Petition for
Establishment of

NINE LAKES

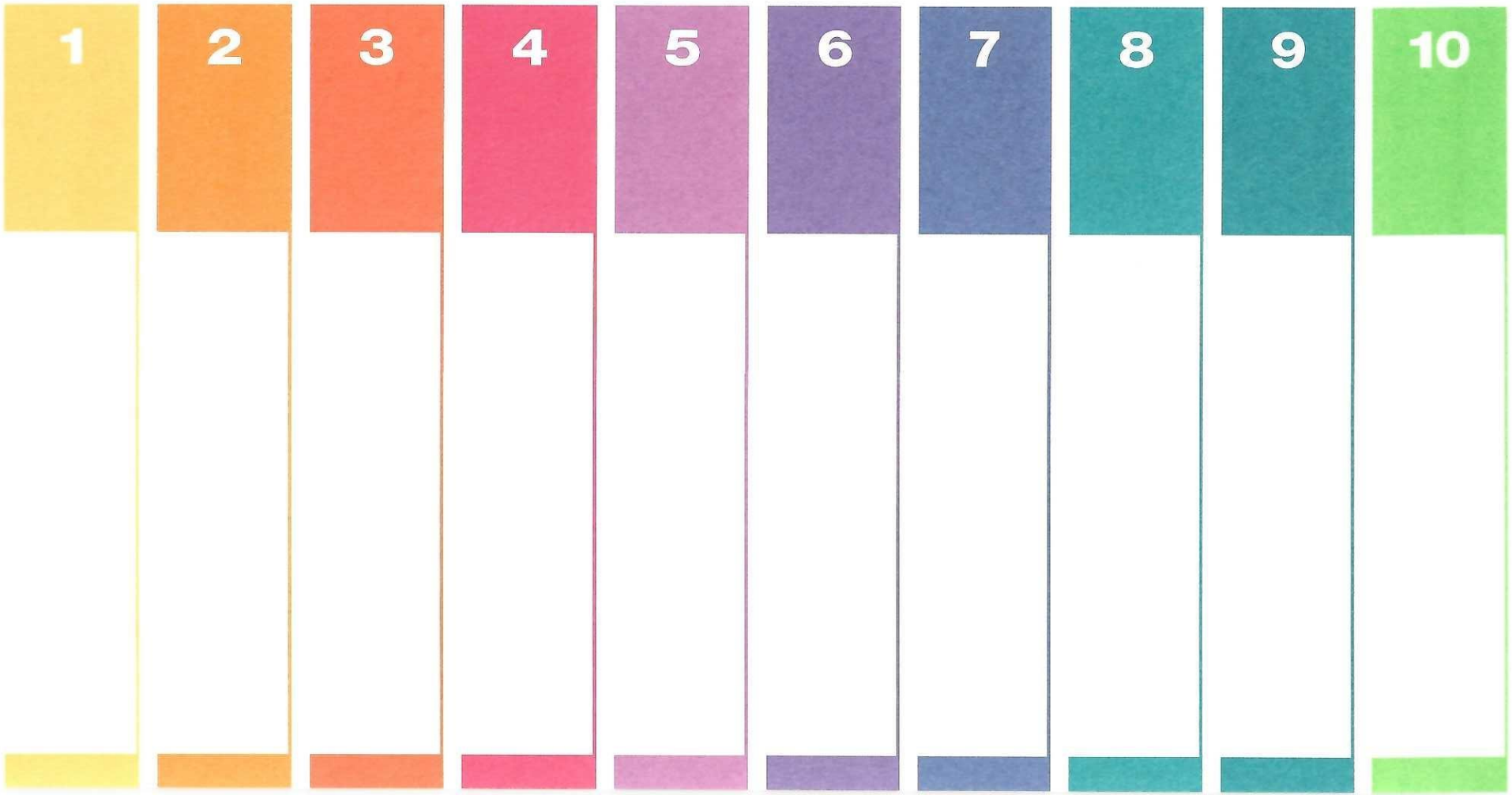
OF

EAST TENNESSEE

American

Viticultural

Area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INTRODUCTION

"I Thrill at Thought of Mountains Grand;
Rolling Green Hills and Fertile Farm Land;
Earth Rich with Stone, Mineral and Ore;
Forests Dense and Wild Flowers Galore;

Powerful Rivers that Bring us Light;
Deep Lakes with Fish and Fowl in Flight;."

Naval Admiral William Porter Lawrence,
From Oh Tennessee, My Tennessee
Official State Poem 1973

This petition is submitted by Patricia McRitchie on behalf of the Appalachian Region Wine Producers Association. This petition seeks the establishment of a viticultural area encompassing all or parts of fourteen counties located in East Tennessee to be known as Nine Lakes of East Tennessee. The proposed viticultural area is located in the Valley and Ridge Province of East Tennessee and is entirely within the Tennessee River Watershed.

The boundaries of this proposed viticultural area encompass approximately 4064.672 square miles (2,601,390 acres). At the present time there are twenty-nine wineries and 32 vineyards with more than 232 acres planted. Vineyards are located in every county of the proposed Nine Lakes of East Tennessee American Viticultural Area (AVA) and wineries are located in all except two of the fourteen counties. Additional new vineyard and winery projects in various stages of development are found throughout the proposed Nine Lakes of East Tennessee AVA. This is a relatively new region for modern commercial winery and vineyard development but grape growing and winemaking have a long and substantial history in the region. This rapidly growing viticultural region anticipates continued and sustained vineyard and winery growth.

This petition is submitted under the authority of 27 CFR Parts 4 and 9, which allow the establishment of definitive viticultural areas. Section 4.25a(e)(1), Title 27 CFR, defines an American viticultural area as a delimited grape-growing region distinguishable by geographical features. These features include climate, soil, topography, and elevation that distinguish the viticultural region from the surrounding areas.

This petition seeks to establish Nine Lakes of East Tennessee as an American viticultural area based on the following:

1. Evidence that the name of the proposed viticultural area, Nine Lakes of East Tennessee, is locally, regionally, and/or nationally known as referring to the area specified in the application.

2. Evidence that the boundaries of the proposed viticultural area are as specified in the application.

3. Evidence of geographical features (climate, soil, physical features) distinguishing the viticultural features of the proposed area from surrounding areas.

4. A description of the specific boundaries of the proposed viticultural area using features found in U.S. Geological Survey (U.S.G.S.) maps.

Copies of the appropriate U.S.G.S. maps with these specific boundaries are provided and the boundaries are prominently marked.

1. EVIDENCE RELATING TO NAME AND EVIDENCE THAT THE BOUNDARIES OF THE VITICULTURAL AREA ARE AS SPECIFIED.

The name Nine Lakes of East Tennessee is locally and regionally known to refer to the boundaries of the viticultural area this petition proposes to establish.

a. Name Evidence

The state of Tennessee is divided into three main regions: East, Middle and West. These divisions are so distinct that they were constitutionally mandated in the early 1900s. The proposed Nine Lakes of East Tennessee AVA is located entirely in East Tennessee. East Tennessee is further divided into three geographic regions.[1] From east to west these regions are: the Blue Ridge Mountains, the Valley and Ridge Province, and the Cumberland Plateau region.[2] The proposed viticultural area is entirely within the Valley and Ridge Province.[3] This area is characterized by very long linear valleys paralleled by ridges, all running in a northeast to southwest direction and elevations between 700' and 1200'.

The Valley and Ridge Province is geographically distinct from both the Cumberland Plateau and the Blue Ridge Mountains. This will be discussed in detail in subsequent sections of this petition. In general, flat-topped mountains and valleys characterize the Cumberland Plateau with elevations ranging from 1500' to over 2000'. The Blue Ridge Mountains are densely forested, with rugged terrain and the highest elevations in the state.

The entire state of Tennessee lies within the drainage of the Mississippi River. The proposed Nine Lakes of East Tennessee AVA lies entirely within the watershed of the Tennessee River or its tributaries.[4] The Tennessee River is formed by the juncture of the Holston and French Broad rivers at Knoxville, within the Nine Lakes of East Tennessee region. The Tennessee flows southwesterly along the Alabama-Mississippi line then cuts

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[1] *See* Figure 1, *Level IV Ecoregions of Tennessee.*

[2] Discover Tennessee: Eastern Tennessee. Accessed 6/21/2019. http://www.southeastdiscovery.com/tennessee-areas.php. The Valley and Ridge Province is also referred to in literature and maps as Ridge and Valley. For consistency this petition will exclusively use "Valley and Ridge". Similarly, Unaka Mountains and Blue Ridge Mountains are used interchangeably. For consistency this petition will use Blue Ridge Mountains.

[3] *See* Map 1, *Geographic Regions of East Tennessee / Nine Lakes of East Tennessee AVA.*

[4] *See* Map 2, *Tennessee River Watershed.* A watershed is a geographic area of land draining water to a shared destination. Watershed boundaries always follow the highest ridgelines around the stream channels and meet at the bottom or lowest point of land where the water flows out of the watershed.

northward across Tennessee into Kentucky. Major tributaries of the Tennessee River included within the Nine Lakes of East Tennessee region include the Clinch, Little Tennessee, Hiawassee, Elk, and Duck.[5]

Also within the Nine Lakes of East Tennessee AVA are nine lakes formed when the Tennessee Valley Authority dammed the rivers. This was done as part of the Tennessee Valley Authority Act enacted in 1933. The purpose of the Act was to resolve issues plaguing the valley such as flooding, reforestation, and electricity production.[6] These lakes gave rise to the name "Nine Lakes" to refer to this area.

The dams of the Tennessee and Cumberland River systems and the lakes so formed, in addition to vastly reducing flood damage have facilitated water transportation, provided abundant low cost hydroelectric power and created extensive recreation areas. Fishing, boating, swimming and camping along the many lakes, together with the several state and national parks, have made tourism a major industry in the region.

It has also fostered a burgeoning vineyard and winery industry. At the present time there are 232 acres of vineyards and 29 wineries in the proposed Nine Lakes of East Tennessee AVA. There are vineyards in every county in the proposed AVA and wineries in all but two of the fourteen counties.[7]

County	Vineyards	Wineries	Varietals	Acreage
Anderson	2	0	***Labrusca*** - Concord	3
			Vinifera - Chardonnay | Riesling	2
Blount	3	4	***Hybrid*** - Chambourcin | Seyval Blanc	7
			Labrusca - Concord	4
			Muscadine	8
			Vinifera - Cabernet Sauvignon	1
Campbell	1	1	***Vinifera*** - Cabernet Franc	1
Claiborne	1	2	***Aestivalis*** - Norton	2.5
			Hybrid - Cayuga | Chambourcin	5
			Vinifera - Cabernet Franc | Cabernet Sauvignon | Chardonnay | Muscato	4
Cocke	2	2	***Hybrid*** - Chambourcin | Corot Noir | Noiret | Seyval Blanc	12
			Labrusca - Concord |Niagara	2
			Muscadine	10

[5] "Tennessee River." New World Encyclopedia, November 15, 2015. https://www.newworldencyclopedia.org/entry/Tennessee_River.

[6] "TVA." History. A&E Entertainment, August 3, 2017. https://www.history.com/topics/great-depression/history-of-the-tva.

[7] Data provided by Appalachian Region Wine Producers Association.

Grainger	3	1	***Hybrid*** - Cayuga | Steuben | Traminette	6.05
			Labrusca - Catawba | Campbell Early | Concord | Niagara	5
			Muscadine	2
			Vinifera - Cabernet Franc | Cabernet Sauvignon | Chardonnay | Golden Muscat | Petit Manseng | Riesling | Sangiovese | Touriga	13.95
Hamblen	2	1	***Hybrid*** - Stueben | Traminette	3
			Labrusca - Catawba | Concord	4.5
Jefferson	5	1	***Aestivalis*** - Cynthiana	1
			Hybrid - Chambourcin | Leon Millet | Vidal Blanc	7.5
			Labrusca - Campbell Early | Catawba | Concord |Niagara	8.5
			Muscadine	2
			Vinifera - Cabernet Sauvignon	2
Knox	3	2	***Aestivalis*** - Cynthiana	2
			Labrusca - Concord	4
			Vinifera - Chardonnay | Petit Verdot | Syrah	3
Loudon	2	1	***Hybrid*** - Captivator | Stueben	3
			Labrusca - Catawba | Concord | Fredonia | Niagara | Sunbelt	11
			Muscadine	4
Monroe	5	2	***Labrusca*** - Concord	1
			Muscadine	77
Roane	1	0	***Labrusca*** - Concord	2
Sevier	1	11	***Labrusca*** - Concord	2
Union	1	1	***Hybrid*** - Chambourcin | Traminette	2
			Labrusca - Catawba | Concord	3
			Muscadine	1
TOTALS	32	29		232

Chart 1. Wineries and Grapes of Proposed Nine Lakes of Tennessee AVA

This return to agriculture has historic roots. Agriculture was a driving force in the settlement and development of Tennessee. The vast majority of immigrants to the state of Tennessee during the late eighteenth century and early nineteenth century were in search of a better life and the route to this life was exploitation of the rich farming potential of the region. Tennessee's eastern valleys of the Tennessee and Holston River systems were some of the first areas settled.[8]

European settlers were quick to introduce grape growing and winemaking to Tennessee. In 1880 the Tennessee Department of Agriculture estimated there were 1128

[8] Winters, Donald L. "Agriculture." Tennessee Encyclopedia. Accessed July 2, 2019. https://tennesseeencyclopedia.net/entries/agriculture, October 8, 2017.

acres of grapes growing in the state.[9] However, as in all states, prohibition slowed or halted grape production in Tennessee. The industry rebounded during the later decades of the 20th century. In 1980 the first post-prohibition wineries were licensed and by 2015 Tennessee was estimated to have over 1000 acres of grapes and around 70 wineries.[10] The epicenter of the Tennessee wine industry is in the proposed Nine Lakes of East Tennessee AVA.[11]

Although modern winemaking in the Nine Lakes of East Tennessee region is recent[12] it is an area successfully growing a wide variety of grapes and producing wines expressive of the region. Muscadine, hybrid, vinifera and native grapes are all grown within the proposed AVA.[13] The wineries in the proposed viticultural area have garnered awards for their locally produced wines and are effectively utilizing available information regarding climate, soils, and topography to determine the best sites and varieties for their vineyards. New growers are looking to the region as an area where successful cultivation of a broad variety of wine grapes can successfully be grown.

The proposed Nine Lakes of East Tennessee AVA is located within an area that has historically been known as the Great Valley of East Tennessee (the entire area of the Valley and Ridge Province). However the Great Valley of East Tennessee encompasses a far greater area than that proposed for the Nine Lakes of East Tennessee AVA. It encompasses the southern part of the Valley and Ridge Province as well as parts of the northern part of the Valley and Ridge Province, areas climatically and geographically distinct from the proposed AVA and in some areas unsuitable or unavailable for viticulture. The Nine Lakes of East Tennessee only includes the area around the nine lakes created by the TVA.[14] For these reasons Nine Lakes of East Tennessee is a more appropriate, succinct, and descriptive name for the region.

Use of Nine Lakes of East Tennessee to describe this region, while historically recent, has quickly become the preferred name referring to the area of the proposed

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[9] "Viticulture." Tennessee Department of Agriculture. Accessed July 2, 2019. https://www.tn.gov/agriculture/farms/produce-nursery/viticulture.html.

[10] "Tennessee Wine History." Tennessee Wines, n.d. https://tennesseewines.com/tennessee-wine-history/.

[11] Gaines, Jim. "Tennessee Wine Industry Grows Slowly." Knox News, December 25, 2016. https://www.knoxnews.com/story/money/business/2016/12/25/tennessee-wine-industry-grows-slowly/95445160/.

[12] The first of the modern wineries in the region is the Tennessee Valley Winery established in 1984.

[13] *See* chart above.

[14] *See* Map 3, *Nine Lakes Tourism Map*.

AVA.[15] According to Julie Graham, Executive Director of the Middle East Tourism Council (METTC), "[r]eferences to the "Nine Lakes" of the region ... were used broadly in marketing material by the METTC."[16] In 2014 the METTC, began branding the region as "Nine Lakes of East Tennessee" because the region had become recognized for and strongly associated with its nine lakes.

Nine Lakes of East Tennessee has broad regional support as the name to refer to and market this fast-growing region. Supporting materials are provided in Section 6 of this petition showing use of Nine Lakes to refer to this specific region. It is used by wineries and other organizations in the region for promotion and identification.

b. Boundary Evidence.

The proposed boundaries of the Nine Lakes of East Tennessee AVA include fourteen counties in whole or part that surround the Nine Lakes formed by the TVA dams in 1933. Counties in the Valley and Ridge Province south of the Nine Lakes area are excluded due to geographical and climatic differences as well as the lack of nexus with the name "Nine Lakes". The boundaries to the east include counties bordering the Blue Ridge Mountains but exclude portions of those counties that are part of the Cherokee National Forest or the Great Smoky Mountain National Park. Portions of counties forming the western boundary in the Cumberland Plateau or Cumberland Escarpment are also excluded due to elevation and/or climatic differences. The boundaries to the north and northeast are formed by the state border with Virginia or by the borders of Tennessee counties that lack nexus with the name "Nine Lakes".

The counties included in whole are: Grainger, Hamblen, Jefferson, Knox, Loudon, and Union. Counties that are included in part are: Anderson, Blount, Campbell, Claiborne, Cocke, Monroe, Roane, and Sevier.

County	Sq. Miles	Acreage	Percent in AVA	Sq. Miles in AVA	Acreage in AVA
Anderson	337.521	216013.44	83%	280.14243	179,291.16
Blount	558.571	357485.44	72%	402.1711	257,389.52
Campbell	480.082	307252.48	20%	96.0164	61,450.496
Claiborne	434.295	277948.8	80%	347.436	222,359.04
Cocke	434.421	278029.44	55%	238.932	152,916.19
Grainger	280.355	179427.2	100%	280.355	179,427.2
Hamblen	161.042	103066.88	100%	161.042	103,066.88
Jefferson	273.827	175249.28	100%	273.827	175,249.28
Knox	508.492	325434.88	100%	508.492	325,434.88
Loudon	228.616	146314.24	100%	228.616	146,314.24

[15] *See* Section 6, *Exhibits.*

[16] *See* Exhibit 2, *Letter regarding origin of "Nine Lakes" in the Great Valley of East Tennessee.*

Monroe	635.248	406558.72	49%	311.272	199,213.77
Roane	360.993	231035.52	96%	346.553	221,794.1
Sevier	592.33	379091.2	62%	367.247	235,036.54
Union	223.573	143086.72	100%	223.573	143,086.72
TOTALS				**4064.672**	**2,601,390**

Chart 2. Area of Proposed Nine Lakes of Tennessee

The preceding paragraphs provide evidence that "Nine Lakes" has local and regional name recognition and is a name closely associated with this part of Tennessee.[17] The petitioner acknowledges that because there are other areas of the United States using "Nine Lakes"[18] that it is appropriate and desirable to add the modifier "of East Tennessee" to the proposed name. This name has only been used in conjunction with this region. Other established American viticultural areas such as The Rocks District of Milton-Freewater, Ancient Lakes of the Columbia Valley, Champlain Valley of New York, and Antelope Valley of the California High Desert also use geographical modifiers in such a manner to more precisely describe the viticultural area.

The foregoing is evidence that Nine Lakes of East Tennessee is locally and regionally known as encompassing the area proposed by this petition and is the best and most appropriate name for the proposed viticultural area.

[17] Sites specifically referring to this region are first to appear in a Google search of "Nine Lakes".

[18] Other references to "Nine Lakes" are to Nine Lakes Basin (California), Nine Lakes Project (United Kingdom), Nine Lakes Sport & Marina (Wisconsin), Nine Lakes Baptist Church (Washington). The only references to "Nine Lakes" in the Eastern United States were related to the Nine Lakes area of East Tennessee.

2. Evidence of Geographical Features.

The proposed viticultural area, Nine Lakes of East Tennessee, is distinguishable from the surrounding areas due to geology, soil, elevation, climate, and other physiologic factors as discussed below.

a. ***Geology.***

The proposed Nine Lakes of East Tennessee AVA is located in the Valley and Ridge Province of East Tennessee. Alternating, narrow ridges and valleys characterize the Valley and Ridge Province. This area moves from southwest to northeast from Alabama to New York. It is bounded to the east by the Blue Ridge Mountains and to the west by the Cumberland Plateau.[19]

The rocks and subsequent soils of the Valley and Ridge Province where the Nine Lakes of East Tennessee is located, as well as the Blue Ridge Mountains and Cumberland Plateau regions flanking the Valley and Ridge Province, have origins extending back to the early formation of the earth's continental landmasses.[20]

This geologic history is complex and involves plate tectonics (continental drift, continental collisions, subduction zones, intercontinental deformations) and the whole spectrum of uplifting and erosional wearing down for the entire mountain building cycle. Each of these cycles required several hundred million years during which the ongoing uplift and erosional wearing down processes were constantly active. The erosional cycle gradually reduced land surfaces from mountains to relatively level surfaces, gently sloping toward a depositional basin (ocean/sea) to the east of the mountains. Geological evidence indicates at least three complete tectonic cycles, the last of which (the Alleghanian orogeny) involved a collision and later separation of the Euro-African Plate from the North American Plate that produced a mountain range on the order of the present day Andes Mountains of South America and eventually resulted in the creation of the Atlantic Ocean and the present day plate positions.

During a period of three hundred million years, following the build up of this original Appalachian Mountain system, the forces of weather and erosion have likely removed thousands of meters of rocks with the resulting surfaces of today. Present day mountain peaks provide evidence of the first of three erosional cycles. The ridges of the Blue Ridge Province represent the next erosional cycle. This middle cycle is a significantly older cycle than the third leveling cycle, which is a more substantial erosional cycle.

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[19] *See* Map 1.

[20] *See* Figure 2, *Rock Ages of Tennessee.*

Geologically, the Valley and Ridge Province is very different from the Blue Ridge Mountains and Cumberland Plateau even though it was shaped during many of the same mountain building episodes and all areas rise to above-average elevations.[21] Valley and Ridge rocks are almost entirely sedimentary and were initially deposited during Paleozoic era. During this time, an ocean covered much of eastern North America. This ocean, along with the erosion of bordering landmasses, generated large amounts of sedimentary rock.

The ocean eventually came to a close in the Alleghanian orogeny, as the North American and African protocontinents came together to form Pangea. As the continents collided, the sediment and rock stuck between them had nowhere to go. It was put under stress from the approaching landmass. The folding and fracturing during the late Paleozoic time resulted in the southwest to northeast orientation of the ridges and valleys, which are underlain by respectively resistant and weaker rocks. [22]

The present day Valley and Ridge Province ranges in width from 100 to 30 miles from north to south. The elevations of the Valley range from 750' in the south to 1000' in the north. Ridges can reach up to 1500' with a number of select mountain peaks reaching 3000.[23]

The proposed Nine Lakes of East Tennessee AVA has bedrock consisting of alternating beds of limestone, dolomite, shale, and sandstone of early Paleozoic age. Ridgetops are capped with more resistant carbonate and sandstone layers, and valleys have been eroded into the less resistant shale beds. The narrow river valleys are filled with unconsolidated deposits of clay, silt, sand, and gravel.[24] Although the entire Valley and Ridge Province is fairly homogenous in geologic terms, the proposed AVA is distinct from the areas to the north and south due to elevation and soils. This is discussed in subsequent sections of this petition.

The Blue Ridge Mountains of the Appalachian Foldbelts and the eastern escarpment of the Cumberland Plateau mark the boundaries of this region. The proposed AVA is geologically distinct from the bordering Blue Ridge Mountains and Cumberland Plateau.

The Blue Ridge Mountains are part of the Appalachian Mountain system. The northern mountains are composed of Lower Paleozoic limestone, dolomites and shale with exposures of Precambrian igneous and metamorphic basement rocks such as tuff, rhyolite,

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[21] *See* Map 6, *Geologic Map of Tennessee.*

[22] *See* Figure 3, *Formation of Appalachians. See also* Figure 4. *Geology of Valley and Ridge Appalachians.*

[23] Mitchell, Brooks. "A Look at the Valley and Ridge." Thought Co., February 29, 2019. https://www.thoughtco.com/a-look-at-the-valley-and-ridge-1441241.

[24] *See* Map 7, *Rock Types of Tennessee.*

granite, schist and quartzite. The many formless mountains to the south along the state line are mainly composed of Precambrian sedimentary and metamorphic sandstone, conglomerate, arkose and siltstone. These include the Great Smoky Mountains, part of the Blue Ridge Mountains bordering the proposed Nine Lakes of East Tennessee AVA.[25]

To the west of the proposed AVA, the Cumberland Plateau forms a tableland[26] thirty to fifty-five miles wide and averages from five hundred to over a thousand feet higher than the adjacent Valley and Ridge Province to its east. This elevated tableland is the result of the uplift of highly resistant caprock of Pennsylvanian age sandstone and conglomerate as a result of continental collisions. Conglomeritic sandstone, siltstone, shale, and coal are the major rock types of the Cumberland Plateau. These rocks, from the Paleozoic Era, are of the Pennsylvanian period and are underlain by shales, limestone, and dolomite of the Mississippian period. Deposits of silt, sand, and gravel are in major river valleys and terraces along rivers while the lower slopes of many hills have a thin layer of colluvium.

