Ecological site F130BY012WV
Non-Hydric Floodplains

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General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

MLRA notes

Major Land Resource Area (MLRA): 130B–Southern Blue Ridge

This MLRA is in North Carolina (51 percent), Tennessee (18 percent), Georgia (17 percent), Virginia (10 percent), and South Carolina (4 percent). It makes up about 16,080 square miles (41,665 square kilometers). It is locally known as the Southern Appalachians. It includes Lenoir, Morganton, Marion, Hendersonville, Waynesville, and Asheville, North Carolina; Gatlinburg, Tennessee; Damascus and Galax, Virginia; Walhalla, South Carolina; and Cleveland, Dahlonega, and Ellijay, Georgia. Interstate 40 crosses the parts of the area in Tennessee and North Carolina. Interstate 77 crosses the part in Virginia. Many national forests are in the area, including the Jefferson, Cherokee, Nantahala, Pisgah, and Chattahoochee National Forests. The Appalachian Trail begins on Springer Mountain in Georgia, near Amicalola State Park. The Great Smoky Mountains National Park is in this MLRA. The Mount Rogers National Recreation Area is in the part of the MLRA in Virginia. The Cherokee Indian Reservation is west of Waynesville, North Carolina.

Classification relationships

This ecosite is found in mountians in MLRA 130B: Southern Blue Ridge This is a complex system that encompasses a matrix of co-occurring vegetation communities. Data and maps produced by the SE GAP Analysis Project were queried (USGS 2001). At the most detailed level natural vegetation is represented by NatureServe's Ecological System classification (NatureServe 2017). Data has been cross-walked with NVC classification levels (Class, Subclass, Formation, Division, Macrogroup, Ecological System). The classification approach used was the International Terrestrial Ecological Systems Classification (ITESC) (NatureServe 2007 and White 2003). Ecological Systems were cross-checked with the Vegetation Classification System developed for the Great Smoky Mountains National Park (GRSM) in 2009.

Ecological site concept

About 80 percent of the acreage is cleared and used for pasture or cropland. The remainder is in woods. Wooded areas are mainly mixed hardwoods that include yellow-poplar, northern red oak, sycamore, black walnut, red maple, and hickories. Understory plants include rhododendron, ironwood, flowering dogwood, alder, greenbrier, and switchcane. Important crops grown are corn, tobacco, small grain, and vegetable crops. The soils included in this site concept are more well-drained than those in hydric floodplains and therefore differences in vegetation based on water tolerance is likely. This should be investigated in the field where future projects are identified. At the scale of PES, very little difference was discernable.

Associated sites

F130BY011WV	Hydric Floodplains

Similar sites

F130BY011WV	Hydric Floodplains

Table 1. Dominant plant species

Tree	Not specified
Shrub	Not specified
Herbaceous	Not specified

Physiographic features

This MLRA is mainly in the Southern Section of the Blue Ridge Province of the Appalachian Highlands. The southern tip of the MLRA and two protruding areas to the east are in the Piedmont Uplands Section of the Piedmont Province of the Appalachian Highlands. This MLRA consists of several distinct topographic areas, including the Blue Ridge Escarpment on the eastern edge of the area, the New River Plateau on the northern end, interior low and intermediate mountains throughout the MLRA, intermountain basins between the major mountains, and the high mountains making up the bulk of the MLRA. Elevation ranges from about 900 feet (275 meters) at the south and southwest boundaries of the area to more than 6,600 feet (2,010 meters) at the crest of the Great Smoky and Black Mountain ranges.

The extent of the major Hydrologic Unit Areas (identified by four-digit numbers) that make up this MLRA is as follows: Upper Tennessee (0601), 46 percent; Kanawha (0505), 13 percent; Middle Tennessee-Hiwassee (0602), 12 percent; Edisto-Santee (0305), 9 percent; Alabama (0315), 8 percent; Ogeechee-Savannah (0306), 6 percent; Pee Dee (0304), 4 percent; Chowan-Roanoke (0301), 1 percent; and Apalachicola (0313), 1 percent. From north to south, the major rivers in this area are the New River in Virginia; the Yadkin, Catawba, French Broad, Little Tennessee, and Hiwassee Rivers in North Carolina; the Saluda, Seneca, Chattooga, and Tugaloo Rivers in South Carolina; and the Toccoa and Coosawattee Rivers in Georgia. The Tugaloo River is a headwater stream of the Savannah River, and the French Broad, Little Tennessee, Hiwassee, and Ocoee Rivers also flow into Tennessee in this area. The Hiwassee River in Tennessee and the Conasauga River in Georgia have been designated National Wild and Scenic Rivers in this area. The Chattooga River (made famous in the motion picture “Deliverance”) in South Carolina is a National Scenic River.

