norwich, Connecticut

Elevation: 20 feet Latitude: 41 32N Longitude: 072 04W

#### **Average Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 50.3 27.6 29.7 38.4 48.1 58.4 66.8 72.2 70.7 63.4 52.8 43.3 32.4

# **Average High Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  60.9 37.6 39.6 48.5 59.3 70 78 82.7 81 74.4 64.7 53.5 41.6

# **Average Low Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 39.7 17.5 19.7 28.2 36.9 46.8 55.5 61.7 60.4 52.3 40.8 33.1 23.1

# **Average Precipitation**

Years on Record: 30

Sep. Oct. YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Nov. Dec. 5 4 3.9 4.5 4.6 4.5 3.3 3.7 3.9 3.9 4.1 4.7 in 50

Stamford, Connecticut

Elevation: 190 feet Latitude: 41 08N Longitude: 073 33W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 50.8 27.4 29.9 38.9 49 59.1 67.7 72.6 71.2 64 53.3 43.4 32.5

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 61.9 37.2 40.2 49.7 61.3 71.7 80 84.4 82.5 75.5 65.2 53.5 41.3

Average Low Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 39.6 17.6 19.6 28 36.7 46.3 55.4 60.7 59.7 52.4 41.4 33.4 23.6

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 49.4 3.8 3.4 4.2 4.4 4.7 4 4 4 4.1 4.1 4.6 4.2

Storrs, Connecticut

Elevation: 650 feet Latitude: 41 48N Longitude: 072 15W

**Average Temperature** 

Years on Record: 106

Nov. Dec. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. YEAR Jan. Feb. 50 39 30 °F 46 26 33 44 55 69 68 60 26 64

**Average High Temperature** 

Years on Record: 105

Sep. Oct. Nov. Dec. YEAR Jan. Mar. Apr. May Jun. Jul. Aug. Feb. °F 55 78 77 69 60 48 37 33 33 42 55 66 75

**Average Low Temperature** 

Years on Record: 105

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 37 17 19 26 33 44 53 59 57 50 39 32 23

**Average Precipitation** 

Years on Record: 109

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 45.8 3.6 3.3 4.1 3.8 3.7 3.4 4.2 4.2 3.9 3.7 4.1 3.9

Stratford, Connecticut

Elevation: 10 feet Latitude: 41 10N Longitude: 073 08W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 51.7 28.9 30.4 38.6 48.2 58.4 67.6 73.7 73.1 65.9 55.6 45.6 34.3

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59.5 36 37.6 46.2 56.6 66.7 76 81.7 80.9 74.2 64.1 53 41

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 43.9 21.9 23.2 30.9 39.8 50 59.1 65.7 65.1 57.6 47.1 38.2 27.6

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 41.7 3.2 3 3.8 3.8 3.9 3.5 3.8 3.3 3.1 3.1 3.8 3.5

#### Wethersfield, Connecticut

Elevation: 15 feet Latitude: 41 44N Longitude: 072 39W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 49.7 25.4 27.9 37.2 47.9 58.7 67.6 73 71.2 63.1 52 42.2 30.3

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59.9 34.6 37.4 46.8 58.6 69.9 78.4 83.5 81.7 74.3 63.3 51.6 38.8

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 39.5 16.1 18.4 27.6 37.3 47.4 56.8 62.4 60.7 51.9 40.7 32.8 21.8

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. Oct. Nov. Dec. May Jun. Jul. Aug. Sep. 3.6 3.5 in 42.8 3.3 3 3.4 3.8 4 3.8 3.6 3.5 3.7 3.6

Willimantic, Connecticut

Elevation: 244 feet Latitude: 41 44N Longitude: 072 10W

**Average Temperature** 

Years on Record: 14

Nov. Dec. YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. °F 50 28 29 38 49 73 70 54 42 30 58 67 63

**Average High Temperature** 

Years on Record: 14

Mar. Apr. Jul. Oct. Nov. Dec. YEAR Jan. Feb. May Jun. Aug. Sep. 79 75 52 39 °F 61 37 38 48 60 69 84 81 66

Avera	ge Lov	w Ten	npera	ture						,	Years	on Rec	ord: 14
°F	YEAR 40	<b>Jan</b> . 19	Feb. 20	<b>Ma</b> r. 29	Apr. 38	May 47	Jun. 56	Jul. 62	Aug. 59	Sep. 52	Oct. 42	Nov.	Dec. 21
Highe	st Rec	ordec	d Tem	perat	ure	nárnadaananaan	WAGOORANAADOOONIA	***************************************		******************************	Years (	on Rec	ord: 14
°F	YEAR 101	Jan. 65	Feb. 72	Mar. 86	Apr. 87	<b>May</b> 93	Jun. 100	Jul. 98	Aug. 100	Sep. 101	Oct. 89	Nov. 83	Dec. 66
Lowes	st Rec	orded	Tem	peratu	ire					900000000000000000000000000000000000000	Years (	on Rec	ord: 14
°F	YEAR -16	Jan. -16	Feb. -9	Mar. -4	Apr. 14	<b>May</b> 29	Jun. 40	Jul. 45	Aug. 42	Sep. 29	Oct. 23	Nov. 14	Dec. -8
Avera	ge Pre	cipita	tion	************		50553501555555					Years (	on Rec	ord: 13
in.	YEAR 44.5	Jan. 3.3	Feb.	Mar. 4.1	Apr. 4.2	May 4	Jun. 2.8	Jul. 3.2	Aug. 4.3	Sep. 3.4	Oct. 3.5	Nov. 4.8	Dec. 3.8
Avera	ge Sno	owfall								`	Years (	n Rec	ord: 11
	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
in.	43.6	14.2	11.3	7.1	0.6					-		1.4	9
Avera	ge Nui	mber	of Day	ys Ab	ove 9	0F/32	2C				Years (	on Rec	ord: 14
	YEA	R Jan.	. Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Day	s 13.2	an an an		*******		0.6	3.6	5.6	2.6	8.0	200 100 100		
Avera	ge Nu	mber	of Da	ys Bel	low 3	2F/0C				`	Years (	n Rec	ord: 14
- Dav	YEAF	R Jan. 27.9			•		•		Aug.	-	Oct. 4.2		Dec. 26.6
-	ge Nu											on Rec	
Day	YEAI			o. <b>Ma</b> r 0.1	-	May 	y Jun	Jul.	Aug.	Sep.	Oct.	Nov	Dec.

Windsor Locks, Connecticut
Elevation: 180 feet Latitude: 41 55N Longitude: 072 40W

Ave	ra	ge Ter	mpera	iture							\	ears o	n Reco	rd: 51
0	F	YEAR 48	Jan. 26	Feb. 28	Mar. 35	Apr. 48	<b>May</b> 59	Jun. 68	Jul. 73	Aug. 69	Sep. 62	Oct. 51	Nov. 41	Dec. 30
Aver	ra(	ge Hig	h Ter	npera	ture						Y	ears o	n Reco	rd: 50
o <sup>-</sup>	F	YEAR 59	Jan. 33	Feb. 35	Mar. 44	Apr. 59	May 69	Jun. 78	Jul. 84	Aug. 82	Sep. 73	Oct. 62	<b>Nov</b> . 50	Dec. 37
Aver	ra	ge Lov	v Ten	npera	ture						Y	ears o	n Reco	rd: 50
		YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.

37

46

55

60

59

51

**Average Precipitation** 

17 21 28

°F 39

Years on Record: 50

32

23

39

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. 3.9 in 44.3 3.5 3.1 3.9 3.8 3.8 3.6 4 3.6 4 3.8 3.3

# **New Jersey Climate Data**

Summery data from 1961-present

**Boonton, New Jersey** 

Elevation: 280 feet Latitude: 40 54N Longitude: 074 24W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 50.3 26.4 28.6 38.4 48.9 59.1 67.7 72.6 71 63.6 52.3 43.1 31.9

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  60.4 35.1 37.9 47.8 59.2 70.1 78.5 83.4 81.7 74.9 63.9 52.4 40.1

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 40.1 17.6 19.3 28.8 38.5 48 56.9 61.8 60.3 52.3 40.6 33.6 23.7

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 48.3 3.4 3.1 3.9 4.2 4.8 4.1 4.6 4.2 4.4 3.6 4.3 3.8

# **Bridgewater, New Jersey**

Elevation: 160 feet Latitude: 40 36N Longitude: 074 38W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 50.6 26.7 28.7 38.4 48.7 59.3 68.4 73.3 71.7 64 52.6 42.9 32.1

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 61.6 36.1 38.8 49.3 60.5 71.5 80.3 85.2 83.2 75.8 64.6 53.2 40.9

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 39.5 17.1 18.6 27.5 36.9 47 56.4 61.4 60.3 52.2 40.6 32.5 23.2

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 46.4 3.4 2.9 3.6 4 4.4 3.9 4.7 4.6 4.2 3.3 3.8 3.6

Butler, New Jersey

Elevation: 760 feet Latitude: 41 02N Longitude: 074 26W

Average Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  48.1 24.5 26.2 35.8 46.6 56.8 65.4 70.3 68.6 61.4 50.6 41.4 29.9

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59 34.1 36.4 46.2 57.7 68.7 76.7 81.9 80.2 73.3 62.8 51.2 38.7

Troingle mean seculouscule	Average	Low	Tem	perature
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YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 37.2 14.9 16 25.3 35.4 44.9 53.9 58.7 57 49.4 38.4 31.5 21.1

#### Average Precipitation

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. 3.6 in 51 3.4 4.2 4.4 4.9 4.2 4.5 4.6 4.4 4 4.8 4

# Clinton, New Jersey

Elevation: 259 feet Latitude: 40 34N Longitude: 074 52W

#### **Average Temperature**

Years on Record: 100

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 50 30 32 39 50 59 68 73 71 64 53 42 32

# **Average High Temperature**

Years on Record: 100

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 60 37 39 50 60 73 80 86 84 77 66 53 41

#### **Average Low Temperature**

Years on Record: 100

YEAR Jan. Feb. Mar. Apr. Sep. May Jun. Jul. Aug. Oct. Nov. Dec. °F. 39 21 21 30 37 46 55 60 59 51 41 32 24

# **Average Precipitation**

Years on Record: 119

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 45.4 3.5 3.1 3.9 3.8 4 3.9 4.6 4.4 3.8 3.4 3.4 3.7

# **Essex Fells, New Jersey**

Elevation: 350 feet Latitude: 40 50N Longitude: 074 17W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  50.5 26.5 29.1 38.5 48.8 59.3 67.9 73.1 71.4 63.9 52.8 43.3 31.7

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  61.4 35.6 38.8 49.1 60.4 71.4 79.6 84.8 82.9 75.8 64.8 53.3 40.5

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 39.6 17.4 19.3 27.9 37.2 47.1 56.1 61.5 59.8 52 40.7 33.4 22.9

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 49.9 3.7 3.2 3.9 4.5 4.8 4 4.9 4.3 4.5 3.8 4.2 4.1

Glassboro, New Jersey

Elevation: 127 feet Latitude: 39 42N Longitude: 075 07W

Average Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 53.7 30.5 32.8 42.1 51.6 61.8 70.9 75.7 74.4 67.4 55.7 46.4 35.6

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 63.4 38.7 41.4 51.4 61.8 72.4 81.3 85.6 84.3 77.6 66.4 55.6 43.8

Average	Low	<b>Temperature</b>
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YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 44.1 22.2 24.1 32.7 41.4 51.2 60.5 65.7 64.4 57 45 37.1 27.4

#### **Average Precipitation**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. 3.3 in 43.8 2.9 3.6 3.9 4 3.6 4.3 4.3 3.5 3.3 3.6 3.6

# Hammonton, New Jersey

Elevation: 85 feet Latitude: 39 39N Longitude: 074 48W

#### **Average Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  53.6 30.5 32.8 42 51.5 61.7 70.7 75.7 74.3 67 55.5 46.3 35.7

# **Average High Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 64.7 40.2 42.8 52.7 63 73.5 82.4 87.1 85.7 79 67.9 57.2 45.3

# Average Low Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 42.5 20.8 22.8 31.3 39.9 49.9 58.9 64.3 62.8 54.8 43 35.3 26

# **Average Precipitation**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 43.8 3.3 3.1 3.6 3.9 3.7 3.7 4.5 4 3.6 3.1 3.6 3.7

# Hightstown, New Jersey

Elevation: 100 feet Latitude: 40 16N Longitude: 074 34W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 52 28.7 30.8 40.3 49.9 60.2 69.4 74.1 72.6 65.1 54.1 44.7 34.2

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  62.2 37.4 40 50.1 60.8 71.6 80.6 84.9 83.2 76.1 65.4 54.3 42.3

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 41.8 20.1 21.6 30.4 39 48.9 58.2 63.1 62 54.1 42.9 35 26

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 45.9 3.3 2.9 3.7 4 4.2 3.5 5.1 4.5 4.1 3.2 3.8 3.6

Lambertville, New Jersey

Elevation: 60 feet Latitude: 40 22N Longitude: 074 57W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 53.3 29.6 32.2 41.7 51.3 62 70.9 75.4 74 66.8 55.5 45.3 34.5

Average High Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 64.3 38.6 41.9 52.5 63.6 74.9 83.2 87.3 85.4 78.7 67.5 55.4 42.9

Average	Low	Tem	perature
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	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
٥F	42.2	20.5	22.6	30.8	39	49.1	58.4	63.4	62.4	54.9	43.4	35.3	26

#### **Average Precipitation**

Years on Record: 30

	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
in	45.4	3.4	2.9	3.8	3.9	4.4	3.7	4.7	4.1	4	3.1	3.9	3.6

**Millville, New Jersey**Elevation: 87 feet Latitude: 39 22N Longitude: 075 04W

#### **Average Temperature**

Years on Record: 14

	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
٥F	54	34	35	42	51	62	71	76	74	66	57	45	34

# **Average High Temperature**

Years on Record: 14

YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°F 64	43	45	52	62	73	82	87	84	77	68	56	43

#### **Average Low Temperature**

Years on Record: 14

	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
٥F	44	25	26	32	41	51	60	66	64	56	46	35	25

# **Highest Recorded Temperature**

Years on Record: 14

	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°F	101	74	73	80	87	93	100	100	101	97	87	84	71

# **Lowest Recorded Temperature**

Years on Record: 14

	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°F	-10	-10	-2	6	17	34	42	49	45	35	24	14	4

A۱	Average Precipitation Years on Record: 19													
-	in.	YEAR 41.7	Jan. 3.1	Feb. 2.8	Mar. 3.9	Apr. 3.1	May 3.7	Jun. 3.3	Jul. 3.7	Aug. 4.8	Sep. 3.2	Oct.	Nov. 3.8	Dec. 3.4
A۱	/era	ge Sno	wfall	William was dyning d		······································						Years	on Rec	ord: 10
-		YEAR 12.4	Jan. 5.2	Feb. 1.8	Mar. 1.6	Apr. 0.1		Jun.	Jul.	Aug.			Nov.	Dec. 1.7
AV	/era	ge Nur	nber	of Da	ys Ab	ove 9	0F/32	2C				Years	on Rec	ord: 14
-	Day	YEAF s 21.5		Feb.	. Mar. 	Apr.	<b>М</b> ау 0.7		Jul. 10	Aug. 4.3	Sep. 1.2	Oct.	Nov.	Dec.
Av	Average Number of Days Below 32F/0C Years on Record: 14													
	Day	YEAF s 106.1		. Feb		•		y Jun 	. Jul.	Aug.	Sep.	Oct. 2.2	Nov. 12.9	Dec. 24
Αv	Average Number of Days Below 0F/-17C Years on Record: 14													

-		YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Days	1.2	1.1	0.1										

# **Moorestown, New Jersey** Elevation: 43 feet Latitude: 39 58N Longitude: 074 58W

Av	/era	ge Ter	npera	ature							Ye	ears on	Record	d: 135
-	°F	YEAR 51	Jan. 32	Feb. 32	Mar. 39	Apr. 50	May 60	Jun. 69	Jul. 73	Aug. 71	Sep. 66	Oct. 53	Nov. 42	Dec.
A۱	/era	ge Hig	jh Ter	mpera	ture						Υe	ears on	Record	d: 105
	°F	YEAR 62	Jan. 39	Feb.	Mar. 50	Apr. 62	<b>May</b> 73	Jun. 80	Jul. 84	Aug. 82	Sep.	Oct. 66	Nov. 53	Dec. 42

Average	low	<b>Temperature</b>
MACIANE		ICIIINCIALUIC

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Nov. Sep. Oct. Dec. °F 42 24 24 32 39 50 59 62 62 55 44 28 33

#### **Average Precipitation**

Years on Record: 133

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 44.7 3.4 3.2 3.7 3.5 3.9 3.8 4.6 4.9 3.7 3.3 3.3 3.5

# Morris Plains, New Jersey

Elevation: 400 feet Latitude: 40 50N Longitude: 074 30W

#### **Average Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 49.9 26.3 28.6 38.2 48.3 58.4 67.1 72 70.4 63.2 52 42.6 31.4

# **Average High Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 61.1 36 38.8 48.7 59.9 70.6 79.1 84.1 82.3 75.3 64.6 53.1 40.8

#### Average Low Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 38.6 16.5 18.5 27.5 36.7 46.2 55 59.8 58.6 51 39.4 32.1 22

# **Average Precipitation**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 50.8 3.7 3.1 4.1 4.5 5 4.2 5 4.4 3.8 4.5 4.5 4

Newark, New Jersey
Elevation: 30 feet Latitude: 40 42N Longitude: 074 10W

A۱	verage Temperature Years on Record: 61													
~	°F	YEAR 55	Jan. 32	Feb. 33	Mar. 42	Apr. 52	May 63	Jun. 72	Jul. 77	Aug. 76	Sep.	Oct. 57	Nov. 47	Dec. 36
Α١	/era	ge Hig	jh Tei	npera	ture							Years	on Rec	ord: 61
	°F		Jan. 38	Feb. 41	Mar. 50	Apr. 61	Мау 72	Jun. 81	Jul. 86	Aug. 84	77	66	Nov. 54	Dec. 42
	/era	ge Lov	wien	npera	ture							Years	on Reco	ord: 61
-	°F	YEAR 46	Jan. 24	Feb. 25	Mar.	Apr. 43	May 53	Jun. 62	Jul. 68	Aug. 67	Sep. 59	Oct. 48	Nov. 39	Dec. 28
Hi	ghe	st Rec	orde	d Tem	perat	ure	والمنافذة			water and a	,	Years (	on Reco	ord: 61
			Jan. 74	Feb. 76	Mar. 89	Apr. 94	May 98	Jun. 102	Jul. 105	Aug. 103	Sep. 105	Oct. 93	Nov. 85	Dec. 72
	wes	st Rec	oraea	rem	perati	ire						Years	on Reco	ord: 61
_	۰F	YEAR -8	Jan. -8	Feb. -7	Mar. 6	Apr. 16	May 33	Jun. 41	Jul. 52	Aug. 45	Sep.	Oct. 25	Nov. 15	Dec.
Αv	'era	ge Pre	cipita	ation							•	Years (	on Reco	ord: 61
-		YEAR 43.5	Jan. 3.4	Feb.	Mar. 4	Apr. 3.7	May 3.9	Jun. 3.3	Jul. 4.2	Aug. 4.1	Sep. 3.6	Oct.	Nov. 3.8	Dec. 3.4
Av	'era	ge Sno	owfall									Years (	on Reco	ord: 52
	in.	YEAR 27	Jan. 7.5	Feb. 7.9	Mar. 4.9	Apr. 0.7	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov. 0.5	Dec. 5.5

Average	Number	of	Days	Above	90F/32C
* Tronugo	ITOHING	$\mathbf{v}$		ADOVE	JUI /JEU

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 24 --- --- 1 5 9 7 2 --- --- ---

# Average Number of Days Below 32F/0C

Years on Record: 61

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 90 24 22 14 2 --- --- 1 7 20

# **Newton, New Jersey**

Elevation: 600 feet Latitude: 41 02N Longitude: 074 48W

#### **Average Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 47.9 23.1 25.5 35.9 46.8 57.3 66.1 70.8 68.9 61.1 49.7 40.3 28.9

# **Average High Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59.5 33.4 36.3 46.8 58.8 70.2 78.5 83.3 81.3 74 62.8 50.8 38.2

# Average Low Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 36.2 12.7 14.7 24.9 34.7 44.4 53.6 58.2 56.5 48.2 36.5 29.8 19.6

# **Average Precipitation**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 44.6 3 2.7 3.3 3.9 4.3 4.3 4.4 4.5 3.9 3.3 3.8 3.3

# Plainfield, New Jersey

Elevation: 90 feet Latitude: 40 36N Longitude: 074 24W

Average Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 53 29.4 32.4 41.5 51.3 61.7 70.3 75 73.7 66.4 55.2 45 34.2

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov Dec. °F 63.2 37.3 41.1 51.6 62.6 73.5 81.8 86.4 84.8 77.6 66.5 54 41.5

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov Dec. °F 42.7 21.5 23.6 31.4 39.9 49.8 58.7 63.6 62.5 55.2 43.8 36 26.8

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 49 3.5 3.1 4 4.1 4.6 3.7 5.2 4.7 4.3 3.6 4.2 3.9

Sussex, New Jersey

Elevation: 390 feet Latitude: 41 12N Longitude: 074 36W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 47.7 22.9 25.2 35.6 46.6 57.1 65.8 70.6 68.8 61.2 50 40.3 28.6

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59.5 33.5 36.4 46.6 58.7 70 78.1 82.9 81.1 73.9 63.1 51.1 38.2

	Average	Low	<b>Temperature</b>	ļ
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YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 35.9 12.2 14 24.5 34.4 44.1 53.4 58.3 56.5 48.4 36.8 29.5 19.1

#### **Average Precipitation**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 46.1 3.4 3 3.5 4 4.4 4.4 4.5 4.2 3.8 3.4 3.9 3.5

# **Trenton, New Jersey**

Elevation: 187 feet Latitude: 40 13N Longitude: 074 46W

#### Average Temperature

Years on Record: 19

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Dec. Oct. Nov. °F 54 31 33 42 52 62 71 76 75 67 56 47 36

# **Average High Temperature**

Years on Record: 19

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 62 37 40 50 61 71 80 85 83 76 65 54 42

# **Average Low Temperature**

Years on Record: 19

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 46 24 25 34 43 53 62 59 67 66 48 39 30

# **Highest Recorded Temperature**

Years on Record: 19

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Oct. Sep. Nov. Dec. °F 102 70 69 83 93 94 98 102 98 96 86 81 72

# **Lowest Recorded Temperature**

Years on Record: 19

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Dec. Nov. °F -4 -4 -2 8 24 35 43 53 48 37 28 15 1

Average Precipitation	on
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YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in. 42 3.1 2.8 3.5 3 3.6 3.5 4.6 3.8 4.1 2.9 3.3 3.7

#### Average Number of Days Above 90F/32C

Years on Record: 19

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 16 --- --- 1 3 6 5 1 --- --- ---

# Average Number of Days Below 32/0C

Years on Record: 19

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 85 24 21 12 2 --- --- 1 6 19

# **Tuckerton, New Jersey**

Elevation: 20 feet Latitude: 39 36N Longitude: 074 21W

# **Average Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 53.5 31.2 33.5 41.6 50.3 60.4 69.8 75 73.9 67.2 56.2 46.7 36.5

# **Average High Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 63.4 40.5 42.9 51.5 60.8 70.8 80 84.7 83.6 77.3 66.8 56.4 45.5

# Average Low Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 43.6 21.9 24 31.6 39.7 49.9 59.6 65.2 64.2 57.1 45.5 36.9 27.3

# **Average Precipitation**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. 3.7 in 45 3.4 4.1 4.2 3.6 3.1 4.1 4.6 3.4 3.2 3.9 3.8

# Woodstown, New Jersey

Elevation: 50 feet Latitude: 39 39N Longitude: 075 19W

Average	Temper	ature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 54.4 31.2 33.6 43 52.5 62.9 71.8 76.2 74.8 67.8 56.5 46.7 36.3

#### Average High Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  65.2 40.1 43.2 53.7 64.6 75.4 83.7 87.6 85.9 79.3 67.9 56.6 44.9

#### **Average Low Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 43.6 22.3 24.1 32.3 40.3 50.5 59.8 64.8 63.6 56.3 45.2 36.7 27.6

#### **Average Precipitation**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 43.7 3.3 2.9 3.6 3.8 3.8 3.8 4.3 4.1 3.5 3.3 3.6 3.8

# Climate Data for Westchester County and Upstate New York

		<b>ley, 1</b> on: 200			41 00N	l Longit	tude: 0	73 50E	-					
Α١	/era	ige Te	mper	ature				7.1.1				Years o	on Reco	ord: 30
					······································		4		·					
	°F	YEAR 53.2	Jan. 29.7	Feb. 31.8	Mar. 40.8	Apr. 51.3	May 61.5		Jul. 75.3	Aug. 73.9	Sep. 66.6	Oct. 55.8	Nov. 45.8	Dec. 34.6
A۷	era/	ge Hi	gh Te	mpera	ature							Years o	on Reco	ord: 30
		YEA R	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	°F	62	36.7	39.6	49.7	61.5	72	80.2	85	83.1	75.7	64.6	53.3	41.2
Av	era	ge Lo	w Ter	npera	ture						•	Years o	on Reco	ord: 30
												······································		
-	OIE.	YEAR		Feb.		Apr.	•	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	°F	44.4	22.6	24	31.9	41	51	60.2	65.5	64.6	57.4	47	38.3	27.9
Hi	ghe	st Re	corde	d Ten	perat	ure	· · · · · · · · · · · · · · · · · · ·	<del>///</del>			***************************************	Years o	n Reco	ord: 49
		VEAD		F" - I-	N/	Δ	24	1	1	Α.	_	<b>~</b> 1		
	۰F	YEAR 104	Jan. 73	Feb. 75	Mar. 84	Apr. 96	May 97	Jun. 99	Jul. 104	Aug. 102	Sep. 101	Oct. 89	Nov. 82	Dec. 71
Ιo	We	st Rec	ordec	l Tem	nerati	ure					,	Veare o	n Reco	ord: 40
			J. 400		Polat		- 14 <sub>0</sub> - 2 1 1 - 1 4					i cais (	AT IVECC	ли. 49
-	٥Ľ	YEAR	Jan. -10	Feb.	Mar. 2	Apr.	May 29	Jun. 40	Jul. 49	Aug. 44	Sep.	Oct. 27	Nov.	Dec. -4
_	1,	-10	-10		<u> </u>	1 /	47	7∪	サフ	71	J <del>4</del>	41	12	+

4.7 3.9

4.3

4.3

Years on Record: 30

Nov. Dec.

4.6 4.3

Aug. Sep. Oct.

3.8

4.1

**Average Precipitation** 

in 50.4 3.8

YEAR Jan. Feb. Mar. Apr. May Jun. Jul.

4.5

3.6 4.4

Average Snowfall

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 36.1 10.9 11.3 6 0.7 --- --- --- 0.1 1.1 6.1

Average Number of Days Above 90F/32C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 15 --- --- 0.1 0.6 3 6.5 4 0.8 --- --- ---

Average Number of Days Below 32F/0C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 99 25 22 17 3.6 0.1 --- --- 1.2 8.6 21

Average Number of Days Below 0F/-17C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 0.8 0.5 0.3 --- --- --- --- 0.1

Garrison, New York

Elevation: 320 feet Latitude: 41 23N Longitude: 073 57E

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 51.9 27.1 29.4 39.3 50.4 61.3 70 74.9 73.2 65.6 54.5 43.8 32

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 61.7 35.1 38.4 49 61.6 72.8 81.3 86.1 83.9 75.7 64 51.7 39.2

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 42.1 19 20.4 29.5 39.2 49.7 58.6 63.7 62.5 55.4 44.9 35.9 24.8

Highest Recorded Temperature												Years on Record: 49			
~	°F	YEAR 105	Jan. 71	Feb. 71	Mar. 81	Apr. 96	May 97	Jun. 102	Jul. 103	Aug. 103	Sep. 105	Oct. 89	Nov. 82	Dec.	
Lowest Recorded Temperature Years on Record:													ord: 49		
-	°F	YEAR -15	Jan. -15	Feb. -11	Mar.	Apr. 15	May 27	Jun. 40	Jul. 45	Aug. 41	Sep. 32	Oct. 22	Nov. 10	Dec. -7	
Average Precipitation Years on Record: 3													ord: 30		
-	in	YEAR 47.1	Jan. 3.4	Feb. 3.4	Mar. 3.8	Apr.	May 4.8	Jun. 4	Jul. 4	Aug. 4.2	Sep.	Oct. 3.8	Nov. 4.4	Dec. 4	
Av	era	ge Sn	owfall	<u> </u>						27 Y. dans		Years	on Rec	ord: 30	
<b>3</b>	in	YEAR 34.9	Jan. 11.1	Feb. 11.9	Mar. 5.3	Apr. 0.4	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov. 1.2	Dec. 7.8	
Av			11.1	11.9	5.3	0.4			Jul. 	Aug.				7.8	
-	era,	34.9 <b>ge Nu</b>	11.1	11.9 <b>of Da</b>	5.3 <b>ys Ab</b>	0.4 <b>ove 9</b>	 00F/32	 2C		Aug Aug. 5.2		 Years (	1.2 on Reco	7.8 ord: 30	
-	<b>vera</b> Day	34.9 <b>ge Nu</b> YEA	11.1 mber R Jan.	11.9 <b>of Da</b> Feb	5.3 <b>ys Ab</b> . Mar.	0.4 <b>ove 9</b> Apr. 0.1	May	 2 <b>C</b> Jun. 4.3	Jul.	Aug.	Sep. 1.3	Years of Oct.	1.2 on Reco	7.8 ord: 30 Dec.	

0.2

Aug. Sep. Oct. Nov. Dec.

Average Number of Days Below 0F/-17C

0.7

1.2

Days 2.1

YEAR Jan. Feb. Mar. Apr. May Jun. Jul.

**High Falls, New York**Elevation: 1245 feet Latitude: 41 46N Longitude: 074 09E

Average Temperature  Years on Record: 30												ord: 30	
			· 1.234·			,,.,							
-	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°I	F 48.3	23.5	25.8	35.3	46.4	58	66.2	71	69.4	62.2	51.8	40.5	28.4
Average High Temperature Years on Record: 30													
	200 - 200 -								· · · · · · · · · · · · · · · · · · ·				<u>i</u> .
=	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec
٥I	56.4	30.7	33.8	44.1	56.2	67.6	74.8	79.2	•	•	59.5	47.2	35
		****											
Avera	age Lov	w ler	npera	ture							Years	on Reco	ord: 30
οτ	YEAR 7 40.1	Jan. 16.3	Feb. 17.7	Mar. 26.4	Apr. 36.5	May 48.4	Jun. 57.5	Jul. 62.7	Aug. 61.3	Sep. 54.1	Oct. 44.1	Nov. 33.7	Dec.
ſ	40.1	10.3	17.7	20.4	30.3	40.4	37.3	02.7	01.3	34.1	44.1	33.7	21.7
High	est Red	orde	d Tem	perat	ure	*****				,	Years	on Reco	ord: 49
	Arra in Agenti												
-	YEAR		Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°F	7 98	65	70	78	91	90	94	98	97	95	85	78	66
Lowe	st Rec	orded	l Tem	perati	ure					,	Years	on Reco	ord: 49
	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
°F	7 -19	-19	-13	-3	1	25	37	46	42	32	21	8	-12
Aver	age Pre	cinit	ation							,	Vaare i	on Reco	ord: 30
	190110	Joipie									Cars	on Necc	31 d. 30
-	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
ir	47.5	3.3	3.3	3.8	4.2	4.9	4.1	4.2	4	4	3.6	4.1	3.9
۸۷۵۳	aa Sn	ovefol	ı							,		D	
Avera	age Sn	OWIG	I	:							rears	on Reco	ora: 30
-	YEAR	lon	Feb.	Mar.	Anr	Mov	lun	11.1	۸۰۰	Son	Oct	Nov. 1	200
ir	68.4	16	16.2	12.4	Apr. 4	0.5	Jun. 	Jul. 	Aug.	Sep.	0.2		Dec. 14.6

Average	Number	of Davs	Above	90F/32C
			- 1.00 10	00010

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 2.4 --- --- 0.1 0.3 1.3 0.6 0.1 --- --- ---

# Average Number of Days Below 32F/0C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. 25 Days 130 29 23 8.8 0.4 2.4 14 27

# Average Number of Days Below 0F/-17C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 4.4 2.2 1.5 0.2 --- --- --- 0.6

# Highland Falls, New York

Elevation: 318 feet Latitude: 41 22N Longitude: 073 58W

# **Average Temperature**

Years on Record: 174

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 50 28 30 35 48 59 68 73 71 64 53 41 32

# **Average High Temperature**

Years on Record: 108

YEAR Jan. Feb. Mar. Apr. Sep. May Jun. Jul. Aug. Oct. Nov. Dec. °F 59 33 35 46 59 71 80 84 82 75 62 50 37

# **Average Low Temperature**

Years on Record: 108

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 41 21 21 30 37 48 57 62 53 60 44 33 24

# **Average Precipitation**

Years on Record: 162

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 47 3.5 3.2 3.9 4 4.4 4.4 3.9 4.3 3.9 3.8 4.1 3.8

#### Hillburn, New York

Elevation: 270 feet Latitude: 41 07N Longitude: 074 09W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 49.9 26 28.1 37.6 48.5 58.8 67.4 72.4 70.6 63.2 52 42.5 31.4

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 60.9 35.8 38.2 48 59.6 70.7 79 83.9 82.3 75.2 64.4 52.7 40.4

**Average Low Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 38.8 16.1 18 27.2 37.3 46.8 55.8 60.8 58.9 51.1 39.7 32.1 22.3

**Average Precipitation** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 49.3 3.3 3.2 3.8 4.6 5 4.1 4.4 4.6 4.5 3.9 4.5 3.6

Middletown, New York

Elevation: 700 feet Latitude: 41 27N Longitude: 074 27W

**Average Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 50.5 25.4 28 37.8 49.4 60.2 68.5 73.3 71.6 64.4 53.8 42.9 30.6

**Average High Temperature** 

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 60.4 34.1 37.6 47.9 60.3 71.6 79.3 83.8 82 74.8 64.2 51.1 38.3

<b>Average</b>	I OW	Tamn	arafura
Avelaue	LUW	I GIIID	erature

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec °F 40.5 16.7 18.5 27.5 38.4 48.8 57.7 62.7 61.2 54 43.4 34.6 23

#### **Average Precipitation**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 42 2.7 2.6 3.1 3.6 4.5 4.1 4 3.5 3.7 3.2 3.7 3.2

#### Millbrook, New York

Elevation: feet Latitude: 41 47N Longitude: 073 41W

#### **Average Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 47.6 22.7 25.5 35.5 46.3 57.1 65 69.6 68.2 60.6 50 39.6 28

# **Average High Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59 33.2 36.5 46.3 58.2 69.7 77.1 81.8 79.9 72.5 62.5 49.7 37.3

# **Average Low Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 36.1 12.1 14.5 24.7 34.3 44.5 52.8 57.3 56.4 48.6 37.5 29.5 18.6

# **Highest Recorded Temperature**

Years on Record: 49

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Dec. Nov. °F 118 66 78 80 91 96 118 99 98 99 86 79 69

# Lowest Recorded Temperature

Years on Record: 49

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Sep. Aug. Oct. Nov. Dec. °F -29 -29 -20 -11 22 7 32 39 33 25 5 -20

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 38.8 2.7 2.5 2.9 3 3.9 4.3 4.1 3.2 3.1 3.2 3.4

#### Average Snowfall

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 46.3 13.7 11.2 8.3 1.8 0.3 --- --- --- 2.4 11.1

# Average Number of Days Above 90F/32C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 5.8 --- --- 0.1 0.1 1 2.7 1.5 0.4 --- --- ---

# Average Number of Days Below 32F/0C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 147 27 25 24 12 2.6 0.1 --- 1.2 9.6 19 27

# Average Number of Days Below 0F/-17C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 10 4.3 3.2 0.3 --- --- --- --- 2.2

# New York, New York

Elevation: 131 feet Latitude: 40 47N Longitude: 073 58W

#### **Average Temperature**

Years on Record: 33

Jul. YEAR Jan. Feb. Mar. Apr. May Jun. Aug. Sep. Oct. Nov. Dec. °F 55 32 34 43 53 63 72 77 76 68 58 48 37

#### **Average High Temperature**

Years on Record: 33

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Dec. Nov. °F 63 38 40 50 61 72 80 85 84 76 65 54 43

A	vera	ige Lo	w Tei	npera	ature							Years	on Rec	ord: 33
		* /88		<u> </u>					·······					
-	°F	YEAR 47	Jan. 26	Feb. 27	Mar. 35	Apr. 44	Мау 54	Jun. 63	Jul. 69	Aug. 67	Sep.	Oct. 50	. <b>Nov</b> 41	. Dec.
Highest Recorded Temperature Years on Record													ord: 33	
			· 											
-	°F	YEAR 104	Jan. 68	Feb. 75	Mar. 85	Apr. 96	May 97	Jun. 101	Jul. 104	Aug. 99	Sep. 99	Oct. 88	Nov. 81	. Dec.
Lo	Lowest Recorded Temperature Years on Record: 33													
-	۰F	YEAR -2	Jan. <b>-</b> 2	Feb. -2	Mar. 8	Apr. 21	May 36	Jun. 46	Jul. 53	Aug. 50	Sep. 40	Oct. 29	Nov. 17	Dec.
A۷	era	ge Pre	cipita	ation								Years.	on Rec	ord: 32
						-11-12-1						rears	on reco	014. 32
	in.	YEAR 46.7	Jan. 3.5	Feb. 3.1	Mar. 4	Apr. 3.8	May 4.4		Jul. 4.4	Aug. 4.1	Sep.	Oct. 3.4	Nov. 4.4	Dec. 3.8
Αv	era	ge Sno	owfall	l							Y	ears o	n Recor	rd: 125
												cars o	rivecoi	u. 125
-	in.	YEAR 28.1	Jan. 7.5	Feb. 8.4	Mar. 5	Apr. 0.9	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov. 0.9	Dec. 5.4
Av	era	ge Nur	nber	of Da	ys Ab	ove 9	0F/32	2C			`	Years o	on Reco	ord: 33
-		YEA	R Jan.	. Feb	. Mar	. Apr.	May	, Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.

