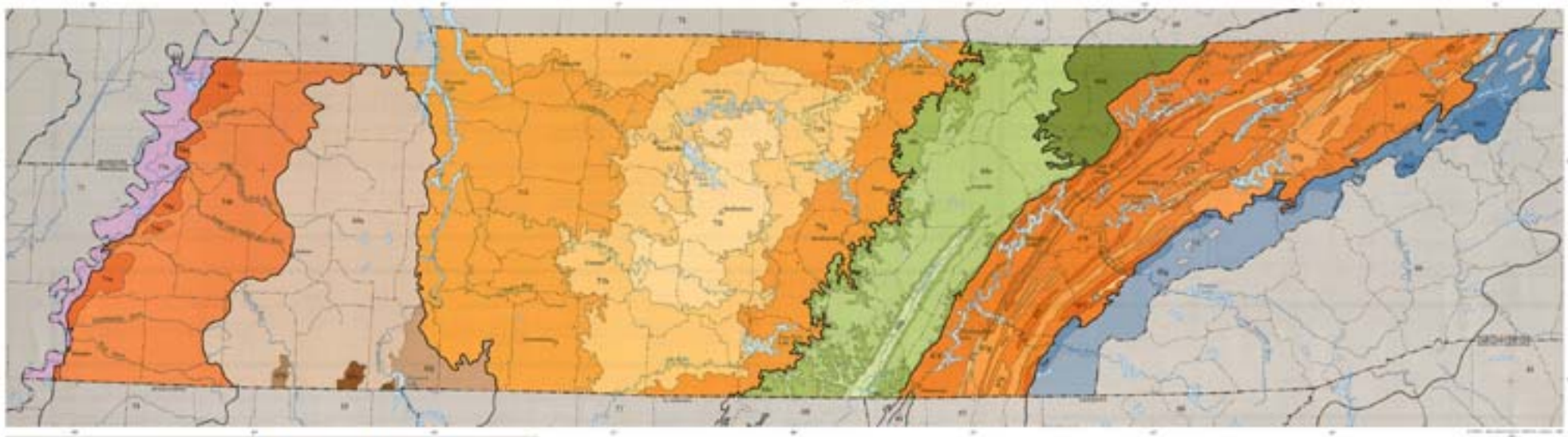
Ecoregions of Tennessee



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Level III ecoregion
Level IV ecoregion
County boundary
State boundary

Albers equal-area projection
Standard parallels 33° 30' N and 36° 10' N

Mapped by ... (1:24,000 - 1:63,360 scale)
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Compiled ... (1:250,000 scale)
Edited ... (1:250,000 scale)

Bailey, R.G., Avers, P.E., King, T., and McNab, W.H. (eds). 1994. Ecoregions and subregions of the United States (map supplemented). With a map and descriptions compiled and edited by McNab, W.H. and Bailey, R.G. Washington, D.C.: U.S. Department of Agriculture - Forest Service, scale 1:7,500,000.

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65. Southeastern Plains

These irregular plains have extensive, if cropland, pasture, woodland, and oak-hickory pine forest. The Cretaceous or Tertiary age sands, clay, and silts of the region contrast geologically with the older limestone, chert, and shale found in the Interior Plateau (71). Elevations and relief are greater than the more plains of Ecoregion 74 to the west, but generally less than the Interior Plateau (71) to the east. Streams in most areas are sandy-bedded and usually meandering.

65a The **Blackland Prairie**, extending north from Mississippi, is a flat to undulating, wooded region covering only a small portion of McNairy County. Sometimes referred to more of the Cretaceous-age chalk, marl, and calcareous clay that characterize the region in Mississippi and Alabama, the northern extent of the Blackland Prairie in Tennessee is not distinct. To the south the natural vegetation has been mostly cut for pasture, pine oak, and oak-hickory along with patches of bluestem prairie. Today, the area is mostly in cropland and pasture, with small patches of mixed hardwoods.