These geologic differences are also reflected in the hydrogeology of the three regions.[27] In the Valley and Ridge, aquifers are composed for the most part of carbonate rocks that are Cambrian and Ordovician in age. They are located predominantly in valleys and rarely in broadly dissected ridges. There are aquifers under approximately 50% of the entire Valley and Ridge Province and in similar proportion under the proposed Nine Lakes of East Tennessee AVA.

In the Blue Ridge Province the aquifers are in dense, almost impermeable bedrock that yields water primarily through fractures. These are crystalline-rock and undifferentiated sedimentary-rock aquifers extending over approximately 86 percent of the region. The Cumberland Plateau aquifers are almost exclusively in Pennsylvanian sandstones and conglomerates.

The following chart summarizes the different rock types found in the proposed Nine Lakes AVA and in the surrounding regions.

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[25]Smith, Kevin E. "Physiography of Tennessee." Tennessee Archeology Net. Accessed February 4, 2019. https://web.archive.org/web/20071106142349/http://mtsu.edu/~kesmith/TNARCHNET/physio.html .

[26] A tableland, or plateau, is an area of a highland, usually consisting of relatively flat terrain, that is raised significantly above the surrounding area, often with one or more sides with deep hills. Plateaus can be formed by a number of processes, including upwelling of volcanic magma, extrusion of lava, and erosion by water and glaciers. Plateaus are classified according to their surrounding environment as intermontane, piedmont, or continental. Some plateaus have a small flat top while others have wide ones.

[27] *See* Map 8. *Hydrogeology.* Hydrogeology is the study of how groundwater moves and is distributed through the soils and rocks.

	ECOREGION	GEOLOGY
In AVA	**Valley and Ridge Province**	
	Southern Limestone / Dolomite Valleys and Low Rolling Hills	Quaternary charty clay solution residuum, Ordovician dolomite and limestone, charty in places
	Southern Shale Valleys	Quaternary sandy shaly decomposition residuum, Ordovician and Cambrian shale, limestone, siltstone
	Southern Sandstone Ridges	Quaternary quartzite-block loamy colluvium; Ordovician, Silurian, Devonian and Mississippian sandstone, shale, siltstone, conglomerate
	Southern Dissected Ridges and Knobs	Quaternary sandy shaly decomposition residuum, Ordovician and Cambrian shale, limestone, siltstone
E/NE	**Blue Ridge Province**	
	Southern Sedimentary Ridges	Quaternary sandy shaly colluvium; Cambrian shale, sandstone, siltstone, quartzite, conglomerate
	Southern Metasedimentary Mountains	Quaternary bouldery colluvium; Precambrian sandstone, siltstone, shale, conglomerate, quartzite, greywacke, arkose, phyllite, slate, and schist
W/NW	**Cumberland Plateau**	
	Cumberland Plateau	Quaternary sandy decomposition residuum; Pennsylvanian conglomerate, sandstone, siltstone, shale
	Plateau Escarpment	Quaternary colluvium with huge blocks; Pennsylvanian sandstone, siltstone, shale, conglomerate; Mississippian limestone, sandstone, shale

Chart 3. Rocks of the Proposed Nine Lakes of East Tennessee and Surrounding Area

b. ***Soils.***[28]

Formation of the soils of the proposed Nine Lakes of East Tennessee AVA was dependent on a number of factors including topography, geology, climate, vegetation, elevation and time. The soils are derived mainly from sedimentary rocks, with limestone, dolomite, and shale common in the valleys and sandstone and conglomerate on most ridges.

The predominant soil order of this region is Ultisols. These soils are broadly characterized as "strongly leached, acid forest soils with low native fertility."[29] They have a clay-enriched subsoil. These are the red-clay soils that predominate in the southeastern United States. Within the proposed Nine Lakes of East Tennessee AVA the predominant suborders of Ultisols are Udults (more or less freely drained and relatively humus poor), and to a lesser extent, Udepts (freely drained and humus poor in more humid locations). The soils on stable positions on ridges and in valleys have argillic horizons and are dominantly Udupts especially Hapludults and Paleudults. The soils on steep slopes are commonly Dystrudepts. The soils over cherty limestone often are gravelly or stony.

Ultisols have an udic soil moisture regime[30] and predominantly thermic soil temperature regime.[31] They range from shallow on sandstone and shale ridges to very deep in valleys and on large limestone formations.[32]

Within the proposed viticultural are there are 18 main different soil series. There is some overlap with surrounding areas but for the most part the soils within the proposed viticultural area are distinct from those of the surrounding area.[33]

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[28] The soils information was compiled from the published soil surveys of the included counties in the proposed Nine Lakes of East Tennessee AVA. See Bibliography for complete list.

[29] "Ultisols." The Twelve Soil Orders. University of Idaho - College of Agricultural and Life Sciences. Accessed July 3, 2019. https://www.uidaho.edu/cals/soil-orders/ultisols.

[30] The udic moisture regime is common to soils of humid climates which have well-distributed rainfall, or which have enough rain in summer so that the amount of stored moisture plus rainfall is approximately equal to, or exceeds, the amount of evapotranspiration. Water moves down through the soil at some time in most years.

[31] The thermic soil temperature regime has an average annual soil temperature, at a depth of 20 inches, of 59°F to 72°F. This thermic area closely mirrors the Valley and Ridge Province with some exclusion to the north. The higher elevation provinces to the east and west of the proposed AVA are in the mesic temperature regime, which is in the 47°F to 59°F range.

[32] "Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin." NRCS MRLA Explorer: Custom Reporter. National Conservation Resource Service/Penn State University CEI. Accessed October 10, 2018. http://wa.cei.psu.edu/MLRA/pdf/rep637068382840903970.pdf, p 3.

Paleudults (Decatur, Dewey, and Fullerton series, commonly cherty) are in the many extensive areas underlain by limestone that traverse the Valley and Ridge Province and the Nine Lakes of East Tennessee AVA from southwest to northeast. Hapludults (especially Townley series) are dominant in valleys underlain by acid shale. Steep, shallow or moderately deep, shaly and stony Dystrudepts (especially Wallen and Montevallo series) are on the sides of steep ridges. Shallow, shaly Eutrudepts (Dandridge series) are in areas of the shale formation extending along the eastern side of the Valley and Ridge and far eastern area of proposed AVA. Eutrudepts (Hamblen, Sullivan, and Pettyjon series) are on narrow bottomland.[34]

The Blue Ridge Mountains are southwest to northeast trending mountains and are strongly dissected. Elevations generally range from 900 to 3600 feet. The Blue Ridge Mountains bordering the proposed AVA contains the highest peaks in the eastern United States, including several over 6000'. They are generally rounded, and a mantle of saprolite commonly occurs over harder rocks forming the core of the mountains. Bare cliffs and peaks are rare. Soil creep is common on steep slopes, and colluvium is a common parent material on lower hillslope segments and in narrow valleys. Soils are commonly well drained and acidic and can be shallow to very deep, especially in valley bottoms or the base of mountain. They have an udic soil moisture regime and a mesic soil temperature regime or even frigid[35] at higher elevations (above 4200').

The soils of the Blue Ridge are predominantly Inceptisols[36] and to a significantly lesser extent Ultisols, commonly found on gentle slopes at lower elevations. Generally, the texture of Blue Ridge soils is clayey or loamy. In areas at elevations of less than 3,500 feet

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[33] *See* Figure 5, *Soils of the Valley and Ridge Appalachians*, and Figure 6, *Major Soils Series of Nine Lakes of East Tennessee AVA.*

[34] "Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin." NRCS MRLA Explorer: Custom Reporter. National Conservation Resources Service/Penn State University CEI. Accessed October 10, 2018. http://wa.cei.psu.edu/MLRA/pdf/rep637068387445202091.pdf, p 3.

[35] Mesic soils have mean annual soil temperatures 46.4°F or higher but lower than 59°F, and differences between mean summer (June, July, and August) and mean winter (December, January, February) soil temperatures is more than 42.8°F at either a depth of 19.7" from the soil surface or at a densic, lithic, or paralithic contact, whichever is shallower. Frigid soils have mean annual summer temperatures lower than 46.4°F and the difference between mean summer and mean winter soil temperatures is more than 42.8°F either at a depth of 19.7" from the soil surface or at a densic, lithic, or paralithic contact, whichever is shallower.

[36] Inceptisols exhibit a moderate degree of soil development and lack significant clay accumulation in the subsoil. They occur over a wide range of parent materials and climatic conditions, and thus have a wide range of characteristics. They commonly are found either with underlying weathering-resistant parent material (for example, quartzite or siliceous sandstone) or in topographic settings conducive to soil erosion or waterlogging.

(1,065 meters), the soils on uplands generally are red, fine-loamy or fine Typic Hapludults (Evard, Junaluska, and Hayesville series). Humic Hapludults (Trimont and Snowbird series) are on north and east aspects. Soils that formed in colluvium in coves are Typic Dystrudepts (Tate, Greenlee, and Northcove series), Typic Hapludults (Lonon and Keener series), or Humic Hapludults (Saunook and Thunder series).

At elevations between 3,500 and 4,200 feet (1,065 and 1,280 meters), the soils on uplands generally are brown, fine-loamy or coarse-loamy Dystrudepts. Humic Dystrudepts (Plott, Porters, and Cheoah series) are common on north and east aspects, and Typic Dystrudepts (Edneyville, Chestnut, Ditney, and Stecoah series) are common on south and west aspects. Soils that formed in colluvium in coves are Humic Dystrudepts (Cullasaja, Spivey, Tuckasegee, and Santeetlah series) or Humic Hapludults (Saunook and Thunder series).

In areas at elevations above 4,200 feet (1,280 meters), the soils on uplands generally are brown, fine-loamy or coarse-loamy Humic Dystrudepts with a frigid soil temperature regime (Burton, Oconaluftee, and Breakneck series). Soils that formed in colluvium also are Humic Dystrudepts (Balsam and Chiltoskie series). Soils that formed in alluvium vary with stream gradient, energy, and entrenchment into the valley floor. In the upper reaches of watersheds where flood plains are narrow, the soils are Oxyaquic and Fluvaquentic Dystrudepts (Dellwood, Reddies, and Cullowhee series). In the lower and broader river valleys, Udipsamments (Biltmore series) and coarse-loamy Dystrudepts (Rosman series) are in areas closest to rivers and streams on flood plains. Humaquepts (Ela, Nikwasi, and Toxaway series) are in low-lying, frequently flooded or ponded areas. Ultisols are most common on the more stable stream terraces. Fine-loamy Aquic and Typic Hapludults (Dillard and Statler series) are on low terraces, and fine Typic Hapludults (Braddock and Unison series) are on high terraces.[37]

West of the Valley and Ridge Region and roughly forming the western boundary of the Nine Lakes of East Tennessee AVA is the Cumberland Escarpment and Cumberland Plateau. This area is underlain over much of its area by nearly horizontal, Mississippian and Pennsylvanian sandstone and shale beds. Drainage is dendritic and winding narrow-crested sandstone ridges and deep narrow valleys are common. Much of this highly dissected landscape is a series of long steep side slopes from narrow ridgetops to narrow floodplains. Soils are moderately-deep to deep, acidic, and have low base saturation. Kaolinite is abundant in the clay separate. Common great groups on stable positions include Hapludults and Fragiudults while Dystrudepts dominate side slopes. Lithic subgroups and skeletal families are common.

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[37] "Land Resource Regions and Major Land Resource Areas of the United States, the Caribbean, and the Pacific Basin." NRCS MRLA Explorer: Custom Reporter. Natural Conservation Resources Service/Penn State University CEI. Accessed October 10, 2018. http://wa.cei.psu.edu/MLRA/pdf/rep637068391445576875.pdf, pp 6-7.

The soils of the Cumberland Plateau are Inceptisols and Ultisols. The most prevalent soil sub-orders are Udults and, to a lesser extent, Udepts. They have a thermic or mesic soil temperature regime and an udic soil moisture regime; are dominantly well drained, strongly acid, and highly leached; and have a clay-enriched subsoil. They are medium textured to fine textured. They range from shallow on sandstone and shale ridges to very deep in valleys and on large limestone formations.

Hapludults (Shelocta, Jefferson, Clymer, Gilpin Latham, Lily, and Hartsells series) and Fragiudults (Tilsit series) on side slopes and ridges formed in loamy hillside colluvium or residuum. Medium textured, very gravelly Dystrochrepts (Dekalb, Berks, and Calvin series) are on upper side slopes and ridges. Loamy Dystrochrepts (Pope series) and Fluvaquents (Bonnie series) are on flood plains. Loamy Hapludults (Allegheny series) and Fragiudults (Monongahela series) are on stream terraces.

In summary, the soils of the proposed Nine Lakes of East Tennessee AVA are Ultisols formed from softer sedimentary rock than surrounding areas to the east/northeast in the Blue Ridge Province and west/northwest in the Cumberland Plateau. The ridges are predominantly sandstone and valley floors are limestone, shale and other sedimentary deposits. The underlying rocks that are so important to soil formation differ from those of regions to the east and west. Most of the soils in the proposed Nine Lakes of East Tennessee AVA are acidic and low in natural fertility. Timely applications of fertilizer and lime are important in maximizing any crop yield. Recommended best management practices will minimize soil erosion and contribute to crop yield and contribute to the support of continued growth in the vineyard industry.

c. ***Elevation.***[38]

As discussed in prior sections, Tennessee is composed of three major physiographic regions: West, Middle and East Tennessee. Each of these regions is further divided into three regions. East Tennessee is divided, from west to east, into the Cumberland Plateau, Valley and Ridge Province, and Blue Ridge Mountains.[39] These different regions each are distinct on the basis of elevation.

The proposed Nine Lakes of East Tennessee AVA is exclusively in the Valley and Ridge Province of East Tennessee in the counties surrounding nine TVA lakes and the city of Knoxville. Elevations in the Valley and Ridge Province range between 1100 to 1500' in the ridges and 700 to 1000' in the valleys. The highest elevations in the ridges and valleys are predominantly in the northern parts of the Valley and Ridge Province outside the proposed boundaries of the Nine Lakes of East Tennessee AVA.

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[38] *See* Figure 7, *Rivers and Topography with Elevations*, Figure 8, *Topography of Valley and Ridge*, and Figure 9, *Terrain of Valley and Ridge Appalachians*.

[39] *See* Map 1, *Tennessee Geographic Regions*.

Within the Valley and Ridge Province, the proposed AVA is slightly southwest of those valleys and ridges with the highest elevations and northeast of the valleys and ridges with lower average elevations. This difference in elevations has an impact on climate and is discussed in the following section.

Even greater differences in elevation are present in the regions west and east of the proposed Nine Lakes of East Tennessee AVA. To the east are the Blue Ridge Mountains. Here the elevations range from 1000' to 6643' at Clingman's Dome, Tennessee's highest point. Average elevations in the Blue Ridge Mountains are nearly 5000'. Parts of counties that include the Blue Ridge Mountains and higher elevations are excluded.

To the west of the proposed AVA is the Cumberland Plateau. The eastern edge, the Cumberland Escarpment, is 750' above the Valley and Ridge Province lowlands and features rugged terrain with steep slopes.[40] This sharp topographic break forms a natural western boundary for the proposed Nine Lakes of East Tennessee AVA that follows in part the 500 foot contour line at the base of the Cumberland Escarpment. The average elevations of the Cumberland Plateau are between 1500' and 1800'. The higher elevations of the regions to the east and west of the proposed AVA affect climate and are discussed in detail in the following section.

d. ***Climate.*** [41]

Climate data was provided by the PRISM climate data mapping system.[42] Arguably, climate has the largest impact on grapegrowing. The growing season length and temperatures have significant impact on fruit ripening and quality.[43] The Nine Lakes of East Tennessee AVA has distinct climatic conditions that uniquely influence viticulture in the region.

Climate in Tennessee is greatly affected by its highly varied topography. This is abundantly illustrated by comparing climatic conditions in the proposed viticultural area to those of the regions surrounding it.

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[40] *See* Map 1 and Figures 8 and 9.

[41] *See* Section 7, Climate Tables 1-10.

[42] The PRISM Climate Group gathers climate observations from a wide range of monitoring networks including weather stations, global positioning systems and remote sensing technologies. Other factors used include elevation, longitude and slope angles. Climate normals datasets used in this petition were from the most recent available data, 1981-2010.

[43] *See* Jones, G. (2015, August 12). Climate, Grapes, and Wine - Terroir and the Importance of Climate to Winegrape Production. Retrieved April 21, 2019, from https://www.guildsomm.com/public_content/features/articles/b/gregory_jones/posts/climate-grapes-and-wine.

Twelve weather stations located within the proposed Nine Lakes of East Tennessee AVA provide data for the proposed AVA[44]. This data was compared to data from sixteen weather stations located in four cardinal or primary intercardinal directions outside the proposed Nine Lakes of East Tennessee AVA. Distance of weather station from boundaries of the proposed AVA is in Table 1.

1. Temperature.[45]

The impact of topography is significant with temperature variations directly correlated to elevation. Increases in elevation have a concomitant decrease in temperature, on average 3°F per 1000' elevation gain. Generally, within the proposed Nine Lakes of East Tennessee AVA, the temperatures increase from northeast to southwest. Directly south of the proposed AVA the temperatures are higher and, as discussed in the preceding section on elevation, the elevations are lower than within the proposed AVA. In all other directions the temperatures are lower and mean elevation is higher.[46]

The Nine Lakes of East Tennessee has average maximum annual temperatures of 69.1°F and average minimum annual temperatures of 45.4°F. The area to the northeast has average maximum temperatures of 67.2°F and average minimum annual temperatures of 43.5°F. The area east of the Nine Lakes of East Tennessee has an average maximum temperature of 60.2°F and an average minimum annual temperature of 38.5°F. The area to the south has an average maximum annual temperature of 71.1°F and average minimum annual temperatures of 48.5°F. To the southwest the average maximum annual temperature is 66.6°F and average minimum annual temperature is 47.1°F. To the west the average maximum annual temperature is 68.4°F and average minimum annual temperature is 46°F. Finally, the area to the northwest has an average maximum annual temperature of 66.2°F and average minimum annual temperatures of 44°F.

In general, the Nine Lakes of East Tennessee region is warmer than all surrounding regions with the exception of that to the south. This is due to the influence of elevation and the moderating influences of the Cumberland Plateau and Blue Ridge Mountains. These influences are less pronounced south of the proposed AVA in the southern Valley and Ridge region.

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[44] *See* Table 1, *Weather Stations and Locations.*

[45] *See* Table 2, *Maximum Temperatures*, Table 3, *Minimum Temperatures*, and Table 4, *Growing Season Mean Temperatures.*

[46] *See* Table 10, *Data Summary.*

2. Frost-Free Season / Growing Season.[47]

The proposed Nine Lakes of East Tennessee AVA enjoys an average growing season of 213 days. It is a longer growing season than the regions to the north, east, and west and shorter than the growing season to the south. This can be directly correlated to elevation. Areas with higher elevations than all except the high ridges of the proposed Nine Lakes of East Tennessee AVA region have shorter growing seasons.

3. Heat Summation.[48]

Using Amerine and Winkler heat summation definitions,[49] the proposed viticultural area ranges from climatic regions III to V[50]. This variation is directly correlated to elevation. Climate data from weather stations located in the valleys of the region is without exception warmer than that from weather stations located on ridges. The area to the northwest is predominantly in climatic region III and to the west is in climatic region IV. The region to the east is in climatic region III with some higher elevations in region II. The region to the south, also in region V, contains over 300 more heat summation units.

Location	Growing Season	Growing Degree Days (Mean)	Climate Region	Plant Hardiness Zone
In AVA	212	3837	IV	7a
Northeast	202	3374	III	6b
East	190	1905	II	6b
South	230	4323	V	7b
Southwest	227	3733	IV	7a
West	213	3804	IV	6b
Northwest	202	3329	III	6b

Chart 4. Winkler Heat Summation

[47] *See* Table 5, *Frost-Free Growing Season* and Table 6, *Frost-Free Growing Season Mean*; *See also* Figure 10, *Median Last 28°F Freeze Southeast United States* and Figure 11, *Median First 28°F Freeze Southeast United States*.

[48] *See* Table 7, *Growing Degree Days/Heat Summation*.

[49] Winkler, A.J., Cook, James A., Kliewer, W.M., and Lider, Lloyd A., General Viticulture, (Berkeley, CA: University of California Press, 1974): pp 61-64. The Winkler classification system divides geographical areas into five zones based on growing degree days using a base of 50°F, the minimum temperature required for grapevine growth. Climate Zone I is the coolest and Climate Zone V is the warmest.

[50] The exceptions to this are two weather stations located near the eastern boundaries of the proposed Nine Lake of East Tennessee AVA at elevations higher than the average elevation of the AVA.

4. Hardiness Zone.

The proposed Nine Lakes of East Tennessee AVA is in Zone 7a of the USDA Hardiness Zone Map. [51] The immediately surrounding areas transition to Zone 6b to the East and West and Zone 7b to the South. Zone 7a is well suited for growing a variety of vinifera and hybrid wine grapes.[52] For example, North Carolina's Yadkin Valley and the Columbia Valley viticultural area in Washington State are also located in Zone 7a.

This is further supported by the location of the Nine Lakes of East Tennessee region in the warm temperate latitude between 35°18'30.245" and 36°36'0.339" N.[53] This latitude is well-suited to growing a wide variety of wine grapes, including vinifera, hybrid, native and muscadine varietals which are all currently growing in the proposed AVA.

5. Precipitation.[54]

Much of the moisture falling as rain in Tennessee comes from the Gulf of Mexico. There is a gradual decrease in precipitation from south to north but the effects of topography largely mitigate this effect especially in the Valley and Ridge region of Tennessee.[55] The Cumberland Plateau to the west/northwest and the Blue Ridge Mountains to the east/northeast both serve to shield the Valley and Ridge region from rain. While the Cumberland Plateau averages 53-58" of rain on average, the Valley and Ridge region ranges from 40-45" in the north to 50-55" in the south. Average rainfall in the proposed AVA falls within this 40-50" average. To the east of the proposed AVA are the Blue Ridge Mountains which have the highest average annual rainfall in the state with over 80" of rain.[56] The diminished rainfall in the Valley and Ridge Province in general may be partially due to the rain shadow effect of the Blue Ridge Mountains.[57]

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[51] *See* Figure 12, *Plant Hardiness Map of Tennessee.*

[52] *See* Grapevine Characteristics Chart. (n.d.). Retrieved April 24, 2019, from https://doubleavineyards.com/news/app/uploads/sites/2/2017/07/Grapevine-Characteristics-Chart.pdf.

[53] *See* Section 10, U.S.G.S. Maps.

[54] *See* Table 8, *Precipitation*, and Table 9, *Snowfall. See also* Figure 13, *Tennessee Annual Average Precipitation*

[55] Ambient Air Monitoring Plan. (n.d.). Retrieved October 3, 2018, from https://www3.epa.gov/ttnamti1/files/networkplans/TNPlan2010.pdf, p 7.

[56] Synopses of Tennessee climate provided by University of Tennessee in Climate of Tennessee. (n.d.). Retrieved October 3, 2018, from https://ag.tennessee.edu/climate/Documents/Climate of TN.pdf, pp 1-3.

[57] *See* Figure 14, *Rain Shadow.*

Precipitation during the growing season and in winter[58] follows the same basic pattern with the proposed Nine Lakes of East Tennessee AVA having less precipitation than all areas except to the Northeast and South during the growing season and less snowfall than all areas except those to South and Southwest.

In general, the Nine Lakes of East Tennessee receives less precipitation in the form of rainfall than nearly all the surrounding areas. It receives much less snowfall than the areas to the west and the north and slightly more snowfall than the region to the south.

6. Climate Summary.

The proposed Nine Lakes of East Tennessee AVA is warmer and enjoys less precipitation than the surrounding regions. This is largely due to the effects of topography, especially elevation. The growing season and frost-free dates fall within the range for cultivation of a variety of wine grapes.[59] The growing season is longer than all areas to the north an east and shorter than the areas to the south. The hardiness zone differs from areas to the north, east, and west. The foregoing evidence supports the proposition that the Nine Lakes of East Tennessee possesses climatic conditions distinguishing it from the surrounding areas.

All of the geographical factors discussed are evidence that the proposed Nine Lakes of East Tennessee is unique and distinct from the surrounding regions

[58] The growing season is from April through October. Winter is December, January and February.

[59] An analysis was made by North Carolina State University using data such as elevation, climate, and soils that divided North Carolina into four zones. The Nine Lakes of East Tennessee region is roughly analogous to Zones 2 or 3 in North Carolina, areas determined by the analysis to be "best" for vinifera and hybrids or "good" for vinifera, hybrids and Muscadines. In comparison, grapes of any type are not recommended in the high mountain areas to the east of the Nine Lakes of East Tennessee while areas to the west of the Nine Lakes of East Tennessee are considered "good" for vinifera, hybrids and Muscadines.