3

8

5

Aug. Sep. Oct.

Years on Record: 33

Nov. Dec.

17

Days 19

Days 75

Average Number of Days Below 32F/0C

20

22

YEAR Jan. Feb. Mar. Apr. May Jun. Jul.

11

**Newburgh, New York**Elevation: 361 feet Latitude: 41 30N Longitude: 074 15W

A۱	Average Temperature  Years on Record: 9														
-	۰F	YEAR 50	Jan. 26	Feb. 30	Mar. 35	Apr. 50	May 59	Jun. 68	Jul. 72	Aug. 71	Sep.	Oct. 53	Nov. 42	Dec. 30	
Average High Temperature												Years	s on Re	cord: 9	
-	°F	YEAR 60	Jan. 35	Feb.	Mar. 45	Apr. 61	Мау 71	Jun. 80	Jul. 84	Aug. 82	Sep. 75	Oct. 64	Nov. 51	Dec.	
Av	era	ge Lov	w Ten	npera	ture	<u>;                                </u>	· · · · · · · · · · · · · · · · · · ·	1944 - A.				Years on Record: 9			
_	°F	YEAR 40	Jan. 18	Feb. 21	Mar. 26	Apr. 39	May 47	Jun. 57	Jul. 61	Aug. 60	Sep. 53	Oct. 42	Nov. 33	Dec. 22	
Highest Recorded Temperature Years on Record:												ord: 9			
	°F	YEAR 101	Jan. 60	Feb. 73	<b>Ma</b> r. 72	Apr. 85	May 88	Jun. 97	Jul. 101	Aug. 97	Sep.	Oct. 86	Nov. 69	Dec. 62	
Lo	wes	st Rec	orded	l Tem	peratı	ıre			·	Years on Record: 9					
-	°F	YEAR -21	Jan. -14	Feb. -18	Mar. 1	Apr. 13	May 30	Jun. 38	Jul. 43	Aug. 42	Sep. 28	Oct. 20	Nov. 12	Dec. -21	
Av	era	ge Pre	cipita	ition	West or any							Years	on Rec	ord: 9	
Mary Mary Mary Mary Mary Mary Mary Mary	in.	YEAR 45.7	Jan. 3	Feb. 2.8	Mar. 3.5	Apr. 4.7	-	Jun. 3.4	Jul. 3.7	Aug. 5	Sep. 4.2	Oct. 4.7		Dec. 3.4	
Av	era	ge Nui	mber	of Da	ys Ab	ove 9	0F/32	2C				Years	on Rec	ord: 9	
]	Day	YEAI	R Jan.	Feb.	Mar.	Apr.	May	Jun. 3	Jul. 5	Aug. 2	Sep.	Oct.	Nov.	Dec.	

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 137.3 30 25 26 7 1 --- --- 0.3 5 16

# Port Jervis, New York

Elevation: 400 feet Latitude: 41 22N Longitude: 074 42W

#### **Average Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 48.8 23.9 26.2 36.7 47.9 58.4 67.1 71.6 69.9 62.2 51.4 40.5 29.4

# **Average High Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  60.1 33.5 36.7 47.8 60.2 71.2 79.5 84.1 81.8 74.2 64 50.4 37.8

# **Average Low Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.  $^{\circ}F$  37.4 14.1 15.6 25.5 35.5 45.6 54.6 59.1 57.9 50.2 38.8 30.7 20.9

# **Average Precipitation**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 43.7 3.1 2.9 3.4 4 4.3 3.9 4.2 3.7 3.9 3.1 4 3.4

**Poughkeepsie, New York**Elevation: 165 feet Latitude: 41 37N Longitude: 073 52W

A	/era	age Te	mper	ature								Years	on Re	cord: 12
-	°F	YEAR	Jan. 27	Feb. 29	Mar. 35	Apr. 48	May 57	Jun. 67	Jul. 72	Aug. 70	Sep	. Oct	. Nov	v. Dec. 29
Average High Temperature												Years	on Re	cord: 12
-	°F	YEAR	Jan. 36	Feb. 39	Mar. 45	Apr. 60	Мау 70	Jun. 80	Jul. 85	Aug. 82	Sep. 74	Oct.	Nov 51	7. Dec.
Av	'era	ige Lo	w Ter	npera	ture		· · · · · · · · · · · · · · · · · · ·	··· ,			100	Years	on Red	ord: 12
-	°F	YEAR 38	Jan. 18	Feb.	Mar. 25	Apr. 37	May 45	Jun. 55	Jul. 60	Aug. 58	Sep.	Oct. 40	Nov	. Dec.
Hig	Highest Recorded Temperature Years on Record: 12													ord: 12
	°F	YEAR 102	Jan. 68	Feb. 72	Mar. 77	Apr. 85	May 95	Jun. 99	Jul. 102	Aug. 100	Sep.	Oct. 88	Nov 82	. Dec.
Lo	wes	st Rec	orded	Tem	perati	ure	-				•	Years (	on Rec	ord: 12
-	۰F	YEAR -23	Jan. -22	Feb. -14	Mar. -7	Apr. 13	<b>М</b> ау 27	Jun. 36	Jul. 43	Aug. 38	Sep. 26	Oct. 18	Nov.	Dec23
Av	era	ge Pre	cipita	ation	And the second			<del>ra de la co</del> rrección de la corrección d			•	Years (	on Rec	ord: 12
-	in.	YEAR 41	Jan. 3	Feb. 2.5	Mar. 3.3	Apr. 4	May 3.7	Jun. 2.8	Jul. 3.3	Aug. 4.3	Sep. 3.5	Oct. 3.7	Nov. 3.5	Dec. 3.4
Ave	era	ge Sno	owfall							Channe, and the same	`	∕ears o	n Rec	ord: 10
	in.	YEAR 35.6	Jan. 13.2	Feb. 7.9	Mar. 5.1	Apr. 0.6	May	Jun.	Jul.	Aug.	Sep.	Oct. 0.1	Nov. 1.2	Dec. 7.5

Avera	age Num				ove 90	0F/32	C				Years	on Rec	ord: 10
							· · · · · · · · · · · · · · · · · · ·					·	
~	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Day	ys 16.1					0.9	4.1	7.1	3	1			
Avera	age Num	ber o	f Day	s Bel	ow 32	2F/0C	,				Years	on Rec	ord: 10
				·······			<u></u>						
***	YEAR	Jan.	Feb.	Mar	. Apr	. Ma	y Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Day	ys 145.5	28.3	25.8	23.9	9.5	2.1				1.2	8.5	19.7	26.5
Avera	ige Num	ber o	f Day	s Bel	ow 0F	=/-17(	5				Years	on Rec	ord: 10
=	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Day	ys 7.4	2.3	3	0.3									1.8

Queens, New York
Elevation: 16 feet Latitude: 40 39N Longitude: 073 47W

EIE	Elevation: 16 feet Latitude: 40 39N Longitude: 073 47VV													
Αv	⁄era	ge Tei	mpera	ature							`	∕ears o	n Reco	rd: 34
	estra com													
-	°F	YEAR 54	Jan. 33	Feb.	Mar. 41	Apr. 51	<b>May</b> 61	Jun. 70	Jul. 76	Aug. 75	Sep.	Oct. 57	Nov. 48	Dec. 38
Αv	Average High Temperature Years on Record: 34													
-	°F	YEAR 61	Jan. 39	Feb.	Mar. 48	Apr. 58	May 68	Jun. 77	Jul. 83	Aug. 82	Sep.	Oct. 65	Nov. 54	Dec. 43
Αv	era	ge Lov	w Ter	npera	ture						<b>\</b>	∕ears o	n Reco	rd: 34
		n Sevilences									1			
-	°F	YEAR 47	Jan. 26	Feb. 27	Mar. 34	Apr. 43	May 53	Jun. 62	Jul. 68	Aug. 67	Sep. 60	Oct. 49	Nov. 41	Dec. 31
Hi	ghe	st Rec	orde	d Tem	perat	ure					Ŋ	∕ears o	n Reco	rd: 34
							<u> </u>							
	°F	YEAR 104	Jan. 69	Feb.	Mar. 85	Apr. 90	May 99	Jun. 99	Jul. 104	Aug. 101	Sep. 98	Oct. 85	Nov. 77	Dec. 70

Lowe	st Rec	ordec	Tem	perat	ure						Years	on Rec	ord: 34
-	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec
°F	7 -2	-2		7	20	34	45	55	46	41	30	19	2
Avera	age Pre	ecipita	ation							erano muga	Years	on Rec	ord: 34
-	YEAR	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
in.	. 40.8	3.3	2.9	3.5	3.7	3.9	3.1	3.7	3.6	3.3	2.9	3.4	3.6
Avera	age Sn	owfall						na atauna ' ara			Years (	on Rec	ord: 35
_	VEAD	lan	T-L	D.//	A	D. Ø				_	O 1		
in.	YEAR 22.7	Jan. 7	Feb. 7.6	Mar. 3.9	Apr. 0.4	May 	Jun. 	Jul.	Aug.	Sep.	Oct.	Nov. 0.3	Dec. 3.5
Avera	ıge Nu	mber	of Da	ys At	ove 9	90F/3	2C		Marini da		Years (	on Rec	ord: 34
	YEA	R . Jan.	. Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Day	ys 10						2	4	3	1			
Avera	ıge Nuı	mber	of Da	ys Be	low 3	2F/00	)			•	Years o	on Reco	ord: 34
-	YFAI	R Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Day	ys 78	23	20	12	1							4	17

Scarsdale, New York
Elevation: feet Latitude: 41 00N Longitude: 073 47W

Av	verage Temperature Years on Record: 30													
-	°F	YEAR 52	Jan. 28.7	Feb. 31.5	Mar. 39.9	Apr. 50.2	May 60.4		Jul. 74.2	Aug. 72.5		Oct. 54.3	Nov. 44.8	
Ave	era	ge Hig	gh Tei	mpera	ture							Years o	on Rec	ord: 30
-	°F	YEAR 62.7	Jan. 37.6	Feb. 40.9	Mar. 50.3	Apr. 61.8	<b>May</b> 72.9	Jun. 81.2	Jul. 85.8	Aug. 83.6	Sep. 76.3	Oct. 65.6	Nov. 54.2	Dec. 41.8
Ave	Average Low Temperature Years on Record: 30													
-	°F	YEAR 41.3	Jan. 19.7	Feb. 22.1	Mar. 29.5	Apr. 38.5	May 47.8		Jul. 62.6	Aug. 61.3	Sep. 53.8	Oct. 43	Nov. 35.4	Dec. 25.2
Hig	Highest Recorded Temperature Years on Record: 44													
	°F	YEAR 102	Jan. 73	Feb. 75	Mar. 82	Apr. 94	<b>May</b> 97	Jun. 100	Jul. 102	Aug. 101	Sep. 102	Oct. 90	Nov. 84	Dec. 70
Lov	ves	st Rec	orded	Tem	perati	ıre	· · · · · · · · · · · · · · · · · · ·				`	Years c	n Reco	ord: 44
-	°F	YEAR -14	Jan. -10	Feb. -14	Mar.	Apr. 13	May 30	Jun. 38	Jul. 46	Aug. 39	Sep. 30	Oct. 21	Nov. 12	Dec.
Ave	era	ge Pre	cipita	tion	. Hardlanda m						`	rears c	n Reco	ord: 30
-	in	YEAR 45.3	Jan. 3.2	Feb. 2.9	Mar. 4	Apr. 4.2	May 4.3	Jun. 3.6	Jul. 3.8	Aug. 3.9	Sep. 3.9			Dec. 3.9
Ave	era	ge Sno	owfall		· · · · · · · · · · · · · · · · · · ·				.,		\ 	∕ears o	n Reco	ord: 30
	in	YEAR 30.2	Jan. 10.1	Feb. 12.4	Mar. 5.1	Apr. 0.6	May	Jun.	Jul.	Aug.	Sep.	Oct. 0.2	Nov. 0.6	Dec. 6

Average	Number	of Days	Above	90F/32C
* * * * * * * * * * * * * * * * * * * *	LACHERDOR	vi Dava	MUVE	3011320

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 19 --- --- 0.1 0.7 4.2 8 4.3 1.5 --- --- ---

#### Average Number of Days Below 32F/0C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 113 26 22 20 6.3 0.4 --- --- 0.1 3.8 11 22

#### Average Number of Days Below 0F/-17C

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 1.6 1 0.4 --- --- --- 0.2

#### Wappingers Falls, New York

Elevation: 155 feet Latitude: 41 38N Longitude: 073 53W

#### Average Temperature

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 48.9 23.8 26.5 36.7 47.6 58.6 67.1 72.2 70.6 62.5 51.1 41.1 29.2

#### **Average High Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 59.7 33.3 36.5 47 59.1 70.6 78.9 83.8 81.8 73.9 62.9 50.7 37.9

#### **Average Low Temperature**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 38.1 14.2 16.4 26.3 36 46.5 55.4 60.7 59.4 51 39.2 31.5 20.5

#### **Average Precipitation**

Years on Record: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 40.7 2.7 2.6 3.1 3.5 4.3 3.8 3.9 3.6 3.4 3.1 3.6 3.1

West Point, New York
Elevation: 471 feet Latitude: 41 30N Longitude: 074 05W

A	vera	ige Te	mper	ature								Years	on Rec	ord: 12
-	°F	YEAR	Jan. 27	Feb. 29	Mar. 35	Apr. 49	<b>M</b> ay 59	Jun. 68	Jul. 73	Aug. 71	Sep.	Oct. 54	Nov.	Dec. 30
A	vera	ige Hig	gh Te	mpera	ature	<del> </del>						Years	on Rec	ord: 12
-	°F	YEAR 60	Jan. 35	Feb. 38	Mar. 44	Apr. 59	<b>М</b> ау 70	Jun. 79	Jul. 84	Aug. 82	Sep. 74	Oct. 64	Nov. 51	Dec. 38
A	Average Low Temperature Years on Record: 12													
_	°F	YEAR 41	Jan. 19	Feb.	Mar. 27	Apr. 40	May 48	Jun. 58	Jul. 63	Aug. 61	Sep. 54	Oct. 44	Nov. 34	Dec. 23
Hi	Highest Recorded Temperature Years on Record: 12													
	°F	YEAR 102	Jan. 67	Feb.	Mar. 74	Apr. 86	May 91	Jun. 98	Jul. 99	Aug. 99	Sep. 102	Oct. 88	Nov. 82	Dec. 63
Lo	we	st Rec	ordec	l Tem	peratı	ıre	Service Service Service				,	Years	on Rec	ord: 12
	°F	YEAR -18	Jan. -15	Feb. -18	Mar. 1	Apr. 17	May 32	Jun. 39	Jul. 49	Aug. 47	Sep. 32	Oct. 24	Nov. 11	Dec. -6
A۱	/era	ge Pre	cipita	ation	Mark to the papers							Years (	on Rec	ord: 12
-	in.	YEAR 43.3	Jan. 2.9	Feb. 3.1	Mar. 3.9	Apr. 4.1	•	Jun. 3.2	Jul. 3.5	Aug. 4.3	Sep. 3.5	Oct.	Nov. 3.9	Dec. 3.6
A۱	/era	ge Sn	owfal			·····	tala tanàna di banasa				`	Years (	on Reco	ord: 12
	in.	YEAR 48.8	Jan. 11.6	Feb.	Mar. 13.4	•	. May	/ Jun.	Jul.	Aug.	Sep.	Oct.	Nov. 2.1	Dec. 7.9

<u>Average</u>	Number	of	Days	<b>Above</b>	90F/32C

Years on Record: 12

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 11.8 --- --- --- 0.5 2.6 4.9 3.2 0.6 --- --- ---

#### Average Number of Days Below 32F/0C

Years on Record: 12

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 123.5 27.8 24.2 22.7 5.6 0.1 --- --- 0.2 2.9 14.7 25.3

#### Average Number of Days Below 0F/-17C

Years on Record: 12

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. Days 3.1 1.3 1.1 --- --- --- 0.7

#### Yorktown Heights, New York

Elevation: 669 feet Latitude: 41 16N Longitude: 073 48W

#### **Average Temperature**

Years on Record: 110

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 48 26 26 33 46 57 66 69 69 62 51 41 30

#### **Average High Temperature**

Years on Record: 105

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 57 33 33 44 57 68 77 82 80 73 62 48 37

#### **Average Low Temperature**

Years on Record: 105

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. °F 37 17 17 26 35 46 55 59 51 57 41 32 23

#### **Average Precipitation**

Years on Record: 110

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec. in 47.7 3.6 3.3 3.9 3.9 4.2 3.9 4.7 4.6 4.1 3.8 4.1 3

<u>Station</u>	Ave. Temp F	Ave. Temp. Apr Oct.	Ave. High T.	Ave. Low T	Highest T F	Lowest T
		-				
Aquebogue	52.3	63.4	60.9	43.6		
Bohemia	51.0	62.3	59.0	42.0		
Bridgehampton	50.9	61.2	58.9	42.8	102	
Brookhaven	50.0	61.3	58.0	43.0	96	-2
Calverton	52.3	63.4	60.9	43.6	100	-8
Carle Place	51.0	63.7	59.0	44.0		
East Hampton	50.0	61.3	58.0	43.0	96	-2
East Setauket	52.6	63.7	61.1	44.1	99	-11
Garden City	52.8	63.7	60.2	45.4	103	-4
Great Neck	51.0	64.0	59.0	46.0		
Greenport	51.3	62.2	59.2	43.3		
Islip	53.0	63.4	61.0	44.0	101	-7
Melville	50.0	61.3	58.0	43.0	96	-2
Mineola	52.9	64.0	60.0	45.2		
Patchogue	51.7	62.7	61.4	41.9	102	-13
Riverhead	50.0	69.4	58.0	43.0	96	-2
Westhampton	48.0	60.0	57.0	41.0		
Averages 🐭	51.2	63.0	59.4	43.5	99.1	-5.67

### LONG ISLAND CLIMATIC DATA

1961-1990

<u>Station</u>	Ave. Precip.	Ave. Precip May-Oct.	Ave. Snow Inches	Ave. Days > 90		Ave. Days
		ay oou	11101103	<u> </u>	<u>&lt;32</u> F	<u>&lt; 0</u> F
Aquebogue	45.3	21.4		-	•	u
Bohemia	46.5	23.4				
Bridgehampton	45.6	20.8	25.6	2.7	104.0	0.2
Brookhaven	34.4	12.7		2.9	105.5	0.4
Calverton	45.4	21.6	27.9	9.2	97.0	0.3
Carle Place	40.4	20.1				
East Hampton	34.4	12.7		2.9	105.5	0.4
East Setauket	45.1	21.7	19.2	6.6	94.0	0.4
Garden City	43.6	21.8	25.0	11.0	82.0	0.2
Great Neck	41.0	20.5				
Greenport	45.0	21.5				
Islip	44.6	23.4	20.6	7.0	98.0	
Melville	34.4	12.7		2.9	105.5	0.4
Mineola	43.0	20.2				
Patchogue	48.5	23.1	29.4	7.8	111.0	1.3
Riverhead	34.4	19.8		2.9	105.5	0.4
Westhampton	43.4	19.8				
Averages	42.0	19.84	24.62	5.59	100.8	0.44

## Long Island Climatic Data

1951-1990\*

<u>Station</u>	Heating Degree Days Base 65 degrees F	Cooling Degree Days Base 65 degrees F	Growing Degree Days
Brideghampton	5685	497	2572
Islip	5647	706	n/a
Mineola	5316	853	3279
Patchogue	5489	457	2868
Riverhead	5331	730	2987
Setauket	5232	718	n/a
Averages	5450	660	2927

#### FROST FREE PERIOD

1961-1990\*

(Days of Growing Season Between 32 degrees F)

Station	Number of Days <32 F
Bridgehampton	191
Greenport	202
Mineola	218
Riverhead	208
Setauket	199
Average	204

#### **SUMMARY OF CONNECTICUT CLIMATIC DATA**

### 1961-present

<u>Station</u>	Ave. Temp F	Ave. Temp Apr Oct.	Ave. High T. F	Ave. Low T F	<u>Highest T</u> F	Lowest T F
Bridgeport	52.0	63.6	60.0	44.0	103	-7
Burlington	47.8	60.0	58.6	37.1		
Coventry	46.4	58.1	58.3	34.4		
Danbury	49.0	61.0	60.0	39.0	100	-16
Falls Village	47.6	57.0	59.6	35.6		
Gaylordsville	48.4	60.7	60.0	36.7		
Groton	50.0	61.7	59.0	42.0	100	-8
Hartford	50.0	62.8	60.0	40.0	102	-26
Meriden	50.3	62.0	59.5	41.1		
New Haven	50.0	61.7	59.0	42.0	100	-8
New London	49.9	60.9	59.2	40.5		
Norfolk	44.1	56.7	53.3	34.8		
Norwalk	50.5	62.0	60.9	40.0		
Norwich	50.3	61.8	60.9	39.7		
Stamford	50.8	62.4	61.9	39.6		
Storrs	46.0	58.6	55.0	37.0		
Stratford	51.7	63.2	59.5	43.9		
Wethersfield	49.7	61.9	59.9	39.5		
Willimantic	50.0	62.0	61.0	40.0	101	-16
Windsor Locks	48.0	61.4	59.0	39.0		
Averages	49.1	60.9	59.23	39.3	101	-13.5

#### SUMMARY OF CONNECTICUT CLIMATIC DATA

## 1961-present

<u>Station</u>	Ave. Precip. Inches	Ave. Precip May-Oct. "	Ave. Snow Inches	Ave. Days > 90 F	Ave. Days < 32 F	Ave. Days < 0
Bridgeport	41.1	20.2	24.9	7.0	100.0	
Burlington	49.3	24.9				
Coventry	47.6	24.4				
Danbury	48.8	25.0	38.6	9.3	132.0	
Falls Village	42.6	23.2				
Gaylordsville	44.5	23.1				
Groton	44.4	20.7	34.5	3.0	110.4	0.9
Hartford	44.2	21.9	47.3	18.0	134.0	
Meriden	49.7	25.0				
New Haven	44.4	20.7	34.5	3.0	110.4	0.9
New London	48.2	22.1				
Norfolk	51.5	26.0				
Norwalk	46.8	23.7				
Norwich	50.0	23.4				
Stamford	49.4	24.9				
Storrs	45.8	23.1				
Stratford	41.7	20.7				
Wethersfield	42.8	22.0				
Willimantic	44.5	21.2	43.6	13.2	128	3.6
Windsor Locks	44.3	22.2				
Averages	46.1	23.0	37.23	9.0	119	1.8

#### **Conneticut Climatic Data**

#### 1951-present\*

Station	Heating Degree Days Base 65 degrees F	Cooling Degree Days Base 65 degrees F	Growing Degree Days
Bridgeport	5537	724	
Burlington	6636	418	
Conventry	7036	283	
Danbury	n/a	n/a	2755
Falls Village	6714	422	
Groton	5951	472	
Hartford	6151	610	
Middletown	5945	633	2839
Norfolk	7781	195	1994
Norwalk	5865	613	2847
Norwich	5869	551	
Stamford	5778	613	
Storrs	6481	377	
Averages	5826	455	2609

#### FROST FREE PERIOD

1961-1990\*

(Days of Growing Season Between 32 degrees F)

153.5

Station	Average Number of Days >32 F
Danbury	158
Falls Village	128
Hartford	167
Middletown	172
<b>Mount Carmel</b>	160
Norfolk	140
Norwalk	173
Shepaug	152
Storrs	165
West Thompson	130
Wigham Reservoir	144

Average

#### **NEW JERSEY CLIMATIC DATA**

### 1961-present

<u>Station</u>	Ave. Temp F	Ave. Temp. Apr Oct.	Ave. High T. F	Ave. Low T	Highest T F	Lowest T F
		•				
Boonton	50.3	62.2	60.4	40.1		
Bridgewater	50.6	63.0	61.6	39.5		
Butler	48.1	60.0	59.0	37.2		
Clinton	50.0	62.5	60.0	39.0		
Essex Fells	50.5	62.4	61.4	39.6		
Glassboro	53.7	65.4	63.4	44.1		
Hammonton	53.6	65.2	64.7	42.5		
Hightstown	52.0	63.6	62.2	41.8		
Lambertville	53.3	65.1	64.3	42.2		
Millville	54.0	65.2	64.0	44.0	101	-10
Moorestown	51.0	63.1	62.0	42.0		
Morris Plains	49.9	62.0	61.1	38.6		
Newark	55.0	66.5	63.0	46.0	105	-8
Newton	47.9	60.1	59.5	36.2		
Plainfield	53.0	65.0	63.2	42.7		
Sussex	47.7	60.0	59.5	35.9		
Trenton	54.0	65.7	62.0	46.0	102	-4
Tuckerton	53.5	65.0	63.4	43.6		
Woodstown	54.4	66.0	65.2	43.6		
Averages	51.7	63.6	62.1	41.3	102.7	-7.3

#### **NEW JERSEY CLIMATIC DATA**

### 1961-present

<u>Station</u>	Ave. Precip. Inches	Ave. Precip May-Oct. "	Ave. Snow Inches	Ave. Days > 90 F	Ave. Days <u>&lt;32</u> F
Boonton	48.3	25.7			
Bridgewater	46.4	25.1			
Butler	51.0	26.6			
Clinton	45.4	24.1			
Essex Fells	49.9	26.3			
Glassboro	43.8	23.0			
Hammonton	43.8	22.6			
Hightstown	45.9	24.6			
Lambertville	45.4	24.0			
Millville	41.7	21.7	12.4	21.5	106.1
Moorestown	44.7	24.2			
Morris Plains	50.8	26.9			
Newark	43.5	22.1	27.0	24.0	90.0
Newton	44.6	24.7			
Plainfield	49.0	26.1			
Sussex	46.1	24.7			
Trenton	42.0	22.5		16.0	85.0
Tuckerton	45.0	22.0			
Woodstown	43.7	22.8			
Averages	45.8	24	19.7	20.5	93.7

### **New Jersey Climatic Data**

1951-1990\*

<u>Station</u>	Heating Degree Days Base 65 degrees F	Cooling Degree Days Base 65 degrees F	<b>Growing Degree Days</b>
Boonton	5925	602	2877
Cranford	5239	841	n/a
Essex Fells	5896	656	3013
Glassboro	5037	968	3583
Hammonton	5054	949	3581
Hightstown	5458	758	3332
Lambertville	5172	937	3465
Millville	4946	983	3592
Moorestown	5010	1016	n/a
Morris Plains	6039	559	2889
Newark	4888	1201	n/a
Newton	6643	439	2630
Plainfield	5227	891	3367
Sussex	6682	426	n/a
Tuckerton	5027	879	n/a
Woodstown	4849	1041	n/a
Average	5443.3	821.6	3233

#### FROST FREE PERIOD

1961-1990\*

(Days of Growing Season Between 32 degrees F)

Station	Number of Days >32 F
Boonton	172
Essex Fells	170
Glassboro	194
Hammonton	188
Hightstown	175
Lambertville	169
Millville	191
Moorestown	184
Morris Plains	159
Newton	144
Plainfield	179
Sussex	145
Average	172.5

## **Climate Data for Westchester County and Upstate New York**

1961- present

<u>Station</u>	Ave. Temp F	Ave. Temp. Apr Oct.	Ave. High T. F	Ave. Low T F	<u>Highest T</u> F	Lowest T F
Ardsley	53.2	65.0	62.0	44.4	104	-10
Dobbs Ferry	53.2	64.8	61.9	44.3		
Garrison	51.9	64.0	61.7	42.1	105	-15
High Falls	48.3	61.0	56.4	40.1	98	-19
Highland Falls	50.0	62.0	59.0	41.0		
Hillburn	49.9	61.7	60.9	38.8		
Middletown	50.5	63.0	60.4	40.5		
Millbrook	47.6	59.0	59.0	36.1	118	-29
New York	55.0	66.7	63.0	47.0	104	-2
Newburgh	50.0	62.4	60.0	40.0	101	-21
NY Westerleigh	53.6	65.3	62.7	44.7		
Port Jervis	48.8	61.0	60.1	37.4		
Poughkeepsie	49.0	61.0	61.0	38.0	102	-23
Queens	54.0	65.4	61.0	47.0	104	<b>-2</b>
Scarsdale	52.0	63.7	62.7	41.3	102	-14
Suffern	49.9	62.0	60.9	38.8		
Wappingers Falls	48.9	61.0	59.7	38.1		
West Point	50.0	62.5	60.0	41.0	102	-18
Westchester Cty.	50.8	62.6	59.0	42.5		
Yorktown Heights	48.0	60.0	57.0	37.0		
Averages	50.73	62.6	60.42	41)	104	-15.3

# **Climate Data for Westchester County and Upstate New York**

1961- present

<u>Station</u>	Ave. Precip.	Ave. Precip. May-Oct. "	Ave. Snow Inches	Ave. Days  > 90  F	Ave. Days <a href="mailto:22">&lt; 32</a> F	Ave. Days < 0
		,		•	-	
Ardsley	50.4	25.1	36.1	15.0	99.0	0.8
Dobbs Ferry	49.5	23.1				
Garrison	47.1	24.8	34.9	21.0	114.0	2.1
High Falls	47.5	24.8	68.4	2.4	130.0	4.4
Highland Falls	47.0	24.7				
Hillburn	49.3	26.5				
Middletown	42.0	23.3				
Millbrook	38.8	22.6	46.3	5.8	147.0	10
New York	46.7	23.9	28.1	19.0	75.0	
Newburgh	45.7	24.7		11.0	137.3	
NY Westerleigh	45.8	22.0				
Port Jervis	43.7	23.1				
Poughkeepsie	41.0	21.3	35.6	16.1	145.5	7.4
Queens	40.8	20.5	22.7	10.0	78.0	
Scarsdale	45.3	22.6	30.2	19.0	113.0	1.6
Suffern	47.5	23.6				
Wappingers Falls	40.7	22.1				
West Point	43.3	22.0	48.8	11.8	123.5	3.1
Westchester Cty.	49.0	21.5				
Yorktown Heights	47.7	25.3				
Averages	45.4	23.4	39	13.1	116	4.2

## **Climate Data for Westchester County and Upstate New York**

#### 1951-present\*

<u>Station</u>	Heating Degree Days Base 65 degrees F	Cooling Degree Days Base 65 degrees F	<b>Growing Degree Days</b>
Dobbs Ferry	5199	895	3018
Middletown	5933	685	
Millbrook	6746	364	2430
New York	4805	921	
NY Westerleigh	5009	945	
Port Jervis	6167	570	2484
Poughkeepsie	6391	566	2682
Scarsdale	5470	779	3192
Suffern	6067	593	
West Point	5550	896	
Westchester Cty.	5832	691	
Averages	5743	719	2761

#### **FROST FREE PERIOD**

(Days of Growing Season Between 32 degrees F) 1961-1990\*

Station	Average Number of Days >32 F
Carmel	153
Dobbs Ferry	188
Millbrook	139
Mount Morris	154
NY Westerleigh	201
Port Jervis	151
Poughkeepsie	153
Scarsdale	174
West Point	186
Average	166.5

## **Climate Data Summary for All Regions**

## Based on summary of data collected from 15-100 years

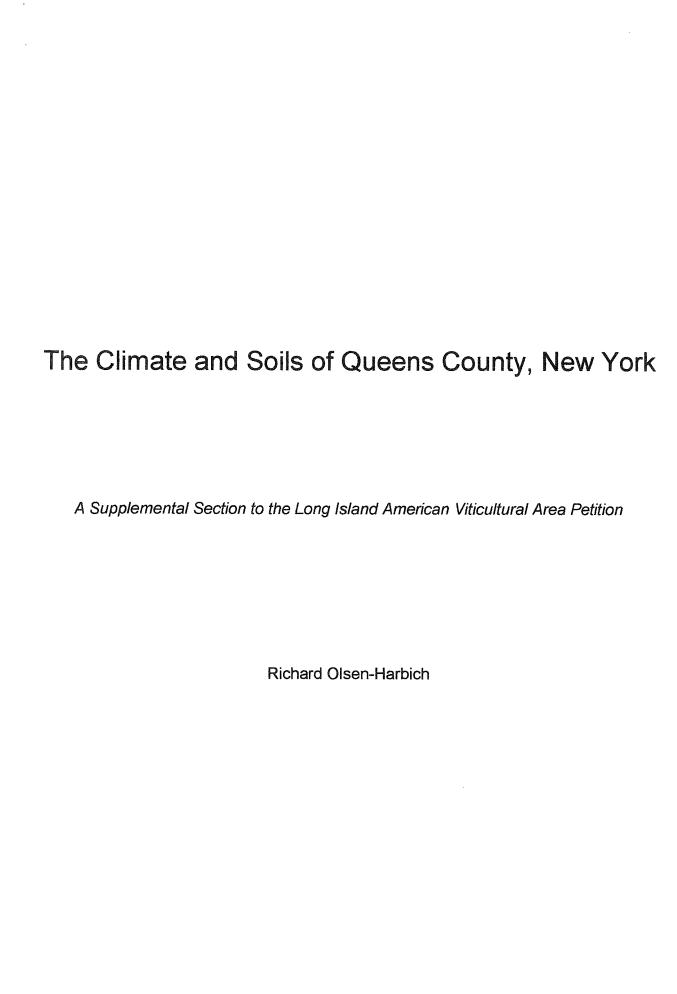
Region	Ave. Temp F	Ave. Temp. Apr Oct.	Ave. High T. F	Ave. Low T	<u>Highest T</u> F	Lowest T F
Long Island	51.2	63.0	59.4	43.5	99.1	-5.67
Westchester/NY	50.7	62.6	60.4	41.0	104	-15.3
New Jersey	52.0	63.6	62.1	41.3	102.7	-7.3
Connecticut	49.1	60.9	59.2	39.3	101	-13.5

Region	Ave. Precip. Inches	Ave. Precip May - Oct. "	Ave. Snow Inches	Ave. Days > 90 F	Ave. Days < 32 F	Ave. Days < 0
Long Island	42.0	19.8	24.62	5.59	100.8	0.44
Westchester/NY	45.4	23.4	39.0	13.1	116.0	4.2
New Jersey	45.8	24.0	19.7	20.5	93.7	n/a
Connecticut	46.1	23	37.2	9.0	119.0	1.8

# **Climate Data Summary for All Regions**

# Based on summary of data collected from 15-100 years

Region	Growing Degree <u>Days</u>	Heating Degree <u>Days</u>	Cooling Degree <u>Days</u>	Frost Free Days
Long Island	2927	5450	660	204
Westchester/NY	2761	5743	719	167
New Jersey	3233	5443	822	173
Connecticut	2609	5826	455	154



### The Soils of Queens County

The soils of Queens County, which directly borders the proposed Long Island AVA, are somewhat similar in origin to those of western Nassau County, although it is in this area where the soil series and type begin to become different. In fact, there are only a few soil series found in Queens that are also found in either Nassau or Suffolk County. The Soil Conservation Service reports in *The Soil Survey of Nassau County* that the area of bedrock under the subsurface becomes much closer to the surface in Queens, making the depth of the Queens soils much shallower than the typical soils found on Long Island. Some areas of Queens show exposed bedrock formations while the bedrock layer in Nassau County can be as much as 500 feet below the surface. This is evident in large rock formations which are visible to the naked eye in many areas of Queens, but not seen in Nassau and Suffolk Counties. Construction reports from Queens indicate a high level of blasting and rock cutting needed for many excavations, something which has rarely, if ever been necessary on Long Island. Many of the rocks excavated from the development of Queens have been used to construct bridges and overpasses on the various highways of western Long Island, namely the Northern State Parkway, in the first half of the 20<sup>th</sup> century.