65b The **Fleming/Holly/Red Prairie Margins** extend north from Mississippi, but are distinct in many of the eastern ecoregion belt (taken mostly from Hatley, Mississippi north into Tennessee). In Mississippi and Alabama, this is a transitional region between the Blackland Prairie and the more forested plateaus and hills. Tertiary sands in the Fleming-type matrix, are heavily forested, but the prairie and alluvial areas now have significant amounts of cropland and pasture. In Tennessee, the small region stands out as lower, less hilly agricultural land compared to the forested Southeastern Plains and Hills (65c) that surround it.

65c The **Southeastern Plains and Hills** contains several north-south trending bands of sand and clay formations. Various age sand, clay, and lignite are in the west, and Cretaceous age limestone, chalk, and marl are in the east. With elevations reaching over 600 feet, and more rolling topography and more relief than the Loess Plains (74b) to the west, streams have increased gradients generally south tributaries, and distinctive fluvial characteristics like west Tennessee. The natural vegetation type is oak-hickory forest grading into oak-hickory-pine to the south.

65d The **Fall Line Hills** ecoregion, comprising the Tennessee or Tombigbee Hills in Mississippi and the Fall Line Hills in Alabama is composed primarily of Cretaceous age marine plain sandy sediments. The sand and clayey soil and parent materials are covered by sandy loam topsoils. It is mostly forested terrain of oak-hickory pine on upper hills with 100-200 feet of relief. Elevations in the small Tennessee portion roughly between Chambers Creek and Pickwick Lake in Hardin County, are 400-600 feet.

65j The **Dunbarton Hills** have the highest elevations in Ecoregion 65, and contain characteristics of both the Southeastern Plains and the Interior Plateau (71). Ecoregion. Many terraces of this transitional area have cut down into the Mississippian, Devonian- and Silurian-age rocks and may look similar in places to the Interior Plateau (71). Cretaceous age exposed other deposits of silt, sand, clay, and gravel; however, overlie the older limestone, shale, and chert. It is a mostly forested region of oak-hickory pine, and has relatively extensive acres now associated with soils and pasture operations.

66. Blue Ridge Mountains

The Blue Ridge Mountains of Tennessee are characterized by forested ridges, high gradients, steep, crest streams, and rugged terrain on a mix of igneous, metamorphic, and sedimentary geology. Annual precipitation of nearly 80 inches can occur on the north-exposed high peaks of the Great Smoky Mountains that reach over 6000 feet. The northern Blue Ridge is one of the most rugged areas in the eastern U.S., and is the highest mountain region of the state, and includes Appalachian oak forests, montane hardwood forests, and northeastern hardwood forests. Shrub grass, and beech-birch, hemlock, cove hardwoods, and oak-pine communities are also significant.

66d The **Southern Igneous Ridges and Mountains** occur in Tennessee's northeastern Blue Ridge near the North Carolina border, primarily on Precambrian age igneous and high-grade metamorphic rocks. The typical crystalline rock types include granite, gneiss, schist, and metasediments, covered by well drained, gentle, loamy loamy soils. Elevations of this rough dissected ridge range from 3000-6200 feet, with Roan Mountain reaching 6288 feet. Although there are a few small areas of pasture and apple orchards, the region is mostly forested. Appalachian oak and northern hardwoods have predominance.

66e The **Southern Sedimentary Ridges** in Tennessee include some of the northernmost foothill areas of the Blue Ridge Mountains ecoregion, such as the Bays, Bean, Chilhowee, Ungards, Stone, Rader and Iron Mountain areas. Slopes are steep and elevations are generally 1000-2500 feet. The rocks are primarily Cambrian-age sedimentary, such as sandstone, siltstone, quartzite, conglomerate, although some limestone, shale, known locally as interbeds, belt are predominantly. Acidic loams and thin sandy loams with variable amounts of underlying rock fragments, and support mostly mixed oak and oak-pine forest.