3. Description of Proposed Boundaries.

Nine Lakes of East Tennessee

The area of the proposed Nine Lakes of East Tennessee AVA encompasses approximately 4064.67 square miles (260,139 acres) consisting of all or parts of fourteen Tennessee counties: Anderson, Blount, Campbell, Claiborne, Cocke, Grainger, Hamblen, Jefferson, Knox, Loudon, Monroe, Roane, Sevier, and Union.

COUNTY	SQ. MILES	ACREAGE
Anderson	280.14	179,291.16
Blount	402.17	257,389.52
Campbell	96.02	61,540.5
Claiborne	347.44	222,359.04
Cocke	238.93	152,916.19
Grainger	280.36	179,427.2
Hamblen	161.04	103,066.88
Jefferson	272.83	175,249.28
Knox	508.49	325,434.88
Loudon	228.62	146,314.24
Monroe	311.27	199,213.77
Roane	346.55	221,794.1
Sevier	367.24	235,036.54
Union	223.57	143,086.72

The subject area is shown within the outlined perimeter on the included 1:100,000 metric scale topographic maps. This series was produced by the Tennessee Valley Authority and the U.S.G.S. The following maps are included:

NAME	MAP NUMBER	CONTOUR INTERVAL	DATE
Middlesboro	N3630-8300	50 meters	1977
Morristown	N3600-W8300	50 meters	1981
Knoxville	35083-E1-TN-100	50 meters	1983
Oak Ridge	N3600-W8400	50 meters	1979
Watts Bar Lake	N3530-W8400	20 meters	1981
Cleveland	N3500 – W8400	20 meters	1981

Each whole map is a 30 x 60 minute quadrangle showing:

- Contours and topographic features;
- Highways, roads, and other man-made features;
- Water features;
- Woodland areas; and
- Geographic names.

The perimeter uses both physiographic and geographic features. All points used are identifiable on the enclosed U.S.G.S. maps.

The actual proposed Nine Lakes of East Tennessee AVA perimeter is further defined by approximate mileage between points, compass bearings and/or straight line distances as determined by a map gauge, 1:100,000 metric straight-edge scale, and protractor. Items of definition for the perimeter used point-to-point, contour lines, national park boundaries, US and TN highways and roads, and county lines to effectively define the perimeter.

The numbers on the text below correlate with the numbered red dots on the map, one number for each identified point.

(1) On the Middlesboro map, begin at the intersection of Hancock and Claiborne counties with the Virginia state line. Follow the Virginia-Tennessee state line west for 16.3 km/10.13 miles to the boundary of the Cumberland Gap National Historical Park (CGNHP).

(2) Follow the CGNHP boundary south approximately 6.7 km/4.16 miles.

(3) Turn northwest and proceed 1 km/.62 miles to the intersection of the CGNHP boundary and the 500-foot contour line, southeast of Powell Mountain.

(4) Proceed southeasterly along the meandering 500-foot contour line for approximately 18 km/11.18 miles onto the Morristown map.

(5) Continue on the 500-foot contour line for approximately 11 km/6.84 miles to the intersection of Claiborne and Campbell counties.

(6) Proceed into Campbell county in a westerly/southwesterly direction along the meandering 500-foot contour line for approximately 5.7 km/3.54 miles onto the Oak Ridge map.

(7) Proceed west on the 500-foot contour line for approximately 14 km/8.7 miles to the point where the contour line turns sharply northwest.

(8) Proceed southwest in a straight line approximately .8 km/.49 miles over Highway 25W to the 500-foot contour line.

(9) Continue west along the 500-foot contour line approximately 12 km/7.46 miles to its intersection with Interstate 75.

(10) Proceed south 90 degrees in a straight line for approximately 10.2 km/6.34 miles to the intersection of the Campbell and Anderson county lines.

(11) Follow the Campbell/Anderson county line south approximately 10.1 km/6.28 miles to a point on the county line approximately 3.9 km/2.42 miles south of the marked Radio Tower.

(12) Proceed southwest 43 degrees in a straight line for 14.9 km/9.26 miles to the intersection of Anderson and Morgan counties.

(13) Continue southeast for approximately 9 km/5.59 miles along the Anderson/Morgan county line to the intersection of Anderson, Morgan, and Roane counties.

(14) Turn in a southwesterly direction and follow the Roane county line approximately 9.1 km/5.65 miles onto the Watts Bar Lake map.

(15) Proceed southwest along the Morgan/Roane county line to the intersection of Morgan, Roane, and Cumberland counties.

(16) Continue southwest 64 degrees in a straight line for approximately 14.2 km/8.82 miles to the point of intersection of the Roane and Rhea county line with State Road 29.

(17) Proceed in a southerly direction approximately 9.8 km/5.47 miles along the Roane/Rhea county line to the point where Roane, Rhea, and Meigs counties meet.

(18) Follow the Roane/Meigs county line south/southeast to the point of intersection of the Roane, Meigs, and McMinn county lines.

(19) Proceed east 2.9 km/1.8 miles following the Roane/McMinn county line to the intersection of Roane, McMinn, and Loudon counties.

(20) Proceed south then east on the Loudon/McMinn county line to the intersection of Loudon, McMinn, and Monroe counties.

(21) Proceed south on the McMinn/Monroe county line approximately 17 km/10.56 miles onto the Cleveland County map.

(22) Continue south/southeast approximately 22 km/13.67 miles to the intersection of the McMinn/Monroe county line with State Road 39.

(23) Proceed southeast on State Road 39 approximately 4.9 km/3.04 miles to the intersection with the boundary line of Cherokee National Forest (CNF). The proposed boundary of the AVA follows the northern boundary of the CNF with numbered guiding points.

(24) Follow the boundary line of the CNF in a south then southwest direction approximately 6.1 km/3.79 miles.

(25) Continue northeast approximately 32 km/19.88 miles following the meandering CNF boundary line past guiding points 26-29 and onto the Watts Bar Lake map.

(26) Continue along CNF boundary.

(27) Continue along CNF boundary.

(28) Continue along CNF boundary.

(29) Continue along CNF boundary line onto the Watts Bar Lake map.

(30) Proceed northeast approximately 9.2 km/5.72 miles on the meandering CNF boundary line, located in Tellico Lake, to the shore of Tellico Lake.

(31) Continue east along the boundary line of the CNF for approximately 5.6 km/3.48 miles.

(32) Proceed on the CNF boundary line as it meanders east through Tellico Lake for approximately 19.1 km/11.87 miles, crosses the county line into Blount County, and continues onto the Knoxville map.

(33) Proceed 90 degrees north approximately 1500' to join the boundary line of the Great Smoky Mountains National Park (GSMNP).

(34) Continue northwest along the GSMNP boundary line for approximately 22.8 km/14.17 miles.

(35) Turn southeast and continue along the GSMNP boundary line for approximately 8 km/4.97 miles.

(36) Turn northeast and continue along the GSMNP boundary line for approximately 13.2 km/8.2 miles to the intersection of the GSMNP boundary line and the Blount/Sevier county line.

(37) Proceed east along the GSMNP boundary line for 39 km/24.23 miles to the intersection of the GSMNP boundary line and the Sevier/Cocke county line.

(38) Proceed northeast 57 degrees in a straight line for 9.9 km/6.15 miles to the intersection of the GSMNP boundary line and US 321/State Road 32.

(39) Turn east and proceed 3.2 km/1.99 miles along the CNF boundary line.

(40) Turn north and proceed 4.8 km/2.98 miles along the CNF boundary line, to a point near the intersection of Interstate 40 and US 321.

(41) Proceed slightly northeast for 5 km/3.12 miles to the intersection of the CNF boundary line and State Road 73.

(42) Proceed 48 degrees northwest in a straight line for 14.8 km/9.2 miles onto the Morristown map.

(43) Continue 48 degrees northwest in a straight line for 6.7 km to the Cocke/Greene county line.

(44) Proceed northwest along the Cocke/Greene county line to the point where Cocke, Greene, and Hamblen counties meet.

(45) Turn northeast along the Greene/Hamblen county line and proceed to the point where Greene, Hamblen, and Hawkins counties meet.

(46) Turn northwest along the Hawkins/Hamblen county line and proceed to the point where Hamblen, Hawkins, and Grainger counties meet.

(47) Proceed north along the Hawkins/Grainger county line and proceed to the point where Hawkins, Grainger, and Hancock counties meet.

(48) Turn west and proceed along the Grainger/Hancock county line to the point where Grainger, Hancock, and Claiborne counties meet.

(49) Proceed north along the Hancock/Claiborne county line for approximately 13.1 km/8.14 miles onto the Middlesboro map.

(50) Continue north/northwest along the Hancock/Claiborne county line for approximately 13.7 km/8.51 miles to the point where Hancock and Claiborne counties meet at the Virginia state line to Point 1, the origin point for this boundary description.

This concludes the description of the perimeter survey of the proposed Nine Lakes of East Tennessee viticultural area as shown outlined on the included U.S.G.S. maps.

4. MAPS

Six Tennessee Valley Authority/U.S.G.S. maps with the boundaries of the proposed Nine Lakes of East Tennessee AVA are clearly marked are included with this petition. The boundaries are outlined in pink.

- U.S. Geological Survey (U.S.G.S.), Middlesboro Quadrangle, Kentucky-Tennessee-Virginia, [map], 1:100,000, 30x60 minute series, Reston, VA: U.S.G.S., 1977.

- U.S. Geological Survey (U.S.G.S.)/Tennessee Valley Authority (TVA), Morristown Quadrangle, Tennessee, [map], 1:100,000, 30x60 minute series, Reston, VA: U.S.G.S., 1981.

- U.S. Geological Survey (U.S.G.S.)/Tennessee Valley Authority (TVA), Knoxville Quadrangle, Tennessee-North Carolina, [map], 1:100,000, 30x60 minute series, Nashville, TN: TVA, 1983.

- U.S. Geological Survey (U.S.G.S.) /Tennessee Valley Authority (TVA), Oak Ridge Quadrangle, Tennessee, [map], 1:100,000, 30x60 minute series, Reston, VA: U.S.G.S., 1979.

- U.S. Geological Survey (U.S.G.S.) /Tennessee Valley Authority (TVA), Watts Bar Lake Quadrangle, Tennessee, [map], 1:100,000, 30x60 minute series, Reston, VA: U.S.G.S., 1981.

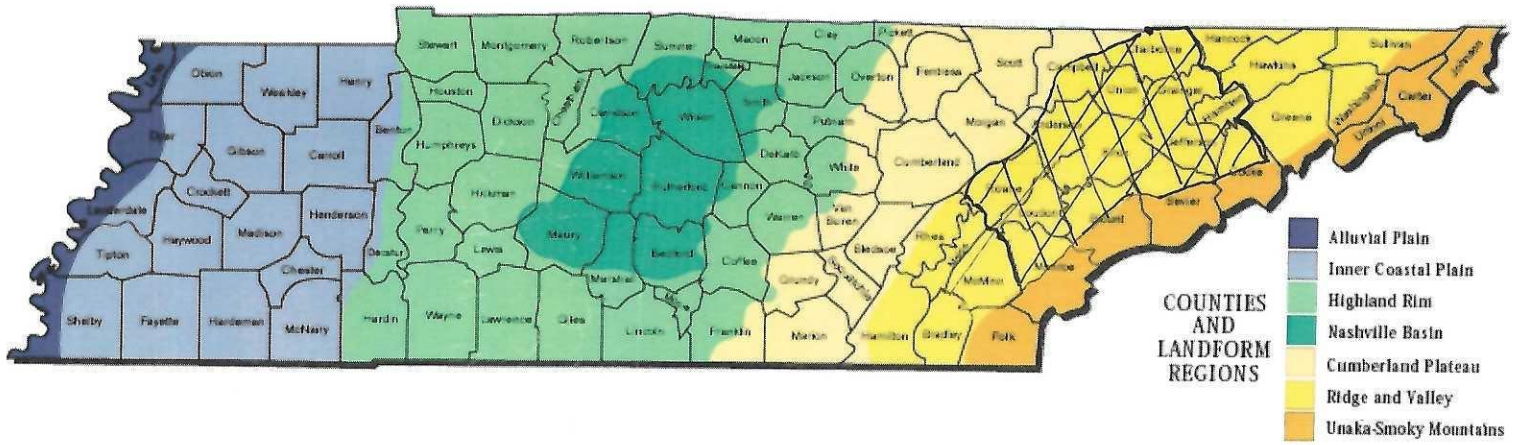
- U.S. Geological Survey (U.S.G.S.)/Tennessee Valley Authority (TVA), Cleveland Quadrangle, Tennessee-North Carolina, [map], 1:100,000, 30x60 minute series, Reston, VA: U.S.G.S., 1981.

Also included in Section Five are the following maps:

Map 1. Tennessee Geographic Regions / Nine Lakes of East Tennessee AVA.
Map 2. Tennessee River Watershed Map.
Map 3. Nine Lakes Tourism Map.
Map 4. Great Appalachian Valley Map.
Map 5. Wineries of Nine Lakes of East Tennessee AVA.
Map 6. Geologic Map of Tennessee.
Map 7. Rock Types of Tennessee.
Map 8. Hydrogeology.

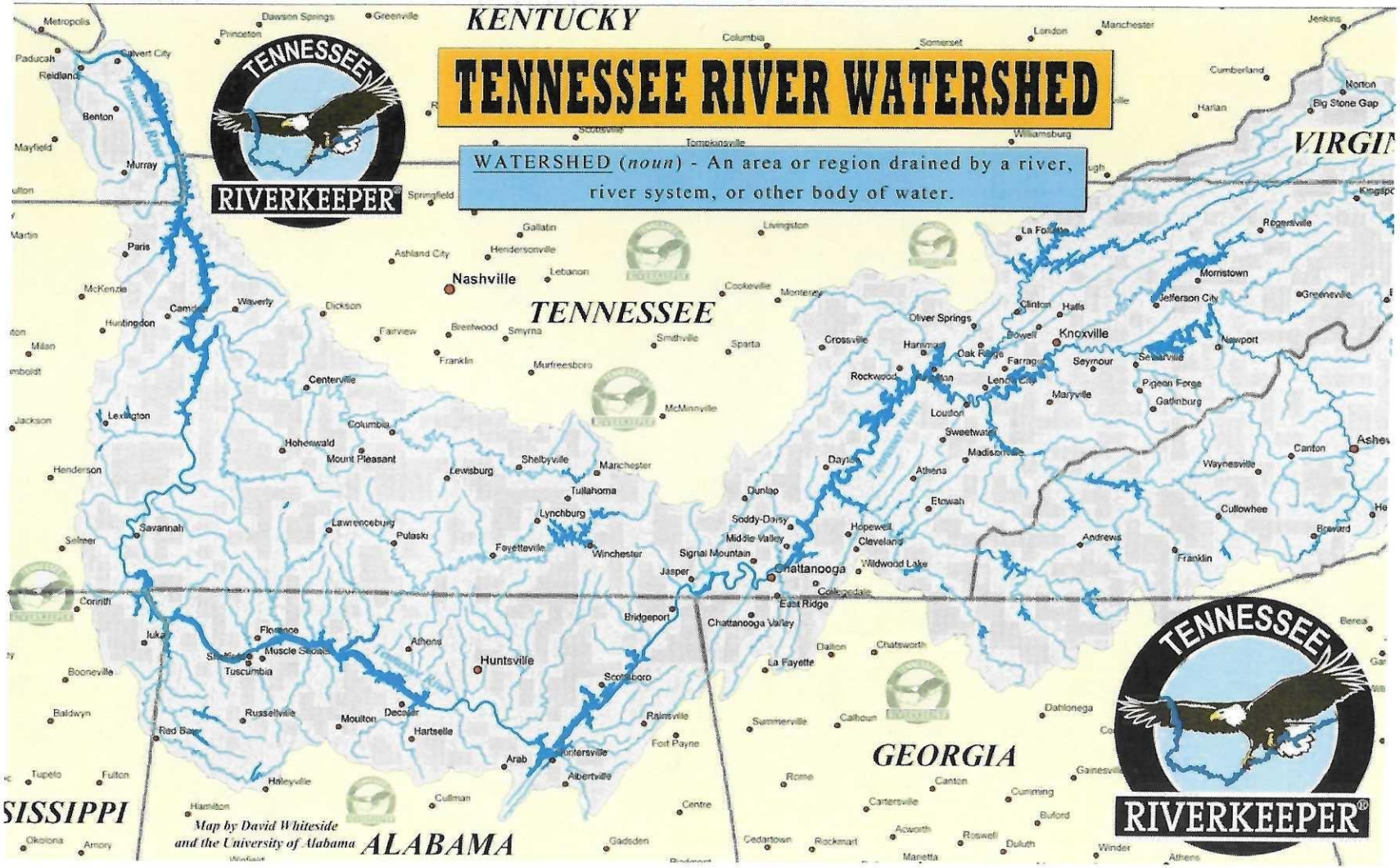
Map 1.

Tennessee Geographic Regions

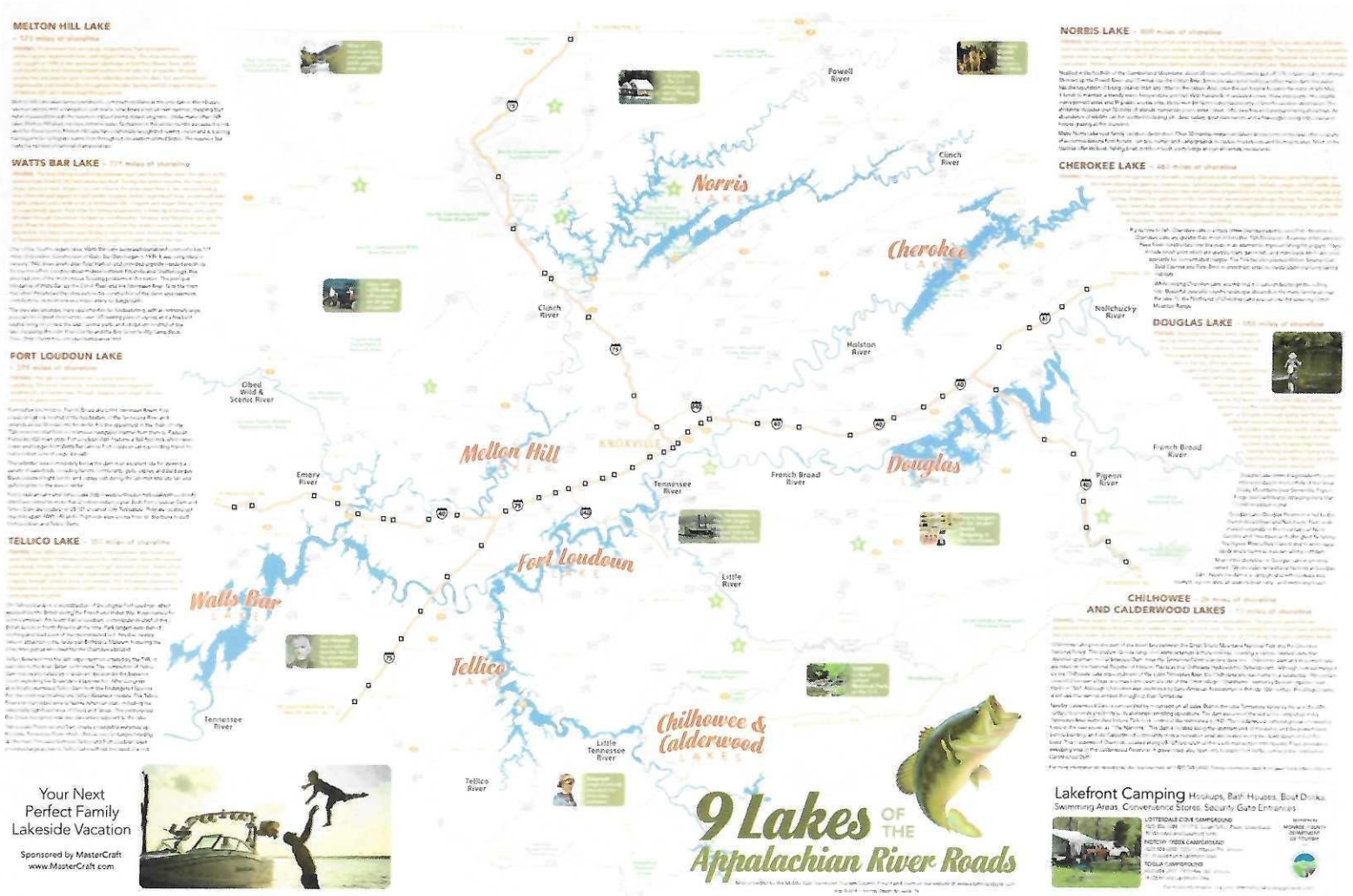


Proposed Nine Lakes of Tennessee AVA

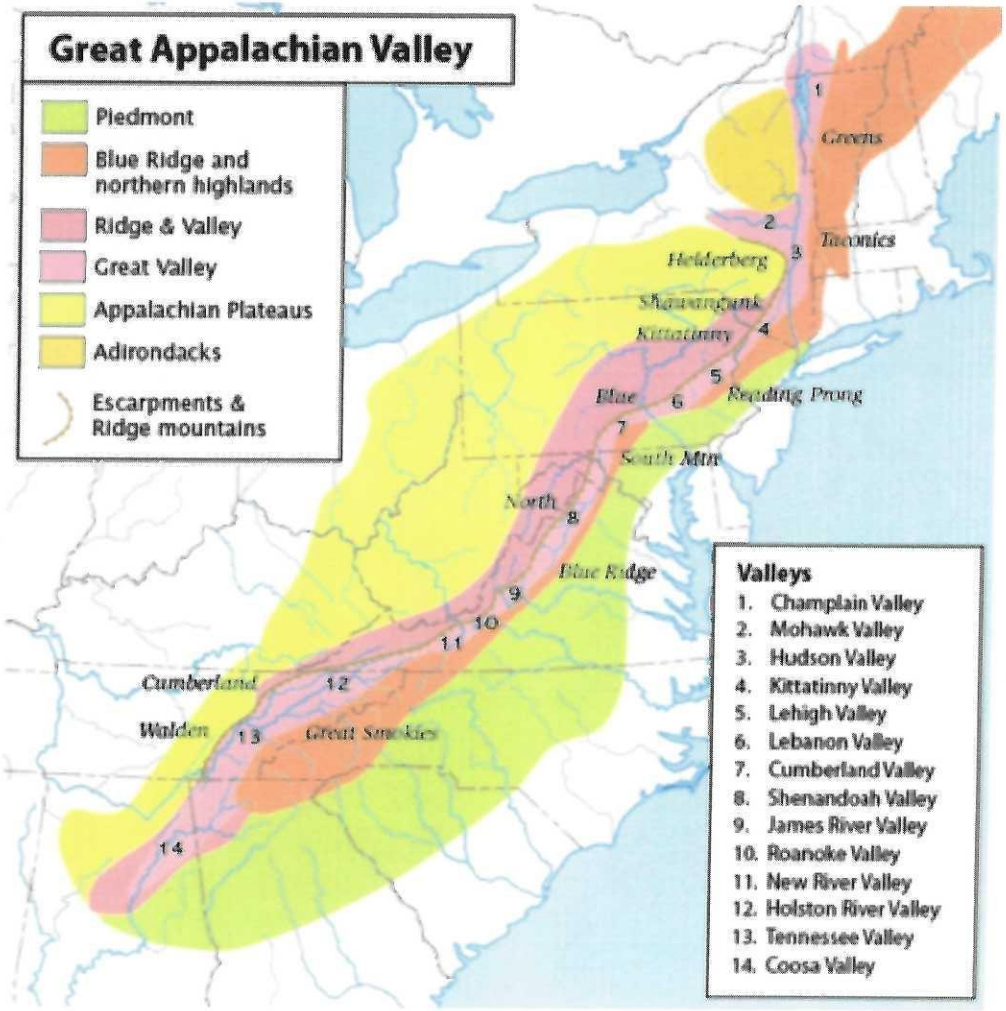
Map 2 | TENNESSEE RIVER WATERSHED



MAP 3 | Nine Lakes of East Tennessee



Map 4 | Great Appalachian Valley



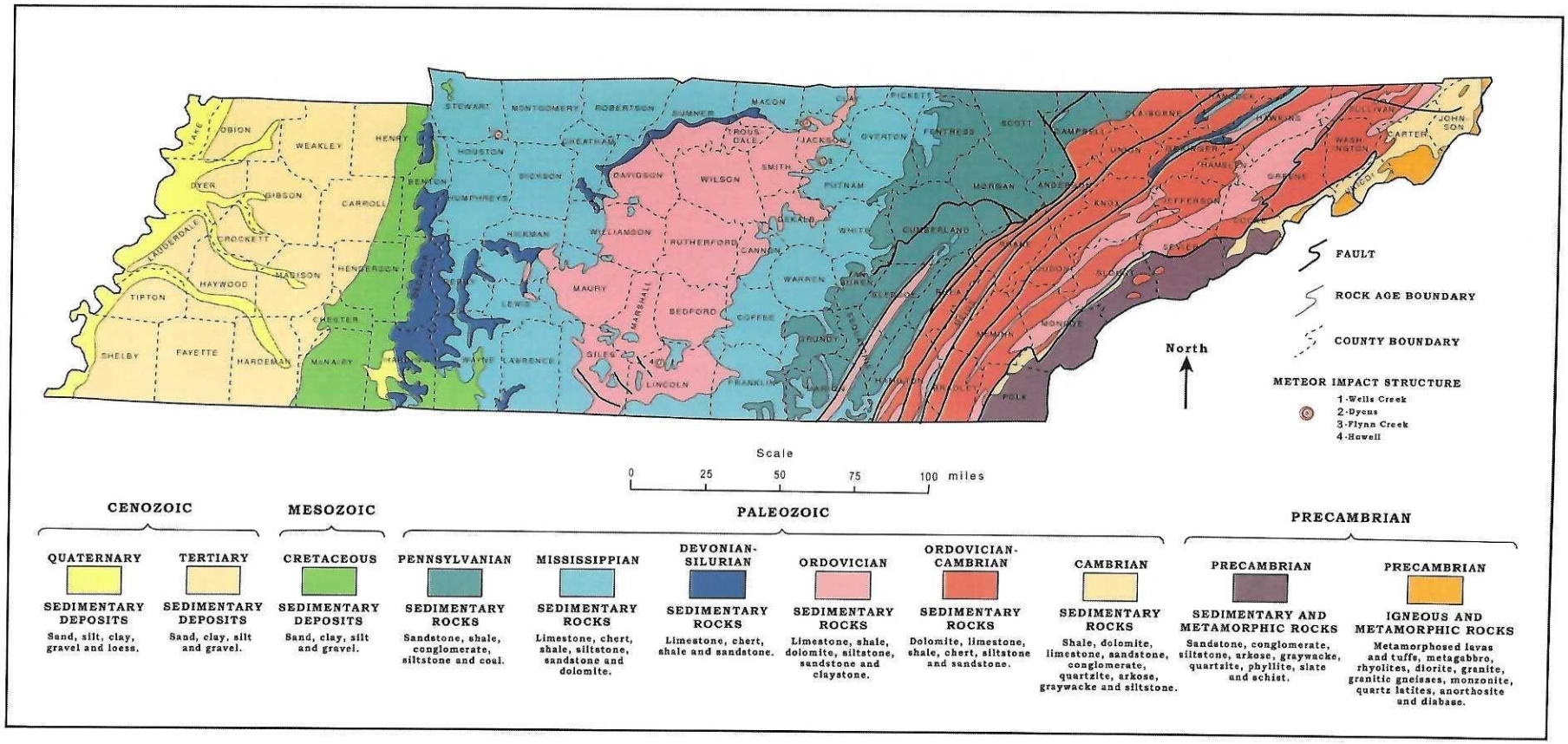
The proposed Nine Lakes of East Tennessee is located between numbers 12 and 13 within the Great Valley, nestled between the Blue Ridge and northern highlands to the east and the Appalachian Plateaus to the west.