Eventually, the soils become completely dissimilar as the terminal moraine decreases and the land of Queens drops off into the East River, where the areas of the Highland and Newark Basins all merge. The area of the tall, rocky Palisades cliffs, seen from the George Washington Bridge, is testament enough to the vast difference between this area and the rest of Long Island. Most of this discussion is however mute, as the region of Queens County (part of New York City) is completely urbanized and contains essentially no agricultural land. Agriculture in any form in Queens, is a relic of the past; there is no prospect for any viticultural industry in this region. For all of the above reasons and for the reasons that follow in this paper, the logical and most practical boundary for the Long Island AVA is the border separating Queens and Nassau County.

More specifically, it can be seen that the soil series of the region of Queens County are quite dissimilar to those of both Nassau and Suffolk Counties. Indeed, although there exists a viable

soil survey for the area of Nassau County, there is no soil survey available currently for the area of Queens. This is mainly because agriculture as a commercial business has been virtually extinct from this area for as many as 80 years, well before the soil mapping identification systems were first put in place for the rest of the country. It has only been within the last 10 years that the soil scientists in New York City have worked to put together a listing of the urban soil types and series found in Queens. Most all of the soil series now identified in Queens are known as *anthropgenic soils*. These soils are described as having properties that are dominantly derived from human activities.

The ICOMANTH (International Committee on Anthropogenic Soils) has identified over 11 categories of changes in soils due to human activities, and the properties, which describe these types of soils. These categories include: dredge materials, accelerated erosion, land filling, surface removal, contamination, land leveling, severe compaction by machinery, and sedimentation. Indeed, most of the soils found today in Queens bear little resemblance to the soils found in this area 100 years ago (when Queens was an active farming community supplying New York City) due to the vast concentration of development and construction that have taken place there since the turn of the century.

The main soil series that are now identified in Queens County are described through work done by the New York City Soil Survey Project – a partnership involving the USDA, the National Resource and Conservation Service, and the New York City Soil and Water Conservation District. The main soil series of Queens are listed as follows:

(From the National Cooperative Soil Survey, U.S.A.)

#### **VERAZANO SERIES**

The Verazano series consists of very deep well-drained soils with moderate to rapid permeability. These soils formed in a thick anthrotransported loamy mantle over sandy sediments and occurs on modified landscapes in and near major urbanized areas of the Northeast. Slope ranges from 0 to 35 percent. Mean annual temperature is about 50 degrees Fahrenheit and mean annual precipitation is about 45 inches.

**TAXONOMIC CLASS:** Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Typic Udorthents

**TYPE LOCATION:** Queens County, New York; From the intersection of Rockaway Point Blvd. and B 169th street 2,000 feet south on B 169th street. Then 350 feet outside of backside fence of Jacob Riis Park Golf Course; USGS Coney Island topographic quadrangle; Latitude 40 degrees, 33 minutes, 48.1 seconds N. and Longitude 73 degrees, 52 minutes, 47.6 seconds W. (Rockwell GPS Receiver); NAD 1983.

RANGE IN CHARACTERISTICS: Depth to contrasting particle size classes range from 12 to 36 inches. The transported loamy fill may be any geologic deposit ranging from glacial till, outwash, alluvium, coastal plain sediments, or residuum, usually from a very local source. Human artifact fragments range from 0 to 10 percent. Textures include loam, sandy loam and fine sandy loam, and fine sand or coarser in the lower subsoil. Reaction ranges from very strongly acid to slightly acid in the loamy mantle and from very strongly acid to slightly alkaline in the sandy substratum. Many pedons have seashell fragments in the lower part of the soil.

**GEOGRAPHIC SETTING:** Verazano soils are on nearly level to strongly sloping modified landforms. These soils formed in a thick loamy mantle over sandy deposits on outwash plains, barrier beaches and islands, or dredged deposits. The loamy cap is relatively clean of refuse with less than 10 percent of human artifacts and less than 20 percent gravel. Seashell fragments may

be present in the lower part. Slope ranges from 0 to 15 percent. Mean annual precipitation ranges from 40 to 50 inches. Mean annual temperature ranges from 48 to 56 degrees Fahrenheit.

GEOGRAPHICALLY ASSOCIATED SOILS: These are <u>Bigapple</u> (T), Barren (T), Fortress (T), <u>Gravesend</u> (T), <u>Hooksan</u>, Jamaica (T), Sandyhook (T) and Tilden (T) soils. Barren, Jamaica and Sandyhook soils have water table within 40 inches from soil surface.

SERIES ESTABLISHED: Queens County, New York, 1997.

#### **BIGAPPLE SERIES**

The Bigapple series consists of very deep, well-drained soils with rapid permeability. The soil formed in a thick mantle of anthrotransported soil material from dredging activities in coastal waterways and rivers. The anthrotransported material is thicker than 40 inches and occurs on modified landscapes in and near major urbanized areas of the Northeast. Slope ranges from 0 to 75 percent. Mean annual temperature is about 50 degrees and mean annual precipitation is about 45 inches.

TAXONOMIC CLASS: Mixed, mesic Typic Udipsamments

**TYPE LOCATION:** Queens and Kings County, New York; type location is located on the Southern portion of a human made island (White Island) in Marine Creek Park; USGS Coney Island topographic quadrangle; Latitude 40 degrees, 35 minutes, 39 seconds N. and Longitude 73 degrees, 54 minutes, 56 seconds W. (Rockwell GPS Receiver), NAD 1983.

RANGE OF CHARACTERISTICS: Thickness of the anthrotransported material is greater than 40 inches. The anthrotransported material may be any dredged material from coastal waterways, bays, or rivers. Thickness of the solum ranges from 18 to 34 inches. Rock fragments range from 0 to 20 percent. Seashell fragments are present in some pedons.

Human artifact fragments range from 0 to 10 percent. Textures and their gravelly analogs include very fine sand or coarser.

**GEOGRAPHIC SETTING:** Bigapple soils are on nearly level to very steep artificially created or modified landforms. These soils formed in anthrotransported soil material from dredging activities of nearby shorelines, waterways, bays or rivers. The anthrotransported soil material is relatively clean of human refuse. It is less than 20 percent pebbles or gravel. Seashell fragments are present in some pedons. Slope ranges from 0 to 75 percent. Mean annual precipitation ranges from 40 to 50 inches. Mean annual temperature ranges from 48 to 56 degrees F.

**GEOGRAPHICALLY ASSOCIATED SOILS:** These are Barren (proposed), Fortress (proposed), <u>Hooksan</u>, Jamaica (proposed), <u>Gravesend</u> (proposed), <u>Matunuck</u>, <u>Pawcatuck</u>, Sandyhook (proposed), Tilden (proposed), and <u>Verazano</u> (proposed) soils.

**DRAINAGE AND PERMEABILITY:** This soil is well drained. The potential for surface runoff is very low to low on vegetated slopes less than 20 percent, and medium on vegetated slopes 20 percent and greater. The potential for surface runoff is one class more rapid where the soil is unvegetated or the surface is poorly protected from erosion. Permeability is rapid.

#### **GRAVESEND SERIES**

The Gravesend series consists of very deep, well-drained soils with rapid permeability. These soils formed in a mixture of household garbage, construction debris and other discarded materials layered with anthrotransported natural soil material. The soil has a mantle of anthrotransported natural soil material less than 40 inches thick and occurs in landfills on modified landscapes in and near major urbanized areas of the Northeast. Slope ranges from 0 to 50 percent. Mean annual temperature is 74 degrees F. and mean annual precipitation is about 45 inches.

**TYPE LOCATION:** Queens County, New York: From the intersection of Cross Bay Blvd. and 165th Avenue 1500 feet west on 165th Avenue until interception with 81st street. Then 250 feet south on a path into Spring Creek Park, Gateway National Recreation Area; USGS Jamaica topographic quadrangle; Latitude 40 degrees, 38 minutes, 52.1 seconds N. and Longitude 73 degrees, 50 minutes, 49 seconds W. (Rockwell GPS Receiver); NAD 1983.

RANGE IN CHARACTERISTICS: The thickness of the landfill materials is generally more than 5 feet. The anthrotransported material may be any geologic deposit ranging from glacial outwash, coastal plain sediments, alluvial sediment, or sediment from coastal waterways. The thickness of the anthrotransported soil cap over the upper garbage layer ranges from 7 to 24 inches. Rock fragments

range from 1 to 30 percent and the texture includes fine sand or coarser. Reactions in the fill cap range from extremely acid to slightly alkaline. Reaction in the garbage layers is estimated to be neutral. Seashell fragments may be present in some pedons.

GEOGRAPHIC SETTING: Gravesend soils are on nearly level to very steep modified landforms in landfills. These soils formed in a mixture of household and anthrotransported soil material, with a cap of anthrotransported soil material that is relatively clean of refuse. The anthrotransported soil material is dominantly from locally excavated materials such as alluvium, outwash, coastal plain sediments, or dredged sediments from coastal waterways. Dominant coarse fragments are seashells or human manufactured items with smaller amounts of sedimentary and metamorphic rocks, basalt, and quartzite pebbles. Slope ranges from 0 to 50 percent. Mean annual precipitation ranges from 40 to 50 inches. Mean annual temperature ranges from 61 to 85 degrees F.

GEOGRAPHICALLY ASSOCIATED SOILS: These are Barren (proposed), <u>Bigapple</u> (proposed), <u>Centralpark</u> (T), Fortress (proposed), <u>Greatkills</u> (T), Jamaica (proposed), <u>Tilden</u> (proposed) and <u>Verazano</u> (proposed) soils.

**DRAINAGE AND PERMEABILITY:** The soils are well drained. The potential for surface runoff is very low to low on vegetated slopes less than 20 percent, and medium on vegetated slopes 20 percent and greater. The potential for surface runoff is one class more rapid where the soil is unvegetated or the surface is protected from erosion. Permeability is rapid.

SERIES ESTABLISHED: Queens County, New York; 1995.

#### BREEZE SERIES

The Breeze series consists of very deep, well-drained soils with rapid permeability. The soil formed in a thick mantle of sandy soil materials intermingled with demolished construction debris. These soils occur on modified landscapes in and near major urbanized portions of the Northeast. Slope ranges from 0 to 75 percent. Mean annual temperature is about 54 degrees F. Mean annual precipitation is about 47 inches

TAXONOMIC CLASS: Mixed, mesic Typic Udipsamments

**TYPE LOCATION:** Queens County, New York; From the intersection of B 193rd Street and State Road, 750 feet heading West of this intersection on State Road, then 50 feet due South on the other side of a fence on a large smoothed mound; USGS Coney Island topographic quadrangle; Latitude 40 degrees, 33 minutes, 40 seconds N. and Longitude 73 degrees, 54 minutes, 59 seconds W., NAD 1983. (Rockwell GPS Receiver)

RANGE IN CHARACTERISTICS: The thickness of the anthropotransported soil materials range from 40 to 80 inches. The anthropotransported material may be any sandy material ranging from dredge sand, eolian sand, or outwash sand, usually from a very local source. The construction debris may range in material of plastic, glass, rubber, brick, lumber, asphalt, coal ash, unburned coal, gypsum board, concrete, and steel. A distinction can be made between materials that will hold water, allow roots to penetrate, and decompose versus those that will act

like a rock fragment. Coarse fragments range from 10 to 34 percent by volume throughout the profile. Textures range from loamy fine sand to coarse sand, and gravelly to boulder texture phases can occur.

**GEOGRAPHIC SETTING:** Breeze soils are on nearly level to steeply sloping artificially created or modified landforms. These soils formed in anthropotransported sandy soil materials intermingled with construction debris. The anthropotransported soil material is dominantly from sandy sediments and deposits such as dredge, dunes, and outwash. The construction debris material commonly originates from the demolition of buildings and roads. The dominant coarse fragments of the construction debris are concrete, asphalt, brick, coal ash, and steel. Natural rock fragments if present are derived mainly from sedimentary and metamorphic rocks. Slope generally ranges from 0 to 75 percent. Mean annual precipitation ranges from 40 to 50 inches. Mean annual temperature ranges from 45 to 63 degrees F.

**GEOGRAPHICALLY ASSOCIATED SOILS:** These are <u>Barren</u> (T), <u>Bigapple</u> (T), <u>Fortress</u> (T), <u>Hooksan</u> and <u>Jamaica</u> (T). Barren (T), Bigapple (T), Fortress (T), Hooksan and Jamaica (T) soils are relatively clean of construction debris.

**DRAINAGE AND PERMEABILITY:** Well drained. The potential for surface runoff is negligible to low. Permeability is rapid.

SERIES ESTABLISHED: Queens County, New York; 1998.

#### **JAMAICA SERIES**

The Jamaica series consists of very deep, poorly drained soils with rapid permeability. The soil formed in thick mantle of anthrotransported sandy soil materials. These soils occur on modified landscapes in and near urbanized areas of the Northeast. Slope ranges from 0 to 3 percent. Mean annual temperature is about 56 degrees, and mean annual precipitation is about 44 inches.

TAXONOMIC CLASS: Mixed, mesic Typic Psammaquents

**TYPE LOCATION:** Brooklyn County, New York; Floyd Bennett Field, from Flatbush avenue and Floyd Bennett Field road entrance intersection 1625 feet east on main road, then make the first left turn an go northwest 6,000 feet toward the last runway. Then go northeast about 2,000 feet on the last runway. Then make a right turn toward an open area an go about 250 feet; USGS Coney Island topographic quadrangle; Latitude 40 degrees, 35 minutes, 59 seconds N. and Longitude 73 degrees, 53 minutes, 20 seconds W.

**RANGE IN CHARACTERISTICS:** Solum thickness is 10 to 20 inches. The thickness of the fill materials range from 40 to 80 inches. The anthrotransported material may be from any dredged, outwash or eolian sediments. Soil texture ranges from fine sand or coarser. Reaction ranges from very strongly acid through neutral. Coarse fragments are generally absent. Some pedons may contain seashells.

**GEOGRAPHIC SETTING:** Jamaica soils are on nearly level areas to gently sloping artificially created or modified landforms. These soils formed in anthrotransported soil material from eolian sand, outwash sand, or dredged sand from activities along coastal waterways, lakes and rivers, in and near major urbanized areas of the Northeast. The anthrotransported material is relatively clean of human artifacts. Coarse fragments are less than 20 percent. Seashell pieces may be present. Slopes are commonly 0 to 3 percent. The mean annual temperature range 45 to 63 degrees, mean annual precipitation ranges from 40 to 50 inches.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Barren (T), Fortress (T),

Hooksan, Ipswich, Matunuck, Pawcatuck, Breeze (T), and Verazano (T).

DRAINAGE AND PERMEABILITY: Poorly drained. The potential for surface runoff is low.

Permeability is rapid

DISTRIBUTION AND EXTENT: These soils occur on modified landscapes in and near major

urbanized areas of the Northeast. MLRA 149A, 149B, and 144A. The soils are of this series are

small extent.

SERIES PROPOSED: Brooklyn, New York, 1998.

**MONTAUK SERIES** 

The Montauk series consists of very deep, well-drained soils formed in glacial till derived

primarily from granitic materials. These soils are on upland till plains and moraines. Slope

ranges from 0 to 35 percent. Mean annual temperature is 49 degrees F, and mean annual

precipitation is 45 inches.

TAXONOMIC CLASS: Coarse-loamy, mixed, subactive, mesic Oxyaquic Dystrudepts

TYPE LOCATION: Suffolk County, New York, Town of East Hampton; on dirt road, 0.5 mile

east of Long Lane, 0.3 mile north of Stephan Hand's Path. USGS East Hampton, NY topographic

quadrangle; latitude 40 degrees, 58 minutes, 54 seconds N. and longitude 72 degrees, 13

minutes, 19 seconds W. NAD 1927.

RANGE IN CHARACTERISTICS: Thickness of the solum and depth to the firm till

substratum ranges from 18 to 38 inches. Rock fragments range from 3 to 35 percent in the solum

and 5 to 50 percent in the C horizon. The soil ranges from extremely acid through moderately

acid throughout.

GEOGRAPHIC SETTING: Montauk soils are on glaciated uplands and moraines. Slopes

range form 0 to 35 percent. The landscape in some areas has many closed depressions, some of

which are filled by perennial ponds or wet spots. The soils formed in thick moderately coarse or

medium textured glacial till mantles underlain by firm sandy till. Some areas have very stony or

extremely stony surfaces. The climate is humid, cool and temperate. Mean annual precipitation

ranges from 35 to 56 inches; mean annual temperature ranges from 46 to 52 degrees F., and the

mean annual frost-free period ranges from 120 to 200 days. Elevation ranges from 10 to 400 feet

above sea level.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the well drained Charlton,

Chatfield, Riverhead, Canton and Haven soils which lack Cd horizons; the excessively drained,

sandy Carver and Plymouth soils; the moderately well drained Sutton, and Woodbridge soils; the

poorly drained Leicester and Ridgebury soils; the very poorly drained Whitman soils; and the

shallow Hollis soils.

DRAINAGE AND PERMEABILITY: Well drained. The potential for runoff is low to high.

Permeability is moderately rapid in the solum and slow or moderately slow in the

substratum.

DISTRIBUTION AND EXTENT: New York, Connecticut, Massachusetts, New Hampshire

and possibly New Jersey. MLRA's 149B, 144A, and 145. The series is of large extent.

**SERIES ESTABLISHED:** Suffolk County, New York, 1970.

#### LAGUARDIA SERIES

The Laguardia series consists of very deep, well-drained soils with moderate permeability. These soils formed in a thick mantle of construction debris intermingled with anthrotransported soil materials. These soils occur on modified landscapes in and near major urbanized areas of the Northeast. Slope ranges from 0 to 75 percent. Mean annual temperature is about 54 degrees Fahrenheit and mean annual precipitation is about 47 inches.

TAXONOMIC CLASS: Loamy-skeletal, mixed, active, nonacid, mesic Typic Udorthents

**TYPE LOCATION:** Kings County, New York; From the intersection of East 105th Street and Seaview Avenue, 1000 feet Southeast of the intersection; USGS Brooklyn topographic quadrangle; Latitude 40 degrees, 38 minutes, 7 seconds N. and Longitude 73 degrees, 52 minutes, 52 seconds W. NAD 1983. (Rockwell GPS Receiver)

RANGE IN CHARACTERISTICS: The thickness of the fill materials ranges from 40 to 80 inches. The transported construction debris may range in material of pieces of plastic, glass, rubber, bricks, lumber, asphalt, coal ash, unburned coal, gypsum board, concrete, and steel. The transported natural soil material may originate from any geologic deposit ranging from till, outwash, alluvium, coastal plain sediments, or residuum, usually from a local source. There is a distinction between materials that will hold water and allow roots to penetrate, and will decompose versus those that will act like a rock fragments. Coarse fragments average 35 to 75 percent by volume. Soil textures may include sandy loam, loam, or silt loam and gravelly, cobbly, stony, and bouldery texture phases can occur

GEOGRAPHIC SETTING: Laguardia soils are on nearly level to steeply sloping artificially created or modified landforms. These soils formed in construction debris intermingled and mixed with natural soil materials. The construction debris material commonly originates from the demolition of buildings and roads. The dominant coarse fragments in the construction debris are concrete, asphalt, bricks, coal ash, and steel with some sedimentary and metamorphic rocks sparsely intermingled. The transported soil material is dominantly from locally excavated upland

materials such as alluvium, till, outwash, or coastal plain sediments. Slope ranges from 0 to 75 percent. Mean annual precipitation ranges from 40 to 50 inches. Mean annual temperature ranges from 45 to 63 degree Fahrenheit.

GEOGRAPHICALLY ASSOCIATED SOILS: These are <u>Canarsie</u> (T), <u>Centralpark</u> (T), <u>Foresthills</u> (T), <u>Greenbelt</u> (T) and <u>Inwood</u> (T).

**DRAINAGE AND PERMEABILITY:** Well drained. The potential for surface runoff is low to medium on vegetated slopes less than 8 percent, and high to very high on vegetated slopes 8 percent and greater, runoff is one class higher where the soil is unvegetated or the surface is poorly protected from erosion or compacted. Permeability is moderate in areas where the soil has not been compacted at the surface, but is slow where it has surface compaction or platy structure.

**SERIES PROPOSED:** Bronx County, New York; 1997.

#### **INWOOD SERIES**

The Inwood series consists of very deep, well-drained soils with moderately rapid permeability. These soils formed in a thick mantle of demolished construction debris intermingled with humanly transported natural soil materials. These soils occur on modified landscapes in and near major urbanized areas of the Northeast. Slope ranges from 0 to 75 percent. Mean annual temperature is about 54 degrees Fahrenheit and mean annual precipitation is about 47 inches.

TAXONOMIC CLASS: Fragmental, mixed, mesic Typic Udorthents

**TYPE LOCATION:** Bronx County, New York: In Soundview Park along the Bronx River; USGS Flushing topographic quadrangle; Latitude 40 degrees, 48 minutes, 46 seconds N. and Longitude 73 degrees, 52 minutes, 3 seconds W., NAD 1983.(Rockwell GPS Receiver)

RANGE IN CHARACTERISTICS: The thickness of the fill materials ranges from 40 to 80 inches. The transported construction debris may range in material of pieces of plastic, glass, rubber, bricks, lumber, asphalt, coal ash, unburned coal, gypsum board, concrete, and steel. The demolished construction debris may be capped with transported natural soil material ranging in thickness from 2 to 18 inches. There is a distinction between materials that will hold water and allow roots to penetrate, and will decompose versus those that will act like a rock fragment. Coarse fragments include both natural and demolished construction debris. Textures of the transported natural soil material include sandy loam, loam, or silt loam and gravelly, cobbly, stony, and bouldery texture phases can occur

GEOGRAPHIC SETTING: Inwood soils are on nearly level to steeply sloping artificially created or modified landforms. These soils formed in demolished construction debris intermingled with some natural soil materials. The construction debris material commonly originates from the demolition of buildings and roads. The dominant coarse fragments in the construction debris are concrete, asphalt, bricks, coal ash, and steel with some sedimentary and metamorphic rocks sparsely intermingled. The transported soil material is dominantly from locally excavated upland materials such as alluvium, glacial till, outwash, or coastal plain sediments. Slope generally ranges from 0 to 75 percent. Mean annual precipitation ranges from 40 to 50 inches. Mean annual temperature ranges from 45 to 63 degrees Fahrenheit.

**GEOGRAPHICALLY ASSOCIATED SOILS:** These are <u>Canarsie</u> (T), <u>Centralpark</u> (T), <u>Foresthills</u> (T), <u>Greenbelt</u> (T) and <u>Laguardia</u> (T).

**DRAINAGE AND PERMEABILITY:** Well drained. The potential for surface runoff is low to medium on vegetated slopes less than 8 percent, and rapid to very rapid on vegetated slopes 8 percent and greater; runoff is one class more rapid where the soil is unvegetated or the surface is poorly protected.

Other soil series found in Queens County include the following, less common types:

Charlton
Chatfield
Cheshire
Ebbetts
Greatkills
Freshkills
Hollis
Hooksan
Leicester
Oakville
Plymouth
Riverhead
Sutton
Todthill

Wotalf

Although Queens is still geographically part of Long Island and shares a common glacial history, it is clear from the data presented that the soils of Queens County are different from those found in the region of Long Island. It is also clear that these soil types change dramatically, approximately at the Nassau County - Queens border. This is due to the large degree of human activity in Queens, which has disturbed and changed the soil composition of the area and to the decrease in the depth of the terminal moraine. The soils of Queens are for the most part, anthropogenic as they have experienced a great deal of movement and upheaval due to the urbanization of the area.

Out of the 30 soil types found in the region of Queens, there are only 3 that are also found in the region of Long Island. These are the Riverhead, Plymouth and Montauk soil series, which are the main natural soils still found in Queens County. Of these, the Montauk series makes up the predominant natural soil in Queens and is found elsewhere only in Eastern Suffolk County, along

the ocean shoreline in East Hampton Town. Typically on Long Island, the Montauk series is not viewed as an agriculturally important soil as it is very sandy and arid. Many of the other soil series found in Queens are also commonly found in areas other than Long Island. Soil series such as Sandyhook, Hooksan and Tilden, are also found in areas of eastern coastal New Jersey. The soils series Charlton, Cheshire, Hollis, Leicester, Sutton and Wethersfield – all found in Queens are also common soils found in Middlesex and New Haven Counties in southern Connecticut. Indeed the soils of Queens bear only a slight resemblance to the soils of Long Island and are mostly classified as different series - even from those of neighboring Nassau County.

The difference in soil series, soil quality and depth, and the geological differences in bedrock depth between Queens and Long Island, would all lead to a significant impact on grape and wine quality if a commercial vineyard were to be planted in the area of Queens County. The French have documented for decades the significant effect that soil and soil type has on wine quality. With the different soils found in the Queens area, there is no doubt that the terrior of this area is significantly different from that of the rest of the Long Island area and would reflect in different aromas and tastes found in wines made from grapes grown in these areas. All other issues of urbanization aside, from a strictly soil science perspective, the western border for the Long Island AVA clearly must end at the Nassau County line.

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Queens, New York
Elevation: 16 feet Latitude: 40 39N Longitude: 073 47W

A۱	era	ige Te	mpera	ature							Ye	ears on	Record	d: 34
	°F	YEAR 54	Jan. 33	Feb. 34	<b>Ma</b> r. 41	Apr. 51	<b>May</b> 61	Jun 70	. Jul. 76	Aug. 75	Sep. 68	Oct. 57	Nov. 48	Dec.
Av	era	ige Hig	gh Tei	mpera	ature						Ye	ears on	Record	l: 34
	°F	YEAR 61	<b>Jan</b> . 39	Feb. 40	Mar. 48	Apr. 58	<b>May</b> 68	Jun 77	. Jul. 83	Aug. 82	Sep. 75	Oct. 65	Nov. 54	Dec. 43
Av	era	ge Lo	w Ten	npera	ture						Υe	ears on	Record	l: 34
	°F	YEAR 47	Jan. 26	Feb. 27	Mar. 34	Apr. 43	May 53	Jun. 62	Jul. 68	<b>Aug</b> . 67	Sep.	Oct. 49	Nov. 41	Dec.
Hiç	ghe	st Rec	orde	d Tem	perati	ure					Ye	ars on	Record	: 34
	°F	YEAR 104	<b>Jan</b> . 69	Feb. 68	<b>M</b> ar. 85	Apr. 90	<b>May</b> 99	<b>Jun</b> . 99	Jul. 104	Aug. 101	Sep. 98	Oct. 85	Nov. 77	Dec. 70
Lo	we	st Rec	orded	Tem <sub> </sub>	peratu	re					Ye	ars on	Record	: 34
	°F	YEAR -2	Jan. -2	Feb.	<b>M</b> ar. 7	Apr. 20	May 34	Jun. 45	Jul. 55	Aug. 46	Sep. 41	Oct. 30	<b>Nov</b> . 19	Dec.
Av	era	ge Pre	cipita	ition							Ye	ars on	Record:	: 34
	in.	YEAR 40.8	Jan. 3.3	Feb. 2.9	Mar	Apr. 3.7				Aug. Se 3.6 3.	-		ov. De	
Ave	era	ge Sno	owfall								Yea	ars on l	Record:	35
	in.	YEAR 22.7	Jan. 7	Feb. 7.6		o 4	May J 	un	Jul. ,	Aug. Se	ep. Od	ct. No - 0.:	ov. De	

Averag	e Numi	ber of	f Clea	r Day	S					Ye	ars on	Record	l: 35
Days	YEAR 98	Jan. 8	Feb. 8	Mar. 8	Apr. 8	May 7	Jun. 7	Jul. 8	Aug. 8	Sep. 10	Oct. 11	Nov. 8	Dec. 8
Averag	e Numl	ber of	Clou	dy Da	lys					Ye	ars on	Record	: 35
Days	YEAR 151	Jan. 15	Feb.	Mar. 14	Apr. 13	May 13	Jun. 12	Jul. 11	Aug. 10	Sep. 11	Oct. 11	Nov. 14	Dec. 15
Average	e Numl	oer of	Rain	y Day	S					Yea	ars on	Record	: 35
Days	YEAR 118	Jan. 10	<b>Feb</b> .	Mar. 11	Apr. 11	May 11	Jun. 10	Jul. 9	Aug. 9	Sep. 9	Oct.	<b>Nov</b> . 10	Dec.
Average	e Numb	oer of	Days	Abov	/e 90l	F/32C	<b>;</b>			Yea	ars on	Record	: 34
Days	YEAR 10	Jan.	Feb.	Mar.	Apr.	May	Jun. 2	Jul. 4	_	Sep.	Oct.	Nov. [	Dec.
Average	Numb	er of	Days	Abov	/e 65i	F/18C	,			Yea	ars on	Record:	34
Days	YEAR 165	Jan. 	Feb.	Mar. 1	Apr.	<b>May</b> 20	Jun. 29	Jul. 31	Aug.	Sep. 28	Oct. 15	Nov.	Dec.
Average	Numb	er of	Days	Belo	w 32F	:/0C				Yea	rs on	Record:	34
Days	YEAR 78	Jan. 23	Feb. 20	<b>Ma</b> r. 12	Apr.	May 	Jun.	Jul.	Aug. :	Sep. (		<b>Nov. E</b> 4 1	Dec. .7
Average	Numb	er of	Days	Belov	w 5/-1	5C				Yea	rs on l	Record:	34
Days	YEAR 1	Jan. 1	Feb.	Mar.	Apr.	May 	Jun.	Jul. 	Aug. S	Sep. (	Oct.	Nov. [	Dec. 