Table 2. Representative physiographic features

Landforms	(1) Flood plain (2) Valley (3) Drainageway
Flooding duration	Brief (2 to 7 days)
Flooding frequency	None to frequent
Ponding duration	Very brief (4 to 48 hours)
Ponding frequency	None to rare
Elevation	300 − 1,240 m
Slope	0 − 10 %
Ponding depth	0 − 20 cm

Water table depth	30 – 160 cm

Climatic features

The average annual precipitation in this area generally is 36 to 60 inches (915 to 1,525 millimeters), generally increasing with elevation. It is 60 to 90 inches (1,525 to 2,285 millimeters) in southwestern North Carolina and northeastern Georgia and can be as much as 119 inches (3,025 millimeters) on the higher peaks in the MLRA. Much of the precipitation occurs as snow at the higher elevations. The amount of precipitation is lowest in the fall. The average annual temperature ranges from 46 to 60 degrees F (8 to 16 degrees C), decreasing with elevation. The freeze-free period averages 185 days and ranges from 135 to 235 days. The freeze-free period is shorter at high elevations and on valley floors because of cold air drainage. Microclimate differences resulting from aspect significantly affect the type and vigor of the plant communities in the area. South- and west-facing slopes are warmer and drier than north- and east-facing slopes and those shaded by the higher mountains.

Table 3 Representative climatic features

Frost-free period (average)	160 days
Freeze-free period (average)	190 days
Precipitation total (average)	1,400 mm

- (1) JASPER 1 NNW [USC00094648], Jasper, GA
- (2) GALAX RADIO WBRF [USC00443267], Galax, VA
- (3) FRANKLIN [USC00313228], Franklin, NC
- (4) CLAYTON 1 SSW [USC00091982], Clayton, GA
- (5) GRANDFATHER MTN [USC00313565], Collettsville, NC
- (6) ASHEVILLE [USW00013872], Asheville, NC

Influencing water features

The vegetation that occurs on this site is influenced by water tolerance. This site is subject to flooding.

Soil features

The soil series associated with this site include: French, Rosman, Biltmore, Bandana, Reddies, Dellwood, Whiteside, and Cullowhee.

Table 4. Representative soil features

Parent material	(1) Alluvium – metasedimentary rock (2) Colluvium – gneiss
Surface texture	(1) Cobbly fine sandy loam (2) Gravelly loam (3) Loamy sand
Family particle size	(1) Loamy

Drainage class	Somewhat poorly drained to well drained
Permeability class	Moderate to rapid
Soil depth	40 – 90 cm
Surface fragment cover <=3"	Not specified
Surface fragment cover >3"	Not specified
Available water capacity (0-101.6cm)	5.08 – 24.89 cm
Soil reaction (1:1 water) (0-101.6cm)	5.3 – 5.9
Subsurface fragment volume <=3" (Depth not specified)	0 – 60 %
Subsurface fragment volume >3" (Depth not specified)	0 – 30 %

Ecological dynamics

The vast majority of this site is cleared and used for pasture or cropland. The remainder is forested. Reference conditions are difficult to establish for this site due to the level of past and current disturbance. It is unclear which NatureServe classification best fits. The USDA-NRCS Official Series Descriptions list the following as important trees in forested areas and classify this as “mixed hardwoods”: yellow-poplar, northern red oak, sycamore, black walnut, red maple, and hickories. Important crops listed include corn for grain and silage, small grains, truck crops, and burley tobacco.

State and transition model

Additional community tables

Other references

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Approval

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Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	
Approved by	
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

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2. **Presence of water flow patterns:**

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3. **Number and height of erosional pedestals or terracettes:**

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

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5. **Number of gullies and erosion associated with gullies:**

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6. **Extent of wind scoured, blowouts and/or depositional areas:**

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7. **Amount of litter movement (describe size and distance expected to travel):**

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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

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12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

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14. **Average percent litter cover (%) and depth (in):**

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15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

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16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

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17. **Perennial plant reproductive capability:**