MAP 5 | WINERIES OF NINE LAKES OF EAST TENNESSEE

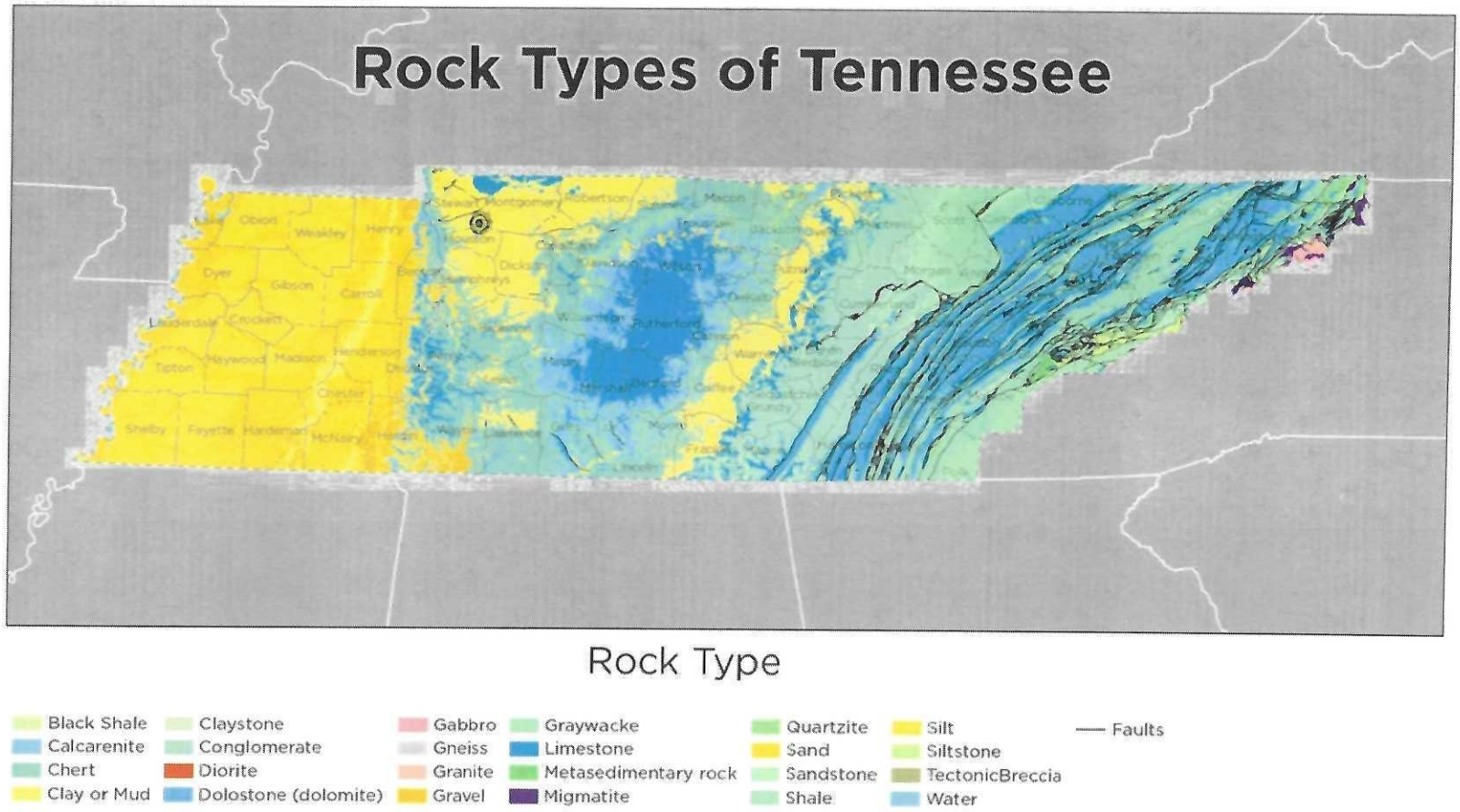
WINERIES IN NINE LAKES OF EAST TENNESSEE

Blount	Pleasant Hill Vineyards and Farm Winery
	Blue Goose Vineyards and Farm Winery
	Cades Cove Cellars
	Rocky Top Vineyard & Winery, Inc.
Campbell	Chapman Hill Winery
Claiborne	Brooks Winery
	Anthony and Angela Mowery
Cocke	Goodwater Vineyards and Winery
	Goodwater Tasting Room at Hartford
Grainger	Spout Spring Estates Winery
Hamblen	Nolichucky Vineyards and Farm Winery
Jefferson	Lach Amore Winery
Knox	Blue Slip Winery, LLC
	Gypsy Circus Cider Company LLC
Loudon	Tennessee Valley Winery
Monroe	Fox Creek Vineyards and Farm Winery
	Tsali Notch Vineyards
Sevier	Mountain Mist Farm Winery
	Apple Barn Winery
	Hillside Winery
Sevier	Mill Bridge Winery
	Mountain Valley Vineyards
	Smoky Mountain Winery
	Sugarland Cellars
	Tennessee Homemade Wines
	Bootleggers Homemade Wine, LLC
	Wyile Cider
	Martha's Vineyard Winery LLC
Union	The Winery at Seven Springs Farm

Map 6 | GEOLOGIC MAP OF TENNESSEE



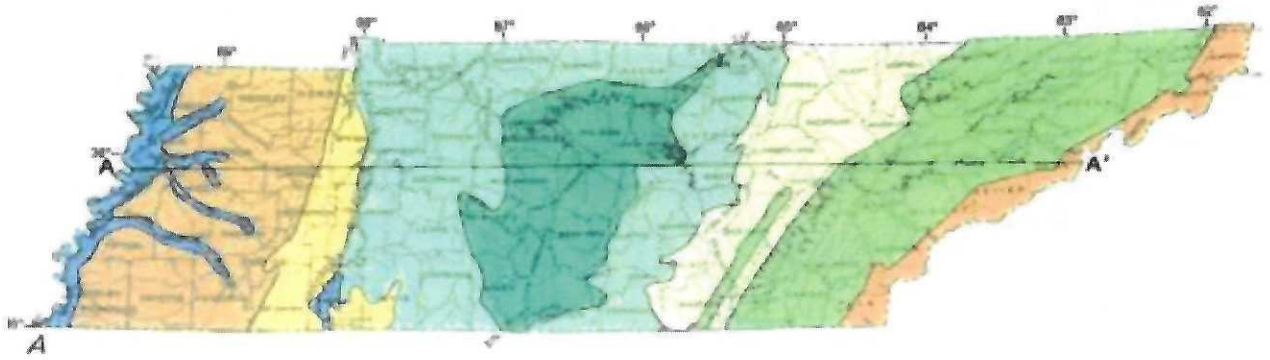
Map 7 | ROCK TYPES OF TENNESSEE



Data Source: USGS Mineral Resource Database | Author: UTK GIS Outreach and Engagement Lab
Date: 07/26/2018 | Projection: TN State Plane

Map 8

Tennessee Hydrogeology



EXPLANATION

- Alluvial aquifer
- Tertiary sand aquifer
- Cretaceous sand aquifer
- Pennsylvanian sandstone aquifer
- Mississippian carbonate aquifer
- Ordovician carbonate aquifer
- Knox aquifer
- Cambrian—Ordovician carbonate aquifer
- Crystalline rock aquifer
- A—A' Trace of cross section

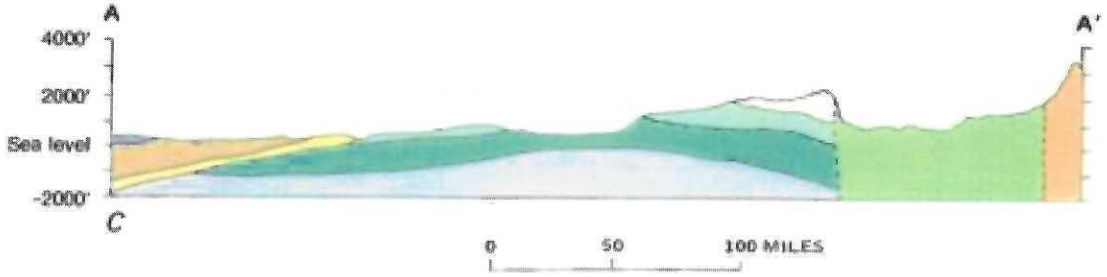


EXHIBIT LIST

Exhibit 1.	Map of Nine Lakes Region.
Exhibit 2.	Letter from Julie Graham, Executive Director, Nine Lakes of East Tennessee, Middle East Tennessee Tourism Council.
Exhibit 3.	Nine Lakes of East Tennessee Rack Card.
Exhibit 4.	Nine Lakes of East Tennessee Tri-Fold.
Exhibit 5.	Tickets from Nine Lakes of East Tennessee Wine Festival.
Exhibit 6.	Nine Lakes of East Tennessee Visitor's Guide.
Exhibit 7.	Screen shots of images for Nine Lakes of East Tennessee.
Exhibit 8.	Screen shots of images for Nine Lakes wine country.
Exhibit 9.	List of Nine Lakes websites related to tourism and/or vineyards and wine.
Exhibit 10.	First 3 Pages of Google listings for Nine Lakes of East Tennessee.
Exhibit 11.	Article: Nine Lakes, Four Rivers, One East Tennessee.
Exhibit 12.	Article: About Tennessee Wine.
Exhibit 13.	Promo for Tennesse Lake Tour: Nine Lakes.
Exhibit 14.	Article: First-ever East Tennessee Polar Plunge invites people to dive into 2019.
Exhibit 15.	Article: Lakeside of the Smokies Ballon Fest Tickets Now on Sale.
Exhibit 16.	Facebook screen shots for Nine Lakes of East Tennessee and Nine Lakes of Tennessee Wine Country.
Exhibit 17.	Screen shot for Nine Lakes Wine Festival promo.
Exhibit 18.	Article: Six East Tennessee Wineries Win at Two Major Wine Competitions.
Exhibit 19.	Nine Lakes logos.

LAKE

E

LAKE

NORRIS LAKE

CHEROKEE LAKE

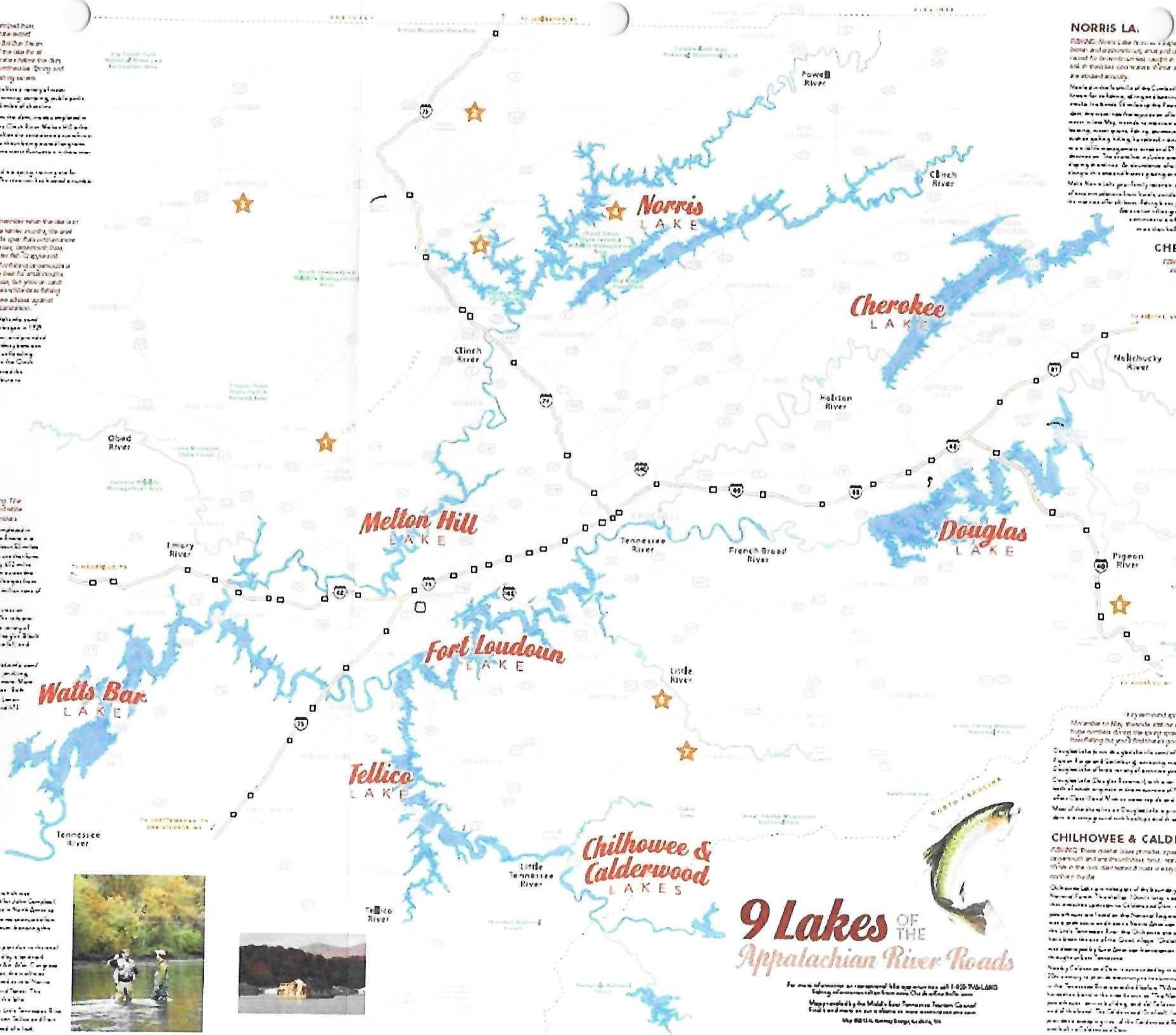


Exhibit 1

CHILHOWEE & CALDERWOOD LAKES

Exhibit 2

November 12, 2017

To Whom It May Concern

SUBJECT: Origin of "Nine Lakes" in the Great Valley of East Tennessee

The Nine Lakes region in the Great Valley of East Tennessee is a contemporary geologic feature which had its beginnings in the 1930s. President Franklin Delano Roosevelt and Senator George Norris had a vision for a better life for the people of the region, which they outlined in the Tennessee Valley Authority Act, passed in 1933. The act provided for flood control, electrification, navigation and the overall improvement of the quality of life. In 1936, the Unified Development of the Tennessee River System plan laid out the tactics by which the Tennessee Valley Authority (TVA) would build dams to transform the poverty-stricken, often-flooded Valley into a modern, electrified and developed slice of America. The plan was approved in March of 1936. When the TVA Act was passed, TVA had acquired Wilson Dam in North Alabama, and work began almost immediately on Norris Dam in East Tennessee. But when the plan passed, a roadmap was in place for nine more dams that would transform the entire region into one that could enjoy a more stable, modern American lifestyle and at last be attractive for economic development. In total, TVA constructed 24 dams from 1936 through the 1970s.

With 9 lakes and 2 Appalachian Ranges: the Smokies & the Cumberland Mountains, Middle East Tennessee has a lot to offer outdoor enthusiasts. This value was recognized in 2008 when Tennessee's Department of Tourist Development Commissioner Susan Whitaker announced the merger of the East Tennessee Marketing Partnership with the Middle East Tennessee Tourism Council (METTC - made up of 16 East Tennessee counties) to create a marketing alliance. She also announced a new Web site, www.VacationEastTennessee.org to serve as an information clearinghouse for East Tennessee tourism.

References to the "Nine Lakes" of the region (Cherokee Lake, Chilhowee Lake, Calderwood Lake, Douglas Lake, Fort Loudoun Lake, Melton Hill Lake, Norris Lake, Tellico Lake and Watts Bar Lake) were used broadly in marketing materials by METTC. In 2014, the brand "9 Lakes" began as an idea with publication of marketing collateral labeled "9 Lakes of the Appalachian River Roads." The 9 Lakes brand was officially adopted by METTC as their marketing brand in fall of 2015. The rebranding from Vacation East Tennessee to 9 Lakes East Tennessee has now been completed with publication of marketing materials to include brochures and a vacation guide, a Facebook Page (https://www.facebook.com/9lakeseasttn/) a website (www.9lakeseasttn.com) and extensive reference on the National Geographic Travel Guide, Tennessee River Valley (https://www.tennesseerivervalleygeotourism.org).

The unique Geotourism Reference of "9 Lakes," is rooted in the contemporary geologic formation by TVA of the Nine Lakes Region of East Tennessee, and this area has natural place-based assets to offer outdoor enthusiasts. Visitors come from all over the world to explore terrific fishing, limitless hiking trails, 15 driving trails including 3 wine trails and over 300 attractions within a 1.5 hour radius of Knoxville, not counting those in the Great Smoky Mountain National Park. With over 150 annual events, rural communities located off-the-beaten path offer glimpses into the rich cultural history of East Tennessee.

I am pleased to submit this supporting letter for application to the U.S. Department of the Treasury, Alcohol and Tobacco Tax and Trade Bureau, for designation of Nine Lakes in the Great Valley of East Tennessee as an American Viticultural Area and I look forward to your favorable decision.

Julie Graham, Executive Director
Middle East Tennessee Tourism Council
Office: 865-278-3395 Mobile: 865-585-0811
9LakesEastTN.com
info@9LakesEastTN.com

Enclosures
9 Lakes of the Appalachian River Roads
9 Lakes Rack Card
9 Lakes Tri-Fold
9 Lakes Vacation Brochure

Google nine lakes of east tennessee

Exhibit 7

nine lakes of east tennessee Remove

Collections SafeSearch

finger lakes | lake ontario | east tennessee | hot air | oak ridge tn | knoxville | niagara | wine festival | knoxville tn | smokies

Nine Lakes Wine Country | The K...
ninelakeswinecountry.com

Nine Lakes Wine Country | The K...
ninelakeswinecountry.com

NINE LAKES Wine Country

Nine Lakes Wine Country Events | Eve...
eventbrite.com

Nine Lakes Wine Count...
tnvacation.com

Award-winning wines | Nine Lakes Wine ...
ninelakeswinecountry.com

Nir
nin

Tickets | Nine Lakes Wine Festival
ninelakeswinefestival.com

tourism logo for Nine Lak...
99designs.com

Region History | Nine Lakes Win...
ninelakeswinecountry.com

Tennessee wine wins g...
ninelakeswinecountry.com

NINE LAKES Wine Festival

Nine Lakes Wine Festival : A Spring ...
localwineevents.com

GOLD WATER VINEYARDS

East TN Wine ...
lotsballoonfest.com

CHAPMAN HILL WINERY

East TN Wine ...
lotsballoonfest.com

Lakes Region of East Tennessee
easttnvacations.com

TBEX Conference Preview ...
weny.com

East TN Wine
lotsballoonfest

CADES COVE 2012 CELLARS

East TN Wine ...
lotsballoonfest.com

Tickets | Nine Lakes Wine Festival
ninelakeswinefestival.com

Wine Country Weddings & Receptions in ...
fingerlakeswinecountry.com

APPALACHIAN WILES
SMOKY MOUNTAIN CLAN

East TN Wine ...
lotsballoonfest.com

MILL BRIDGE Winery

East TN Wine ...
lotsballoonfest.com

Oakes Daylily Bloom Festival ...
foothillswineandcidertrail.com

Dog-friendly lodging | Dog-fri...
dogtrekker.com

WCSX Wine, Nine, and Dine Scramble 2019!
wcsx.com

Best US Win
thrillist.com

Google nine lakes wine country

Exhibit 8

All Maps Images News Videos More Settings Tools Collections SafeSearch

finger lakes | lake ontario | east tennessee | hot air | oak ridge tn | knoxville | niagara | wine festival | knoxville tn | smokies

Nine Lakes Wine Country | The K...
ninelakeswinecountry.com

Nine Lakes Wine Country | The K...
ninelakeswinecountry.com

NINELAKES Wine Country

Nine Lakes Wine Country Events | Eve...
eventbrite.com

Nine Lakes Wine Count...
tnvacation.com

Award-winning wines | Nine Lakes Wine ...
ninelakeswinecountry.com

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nin

Tickets | Nine Lakes Wine Festival
ninelakeswinefestival.com

tourism logo for Nine Lak...
99designs.com

Region History | Nine Lakes Win...
ninelakeswinecountry.com

Tennessee wine wins g...
ninelakeswinecountry.com

NINELAKES Wine Festival

Nine Lakes Wine Festival : A Spring ...
localwineevents.com

GOD WATER VINEYARDS

East TN Wine ...
lotsballoonfest.com

CHAPMAN HILL WINERY

East TN Wine ...
lotsballoonfest.com

Lakes Region of East Tennessee
easttnvacations.com

TBEX Conference Preview ...
weny.com

East TN Wine
lotsballoonfest

CADES COVE 2012 CELLARS

East TN Wine ...
lotsballoonfest.com

Tickets | Nine Lakes Wine Festival
ninelakeswinefestival.com

Wine Country Weddings & Receptions in ...
fingerlakeswinecountry.com

APPALACHIAN WYLES
SMOKY MOUNTAIN CLAN

East TN Wine ...
lotsballoonfest.com

MILL BRIDGE Winery

East TN Wine ...
lotsballoonfest.com

Oakes Daylily Bloom Festival ...
foothillswineandcidertrail.com

Dog-friendly lodging | Dog-fri...
dogtrekker.com

WCSX Wine, Nine, and Dine Scramble 2019!
wcsx.com

Best US Win
thrillist.com

EXHIBIT 9

Website Listings for Nine Lakes of East Tennessee

NINE LAKES OF EAST TENNESSEE: https://www.easttnvacations.com

NINE LAKES WINE COUNTRY: https://www.easttnvacations.com/eat/wine-country-trails/

NINE LAKES WINE COUNTY: https://www.ninelakeswinecountry.com/

FACEBOOK PAGE: https://www.facebook.com/9lakeseasttn/

NINE LAKES WINE FESTIVAL: https://www.ninelakeswinefestival.com/

NINE LAKES REGION OF EAST TENNESSEE:
https://www.tnvacation.com/articles/9-lakes-region-east-tennessee

SOUTHEAST DISCOVERY
http://www.southeastdiscovery.com/blog/2011/03/eastern-tennessee-land-of-the-lakes/

Google nine lakes of east tennessee

Exhibit 10

All Maps Images News Videos More Settings Tools

EastTnVacations

Welcome to the 9 Lakes Region of East Tennessee

The **9 Lakes** region of **East Tennessee** is the perfect place for your next vacation! Read about all of the best things to see and do in this special area.