66f The **Limestone Valleys and Coves** are small but distinct northeast areas of the Blue Ridge, with elevations usually between 1500 and 2500 feet. About 450 million years ago, when Blue Ridge rocks, to the east were forced up and over younger rocks to the west. As pressure, this Precambrian rocks were eroded through to Cambrian or Silurian-age limestones, as seen especially in isolated, deep cove areas that are surrounded by steep mountains. The main areas of limestone include the Maryville/Cave Springs area and Shady Valley in the north, and Watts Bar, Tuckaleechee Cove, and Cades Cove of the Great Smoky Mountains in the south. Any, and pastures, with some tobacco patches on small farms are typical land uses.

66g The **Southern Metasedimentary Mountains** are steep, dissected, ecologically-diverse mountains, that include Ocoee/Great Smoky Mountains, the highest peak in Tennessee. The Precambrian age metamorphic and sedimentary geologic materials are generally coarse and more metamorphosed than the Southern Sedimentary Ridges (66e) to the west and north. The Appalachian oak forests and, at higher elevations, the northern hardwoods forests include a variety of mixed and pines, as well as cove-hemlock, hemlock, yellow poplar, hardwood, buckeye (yellow birch) and beech. Spruce-fir forest, found primarily above 5500 feet, has a more coniferous growth form. Its open forests are restricted to the highest windy peaks. The Copper Basin, in the southeast corner of Tennessee, was the site of copper mining and smelting from the 1850's to 1987, and since left more than fifty square miles of eroded bare earth.

67. Ridge and Valley

Also known as the Great Valley of East Tennessee, this is a subbasin-like, low-lying region between the Blue Ridge Mountains to the east and the Cumberland Plateau on the west. As a result of extensive folding and faulting events, the irregular parallel ridges and valleys occur in a variety of landforms, including: open valleys, rolling hills, sinkhole- karst landscape, and marble. Springs and caves are relatively numerous. Forested hilly terrain covers about 50% of the region. The ecoregion has great aquatic habitat diversity in Tennessee and supports a diverse fish fauna (considerably by that in the Highland Rim.

67f The **Southern Limestone/Dolomite Valleys and Low Rolling Hills** form a distinguishable, region comprised predominantly of limestone and cherty limestone (carbonate) rock exposed by low rolling ridges and valleys, and the main city in these areas is Knoxville. Landforms included limestone valleys, sinkholes and underdrainage, as the dissolution of thick strata. Water and forests, hydrological and forests, and occasional sub-zone riparian forests are the common forest types, and grassland forests interspersed with cedar-pine glades also occur here.

67g The **Southern Main Valleys** consist of less rocky rolling valleys, and ridges and hills, across these are dominated by a karst topography. The sandstone areas are associated with Ordovician age cold-stream shale, and the well drained soils are often rapidly, and in natural. In the south, the shale valleys are associated with Cambrian age shales that contain some narrow deposits of limestone, but the main areas in the ecoregion area. Small farms and rural residences cotton out the land. The ecoregion ridges are used for pasture or hay (cropland in flood and forested land, while small fields of hay, corn, tobacco, and garden crops are grown on the lower slopes and bottom land.

67h The **Southern Sandstone Ridges** ecoregion encompasses the ridges sandstone ridges, but these ridges also have areas of shale and siltstone. The deep, forested

68. Southwestern Appalachians

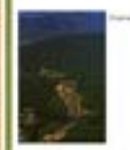
Stretching from Kentucky to Alabama, these open low mountains contain a mosaic of forest and woodland with some cropland and pasture. The eastern boundary of the ecoregion in Tennessee, along the more abrupt mountain escarpment where it meets the Ridge and Valley (67), is relatively smooth and only slightly notched by small stream and flowing stream drainages. The western boundary, next to the Interior Plateau's Eastern Highland Rim (71g), is more convoluted with a irregular mosaic/pattern that is more deeply incised. The annual precipitation forests is somewhat more rainy in the deeper ravines and escarpment slopes, and has upland forests are dominated by chestnut oaks with shortleaf pine.