# Queens - Flushing, New York Elevation: 11 feet Latitude: 40 46N Longitude: 073 54E

Aver	age T	emper	ature							١	∕ears o	n Reco	rd: 30
°]	<b>YEA</b> F 54.4			Mar. 41.5	•	<b>May</b> 61.8			Aug. 4 75.3	•	Oct. 57.5	Nov. 47.4	Dec. 36.6
Aver	age Hi	igh Te	mpera	iture						Υ	ears or	n Reco	rd: 30
°I	YEAF 61.2			Mar. 48.4		<b>May</b> 69.8		. Jul. 9 83.	•	•	Oct. 64.2	Nov. 53.3	Dec. 42.1
Aver	age Lo	ow Ten	npera	ture						Y	ears or	Recor	rd∙ 30
	YEAF	₹ Jan.	Feb.	Mar.	Apr.	May	Jun	. Jul.	Aug.	Sep.	Oct.	Nov.	Dec
°F	47.6	25.6	27.1	34.6	43.8	53.8	63.3	68.	9 68.3	61.2	50.7	41.5	31
High	est Re	corde	d Tem	perat	ure					Y	ears on	Recor	d: 49
°F	YEAR	3 Jan. 72	Feb. 74	Mar. 83	Apr. 91	<b>May</b> 97	Jun 101		J	. Sep.	Oct. 89	Nov. 83	Dec.
Lowe	st Red	orded	Temp	eratu	ire					Ye	ears on	Recon	d: 49
°F	YEAR	Jan. -3	Feb. -2	Mar. 8	Apr. 22	May 38	Jun. 46	Jul. 56	Aug. 51	Sep.	Oct. 30	Nov. 17	Dec.
Avera	ige Pro	ecipita	tion							Υe	ears on	Record	d: 30
in	YEAR 42.1	Jan. 3.1			Apr. 3.8	_		Jul. 4.1	Aug. \$	Sep. C		ov. D	
Avera	ge Sn	owfall								Ye	ars on	Record	l: 30
in	YEAR 22.6				Apr. 1	May .	Jun.	Jul.	Aug. \$	Sep. O	ct. No - 0.	ov. De	

Average	e Numb	er of	Clea	r Days	S					Υe	ears on	Recor	d: 45
Days	YEAR 95	Jan. 8	Feb. 8	Mar. 8	Apr. 8	May 7			Aug. 8	Sep. 10	Oct.	Nov	Dec.
Average	e Numb	er of	Cloud	dy Da	ys					Υe	ars on	Record	d: <b>4</b> 5
Days	YEAR 153	Jan. 15		<b>Ma</b> r. 14	Apr. 13	May 13		Jul. 11	Aug. 11	Sep.	Oct.	Nov.	Dec. 14
Average	Numb	er of	Rainy	/ Day	S					Ye	ars on	Record	d: 53
Days	YEAR 118	Jan. 11	Feb.	<b>M</b> ar. 11	Apr. 11	May 11	Jun. 10	Jul. 9	Aug. 9	Sep.	Oct.	<b>Nov</b> .	Dec.
Average	Numb	er of	Days	Abov	/e 90F	F/32C	;			Ye	ars on	Record	d: 30
Days	YEAR 16	Jan.	Feb.	Mar.	-	-	Jun. 3.3	Jul. 6.3	Aug.	Sep. 1.1	Oct.	Nov.	Dec.
Average	Numb	er of	Days	Belov	w 32F	70C				Ye	ars on	Record	i: 30
Days	YEAR 72	Jan. 22	Feb. 19	Mar. 11	<b>Apr</b> . 0.9	May 	Jun.	Jul.	Aug.	•	Oct. 0.1	Nov. 3.3	Dec. 16
Average	Numb	er of	Days	Belov	w 0F/-	-17C				Ye	ars on	Record	i: 30

YEAR Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sep. Oct. Nov. Dec.

Days 0.2

0.2 0.1

# **Climate Data for Queens County**

1961- present

National Oceanic and Atmospheric Administration, National Climatic Data Center, Asheville, NC (2000 Weatherbase.com - http://www.weatherbase.com/weather/city.php3?c=US&s=NY, (2000).

<u>Station</u>	Ave. Temp F	Ave. Temp. Apr Oct.	Ave. High T. F	Ave. Low T	<u>Highest T</u> F	Lowest T F
Queens	54.0	65.4	61.0	47.0	104	-2
Queens/Flushing	54.4	65.9	61.2	47.6	107	-3
JFK Airport	53.7	64.9	60.7	46.5		
LaGuardia Airport	54.3	66.0	61.1	47.5		
Averages	54.1	65.5	61.0	47.2	105.5	-2.5

<u>Station</u>	Ave. Precip. Inches	Ave. Precip. May-Oct. "	Ave. Snow Inches	Ave. Days > 90 F	Ave. Days < 32 F
Queens	40.8	20.5	22.7	10	78
Queens/Flushing	42.1	21.7	22.6	16	72
JFK Airport	40.6	20.84			
Laguardia Airport	41.0	21.6			
Averages	41.0	21.2	22.65	13	75

# **Climate Data for Queens County**

# 1951-present

<u>Station</u>	Heating Degree Days Base 65 degrees F	Cooling Degree Days Base 65 degrees F
JFK Airport	5027	921
LaGuardia Airport	4910	1052
Average	4969	987

National Oceanic and Atmospheric Administration, National Climatic Data Center, Asheville, NC (2000).

<u>Station</u>	Ave. Temp	Ave. Temp.	Ave. High T.		<u>Highest T</u>	Lowest T
	F	Apr Oct.	F	F		Same .
Aquebogue	52.3	63.4	60.9	43.6		
Bohemia	51.0	62.3	59.0	42.0		
Bridgehampton	50.9	61.2	58.9	42.8	102	
Brookhaven	50.0	61.3	58.0	43.0	96	-2
Calverton	52.3	63.4	60.9	43.6	100	-8
Carle Place	51.0	63.7	59.0	44.0		Ü
East Hampton	50.0	61.3	58.0	43.0	96	-2
East Setauket	52.6	63.7	61.1	44.1	99	- -11
Garden City	52.8	63.7	60.2	45.4	103	-4
Great Neck	51.0	64.0	59.0	46.0		
Greenport	51.3	62.2	59.2	43.3		
Islip	53.0	63.4	61.0	44.0	101	-7
Melville	50.0	61.3	58.0	43.0	96	-2
Mineola	52.9	64.0	60.0	45.2		_
Patchogue	51.7	62.7	61.4	41.9	102	-13
Riverhead	50.0	69.4	58.0	43.0	96	-2
Westhampton	48.0	60.0	57.0	41.0		<del></del>
Averages	51.2	63.0	59.4	43.5	99.1	-5.67

# LONG ISLAND CLIMATIC DATA

## 1961-1990

<u>Station</u>	Ave. Precip. Inches	Ave. Precip May-Oct.	Ave. Snow Inches	Ave. Days > 90	<32	Ave. Days < 0
A i				<b>F</b>		F
Aquebogue	45.3	21.4				
Bohemia	46.5	23.4				
Bridgehampton	45.6	20.8	25.6	2.7	104.0	0.2
Brookhaven	34.4	12.7		2.9	105.5	0.4
Calverton	45.4	21.6	27.9	9.2	97.0	0.3
Carle Place	40.4	20.1			01.0	0.0
East Hampton	34.4	12.7		2.9	105.5	0.4
East Setauket	45.1	21.7	19.2	6.6	94.0	0.4
Garden City	43.6	21.8	25.0	11.0	82.0	0.4
Great Neck	41.0	20.5	20.0		02.0	0.2
Greenport	45.0	21.5				
Islip	44.6	23.4	20.6	7.0	98.0	
Melville	34.4	12.7	20.0	2.9	105.5	0.4
Mineola	43.0	20.2		2.0	100.0	0.4
Patchogue	48.5	23.1	29.4	7.8	111.0	1.3
Riverhead	34.4	19.8	20.7	2.9	105.5	
Westhampton	43.4	19.8		2.9	105.5	0.4
Journal profit	<b>70.7</b>	13.0				
Averages	42.0	19.84	24.62	5.59	100.8	0.44

## Long Island Climatic Data

1951-1990\*

<u>Station</u>	Heating Degree Days Base 65 degrees F	Cooling Degree Days Base 65 degrees F	Growing Degree Days
Brideghampton	5685	497	2572
Islip	5647	706	n/a
Mineola	5316	853	3279
Patchogue	5489	457	2868
Riverhead	5331	730	2987
Setauket	5232	718	n/a
Averages	5450	660	2927

## FROST FREE PERIOD

1961-1990\*

(Days of Growing Season Between 32 degrees F)

Station	Number of Days <32 F
Bridgehampton	191
Greenport	202
Mineola	218
Riverhead	208
Setauket	199
Average	204

# **Queens Climate Data and Summary**

The climate data presented on the following pages is pooled from a number of approved and official sources which include the National Oceanic and Atmospheric Administration, The National Environmental Satellite, Data and Information Service, The National Climatic Data Center in Asheville, N.C., Weatherbase.com, Canty and Associates, The National Virtual Data System, and Worldclimate.com. This data goes back an average of 30 years and in some cases has been recorded at various weather stations for over a century.

Observations that were recorded and compared included average temperature, average maximum and minimum temperature as well as averages of temperature extremes, and precipitation. The Long Island data was collected from all available weather stations operating in the Long Island area and averaged to provide a total Long Island climate picture. The data from Queens County, NY was taken from the four available weather stations in Queens, which include the two major New York airports - JFK International and LaGuardia International Airports. Because of the two airports and the large number of weather stations for a relatively small area, the climate of Queens has been well documented.

Upon first viewing the maps of Queens County and Long Island, one will see that geographically and geologically, Queens County is physically part of the region of Long Island. As was described in the soil data section, although Queens shares a similar glacial history with Long Island, the effect of the glaciers and the amount of topsoil they carried started to diminish toward the western end of Long Island - what is now Queens and Brooklyn. This is evident with the large amount of exposed bedrock, which becomes visible beginning in the Queens area and increases substantially toward the island of Manhattan. One can also see from the map of the area that the border of Queens County also corresponds to the beginning of where the rest of Long Island starts to separate significantly from the mainland. Where the border begins at Little Neck Bay, the coast is still relatively close to the mainland area of the Bronx, New York. Two bridges originating from Queens, (the Throgs Neck and the Whitestone Bridges) span this narrow inlet to reach this area of the Bronx, upstate New York and New England. At the beginning of the Nassau County line however, Long Island begins to separate further from the mainland and the body of water called the Long Island Sound begins to form and get wider as one travels east. At it widest point, Long Island Sound is almost 20 miles across, separating the east end of Long Island from the mainland of Connecticut.

It is mainly from this geographic orientation that Long Island derives its mild, maritime climate. As was described in the Climate Chapter, the surrounding water heavily influences Long Island's weather. As the area of Queens is much closer to the mainland (both to the north and west) and has less water surrounding it, its climate is moderated less by a maritime effect. This is evidenced by the historical climate data from Queens County.

As one can see from the data presented, the region of Queens is across the board, much warmer than the region of Long Island. The average temperature of Queens is 54.1 degrees F, compared to 51.2 F for Long Island – a significant difference of almost 3 degrees F. The average temperature of Queens from May through October (the main growing season for grapes) is 2.5 degrees F, warmer than the same period on Long Island. The average high temperature in Queens is also 1.6 degrees F warmer than Long Island. The average low temperature for Queens is 3.7 degrees F, warmer than Long Island. In particular, Queens experiences a lack of influence of the water in the summer months, having a recording of 105.5 degrees F as the highest recorded temperature. Long Island has 99.1 by comparison. Queens also experiences on average, 13 days where the temperature reaches 90 degrees F or more, versus Long Island, which only has 5.59 days of this temperature. These numbers once again show clearly the importance of the moderating effect of the surrounding water on the temperatures of Long Island.

The warmer climate of Queens is also seen during the months of the year that does not include the growing season. As the data shows, Queens experiences 75 days of temperatures below 32 degrees F, while Long Island experiences over 100 days below 32 degrees F. – 25 days more – a difference of almost one month. The average low temperature recorded in Queens is –2.5 degrees F. while on Long Island the average lowest is –5.67 degrees F. In this category, Queens is once again warmer, showing an overall average in lowest temperature recorded of 3.67 degrees F higher than Long Island.

In terms of Heating-Degree Days and Cooling-Degree Days, the data once again is consistent. Queens on average has 4969 Heating Degree-Days versus 5450 for Long Island. As was stated earlier in the paper, the larger the number of Heating Degree-Days, the cooler the climate of that region. Long Island is by far the cooler of the two areas, having 481 more Heating Degree-Days. In terms of Cooling Degree-Days, the larger the number, the warmer the climate of that region. The average for Queens is 987 versus 660 for Long Island (a huge difference of 327 Degree Days) once again highlighting how much warmer the area of Queens is when compared to Long Island. These numbers represent substantial

and significant differences between the climate of Queens County and the rest of Long Island and once again demonstrate the powerful maritime influence that moderates the climate of the Long Island region.

In terms of average annual precipitation, Long Island and Queens are more similar, with Long Island having on average, only an inch more of rainfall per year. However the amount of rainfall accumulated during the growing season shows a greater difference between these two regions, with Queens County having 1.4 inches more during this six-month period – a significant difference to a grape grower. This shows clearly the shift in weather patterns and rainstorms that consistently veer away from Long Island. This change in storm patterns is most likely due to the influence of the maritime breezes, which increase in velocity and turbulence as Long Island stretches out eastward into the Atlantic Ocean.

Queens County is part city and part urban sprawl. There is a possibility that part of the explanation for the warmer climate in Queens is due to the fact that sunlight and heat can be absorbed by streets, pavement and buildings, artificially raising ambient temperatures. Larger structures also inhibit some breezes that would otherwise moderate some of the climate. It is true however that the orientation of Queens County, closer to the mainland of New York and New Jersey, is the most significant factor for the warmer temperatures experienced in this area.

Even though the area of Queens County is geographically attached to Long Island, any similarity that Queens has to Long Island ends there. Indeed from a historical and political perspective, the area of Queens County has never been recognized as being part of Long Island. Queens County represents the western boundary of New York City and has never been included in any summary of business, population or economic information involving Long Island. The name Long Island has always, only meant to describe the counties of Nassau and Suffolk. Aside from this, the region of Queens is highly urbanized and contains no viable agricultural farmland. Open space in Queens is either along the shoreline, in the form of wetlands, marshlands and beaches, or is preserved in the form of public parks. For all practical purposes, there exists little possibility that a commercial vineyard and winery operation could exist in this area. If the possibility does occur however, the climate and soil data clearly show that the area of Oueens County differs significantly from that of Long Island. All of the climate factors combined, along with the differences in soil depth and series, clearly show that Queens County would theoretically grow and produce grapes and wines of a different type and character from those grown and produced on Long Island. The differences in the climate and soil of Queens as compared to Long Island provide sufficient evidence to strongly support the Queens/Nassau County border as the western boundary line for the proposed Long Island AVA.



New York

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## Crater

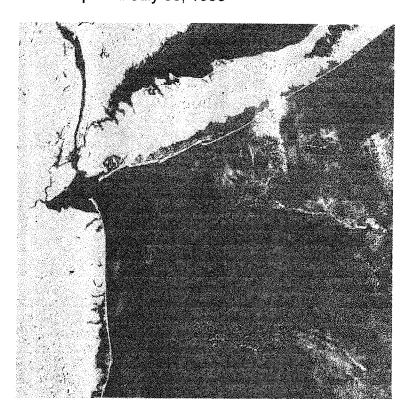
- -New York
- -Panama
- -Aljeandro Selkirk island
- -Lake Titicaca
- -Buenos Aires
- -Antartica Iceberg
- -Tenovmer Crater
- -Strait of Gibralter
- -English Channel -Turkey
- -Egypt
- -Aral Sea
- -Great Sandy
- -Elgygytgym Crater

## ▶ Using LANDSAT 7 Data

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## New York and Long Island Path 13 Row 32 Date Acquired: July 30, 1999



This Landsat 7 browse image shows the area around New York Only including Newark, NJ and Long Island. Click below for a in depth view of Manhattan Island. (These pictures will open in a new window).

Large New York Image

Manhattan Island

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# The Wines of Long Island

# Birth of a Region

Philip F. Palmedo and Edward Beltrami

Photographs by Sara Matthews

Preface by Paul Pontallier, Château Margaux



Appendix I

I Mondach



# WINES OF LONG ISLAND



# Presented by Thomas J. McAdam's Liquor C orp.

(A Buy-Rite/Price-Cutter Discount Store)

Tour of Wingrice	Winome of the Month	Table To The Control of the Control		
Lour of Wineries	Winery of the Month	Long Island Region	Wines    Ordering	- 14
		Don's toland receiving	Willes    Oldering	Ji.
				11
			·	

## About our site

## Getting around

There are many interesting locations in our site to make you better informed about the superb wine offerings from Eastern Long Island.

## About Us

Touring the Wineries will take you first to the list of vineyards from which our selections are procured. Select one to read a brief description of the vineyard and its wines. Our prices for these selections can be found by going through wines.

Each month, we will pick one of the 18 vineyards as the Winery of the Month to showcase with a more in depth focus.

For all pages within the site, when you read about a wine that interests you; check the box next to it and click the [add to my shopping basket] button at the top of the page before leaving the page. Your selection will be added to a shopping basket to review at anytime simply by going to the "ordering" page.

If at any time you wish to unselect a wine, press the check box next to that wine until the "X" disappears, then click on "add to shopping basket" and that wine will be removed.

## \* Note:

Please Note that this site uses a feature known as "Cookies" to store your selections. Although both Netscape and Microsoft Explorer support this technology, it is not supported by all web browsers. If your selections do not get saved in your shopping basket (i.e. they do not show up on the ordering page) then you may want to check with your internet provider to see if they support this technology. If your provider does not support "Cookies" you may still use this site by writing down the items and quantities you wish to purchase and filling out the message box on the bottom of the order page. Please make sure to also fill out the personal information on the order page as well.

Where our Grapes are grown. Eastern Long Island is more than a playground for the rich and famous. See why growers have such success growing grapes of such superb flavor.

Seeing our Wine List. Our selections are indexed by wine type. Choose a type of wine to see a list of wines, our prices, and a short description of the wine's sensibilities. Check the box next to any wine that appeals to you. Remember to save the selection before going to another page in order to add it to your shopping basket.

#### How to Order

When you are ready to place an order, link to the order page by clicking the button at the top of the

page. The order page will show the selections you have chosen. Fill in the Quantity box with the number of bottles that you wish to order and click the Total Button. Your total order cost will be calculated for you.

For us to fill your order, we need you to fill in the form you will find at the bottom of the order page. When you place your order by clicking the [Place Order] button, you order will be faxed to our store for processing.

Our Customer Service representative will reach you by phone to verify your order and obtain credit card payment information. Your order will then be shipped without delay.

## Who we are

McAdam "Buy-Rite" Liquors, established in 1934 and owned by the Fink family, has emerged as one of New York's largest and most respected Wine & Spirit merchants. We are a major source of the world's finest wines as well as wine future specialists.

We are pleased to be recognized as the largest purveyor of the rapidly growing Long Island Wine industry. Quality offerings from 18 vineyards from the rich and fertile regions of eastern Long Island are listed in our pages. The accolades for the region's merlots, cabernets and chardonnays have been truly outstanding. Equally impressive are the "Late Harvest" dessert wines, and some of the best Meritage and Pinot Noir that you can find.

We dedicate our site to inform, excite, and have you discover the wonders of our vines.

## The Owner:

**Bob Fink** holds a degree from New York University in Management and Marketing. He has been on the Board of Trustees of the Metropolitan Package Store Association; been a recipient of the prestigious "Retailer of the Year" Award for the New York Area; and has graduated with honors from the late Harold Grossman's *Sommelier Wine Program*.

## The Manager:

William Rudowski, store manager and wine buyer, has been with McAdam's for 15 years. His reputation as an astute wine merchant is widespread. His keen palate and amazing memory for the tastings he has participated in make him a veritable encyclopedia of wine knowledge. Contact him for recommendations and you will not be disappointed.

You are visitor number

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since 2/1/97

Thomas J. McAdam's Liquor Corp. - World largest purveyor of Long Island Wines. 398 3rd Avenue, New York, NY 10016 - (between 28th and 29th St.) (212) 679-1224 Fax (212) 689-5761

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Items marked 'SOLD-OUT' often come back into inventory. You can place an order for those items and you automatically be notified/invoiced when they arrive.

Vint	Description	Size	Bottle	Case Pr	_
	BEDELL CELLARS CABERNET SAUVIGNON, NORTH FORK OF LONG ISLAND	MAGNU	Pr 34.61		
	BEDELL CELLARS CABERNET SAUVIGNON, NORTH FORK OF LONG ISLAND	750ML	20.07	225.81	
	BEDELL CELLARS CHARDONNAY, NORTH FORK OF LONG ISLAND	750ML	9.35	105.21	
	BEDELL CELLARS CHARDONNAY, RESERVE, NORTH FORK OF LONG ISLAND	750ML	14.00		
	BEDELL CELLARS CUPOLA, NORTH FORK OF LONG ISLAND	750ML		262.71	
	BEDELL CELLARS CYGNET, A SPECIAL BLEND OF PREMIUM WHITE GRAPES	750ML	7.00		
	BEDELL CELLARS EIS, WHITE TABLE WINE	375ML	26.52	596.70	
	BEDELL CELLARS GEWURZTRAMINER, NORTH FORK OF LONG ISLAND SOLD-OUT	750ML	12.15	136.71	
	BEDELL CELLARS MAIN ROAD RED, RED TABLE WINE	750ML	9.08	102.15	
	BEDELL CELLARS MAIN ROAD WHITE, WHITE TABLE WINE	750ML		103.95	
	BEDELL CELLARS MERLOT, NORTH FORK OF LONG ISLAND	750ML		178.65	
	BEDELL CELLARS MERLOT, NORTH FORK OF LONG ISLAND	750ML		188.91	
	BEDELL CELLARS MERLOT, RESERVE, NORTH FORK OF LONG ISLAND	750ML	27.99	314.91	

	BEDELL CELLARS RASPBERRY WINE	375ML	10.20	229.50	7
поот	CHANNING DAUGHTERS CHARDONNAY, BRICK KILN,	]	1	1	. I
	THE HAMPTONS, LONG ISL	750ML	15.08	169.65	∥ ┌
1998	CHANNING DAUGHTERS CHARDONNAY, BRICK KILN, THE HAMPTONS, LONG ISL	750ML	16.36	184.05	1
1998	CHANNING DAUGHTERS CHARDONNAY, BRICK KILN, THE HAMPTONS, LONG ISL	375ML	8.76	197.10	
1997	CHANNING DAUGHTERS CHARDONNAY,	750ML	10.64	119.70	1
1998	SCUTTLEHOLE, THE HAMPTONS, LI CHANNING DAUGHTERS CHARDONNAY.	750ML	1 13 08	147.15	I 31
	SCUTTLEHOLE, THE HAMPTONS, LI				<b>]</b> [
1997	CHANNING DAUGHTERS FRESH RED, PRORIETOR'S ESTATE, THE HAMPTONS\	750ML	13.08	147.15	
1994	CHANNING DAUGHTERS MERLOT, SCULTURE GARDEN, LIBRARY SELECTION	750ML	17.51	197.01	
1995	CHANNING DAUGHTERS MERLOT, SCULTURE GARDEN, THE HAMPTONS, LI	750ML	15.08	169.65	
1998	CHANNING PERRINE RIESLING, ROLLING RIDGE	750ML	13.08	147.15	
1007	VINEYARD, NORTH FORK CHANNING PERRINE RIESLING, ROLLING RIDGE	(7750) A	10.24		Ι.
	VINEYARD, NORTH SOLD-OUT	750ML	10.64	119.70	
1997	CHANNING PERRINE SAUVIGNON BLANC, MUDD VINEYARD, NORTH FORK	750ML	13.08	147.15	Г
	CHANNING PERRINE SAUVIGNON BLANC, MUDD VINEYARD, NORTH FORK	750ML	15.19	170.91	
L	COBBLESTONE AUNT WILLOW'S APPLE CRANBERRY WINE	750ML	3.59	43.08	1 1
n oo a	<b>!</b>		7 27	00.40	
	COBBLESTONE CHARDONNAY, OLD BROOKVILLE, NASSAU COUNTY	750ML	7.37	88.44	Г
	COBBLESTONE UNCLE DOC'S GARLIC CHARDONNAY, NORTH FORK OF SOLD-OUT	750ML	3.59	43.08	
	COREY CREEK VINEYARDS CABERNET FRANC, NORTH FORK OF LONG ISLAND	750ML	16.31	183.51	Г
1995	COREY CREEK VINEYARDS CHARDONNAY, NORTH FORK OF LONG ISLAND	750ML	10.08	113.40	Г
1996	COREY CREEK VINEYARDS CHARDONNAY, NORTH	750ML	10.87	122.31	
1996	FORK OF LONG ISLAND COREY CREEK VINEYARDS CHARDONNAY, RESERVE,	750ML	13.88	156.15	
1 1	NORTH FORK OF LONG ISL COREY CREEK VINEYARDS CHARDONNAY, RESERVE,	750ML	13.50	152.91	
	NORTH FORK OF LONG ISL				
	COREY CREEK VINEYARDS MERLOT, NORTH FORK OF LONG ISLAND	750ML	15.12	170.10	
1997	COREY CREEK VINEYARDS MERLOT, NORTH FORK OF LONG ISLAND	750ML	16.31	183.51	Г
1997	COREY CREEK VINEYARDS ROSE, NORTH FORK OF LONG ISL/FINGER LAKES	750ML	9.51	107.01	
	COUNTRY GARDENS BLUSH BOUQUET (BIDWELL	750ML	4.97	59.64	
	VINEYARDS)				
	DUCK WALK VINEYARDS APHRODITE, LATE HARVEST GEWURZTRAMINER, LI	750ML	26.28	295.65	
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1997	DUCK WALK VINEYARDS APHRODITE, LATE HARVEST GEWURZTRAMINER, LI	375ML	12.60	141.75	
	DUCK WALK VINEYARDS BLUEBERRY PORT, LONG ISLAND, NEW YORK	375ML	12.60	283.50	Г
1993	DUCK WALK VINEYARDS CABERNET SAUVIGNON, NORTH FORK OF LONG ISLAND	750ML	18.68	210.15	
1997	DUCK WALK VINEYARDS CHARDONNAY, LONG ISLAND, NEW YORK	750ML	8.40	94.50	Г
1997	DUCK WALK VINEYARDS CHARDONNAY, LONG ISLAND, NEW YORK	1.5L	14.95	84.11	
1996	DUCK WALK VINEYARDS CHARDONNAY, RESERVE, LONG ISLAND, NEW YORK	750ML	10.76	121.05	
1995	DUCK WALK VINEYARDS MERLOT, NORTH FORK OF LONG ISLAND	750ML	15.40	173.25	
1997	DUCK WALK VINEYARDS PINOT MEUNIER, NORTH FORK OF LONG ISLAND	750ML	10.28	115.65	i
	DUCK WALK VINEYARDS SOUTHAMPTON WHITE, THE HAMPTONS, LONG ISLAND	750ML	7.96	89.55	[
	DUCK WALK VINEYARDS WINDMILL BLUSH, TABLE	750ML	7.00	78.75	_ <u> </u>
	WINE DUCK WALK VINEYARDS WINDMILL BLUSH, TABLE	1.5L	13.08	73.58	
	WINE DUCK WALK VINEYARDS WINDMILL RED, TABLE	750ML	7.00	78.75	I
	WINE DUCK WALK VINEYARDS WINDMILL WHITE, TABLE	750ML	7.00	78.75	
	WINE		, , , ,		
	DZUGAS VINEYARDS CHARDONNAY, NORTH FORK OF LONG ISLAND	750ML	11.19	125.91	Г
L	GRISTINA AVALON	750ML	7.16	80.55	
1997	GRISTINA CABERNET FRANC, NORTH FORK OF LONG ISLAND	750ML	14.71	165.51	
1994	GRISTINA CABERNET SAUVIGNON, ANDY'S FIELD, NORTH FORK OF LONG ISL	750ML	23.32	262.35	Γ
	GRISTINA CABERNET SAUVIGNON, NORTH FORK OF LONG ISLAND	750ML	13.44	151.20	
1	GRISTINA CABERNET SAUVIGNON, NORTH FORK OF LONG ISLAND SOLD-OUT	750ML	14.36	161.55	Г
1997	GRISTINA CHARDONNAY, ANDY'S FIELD, NORTH FORK OF LONG ISLAND	750ML	18.48	207.90	
1997	GRISTINA CHARDONNAY, NORTH FORK OF LONG ISLAND	750ML	10.08	113.40	
1994	GRISTINA MERLOT, ANDY'S FIELD, NORTH FORK OF LONG ISLAND	750ML	22.68	255.15	Г
1	GRISTINA MERLOT, ANDY'S FIELD, NORTH FORK OF LONG ISLAND	750ML	22.68	255.15	
1995	GRISTINA MERLOT, NORTH FORK OF LONG ISLAND	750ML	14.00	157.50	
1	GRISTINA MERLOT, NORTH FORK OF LONG ISLAND	750ML	12.60	141.75	
1995	GRISTINA PINOT NOIR, NORTH FORK OF LONG ISLAND	750ML	16.79	188.91	
	GRISTINA ROSE OF CABERNET SAUVIGNON, NORTH FORK OF LONG ISLAND	750ML	8.40	94.50	

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1997 HARGRAVE BLANC FUME, NORTH FORK OF LON ISLAND		10.36	116.55	Г
1997 HARGRAVE CABERNET FRANC, NORTH FORK OF LONG ISLAND	750ML	14.00	157.50	
HARGRAVE CHARDONETTE, NORTH FORK OF LO ISLAND	DNG 750ML	6.92	77.85	
1998 HARGRAVE CHARDONNAY, NORTH FORK OF LOUISLAND	NG 750ML	14.00	157.50	
1997 HARGRAVE MERLOT, NORTH FORK OF LONG ISL	AND 750ML	15.88	178.65	
1997 HARGRAVE PINOT BLANC, NORTH FORK OF LON	G 750ML	10.36	116.55	'
1997 HARGRAVE PINOT NOIR, NORTH FORK OF LONG ISLAND	750ML	16.79	188.91	
1996 JAMESPORT CABERNET FRANC, NORTH FORK OF LONG ISLAND	750ML	12.15	136.71	
1995 JAMESPORT CHARDONNAY, COX LANE VINEYAR NORTH FORK OF L SOLD-OUT	D, 750ML	9.80	110.25	
1997 JAMESPORT CHARDONNAY, COX LANE VINEYAR NORTH FORK OF LONG ISL	2D, 750ML	12.15	136.71	
1995 JAMESPORT CHARDONNAY, THREE BARREL SEL NORTH FORK OF LONG ISL	ECT, 750ML	14.44	162.45	П
JAMESPORT ISLAND BLANC, NORTH FORK OF LO ISLAND	NG 750ML	8.09	103.95	
JAMESPORT ISLAND BLANC, NORTH FORK OF LO ISLAND	NG 1.5L	16.63	93.56	Γ
JAMESPORT ISLAND ROSE, NORTH FORK OF LONISLAND	G 750ML	7.12	85.44	
JAMESPORT ISLAND ROUGE, NORTH FORK OF LO ISLAND	NG 750ML	8.87	99.81	П
JAMESPORT ISLAND ROUGE, NORTH FORK OF LO ISLAND SOLD-OUT	NG 1.5L	16.63	93.56	Г
1994 JAMESPORT MELANGE DE TROIS, NORTH FORK C LONG ISLAND SOLD-OUT	OF 750ML	16.68	187.65	
1995 JAMESPORT VINEYARDS MERLOT, NORTH FORK LONG ISLAND	OF 750ML	14.44	162.45	
1995 JAMESPORT VINEYARDS RIESLING, LATE HARVE NORTH FORK OF LI	ST, 375ML	22.20	499.50	<u> </u>
I996 JAMESPORT VINEYARDS RIESLING, NORTH FORK LONG ISLAND	OF 750ML	9.09	109.08	Γ
1997 JAMESPORT VINEYARDS RIESLING, NORTH FORK LONG ISLAND	OF 750ML	10.28	115.65	Г
1996 JAMESPORT VINEYARDS SAUVIGNON BLANC, NO FORK OF LONG ISLAND		7.83	93.96	Г
1998 JAMESPORT VINEYARDS SAUVIGNON BLANC, NO FORK OF LONG ISLAND	ORTH 750ML	11.19	125.91	
1996 LAUREL LAKE VINEYARDS CHARDONNAY, NORT FORK OF LONG ISLAND	H 750ML	11.45	137.40	Г
1995 LAUREL LAKE VINEYARDS CHARDONNAY, RESE NORTH FORK OF LONG ISL	RVE, 750ML	12.24	146.88	
1997 LAUREL LAKE VINEYARDS CHARDONNAY, RESE NORTH FORK OF LONG ISL	RVE, 750ML	14.00	157.50	

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İ	LAUREL LAKE VINEYARDS LAKE ROSE, NORTH FORK OF LONG ISLAND		8.18	98.16	
	LAUREL LAKE VINEYARDS MERLOT, NORTH FORK OF LONG ISLAND	750ML	13.32	149.85	
1998	LAUREL LAKE VINEYARDS RIESLING, NORTH FORK OF LONG ISLAND	750ML	9.80	110.25	Г
	LAUREL LAKE VINEYARDS WIND SONG, WHITE TABLE WINE	750ML	7.96	89.55	Г
	LENZ CABERNET SAUVIGNON, NORTH FORK OF LONG ISLAND		23.08	259.65	
	LENZ CABERNET SAUVIGNON, NORTH FORK OF LONG ISLAND	750ML	23.35	262.71	Г
	LENZ CABERNET SAUVIGNON, VINEYARD SELECTION, NORTH FORK OF LI	750ML	14.00	157.50	[ [ ]
	LENZ CHARDONNAY, GOLD LABEL, BARREL FERMENTED, NORTH FORK OF LI	750ML	23.35	262.71	Г
	LENZ CHARDONNAY, VINEYARD SELECTION, NORTH FORK OF LONG ISLAND	750ML	9.35		Г
	LENZ CUVEE, METHODE CHAMPENOISE, NORTH FORK OF LONG ISLAND			314.91	Г
	LENZ GEWURZTRAMINER, NORTH FORK OF LONG ISLAND SOLD-OUT	750ML	10.28		Γ
	LENZ MERLOT, ESTATE BOTTLED, NORTH FORK OF LONG ISLAND	750ML	23.35		
	LENZ MERLOT, VINEYARD SELECTION, FORK OF LONG ISLAND SOLD-OUT	750ML	15.88		Γ
	LENZ MERLOT-CABERNET SAUVIGNON BLEND, NORTH FORK OF LONG ISLAND	750ML		178.65	П
	LENZ PINOT NOIR, ESTATE BOTTLED, NORTH FORK OF LONG ISLA SOLD-OUT	750ML	14.00		
	LITTLE COBB ROAD CABERNET SAUVIGNON, SUFFOLK COUNTY	750ML	10.87	122.31	Γ.
	LITTLE COBB ROAD CHARDONNAY, SUFFOLK COUNTY	750ML	6.00	72.00	
	MACARI CABERNET FRANC, ESTATE BOTTLED, NORTH FORK OF LONG ISLAND	750ML		204.75	
	MACARI CHARDONNAY, BARREL FERMENTED, NORTH FORK OF LONG ISLAND	750ML	18.20	204.75	
	MACARI CHARDONNAY, ESTATE BOTTLED, NORTH FORK OF LONG ISLAND	750ML	13.80		
	MACARI MERLOT, ESTATE BOTTLED, NORTH FORK OF LONG ISLAND		18.20		
	MACARI ROSE D'UNE NUIT, ESTATE BOTTLED, NORTH FORK OF LONG ISLAND		11.08	124.65	
	OLD BROOKVILLE CHARDONNAY, NASSAU COUNTY	750ML	8.99	107.88	
	OLD BROOKVILLE CHARDONNAY, NASSAU COUNTY	750ML	10.87	122.31	
İ	OSPREY'S DOMINION BAYMAN'S HARVEST, NORTH FORK OF LONG ISLAND	750ML	5.59	62.91	
	OSPREY'S DOMINION CABERNET SAUVIGNON, NORTH FORK OF LONG ISLAND	750ML	12.84	144.45	Г

11997	OSPREY'S DOMINION CABERNET SAUVIGNON, NORTH	TEAKAT	7 <del>7 7 7 7</del>		
1	FORK OF LONG ISLAND	750ML	12.15	136.7	" ┌
i	OSPREY'S DOMINION CABERNET SAUVIGNON, RESERVE, NORTH FORK OF LI	750ML	22.68	255.13	1
	OSPREY'S DOMINION CHARDONNAY, NORTH FORK OF LONG ISLAND		13.03	146.61	
1997	OSPREY'S DOMINION CHARDONNAY, NORTH FORK OF LONG ISLAND	750ML	9.72	109.35	F
	OSPREY'S DOMINION CHARDONNAY, REGINA MARIS, NORTH FORK OF LI	750ML	7.00	78.75	
1996	OSPREY'S DOMINION CHARDONNAY, RESERVE, NORTH FORK OF LONG ISLAND	750ML	18.79	211.41	<b> </b>
1997	OSPREY'S DOMINION JOHANNISBERG RIESLING, NORTH FORK OF LONG ISL	750ML	11.56	130.05	
1996	OSPREY'S DOMINION MERLOT, NORTH FORK OF LONG ISLAND	750ML	15.19	170.91	
	OSPREY'S DOMINION MERLOT, NORTH FORK OF LONG ISLAND	750ML	13.88	156.15	Г
	OSPREY'S DOMINION PINOT NOIR, NORTH FORK OF LONG ISLAND	750ML	14.39	161.91	Г
1997	OSPREY'S DOMINION PINOT NOIR, NORTH FORK OF LONG ISLAND	750ML	18.48	207.90	Г
	OSPREY'S DOMINION PORT, NORTH FORK OF LONG ISLAND	375ML	9.40	211.50	П
	OSPREY'S DOMINION PORT, NORTH FORK OF LONG ISLAND	750ML	14.92	167.85	П
	OSPREY'S DOMINION SAUVIGNON BLANC, NORTH FORK OF LONG ISLAND	750ML	14.71	165.51	Г
	OSPREY'S DOMINION SPICE WINE	750ML	9.40	105.75	
	OSPREY'S DOMINION STRAWBERRY WINE	750ML	8.44	94.95	
	OSPREY'S DOMINION TWILIGHT BLUSH, NORTH FORK OF LONG ISLAND	750ML	7.56	85.05	
	PALMER CABERNET SAUVIGNON, RESERVE, NORTH FORK OF LONG ISLAND	750ML	15.12	170.10	
	PALMER CHARDONNAY, RESERVE, NORTH FORK OF LONG ISLAND	750ML	12.60	141.75	П
	PALMER SELECT RESERVE, WHITE, NORTH FORK OF LONG ISLAND	750ML	14.28	160.65	П
	PALMER VINEYARDS CABERNET FRANC, PROPRIETOR'S RESERVE, NORTH FORK	750ML	14.28	160.65	
	PALMER VINEYARDS CHARDONNAY, BARREL FERMENTED, NORTH FORK OF LI	750ML	12.60	141.75	
	PALMER VINEYARDS CHARDONNAY, NORTH FORK OF LONG ISLAND	1.5L	15.12	85.05	
	PALMER VINEYARDS CHARDONNAY, NORTH FORK OF LONG ISLAND	750ML	10.08	113.40	
	PALMER VINEYARDS GEWURZTRAMINER, NORTH FORK OF LONG ISLAND	750ML	12.60	141.75	一
	PALMER VINEYARDS LIGHTHOUSE RED, COFFEE POT LIGHT, LONG ISLAND	750ML	8.40	94.50	Г

ł	PALMER VINEYARDS LIGHTHOUSE ROSE, BUD LIGHT,	750ML	T 0 47	N	
	LONG ISLAND	/30ML	8.40	94.50	
	PALMER VINEYARDS LIGHTHOUSE WHITE, PLUM ISLAND LIGHT, LONG ISLAND	750ML	8.40	94.50	   r
	PALMER VINEYARDS LONG ISLAND HOUSE WINE, RED	1.5L	10.08	56.70	
	PALMER VINEYARDS LONG ISLAND HOUSE WINE, WHITE	1.5L	10.08	56.70	Г
	PALMER VINEYARDS MERLOT, NORTH FORK OF LONG ISLAND	750ML	11.76	132.30	
ii .	PALMER VINEYARDS MERLOT, NORTH FORK OF LONG ISLAND	750ML	15.12	170.10	Γ
	PALMER VINEYARDS PINOT BLANC, ESTATE, NORTH FORK OF LONG ISLAND	750ML	8.40	94.50	Г
	PALMER VINEYARDS SAUVIGNON BLANC, NORTH FORK OF LONG ISLAND	750ML	12.60	141.75	Г
	PALMER VINEYARDS SELECT RESERVE, NORTH FORK OF LONG ISLAND		16.52	185.85	T-
	PALMER VINEYARDS SELECT RESERVE, NORTH FORK OF LONG ISLAND	750ML	17.83	200.61	Г
	PALMER VINEYARDS SELECT RESERVE, NORTH FORK OF LONG ISLAND	750ML	21.00	236.25	П
	PALMER VINEYARDS SUNRISE-SUNSET, BLUSH TABLE WINE	750ML	8.40	94.50	П
	PALMER VINEYARDS WHITE RIESLING, NORTH FORK OF LONG ISLAND	750ML	12.60	141.75	Г
	PAUMANOK ASSEMBLAGE, NORTH FORK OF LONG ISLAND	750ML		274.05	Г
	PAUMANOK CABERNET SAUVIGNON, GRAND VINTAGE, NORTH FORK O SOLD-OUT	750ML	27.72	311.85	
	PAUMANOK CABERNET SAUVIGNON, NORTH FORK OF LONG ISLAND	750ML	14.28	160.65	П
	PAUMANOK CHARDONNAY, BARREL FERMENTED, NORTH FORK OF LONG ISLAND	750ML		156.15	Г
	PAUMANOK CHARDONNAY, GRAND VINTAGE, NORTH FORK OF LONG ISLAND			244.71	
	PAUMANOK CHENIN BLANC, NORTH FORK OF LONG ISLAND	750ML	13.08		
	PAUMANOK FESTIVAL CHARDONNAY, NORTH FORK OF LONG ISLAND	750ML	9.32		
	PAUMANOK FESTIVAL RED, NORTH FORK OF LONG ISLAND	750ML		141.75	Г
	PAUMANOK FESTIVAL RED, NORTH FORK OF LONG ISLAND	750ML		159.75	
	PAUMANOK MERLOT, GRAND VINTAGE, NORTH FORK OF LONG ISLAND	750ML	25.72		
1 1	PAUMANOK MERLOT, NORTH FORK OF LONG ISLAND	750ML	11.56	130.05	Γ
1 #	PAUMANOK MERLOT, NORTH FORK OF LONG ISLAND	750ML	15.12	170.10	П
	PAUMANOK RIESLING, DRY, NORTH FORK OF LONG ISLAND	750ML	12.44	139.95	Г

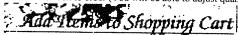
1199	PAUMANOK RIESLING, LATE HARVEST, NORTH FORK	1 377 X AT	1 12 02	11 177 7	
	OF LONG ISLAND	3/5ML	16.87	189.8	
	PAUMANOK RIESLING, SEMI-DRY, NORTH FORK OF LONG ISLAND	750ML	12.44	139.93	
	PAUMANOK SAUVIGNON BLANC, LATE HARVEST, NORTH FORK OF LONG ISLAND	375ML	25.72	289.35	1
1998	PAUMANOK SAUVIGNON BLANC, LATE HARVEST, NORTH FORK OF LONG ISLAND	375ML	31.04	349.20	7 -
	PAUMANOK VIN ROSE, BLUSH TABLE WINE, NORTH FORK OF LONG ISLAND	750ML	5.35	64.20	
	PECONIC BAY VINEYARDS BLUSH, NORTH FORK OF LONG ISLAND	750ML	8.15	91.71	
1993	PECONIC BAY VINEYARDS CABERNET SAUVIGNON, NORTH FORK OF LONG ISL	750ML	18.63	209.61	
1993	PECONIC BAY VINEYARDS CHARDONNAY, NORTH FORK OF LONG ISLAND	750ML	10.87	122.31	
1993	PECONIC BAY VINEYARDS CHARDONNAY, RESERVE, NORTH FORK OF LONG ISL	750ML	12.15	145.80	
1995	PECONIC BAY VINEYARDS CHARDONNAY, ROLLING RIDGE, NORTH FORK OF LI	750ML	16.87	189.81	
<b></b>	PECONIC BAY VINEYARDS CLASSIC RED, NORTH FORK OF LONG ISLAND	750ML	9.96	112.05	
	PECONIC BAY VINEYARDS CLASSIC WHITE, NORTH FORK OF LONG ISLAND	750ML	8.87	99.81	
	PECONIC BAY VINEYARDS MERLOT, EPIC ACRE, NORTH FORK OF LONG ISL	750ML	21.00	236.25	
1995	PECONIC BAY VINEYARDS MERLOT, NORTH FORK OF LONG ISLAND	750ML	18.12	203.85	
1996	PECONIC BAY VINEYARDS VIN DE L'ILE-BLANC, NORTH FORK OF LONG ISL	750ML	9.76	109.80	
1998	PECONIC BAY WINERY CHARDONNAY, NORTH FORK OF LONG ISLAND	750ML	10.28	115.65	
<u> </u>	PECONIC BAY WINERY LOCAL FLAVOR RED, NORTH FORK OF LONG ISLAND	750ML	9.35	105.21	
1998	PECONIC BAY WINERY RIESLING, NORTH FORK OF LONG ISLAND	750ML	12.15	136.71	
	PELLEGRINI VINEYARDS CABERNET FRANC, UNFILTERED, NORTH FORK OF LI	750ML	13.56	152.55	
	PELLEGRINI VINEYARDS CABERNET SAUVIGNON, NORTH FORK OF LONG ISL	75 <u>,</u> 0ML	14.95	168.21	
	PELLEGRINI VINEYARDS CHARDONNAY, EAST END SELECT, NORTH FORK	750ML	7.99	89.91	
	PELLEGRINI VINEYARDS CHARDONNAY, NORTH FORK OF LONG ISLA SOLD-OUT	750ML	11.19	125.91	
	PELLEGRINI VINEYARDS CHARDONNAY, NORTH FORK OF LONG ISLAND	750ML	11.19	125.91	
	PELLEGRINI VINEYARDS CHARDONNAY, VINTNER'S PRIDE, NORTH FORK	750ML	19.11	229.32	
1997	PELLEGRINI VINEYARDS EAST END SELECT, RED TABLE WINE, NORTH FORK	750ML	9.35	105.21	
	PELLEGRINI VINEYARDS ENOCRE, VINTNER'S PRIDE, NORTH FORK OF LI	750ML	22.39	251.91	Г

1996 PELLEGRINI VINEYARDS MERLOT, UNFILTERED, NORTH FORK OF LONG ISL PINDAR AUTUMN GOLD  1994 PINDAR CABERNET FRANC, NORTH FORK OF LONG ISLAND  1996 PINDAR CABERNET PORT, NORTH FORK OF LONG ISLAND  1996 PINDAR CABERNET PORT, NORTH FORK OF LONG ISLAND  1996 PINDAR CABERNET PORT, NORTH FORK OF LONG ISLAND  1995 PINDAR CABERNET SAUVIGNON, RESERVE, NORTH FORK OF LONG ISLAND	24.20 14.95 7.48 11.67 13.59 22.84 17.68 8.77	168.21 84.15 131.31 152.91 256.95	
NORTH FORK OF LONG ISL  PINDAR AUTUMN GOLD  1994 PINDAR CABERNET FRANC, NORTH FORK OF LONG ISLAND  1996 PINDAR CABERNET PORT, NORTH FORK OF LONG ISLAND  1996 PINDAR CABERNET PORT, NORTH FORK OF LONG ISLAND  1995 PINDAR CABERNET SAUVIGNON, RESERVE, NORTH FORK OF LONG ISLAND	7.48 11.67 13.59 22.84 17.68 8.77	84.15 131.31 152.91 256.95	
1994 PINDAR CABERNET FRANC, NORTH FORK OF LONG   750ML   1996 PINDAR CABERNET PORT, NORTH FORK OF LONG   375ML   1996 PINDAR CABERNET PORT, NORTH FORK OF LONG   15LAND   750ML   2   1995 PINDAR CABERNET SAUVIGNON, RESERVE, NORTH FORK OF LONG ISLAND   1750ML   1   1   1   1   1   1   1   1   1	11.67 13.59 22.84 17.68 8.77	131.31 152.91 256.95	
ISLAND  1996 PINDAR CABERNET PORT, NORTH FORK OF LONG ISLAND  1996 PINDAR CABERNET PORT, NORTH FORK OF LONG ISLAND  1995 PINDAR CABERNET SAUVIGNON, RESERVE, NORTH FORK OF LONG ISLAND	13.59 22.84 17.68 8.77	152.91 256.95 198.90	
ISLAND  1996 PINDAR CABERNET PORT, NORTH FORK OF LONG ISLAND  1995 PINDAR CABERNET SAUVIGNON, RESERVE, NORTH FORK OF LONG ISLAND  750ML 1	22.84 17.68 8.77	256.95	
ISLAND  1995 PINDAR CABERNET SAUVIGNON, RESERVE, NORTH FORK OF LONG ISLAND	17.68 8.77	198.90	
FORK OF LONG ISLAND	8.77		
		105.21	
ISLAND	3.44		
LONG ISLAND		161.28	
RESERVE, NORTH FORK OF LI	7.24	193.95	
LONG ISLAND	27.99	314.91	
ISLAND	9.76	109.80	
LONG ISLAND	8.40	94.50	П
PINDAR LONG ISLAND SUMMER BLUSH 750ML	7.48	84.15	<b>-</b>
PINDAR LONG ISLAND WINTER WHITE, NORTH FORK 750ML OF LONG ISLAND	6.84	76.95	
PINDAR LONG ISLAND WINTER WHITE, NORTH FORK 1.5L 1 OF LONG ISLAND	1.80	66.38	
1995 PINDAR MERLOT, NORTH FORK OF LONG ISLAND 750ML 1	7.27	194.31	
1996 PINDAR MERLOT, NORTH FORK OF LONG ISLAND 750ML 1	6.79	188.91	
1995 PINDAR MYTHOLOGY, MERITAGE, NORTH FORK OF 750ML 3 LONG ISLAND	5.00	393.75	
	0.28	115.65	
PINDAR SPRING SPLENDOR 750ML	6.84	76.95	一
PINDAR SWEET SCARLET 750ML	8.87	99.81	
1996 PINDAR VIOGNIER, NORTH FORK OF LONG ISLAND 750ML 2	1.96	247.05	$\Box$
POTATO BARN RED CABERNET FRANC, NORTH FORK 750ML TO OF L ISL (SCHNEIDER)	3.03	146.61	
	7.48	84.15	
1996 PUGLIESE VINEYARDS CABERNET SAUVIGNON, 750ML 12 RESERVE, NORTH FORK OF LI	2.23	137.61	
1995 PUGLIESE VINEYARDS CHAMPAGNE, BLANC DE 750ML 2 BLANC BRUT, HAND-PAINTED	1.96	247.05	Γ
1993 PUGLIESE VINEYARDS CHAMPAGNE, BLANC DE 750ML 10 BLANC BRUT, NORTH SOLD-OUT	6.57	198.84	Г

199	5 PUGLIESE VINEYARDS CHAMPAGNE, BLANC DE NOIR	75010	7 <u></u>		
	NATURE, NORTH FORK	/SUML	14.63	164.6	
199	PUGLIESE VINEYARDS CHAMPAGNE, SPARKLING MERLOT, NORTH FORK OF LI	750ML	15.96	179.53	7
	PUGLIESE VINEYARDS CHARDONNAY GOLD, NORTH FORK OF LONG ISLAND	750ML	9.75	109.71	
	PUGLIESE VINEYARDS CHARDONNAY RESERVE, NORTH FORK OF LONG ISLAND	750ML	10.64	119.70	
	PUGLIESE VINEYARDS CHARDONNAY RESERVE, NORTH FORK OF LONG ISLAND	750ML	10.64	119.70	
Ì	PUGLIESE VINEYARDS LATE HARVEST NIAGARA, NORTH FORK OF LONG ISL	375ML	9.32	104.85	
1	PUGLIESE VINEYARDS LATE HARVEST RIESLING, NORTH FORK OF LONG ISL	375ML	9.32	104.85	
1	PUGLIESE VINEYARDS MERLOT, NORTH FORK OF LONG ISLAND	750ML	11.99	134.91	Г
	PUGLIESE VINEYARDS MERLOT, RESERVE, NORTH FORK OF LONG I SOLD-OUT	750ML	12.47	140.31	
1995	PUGLIESE VINEYARDS PORT BELLO, ESTATE, NORTH FORK OF LONG ISLAND	375ML	14.95	168.21	
	PUGLIESE VINEYARDS RAFFAELLO WHITE PORT, NORTH FORK OF LONG ISL	375ML	14.95	168.21	
	PUGLIESE VINEYARDS RED TABLE WINE, BELLA DOMENICA, NORTH SOLD-OUT	750ML	6.79	76.41	
1997	PUGLIESE VINEYARDS RIESLING SOLD-OUT	750ML	9.76	109.80	
1	PUGLIESE VINEYARDS WHITE TABLE WINE, NORTH FORK OF LONG SOLD-OUT	750ML	7.48	84.15	******
1995	SAGPOND VINEYARDS CHARDONNAY, DOMAINE WOLFFER, RESERVE, SOLD-OUT	750ML	15.40	173.25	
	SAGPOND VINEYARDS CHARDONNAY, LA FERME MARTIN, HAMPTONS, LONG ISL	750ML	12.04	135.45	
	SAGPOND VINEYARDS PINOT NOIR, THE HAMPTONS, LONG ISLAND	750ML	28.48	341.76	
	SCHNEIDER CABERNET FRANC, NORTH FORK OF LONG ISLAND	750ML	21.48	241.65	
	SCHNEIDER CHARDONNAY, NORTH FORK OF LONG ISLAND	750ML	17.75	199.71	
	SCHNEIDER MERLOT, NORTH FORK OF LONG ISLAND	750ML	21.48	241.65	
	TERNHAVEN CELLARS CABERNET SAUVIGNON, NORTH FORK OF LONG ISLAND	750ML	18.68	210.15	
	TERNHAVEN CELLARS CABERNET SAUVIGNON, NORTH FORK OF LONG ISLAND	750ML	16.79	188.91	
	TERNHAVEN CELLARS CLARET D'ALVAH, NORTH FORK OF LONG ISLAND	750ML	17.75	199.71	
	TERNHAVEN CELLARS HARBOR ROSE, ROSE TABLE WINE	750ML	13.08	147.15	
	TERNHAVEN CELLARS MERLOT, NORTH FORK OF LONG ISLAND	750ML		220.50	Г
1994	WOLFFER CHARDONNAY, ESTATE SELECTION, THE HAMPTONS, LONG ISLAND	750ML	23.24	261.45	

1995 WOLFFER CHARDONNAY, ESTATE SELECTION, THE HAMPTONS, LONG ISLAND	750ML	23.24	261.45	
1996 WOLFFER CHARDONNAY, THE HAMPTONS, LONG ISLAND SOLD-OUT	750ML	10.52	118.35	
1995 WOLFFER MERLOT, ESTATE SELECTION, THE HAMPTONS, LONG ISLAND	750ML	27.99	314.91	Г
1995 WOLFFER MERLOT, THE HAMPTONS, LONG ISLAND	375ML	9.80	110.25	
1996 WOLFFER MERLOT, THE HAMPTONS, LONG ISLAND	750ML	17.99	202.41	
1997 WOLFFER ROSE TABLE WINE, THE HAMPTONS, LONG ISLAND	750ML	9.11	102.51	
1994 WOLFFER SPARKLING WINE, THE HAMPTONS, LONG ISLAND	750ML	23.24	261.45	
Last update 11/16/99 08:52:28 AM	<u> </u>			

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Tree



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## **General Long Island Information:**

- Discover Long Island
- East End Community Online
- Fireisland.com
- The Hamptons.com
- Hamptons Online
- The Hamptons Web
- L.I. Guide
- Long Island Our History (Newsday's History Series)
- Long Island A to Z (Newsday)
- Long Island Accommodation Search Engine
- · Long Island Convention & Visitor's Bureau
- Long Island East
- The Long Island Experience L.I. Info.
- Long Island Expressway A L.I. guide.
- Long Island Globalink
- Long Island History
- Long Island History Resource
- · Long Island Kids A website for children
- Long Island Leisure
- Long Island Library Directory
- Long Island On Net
- Long Island Online
- The Long Island Scene A directory of L.I.-related websites
- Long Island Trivia: "The Race to Montauk"
- The Long Island Web
- Long Island Zip Codes
- · Longisland.com
- Longisland.org Searchable database
- · Longislandnet.com Events, business links, etc.

- Long Island's Homepage on the Net
- News 12 Long Island
- North Fork Magazine
- North Fork TechNet
- NYnet Local Page
- On the Island
- Peconic Online
- Southampton Online
- Command Post L.I. Public Safety Information Center
- 27east.com
- Gay Long Island Web Page
- 516Web Long Island Locator L.I. information center and search engine.

## Long Island Towns, Communities & Attractions

**Long Island Events** 

**Long Island Government** 

Long Island Schools, Colleges & Educational Institutions

**Long Island-Based Organizations** 

**Long Island Genealogy Sites** 

Long Island Historical Societies, Museums, Historical Sites & Nature Preserves

**Long Island Transportation** 

**Long Island Arts & Humanities** 

Long Island Media & Publications

**Long Island Dining & Entertainment** 

Long Island Sports, Hobbies & Recreation

**Current Long Island Weather Information** (Large Graphics)

## Miscellaneous Long Island-Related Web Sites:

- L.I. Food For Thought Recipes, etc. by L.I. students
- Long Island Astronaut Biographies:
  - Robert Gibson
  - Kevin R. Kregel
  - James Wetherbee
- The Great Hurricane of 1938
- Long Island Lighting Company (LILCO)
- Suffolk County Water Authority
- Long Island Sound Model Run Animation (National Ocean Service)
- Long Island Sound Study
- New York Air National Guard, 106th Rescue Group
- · Save Barrett Beach

## Long Island Regional Newsgroups:

- li.misc
- li.jobs
- <u>li.events</u>
- li.politics
- li.forsale
- · li.wanted

# Long Island Internet Mailing Lists:

- Long Island Exchange Mailing List
- Fire Island Mailing List
- Long Island 4X4 Mailing List
- Long Island Rooters (Genealogy Mailing List)

# General New York City Information:

- Brooklyn Union Gas's Community Pages
- Clay Irving's New York City Information Page
- Diner's Grapevine NYC area/L.I. restaurants
- Explore New York
- New York City Subway Navigator
- NYnet
- New York City Fire Department (unofficial)
- New York, New York
- New York Public Library
- New York Web
- Paperless Guide to New York City

• Queens, A to Z - Newsday's comprehesive page on the borough

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These pages created and maintained by Jim Fordyce (<u>j4dice@li.net</u>).

Comments, corrections and additions are welcomed.

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Continued From Previous Page LONG ISLAND JEWISH	New Hyde Park NYC TelNo-343-013	1	Lorenz Schneider & Co Inc	LOT Polish Airlines
MEDICAL CENTER — Community-Based Mental Health	Long Island Radiology Assoc PC 227 Franklin Av Hevdett 516 295-550	fook Brite Laundromat	Source School Sc	61-18 190 Fr Medo
Programs— Queens Day Center (Adult Day	Long Island Rail Road - Der Souls of	Hook King Good Ltd	Lorenzo's Pizza & Brew	JF K Airport Jam
Treatment)	Nassau	7 Look Who's Talking	74 215-45 Jam Av Qns Vi	
87-80 Merrick Blvd Jam. 291-540 Drug And Alcohol Treatment—	D New York City & Queens	221-26 Hocace Harding Expvy Bysd279-346	Loretta Construction  8	Lotmor Tire Svc Inc 105-09 Merrick Blvd Jam
Elmont Alcohole Treatment Center 40 Elmont Gelmont 1, 518 437-0441 Family Consultation Center	Suffolk	7 221-26 Horaca Harding Expwy Bysd279-620	3 Loria Victor MD	Lots O Bagels 30-05 Broadway LTC 267-/ Lotte M K Limo & Car Svce
40 Elmont Rd Elmont . 516 437-044	Sulfolk	0 46-23 Kissena Blvo Flus 353-232	Loria Victor MD   \$20 Frankin Av Garden City   516 877-5074     32 O Frankin Av Garden City   516 877-5074     33 O F 520 Frankin Av Garden City   101 Free-Dial 11 & Then   800 634-2477     44 Loriill Jewelers   107-34 71 Av F HIS   261-8461     45 Lorii Marsh Ltd Jewilers proches	142-01 37 Av Flus
366 Jericho Tripk 108500	Suffolk 558-740	U Looking Swell Maternity	Toll Free-Dial 11 & Then. 800 634-2477	Lottery interactive service
366 Letrcho Tripk NOSSON Mineola	Freight Services	Leorning Productions	Lorin Marsh Ltd furniture warehse	Lottery interactive service
	) Mail & Ride—	8 193 Nevvel Bklyn 349-666 Loomis Armored Inc	7 34-19 101 I C	recorded announcement
Manhasset Community Day Center 1355 Northern Blvd (Manhasset	Nassau Toll Free-Dial '1' & Then 800 649-696	580 S Av Manhattan	7 Lori's Hair Salons	
Manhasset	Parlor Car Reservations	156-34 Northern Blvd Flus	246-14 Francis Lewis Blvd Rsdl	Lottery Lotto All Winning Numbers
600 Hempstead Trnpk	Public Affairs/Complaints 558-337	bon Wok Chinese Restaurant 60-06 Kissena Blvd Flus	Lorna's Fish Bowl 113-65 Springfield Blvd Qns Vi	Lottery New York Lettery All Info -
west Hempstead	Long Island Registered Nurses PC	Voona Ravi MD PC	Lorna's Fish Bowl	Lottery Results intractive syc 540-1.3
Hillside-Eastern Queens Mental Health Center	99 Tulip Av Ploral Park 10-516 352-1294	1000 ARW MD PC 211-35 34 Rd Bysd	3 113-65 Springfield Bird Queens Village Toll Free-Dial '1' & Then	Lottery Results inveractive syc-adult970-20
221-10 Jamaica Av Ons VI 740-3310	178 W Main Patchogue > 516 475-232	71-27 169 Fr Medo	7 Loroman Co Inc 92-25 149 Jam 291-0800 Lorraine Flooring Inc	recorded announcement
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20-06 Seagirt Blvd Fr Rkviy 868-1400 SCHNEIDER CHILDREN'S HOSPIT AL	Long Island Seminary Of Jewish Studies For Women	Loose Ends 38-78 13 L1C	2 Lorraine Flooring Inc 23-30 50 AvL I C	Lottery Winning Numbers
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Patient Information Only	CLEANING SERVICE CAN	PUBLICATIONS	Lory Grocery 111-20 101 Av South Rh H846-0318	Lottery And Weather Results - Info
Admitting Office	60-11 87 Flm. ) 10 00 426-6070	43-08 162 flus	os Amigos Mexican Restaurant	Lotto-Accuracy Results
1800 Rockaway Blvd	255-07 149 Av Rsdl	Lopatkin Robert J DDS 23-09 31 Ast.: 278-0358 Lopatynski Edward atty	22-73 31 L1C	Lotto Stats Hotline
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Pediatric Radiology 470-3180			2 Palk Av Manhattan	Lotus Air Conditioning &
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Northern Blvd Manhasset Adult Outpationt Physical Madising	Long John Silvers	, <del> </del>	79-16 Roosevelt Av Jk Hrs	Lou-Cal Svce Sta Inc
	94-15 Northern Blvd Jk Hts	Lopez Jose A MD 40-30 69 Wdsd335-5100 Lopez Maria 71-21 Roosevelt Av Jk Hts 397-9200	45-44 48 Wdsd	34-67 Francis Lewis Blvd Bysd
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Manhasset	Long Life Groceries 34-14 Beach Channel Dr. Far Rockaway	Ad Casan Harrison Durana Tallia Dar Dono	Los Primos Grocery	Loucas Emmanuel R MD 58-47 188 fr Medo
Pain And Headache Treatment Center516 365-8054	34-14 Beach Channel Dr Far Rockaway Toll Free-Dial '1' & Then	OPEST O THOMAS J	111-01 41 Av Corona Toil Free-Dial 11 & Then	Loughney Mayra Holi atty
Radiology— Appointment Scheduling	Long Richard & Assoc 73 Crescent Av	opresti Joseph T MD PC	Toil Free-Dial 11 & Then	42-40 Bell Blvd Bysd
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Nassau 1554 Northern Blvd Manhasset	150-15163 Spfvd Gdns	22-07 Steinway Ast	1 2 6 - 0 2 Northern Blvd Crna	20-14 Cornaga Av Fr Rkwy
	62-05 Roosvit Av Wdsd	fora Maximo 34-11 36 Avt 1 C 433-4011 Forabře Bake Shop	Los Robles 29-08 Noyt Av Ast	Shop 40-54 192 Flus
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115 Middle Neck Rd Great Nec D 516 829-4000	LONG TERM HOME HEALTH CARE	orabie Inc 72-01 Kissena Blvd Flus 380-2521	LOS Tresarmenos Corp 40-01 Queens Blvd Snsd	Louis Auto 68 Green Bklyn
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	36-41 36 LTC	600 3 Av Manhattan	Los Brothers Grocery	Louis Engel & Co 124 Atlantic Av Lynblook Valley Stream TelNo-895-68:
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		66-62 Grand Av Mspth	Loscalzo Anthony J atty	Louis Levy Clothing Corp
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# White Pages Suffolk County

Area Code 51

June 1999 — May 200



Life. Listed Alphabetically.

Includes customer listings of all local telephone companies

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Little Switzerland Dolfs 267 Main Heggin	549-8743	Lloyd
Little Toy Shop Of Cutchogue The	734-2214	21 Lm N
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Long Island Fall Festival Huntington Chamber Of Commerce 151 W Carver Hotgtn. Blydenburg Pk Smthtwn... Long Island Gutters 1016 Grand Blyd Deer Pk 351-1910 243-4455 **New York City Area Codes** 212/646/917 718/347

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11 Prospect Hintom

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601 Suffolk Av Brntwd...