Explore the Area Places to Stay Food & Wine Things to Do

EastTnVacations › explore-the-area

Explore the 9 Lakes Region of East Tennessee

The **9 Lakes** region is made up of the 16 counties surrounding **Knoxville**, TN. Learn all about the most popular destinations in the **9 Lakes** area of Tennessee.

People also ask

What lakes are in East Tennessee?

What is the cleanest lake in Tennessee?

Is Cherokee Lake man made?

Is Watauga Lake man made?

Nine Lakes Wine Festival › wineries › about-nine-lakes

About Nine Lakes | Nine Lakes Wine Festival

Nine Lakes. Four Rivers. One **East Tennessee**. In the 1930s and '40s, the Tennessee Valley Authority built 32 dams along the Tennessee River system to ...

www.ninelakeswinecountry.com › nine-lakes

Nine Lakes | Nine Lakes Wine Country

Learn about our unique geography and climate to find out why the **Knoxville** region is **Tennessee** Wine Country.

TN Vacation › articles › 9-lakes-region-east-tennessee

The 9 Lakes Region of East Tennessee - Tennessee Vacation

... Look no further than the **9 Lakes** Region of **East Tennessee**. From hiking and fishing, to disc golf, wine-tasting and relaxation – there's ...

TN Vacation › local › sharps-chapel-9-lakes-region-east-tennessee-mettc

9 Lakes Region of East Tennessee - METTC in Sharps ...

Plan your next trip to Sharps Chapel, TN and be sure to visit **9 Lakes** Region of **East Tennessee** - METTC. Tennessee offers many local attractions and business ...

Facebook › › Travel Service › Tourist Information Center

Nine Lakes of East Tennessee - Home | Facebook

Nine Lakes of East Tennessee - - Rated 0 based on 4 Reviews "One of the prettiest areas of a beautiful state. Absolutely beautiful Lakes for swimming. ...

Knoxville Weekend › tennessee-lake-tour-nine-lakes

Tennessee Lake Tour :: Nine Lakes - Knoxville Weekend

Take a tour of the "Great **Lakes** of the South" in **East Tennessee**!

https://www.tennesseerivervalleygeotourism.org › content › nine-lakes-

Nine Lakes Wine Festival | Tennessee River Valley ...

East Tennessee has the best wines in our state! Join us for the third annual **Nine Lakes** Wine Festival at Melton **Lake** Park in Oak Ridge, Tennessee, 30 minutes ...

Southeast Discovery › blog › 2011/03 › eastern-tennessee-land-of-the-l

Eastern Tennessee – Land of the Lakes | Southeast Discovery

... Cherokee **Lake Eastern Tennessee** ... property, Rarity Bay is the first, and one of the more successful, of Rarity Community's **nine** properties ...

Searches related to nine lakes of east tennessee

lakes in east tennessee
lakes in tennessee
norris lake
cleanest lake in tennessee
best lakes in tennessee to live
eastern tennessee

Nine Lakes Wine Festival

Website Directions Save

Address: 1400 Oak Ridge Turnpike, Oak Ridge, TN 37830
Phone: (865) 482-7821

Suggest an edit Own this business?

Add missing information

Add business hours
Add category

Know this place? Answer quick questions

Send to your phone Send

Reviews

Write a review Add a photo

Be the first to review

Profiles

Facebook

People also search for


Secret City Festival


Oak Ridge Convention and Visito

Lee Athletic Center

artxtrava

Black Cemetery

Google nine lakes of east tennessee

All Maps Images News Videos More Settings Tools

Outdoor Knoxville › Places › Lakes/Rivers

Lakes - Outdoor Knoxville

There are **nine** TVA reservoir **lakes** that conveniently surround our region. In addition to these super **lakes**, there are spring-fed **lakes** and countless small ponds.

https://lotsballoonfest.com › enjoy-a-sip

Enjoy a Sip | East TN Balloon Festival | East TN Wine | LOTS ...

Sit back and relax as the sun sets and the hot air balloons glow with a glass of **East Tennessee** wine in the **Nine Lakes** Wine Country Wine Garden sponsored by ...

Images for nine lakes of east tennessee



More images for nine lakes of east tennessee

YouTube › watch

9 Lakes of East Tennessee - YouTube

Apr 4, 2019 - Uploaded by 9 Lakes East Tennessee

making memories in **East Tennessee- lake** vacations, National Parks, motorcycle trips, kayaking adventures ...

Eventbrite › e › lakeside-of-the-smokies-balloon-fest-tickets-55994234...

Lakeside of the Smokies Balloon Fest Tickets, Multiple Dates ...

Eventbrite - **9 Lakes of East** TN presents Lakeside of the Smokies Balloon Fest - Saturday October 26, 2019 | Sunday, October 27, 2019 at 715 TN-113, White ...

Sat, Oct 26 · 715 TN-113, White Pine, TN, US

WATE › news › local-news › first-ever-east-tennessee-polar-plunge-in...

First-ever East Tennessee Polar Plunge invites people to dive ...

Oct 26, 2019 - First-ever **East Tennessee** Polar Plunge invites people to dive into 2019 ... the **nine lakes**, the national parks and state parks of **East Tennessee**.

WBIR.com › article › news › local › whats-in-the-water-of-east-tennessee

What's in the water in East Tennessee? | wbir.com

May 29, 2019 - **KNOXVILLE, Tenn.** — As the weather warms up and school lets out, the swimming holes and fishing spots on the **lakes** and rivers of East ...

Upper Cumberland Business Journal › State/National

May named Tennessee Grape and Wine Appreciation Month ...

May ... 2019 - Bill Lee has proclaimed May as Tennessee Grape and Wine ... The **Nine Lakes** region of **East Tennessee**—called so because of the **nine** ...

The Oak Ridger › news › nine-lakes-wine-festival-may-31-june-1

Nine Lakes Wine Festival May 31-June 1 - News - Oakridger ...

Apr 22, 2019 - The 3rd annual **Nine Lakes** Wine Festival has been announced for May 31 ... to raise money for your favorite charity in **East Tennessee**."

Local Wine Events › events › detail › Nine-Lakes-Wine-Festival

Nine Lakes Wine Festival | Knoxville-Northeast TN ...

May 31, 2019 - Join us on May 31st for "**Nine Lakes** Wine Festival" at Melton **Lake** Park in Oak Ridge, **Tennessee**. Find more food and wine events in Oak ...

Searches related to nine lakes of east tennessee

lakes in east tennessee	**cleanest lake** in tennessee
lakes in tennessee	**eastern** tennessee
norris lake	**best lakes** in tennessee to live
fishing lakes in east tennessee	**map** of tennessee **with lakes**

Google nine lakes of east tennessee

All Maps Images News Videos More Settings Tools

TripAdvisor › ... › Knoxville › Knoxville Travel Forum
East TN Lakes - Knoxville Forum - TripAdvisor
I would love to hear everyones thoughts on Watts Bar Lake, Cherokee Lake and 9 Re: East TN Lakes. 11 years ago. Save. I agree Norris lake is clear

Nourish Knoxville › event › nine-lakes-wine-festival-2019
Nine Lakes Wine Festival 2019 Nourish Knoxville
Grand Tasting. Nine Lakes Wine Festival. June 1. 3-8 p.m., Melton Lake Park, Oak Ridge. Taste 100 + Tennessee Wines and Ciders at East ...

Blue Ridge Country › events › nine-lakes-wine-festival
NINE LAKES WINE FESTIVAL - Blue Ridge Country
East Tennessee has the best wines in our state! Join us for Nine Lakes Wine Festival at Melton Lake Park in Oak Ridge, Tennessee. ...

Oak Ridge Today › 2019/05/31 › tennessees-growing-wine-industry-sh...
Tennessee's growing wine industry showcased at Nine Lakes ...
The festival, pictured above in 2018, celebrates Tennessee wines and ciders. It's called that because of the nine lakes surrounding Knoxville.

https://www.tnhomeandfarm.com › tennessee-events › grand-tasting-ni...
Grand Tasting, Nine Lakes Wine Festival - TN Events ...
Event type: Festivals. Region: East Tennessee - Knoxville & Surrounding Areas. Taste great Tennessee wines at the Nine Lakes Wine Festival ...

www.millbridgewinery.com › event › grand-tasting-nine-lakes-wine-fe...
Grand Tasting, Nine Lakes Wine Festival – Mill Bridge Winery
Melton Lake Park Saturday, May 19th, 2018 3pm-8pm. Taste 100 + Tennessee Wines and Ciders at East Tennessee's premier wine festival!

WVLT › tv › content › news › More-Tennessee-growers-are-producin...
More Tennessee growers are producing wine - WVLT
(WVLT) - Wine makers in East Tennessee are among a growing number in the ... Nine Lakes Wine Festival will include wines from Cades Cove ...

https://www.ciderscene.com › blog › cider-posts › nine-lakes-wine-festi...
Nine Lakes Wine Festival | CiderScene | Hard Cider News ...
The third annual Nine Lakes Wine Festival has been announced for May 31 ... to raise money for your favorite charity in East Tennessee."

Yahoo › finance › news › souths-only-human-powered-wine-040000075
South's Only Human-Powered Wine Barrel Race Benefits East ...
South's only human-powered wine barrel race benefits as many as 24 East Tennessee charities at third annual Nine Lakes Wine Festival on

Wimz.com › events › event › community › nine-lakes-wine-festival
Nine Lakes Wine Festival | Classic Rock 103.5 WIMZ
at Melton Lake Park in Oak Ridge, TN. Taste Tennessee Wines and Ciders at East Tennessee's premier wine festival! Chat with winemakers, enjoy live music, ...

Searches related to nine lakes of east tennessee

lakes in east tennessee	cleanest lake in tennessee
lakes in tennessee	eastern tennessee
norris lake	best lakes in tennessee to live
fishing lakes in east tennessee	map of tennessee with lakes

EXHIBIT 11.

NINE LAKES. FOUR RIVERS. ONE EAST TENNESSEE.

In the 1930s and '40s, the Tennessee Valley Authority built 32 dams along the Tennessee River system to control flooding, generate hydroelectric power for remote regions, and create a 650-mile navigable route between Knoxville and the Ohio River.

Six of those dams created nine lakes within an hour's drive of Knoxville, Tennessee: Norris, Cherokee, Douglas, Melton Hill, Watts Bar, Fort Loudon, Tellico, Chilhowee and Calderwood Lakes.

These nine lakes changed the East Tennessee landscape forever. They covered up small towns, forever lost beneath water and displacing hundreds of thousands of families.

But like the powerful waters flowing over those dams, the people of East Tennessee are strong and resourceful. They regrouped. They took advantage of improved waterways and electric power. New resort villages sprung up along these new lakes, offering recreation venues for boating, fishing and skiing. New methods of farming were adopted, to preserve topsoil and bring prosperity to the region.

Today these Nine Lakes and their tributaries irrigate our fields and vineyards, which are again flourishing on Tennessee's gentle hills. We celebrate this region we call Nine Lakes! The waterways not only nourish us; they connect us. You can't have one lake without another, and "Going to the lake" is a common phrase we don't even define. Which lake? Aren't they all connected? Yes.

Come visit our Tennessee winemakers on the shores of Melton Lake. This glassy-smooth waterway in Oak Ridge is known for its world-class rowing venue, with eight lanes that stretch a mile. In fact, come watch the Dogwood Masters Classic Regatta the morning of May 19 and enjoy Nine Lakes Wine Festival that afternoon.

Nine Lakes Region — This is a beautiful place to visit. A place we call home.

https://www.ninelakeswinefestival.com/wineries/about-nine-lakes/

EXHIBIT 12.

ABOUT TENNESSEE WINE

Little girl picking grapes on a Weakley County, Tenn. farm, circa 1940. Used with permission from the Tennessee State Library and Archives.

Did you know Tennessee is great place for growing grapes? Early settlers in the 1800s brought grapes to the Knoxville region, to plant on hillsides considered unsuitable for many other crops. In an 1874 agriculture survey, Tennessee listed 1,128 acres planted in grapes, producing 64,767 gallons of wine with a value of $90,000.

In 1919, however, the Eighteenth Amendment to the Constitution, commonly called Prohibition, all but destroyed the wine industry in the United States. Of the nearly 2,500 wineries in the U.S. prior to Prohibition, less than 100 survived afterward. Vineyards were pulled up to plant tobacco, or grape varieties more suited for eating than making wine.

While a few winemakers kept the industry active with home vineyards and small lot private production allowed under the law, it was in 1973, when seven individuals interested in viticulture and oenology gathered around a kitchen table in Clarksville and organized the Tennessee Viticultural and Oenological Society (TVOS), that the Tennessee wine industry was reborn.

Two of the individuals, Fay Wheeler and his friend Judge William O. Beach, led a small group in formulating a proposed law to encourage grape-growing and commercial winemaking in Tennessee. The law came to pass in 1977 as the Tennessee Wine and Grape Act, which permitted the establishment of wineries in Tennessee, even in "dry" counties. The efforts of Fay and Judge Beach enabled what has become a thriving

industry for commercial vineyards and wineries in Tennessee.

Since then, a number of regulations have loosened, freeing the Tennessee grape and wine industry to grow. Today there are more than 70 wineries in the state, and grape production grew 56 percent between 2017 and 2012, making it the fastest growing segment of Tennessee agriculture.

The state now has six wine trails, three of them in the Nine Lakes Region of East Tennessee. They offer scenic drives, quaint towns and friendly staff at each stop. Be sure to try award winning wines that are uniquely Tennessee… you know Merlot, Syrah, and Chardonnay, we want to introduce you to Chancellor, Chambourcin, Traminette, and Seyval.

https://www.ninelakeswinefestival.com/wineries/tn-wine/

EXHIBIT 13.

Tennessee Lake Tour :: Nine Lakes

<VIDEO CLIP>

Take a tour of the "Great Lakes of the South" in East Tennessee! Julie Graham, the Executive Director of Middle East Tennessee Tourism Council, tells us what there is to do on each body of water!

What's your favorite Tennessee water spot? For more great lakes, rivers, and waterways you should enjoy this summer, check out the Knoxville Weekend Tennessee Lake Tour by clicking here!

Hey you! Have we gotten social yet? Follow us on Facebook, Twitter, Instagram and Pinterest!

https://www.knoxvilleweekend.com/tennessee-lake-tour-nine-lakes/

EXHIBIT 14

First-ever East Tennessee Polar Plunge invites people to dive into 2019

LOCAL NEWS
by: WATE 6 On Your Side staff

Posted: Dec 28, 2018 / 05:14 PM EST / Updated: Dec 28, 2018 / 05:16 PM EST

Local people are aiming to start their new year off right by diving – literally – right on in with the first-ever East Tennessee Polar Plunge on New Year's Day.

The polar plunge, a tradition in many other states and communities, is happening at Cherokee Lake in Jefferson County.

The Jefferson County Chamber of Commerce saying they're hosting the first-ever East Tennessee Polar Plunge to not only have some fun, but also for a good cause.

Proceeds from the event will go toward Keep the Tennessee River Beautiful Foundation to aid in their efforts to perform lake and river clean-ups and also to the Middle Tennessee Tourism Council to help promote the nine lakes, the national parks and state parks of East Tennessee.

The entrance fee to participate in the East Tennessee Polar Plunge is $30 and participants will also receive a T-shirt, marking their bravery for jumping into a cold lake on New Year's Day for a good cause.

To register, visit their website.

https://www.wate.com/news/local-news/first-ever-east-tennessee-polar-plunge-invites-people-to-dive-into-2019/

EXHIBIT 15

WINE NEWS

CISION

LAKESIDE OF THE SMOKIES BALLOON FEST TICKETS NOW ON SALE - LARGEST BALLOON FESTIVAL IN TENNESSEE

Tickets for the first annual Lakeside of the Smokies Balloon Fest, which will feature hot-air balloons and Tennessee wines from Nine Lakes Wine Country, are now on sale. Event organizers say this will be the largest hot-air balloon event in Tennessee.

KNOXVILLE, Tenn., May 1, 2019 /PRNewswire-PRWeb/ -- Organizers have announced that hot air balloon ride tickets are now on sale for the First Annual Lakeside of the Smokies Balloon Fest. Balloon flights are scheduled on October 25 and 26, 2019 at the Chilton Farm in White Pine, Tennessee, just outside Knoxville. Balloon enthusiasts are encouraged to "meet" the pilots on the festival's website https://lotsballoonfest.com/balloons-pilots/ to learn more about their flight experiences and their colorful balloons.

Balloon Meister, Ray Fournier, owner of What's Up Ballooning, will be orchestrating the weekend's flights. "Watching the world go by suspended below a balloon is magical," says Fournier. Fournier's wife, Mary Ann will be bringing her balloon, Lucky Charm, to the festival. Mary Ann has flown in numerous balloon festivals throughout New England, Ohio and Canada and also at the world's largest, the Albuquerque International Balloon Fiesta – Albuquerque, NM. With 25 Hot Air Balloons scheduled to participate, Lakeside of the Smokies Balloon Fest will be Tennessee's largest Hot Air Balloon gathering. Pilot Mark Frizte will be traveling from Tallahassee, Florida with his balloon, "Freedom Flyer." Mark designed his balloon to be a patriotic tribute to the original thirteen colonies and to the US Constitution. "I really love to take people up for their 'bucket list' experience," Mark told festival organizers. With the backdrop of the autumn leaf season in the Great Smoky Mountain National Park, this will be a unique and memorable "bucket list" experience.

Flights are currently booking for morning and late afternoon launches. Special media day flights are scheduled for Friday, October 25 at 7 am. State officials will be onboard for these flights. On Friday afternoon, a special Make a Dream Come True flight is scheduled for a resident of Lifespring Senior Living in Knoxville, TN.

The event will also celebrate the agricultural roots of the 9 Lakes Region of East Tennessee, with participation by the Smoky Mountain Antique Engine & Tractor Association and a wine garden featuring dozens of local award winning wineries.

"Nine Lakes Wine Country is proud to be a sponsor of this event. Our wines are some of the most celebrated in Tennessee and the grape and wine industry is one of the fastest growing segments of Tennessee Agriculture," says Rick Riddle, event organizer and President of the Appalachian Region Wine Growers Association. "The grape and wine industry is unique in that it combines agriculture, tourism and economic development, allowing many family farms in Tennessee to diversify into value-added agriculture and agritourism."

Nine Lakes refers to the nine TVA-made lakes surrounding Knoxville. In the 1930s and '40s, the Tennessee Valley Authority built 32 dams along the Tennessee River system to control flooding, generate hydroelectric power for remote regions, and create a 650-mile navigable route between Knoxville and the Ohio River. Six of those dams created nine lakes within an hour's drive of Knoxville: Norris, Cherokee, Douglas, Melton Hill, Watts Bar, Fort Loudon, Tellico, Chilhowee and Calderwood Lakes. Today these Nine Lakes and their tributaries, combined with valleys and ridges surrounding them, provide a unique growing region for vineyards, which are flourishing on Tennessee's gentle hills. The location for Lakeside of the Smokies Balloon Fest is in Jefferson County on the shores of Douglas Lake.

For those wanting to guarantee either a tethered or untethered balloon ride, tickets are on sale at http://www.LOTSballoonfest.com. Untethered rides will be scheduled for early morning and late afternoon flights and are $250 per person. The flight plan will provide sweeping views of Douglas Lake and the Smokies. Tethered rides will be offered during the hours of the event and are $20 per person. The event will also feature shape balloons and nightly balloon glows, music, food trucks and kid's activities including walk-in Hot Air Balloons.

Proceeds from the event will benefit the Middle East Tennessee Tourism Council, a non-profit organization serving the sixteen counties of the East Tennessee Development District. The organization serves to support tourism promotion and asset development, and serves as the lead regional tourism agency under an annual contract with the Tennessee Department of Tourist Development. The METTC membership is made up of area tourism offices, convention and visitors bureaus, chamber of commerce representatives, and other tourism businesses.

SOURCE Nine Lakes Wine Country

https://openingabottle.com/wine-news?rkey=20190501UN32614&filter=14755&Lakeside-of-the-Smokies-Balloon-Fest-Tickets-Now-on-Sale---Largest-Balloon-Festival-in-Tennessee

Exhibit 16

Nine Lakes of East Tennessee

Patricia Home Find Friends Create

Nine Lakes of East Tennessee

@9lakeseasttn

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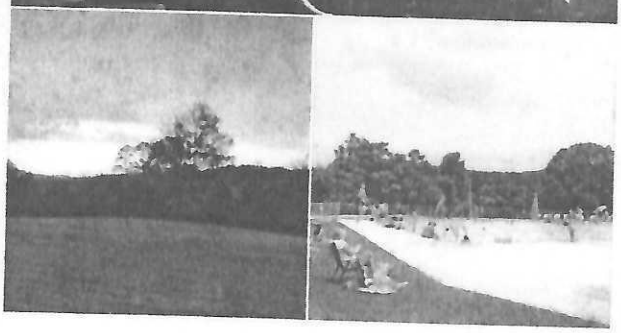

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www.9lakeseasttn.com

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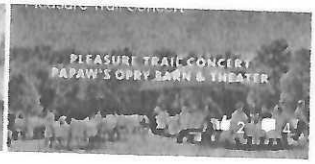

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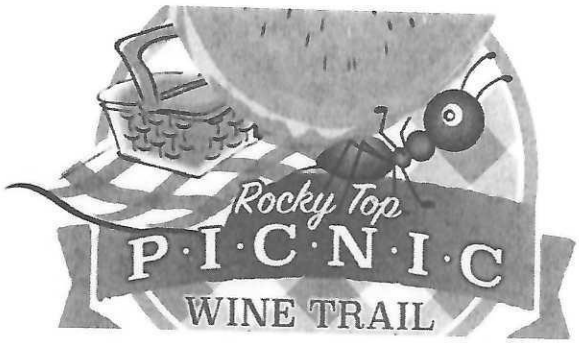
Upcoming Events



Jul 13 **Picnic Wine Trail**
Sat 11 AM · Rocky Top Wine Trail · Pigeon Forge, Tenn... ★ Interested

Aug 17 **2019 GSM Hot Air Balloon Festival**
Sat 3 PM · Townsend Visitors Center · Townsend, Ten... ★ Interested

Aug 17 **Tim White with Song of the Mountains and th...**
Sat 7 PM · Union County Opry · Maynardville, Tenness... ★ Interested

See All

Posts

Nine Lakes of East Tennessee
28 mins ·

Enjoy a romantic date as a couple, or celebrate any special event (including engagements, anniversaries, and even weddings), in a hot air balloon ride! Both untethered and tethered hot air balloon rides

are available at Lakeside of the Smokies Balloon Fest.

For the ultimate adult weekend, include the Elevated Experience and lodging at Mountain Harbor Inn Resort on the Lake. The inn is just 17 minutes from the Balloon Festival location. Mountain Harbor Inn is ranked as one of ... See More

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Mountain Harbor Inn - M

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Nine Lakes of East Tennessee
2 hrs ·

Looking for a great place for a weekend camping trip? Look no further

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Windy Hill Farm & Pre... Like

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than Panther Creek State Park on beautiful Cherokee Lake. The campground has 50 sites with water, 20, 30, 50-amp electrical hookups, grills, picnic tables, and fire rings. There are 2 bathouses with hot showers and restrooms, and campers pay only $3 for pool access. Along with the many miles of hiking and mountain biking trails, you'll find a volleyball pit, disc golf course, and lots of special events. Click here for camping rates and reservations: http://ow.ly/Sxx150uQYnL #madeintn #cherokeelaketn

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Chat

Exhibit 17

Nine Lakes Wine Festival

https://www.tennesseerivervalleygeotourism.org/content/nine-lakes-wine-festival/ten599814e6d6d090c35

East Tennessee has the best wines in our state! Join us for the third annual Nine Lakes Wine Festival at Melton Lake Park in Oak Ridge, Tennessee, 30 minutes from Knoxville in beautiful East Tennessee. We'll have dozens of award-winning Tennessee wines to taste, great food, live music, and more.

Don't miss Nine Lakes Wine Festival: A Taste of Tennessee Wines!