68a The **Cumberland Plateau's** rolling hills and open low mountains are about 1000 feet (300m) higher than the Eastern Highland Rim (71g) to the west, and separates drainage, stream physiography, and general topographic than the surrounding ridge-and-valley ecoregions. The plateau surface is less dissected with fewer relief compared to the Cumberland Mountains (69c) to the Plateau Escarpment (68c). Elevations are generally 1,000-2000 feet with the Cal and Pickard Mountains reaching over 3000 feet. Plateau/Cumberland ecoregion is mostly forested, with small farms in narrow valleys, and shale is associated by mostly well-drained, gravelly sand or loamy textures. The region is forested with some agriculture and coal mining activities.

68b The **Sequatchie Valley** is also mostly forested with an undulating, ridge-crested of broken rock in the north of the Oak Ridge/Knoxville economic centered on the floor valley. The open, rolling, valley floor, 600-1000 feet in elevation, is generally 1000 feet below the top of the Cumberland Plateau. A low, central, cherty ridge separates the two

and east valleys of Mississippian to Ordovician age limestones, dolomites, and shales. Interior of parts of the Ridge and Valley (67), this is an approximately productive region, with areas of pasture hay, soybeans, small grains, corn, and tobacco.

68c The **Plateau Escarpment** is characterized by steep, forested slopes and high, rugged relief. Local relief is often 1000 feet or more. The geologic strata include Mississippian age sandstone, conglomerate, shale, and siltstone, and Pennsylvanian age shale, siltstone, sandstone, and conglomerate. Streams have cut down into the Cumberland, but the gorge sides slopes are composed of talus rock with huge angular, rubbly blocks of sandstone. Vegetation community types in the western and gorges include mixed oak and chestnut oak on the upper slopes, more mesic forest on the middle and lower slopes, hemlock-white pine-oak, maple-beech-birch and rich deciduous with hardwoods along rocky streamsides and river bluffs along floodplain streams.



69. Central Appalachians

The Central Appalachian ecoregion, stretching from southern Tennessee to central Pennsylvania, is generally a high, dissected, rugged plateau composed of sedimentary shale, conglomerate, and coal. The rugged terrain, cool climate, and relative lack of agriculture, resulting in a mostly forested landscape. The high hills and low mountains are covered by a mixed mesophytic forest with areas of Appalachian oak and northern hardwoods forest. Bituminous coal reserves are extensive and have caused the isolation and exploitation of streams.

69d The **Cumberland Mountains**, in contrast to the northeast-trending Cumberland Plateau (68a) to the west and southwest, are more rugged, dissected, with narrow-crested steep ridges, and younger Pennsylvanian age shales, sandstones, siltstones, and coal. Narrow, winding valleys separate the mountain ridges, and relief is often 2000 feet. Cross Mountain, west of Lake City, reaches 3010 feet in elevation. Soils are generally

71. Interior Plateau

The Interior Plateau is a diverse ecoregion extending from southern Indiana and Ohio to northern Alabama. Rock types are distinctly different from the mantle plain south of western Tennessee ecoregions, and elevations are lower than the Appalachian ecoregions to the east. Mississippian to Ordovician age limestone, chert, sandstone, siltstone and shale compose the underlying of open hills, irregular plains, and tablelands. The natural vegetation is primarily oak-hickory forest, with some areas of bluestem prairie and cedar glades. The region has the most diverse fish fauna in Tennessee.

71a The **Western Pennyroyal Karst** is a flatter area of irregular plains with level to gently rolling topography. Most of the region is cultivated or in pasture, with small woodlots and dispersed rural settlement. The predominant soils are fine, loamy agricultural soils are limited mainly from a clay loess mantle over residuum of Mississippian-age limestone