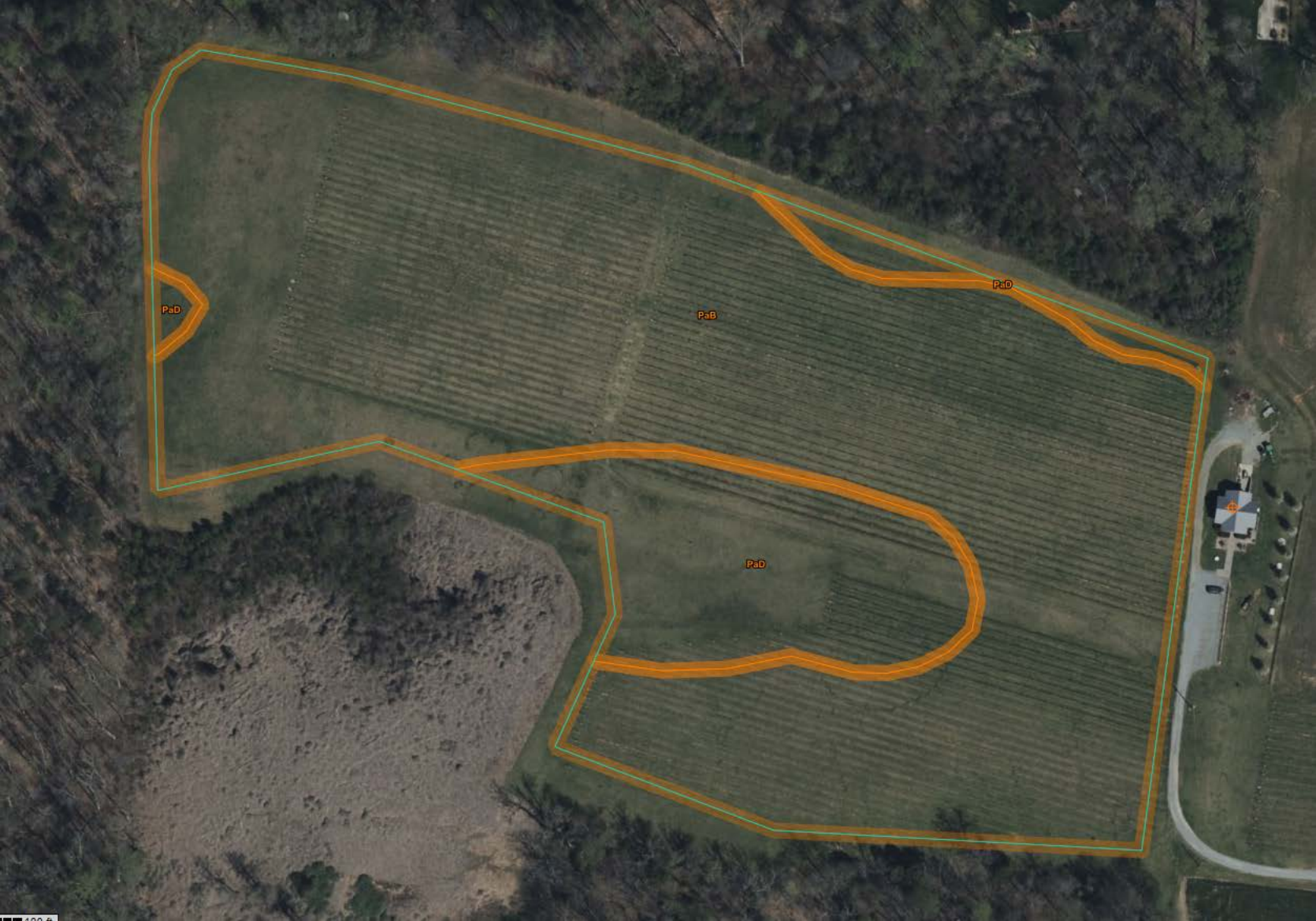
PaD
PaB
PaD
PaD

Davidson County, North Carolina

PaB—Pacolet sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2mnkh
Landscape: Uplands
Elevation: 200 to 1,400 feet
Mean annual precipitation: 37 to 60 inches
Mean annual air temperature: 59 to 66 degrees F
Frost-free period: 200 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Pacolet and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pacolet

Setting

Landscape: Uplands
Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Saprolite derived from granite and gneiss and/or schist

Typical profile

Ap - 0 to 5 inches: sandy loam
E - 5 to 8 inches: sandy loam
Bt - 8 to 29 inches: clay
BC - 29 to 38 inches: sandy clay loam
C - 38 to 80 inches: sandy loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F136XY820GA - Acidic upland forest, moist
Hydric soil rating: No

Data Source Information

Soil Survey Area: Davidson County, North Carolina
Survey Area Data: Version 27, Sep 2, 2025

Davidson County, North Carolina

PaD—Pacolet sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2mnkj
Landscape: Uplands
Elevation: 200 to 1,400 feet
Mean annual precipitation: 37 to 60 inches
Mean annual air temperature: 59 to 66 degrees F
Frost-free period: 200 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Pacolet and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pacolet