Contact Information

James Riddle - Nine Lakes Wine Festival

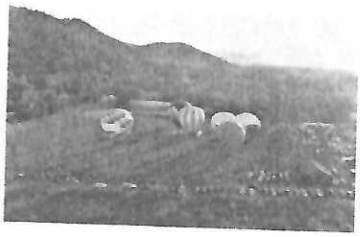
865-803-0282

1478 Hwy 61 E
Maynardville, TN 37807 US

Rick@ninelakeswinecountry.com

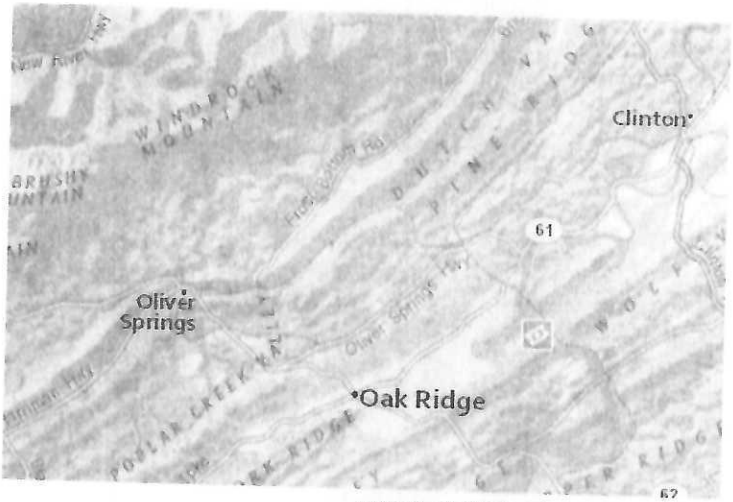
Visit Website >

Related



2019 Great Smoky Mountain Hot Air Balloon Festival

Location



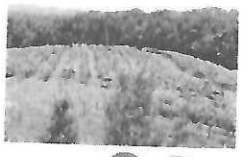
Latitude: 36.03246 **Longitude:** -84.192126

Nearby

Adventures Outdoors Kayak & Bike Rentals

Worthington Cemetery Trail

Six East Tennessee Wineries Win at Two Major Wine Competitions



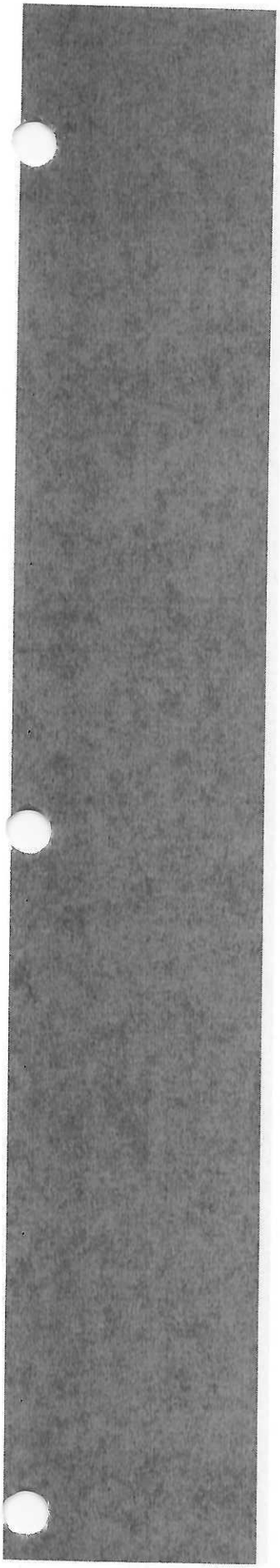
Category: Wine

Date: 20/07/2017

Six East Tennessee wineries, including four from Nine Lakes Wine Country in East Tennessee, have earned honors at two major wine competitions recently: Indy International Wine Competition, and the Asheville Wine & Food Festival International Wine Competition.

Nine Lakes refers to the nine Tennessee Valley Authority-made lakes in East Tennessee within an hour's drive of Knoxville. The region has been called Tennessee's wine country, because its gentle hills are ideal for growing many varieties of wine grapes.

One of those varietals, Chambourcin, won a gold medal at the Indy International Wine Competition. Chambourcin 2014, Reserve Barrel No. 1, is a dry red wine crafted by the boutique winery Cellar 53 Winery in Brush Creek, Tennessee. It opened in 2015 on a family farm owned by Scott and Rebecca Paschal.



All of the Chambourcin grapes used in this wine were grown on our farm," said Rebecca Paschal, winemaker at Cellar 53. "This was the first harvest that we kept ourselves, to make into wine."

Chambourcin is a French-American hybrid grape that is starting to make a mark in East Tennessee. Chambourcin is popular in France's Loire Valley, with over 9,000 acres planted. Like Cabernet Franc, Chambourcin can produce big, rich red wines, and light, fruity rosé wines.

Chambourcin is extremely vigorous and disease-resistant, which makes it a good choice for vineyards in the humid mid-Atlantic region of North America.

"Look for more Chambourcin to be planted here in East Tennessee," said James Riddle, President of the Appalachian Region Wine Producers Association.

"Many of the grapes grown in Tennessee are used to make off-dry and sweeter wines, but varieties like Chambourcin, Chancellor, Seyval and Traminette, used for dry wines,

are gaining in popularity. Customers who prefer dryer wines are choosing these over traditional California wines when given the opportunity. With such versatility Chambourcin should have a prominent place in the future of the Nine Lakes wine industry," said Riddle.

Cellar 53 also won a bronze medal for its Cayuga White at the Indy Competition. Two other East Tennessee wineries also won awards at the Indy competition as well: Cades Cove Cellars in Townsend, TN, won a silver medal for its Blackberry wine, and three bronze medals for its Chambourcin, Chardonnay and Cabernet Sauvignon selections. Spout Spring Estates in Blaine, TN, received a bronze medal for its 2016 Riesling.

Riesling.

At the Asheville Wine Competition a number of East Tennessee wineries won impressive medals:

Goodwater Winery and Vineyards in Mosheim, TN, earned a double gold medal for its Corot Noir; gold medals for Everything's Peachy and Goodwater Raz; and silver medals for Blackberry and Seyval Blanc.

The Winery at Seven Springs Farm received double gold medals for its Riesling, Moscato and Southern Belle wines; gold medals for its Farmhouse White, Heritage Red, Vineyard White, Royal Blue and Muscadine wines, and silver medals for its James's Peach and Red Muscadine wines.

Watauga Lake Winery in Butler, TN, won a double gold medal for its Duncan Hollow wine; a gold for Barely Peach; and silver for Tart 'N Blue.

Cades Cove Winery in Townsend, TN, won a gold medal for its Firefly wine; and silver medals for its Chardonnay, Fall Bounty, Riesling and Blackberry wines.

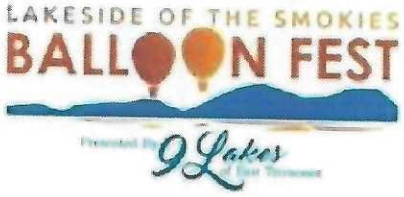
Spout Springs Estates and Winery in Blaine, TN, won silver medals for its Smoky Mountain Rose, Blackberry, Cabernet France, and Chardonnay wines.

Read more at source **PRWeb**

EXHIBIT 19

NINE LAKES LOGOS

https://www.easttnvacations.com/



https://www.knoxvilleweekend.com/event/?eID=9432503

Information Regarding Tables

Climate data was compiled from data provided by the PRISM climate data mapping system. (PRISM). PRISM is a computerized climate mapping system that estimates climate patterns by using data gathered from weather stations, global positioning systems, and remote sensing technologies, along with other factors such as elevation, longitude, slope angles, and solar aspects. This is a service provided by PRISM Climate Group at Oregon State University.[1]

Secondary climate data was provided by National Centers for Environmental Information (NCEI)[2], and the Southeast Regional Climate Center (SERCC)[3]. The NCEI preserves, monitors, assesses and provides public access to climate and historical weather data and information. The mission of SERCC is to provide timely, high quality and pertinent climate data and information to public and private users in the region. SERCC is one of six regional climate centers in the United States and

The period of record for all climate normals data is 1981 – 2010, the most recent available data for all stations. See Table 1 for locations of weather stations.

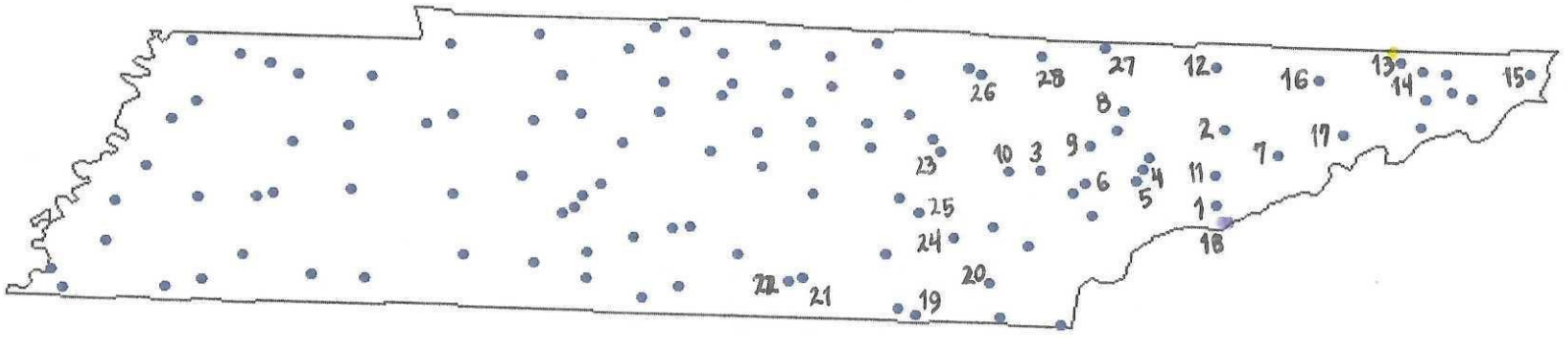
List of Tables

---

[1] PRISM Climate Group, http://prism.oregonstate.edu.

[2] National Centers for Environmental Information: National Oceanic and Atmospheric Administration, https://www.ncdc.noaa.gov.

[3] Southeast Regional Climate Center, http://sercc.com.



NWS Weather Stations

In AVA	In AVA	Outside AVA	Outside AVA
1 – Gatlinburg	8 – Norris	13 – Bristol AP	21 – Monteagle
2 – Jefferson City	9 – Oak Ridge ATDD	14 – Kingsport	22 – Sewanee
3 – Kingston	10 – Rockwood	15 – Mountain City 2	23 – Crossville AP
4 – Knoxville Exp Stn	11 – Sevierville	16 – Rogersville	24 – Dayton
5 – Knoxville AP	12 – Tazewell	17 – Greeneville Exp Stn	25 - Pikeville
6 – Lenoir City		18 – Mt. LeConte	26 – Allardt
7 – Newport 1 NW		19 – Chattanooga AP	27 – Newcomb
		20 – Cleveland Filter Plant	28 - Oneida

Table 1.

Weather Stations and Locations.

	County	Location	Distance in Miles
Gatlinburg	Sevier	In AVA - east	
Jefferson City	Jefferson	In AVA - center	
Kingston	Roane	In AVA - west	
Knoxville Exp Stn	Knox	In AVA - center	
Knoxville AP	Knox	In AVA - center	
Lenoir City	Loudon	In AVA - center	
Newport 1 NW	Cocke	In AVA - east	
Norris	Anderson	In AVA - northwest	
Oak Ridge ATDD	Anderson	In AVA - center	
Rockwood	Roane	In AVA - west	
Sevierville	Sevier	In AVA - east	
Tazewell	Claiborne	In AVA - north	
Bristol AP	Sullivan	Northeast of AVA	60
Kingsport	Sullivan	Northeast of AVA	45.5
Mountain City 2	Johnson	Northeast of AVA	71
Rogersville	Hawkins	Northeast of AVA	14.9
Greeneville Exp Stn	Greene	East of AVA	15.2
Mt. LeConte	Sevier	East of AVA	10
Chattanooga AP	Hamilton	South of AVA	43.5
Cleveland Filter Plant	Bradley	South of AVA	11.2
Monteagle	Marion	Southwest of AVA	76.4
Sewanee	Franklin	Southwest of AVA	81.3
Crossville AP	Cumberland	West of AVA	25.3
Dayton	Rhea	West of AVA	9.9
Pikeville	Bledsoe	West of AVA	25.1
Allardt	Fentress	Northwest of AVA	36
Newcomb	Campbell	Northwest of AVA	13
Oneida	Scott	Northwest of AVA	28.5

Table 2

Maximum Temperatures

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
In AVA	46.91	51.70	61.08	70.17	77.78	84.83	87.55	87.12	81.37	71.23	60.36	49.47	69.13
Northeast	45.33	49.80	58.90	67.93	75.83	82.60	85.20	84.78	79.13	69.50	59.05	47.95	67.16
East	40.90	44.30	51.35	59.80	67.30	74.00	76.85	76.45	71.50	62.95	53.20	43.65	60.19
South	49.85	54.55	63.25	72.20	79.40	86.55	89.55	89.05	82.70	72.75	62.05	51.80	71.14
Southwest	44.85	48.90	57.80	66.60	74.85	82.10	85.50	85.20	78.85	68.75	58.05	47.45	66.58
West	46.90	51.40	60.50	69.63	76.83	83.83	86.63	86.33	80.33	70.40	59.50	48.97	68.44
Northwest	44.00	48.73	58.03	67.43	75.13	81.80	84.60	83.97	78.13	68.33	57.83	46.77	66.23

Data Provided by PRISM Climate Group | Southeast Regional Climate Center
Period of Record: 1981-2010

Table 3

Minimum Temperatures

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
In AVA	26.10	28.89	35.26	43.18	52.68	61.76	65.81	64.75	57.43	45.11	35.66	28.64	45.44
Northeast	24.38	27.18	33.45	41.85	51.00	59.35	63.33	62.10	54.88	43.00	34.28	27.20	43.50
East	20.85	23.25	28.35	35.85	45.20	53.40	56.95	55.75	49.25	39.05	30.75	23.10	38.48
South	29.30	32.60	39.15	46.65	55.60	64.25	68.20	67.55	59.90	48.15	38.50	31.70	48.46
Southwest	26.95	29.65	37.65	46.00	54.65	62.70	66.15	65.20	59.45	47.95	38.75	29.65	47.06
West	26.43	29.83	36.77	44.80	53.30	61.43	65.37	64.33	57.17	45.97	37.27	29.57	46.02
Northwest	24.93	27.87	33.80	41.87	50.63	59.47	63.93	62.33	55.73	44.13	35.27	28.17	44.01

Data Provided by PRISM Climate Group | Southeast Regional Climate Center
Period of Record: 1981-2010

Table 4

Growing Season Mean Temperatures
(April – October)

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
In AVA	0.00	0.00	0.00	56.68	65.23	73.30	76.68	75.93	69.39	58.18	0.00	0.00	67.91
Northeast	0.00	0.00	0.00	54.93	63.40	70.98	74.28	73.43	67.00	56.25	0.00	0.00	65.75
East	0.00	0.00	0.00	47.85	56.30	63.70	66.90	66.10	60.35	51.00	0.00	0.00	58.89
South	0.00	0.00	0.00	59.45	67.50	75.40	78.90	78.30	71.45	60.45	0.00	0.00	70.21
Southwest	0.00	0.00	0.00	56.30	64.75	72.40	75.85	75.20	69.15	58.35	0.00	0.00	67.43
West	0.00	0.00	0.00	57.33	65.20	72.77	76.20	75.50	69.03	58.27	0.00	0.00	67.76
Northwest	0.00	0.00	0.00	54.67	62.87	70.67	74.27	73.17	66.53	55.73	0.00	0.00	65.41

Data Provided by PRISM Climate Group | Southeast Regional Climate Center
Period of Record: 1981-2010

Table 5

Frost-Free Growing Season

Weather Station	First Fall Frost	Last Spring Frost	Location	Growing Season
Gatlinburg 2 SW	27-Oct	9-Apr	In AVA	200
Jefferson City	no data		In AVA	
Kingston	no data		In AVA	
Knoxville Exp Stn	5-Nov	1-Apr	In AVA	217
Knoxville AP	12-Nov	23-Mar	In AVA	233
Lenoir City	13-Nov	24-Mar	In AVA	233
Newport 1 NW	1-Nov	3-Apr	In AVA	211
Norris	3-Nov	5-Apr	In AVA	210
Oak Ridge ATDD	5-Nov	30-Mar	In AVA	220
Rockwood 2	2-Nov	31-Mar	In AVA	215
Sevierville 1 SE	27-Oct	9-Apr	In AVA	201
Tazewell	22-Oct	17-Apr	In AVA	188
Bristol	1-Nov	5-Apr	NE of AVA	209
Kingsport	6-Nov	30-Mar	NE of AVA	220
Mountain City 2	15-Oct	29-Apr	NE of AVA	169
Rogersville 1 NE	31-Oct	4-Apr	NE of AVA	210
Greeneville Exp Stn	24-Oct	16-Apr	East of AVA	190
Mt. LeConte	no data		East of AVA	
Chattanooga AP	16-Nov	19-Mar	South of AVA	242
Cleveland Filter Plant	4-Nov	31-Mar	South of AVA	217
Monteagle	12-Nov	29-Mar	SW of AVA	227
Sewanee	no data		SW of AVA	
Crossville AP	1-Nov	3-Apr	West of AVA	211
Dayton 2SE	8-Nov	31-Mar	West of AVA	221
Pikeville	29-Oct	6-Apr	West of AVA	205
Allardt	31-Oct	4-Apr	NW of AVA	209
Newcomb	no data		NW of AVA	
Oenida	25-Oct	13-Apr	NW of AVA	194

Threshold 28 | Probability 50%

Table 6

Frost-Free Growing Season (Mean)

	Min	Max	Mean
In AVA	188	233	212.8
Northeast	169	220	202
East	190	200	190
South	217	242	229.5
Southwest	227	227	227
West	205	227	212.33
Northwest	194	209	201.5

Data provided by National Climatic Data Center

Table 7
Growing Degree Days / Heat Summation (Winkler Scale)

BASE = 50	April	May	June	July	Aug	Sept	Oct	Heat Summation Units	Region
Gatlinburg 2 SW	165	416.95	622.5	742.45	716.1	519	215.45	3397.45	III
Jefferson City	129	413.85	639	776.55	742.45	523.5	182.9	3407.25	III
Kingston	220.5	509.95	750	866.45	844.75	615	289.85	4096.5	V
Knoxville Exp Stn	202.5	480.5	712.5	846.3	821.5	604.5	271.25	3939.05	IV
Knoxville AP	264	531.65	751.5	881.95	861.8	633	305.35	4229.25	V
Lenoir City	247.5	522.35	756	889.7	868	645	308.45	4237	V
Newport 1 NW	213	483.6	708	833.9	809.1	580.5	258.85	3886.95	IV
Norris	171	434	651	775	756.4	541.5	217	3545.9	III
Oak Ridge ATDD	247.5	514.6	730.5	863.35	846.3	618	294.5	4114.75	V
Rockwood 2	190.5	452.6	690	816.85	790.5	570	240.25	3750.7	IV
Sevierville	228	497.55	730.5	850.95	833.9	606	274.35	4021.25	V
Tazewell	123	406.1	643.5	781.2	756.4	526.5	181.35	3418.05	III
Bristol AP	156	418.5	645	764.15	737.8	514.5	195.3	3431.25	III
Kingsport	193.5	477.4	694.5	821.5	793.6	571.5	248	3800	IV
Mountain City 2	63	325.5	528	643.25	621.55	409.5	108.5	2699.3	II
Rogersville 1 NE	174	441.75	649.5	779.65	753.3	544.5	223.2	3565.9	IV
Greeneville Exp Stn	159	441.75	676.5	807.55	779.65	558	229.4	3651.85	IV
Mt. LeConte	-289.5	-54.25	145.5	240.25	218.55	64.5	-167.4	157.65	<I
Chattanooga AP	315	576.6	793.5	928.45	911.4	675	356.5	4556.45	V
Cleveland Fil Plant	250.5	508.4	730.5	861.8	843.2	603	291.4	4088.8	V
Monteagle	180	430.9	637.5	759.5	744	537	229.4	3518.3	IV
Sewanee	198	483.6	706.5	841.65	818.4	612	288.3	3948.45	IV
Crossville AP	175.5	421.6	631.5	762.6	739.35	516	215.45	3462	III
Dayton 2SE	246	503.75	723	847.85	833.9	612	280.55	4047.05	V
Pikeville	240	485.15	696	823.05	799.8	585	274.35	3903.35	IV
Allardt	144	372	585	703.7	678.9	471	179.8	3134.4	III
Newcomb	154.5	437.1	655.5	790.5	757.95	562.5	241.8	3599.85	IV
Oneida	120	389.05	616.5	762.6	716.1	490.5	158.1	3252.85	III

Data Provided by PRISM Climate Group | Southeast Regional Climate Center
Period of Record: 1981-2010

Table 8 | Precipitation

Average by Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Average	Annual	Growing Season	Winter
In AVA	4.51	4.56	4.55	4.32	4.77	4.29	5.06	3.78	3.61	2.75	4.13	4.77	4.26	51.09	28.57	13.84
Northeast	3.67	3.65	3.73	3.60	4.33	3.94	4.75	3.58	3.14	2.42	3.13	3.83	3.65	43.76	25.75	11.15
East	4.64	4.55	4.77	5.12	5.62	5.70	5.75	5.40	4.48	2.90	4.62	4.60	4.84	58.12	34.96	13.78
South	4.95	4.75	4.97	4.10	4.47	4.30	4.81	3.51	4.08	3.30	4.99	4.95	4.43	53.16	28.56	14.65
Southwest	4.82	5.15	5.42	4.88	5.11	5.15	5.57	3.92	4.64	3.88	5.55	6.13	5.02	60.19	33.13	16.09
West	4.72	4.66	4.89	4.60	5.11	4.36	4.95	3.96	3.99	3.14	4.98	5.12	4.54	54.48	30.11	14.50
Northwest	4.47	4.27	4.73	4.34	5.34	4.82	5.08	4.34	3.68	3.07	4.32	5.00	4.45	53.45	30.66	13.74

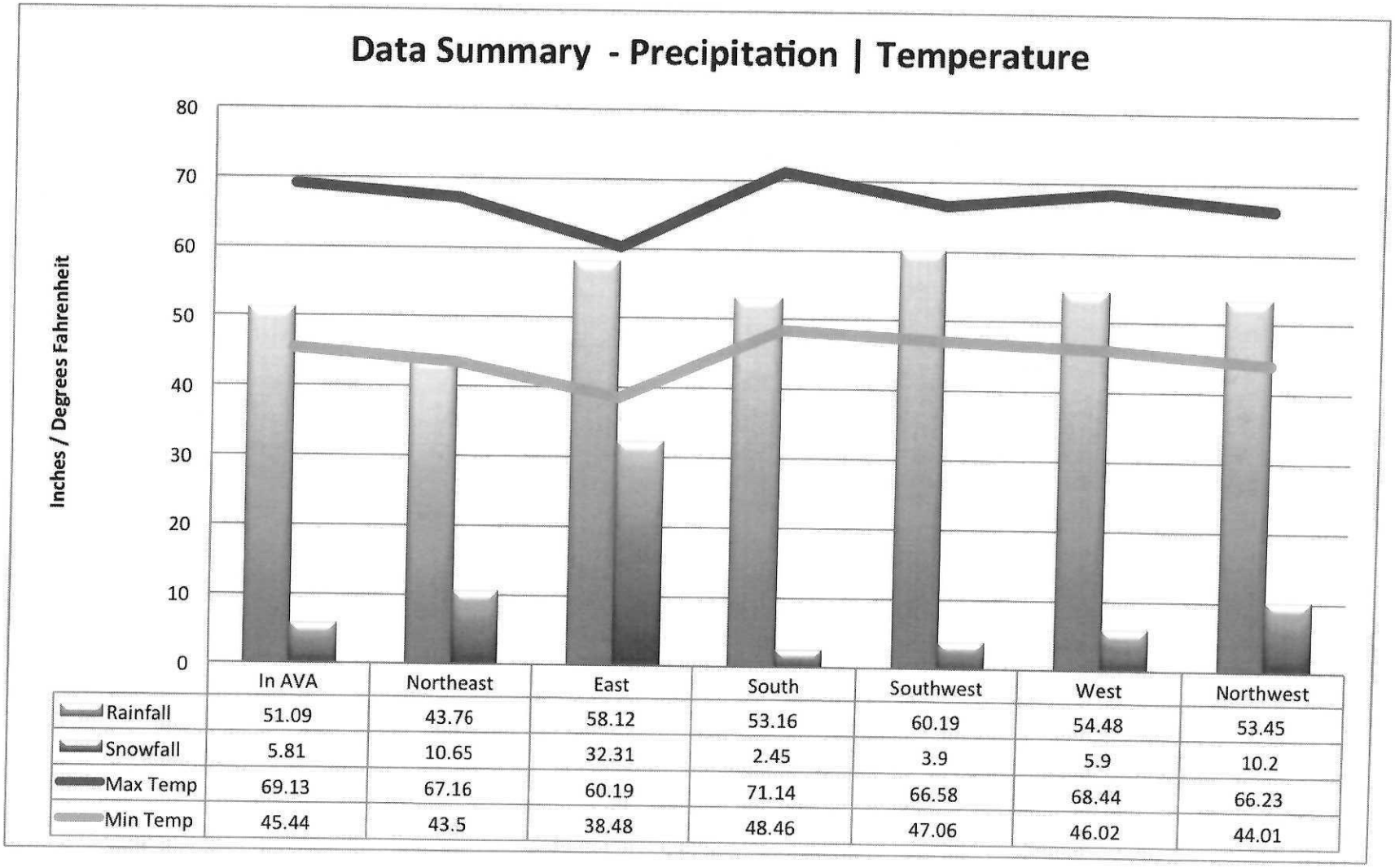
Growing Season – April- October | Winter – January/February/December

Table 9 | Snowfall

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
In AVA	2.31	1.81	0.55	0.30	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.81	5.81
Northeast	4.00	3.15	0.85	0.50	0.00	0.00	0.00	0.00	0.00	0.03	0.23	1.90	10.65
East	9.26	11.45	5.70	2.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.00	32.31
South	1.05	0.40	0.60	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	2.45
Southwest	1.10	1.20	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	3.90
West	2.20	1.77	0.97	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.77	5.90
Northwest	3.70	3.05	1.35	0.20	0.00	0.00	0.00	0.00	0.00	0.05	0.00	1.85	10.20

Data Provided by PRISM Climate Group | Southeast Regional Climate Center
Period of Record: 1981-2010

Table 10



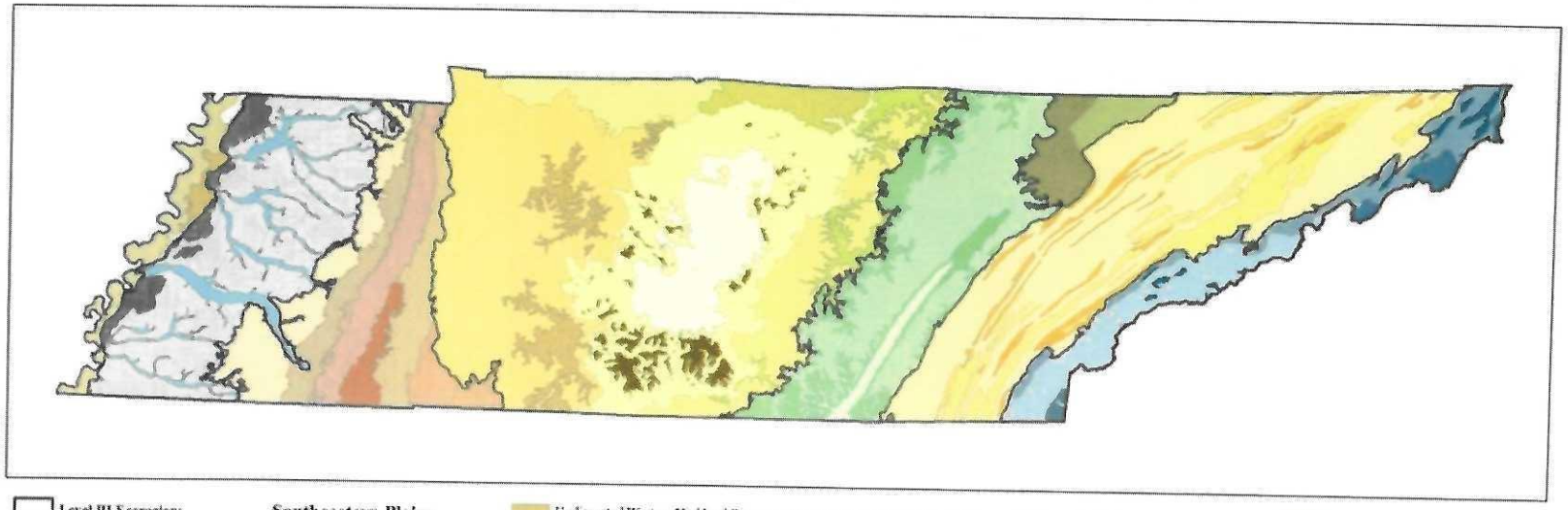
	In AVA	Northeast	East	South	Southwest	West	Northwest
Rainfall	51.09	43.76	58.12	53.16	60.19	54.48	53.45
Snowfall	5.81	10.65	32.31	2.45	3.9	5.9	10.2
Max Temp	69.13	67.16	60.19	71.14	66.58	68.44	66.23
Min Temp	45.44	43.5	38.48	48.46	47.06	46.02	44.01

Data Provided by PRISM Climate Group | Southeast Regional Climate Center
Period of Record: 1981-2010

Figures

Figure 1

Level IV Ecoregions of Tennessee



Level III Ecoregions

Mississippi Aluvial Plain
- Northern Holocene Meander Belts
- Northern Pleistocene Valley Trains
- Northern Backswamps

Mississippi Valley Loess Plains
- Loess Plain
- Bluff Hills
- Loess Plain Meander Belt

Southeastern Plains
- Northern Hilly Gulf Coastal Plain
- Flat Woods
- Pontotoc Ridge
- Black Belt
- Fall Line Hills Ecoregion
- Transition Hills

Interior Plateau
- Western Highland Rim
- Undissected Western Highland Rim
- Outer Nashville Basin
- Nashville Basin Knobs
- Inner Nashville Basin
- Western Pennyroyal Karst Plain
- Greensburg Upland
- Eastern Highland Rim
- Undissected Eastern Highland Rim

Southwestern Appalachians
- Plateau Escarpment
- Cumberland Plateau
- Sequatchie Valley
- Crab Orchard Mountains

Central Appalachians
- Dissected Appalachian Plateau
- Cumberland Mountain Thrust Block

Ridge & Valley
- Southern Limestone Dolomite Valleys and Low Rolling Hills
- Southern Shale Valleys
- Southern Sandstone Ridges
- Southern Table Plateaus
- Southern Dissected Ridges and Knobs

Blue Ridge
- Southern Sedimentary Ridges
- Limestone Valleys and Coves
- Broad Basins
- Southern Crystalline Ridges and Mountains
- High Mountains
- Southern Metasedimentary Mountains
- Amphibolite Mountains

0 15 30 60 90 120 Miles

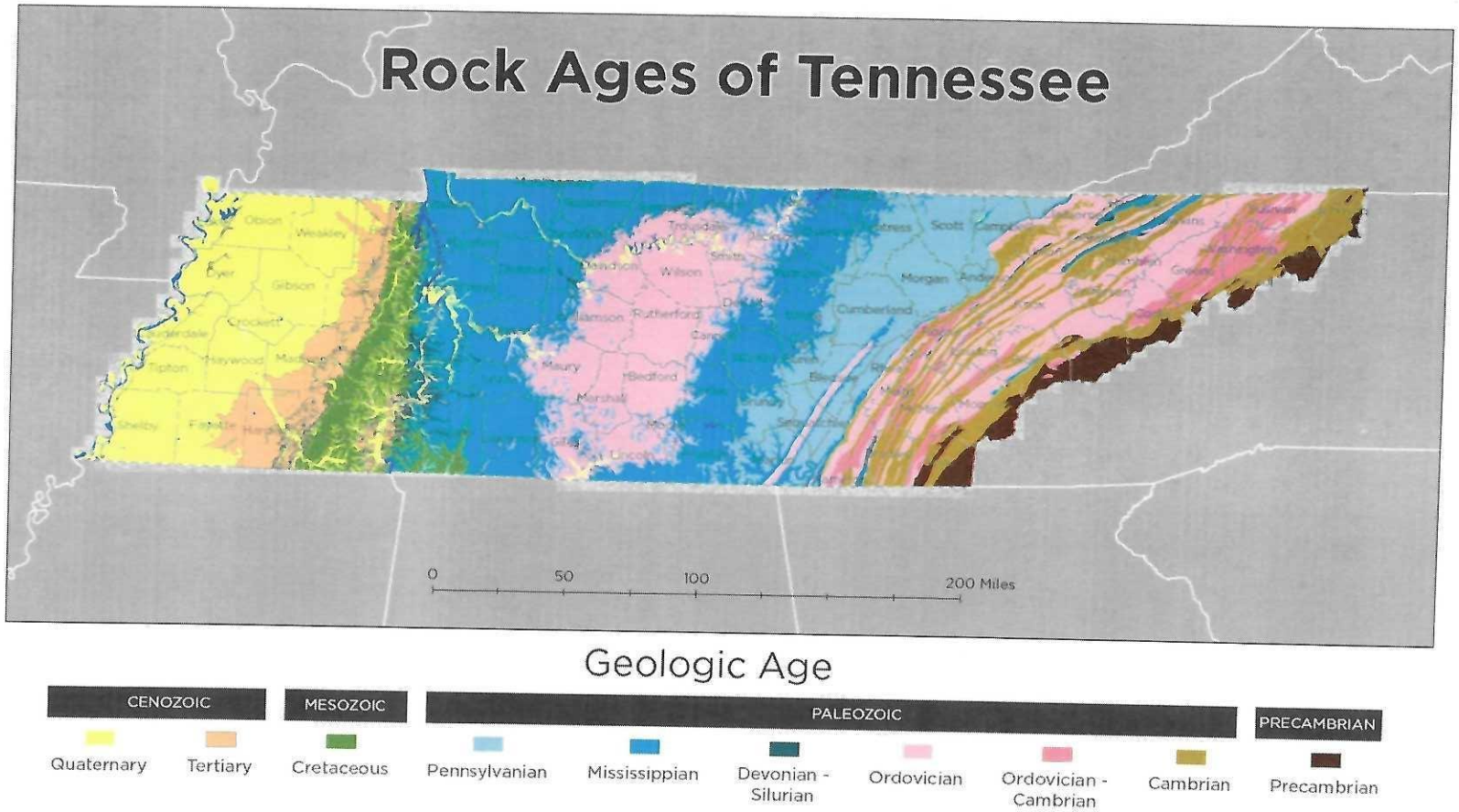
N

Primary Authors: Sunny Fleming (TDEC), Dwayne Estes (APSU, BRIT)

Adapted from EPA Level IV Ecoregions

Coordinate System: NAD 1983 StatePlane Tennessee FIPS 4100 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 1,968,500.0000
False Northing: 0.0000
Central Meridian: -86.0000
Standard Parallel 1: 35.2500
Standard Parallel 2: 36.4167
Latitude Of Origin: 34.3333
Units: Foot (US)

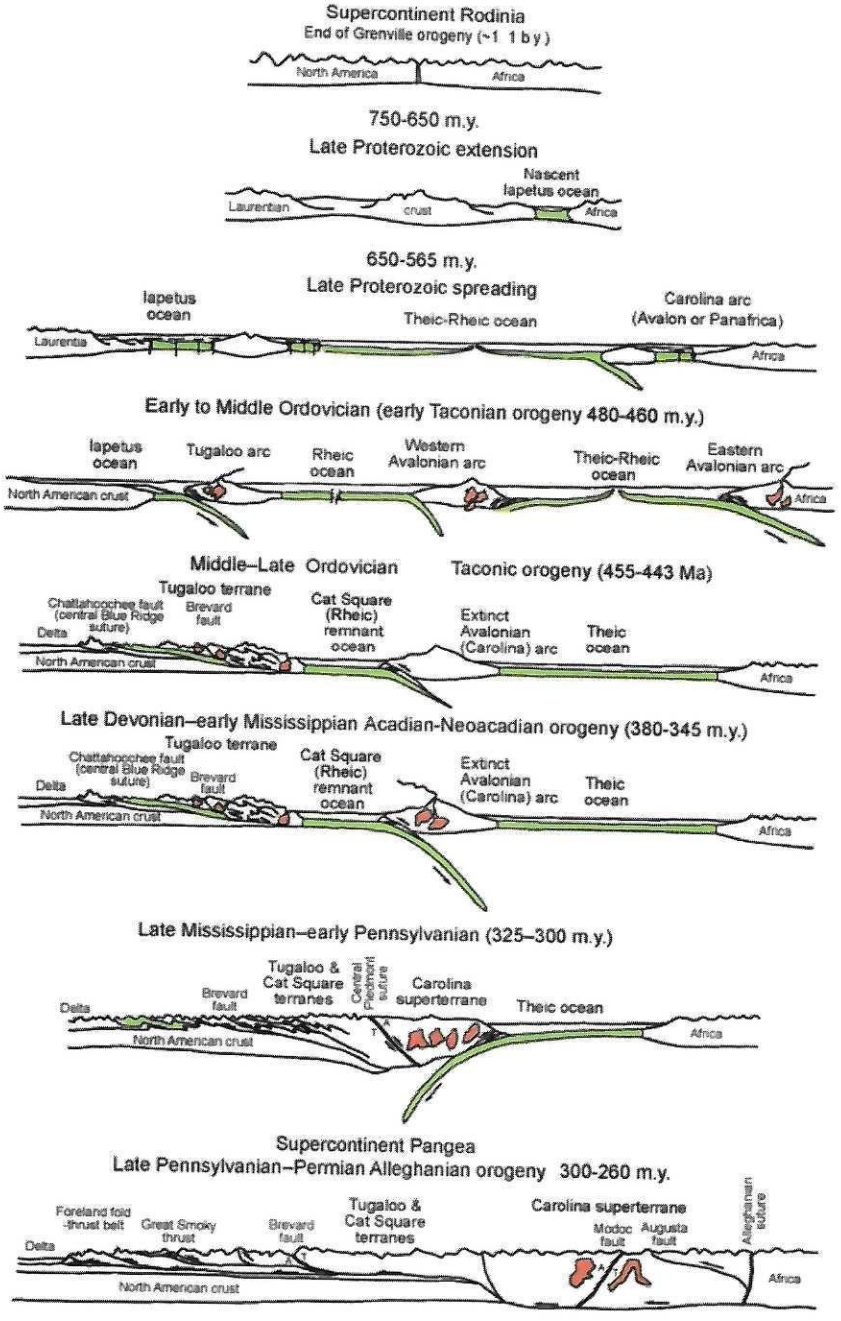
Figure 2



Data Source: USGS Mineral Resource Database | Author: UTK GIS Outreach and Engagement Lab
Date: 07/26/2018 | Projection: TN State Plane

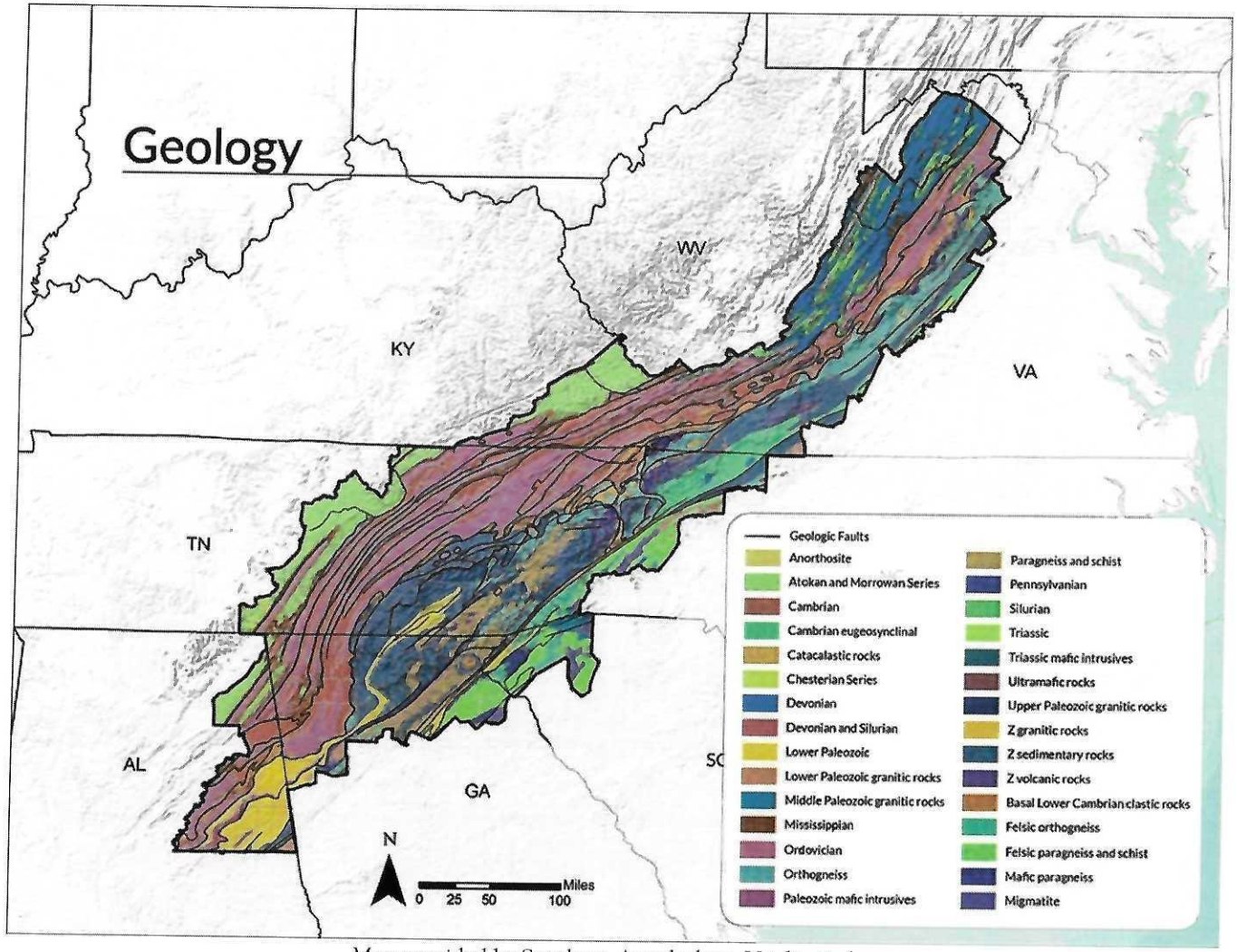
Figure 3

Formation of Appalachians



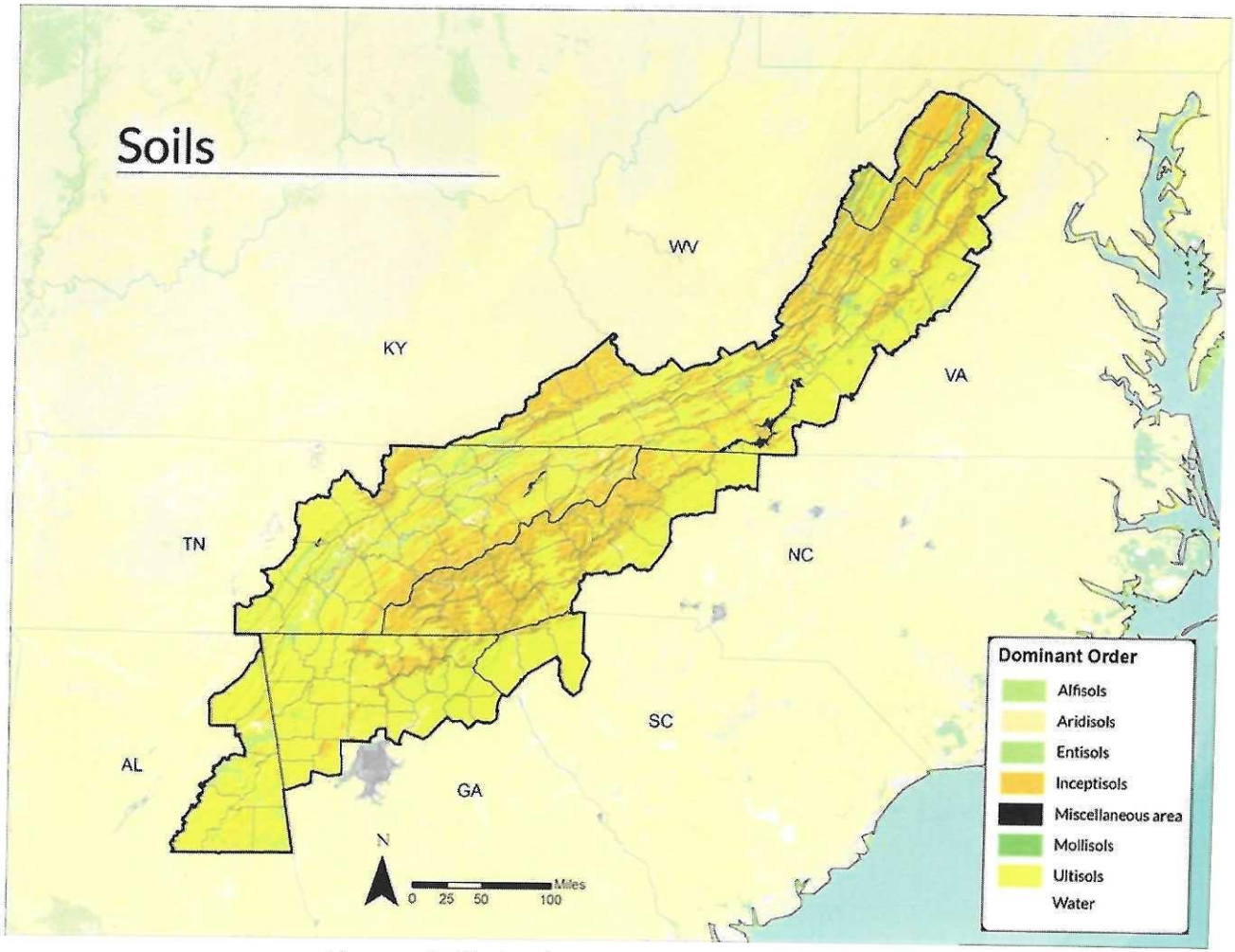
Map provided by Hatcher, Robert D. "Appalachians and Little Tennessee River Geologic History, Occasional Paper No. 23."

Figure 4 | Geology of Valley and Ridge Appalachians



Map provided by Southern Appalachian Vitality Index

Figure 5 | Soils of Valley and Ridge Appalachians



Map provided by Southern Appalachian Vitality Index

Figure 6

Major Soil Series of Nine Lakes of East Tennessee and Surrounding Areas

	ECOREGION	SOILS									
In AVA	Valley and Ridge Province										
	Southern Limestone / Dolomite Valleys and Low Rolling Hills	Fullerton	Dewey	Decatur	Bodine	Waynesboro					
	Southern Shale Valleys	Dandridge	Bays	Needmore	Montevallo	Townley					
	Southern Sandstone Ridges	Wallen	Jefferson	Gilpin							
	Southern Dissected Ridges and Knobs	Lehew	Litz	Muskingum	Montevallo	Wallen	Dandridge	Tellico	Steekee		
E/NE	Blue Ridge Province										
	Southern Sedimentary Ridges	Wallen	Jefferson	Ditney	Unicoi	Cataska					
	Southern Metasedimentary Mountains	Sylco	Ditney	Jefferson	Brookshire	Junalaska	Spivey	Cataska	Keener	Lostcove	Unicoi
W/NW	Cumberland Plateau										
	Cumberland Plateau	Lily	Ramsey	Lonewood	Gilpin						
	Plateau Escarpment	Bouldin	Ramsey	Gilpin	Allen	Jefferson	Varilla				

See Figure 1 for Ecoregion Map of Tennessee

Figure 7

Rivers and Topography with Elevations

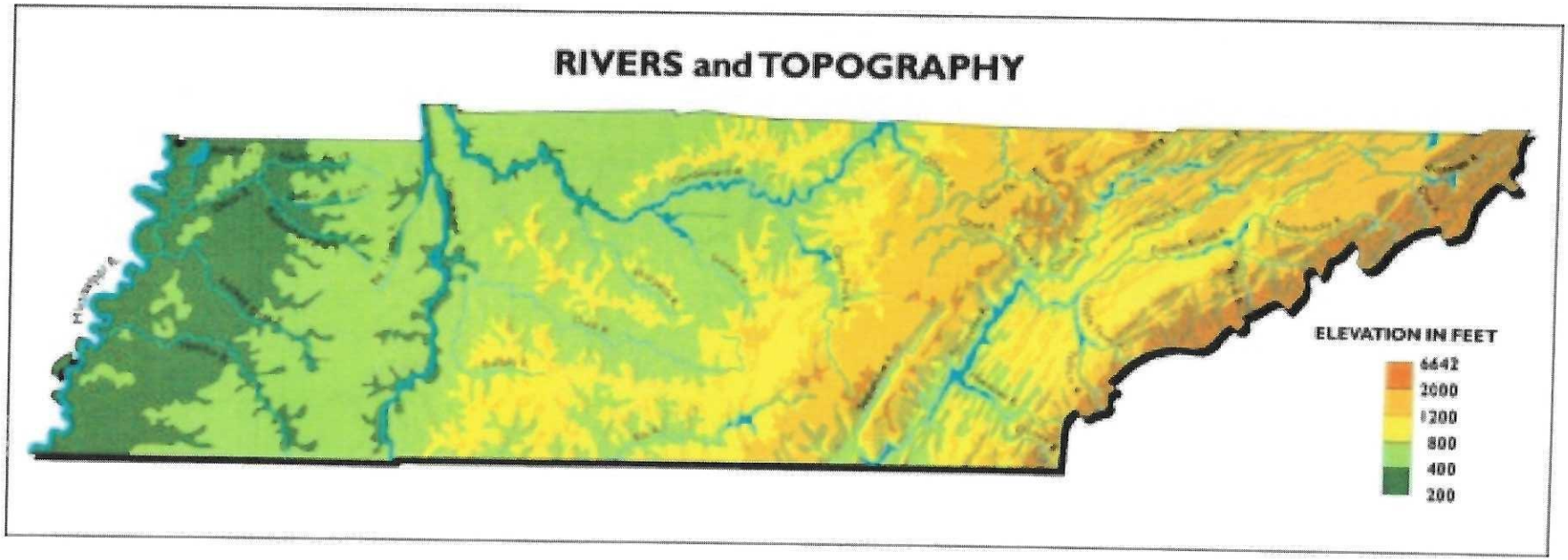


Figure 8

Topography of Ridge and Valley

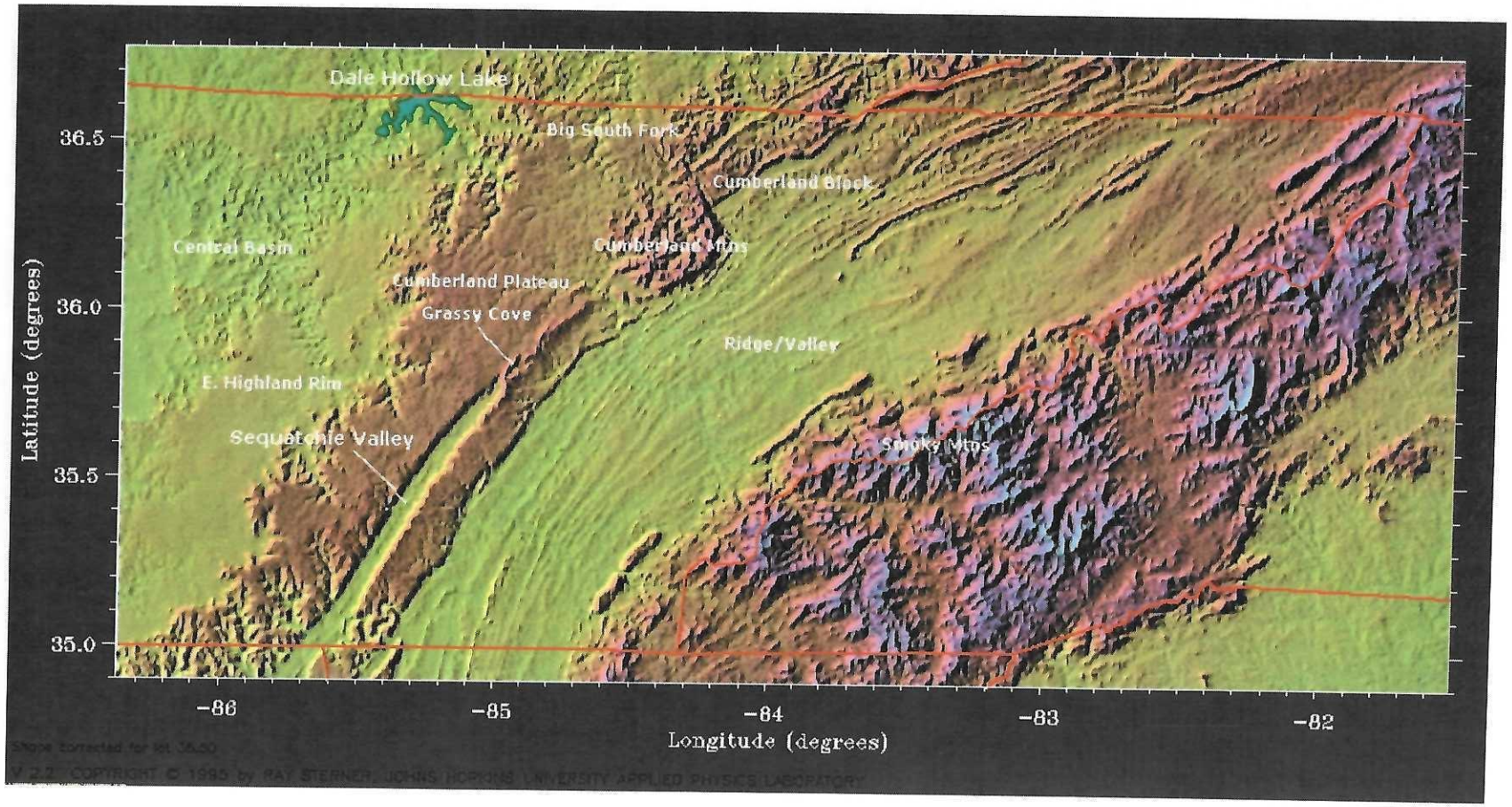
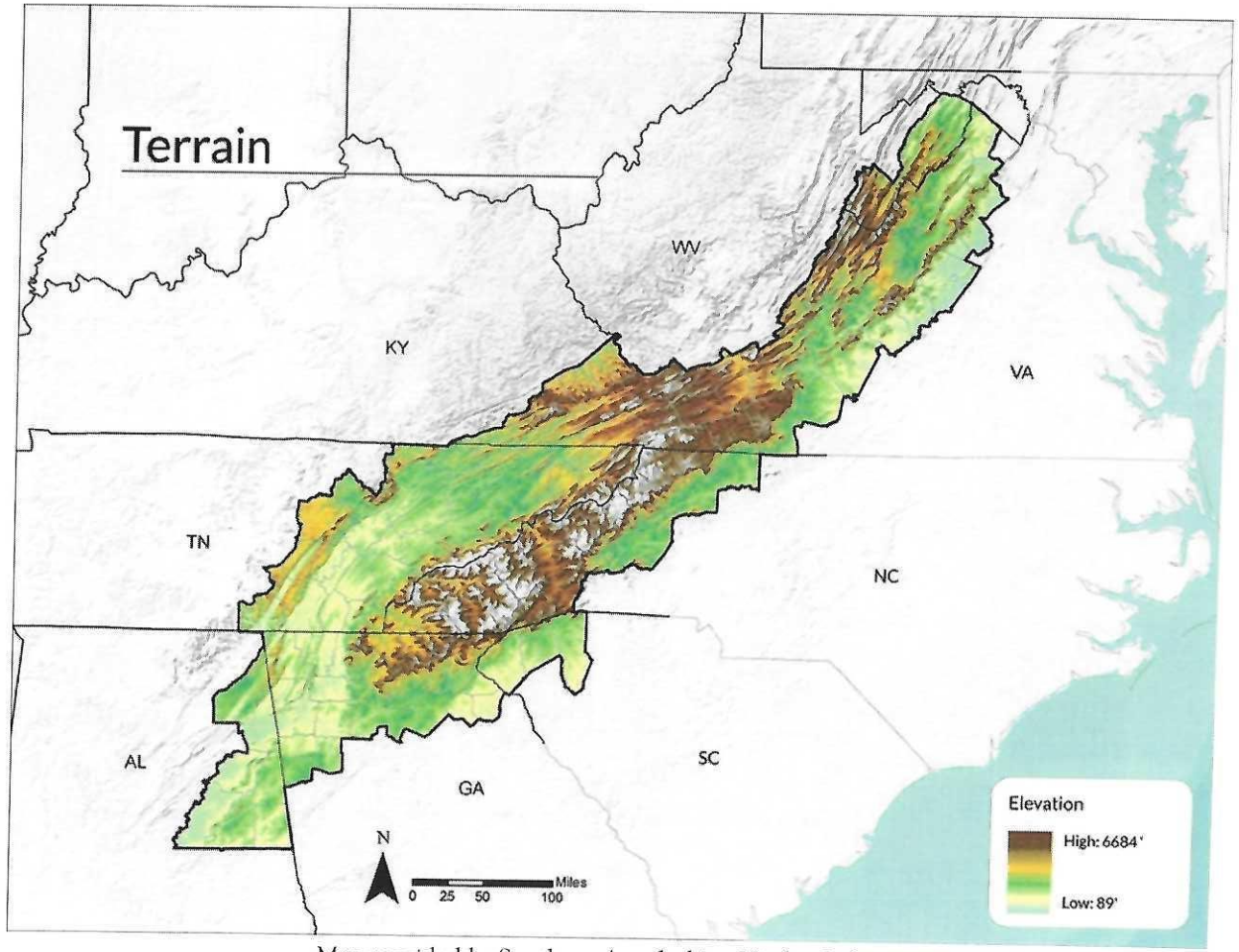


Figure 9

Terrain of Ridge and Valley Appalachians with Elevation



Map provided by Southern Appalachian Vitality Index

Figure 10

Median Last 28°F Freeze Southeast United States

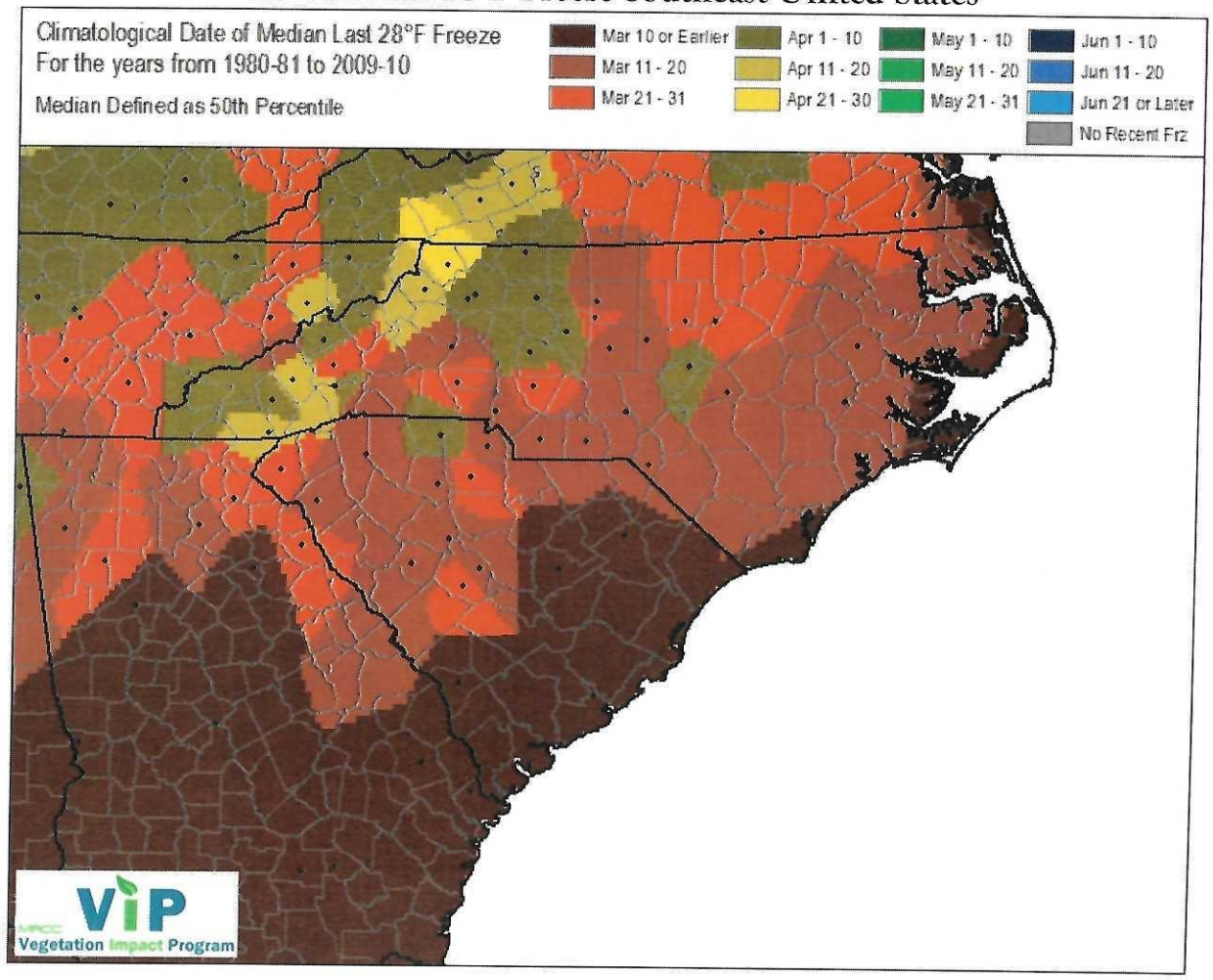


Figure 11

Median First 28°F Freeze Southeast United States

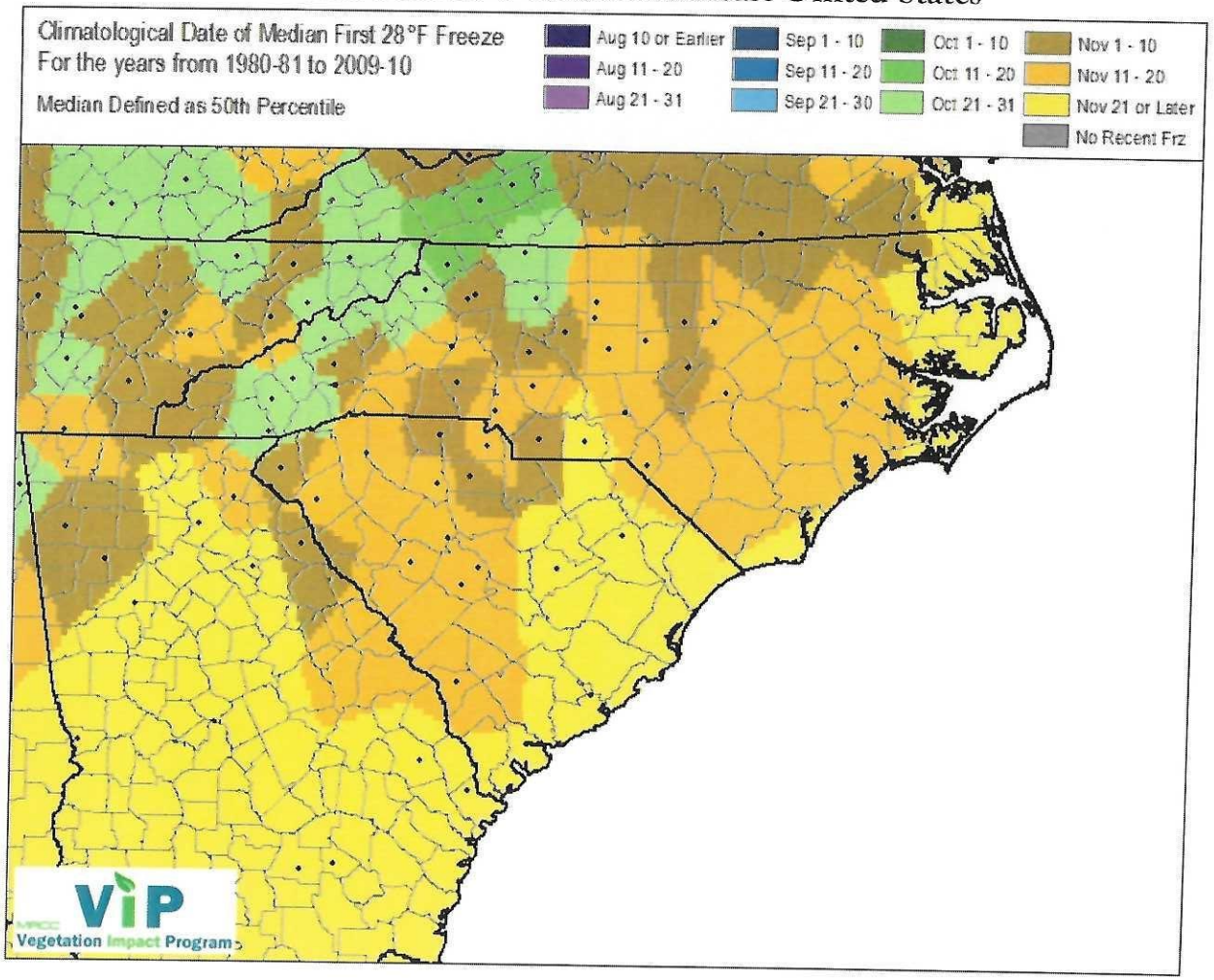


Figure 12

Plant Hardiness Map of Tennessee

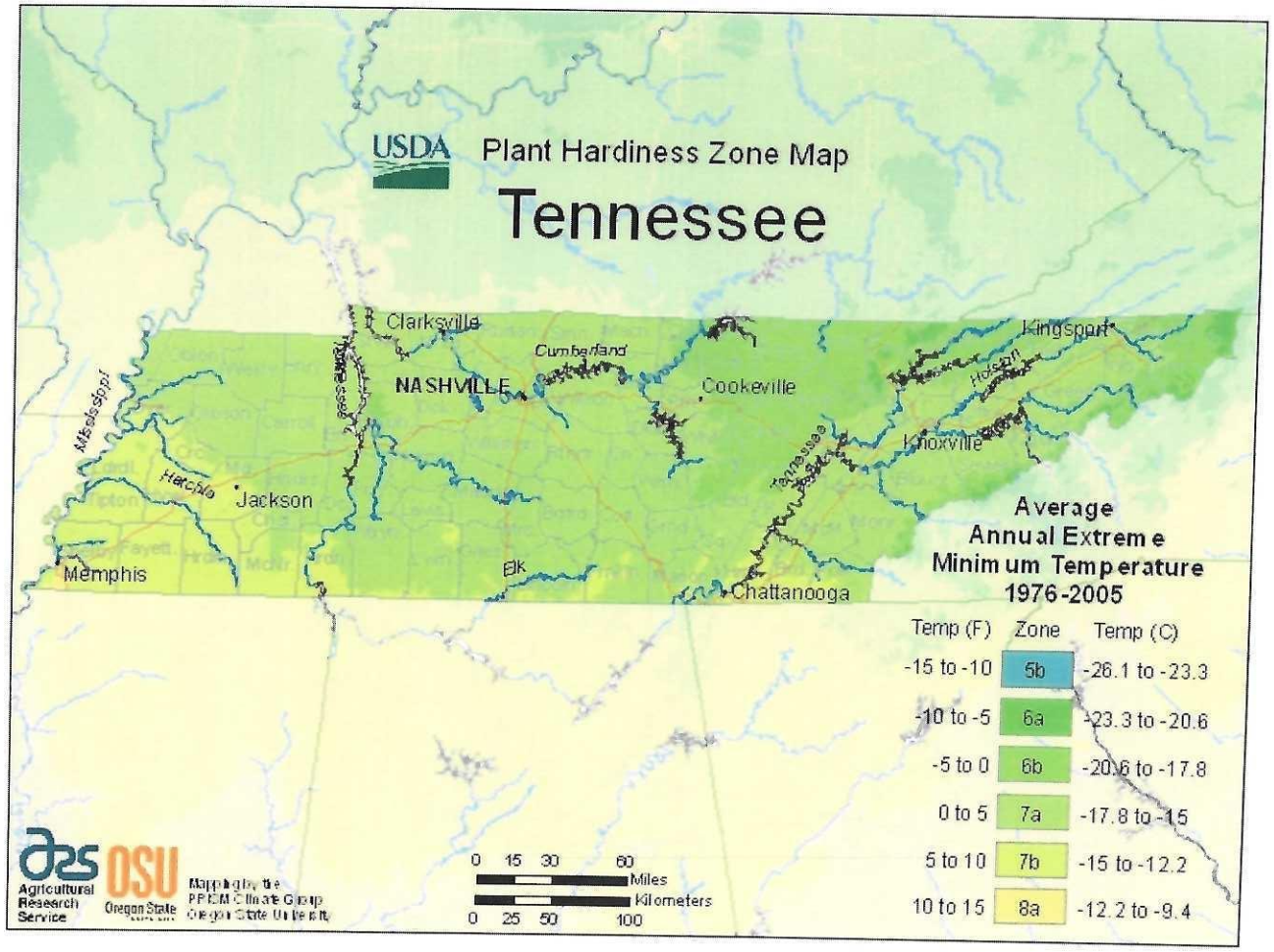


Figure 13

Tennessee Average Annual Precipitation

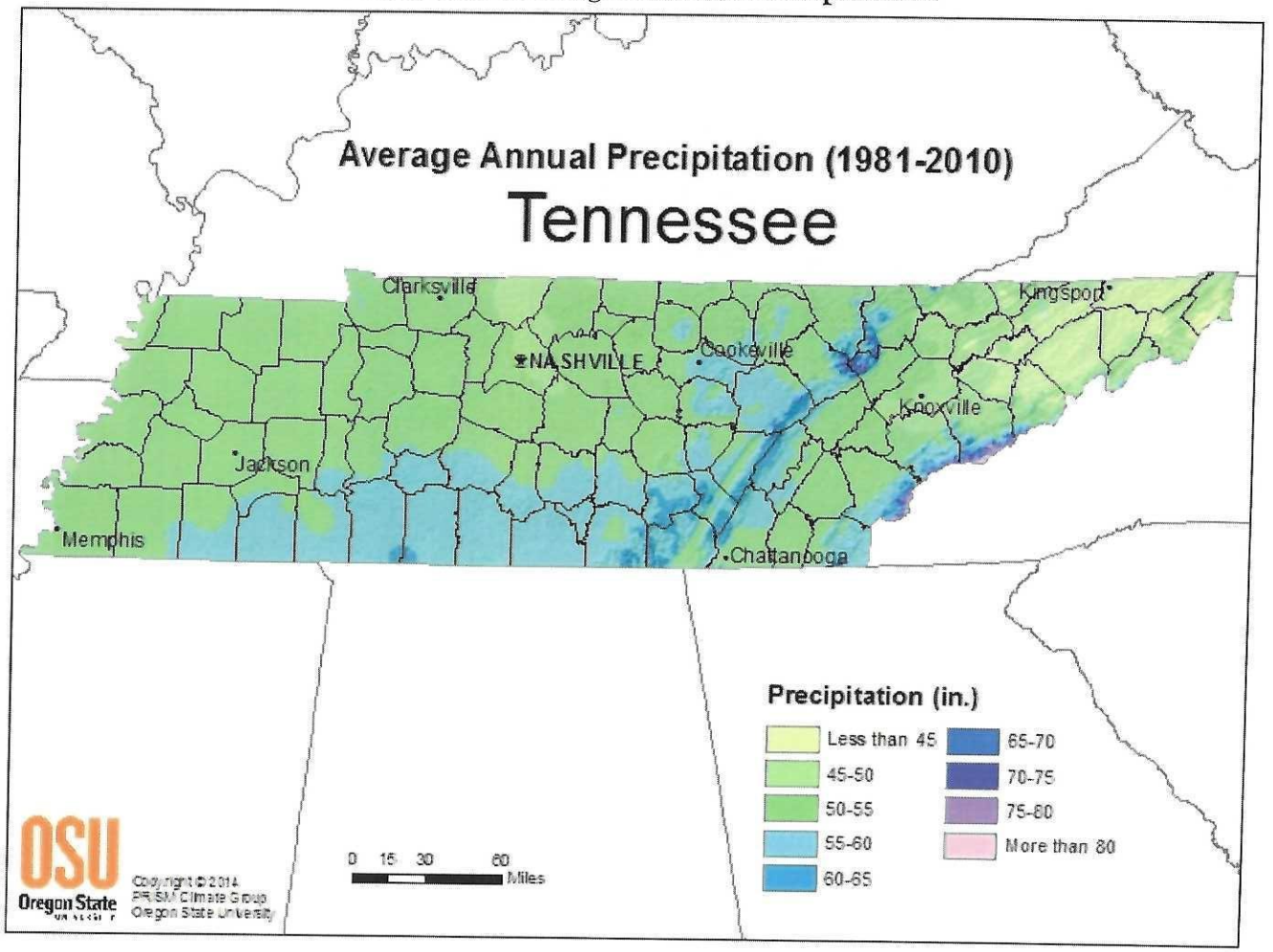
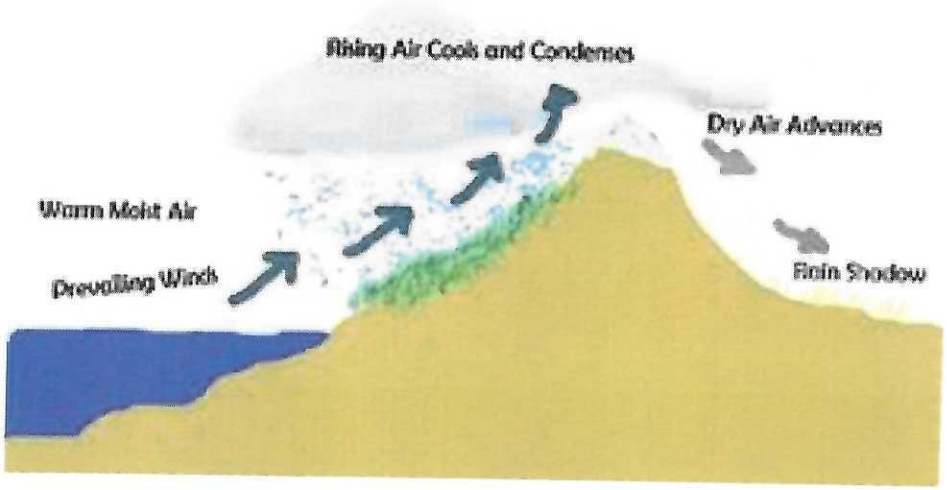


Figure 14

Rain Shadow



A **rain shadow** is a dry area on the **leeward** side of a mountainous area (away from the wind). The mountains block the passage of rain-producing weather systems and cast a "shadow" of dryness behind them. Wind and moist air is drawn by the prevailing winds towards the top of the mountains, where it condenses and precipitates before it crosses the top. The air, without much moisture left, advances across the mountains creating a drier side called the "rain shadow".

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