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Island Jet Center Arrival Av Rokokma	588-0303	Long Island Mobile Veterinary Clinic 227 Union Av Hibrk. 467-2121	L ! Petting Zoo 184A Wading River Rd Morvi	Eastern Corp 441 St James Hibrit Long Island Sales Force	588-5151	Beimont Lake State Park Babyin. Park Police Headquarters-Babyion.
Island Jet Center		1000 Island Monogeomerica e	Long Island Philharmonic	140 Gary Way Rnknkma	738 <b>-6802</b>	Jiake Faks—
folk County Airpt Wisthmpth Beh . Island Jet Center Inc	288-8424	Lettering 8 Newtown Ptz Plannyw	1 Huntington Quad Melville— Administration	Long Island Sales & Miking Executives Huntington Station	549-9700	Bayard Cutting Arboretum- Oakdale—
folk County Airpt Wisthmptn Bch Island Jewish World	288-9866	Long Island Moving & Stormer Assa	Box Office	Long Island Salon Syces Inc 4097 E Jericho Tripk E Nithort	462-0527	Park Office Belmont Lake State Park-
5 Middle Neck Rd Great Neck	827-4000	/ 12U N Bayview Rd Sthold/03-007/	2780 Middle Country Rd Lk Grov	Long Island Salon Services Inc 178 W Main Ptchog		Babylon— Park Office
Park Av Bay Shor	665-5239	Long Island Moving & Storage Inc 108 Newtown Rd	PC 1 Marcy Ct E Setukt	Long Island Savings Bank FS8		Bethpage State Park-
Island Junior Soccer League 1425 Old Country Rd Plainvw	756-9696	Plainview	Long Island Physicians Corp 275 Broadhollow Rd MeM454-1900	The— Nassau Branches—		Farmingdale Park Office
Island Kawasaki L Sunrise Hwy W Islip		108 Newtown Rd Plainvw	315 F Main Purtol 369-3300	Syosset 50 Jackson Av Suffolk Branches	694-9010	Golf And Sports Information, Caleb Smith State Pk Smithtown
		A P W U 300 Eastern Pkwy Frmgdl 694-2798	Long Island Plumbing Ostrotrs Inc	Babyion 180 W Main	694-9010	Park Ofc.
NG ISLAND		Long Island Nail Institute 3601 Hempstead Tripk Levitwn	Long Island Plumbing & Heating	Bay Shore 300 E Main Coram 269 Middle Country Rd	694-9010	Captree State Park-Babylon— Park Office
AWASAKI-YAMAH	4A	Long Island Nails 693 Route 112 Ptchog		East Islip 180 E Main Farmingdale 696 Horseblock Rd		Caumsett State Park-Lioyds Harbor—
N Bway Hicksville 93		LI Nati Centry Pinelawn Fringdi 434-434	300 Main rimpu	Hauppauge 845 Wheeler Rd	694-9010	Park Office
	- 0/07	Long Island/National Employee Asst	Long Island Pool Scapes 2 Avalon Ct Rnimkma	Huntington Jericho Tropk & Park Av		Connetquot River State Park- Oakdale
Island Kenworth Inc	475-4550	111 Smithtown By Pass Smithtwn 979-9010	Long Island Portugese American Clab 1.7.3 Av Rottvet 273-3368	Huntington Jericho Tumpike & Park Av	(	Park Office Oakdale Heckscher State Park-East Islig
Island Kitchens Inc		1793 Northville Turnpike Rivrsde 727-4653	Long Island Power Computers Inc	Huntington 839-140 New York Av		Park Office
'A Sound Av Ryrhd	722-4600	Long Island Neurology PC	Long Island Power Equipt East Inc	Call Medford 718 Route 112	694-9010	Camping Office. Hempstead Lake State Park-
thodist Church	*** ***	Long Idana Neuromuscular Center	135 Milbar Blvd Frmod	Middle Island 598 Middle Country	694-9010	Hempstead Park Office.
Stand Kosher Fish	499-1260	700 New York Av Hntgtn	Huntington 235 Bway Gmwn	Oakdale 1336 Montauk Hwy		Hither Hills State Park-Montauk Camping Reservations
4 Peters Blvd Bay Shor Island Label Inc	666-1978	Long Idand Nurserymens ASSN	21 OMINES INC		694-9010	Park Office
SSA Smithtown Av Bohmia. Island Laminates Inc	. 244-0609	PO 8ox 528 Frmgdl	Lawn Mower Sales & Service 665 Jercho Tropk St Jas	Port Jefferson 450 Port Jefferson Shopping Plz		Camping Office Jones Beach State Park-
Engineers Rd Haupaug	234-6969	3 3 Wair Whitman Rd Huntington Station	Long Island Precast Inc	Port Jefferson	694-9010	Wantagh Park Office
Island Leather & Findings	475-0750	Tot Free-Dial 11 & Then	20 Stinz Rd Brithwn	Shirley 999 Montauk Hwy	694-9010 694-9010	Food Concessionaire
Island Liberty Glass Portion Dr Roknkma	737-3189	Environmental Health Center 625 Belie Terre Rd Prt Jfrsn	408 10 Av E Nithort	Southampton 65 Nugent Stony Brook 1047 Route 25a	694-9010	Jones Beach Theatre-Wantagn Box Office
Island Library Resources		625 BERE THIR ROPITSITSIT	Long Island Private Ride Inc	Wading River 6348 Route 25a	694-9010	Montauk Downs Montauk Park Office
ols Rd Stny Brk Island Library Resources	751-5709	LONG ISLAND OFFICE	753A Long Island Av Deer Pk	West Islip 526 Union Rd Westhampton Beaches	694-9010	S Fairview Av Montuk
Incil Y At Stoney Brook Strry Brk	632-6650	EQUIPMENT INC	753A Long Island Av Deer Park Northport TelNo-754-2291	71 Sunset Av Westhampton Beach	694-9010	Montauk Point State Park- Montauk
Island Life Assoc Ltd		148-2 Remngtn Blvd	Long Island Professional Tractor Trailer School 600 Patton Av	Long Island School For The Gifted		Park Office Montauk Nisseguogue River State Park-
Island Limousine & Bus Svce	673-3663	Rnknkma	West Babylon Lindenhurst TelNo-888-6509	Long Island Scientific Svce Corp	423-3557	Smithtown-
Newton Pl Haupaug Island Limousine Service Corp	234-0223	KIRDKING757 GGGG	Long Island Profiles Publishing Co PO 8ox 9000 Britwits968-8833	3 Enterprise Dr E Setukt	928-3316	Park Office Orient Beach State Park-Orient
Newton Pl Haupaug Island Linen Supply Inc	234-8400	Long Island Office Supply Inc	Long Island Promotion Group 2686 Hempstead Tripk Levitwn	3 Enterprise Or E Setukt	928-3385	Park Office Planting Fields Arboretum-Oyst
laryanne Ct Hntgtn.	271-9771	360 Central Av Bohma	Long island Propellers	Long Island Screen Printing Long Island Screw & Tool Corp	878-5864	Bay Park Office
Island Liquid Waste lociation 400 Route 25A		360 Central Av Bohemia Toll Free-Dial '1' & Then	1509 Rocky Point Rd Mid Isl	80-4 Knickrockr Av Bohmia Long Island Self-Help Clearing	567-9191	Arboretum Center
rt James. Smithtown TelNo- Island Lung Center	-724-9288	Long Island Offset 735 Calebs Path Hauppauge Holbrook TelNo-471-8300	80 Wading River Rd Center Moriches Toll Free-Dial '1' & Then	House 268 Wheatley Rd Old Westbury	626-1721	Robert Moses State Park- Babylon
) F Main Bay Shor	.666-5864	Long Idand Officet SNR Lake by St. lac R62-9600	Long Island Psychological Assoc PC 368 Veterans Memorial Hwy Comac 864-5209	Long Island Self-Help Clearing House 268 Wheatley Rd Old Westbury		Park Office
island mac arthur airport	. 2//-1000	Long Island On Line Svces Inc 380 Town Line Rd Hauppauge	Long Island R & R Rigging Inc	Toll Free-Diat '1' & Then	735-3457	Kings Park
Air Free-Dial 11 & Then 800	428-4322	Toll Free-Dial '1' & Then	Long island Radiant Heat	554 [slip Av [slip	277-2300	Park Office Valley Stream State Park-Valle
Island Mac Arthur Airport  Arrival Av Rinkinkina	467-3210	SERVICE INC	19 Woodmere Dr Mstic 8ch	Long Island Svce Co 369 E Main E Islip	277-2726	Stream— Park Office
Island Maintenance apinc parts		14 Center Ct Critt Mrich	Schedule & Fare Information	Long Island Sewer And Drain Service Inc		Walt Whitman Birthplace 246 Walt Whitman Rd Hotgtn
19 New York Av Hitigth Sta Island Mainthce Co apinc repre	549-0065	Care 2 Maynord Dr Fringd	Nassau	14 Dock Dr Freeport Babylon TelNo-	-669-3221	Wildwood State Park-Wading
Eckert Hittgtn. Island Management	271-2805	150 Broadholow Rd Melvi	93-59 183 Holis	Long Island Shade & Blinds 1285 Route 58 Ryrld	727-1468	River— Park Office
W Main Smthtwn	360-2677	125 Franklin Av Valley Stream	TDO Hearing Impaired 718 558-3022	Long Island Shade & Blinds 1285 Route 58 Ryrhd	727-2268	Camping Office Long Island State Veterans Hom
Island Marine Co Inc 8 Euericho Trnok Hntgm	351-1088	Long Island Orthotics 218 E Main Ptchog	General Offices Sutphin Blvd Jamesca— Central Suffolk	Long Island Shares 15 Fower In Mt Sinai		100 Patriots Rd Stny Brk
Island Marine Contracting rp Bay Shore	969-9626	Long Island Outdoor Furniture	Cal Brentwood TeiNo-273-0600 Nassau	Long Island Sheds & Gazebos		S449 Surrise Hwy Hibrk
Island Marine Surveyor Co Inc		ref.nishing & repairs 1371-8 Church Bohmia	Nassau	1685 Route 58 Rwhd Long island Shell Inc	/2/-6900	Long Island Street Rod Assoc 21 Berger Av
Island Maritime Museum	307-0134	Long Island Overhead Garage Door Svce 4940 Rutherford Rd	Suffolk	Ronkonkma Av Cr Expressway Dr S	981-4117	East Moriches Levittown Te Long Island Stucco
iVest Av st Sayvale — Patchogue TelNo	-447-8679	Virginia Beach VA	Lost & Found	Long Island Shooting Center Ltd		2 4 4 Hawkins Av Rokokma
Island Marketing Concepts & thoology Inc		Long Island Overhead Garage Door	Nassau Tol Free-Dial '1' & Then	Long Island Single Sailors Assi		Long Island Supls Corp 76-11 88 Ridgewood, Nassau Te
Brue Point Rd Seidn Island Martial Arts	732-513 <b>7</b>	Svce 4940 Rutherford Rd Virginia Beach VA	New York City	167 Bayview Av Nirthort	262-7245	LONG ISLAND SURGICAL C. PC 251 E Oakland Av Prt Jfrsn
N. Werwood Av Lodohrst	225-5326	Cal Brookhaven TelNo-286-7760 Long Island Overhead Garage Door	Tot Free-Diat 11 & Then	989 Jericho Trrok Smthtwn	864-7100	Long Island Surgicenter
Island Martial Arts & Sports oot 235 Union Blvd W Islip	893-4243	Svce 4940 Rutherford Rd	Suffolk Toll Free-Dial '1' & Then 800 649-6969	Long Island Sober Home Assn 14 Manhattan Blvd Islip Ter	277-6110	1895 Wait Whitman Rd Metvl Long Island Surveying Equipmen
Island Massage Therapy kays Av E Isi p	581-2298	Virginia Beach VA.: Huntington TelNo-421-6807 Long Island Overhead Garage Door	Parlor Car Reservations	Long Island Soccer Referees Assoc 1425 Old Country Rd Planny		Syce Inc Bayport Long Island Swim Academy
sland Mechanical Corp		Svce 4940 Rutherford Rd Virginia Beach VA Islip TelNo-859-8586	Pinelawn	Long Island Sod Farm	757-1705	3800 Veterans Memorial Hwy Bohm
erried Industria Pk St Jas Island Mechanical Of N Y Inc	584-3800	Long Island Pain Managmnt	Tours & Group Sales718 558-7496	Long Island Soda Systems Inc		40 Oser Av Haupaug
Syrvan Av Bayort Island Mechanical Sales Com	419-1000	5225 Nesconset Hwy Prt Jirsh Sta 474-2300 Long Island Pain & Stress Center	Long Island Real Estate Training 462-1543 Long Island Reflexology Center	Fax 1121 Lincoln Av Bohmia	589-2415 567-8838	Inc 30 Remington Blvd Ronkonkoma
Hartord Dr Corm Island Medical Assoc Inc	696-8482	631 Montauk Hwy W Islip	1.4 E Broadway Prt Jfrsn	Long Island Sound compact discs & tapes—		Toll Free-Dial 11 & Then. Long Island System Users Group
3 Sunrise Hwy W Babyin	422-7200	Headquarters 186 Montauk Hwy Hampton Bays West Islip TelNo-587-1042	Long Island Regional Advisory Council On Higher Education SUNY At Stony Brook Stry Brk	7 6 Jobs Ln Sthmptn	283-6683	681 N Alleghany Av Lndnhrst
Island Medical Care Svces PC 5 Sunr se Hwy N Babyln.	587-6060	Long Island Paneling Ceilings &	Long Island Registered Nurses PC	Long island Sound D J's	J_7 2000	Service 311 Hyman Av W Islin.
Island Medical Diagnostic aging 369 E Main E Islio	277-1600	Floors 6225 Jericho Tripk Comac 499-8595 Long Island Paneling Ceilings &	99 Tulip Av Florat Park	1717 Veterans Memorial Hwy Central Islip		Long Island Tax Grievance Inc 1685 Middle Country Rd Critich.
Island Medical Imaging PC 61 Montauk Hwy W Islip		Floors 2410 Middle Country Rd Cntrch.: 588-8535 Long Island Paneling Ceilings &	814 Futton Frmgd	Toll Free-Dial '1' & Then	427-6863	Long Island Tax Savers 1355K Montauk Hwy Mstic.
Island Medical Manufacturers	t	Floors 4769 Sugrise Hwy Bohmia 567-6030	152 W Jericho Trnok Hintgth Sta 423-3020	1717 Veterans Memonal Hwy	771-0003	Long Island Taxi & Transportati
Gar <sup>4</sup> ed Av Amtyvi Island Message Centers Inc		Long Island Paneling Ceilings & Floors 69 E Sunrise Hwy Londhrst 888-7664	Long Island Research Inst 110 Lake Av S Nscrist	Contri Isip.  Long Island Sound Junior Drum &	. 431-9093	3130 Hempstead Trook Levitwo
0 Sunrise Hwy W Babyin Island Message-On-Hold	669-3600		Long Island Residential & Commercial Real Estate Co	Bugle Corps 780 Sunnse Hwy West Babyton Huntington TelNo	-547-6863	Long Island Taxi & Transportati Operators Inc
osset Nassau Teliko	)-921-613 <b>1</b>	Long Island Parrot Society	939 Montauk Hwy W Islip	Long Island Sound & Security 258 Chestnut Prt Jirsn Sta	476-1255	755 Long Island Av Deer Pk
Island Metalform inc Lucon Dr Deer Pk	586-4660	149-36 85 Howard Beach Lindenhurst TelNo-957-1100	94 Medford Av Ptchog 687-5555	Long island Sound Technologies		35 Stoneywell Ct Dix HIs
Island Mica & Cabinet Bldg	499-8595	Long Island Party Rentals 670 Montauk Hwy Watr Ml	Long Island Responds Fund Raising Office 1723 Middle Country Rd Chtrch.: 585-5834		.254-9100	Flowr Fld Indstri Pk St Jas.
ipis 6225 Jericho Trinpii Comac	477.0373					
		Long Island Pathology Tot Free-Dial '1' & Then	Long Island Restrict Tours 98 Lakebridge Drive N Krigs Pk	Hearing Assn 176 Little East Neck Rd S Babyln	893-8986	Long Island Technical Support 90 Barretts Av Hitsvi

B - 11-12 ME)

## LONG ISLAND ... AT A GLANCE

#### **GEOGRAPHY**

Area:

Nassau: 285.4 sq miles/182,680 acres Suffolk: 885.1 sq miles/566,466 acres Nassau-Suffolk: 1,170 sq miles/749,146 acres

Length:

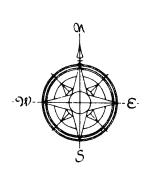
120 miles from Manhattan to Montauk 56 miles from the Queens border to Riverhead 28 miles (North Fork)

44 miles (South Fork)

Width: 12 to 16 miles

Shoreline: 1,180 linear miles

Source: LI Regional Planning Board



# Temperature

32.4° 71.9° Annual snowfall 26.9" 30" humidity 68% 70% 13.2 mph 9 mph

CLIMATE

Nassau

Suffolk

Type of weather by days per year Clear

**HOW FAR IS IT?** 

Approximate Mileage

Hempstead

Huntington

JFK Airport

Montauk

Riverhead

**Valley Stream** 

LaGuardía Airport

10 11 5 14 25 27 65 106

24 23 11 x 11 18 57 98

35 38 39 18 25 x 46 88

16 12 x 11 22 29 68 108

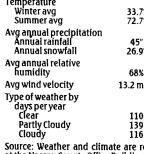
116 116 108 98 98 88 41 x

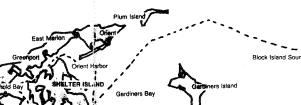
75 75 68 57 59 46 x 41

21 18 7 5 12 26 63 101

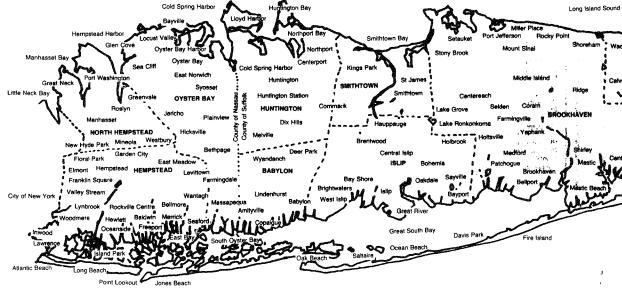
110 106 139 133 116 126

Source: Weather and climate are recorded daily at the Nassau County Office Building in Mineola, and at Islip MacArthur Airport in Islip





Fishers Island Sound



Atlantic Ocean

#### TRAVEL TIMES TO NEW YORK CITY

Town	Miles	Drive Times	Railroad Times*
Babylon	40	48 min.	55 min.
Freeport	25	30 min.	40 min.
Garɗen Cíty	22	27 min.	40 min.
Hempstead	22	27 min.	50 mín.
Huntington	33	40 min.	1 hr. 5 min.
Mineola	20	24 mín.	36 mín.
Oyster Bay	28	34 min.	1 hr. 15 min.
Patchoque	57	1 hr. 9 min.	1 hr. 45 min.
Port Jefferson	56	1 hr. 8 min.	1 hr. 50 min.
Smithtown	46	56 min.	1 hr. 27 min.
Riverhead	76	1 hr. 31 min.	2 hr. 22 min.
Montauk	116	2 hr. 20 min.	3 hrs. 25 min.
*During Off-Peak Hours	So	urce: LIRR, LI/BUS	INESS Research Burea



### APPROXIMATE AIR TRAVEL TIMES FROM NY AIRPORTS

#### DOMESTIC

Atlanta	2 hr. 55 min.	Los Angeles	5 hr. 45 min.
Boston	47 min.	Miami	3 hr.
Buffalo	1 hr. 4 min.	Las Vegas	5 hr. 15 min.
Chicago	2 hr. 15 min.	Seattle	5 hr. 30 min.
Houston	3 hr. 30 min.	Washington, DC	1 hr.

#### OVEDSEAS

OVERSIAS					
Athens, Greece	9 hr.	Paris, France	7 hr.		
Bombay, India	16 hr. 50 min.	Peking, China	17 hr. 20 min.		
Buenos Aires, Argentina	10 hr. 15 min	Rome, Italy	8 hr. 10 mín.		
Frankfurt, Germany	7 hr. 20 min.	Stockholm, Sweden	7 hr. 30 min.		
London, England	6 hr. 40 mín.	Sydney, Australia	22 hr. 5 min.		
Madrid Spain	7 hr.	Tel Aviv, Israel	12 hr.		
Montreal, Canada	1 hr. 10 min.	Tokyo, Japan	13 hr. 50 mín.		
Nairobi, Kenya	15 hr. 35 mín.	Toronto, Canada	1 hr. 14 mín.		

Source: Pan American Airlines, Trans World Airlines, American Airlines.

# Long Island Maps and Their Makers

By David Yehling Allen Melville Library, Map Collection SUNY Stony Brook

Long Island has a cartographic history reaching back almost five centuries. Here can be found a sample of the many ways in which mapmakers have shown Long Island--ranging in time from the first explorers' charts to recent digital maps.

These maps were made for a variety of purposes. Among their many functions were to guide sea captains, to depict military engagements, to establish property boundaries, to show routes for travelers, to sell real estate, and to depict soil conditions for farmers. They should be of interest to historians, archaeologists, environmentalists, surveyors, educators, real estate professionals, and anyone interested in Long Island's past.

The design of this Web site is based on the author's book Long Island Maps and Their Makers: Five Centuries of Cartographic History (ISBN 0-8488-1804-0). The maps are listed in chronological order and arranged according to chapter titles of the book. Information in depth about these and many other Long Island maps can be found in the printed version.

Long Island Maps and Their Makers is available from Amereon House, P.O. Box 1200, Mattituck, NY 11952-9500. (Phone: 516/298-5100; fax 516/298-5631). Cost is \$23.95 plus tax for New York State residents. There is a shipping and handling charge of \$3.95 for the first volume and \$1.10 for each subsequent volume.)

Long Island Cartobibliography. Download an annotated bibliography of Long Island maps with a free copy of EndNote viewing software. A bibliography of Long Island geology is also available at this site.

#### Click on a chapter title for a list of the maps for each chapter

- 1. Long Island Unveiled: Early Colonial Maps.
- 2. The Cartography of Conflict, 1750-1783.
- 3. The Age of Simeon De Witt (Along with Edmund Marsh Blunt and Several Others).
- 4. Long Island Triangulated: Nineteenth-Century Maps of the U.S. Coast Survey.
- 5. The Cartography of Commerce: Property Maps and Atlases.
- 6. Long Island Digitized: Twentieth-Century Maps.

Go to Map Collection Home Page (SUNY Stony Brook)

## LEHISTORY CONLASSE

# Early Maps of Long Island

Maps made in the 17th Century help show how Europe came to understand Long Island. Italian explorer Giovanni da Verrazano entered New York Harbor in 1524, but it was not until 1609 that Englishman Henry Hudson sailed farther inland and found the river that would bear his name. In 1613-14, Dutch mariner Adrian Block sailed around Long Island and returned home with information that helped chart the East Coast. Here are two Dutch maps made from 1635 to 1656.

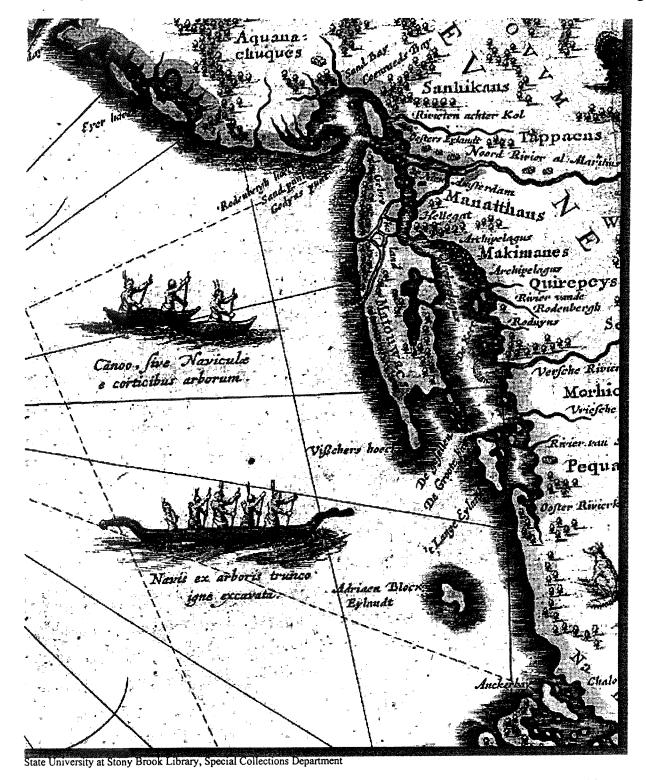
# MORE MAPS: 1635 Dutch Map



Long Island Studies Institute

This is a Dutch map; the cartographer was Nicholaes Visscher. The detail seen above prominently features the Dutch words Lange Eylandt, for Long Island, over the Algonquian word Matouwacs. The map reflects the growth of Dutch and English settlements on Long Island, including "S. Holt" on the North Fork, for Southold, and "Garner's Eylant," for the island owned by Englishman Lion Gardiner. It also shows the island as a land mass and not a series of islands divided by channels, as on the Blaeu map. The map is the first to feature the evidence of the Hempstead Plains, according to cartography scholar David Allen, author of "Long Island Maps and Their Makers: Five Centuries of Cartographic History" (Amereon Ltd.). The plains are designated here by the words "Gebroken Landt," for broken land.

07/02/98 09:57:09



Dutch cartographer William Janszoon Blaeu based this 1635 map on charts drawn after the 1613-14 journey of Adrian Block. The map is notable for its illustrations, such as the Indian canoes in the ocean. Blaeu also depicted Long Island as a series of islands, not a large landmass. The Algonquian word ''Matouwacs'' is not easily translated today, but a 19th Century linguist believed it meant ''Island of the Periwinkle.'' The map is unusual to today's eye because it is oriented with west at the top.

# Long Island Unveiled: Early Colonial Maps

It took European explorers and colonists more than 200 years to determine the shape of Long Island. The earliest maps, which are based on the voyages of Verazzano, show Long Island as a peninsula named "Flora." The first map to show Long Island as an island was made by the Dutch explorer Adriaen Block in 1614. Gradually the Dutch colonists and their English successors, made increasingly detailed and accurate maps. A highpoint of the early mapping of Long Island is the Ryder map of 1674 (shown below), which is the first map of Long Island made by a professional surveyor. But the Ryder map was not well known, and subsequent mapmakers continued to produce highly distorted maps of Long Island well into the eighteenth century.



Giacomo di Gastaldi [New France], 1556. Detail showing Long Island as "Flora." (Courtesy of the John Carter Brown Library at Brown University.)



William Janzoon Blaeu, *New Belgium and New England*, 1635. Detail showing Long Island and Natives in canoes. (Courtesy of SUNY Stony Brook.)



Anonymous, *Manhattan on the North River*, 1639.

Detail showing Dutch settlements on Manhattan and Native longhouse in Brooklyn.

(Courtesy of the Library of Congress, Geography and Map Division.)



Nicholaes Visscher, *New Belgium and New England, 1656*Detail from a facsimile showing Long Island.
(Courtesy of the State University of New York at Stony Brook.)



Arendt Roggeveen, *Map of New Netherland*, 1675.

Detail showing Long Island.

(Courtesy of the Library of Congress, Geography and Map Division.)



John Seller, A Chart of the Sea Coasts of New-England, New Jarsey, Virginia, Maryland and Carolina--from C. Cod to C.Hatteras, 1675. Early English map influenced by Dutch maps and by John Scott map. (Courtesy New York State Library.)



Robert Ryder, *Long Island Sirvaide by Robartte Ryder*, [1674]. First map of Long Island based on an actual survey. (Courtesy of the John Carter Brown Library at Brown University.)



Philip Welles, [Draught of a Tract of Land on the East Side of Cow Neck on Long Island], 1683.

Map of Hempstead Harbor showing property boundaries and possible Native wigwams.

(Courtesy New York State Archives.)



John Thornton, Part of New England, New York, East New Iarsey, and Long Island, 1689.

Famous nautical chart based in part on the Ryder map.

(Courtesy of the John Carter Brown Library at Brown University.)



Robert Morden, A Map of ye English Empire in the Continent of America, 1690.

Detail showing whaling off the coast of Long Island. (Courtesy of New York Public Lbrary.)



Johann Baptista Homann, *New England in North America*, 1710. Detail showing Long Island; copied from a variety of Dutch maps. (Courtesy New York State Library)



Cyprian Southack, A Map of the Coast of New England, [1730]. Detail showing an elongated Long Island.

(Courtesy of the Library of Congress, Geography and Map Division)

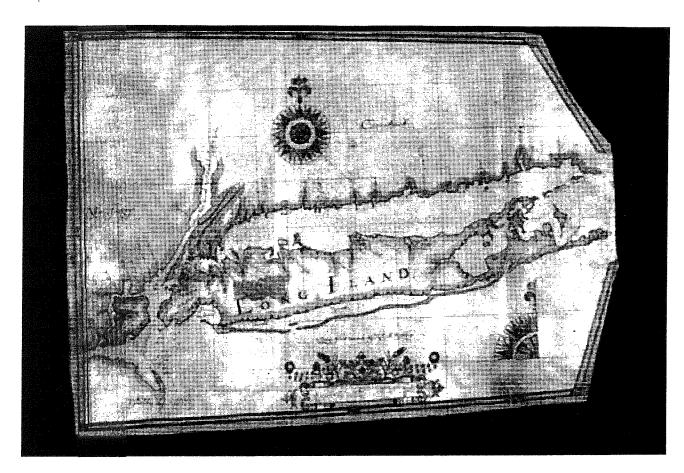


Jacques Nicolas Bellin, Map of New England, 1757.

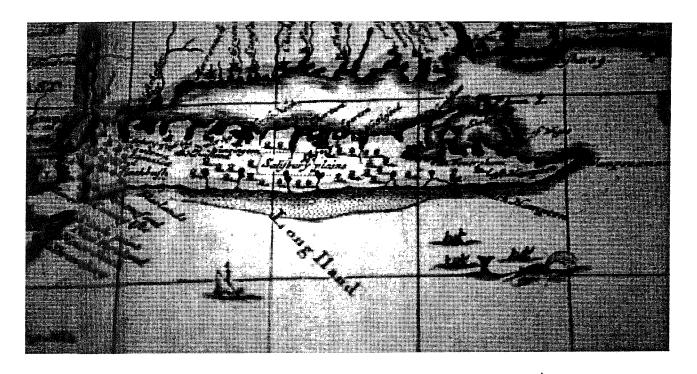
One of the many 18th-century British and French maps showing influence of Southack.

(Courtesy of the John Carter Brown Library at Brown University)

Next Chapter



Robert Ryder map 1674



Robert Morden map 1690

# 2. The Cartography of Conflict, 1750-1783

Map making is often associated with military activity. Beginning in the 1750s, with the outbreak of the French and Indian War, the British began making detailed surveys of their North American colonies. Intensive map making continued through the period of the American Revolution.



Thomas Jefferys, A Map of the Most Inhabited Part of New England, 1755. Detail showing Long Island. The model for most maps showing Long Island as a whole between 1755 and the De Witt map of 1802. (Courtesy of the Library of Congress, Geography and Map Division.)



John Montresor, A Map of the Province of New York, 1775.
Southern sheet showing Long Island. Based on previous map, but shows some additional details on western Long Island.
(Courtesy of the Library of Congress, Geography and Map Division.)



Anonymous, The Country Twenty-five Miles Round New York, Drawn by a Gentleman from from That City, 1777.

Shows western Long Island at the time of the Battle of Long Island. (Library Company of Philadelphia.)

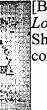
J.F.W. Des Barres, A Sketch of the Operations of His Majesty's Fleet and Army under the Command of the Rt. Hble. Lord Viscount Howe and Genl. Sr. W,. Howe, K.B., in 1776, [1778].

Shows movement of troops at the Battle of Long Island. (Courtesy of the New York Public Library.)



J.F.W Des Barres, *Oyster Bay and Huntington*, 1778. Detail showing area around Huntington.

(Courtesy New York Public Library.)



[Benjamin Tallmadge?], A Rough Draught of Fort St. George on the South Side of Long Island, [1780?].

Shows British fort in southern Brookhaven captured by the Americans under the command of Tallmadge. (Courtesy of the Connecticut Historical Society.)

Next Chapter

# 3. The Age of Simeon De Witt (Along with Edmund Marsh Blunt and Several Others)

The newly independent Americans still lacked the map making capabilities of the British and other major European nations. For some time American map publishers continued to copy British maps of this area. This situation gradually changed as the education of surveyors in this country improved, and as facilities for engraving and printing maps were developed. Simeon De Witt and Edmund Marsh Blunt were among the leading American map makers during this period, and much of their work focused on New York and Long Island.



Isaac Hulse, "Map of the Town of Brookhaven, in the County of Suffolk," 1797. Detail of area around Port Jefferson. One of a series of town maps drawn up at the end of the eighteenth century as a result of a law passed by the New York State Legislature. (Courtesy of the State University of New York at Stony Brook.)



Simeon De Witt, A Map of the State of New York, 1802 [southern Sheet]. First American map of Long Island to improve on British revolutionary war era maps.

(Courtesy of the Library of Congress, Geography and Map Division.)



David Burr, part of "Map of the County of Suffolk," from his Atlas of the State of New York, 1829.

Detailed map based on surveys by DeWitt.
(Courtesy State University of New York at Stony Brook.)



Edmund Blunt, Long Island Sound from New York to Montauk Point, Surveyed in the Years 1828.29.30., 1830.

Detail showing western end of Long Island Sound.

(Courtesy of Library of Congress, Geography and Map Division.)

Next Chapter

# 4. Long Island Triangulated: Nineteenth-Century Maps and Charts of the U.S. Coast Survey

A new era began in the mapping of Long Island and the nation when the U.S. Coast Survey started its activities on Fire Island. The Coast Survey was the first federal agency to produce detailed and accurate maps of large areas of the United States.

The Coast Survey began its nationwide mapping with the construction of a baseline on Fire Island (shown below). Between 1833-1843 the Coast Survey produced highly detailed manuscript (hand written) maps of Long Island. These were used as the basis for a number of published maps that appeared in the years after 1844.



U.S. Coast Survey, Sketch B., No. 2, Showing the Triangulation & Geographical Positions in Section No. II from New York City to Point Judith, 1851.

Shows base line on Fire Island and triangulation network used in first survey by U.S. government.

(Courtesy State University of New York at Stony Brook.)

U.S. Coast Survey, Detail of a Manuscript map showing Huntington area, 1837.

(Courtesy State University of New York at Stony Brook.)



U.S. Coast Survey, *Middle Part of the Southern Coast of Long Island*, 1857. Detail from a published Coast Survey map.
(Courtesy State University of New York at Stony Brook.)

U.S. National Ocean Survey, *Oyster and Huntington Bays*, 1996. Modern nautical chart made by the National Oceanic and Atmospheric Administration, the successor agency to Coast Survey. (Courtesy State University of New York at Stony Brook.)

Many high-quality images of nineteenth-century coastal charts of Long Island are available from a site on the Web maintained by the National Oceanic and Atmospheric Administration. Click here to go to NOAA's <u>Historical Map and Chart Collection</u>.

Next Chapter

# 5. The Cartography of Commerce

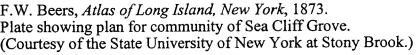
During the nineteenth century Long Island gradually became more prosperous and heavily populated. The growth of wealth and population created a market for many types of maps. The development of new printing processes, such as lithography, made possible the inexpensive production of attractive maps to meet this demand. Many of these maps show the growth of roads and railroads. Property maps, which show individual houses and give the names of their owners were particularly popular during this period.



J. Chace, *Map of Suffolk County*, 1858.

Detail showing area near Southampton.

(Courtesy State University of New York at Stony Brook.)





Fowler and Bulger, *Hempstead, N.Y., Long Island*, 1876. Bird's-eye view. (Courtesy of Long Island Studies Institute, Hofstra University.)



Hyde and Company, *Map of Long Island*, 1896. Detail of area near Port Jefferson. (Courtesy of the State University of New York at Stony Brook.)

1906 E. Belcher Hyde Atlas of Long Island

(This site includes a complete property atlas of Long Island. Click on the index map to view area you are interested in. Courtesy of Newsday.)

Next Chapter

# 6. Long Island Digitized: Twentieth-Century Maps

The twentieth century has seen radical changes in cartography. Thematic maps (maps about a subject) have been widely used in this century. Conventional maps have been supplemented by aerial photographs and satellite images. Most maps are now produced using computers, and increasingly maps are being viewed on computer screens. The number of Long Island maps available on the Internet is growing exposively.



United States Geological Survey, Area around Huntington from *Northport Quadrangle*, 1903.

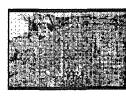
Typical early U.S.G.S. 15' map. Compare with digital map of same area shown below.

(Courtesy State University of New York at Stony Brook.)



United States Geological Survey, *Topographic Map of Long Island New York*, 1913.

Detail showing eastern Long Island.
(Courtesy State University of New York at Stony Brook.)



U.S. Bureau of Chemistry and Soils. Soil Map, Suffolk and Nassau Counties, 1928.

Part of the largest and most colorful thematic map of Long Island. (Courtesy State University of New York at Stony Brook.)



Henry I. Jebb, *Jebb Guide Map, Greater New York*, 1930.

Real estate map showing growth of urbanized areas near New York.

(Courtesy State University of New York at Stony Brook.)



U.S. Bureau of the Census, "Nassau and Suffolk Couties: Black Population as a Percentage of the Total Population," from *Urban Atlas; Tract Data for Standard Metropolitan Statistical Areas*, 1974.

Example of a typical computer-produced map using census data. (Courtesy State University of New York at Stony Brook.)



United States Geological Survey, *Huntington Quadrangle*, 1979.

Detail of a small portion of a digital version of a modern topographic map.

(Courtesy State University of New York at Stony Brook.)

EROS Data Center, Satellite view of western Long Island. Built up areas appear to be blue in this rendition. (Courtesy State University of New York at Stony Brook.)

United States Geological Survey, Color aerial photograph of Port Jefferson area, 1988.

Rapidly growing vegetation, such as golf courses, appears to be red.

(Courtesy of State University of New York at Stony Brook.)

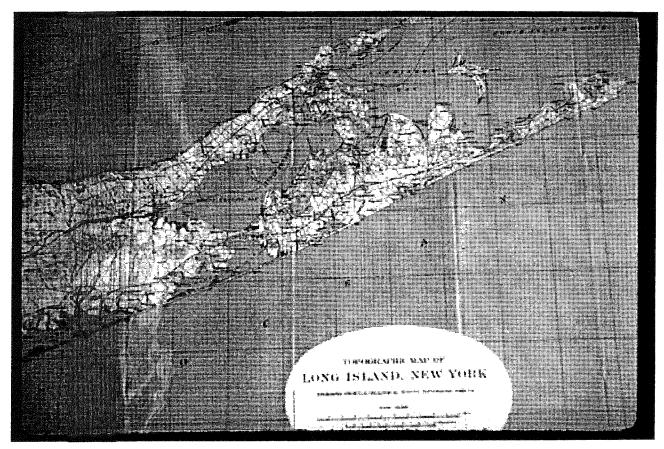


Population by Household Income in Suffolk County, N.
Digital map produced using data files generated by the U.S. Census Burea
(Courtesy State University of New York at Stony Broo

Long Island Maps Elsewhere on the Intern



Click here for a portfolio of links to other sites on the World Wide Web where you can fin Long Island ma



US Geological Survey 1913

Search Result Documents: 379

CITATIONS LIST Database: ALLNEWS

1. 11/15/99 Newsday CO2, 1999 WL 8198414 Newsday BUSINESS EXPENSE ACCOUNT / Pearl's Subtle Glow Peter M. Gianotti Word Count: 289

THAT PALMON PORCH FORM

- 2. 11/14/99 Newsday G10, 1999 WL 8198649 Newsday LI LIFE DINING OUT / STEVE'S PIER ONE [CORRECTION: The name of the restaurant reviewed in today's LI LIFE is Pier One. An incorrect name appears in some editions of the section, which is printed in advance. Pg. A02 NS 11/14/99] Peter M. Gianotti. STAFF WRITER Word Count: 676
- 3. 11/8/99 Newsday C02, 1999 WL 8197202 Newsday BUSINESS EXPENSE ACCOUNT / Dressed to Grill Peter M. Gianotti Word Count: 278
- 4. 11/7/99 Newsday G10, 1999 WL 8197066 Newsday QUEENS LIFE DINING OUT ChaletAlpina Peter M. Gianotti. STAFF WRITER Word Count: 666
- 5. 11/7/99 Newsday G10, 1999 WL 8197565 Newsday LI LIFE DINING OUT / Trattoria DiMeo Peter M. Gianotti. STAFF WRITER Word Count: 658
- 6. 11/1/99 Newsday CO2, 1999 WL 8197374 Newsday BUSINESS EXPENSE ACCOUNT / Deli Delicious Peter M. Gianott Word Count: 337
- 7. 10/31/99 Newsday G10, 1999 WL 8198673 Newsday LI LIFE DINING OUT / Kawaski PETER M. GIANOTTI. STAFF WRITER Word Count: 640
- 8. 10/31/99 Newsday G10, 1999 WL 8198774 Newsday LI LIFE WINES OF LONG ISLAND Peter Gianotti Word Count: 113
- 9. 10/25/99 Newsday A06, 1999 WL 8194652 Newsday NEWS Sold' One Historic LI Vineyard Alan J. Wax. STAFF WRITER Word Count: 562
- 10. 10/25/99 Newsday C02, 1999 WL 8194795 Newsday BUSINESS EXPENSE ACCOUNT Mexican Food Fest Word Count: 303
- 11. 10/24/99 N.Y. Times Abstracts 35, 1999 WL 29283849 New York Times Abstracts ISSN: 0362-4331 Section 1 Italian Prince and Wife Buy Cradle of the L.I. Wine Industry Howard G Goldberg Word Count: 136
- 12. 10/24/99 Newsday G10, 1999 WL 8195289 Newsday LI LIFE DINING OUT Cafe Grappa Peter M. Gianott. iSTAFF WRITER Word Count: 692
- 13. 10/24/99 Newsday G10, 1999 WL 8195316 Newsday LI LIFE WINES OF LONG ISLAND PETER M. GIANOTTI. STAFF WRITER Word Count: 102
- 14. 10/24/99 Times Union (Alb.) D8, 1999 WL 21380105 Times Union Albany, NY CAPITAL REGION; Storied Long Island winery changes hands HOWARD G. GOLDBERG New York Times Word Count: 339
- 15. 10/20/99 Newsday B17, 1999 WL 8194496 Newsday FOOD & DINING FOOD DAY / WEDNESDAY / FOOD TALK Word Count: 429

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- 16. 10/18/99 Newsday C02, 1999 WL 8194369 Newsday BUSINESS EXPENSE ACCOUNT / Relax and Enjoy Peter M. Gianotti Word Count: 277
- 17. 10/17/99 N.Y. Times Abstracts 17, 1999 WL 29282957 New York Times Abstracts ISSN: 0362-4331 Section 14LI Page Long Island Vines Parting of the Ways at Macari Vineyards: [Review] Howard G Goldberg Word Count: 97
- 18. 10/17/99 Newsday G10, 1999 WL 8194730 Newsday LI LIFE WINES OF LONG ISLAND PETER GIANOTTI Word Count: 127
- 19. 10/17/99 Newsday G10, 1999 WL 8196262 Newsday LI LIFE DINING OUT Peter M.Gianotti. STAFF WRITER Word Count: 720
- 20. 10/17/99 Newsday G10, 1999 WL 8196575 Newsday REGIONS 275 Old Country Rd. Peter M.GianottiSTAFF WRITER Word Count: 640
- 21. 10/13/99 Newsday A51, 1999 WL 8195438 Newsday BUSINESS & TECHNOLOGY Legislation Will Provide Tasty Profit for Wineries Alan J. Wax. STAFF WRITER Word Count: 519
- 22. 10/13/99 Newsday B06, 1999 WL 8195996 Newsday PART II Sometimes, WORK Is It's Own Reward / It's hard labor, to be sure, but on a beautiful fall day, there are worse placess to be than in a sunlit field picking grapes Sylvia Carter. STAFF WRITER Word Count: 2151
- 23. 10/12/99 N.Y. Daily News 12, 1999 WL 23487647 New York Daily News Suburban WINERIES GET PASS TO SELL YOU A GLASS ROBERT GEARTY DAILY NEWS STAFF WRITER Word Count: 224
- 24. 10/10/99 Newsday G10, 1999 WL 8195870 Newsday LI LIFE DINING OUT Peter M. Gianotti. STAFF WRITER Word Count: 623
- 25. 10/4/99 Newsday C13, 1999 WL 8193172 Newsday BUSINESS PATENTS / Entrepreneur Drawn to a Tasty Idea / Magnetic coasterssaid to improve wine Drew Fetherston. STAFF WRITER Word Count: 1010
- 26. 10/3/99 Newsday G10, 1999 WL 8192778 Newsday LI LIFE WINES OF LONG ISLAND Peter Gianotti Word Count: 124
- 27. 10/3/99 Newsday G10, 1999 WL 8192780 Newsday LI LIFE DINING OUT / Donatello West Peter Gianotti Word Count: 653
- 28. 9/27/99 Newsday CO2, 1999 WL 8191717 Newsday BUSINESS INDIAN OVEN: 67-71 E. Old Country Rd. ... Peter M. Gianotti Word Count: 318
- 29. 9/26/99 N.Y. Daily News 3, 1999 WL 23485870 New York Daily News Travel AWAY FOR THE WEEKEND Word Count: 332
- 30. 9/26/99 Newsday G10, 1999 WL 8191936 Newsday LI LIFE Paumanok Vineyards knows where to find the sweet spot. And the ... Peter Gianotti Word Count: 96

3

- 31. 9/26/99 Newsday G10, 1999 WL 8191969 Newsday LI LIFE Maxwell's 660 Franklin Ave., Garden City 516-742-4745 (2 Stars) ... Peter Gianotti Word Count: 733
- 32. 9/20/99 Newsday 04, 1999 WL 8190977 Newsday EXECUTIVE EDITION Don't tell the bride and groom, but at a wedding in the Hamptons ... Jack Otter Word Count: 626
- 33. 9/20/99 Newsday 08, 1999 WL 8190981 Newsday EXECUTIVE EDITION BY Alan J. Wax STAFF WRITER THESE ARE heady times in Long ... Alan J. Wax. STAFF WRITER Word Count: 1354
- 34. 9/20/99 Newsday CO2, 1999 WL 8191010 Newsday BUSINESS RIALTO: 588 Westbury Ave., Carle Place 516-997-5283 Hours: Monday ... Peter M. Gianotti Word Count: 284
- 35. 9/17/99 Associated Press (Pg. Unavail. Online), 1999 WL 22045444 AP
  Online Floyd Spares East Coast Vineyards By SETH SUTEL Word Count:
  447
- 36. 9/15/99 Newsday A53, 1999 WL 8190436 Newsday BUSINESS & TECHNOLOGY By Alan J. Wax STAFF WRITER Only weeks ago, East End vintners were ... Alan J. Wax. STAFF WRITER Word Count: 602
- 37. 9/15/99 Newsday B19, 1999 WL 8190310 Newsday FOOD & DINING Organic Food Sampling Something for everyone in the form of food ... Word Count: 379
- 38. 9/13/99 Newsday C02, 1999 WL 8190022 Newsday BUSINESS HUNAN DYNASTY 3880 Hempstead Tpke. ... Peter M. Gianotti Word Count: 305
- 39. 9/12/99 Newsday G08, 1999 WL 8189742 Newsday LI LIFE The 1997 vintage continues to show off its almost across-the-shelf ... Peter M. Gianotti Word Count: 106
- 40. 9/12/99 Newsday G08, 1999 WL 8189791 Newsday LI LIFE 661 Northern Blvd., Great Neck 516-487-9200 NORTHERN BOULEVARD ... Peter M. Gianotti Word Count: 698
- 41. New York Law Journal Tuesday, September 7, 1999 Starting Out ON THAT DAY OFF: SOME QUICK TRIPS FOR A LITTLE R & R 9/7/99 NYLJ S26, (col. 1)
- 42. 9/5/99 Newsday G08, 1999 WL 8188602 Newsday LI LIFE As you get ready to fire up that barbecue one more time, look for ... Peter M. Gianotti Word Count: 104
- 43. 9/5/99 Newsday G08, 1999 WL 8188645 Newsday LI LIFE 53 W. Main St., Smithtown 516-382-9744 IL VIOLINO sounds an ... Peter M. Gianotti Word Count: 565
- 44. 9/3/99 USA TODAY 07D, 1999 WL 6852664 USA Today LIFE Vintage forecasts: High quality from Spain, high profile for Sonoma Jerry Shriver Word Count: 293
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- 45. 8/30/99 Newsday 23, 1999 WL 8187675 Newsday EXECUTIVE EDITION 'BUG LIGHT," as the lighthouse in Orient Harbor is affectionately ... Ellen Mitchell. Ellen Mitchell is a freelance writer Word Count: 834
- 46. 8/30/99 Newsday C02, 1999 WL 8187728 Newsday BUSINESS SHOW WIN 325 Fort Salonga Rd., Northport 516-261-6622 Hours: ... Peter M. Gianotti Word Count: 313
- 47. 8/29/99 Newsday G10, 1999 WL 8187468 Newsday LI LIFE (1 Star) ASSESSMENT: Show time. OPEN: Dinner six days; closed ... Peter M. Gianotti Word Count: 667
- 48. 8/23/99 Newsday A13, 1999 WL 8186426 Newsday NEWS IN THE 21st Century, Long Island films may make a name for ... Steve Parks. STAFF WRITER Word Count: 1071
- 49. 8/22/99 Newsday G10, 1999 WL 8186612 Newsday LI LIFE Corey Creek Vineyards in Southold, a dependable source of ... Peter M. Gianotti Word Count: 134
- 50. 8/16/99 Newsday CO2, 1999 WL 8186988 Newsday BUSINESS 1141 E. Jericho Tpke., Huntington 516-547-5534 Hours: Every day ... Peter M. Gianotti Word Count: 335
- 51. 8/15/99 Grand Rapids Press A6, 1999 WL 22963025 The Grand Rapids Press National Winemakers aren't whining about drought Pat Milton The Associated Press Word Count: 644
- 52. 8/15/99 Newsday G10, 1999 WL 8185294 Newsday LI LIFE Time for a couple of summery whites. ... Peter M. Gianotti Word Count: 125
- 53. 8/12/99 N.Y. Daily News 9, 1999 WL 23481705 New York Daily News
  Suburban RAIN REIGNS IN SUFFOLK ROBERT GEARTY DAILY NEWS STAFF WRITER
  With Debbie Tuma Word Count: 577
- 54. 8/11/99 Wall St. J. B10 1999 WL-WSJ 5463981 The Wall Street Journal 'Some Like It Hot,' Say Grape Growers Of Region's Drought --- Vintners Know Dry Weather Makes for Better Wine; Other Farmers Crave Rain Word Count: 439
- 55. 8/11/99 Newsday B07, 1999 WL 8184590 Newsday PART II THE SPACIOUS kitchen of Vincent and Joni Carosella was ready for ... Erica Marcus. STAFF WRITER Word Count: 2477
- 56. 8/10/99 Atlanta J. & Atlanta Const. F;6, 1999 WL 3790135 The Atlanta Journal Business FEAST OR FAMINE: Hot and dry weather could give winemakers from Virginia to New England a great wine Pat Milton Word Count: 631
- 57. 8/10/99 Austin Am.-Statesman D1, 1999 WL 7423045 Austin American-Statesman Drought bodes well for wine, // If weather holds, 1999 could be a great vintage as dry weather makes Northeast growers giddy Pat Milton Word Count: 631

- 58. 8/10/99 Charleston Gazette & Daily Mail (WV) P7B, 1999 WL 6739641 the Charleston Gazette HEADLINE: It's a great year for wine Grapes produce better flavor in hot, dry weather The Associated Press Word Count: 651
- 59. 8/10/99 Patriot Ledger (Quincy Mass.) 13, 1999 WL 8469891 The Patriot Ledger Quincy, MA News Drought has been great for vintners PAT MILTON Word Count: 634
- 60. 8/9/99 Associated Press (Pg. Unavail. Online), 1999 WL 22031928 AP
  Online Drought Good for Winemakers By PAT MILTON Word Count: 635
- 61. 8/8/99 Newsday G10, 1999 WL 8184692 Newsday LI LIFE 31 Race Lane, East Hampton, 516-324-3199 ASSESSMENT: New cycle. ... PETER M GIANTOTTI Word Count: 661
- 62. 8/8/99 Newsday G10, 1999 WL 8184710 Newsday LI LIFE Ternhaven Cellars specializes in reds. And the young Greenport ... Peter M. Gianotti Word Count: 135
- 63. 8/5/99 Newsday A08, 1999 WL 8184199 Newsday NEWS The vineyard owner sat outside his tasting room on a wooden ... Marcelo Ballv. STAFF WRITER Word Count: 539
- 64. 8/2/99 Newsday CO3, 1999 WL 8183581 Newsday BUSINESS CHASE MANHATTAN Bank has had it with stormy weather. ... James T. Madore; Jamie Martorana; Alan J. Wax Word Count: 805
- 65. 8/1/99 Newsday G10, 1999 WL 8183349 Newsday LI LIFE Alison in the Inn 47 Quogue St., Quogue 516-653-6800 (2 stars) ... PETER M. GIANOTTI Word Count: 643
- 66. 8/1/99 Newsday G10, 1999 WL 8183432 Newsday LI LIFE Osprey's Dominion in Peconic has built one of the East End's more ... Peter Gianotti Word Count: 103
- 67. 8/1/99 Restaurant Hospitality 68, 1999 WL 10249222 Restaurant Hospitality Volume 83, Issue 8; ISSN: 0147-9989 Life beyond California Catherine Fall Word Count: 601
- 68. 7/18/99 Newsday G10, 1999 WL 8181430 Newsday LI LIFE DINING OUT / Villa Sorrento PETER M. GIANOTTI Word Count: 596
- 69. 7/18/99 Newsday G10, 1999 WL 8181432 Newsday LI LIFE DINING OUT / WINES OF LONG ISLAND Gianotti Word Count: 124
- 70. 7/18/99 Newsday G11, 1999 WL 8181470 Newsday QUEENS LIFE DINING OUT / SHUMA PETER. M. GIANOTTI Word Count: 670
- 71. 7/12/99 Newsday 03, 1999 WL 8180533 Newsday EXECUTIVE EDITION F.Y.I / What's hot this week / LI Farmers' Fancy Turns From Spuds Word Count: 910



- 72. 7/12/99 Newsday C08, 1999 WL 8180553 Newsday BUSINESS Hearty Appetite For Grapes / New Money flows into LI's wine industry Alan J. Wax. STAFF WRITER Word Count: 1417
- 73. 7/12/99 Newsday C09, 1999 WL 8180552 Newsday BUSINESS How Locals Stack Up Peter M. Gianotti. STAFF WRITER. Gianotti is the author of "Newsday's Guide to the Wines of Long Island." Word Count: 322
- 74. 7/11/99 Newsday E14, 1999 WL 8180486 Newsday TRAVEL WEEKEND ON A BUDGET / BLOCK ISLAND GETAWAY / A Challenge of Charming Choices / Bring your own bike, browse the markets and splurge on lobster. SIDEBAR: THE BOTTOM LINE / UNDER 4 HRS, UNDER \$400 (see end of text) Beth Whitehouse. STAFF WRITER Word Count: 1764
- 75. 7/11/99 Newsday G10, 1999 WL 8180350 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 124
- 76. 7/11/99 Newsday G10, 1999 WL 8180352 Newsday LI LIFE DINING OUT / Camille's PETER M. GIANOTTI Word Count: 661
- 77. 7/4/99 Newsday G08, 1999 WL 8179491 Newsday LI LIFE DINING OUT PETER M. GIANOTTI Word Count: 683
- 78. 7/4/99 Newsday G08, 1999 WL 8179492 Newsday LI LIFE WINES OF LONG ISLAND Peter Gianotti Word Count: 150
- 79. 7/3/99 Newsday A04, 1999 WL 8179247 Newsday NEWS Sale of Fine Wineries / Two sold as LI continues to gain recognition Tom Incantalupo. STAFF WRITER Word Count: 408
- 80. 6/27/99 Newsday G10, 1999 WL 8179031 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 148
- 81. 6/21/99 Newsday CO2, 1999 WL 8177655 Newsday BUSINESS EXPENSE ACCOUNT / Good Raw or Cooked Peter M. Gianotti Word Count: 304
- 82. 6/20/99 Newsday E07, 1999 WL 8177490 Newsday TRAVEL ITINERARY IDEAS Martin Hollander. STAFF WRITER Word Count: 593
- 83. 6/20/99 Newsday G10, 1999 WL 8177528 Newsday LI LIFE DINING OUT / The Beacon PETER M. GIANOTTI Word Count: 641
- 84. 6/20/99 Newsday G10, 1999 WL 8177530 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 146
- 85. 6/13/99 Newsday G29, 1999 WL 8176530 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 148
- 86. 6/13/99 Newsday G29, 1999 WL 8176531 Newsday LI LIFE DINING OUT / Allen & Company PETER M. GIANOTTI Word Count: 660
- 87. 6/9/99 Newsday B16, 1999 WL 8175913 Newsday FOOD & DINING FOOD DAY WEDNESDAY / Wines of Long / The Great White Grape: Riesling Michael

- Dresser. DISTRIBUTED BY LOS ANGELES TIMES-WASHINGTON POST NEWS SERVIC Word Count: 613
- 88. 6/7/99 N.Y. Daily News 17, 1999 WL 17234682 New York Daily News News TODAY IN NEW YORK SHARON KING Word Count: 1291
- 89. 6/6/99 N.Y. Daily News 10, 1999 WL 17234527 New York Daily News
  Suburban LOCAL WINE A HIT AT WHITE HOUSE ROBERT GEARTY Word Count:
  568
- 90. 6/6/99 Newsday G10, 1999 WL 8175415 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 141
- 91. 6/2/99 Newsday B17, 1999 WL 8174759 Newsday FOOD & DINING Food Day / WEDNESDAY / FOOD TALK Word Count: 390
- 92. 5/30/99 Newsday G08, 1999 WL 8174308 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 127
- 93. 5/30/99 Newsday G08, 1999 WL 8174351 Newsday LI LIFE DINING OUT PETER M. GIANOTTI Word Count: 758
- 94. 5/28/99 Newsday C03, 1999 WL 8174079 Newsday REAL ESTATE HOME OF THE WEEK / Former Boarding House Tommi Jackson Word Count: 195
- 95. 5/24/99 Newsday CO2, 1999 WL 8173372 Newsday BUSINESS EXPENSE ACCOUNT / Bella Italian Fare Peter M. Gianotti Word Count: 291
- 96. 5/24/99 Newsday C03, 1999 WL 8173414 Newsday BUSINESS INSIDE STORIES / Mattituck winery gets special order / When White House Calls, Be Ready Jamie Martorana, Alan J. Wax Word Count: 952
- 97. 5/24/99 Travel Agent 142, 1999 WL 10884628 Travel Agent ISSN: 1053-9360 Wine Tours With Taste. (New York State) Word Count: 870
- 98. 5/23/99 Newsday G10, 1999 WL 8173193 Newsday LI LIFE WINES OF LONG ISLAND PETER M. GIANOTTI Word Count: 113
- 99. 5/23/99 Newsday G12, 1999 WL 8173131 Newsday QUEENS LIFE DINING OUT Peter M. Gianotti Word Count: 689
- 100. 5/16/99 Newsday G09, 1999 WL 8172122 Newsday LI LIFE WINES OF LONG ISLAND Peter Gianotti Word Count: 98
- 101. 5/12/99 Newsday A49, 1999 WL 8171525 Newsday BUSINESS For a Fee, a Little Slice of Wine Country Alan J. Wax. STAFF WRITER Word Count: 468
- 102. 5/9/99 Newsday G10, 1999 WL 8170974 Newsday LI LIFE DINING OUT PETER M. GIANOTTI Word Count: 644
- 103. 5/9/99 Newsday G10, 1999 WL 8171107 Newsday LI LIFE WINES OF LONG ISLAND PETER M. GIANOTTI Word Count: 140

- 104. 5/5/99 N.Y. Daily News 17, 1999 WL 17231637 New York Daily News News TODAY IN NEW YORK SHARON KING Word Count: 1270
- 105. 5/2/99 Newsday G10, 1999 WL 8169759 Newsday LI LIFE DINING OUT PETER M. GIANOTTI Word Count: 673
- 106. 5/2/99 Newsday G10, 1999 WL 8169797 Newsday LI LIFE WINE OF LONG ISLAND Peter Gianotti Word Count: 161
- 107. 5/2/99 Newsday G15, 1999 WL 8169804 Newsday QUEENS LIFE DINING OUT PETER M. GIANOTTI Word Count: 676
- 108. 5/1/99 Times London 22, 1999 WL 7990933 The Times of London Features
  The Big Apple of her eye Ben Macintyre Word Count: 950
- 109. 4/26/99 Time Mag. 20, 1999 WL 15940860 Time Magazine Issue: April 26, 1999 Vol. 153 No. 16 Notebook Senator Clinton? The First Lady Gets into A New York State of Mind Karen Tumulty/Washington Word Count: 207
- 110. 4/25/99 Newsday G10, 1999 WL 8168662 Newsday LI LIFE WINES OF LONG ISLAND PETER M. GIANOTTI Word Count: 125
- 111. 4/25/99 Newsday G10, 1999 WL 8168663 Newsday LI LIFE DINING OUT PETER M. GIANOTTI Word Count: 684
- 112. 4/18/99 Newsday A53, 1999 WL 8167590 Newsday NEWS LONG ISLAND: OUR FUTURE / Chapter 4: Environment and Energy / THE FUTURE IS NOW / THROUGH THE GRAPEVINE / 'Gene gun' aims for engineered crops that rely less on toxic pesticides DAN FAGIN. STAFF WRITER Word Count: 923
- 113. 4/18/99 Newsday G08, 1999 WL 8167710 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 113
- 114. 4/18/99 Newsday G08, 1999 WL 8167711 Newsday LI LIFE DINING OUT PETER M. GIANOTTI Word Count: 723
- 115. 4/17/99 Independent (London) 21, 1999 WL 15739533 The Independent London Features Travel: New York: An island of vine romance Thirsty travellers beware; there's a lot more to drink in Long Island t han Iced Tea. By Anthony Rose Anthony Rose Word Count: 1165
- 116. 4/14/99 Newsday B20, 1999 WL 8167036 Newsday FOOD & DINING FOOD DAY / WEDNESDAY / WINES OF LONG ISLAND / Wines to Add Life to the Party Michael Dresser. THE BALTIMORE SUN Word Count: 570
- 117. 4/11/99 Newsday G06, 1999 WL 8166559 Newsday LI LIFE DINING OUT PETER M. GIANOTTI Word Count: 644
- 118. 4/11/99 Newsday G06, 1999 WL 8166522 Newsday LI LIFE WINES OF LONG ISLAND / Paumanok's Riesling Is Well recommended Peter M. Gianotti Word Count: 125
- 119. 4/4/99 Newsday G08, 1999 WL 8165364 Newsday LI LIFE DINING OUT Copr. (C) West 1999 No Claim to Orig. U.S. Govt. Works



- PETER M. GIANOTTI Word Count: 664
- 120. 4/4/99 Newsday G08, 1999 WL 8165305 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 146
- 121. 3/31/99 Newsday B20, 1999 WL 8164680 Newsday PART II FOOD DAY / WEDNESDAY / FOOD TALK COMPILED BY BERNADETTE WHEELER Word Count: 376
- 122. 3/29/99 Newsday CO2, 1999 WL 8164365 Newsday BUSINESS EXPENSE ACCOUNT / Hearty German Fare Peter M. Gianotti Word Count: 299
- 123. 3/28/99 Newsday G08, 1999 WL 8164221 Newsday LI LIFE DINING OUT PETER M. GIANOTTI Word Count: 673
- 124. 3/28/99 Newsday G08, 1999 WL 8164223 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 130
- 125. 3/24/99 Syracuse Newspapers E1, 1999 WL 4673622 The Post-Standard Syracuse, NY Lifestyle Wine BINGHAMTON PAIR SPIKES ITS WINES WITH HEMP JIM REILLY STAFF WRITER Word Count: 1051
- 126. 3/22/99 Newsday C02, 1999 WL 8163282 Newsday BUSINESS EXPENSE ACCOUNT / Regal Dim Sum Peter M. Gianotti Word Count: 347
- 127. 3/21/99 Newsday G09, 1999 WL 8163039 Newsday LI LIFE WINES OF LONG ISLAND PETER M. GIANOTTI Word Count: 148
- 128. 3/21/99 Newsday G09, 1999 WL 8163041 Newsday LI LIFE DINING OUT PETER M. GIANOTTI Word Count: 685
- 129. 3/15/99 Newsday CO2, 1999 WL 8162157 Newsday BUSINESS EXPENSE ACCOUNT / Its Business Is Beef Peter M. Gianotti Word Count: 308
- 130. 3/14/99 Newsday G08, 1999 WL 8161964 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 117
- 131. 3/7/99 Newsday G08, 1999 WL 8160681 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 151
- 132. 3/7/99 Newsday G08, 1999 WL 8160754 Newsday LI LIFE DINING OUT / Bombay Palace PETER M. GIANOTTI Word Count: 672
- 133. 3/4/99 Newsday B20, 1999 WL 8160219 Newsday HOME & GARDENS GARDEN CALENDAR COMPILED BY ALICE NORKETT Word Count: 273
- 134. 2/28/99 Newsday G08, 1999 WL 8159587 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 151
- 135. 2/23/99 Newsday A03, 1999 WL 8158667 Newsday NEWS Spirits, Sweets and Sick Leave / Ill for county job; fit as vintner Elizabeth Moore. STAFF WRITER Word Count: 554
- 136. 2/22/99 Newsday C02, 1999 WL 8158566 Newsday BUSINESS EXPENSE Copr. (C) West 1999 No Claim to Orig. U.S. Govt. Works



- ACCOUNT / Steadfast Steak Spot Peter M. Gianotti Word Count: 299
- 137. 2/21/99 Newsday G08, 1999 WL 8158420 Newsday LI LIFE DINING OUT / Elephant Room PETER M. GIANOTTI Word Count: 571
- 138. 2/21/99 Newsday G08, 1999 WL 8158445 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 143
- 139. 2/14/99 Newsday G09, 1999 WL 8157272 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 155
- 140. 2/14/99 Newsday G09, 1999 WL 8157329 Newsday LI LIFE DINING OUT PETER M. GIANOTTI Word Count: 730
- 141. 2/7/99 Newsday G08, 1999 WL 8156161 Newsday LI LIFE WINES OF LONG ISLAND Peter M. Gianotti Word Count: 102
- 142. 2/6/99 Newsday A06, 1999 WL 8155946 Newsday NEWS Health Label For Wines Alan J. Wax. STAFF WRITER; This story was supplemented by The Associated Press. Word Count: 525
- 143. 2/1/99 Wines & Vines (Pg. Unavail. Online), 1999 WL 11582008 Wines & Vines A Wines & Vines special report: harvest 1998.(grape harvesting)
  Don Luvisi Glenn McGourty Philip R. Wente Maxwell Norton Larry Bettiga Ed Weber Paul S. Verdegaal Buck Cobb Rhonda Smith Alex Yakut Al Wierdekehr Rick Hamman Bruce Bordelon Jack Johnston Charlene Selbee Tim Martinson Alice Wise John F. Griggs George Ray McEachern Tony K. Wolf Wade Wolfe Word Count: 9809
- 144. 1/31/99 Newsday G08, 1999 WL 8155111 Newsday LI LIFE WINES OF LONG ISLAND Peter Gianotti Word Count: 102
- 145. 1/31/99 Newsday G08, 1999 WL 8155115 Newsday LI LIFE DINING OUT PETER GIANOTTI Word Count: 630
- 146. 1/13/99 Newsday B18, 1999 WL 8154139 Newsday FOOD & DINING FOOD TALK COMPILED BY BERNADETTE WHEELER Word Count: 345
- 147. 1/10/99 Newsday G08, 1999 WL 8150565 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 742
- 148. 1/10/99 Newsday G08, 1999 WL 8152460 Newsday LI LIFE DINING OUT PETER M. GIANOTTI Word Count: 750
- 149. 1/4/99 Newsday C02, 1999 WL 8151768 Newsday BUSINESS EXPENSE ACCOUNT / Tasty Reincarnation Peter M. Gianotti Word Count: 306
- 150. 12/28/98 Newsday C02, 1998 WL 2699638 Newsday BUSINESS EXPENSE ACCOUNT / Dependable Chinese Peter M. Gianotti Word Count: 314
- 151. 12/27/98 N.Y. Times Abstracts 12, 1998 WL 22339089 New York Times Section LI Page 4 Long Island Vines Goldberg, Howard G Word Count: 61

- 152. 12/21/98 Newsday C02, 1998 WL 2699033 Newsday BUSINESS EXPENSE ACCOUNT / Bring On the Burgers Peter M. Gianotti Word Count: 325
- 153. 12/18/98 Newsday B28, 1998 WL 2698661 Newsday PART II/WEEKEND FOOD DAY / Wines of Long Island Word Count: 242
- 154. 12/14/98 Newsday C02, 1998 WL 2698129 Newsday BUSINESS EXPENSE ACCOUNT / Cuisine to Count On Peter M. Gianotti Word Count: 316
- 155. 12/13/98 Newsday G08, 1998 WL 2697927 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 711
- 156. 12/7/98 Newsday C02, 1998 WL 2697190 Newsday BUSINESS EXPENSE ACCOUNT / A Cozy Lunch Peter M. Gianotti Word Count: 313
- 157. 12/6/98 Newsday G05, 1998 WL 2696964 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 775
- 158. 12/4/98 Newsday B24, 1998 WL 2696748 Newsday PART II/WEEKEND Wines of Long Island Peter M. Gianotti Word Count: 297
- 159. 11/30/98 Newsday C02, 1998 WL 2696220 Newsday BUSINESS EXPENSE ACCOUNT / Familiar Indian Fare Peter M. Gianotti Word Count: 313
- 160. 11/29/98 Newsday G07, 1998 WL 2696121 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 759
- 161. 11/25/98 San Diego Union & Trib. B7:1,6,7,8;B9:2,3,4,5, 1998 WL 20062497
  The San Diego Union-Tribune LOCAL WORLD & NATIOAL OBITUARIES MICHAEL
  TODD Wine magazine publisher; 51 Word Count: 135
- 162. 11/23/98 Newsday C02, 1998 WL 2695362 Newsday BUSINESS EXPENSE ACCOUNT / Toast to the French Peter M. Gianotti Word Count: 323
- 163. 11/22/98 N.Y. Daily News 62, 1998 WL 21935110 New York Daily News Sunday Extra CHILL OUT IN COMFORT ZONE ALES WELL & SPAETZLE'S SPECIAL AT DROVERS, WHERE YOU GET HOMEY COOKING. PAUL SCHULTZ Word Count: 743
- 164. 11/22/98 Newsday G06, 1998 WL 2695195 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 780
- 165. 11/21/98 Newsday A32, 1998 WL 2695000 Newsday NEWS OBITUARIES /
  Robert Schoolsky, Ex-Newsday Wine Columnist, Dies By Alan J. Wax. STAFF
  WRITER Word Count: 419
- 166. 11/20/98 Newsday A35, 1998 WL 2694869 Newsday NEWS Nursing Home Operation at Issue By Elizabeth Moore. STAFF WRITER Word Count: 680
- 167. 11/20/98 Newsday B28, 1998 WL 2694915 Newsday PART II/WEEKEND FOOD DAY / Wines of Long Island Peter M. Gianotti Word Count: 301
- 168. 11/16/98 Newsday CO2, 1998 WL 2694362 Newsday BUSINESS EXPENSE ACCOUNT / Eat in Italian Comfort Peter M. Gianotti Word Count: 323

- 169. 11/15/98 Newsday G10, 1998 WL 2694261 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 771
- 170. 11/9/98 Newsday C02, 1998 WL 2693357 Newsday BUSINESS EXPENSE ACCOUNT / Cuisine With Flair Peter M. Gianotti Word Count: 310
- 171. 11/8/98 Newsday G07, 1998 WL 2693219 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 739
- 172. 11/6/98 Newsday B26, 1998 WL 2692911 Newsday PART II/WEEKEND FOOD DAY / Wines of Long Island Peter M. Gianotti Word Count: 305
- 173. 11/2/98 Newsday C02, 1998 WL 2692310 Newsday BUSINESS EXPENSE ACCOUNT / Tasty and Tasteful Peter M. Gianotti Word Count: 333
- 174. 11/1/98 Newsday G08, 1998 WL 2692206 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 767
- 175. 10/29/98 Newsday G13, 1998 WL 2700116 Newsday QUEENS LIFE DINING OUT Peter M. Gianotti Word Count: 708
- 176. 10/26/98 Newsday CO2, 1998 WL 2691269 Newsday BUSINESS EXPENSE ACCOUNT / Cafe Is Hidden Gem Peter M. Gianotti Word Count: 325
- 177. 10/25/98 Newsday G06, 1998 WL 2691174 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 773
- 178. 10/23/98 Newsday B26, 1998 WL 2690844 Newsday PART II/WEEKEND FOOD / Wines of Long Island Peter M. Gianotti Word Count: 290
- 179. 10/19/98 Newsday C02, 1998 WL 2690282 Newsday BUSINESS EXPENSE ACCOUNT / Thai Lover's Delight Peter M. Gianotti Word Count: 347
- 180. 10/18/98 Times Union (Alb.) J1, 1998 WL 15816125 Times Union (Albany, NY) TRAVEL LATE AUTUMN HARVEST Long Island's exclusive vineyards yield some of the nation's best wines FRED LEBRUN Word Count: 1450
- 181. 10/11/98 Newsday G06, 1998 WL 2688734 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 751
- 182. 10/9/98 Newsday B26, 1998 WL 2689378 Newsday PART II/WEEKEND Wines of Long Island Peter M. Gianotti Word Count: 264
- 183. 10/4/98 Newsday G07, 1998 WL 2688047 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 742
- 184. 10/1/98 St. Louis Post-Dispatch 11, 1998 WL 3354902 St. Louis Post-Dispatch GET OUT ON WINE: A MODERATE INDULGENCE Word Count: 248
- 185. 9/30/98 Buff. News D3, 1998 WL 6043928 Buffalo News LIFESTYLES THE GRAPES OF LONG ISLAND ROBIN STANSBURY Word Count: 814
- 186. 9/27/98 Newsday G10, 1998 WL 2687648 Newsday LI LIFE DINING OUT BY
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PETER M. GIANOTTI Word Count: 746