Setting

Landscape: Uplands
Landform: Hillslopes on ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Saprolite derived from granite and gneiss and/or schist

Typical profile

Ap - 0 to 5 inches: sandy loam
E - 5 to 8 inches: sandy loam
Bt - 8 to 29 inches: clay
BC - 29 to 38 inches: sandy clay loam
C - 38 to 80 inches: sandy loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F136XY820GA - Acidic upland forest, moist
Hydric soil rating: No

Data Source Information

Soil Survey Area: Davidson County, North Carolina
Survey Area Data: Version 27, Sep 2, 2025


80° 17' 25" W
80° 17' 7" W
35° 56' 11" N
35° 56' 2" N
564020
564060
564100
564140
564180
564220
564260
564300
564340
564380
564420
564460
3977140
3977100
3977060
3977020
3976980
3976940
3976900
3976860
PaD
PaB
PaD
PaD
Soil Map may not be valid at this scale.
Map Scale: 1:2,070 if printed on A landscape (11" x 8.5") sheet.
N
0 30 60 120 180 Meters
0 100 200 400 600 Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Severe subsidence
- Moderate subsidence
- Low subsidence
- Mineral soil
- Not rated or not available

Soil Rating Lines
- Severe subsidence
- Moderate subsidence
- Low subsidence
- Mineral soil
- Not rated or not available

Soil Rating Points
- Severe subsidence
- Moderate subsidence
- Low subsidence
- Mineral soil
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Davidson County, North Carolina
Survey Area Data: Version 27, Sep 2, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 13, 2022—May 9, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Agricultural Organic Soil Subsidence

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
PaB	Pacolet sandy loam, 2 to 8 percent slopes	Mineral soil	Pacolet (85%)	Flooding and ponding (1.00)	9.9	83.3%
				Not saline (1.00)		
				Subaerial (1.00)		
				pH (1.00)		
				Frost-free days (0.73)		
PaD	Pacolet sandy loam, 8 to 15 percent slopes	Mineral soil	Pacolet (85%)	Flooding and ponding (1.00)	2.0	16.7%
				Not saline (1.00)		
				Subaerial (1.00)		
				pH (1.00)		
				Frost-free days (0.73)		
Totals for Area of Interest					**11.9**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Mineral soil	11.9	100.0%
Totals for Area of Interest	**11.9**	**100.0%**

Description

SOH - Soil Health

Agricultural Organic Soil Subsidence

Soil health is primarily influenced by human management, which is not captured in soil survey data at this time. These interpretations provide information on inherent soil properties that influence our ability to build healthy soils through management.

Organic soils used in agricultural production are subject to a loss of volume and depth of organic material due to oxidation caused by above normal microbial activity resulting from excessive water drainage, soil disturbance, or extended drought. Microbial mediated oxidation is the primary driver of volume reduction once excess water is removed. Soil shrinkage and compaction due to dewatering is considered to be secondary. Any drawdown resulting in water levels below soil surface can result in increased subsidence rates. The subsidence rate can also be influenced by agricultural practices. The type of tillage operation, such as plowing, disc harrowing and switch plowing, moldboard plowing increase the oxidation rate. The use of no-till practice is recommended to slow the subsidence. Any aggressive tillage measure increases microbiological activity and decreases carbon sequestration. Drainage water management can be implemented to control water tables to help slow the subsidence rate.

Several soil and site properties influence the rate of organic matter oxidation and subsidence. Organic soils are generally found in cooler climates, thus, farmed organic soils in warmer climates are vulnerable. Periodic saturation of the organic soil with water tends to decrease the rate of oxidation since anaerobic decomposition is slower than aerobic decomposition. The pre-existing degree of decomposition is also a factor in the subsidence rate since as organic matter is decomposed, the remaining material becomes more resistant to decay. Acidity in soils tends to slow microbial growth so acid soils are less prone to subsidence. The degree to which each of the soil properties considered promotes oxidation is rated. The average degree of accelerating microbial oxidation of organic matter is taken as the overall rating.

The ratings are both verbal and numerical. Numerical ratings indicate the suitability of the individual soil properties. The ratings are shown in decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the most severe propensity for subsidence (1.00) and the point at which the soil has no propensity for subsidence, such as a mineral soil (0.00).

Rating class terms indicate the rate at which the soils are likely to subside considering all the soil features that are examined for this rating. "Severe subsidence" indicates that the soil has features that are very favorable for the aerobic soil organisms that cause subsidence. Very careful management will be needed to slow the subsidence rate. "Moderate subsidence" indicates that the soil has features that are moderately favorable for aerobic soil organisms. The soil can be made more sustainable by careful management. "Low subsidence"

indicates that the soil has one or more features that are unfavorable for aerobic soil organisms. With careful management the soil can be used for crop production and be nearly sustainable. Soils that are not organic are rated "Mineral soil". These soils do not subside due to organic matter oxidation.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

This interpretation is being provided for review and comment by the user community. Please forward any feedback to the Soils Hotline soilshotline@lin.usda.gov.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Map Scale: 1:2,070 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very low
- Low
- Moderate
- High
- Very high
- Not rated or not available