- 187. 9/27/98 Newsday H03, 1998 WL 2686970 Newsday LI LIFE CELEBRATE HUNTINGTON. THE LONG ISLAND FALL FESTIVAL AT HUNTINGTON / A FEAST OF FUN FOR EVERYONE AT LONG ISLAND'S LARGEST FESTIVAL Produced by Newsday Special Sections with the cooperation of the Huntington Township Chamber of Commerce and Epoch 5 Marketing. Word Count: 1900
- 188. 9/27/98 Newsday H15, 1998 WL 2686969 Newsday LI LIFE CELEBRATE HUNTINGTON. THE LONG ISLAND FALL FESTIVAL AT HUNTINGTON / What's Happening AT the Fair Produced by Newsday Special Sections with the cooperation of the Huntington Township Chamber of Commerce and Epoch 5 Marketing. Word Count: 650
- 189. 9/25/98 Newsday B32, 1998 WL 2686744 Newsday PART II/WEEKEND FOOD DAY / Wines of Long Island Peter M. Gianotti Word Count: 278
- 190. 9/20/98 Newsday G06, 1998 WL 2686011 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 755
- 191. 9/20/98 Newsday G08, 1998 WL 2686102 Newsday QUEENS LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 717
- 192. 9/20/98 Palm Beach Post 1I, 1998 WL 19908529 The Palm Beach Post TRAVEL LONG ISLAND NOW A GRAPE PLACE TO VISIT FINE WINERIES UNCORK NEW IMAGE FOR AREA Gary Glancy Special to The Palm Beach Post Word Count: 1196
- 193. 9/20/98 Rec. N. N.J. T09, 1998 WL 5819563 The Record, Northern New Jersey TRAVEL CELEBRATING 25 YEARS OF WINEMAKING MELANIE AXELROD Word Count: 865
- 194. 9/20/98 Rec. N. N.J. T09, 1998 WL 5819564 The Record, Northern New Jersey TRAVEL WHERE LONG ISLAND IS LAID-BACK BY MELANIE AXELROD, Staff Writer Word Count: 1085
- 195. 9/18/98 Newsday B25, 1998 WL 2685733 Newsday PART II/WEEKEND FOOD DAY / FRIDAY / COOKING WITH...John Ross of Ross' North Fork Restaurant / Adding Local Wines to the Recipe By Erica Marcus. STAFF WRITER Word Count: 647
- 196. 9/16/98 Buff. News D1, 1998 WL 6040772 Buffalo News LIFESTYLES A NEW YORK STATE OF WINE JANICE OKUN/ News Food Editor Word Count: 1230
- 197. 9/16/98 U.S. Newswire (Pg. Unavail. Online), 1998 WL 13605462 U.S. Newswire New York's '98 Vintage: Early, Small, Potentially Great Word Count: 455
- 198. 9/14/98 Newsday CO2, 1998 WL 2685290 Newsday BUSINESS EXPENSE ACCOUNT / The Casual Ideal Peter M. Gianotti Word Count: 332
- 199. 9/13/98 Newsday G05, 1998 WL 2685035 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 753

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- 200. 9/11/98 Newsday B21, 1998 WL 2684818 Newsday PART II/WEEKEND Wines of Long Island Peter M. Gianotti Word Count: 276
- 201. 9/6/98 Hartford Courant F1, 1998 WL 12427953 The Hartford Courant TRAVEL PREMIUM WINE COUNTRY LONG ISLAND'S VINEYARDS ARE A SAMPLER'S DELIGHT ROBIN STANSBURY; Courant Staff Writer Word Count: 1279
- 202. 9/6/98 Hartford Courant F6, 1998 WL 12427955 The Hartford Courant TRAVEL TRIP TIPS ROBIN STANSBURY Word Count: 440
- 203. 9/6/98 Newsday G08, 1998 WL 2684233 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 781
- 204. 9/4/98 Wall St. J. W6 1998 WL-WSJ 18983306 The Wall Street Journal WEEKEND JOURNAL Tastings: Long Island Makes Good Wines, Honest --- Attention, Label Snobs: North Fork Vineyards Are Improving With Age By Dorothy J. Gaiter and John Brecher Word Count: 1250
- 205. 8/31/98 Newsday C02, 1998 WL 2683522 Newsday BUSINESS EXPENSE ACCOUNT / Consistent Elegance Peter M. Gianotti Word Count: 315
- 206. 8/30/98 Newsday G10, 1998 WL 2683437 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 740
- 207. 8/28/98 Newsday B24, 1998 WL 2683137 Newsday PART II/WEEKEND FOOD DAY / FRIDAY / WINES OF LONG ISLAND Peter M. Gianotti Word Count: 276
- 208. 8/26/98 Star-Ledger (Newark N.J.) 052, 1998 WL 16954796 The Star-Ledger Newark, NJ SAVOR Quality of Long Island wines belies their lack of experience or expense T.J. Foderaro Word Count: 955
- 209. 8/24/98 Newsday CO2, 1998 WL 2682687 Newsday BUSINESS EXPENSE ACCOUNT / Real Italian, Real Good Peter M. Gianotti Word Count: 316
- 210. 8/23/98 Newsday G09, 1998 WL 2682576 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 771
- 211. 8/17/98 Newsday CO2, 1998 WL 2681836 Newsday BUSINESS EXPENSE ACCOUNT / Diner Is Real McCoy Peter M. Gianotti Word Count: 311
- 212. 8/16/98 N.Y. Times Abstracts 12, 1998 WL 5422939 New York Times Section LI —Page 3 In Tasting, L.I. Wines Hold Own vs. French SCHOLEM, RICHARD JAY Word Count: 289
- 213. 8/16/98 Newsday G19, 1998 WL 2681690 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 721
- 214. 8/14/98 Newsday B22, 1998 WL 2681448 Newsday PART II/WEEKEND FOOD DAY / FRIDAY / Wines of Long Island Word Count: 297
- 215. 8/13/98 Newsday A52, 1998 WL 2681265 Newsday BUSINESS Star Winemaker Takes Skill West/ Dan Kleck of Palmer Vineyardsis leaving to join Calif. producer. By Alan J. Wax. STAFF WRITER Word Count: 445

- 216. 8/10/98 Newsday C02, 1998 WL 2680933 Newsday BUSINESS EXPENSE ACCOUNT / Dim Sum Sans Carts Peter M. Gianotti Word Count: 327
- 217. 8/9/98 Newsday G08, 1998 WL 2680786 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 753
- 218. 8/9/98 Times Union (Alb.) I5, 1998 WL 15803975 Times Union (Albany, NY) ARTS Wining and dining on Long Island's North Fork WILLIAM M. DOWD Associate Editor Word Count: 1597
- 219. 8/5/98 Plain Dealer (Clev.) 4F, 1998 WL 4147664 The Plain Dealer Cleveland, OH FOOD WINES AND SPIRITS LONG ISLAND VINTNERS GIVING UP LABOR OF LOVE FRANK J. PRIAL NEW YORK TIMES WORD COUNT: 923
- 220. 8/3/98 Newsday C02, 1998 WL 2680088 Newsday BUSINESS EXPENSE ACCOUNT / Chow at Chaophaya Peter M. Gianotti Word Count: 315
- 221. 8/2/98 Newsday G08, 1998 WL 2679992 Newsday LI LIFE DINING OUT Peter M. Gianotti Word Count: 759
- 222. 7/27/98 Newsday C02, 1998 WL 2679456 Newsday BUSINESS EXPENSE ACCOUNT / Chinese Fare Blooms Peter M. Gianotti Word Count: 332
- 223. 7/26/98 Newsday G07, 1998 WL 2679206 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 740
- 224. 7/20/98 Newsday A25, 1998 WL 2678442 Newsday VIEWPOINTS THE NEWSDAY INTERVIEW WITH LOUISA AND ALEX HARGRAVE They were interviewed by staff writer Alan J. Wax. Word Count: 1233
- 225. 7/17/98 Newsday B24, 1998 WL 2678058 Newsday PART II/WEEKEND FOOD DAY / FRIDAY / Wines of Long Island Peter M. Gianotti Word Count: 287
- 226. 7/17/98 Newsday D09, 1998 WL 2678067 Newsday NEWS WEEK IN WHEELS / PIT STOP / Rallies For Jeeps and Saabs By Lynn Petry. STAFF WRITER E-mail: petry@newsday.com Word Count: 804
- 227. 7/8/98 Newsday B06, 1998 WL 2677111 Newsday PART II Aged TO PERFECTION / Alex and Louisa Hargrave had a dream of producing wine on Long Island. After 25 years and numerous successes, they're selling the vineyard and moving on. Alan J Wax. Word Count: 2112
- 228. 7/3/98 Newsday B20, 1998 WL 2676515 Newsday PART II/WEEKEND FOOD DAY / Wines of Long Island Peter M. Gianotti Word Count: 289
- 229. 6/19/98 Newsday B39, 1998 WL 2674686 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 281
- 230. 6/19/98 Newsday B39, 1998 WL 2674687 Newsday PART II/WEEKEND FOOD TALK Bernadette Wheeler Word Count: 271
- 231. 6/10/98 Chi. Daily Herald 8, 1998 WL 27458536 Chicago Daily Herald FOODPLUS Good wine Eastern Long Island, N.Y.: America's newest

- vineyard Mary Ross Word Count: 819
- 232. 6/5/98 Newsday B35, 1998 WL 2672710 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 315
- 233. 5/22/98 Newsday B39, 1998 WL 2671063 Newsday PART II/WEEKEND WINES OF LONG ISLAND. Peter M. Gianotti Word Count: 277
- 234. 5/18/98 Newsday C03, 1998 WL 2670496 Newsday BUSINESS INSIDE STORIES /Double-Play Needs A Big New Stadium / Entrepreneur envisions Mets-Nets-Islanders facility James Bernstein Word Count: 941
- 235. 5/17/98 Newsday 160, 1998 WL 2677834 Newsday FUN BOOK FUN BOOK '98 / WINERIES / Raise a Glass to Island's Vineyards. SIDEBAR: FARM TREATS RIPE FOR THE PICKING (see end of text) Word Count: 1953
- 236. 5/10/98 N.Y. Daily News 19, 1998 WL 11032695 New York Daily News SUBURBAN HERE'S TO GRAPE EXPECTATIONS NORTH FORK PRESSES ON WITH FINE WINES BIZ ROBERT GEARTY Word Count: 652
- 237. 5/8/98 Newsday B13, 1998 WL 2669345 Newsday PART II/WEEKEND COVER STORY / Making Mom's Day / Sunday outings for you and your dearest By Steve Parks. STAFF WRITER Word Count: 1923
- 238. 5/8/98 Newsday B43, 1998 WL 2669334 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M Gianotti Word Count: 281
- 239. 5/6/98 Newsday A54, 1998 WL 2669089 Newsday VIEWPOINTS EDITORIAL / A Young Couple's Dream That Changed LI Forever Word Count: 305
- 240. 4/27/98 Prod. Alert (Pg. Unavail. Online), 1998 WL 9861696 Product Alert Vol. 28, No. 8 ISSN: 0740-3801 Christian Wolffer Cuvee Sparkling Wine 1993 Methode Champenoise Brut MANUFACTURER: Sagpond Vineyards CATEGORY: Wine & Wine Coolers Word Count: 68
- 241. 4/26/98 N.Y. Times Abstracts 1, 1998 WL 5409604 New York Times Section LI Page 1 Winegrowing Entrepreneurs To Cultivate Other Fields GOLDBERG, HOWARD G Word Count: 149
- 242. 4/24/98 Newsday B35, 1998 WL 2667840 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 270
- 243. 4/17/98 Newsday B45, 1998 WL 2666872 Newsday PART II/WEEKEND News & Notes Joan Reminick Word Count: 638
- 244. 4/10/98 Newsday B31, 1998 WL 2666158 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 282
- 245. 4/6/98 Travel Agent NY1, 1998 WL 10256586 Travel Agent ISSN: 1053-9360 The Spirit of Adventure Word Count: 1239
- 246. 3/27/98 Newsday B39, 1998 WL 2664302 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 275

247. 3/20/98 Newsday B35, 1998 WL 2663180 Newsday PART II/WEEKEND FOOD TALK Word Count: 281

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- 248. 3/20/98 Newsday B35, 1998 WL 2664600 Newsday PART II/WEEKEND FOOD TALK Word Count: 311
- 249. 3/6/98 Newsday B39, 1998 WL 2661463 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 272
- 250. 2/22/98 Newsday 153, 1998 WL 2660412 Newsday LI HISTORY LONG ISLAND: OUR STORY / OUR TOWNS / Town of Southold Word Count: 3143
- 251. 2/20/98 Newsday B35, 1998 WL 2659526 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 279
- 252. 2/20/98 Newsday B35, 1998 WL 2659527 Newsday PART II/WEEKEND FOOD TALK Word Count: 283
- 253. 2/6/98 Newsday B39, 1998 WL 2657459 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 268
- 254. 1/23/98 Newsday B31, 1998 WL 2655362 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 299
- 255. 1/9/98 Newsday B27, 1998 WL 2653522 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 259
- 256. 12/28/97 Newsday G08, 1997 WL 2723694 Newsday LI LIFE 98 Things To Look Forward To . . . . . '98 PHIL MINTZ. STAFF WRITER; Robert Fresco, Peter Gianotti, Bob Herzog, Aileen Jacobson and Alan Wax contributed to this article. Word Count: 4390
- 257. 12/28/97 Newsday G08, 1997 WL 2723790 Newsday LI LIFE 98 Things To Look Forward To . . . . . '98 PHIL MINTZ. STAFF WRITER; Robert Fresco, Peter Gianotti, Bob Herzog, Aileen Jacobson and Alan Wax contributed to this article. Word Count: 4447
- 258. 12/28/97 Newsday G08, 1997 WL 2723995 Newsday LI LIFE 98 Things To Look Forward To . . . . . '98 PHIL MINTZ. STAFF WRITER; Robert Fresco, Peter Gianotti, Bob Herzog, Aileen Jacobson and Alan Wax contributed to this article. Word Count: 4474
- 259. 12/19/97 Newsday B39, 1997 WL 2722764 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 273
- 260. 12/17/97 Newsday A26, 1997 WL 2722440 Newsday NEWS Upton Laboratory's Time in 2 Bottles Niraj Warikoo. STAFF WRITER Word Count: 345
- 261. 12/5/97 Newsday B39, 1997 WL 2721006 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 266
- 262. 12/1/97 SmartMoney 207, 1997 WL 9458866 SmartMoney Vol. VI, No. XII

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- Inconspicuous Consumer The Emergency Gift Grape Expectations: With these top wines in the cellar, You'll never be empty-handed By John J. Miller Word Count: 993
- 263. 11/25/97 Village Voice 76, 1997 WL 11417608 The Village Voice Music THE GOD CONSUMED GREG TATE Word Count: 1341

y . . . . . .

- 264. 11/22/97 Times Union (Alb.) B2, 1997 WL 14933011 Times Union (Albany, NY) Capital Region Five hold winning tickets in Thursday's Take Five Word Count: 87
- 265. 11/21/97 Newsday B43, 1997 WL 2719169 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 275
- 266. 11/16/97 N.Y. Times Abstracts 1, 1997 WL 8012163 New York Times Section LI Page 1 At the Packed Wineries, It's Nose to Nose CUMMINGS, MARY Word Count: 128
- 267. 11/10/97 Newsday C05, 1997 WL 2717604 Newsday BUSINESS PEOPLE ON THE MOVE Compiled by Lisa Doll Bruno Word Count: 868
- 268. 11/7/97 Newsday B39, 1997 WL 2717176 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 281
- 269. 10/22/97 Star-Ledger (Newark N.J.) 080, 1997 WL 12572851 The Star-Ledger Newark, NJ SAVOR A glass of wine Sam Gugino Word Count: 921
- 270. 10/10/97 Newsday B31, 1997 WL 2712887 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 279
- 271. 10/1/97 Patriot Ledger (Quincy Mass.) 23, 1997 WL 8194064 The Patriot Ledger Quincy, MA Feature Wine notes Sound taste Long Island climate enhances quality William Nesto Word Count: 840
- 272. 9/28/97 N.Y. Times Abstracts 49, 1997 WL 8005444 New York Times Section LI Page 1 For Wine Lists, Check These Restaurants GOLDBERG, HOWARD G Word Count: 176
- 273. 9/26/97 Newsday B39, 1997 WL 2711810 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 288
- 274. 9/14/97 Newsday G06, 1997 WL 2709638 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 760
- 275. 9/12/97 Newsday B35, 1997 WL 2709404 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 293
- 276. 9/7/97 N.Y. Times Abstracts 1, 1997 WL 8002586 New York Times Section LI Page 1 How Significant Are Medals Awarded in Wine Competitions? GOLDBERG, HOWARD G Word Count: 159
- 277. 9/7/97 Newsday E17, 1997 WL 2708768 Newsday LI LIFE REVIEWS SMALL BITES Peter. Gianotti Word Count: 212

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278. 9/7/97 Newsday E17, 1997 WL 2708817 Newsday LI LIFE SMALL BITES Peter. Gianotti Word Count: 220

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- 279. 9/5/97 Newsday B37, 1997 WL 2708433 Newsday PART II/WEEKEND News & Notes By Joan Reminick Word Count: 624
- 280. 9/4/97 Balt. Sun 7B, 1997 WL 5528226 The Baltimore Sun METRO From bok choy to wine, Long Island agribusiness booming; Suffolk County leads New York in wholesale value of crops Word Count: 857
- 281. 8/29/97 Newsday B29, 1997 WL 2707614 Newsday PART II/WEEKEND FOOD TALK Word Count: 274
- 282. 8/22/97 Newsday B31, 1997 WL 2706817 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 245
- 283. 8/15/97 Newsday B29, 1997 WL 2706006 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 272
- 284. 8/10/97 Phila. Inquirer T6, 1997 WL 8700665 The Philadelphia Inquirer KINDER, GENTLER LONG ISLAND Jill P Capuzzo Word Count: 13
- 285. 8/8/97 Newsday B31, 1997 WL 2705268 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 263
- 286. 8/8/97 Newsday B31, 1997 WL 2705269 Newsday PART II/WEEKEND FOOD TALK Word Count: 237
- 287. 7/25/97 Newsday B35, 1997 WL 2703548 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 206
- 288. 7/24/97 Winnipeg Free Press C3, 1997 WL 21483276 Winnipeg Free Press Entertainment Macaroni bar hopping with Fringe-types Night Hawks By Lisa Saunders Unbylined Word Count: 546
- 289. 7/4/97 Newsday B25, 1997 WL 2701168 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 261
- 290. 6/23/97 Newsday C08, 1997 WL 2699901 Newsday BUSINESS Wine Country / Fine vintages spark new growth in East End vineyards, winemaking By Alan J. Wax. STAFF WRITER Word Count: 2268
- 291. 6/20/97 Newsday B29, 1997 WL 2699519 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 265
- 292. 6/6/97 Newsday A64, 1997 WL 2697790 Newsday BUSINESS LONG ISLAND INC. / Westin Hotel Chain Puts Palmer on Its Wine List Alan J. Wax; James T. Madore Word Count: 530
- 293. 6/6/97 Newsday B15, 1997 WL 2697760 Newsday PART II/WEEKEND COVER STORY / A Little Music for All / Mozart festival strives to have something for everybody By Julia Szabo. Julia Szabo is a free-lance writer. Word Count: 1470

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- 294. 6/6/97 Newsday B35, 1997 WL 2697785 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 204
- 295. 5/30/97 Wash. Post N39, 1997 WL 11158360 The Washington Post Fast Forward On-Wine Services Alan S. Kay Word Count: 429

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- 296. 5/23/97 Newsday B35, 1997 WL 2695974 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 233
- 297. 5/18/97 Newsday 125, 1997 WL 2701853 Newsday FUN BOOK NIGHTSPOTS / WHERE THE BREWS ARE Word Count: 629
- 298. 5/18/97 Newsday 130, 1997 WL 2701855 Newsday FUN BOOK FUN BOOK 97 / A TOAST TO LI'S WINERIES. Sidebar: PICK IT TIME AT LI'S FARMS (see end of text) Word Count: 1912
- 299. 4/25/97 Newsday B27, 1997 WL 2692078 Newsday PART II/WEEKEND WINES OF LONG ISLAND By Peter M. Gianotti Word Count: 293
- 300. 4/13/97 Balt. Sun 12B, 1997 WL 5510598 The Baltimore Sun METRO Long Island wines win more respect, bring higher prices; Sales have doubled since 1990; typical chardonnay now \$14 Word Count: 1014
- 301. 4/11/97 Newsday B29, 1997 WL 2690541 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 309
- 302. 4/10/97 St. Louis Post-Dispatch 34, 1997 WL 3334649 St. Louis Post-Dispatch GET OUT A TRIP TO LONG ISLAND Word Count: 168
- 303. 3/30/97 Observer 007, 1997 WL 7812185 The Observer The Observer News Page Roving brief: The week in ... Wonderland Word Count: 258
- 304. 3/29/97 N.Y. Times Abstracts 21, 1997 WL 7990467 New York Times Section A Page 2 Finally, a Little Respect For Wineries of Long Island KRAUSS, CLIFFORD Word Count: 162
- 305. 3/28/97 Newsday B23, 1997 WL 2689108 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 295
- 306. 3/17/97 Newsday CO3, 1997 WL 2687223 Newsday BUSINESS INSIDE STORIES / After 72 Years in Queens, Edo Looks for New Home / Leaner Times, Smaller Plant Slimmer Times, Smaller Plant James Bernstein Word Count: 994
- 307. 3/14/97 Newsday B21, 1997 WL 2686796 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 316
- 308. 3/11/97 Newsday B02, 1997 WL 2686405 Newsday PART II Grading the Wine Server / A panel of sommeliers picks the country's best By Alan J. Wax. STAFF WRITER Word Count: 880
- 309. 3/5/97 S.F. Examiner Z2, 1997 WL 4335090 San Francisco Examiner EPICURE Food, wine all-stars shine at 11th Masters Alan Goldfarb Word Count: 1160

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310. 2/28/97 Newsday B29, 1997 WL 2684859 Newsday PART II/WEEKEND WINES OF LONG ISLAND. Peter M. Gianotti Word Count: 314

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- 311. 2/14/97 Newsday B29, 1997 WL 2683038 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti. Word Count: 308
- 312. 1/31/97 Newsday B23, 1997 WL 2681212 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 303
- 313. 1/17/97 Newsday B25, 1997 WL 2679464 Newsday PART II/WEEKEND WINES OF LONG ISLAND Word Count: 331
- 314. 1/12/97 Hartford Courant 3, 1997 WL 2976735 The Hartford Courant NORTHEAST Lary Bloom's CONNECTICUT Destination Clinton A CASE OF CONNECTICUT WINING LARY BLOOM Word Count: 2258
- 315. 1/12/97 Hartford Courant 3, 1997 WL 14692129 The Hartford Courant NORTHEAST Lary Bloom's CONNECTICUT Destination Clinton A CASE OF CONNECTICUT WINING LARY BLOOM Word Count: 2258
- 316. 1/3/97 Newsday B19, 1997 WL 2677654 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 302
- 317. 12/20/96 Sun-Sentinel (Ft. Lauderdale Fla.) 1B, 1996 WL 14333289 Sun-Sentinel Ft. Lauderdale LOCAL FOR PROFESSOR IT WAS LOVE AT FIRST TASTE CONNOISSEUR HAS SAMPLED 4,000 WINES AND LIQUORS ARDEN MOORE Staff Writer Word Count: 584
- 318. 12/20/96 Sun-Sentinel (Ft. Lauderdale Fla.) 6B, 1996 WL 14333405 Sun-Sentinel Ft. Lauderdale LOCAL FOR FIU'S WINE PROFESSOR, IT WAS LOVE AT FIRST TASTE ARDEN MOORE Staff Writer Word Count: 585
- 319. 12/13/96 Newsday B41, 1996 WL 2548122 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 301
- 320. 12/9/96 Newsday C07, 1996 WL 2547642 Newsday BUSINESS SECTORS / MARKETING / Winemaker has a Vintage Idea / Heads-up marketing is pouring LI products onto national menu By Alan J. Wax. STAFF WRITER Word Count: 775
- 321. 11/29/96 Newsday B31, 1996 WL 2546374 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 285
- 322. 11/15/96 Newsday B35, 1996 WL 2544559 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 322
- 323. 11/14/96 Newsday A56, 1996 WL 2544418 Newsday BUSINESS Island's Wines in Their Prime By Alan J. Wax. STAFF WRITER Word Count: 319
- 324. 11/12/96 Guardian (London) 004, 1996 WL 13386941 The Guardian The Guardian Education Page Higher Education: On Campus: Killjoy is here ADAM HIBBERT Word Count: 467

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325. 11/8/96 Newsday B37, 1996 WL 2543648 Newsday PART II/WEEKEND FOOD TALK Word Count: 268

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- 326. 11/1/96 Newsday B41, 1996 WL 2542675 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 313
- 327. 10/31/96 Newsday A49, 1996 WL 2542528 Newsday BUSINESS LI Vintners Plan Pitch to Wine Pros By Alan J. Wax. STAFF WRITER Word Count: 215
- 328. 10/18/96 Newsday B25, 1996 WL 2540837 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 314
- 329. 10/14/96 Newsday C05, 1996 WL 2540341 Newsday BUSINESS Putting Island Grapes to the Test By Alan J. Wax. STAFF WRITER Word Count: 1002
- 330. 10/13/96 Newsday E04, 1996 WL 2540234 Newsday LI LIFE DINING OUT BY PETER M. GIANOTTI Word Count: 778
- 331. 10/13/96 Newsday E30, 1996 WL 2540150 Newsday LI LIFE LABEL IT AN ART FORM BY ALAN J. WAX. STAFF WRITER Word Count: 1042
- 332. 10/13/96 Newsday E32, 1996 WL 2540148 Newsday LI LIFE VINTAGE LONG ISLAND / A sampler of local wines BY PETER GIANOTTI. STAFF WRITER Word Count: 915
- 333. 10/4/96 Newsday B43, 1996 WL 2538951 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 300
- 334. 9/29/96 Grand Rapids Press I3, 1996 WL 8107992 The Grand Rapids Press Wine tour uncorks taste of Europe in Ontario Lois Abraham Word Count: 784
- 335. 9/20/96 Newsday B29, 1996 WL 2537147 Newsday PART II/WEEKEND FOOD TALK Word Count: 276
- 336. 9/20/96 Newsday B29, 1996 WL 2537149 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 320
- 337. 9/11/96 Newsday B02, 1996 WL 2536079 Newsday PART II ARTS ON THE ISLAND Word Count: 209
- 338. 9/6/96 Newsday B31, 1996 WL 2535451 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 294
- 339. 8/25/96 Newsday E02, 1996 WL 2534242 Newsday LI LIFE VITAL SIGNS / Taking the Pulse Of Life on Long Island EDITED BY DENISE FLAIM; Jack Otter; Stacey Altherr; Andrew Friedman Word Count: 1360
- 340. 8/23/96 Newsday B29, 1996 WL 2533976 Newsday PART II/WEEKEND WINES OF LONG ISLAND. Peter M. Gianotti Word Count: 306
- 341. 8/21/96 S.F. Chron. 4ZZ1, 1996 WL 3226070 The San Francisco Chronicle Copr. (C) West 1999 No Claim to Orig. U.S. Govt. Works

FOOD WINE POTPOURRI Lavish Wines of Long Island Gerald D. Boyd Word Count: 822

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- 342. 8/16/96 Newsday A56, 1996 WL 2533262 Newsday BUSINESS Standup Idea From LI Wineries Alan Wax Word Count: 232
- 343. 8/16/96 Newsday D02, 1996 WL 2533253 Newsday REAL ESTATE COVER STORY / North Fork Intends to Keep The Country In Wine Country By Rhoda Amon. STAFF WRITER Word Count: 1878
- 344. 8/11/96 Newsday E14, 1996 WL 2532714 Newsday LI LIFE DAY TRIPPER Word Count: 437
- 345. 8/9/96 Newsday B23, 1996 WL 2532517 Newsday PART II/WEEKEND FOOD TALK Peter M. Gianotti Word Count: 262
- 346. 8/9/96 Newsday B23, 1996 WL 2532518 Newsday PART II/WEEKEND WINES OF LONG ISLAND Compiled by Peter M. Gianotti Word Count: 295
- 347. 8/5/96 Newsday CO2, 1996 WL 2531952 Newsday BUSINESS INSIDE STORIES / A twice-monthly look behind the LI business headlines / Scrappy Negotiations Over Grumman HQ By James Bernstein. STAFF WRITER Word Count: 896
- 348. 8/5/96 Travel Agent 74, 1996 WL 8353679 Travel Agent ISSN: 1053-9360 Cheers to Fall Word Count: 447
- 349. 7/26/96 Newsday B27, 1996 WL 2530962 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 300
- 350. 7/19/96 Newsday A43, 1996 WL 2530085 Newsday BUSINESS LI Cruises for Share Of City's Tourists By Alan J. Wax. STAFF WRITER Word Count: 389
- 351. 7/17/96 Syracuse Newspapers F1, 1996 WL 7173805 Syracuse Herald-Journal Business ONTARIO, N.Y. WINE TRAIL IS FORGED Elizabeth Doran Contributing Writer Word Count: 671
- 352. 7/12/96 Newsday B29, 1996 WL 2529409 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 280
- 353. 6/28/96 Newsday B31, 1996 WL 2527849 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 297
- 354. 6/14/96 Newsday B25, 1996 WL 2526228 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 316
- 355. 6/7/96 Newsday B27, 1996 WL 2525665 Newsday PART II/WEEKEND FOOD TALK Word Count: 279
- 356. 6/7/96 Newsday B27, 1996 WL 2525667 Newsday PART II/WEEKEND FOOD TALK Word Count: 279
- 357. 6/1/96 SmartMoney 181, 1996 WL 16053184 SmartMoney Vol. V, No. VI Copr. (C) West 1999 No Claim to Orig. U.S. Govt. Works

- Inconspicuous Consumer The Cocktail Hour France? Italy? California? Try Long Island, Home to the newest world-class Merlots By Anthony Brandt Word Count: 985
- 358. 6/1/96 SmartMoney 182, 1996 WL 16053041 SmartMoney Vol. V, No. VI Inconspicuous Consumer The Cocktail Hour Red Alert By Anthony Brandt Word Count: 291
- 359. 6/1/96 Wines & Vines 26, 1996 WL 9353336 Wines & Vines Vol. 77, No. 6, ISSN: 0043-583X Look for growth on Long Island's North Fork. (wine industry) Alan Goldfarb Word Count: 2145
- 360. 5/31/96 Newsday B33, 1996 WL 2524442 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 320
- 361. 5/19/96 Newsday 119, 1996 WL 2525775 Newsday FUN BOOK '96 / WINERIES / A TOAST TO LI'S WINERIES Word Count: 1228
- 362. 5/19/96 Newsday 119, 1996 WL 2534974 Newsday FUN BOOK FUN BOOK '96 / WINERIES / A TOAST TO LI'S WINERIES Word Count: 1293
- 363. 5/17/96 Newsday B25, 1996 WL 2522937 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 305
- 364. 5/3/96 Newsday B27, 1996 WL 2521541 Newsday PART II/WEEKEND FOOD TALK Word Count: 243
- 365. 5/3/96 Newsday B27, 1996 WL 2521556 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 320
- 366. 4/28/96 N.Y. Times Abstracts 15, 1996 WL 7505404 New York Times Section LI Page 1 Wide Opportunities for Tasting Island's Wines SCHOLEM, RICHARD JAY Word Count: 16
- 367. 4/22/96 Newsday C06, 1996 WL 2519871 Newsday BUSINESS Critic Gets A Taste Of LI's Wines By Alan J. Wax. STAFF WRITER Word Count: 587
- 368. 4/19/96 Newsday B23, 1996 WL 2519516 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 308
- 369. 4/12/96 Newsday B23, 1996 WL 2518815 Newsday PART II/WEEKEND FOOD TALK Word Count: 292
- 370. 3/31/96 Newsday F11, 1996 WL 2517540 Newsday MONEY & CAREERS LI BUSINESS SPOTLIGHT / Two Shores and Bus Tours By Alan J. Wax. STAFF WRITER Word Count: 739
- 371. 3/22/96 Newsday B29, 1996 WL 2516859 Newsday PART II/WEEKEND WINES OF LONG ISLAND Peter M. Gianotti Word Count: 313
- 372. 3/8/96 Newsday B25, 1996 WL 2514940 Newsday PART II/WEEKEND LONG ISLAND WINES Peter M. Gianotti Word Count: 307

- 373. 2/23/96 Newsday B26, 1996 WL 2513235 Newsday PART II/WEEKEND LONG ISLAND WINES Peter M. Gianotti Word Count: 289
- 374. 2/9/96 Newsday B29, 1996 WL 2512060 Newsday PART II/WEEKEND LONG ISLAND WINES Peter M. Gianotti Word Count: 293
- 375. 1/26/96 Newsday B23, 1996 WL 2510833 Newsday PART II/WEEKEND LONG ISLAND WINES By Peter M. Gianotti. STAFF WRITER Word Count: 271
- 376. 1/17/96 Newsday A38, 1996 WL 2510050 Newsday BUSINESS SHORT CUTS Compiled from staff, Associated Press, Bloomberg Business News and Reuter reports. Word Count: 855
- 377. 1/7/96 N.Y. Times Abstracts 11, 1996 WL 7486634 New York Times Section LI Page 1 Does price influence the choice of wine? SCHOLEM, RICHARD JAY Word Count: 28
- 378. 1/3/96 Newsday A30, 1996 WL 2509105 Newsday BUSINESS Mail-Order Wine Bill Vetoed / Pataki cites possible negative effects of reciprocal deal By Alan J. Wax. STAFF WRITER Word Count: 392
- 379. 1/2/96 Buff. News B4, 1996 WL 5815379 Buffalo News LOCAL PATAKI'S VETO UPSETS HEAD OF FARM BUREAU Word Count: 146