Soil Rating Lines
- Very low
- Low
- Moderate
- High
- Very high
- Not rated or not available

Soil Rating Points
- Very low
- Low
- Moderate
- High
- Very high
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Davidson County, North Carolina
Survey Area Data: Version 27, Sep 2, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 13, 2022—May 9, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

American Wine Grape Varieties Site Suitability (Very Long)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
PaB	Pacolet sandy loam, 2 to 8 percent slopes	Moderate	Pacolet (85%)	Growing season length (0.50)	9.9	83.3%
				Site and soil features (0.90)		
PaD	Pacolet sandy loam, 8 to 15 percent slopes	Moderate	Pacolet (85%)	Growing season length (0.42)	2.0	16.7%
				Slope (0.87)		
				Site and soil features (0.90)		
Totals for Area of Interest					**11.9**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Moderate	11.9	100.0%
Totals for Area of Interest	**11.9**	**100.0%**

Description

VIN - Viticulture

American Wine Grape Varieties Site Suitability (Very Long)

Soil and Site Suitability for Viticulture in the United States

The wine industry in the United States has experienced remarkable growth in the past 10 years. In order to support this growth, NRCS Soil Science Division and the National Soil Survey Center have developed a series of tools that use the soil survey database to locate areas that are amenable to a number of wine grape varieties. These tools quantify the suitability of sites for 12 sets of grape varieties, including European Vinifera, French-American hybrids, American, and Muscadine grapes.

Identification of areas suited to wine grapes presents a unique challenge because absolute fruit yield is not the measure of success for a vineyard. Wine grapes do not necessarily require the most productive soils but rather produce a desirable product where certain soil, site, and climatic characteristics are met. The interaction of climate, soil, geology, topography, and grape variety results in a terroir for a vineyard.

The soil characteristics required for high quality grapes are related mainly to water. Too much water encourages detrimental fungal growth and excessive vine vigor. Vines will grow on wetter sites, but they will be subject to an onslaught of fungal diseases and the vine longevity will be reduced. Most wine grapes prefer a near-neutral soil pH, relatively low general soil fertility, and moderate water-storage capacity.

The climatic tolerance of wine grapes is naturally diverse and crossbreeding by man has extended that tolerance to the point that there is a wine grape variety able to grow in each of the 50 states. Indeed, most grape varieties require a cold period for dormancy, but the Muscadines can produce in climates where there is no frost. Other climate factors, such as winter temperature extremes, limit where certain wine grapes can be grown and which varieties are adapted.

A major piece to the puzzle is pairing the physiology of a grape variety with the climate of a given site once the soil requirements are met. The goal is to find a climate similar to that where a grape variety originates such that the time required to bring the fruit to maturation can exploit as much of the growing season as possible. This way, the fruit will develop more fully the characteristics we associate with a particular variety. A major component of climate is the yearly accumulation of heat, called growing degree days (GDD). This is used as an indicator of which variety is best adapted to the climate of an area. For example, Chardonnay grapes achieve their best varietal character in a climate supplying up to 2,500 GDD and Cabernet Sauvignon grapes reach maturity at 3,000 to 3,500 GDD. Interestingly, microclimatic niches can be found in many areas where the larger scale climate is not suitable. Such areas are often sought by vintners.

Given the soil and a larger climate context, the lay of the land is also a consideration for selecting a vineyard site for a specific variety. Sites need to be high enough on the landscape to avoid frost pockets but low enough to avoid wind damage. Some slope gradient is desirable as long as it does not interfere

with equipment usage. The direction the slope faces can be important when the growing degree days are marginal because it affects the amount of heat received by the landscape.

The wine grapes grown in the United States fall into four general classes: Vinifera, French-American hybrids, American, and Muscadine. Within each general class, the vines can be further subdivided by the length and heat of the growing season that they require. There is a relationship between growing season and harvest date. Usually, growers attempt to match the harvest date to use as much of the growing season as possible in order to accumulate as much sugar as the environment allows. All groups except the Muscadine require a period of cold weather for dormancy, but many cannot tolerate extremely cold temperatures.

This group of American varieties represents the medium growing season varieties such as Buffalo, Fredonia, Alden, Delaware, Niagara, and Steuben. These varieties do best in a climate characterized by a growing season averaging 150 to 170 days.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are made suitable by all of the soil features that affect these uses. "Very high" indicates that the soil has features that are very favorable for the specified grape. High quality of fruit may be expected most years. "High" indicates that the soil has features that are favorable for the specified grape. Good quality fruit can be expected most years. "Moderate" indicates that the soil has one or more features that are unfavorable for the specified grape. Good quality fruit can be expected some years, but in other years there may be damage from frost or fungi. "Low" indicates that the vines will grow, but the fruit may not be of high quality and the crop may be damaged some years by excessive cold, heat, or wetness. "Very low" indicates a site where the vines are not likely to grow or persist.

Numerical ratings indicate the degree of suitability. The ratings are shown in decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil has the least similarity to a good site (0.00) and the point at which the soil feature is very much like known good sites (1.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

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Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher