



Evergreen FOREST MANAGEMENT



Daron Brown, R.F.
Consulting Forester

TIMBER SALES ▲ APPRAISALS ▲ FOREST MANAGEMENT

Office: (336) 903-1595 • daronbrown67@gmail.com • Website: www.evergreenforestry.com • Mobile: (336) 927-3967

FOREST MANAGEMENT PLAN FOR Jason Anderson

ADDRESS 1657 Brushy Mtn. Rd.
Wilkesboro, NC 28697

Date 6/15/2020

<u>PIN</u>	<u>Total Acres</u>	<u>Wooded Acres</u>	<u>Area</u>
3863-07-5716	59.1	59.1	1A&1B
3863-29-5446	10.3	10.3	3
3863-29-3104	1.3	1.3	4
3863-28-4938	2.0	2.0	5
3863-28-8978	1.7	1.7	6
3863-27-8396	10.8	10.8	2
TOTAL	85.2	85.2	

LOCATION This plan is for six separate parcels. All parcels are in the same general area of southern Wilkes County. The parcels are located on the east and west side of Cove Gap Road just south of its intersection with Pores Knob Road.

DESCRIPTION All areas are upland hardwood sites. Some areas have been harvested within 15-20 years ago. See more detailed description below for each area.

Area 1A Mostly clear cut with some scattered 12"-14" DBH Poplar. This is a young and growing stand predominantly Yellow Poplar. Several undesirable timber species were present including Black Locust and Paulownia.

Area 1B This area was high grade harvested approximately 15 years ago. Dominate species include Yellow Poplar, White Pine, Red Maple and Chestnut Oak. Two distinct age classes were present as result of the last harvest with older trees being about 70 years old and younger mid-story trees about 15 years old.

Area 2 The dominate species on area two is Chestnut Oak with other species scattered such as Red Maple White Pine all averaging around 14-16"DBH.

Area 3,4,5 These areas were clear cut harvested approximately 15 years ago. The dominate species is Yellow Poplar. There also is a problem with invasive species such as Paulownia on these areas.

Area 6 This area was high grade harvested approximately 15 years ago. Dominate species include Yellow Poplar, with scattered Red Maple, Black Locust, Chestnut Oak present. As with areas 3,4,5 this area also has the invasive species Paulownia present.

OBJECTIVE The owners objective is to manage timber on the property for optimum production as well as aesthetics and wildlife habitat.

STAND DATA SUMMARY

	Basal Area	Approx. Age	Height	Age Even/Uneven	Avg. Dbh.	Growth Rate	Board Foot/AC	Acreage
Area 1A	50	15-70	60'	Uneven	13"	4.00%	N/A	22
Area 1B	80	15-70	60'	Uneven	14"	3.00%	N/A	37.1
Area 2	110	70	70'	Uneven	15"	1.50%	8,000	10.8
Area 3	50	15-20	45'	Uneven	12"	4.00%	N/A	10.3
Area 4	60	15-20	45'	Uneven	12"	4.00%	N/A	1.3
Area 5	50	15-20	45'	Uneven	12"	4.00%	N/A	2
Area 6	70	15-70	55'	Uneven	12"	4.00%	N/A	1.7

RECCOMENDATION

Area 1A Area 1A & 1B is a total of 59.1 acres combined however I have made a distinction between the

Area 1B two sides due to harvesting differences during the last harvest approximately 15 years ago.

Area 1A seems to have been clear cut and area 1B was select harvest. There were more residuals left in area 1B most likely because of the rougher terrain. The average diameter at breast height (DBH) of the trees on 1A is 12"-14". This tells us that the stand lacks maturity and needs another 20 plus years to mature. Generally 16" average DBH would be considered mature for most local timber markets.

Area 1B had a slightly higher average DBH than 1A because of the residuals from the last harvest.

I recommend these two areas be managed as one because of the harvesting logistics and allow 1B to continue to grow another 20 years before being considered for harvest.

There is also a problem with invasive species such as Paulownia growing through out both stands. In order to increase future timber production and growth rates one option would be conduct a timber stand improvement (TSI) thinning. This is carried out by physically cutting inferior or undesired trees through out the stand. By cutting undesirable, low value trees early in the growing stage you can considerably increase profit from future harvest. This decreases crown competition for highly valued crop trees and allows for faster growth rates. The TSI work is usually a cost shared covered practice by the NC Forest Service as well as NRCS. Application process for cost share assistance can be tedious at times and usually has to be done a year in advance to the practice but at a minimum rate of 40% its well worth the effort in my opinion. A forestry consultant can assist with the application process if needed as well as secure a contractor to do the work. In order to receive the maximum benefit from the TSI work this practices should be carried out within the next five years.

After at least 20 years of additional growth have a forestry consultant evaluate the stand for harvest. Once the harvest is complete reforestation considerations must be made to insure a future healthy stand. Two options are available for reforestation following the harvest. One would be to allow the stand to regenerate naturally. As a result of the clear cut harvest there would be an abundance of hardwood stump sprouts and well as several hundred Yellow Poplar sprouts throughout the stand. This would produce an adequate stocking of hardwoods for a healthy future stand. Another option would be to replant White Pine in the clear cut area. Pines are a better option for many people due to the shorter

rotation periods. Pines can be harvested ever 30-40 years where as hardwoods take 50-70 years to mature. Pines will need to be planted on a 12x12 foot spacing or about 300 trees per acre. Seedlings should be planted during the early spring following the harvest. Cost share is usually available for reforestation from the NC forest service however all applications must be submitted and approved prior to any reforestation efforts being carried out. The cost shear assistance rate is usually 40% of prevailing rate. Your forestry consultant can assist with cost share applications and securing a reforestation contractor. Once the pines are planted evaluate for survival the following winter and again in 12 years for possible thinning.

Area 2 Area two is starting to should signs of maturity with the average DBH nearing 16". This is an older stand that has not been cut in close to 70 years. Dominate species include Chestnut Oak, Red Maple and scattered White Pine. The stand appears to be healthy and growing but growing at a slower rate due to its maturity. I recommend considering ha possible harvest within the next five years. Contact a forestry consultant to monitor the market conditions in order to optimize the timber profits by selling when the market has peaked on the species you have. Timing is everything when it comes to selling timber and as with most all markets there is a cycle of highs and lows. Once the timber is harvested follow the same recommendations on reforestation as listed for area one above.

Area 3-6 Areas 3-6 are all immature mixed stands of upland hardwoods. These stands are unevenly aged with trees ranging from 15-70 years old. It appears these stands were select harvested approximate 15 years ago. Since Yellow Poplar is a pioneer species and usually the first to regenerate following a harvest, these stands have an abundance of young Poplar. These stands appear to be healthy and growing good however as with area one there is a problem with invasive species such as Paulownia. Paulownia is a non-native invasive that will out grow and crowd out native more valued species such as Poplar and Oak. Follow the same recommendation as with area one by implementing the TSI thinning if you want maximize your timber yield potential. Allow these stands to continue to mature another 20 years before being considered for a harvest at which time have them evaluated by a forestry consultant.

SOILS Soils on the property are adequate to produce commercially grown timber. See soil report attached.

TIME LINE FOR MANAGEMENT PRACTICES

	2020		2040		2060
Area One	(Allow to Grow, TSI work optional)		(Evaluate for Harvest)		
Area Two	(Evaluate for Harvest by 2025)				
Area Three	(Allow to Grow, TSI work optional)		(Evaluate for Harvest)		
Area Four	(Allow to Grow, TSI work optional)		(Evaluate for Harvest)		
Area Five	(Allow to Grow, TSI work optional)		(Evaluate for Harvest)		
Area Six	(Allow to Grow, TSI work optional)		(Evaluate for Harvest)		

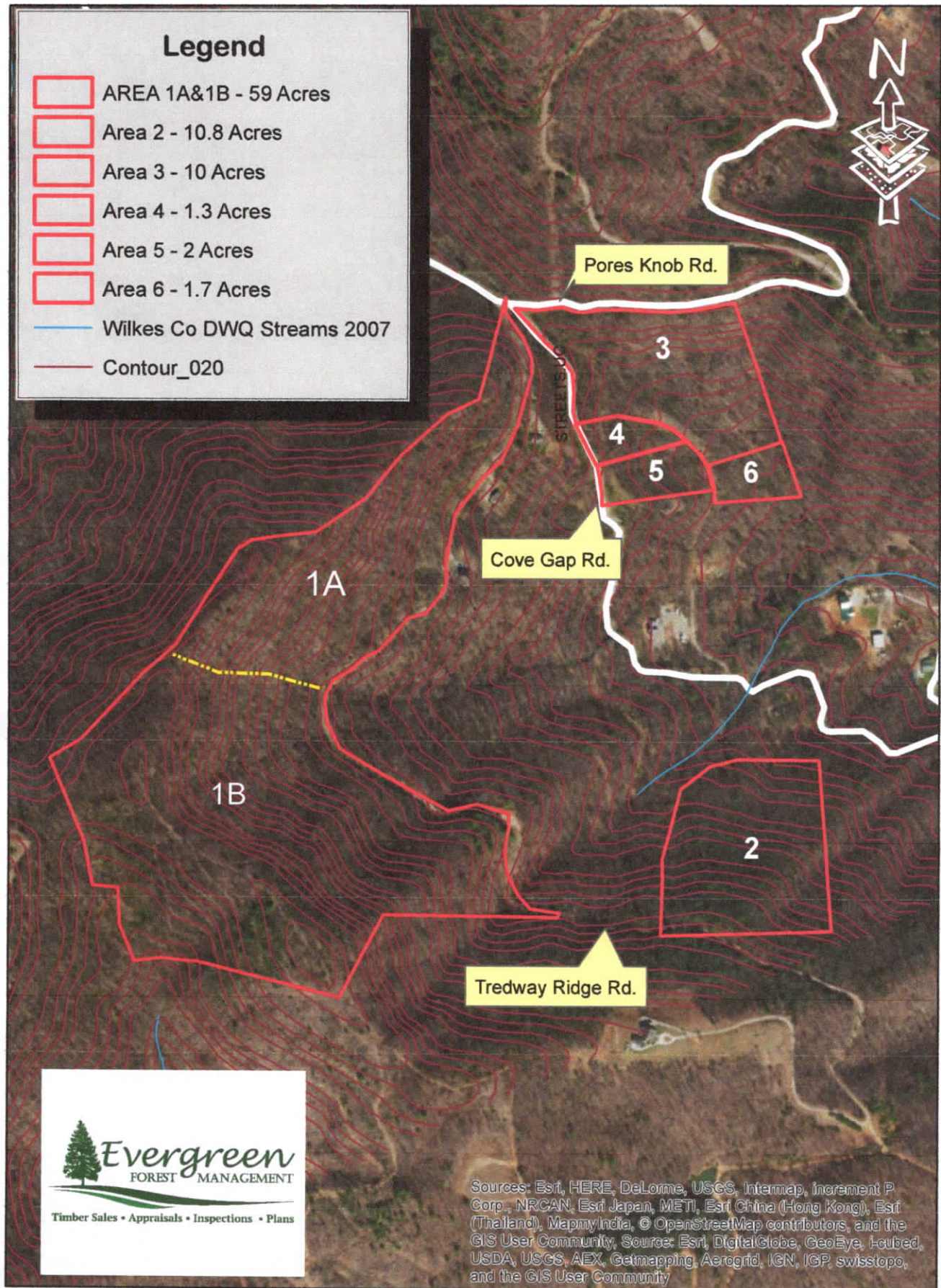
Daron Brown, R.F. #1111
Evergreen Forest Management

Jason Anderson Forest Management Map

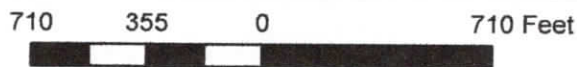
June 2020

Legend

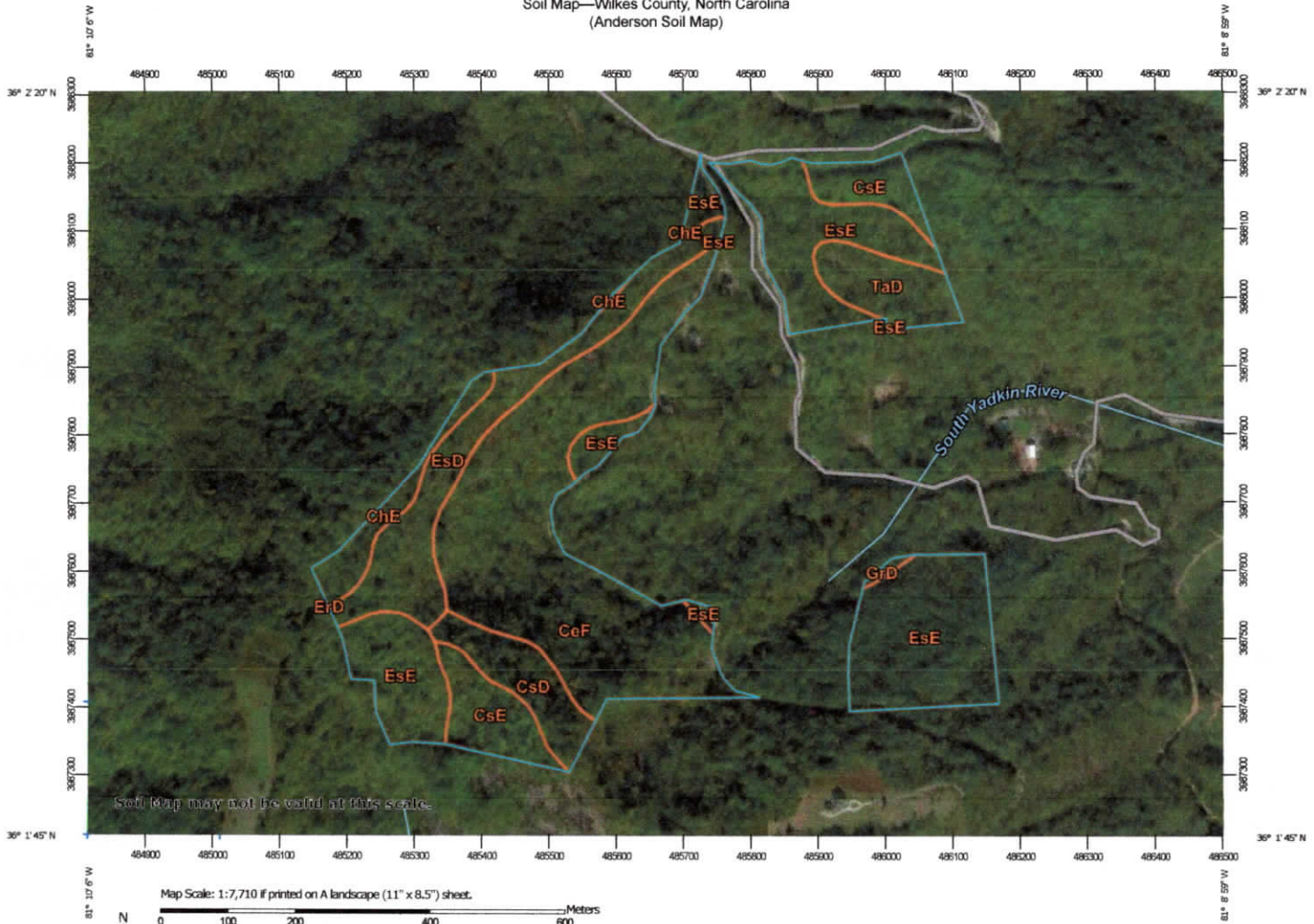
- AREA 1A&1B - 59 Acres
- Area 2 - 10.8 Acres
- Area 3 - 10 Acres
- Area 4 - 1.3 Acres
- Area 5 - 2 Acres
- Area 6 - 1.7 Acres
- Wilkes Co DWQ Streams 2007
- Contour_020



Sources: Esri, HERE, DeLorme, USGS, Intermap, Increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community, Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Soil Map—Wilkes County, North Carolina
(Anderson Soil Map)



Map Scale: 1:7,710 if printed on A landscape (11" x 8.5") sheet.





































0 100 200 400 600 Meters

0 350 700 1400 2100 Feet

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

Soil Map—Wilkes County, North Carolina
(Anderson Soil Map)

MAP LEGEND

- | | |
|--|---|
| Area of Interest (AOI) |  Spoil Area |
|  Area of Interest (AOI) |  Stony Spot |
| Soils |  Very Stony Spot |
|  Soil Map Unit Polygons |  Wet Spot |
|  Soil Map Unit Lines |  Other |
|  Soil Map Unit Points |  Special Line Features |
| Special Point Features | Water Features |
|  Blowout |  Streams and Canals |
|  Borrow Pit | Transportation |
|  Clay Spot |  Rails |
|  Closed Depression |  Interstate Highways |
|  Gravel Pit |  US Routes |
|  Gravelly Spot |  Major Roads |
|  Landfill |  Local Roads |
|  Lava Flow | Background |
|  Marsh or swamp |  Aerial Photography |
|  Mine or Quarry | |
|  Miscellaneous Water | |
|  Perennial Water | |
|  Rock Outcrop | |
|  Saline Spot | |
|  Sandy Spot | |
|  Severely Eroded Spot | |
|  Sinkhole | |
|  Slide or Slip | |
|  Sodic Spot | |

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Wilkes County, North Carolina
Survey Area Data: Version 23, Sep 16, 2019

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

Date(s) aerial images were photographed: Oct 29, 2011—Nov 28, 2017

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CeF	Chestnut-Ashe complex, 25 to 90 percent slopes, very stony	29.5	34.4%
ChE	Chestnut-Edneyville complex, 25 to 60 percent slopes, stony	2.9	3.4%
CsD	Cowee-Saluda complex, 8 to 25 percent slopes, stony	4.6	5.4%
CsE	Cowee-Saluda complex, 25 to 60 percent slopes, stony	6.9	8.0%
ErD	Evard gravelly sandy loam, 15 to 25 percent slopes	0.0	0.0%
EsD	Evard-Cowee complex, 8 to 25 percent slopes, stony	10.2	11.9%
EsE	Evard-Cowee complex, 25 to 60 percent slopes, stony	27.0	31.5%
GrD	Greenlee-Ostin, frequently flooded complex, 3 to 40 percent slopes, very stony	0.2	0.3%
TaD	Tate fine sandy loam, 8 to 25 percent slopes	4.4	5.1%
Totals for Area of Interest		85.7	100.0%

Forestland Productivity

This table can help forestland owners or managers plan the use of soils for wood crops. It shows the potential productivity of the soils for wood crops.

Potential productivity of merchantable or *common trees* on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forestland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration and those that remain in the stand after thinning or partial harvest.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service, National Forestry Manual.

Report—Forestland Productivity

Forestland Productivity—Wilkes County, North Carolina				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber <i>Cu ft/ac/yr</i>	
CeF—Chestnut-Ashe complex, 25 to 90 percent slopes, very stony				
Chestnut, very stony	Black oak	71	53.00	Eastern white pine, Shortleaf pine, Yellow-poplar
	Chestnut oak	69	51.00	
	Eastern white pine	78	139.00	
	Scarlet oak	—	—	
	Shortleaf pine	—	—	
	White oak	70	52.00	
	Yellow-poplar	97	102.00	
Ashe, very stony	Chestnut oak	57	40.00	Eastern white pine, Shortleaf pine
	Eastern white pine	80	144.00	
	Northern red oak	—	—	
	Pitch pine	—	—	
	Scarlet oak	—	—	
	Shortleaf pine	57	82.00	
	Virginia pine	62	95.00	
ChE—Chestnut-Edneyville complex, 25 to 60 percent slopes, stony				
Chestnut, stony	Black oak	71	53.00	Eastern white pine, Shortleaf pine, Yellow-poplar
	Chestnut oak	69	51.00	
	Eastern white pine	78	139.00	
	Scarlet oak	—	—	
	Shortleaf pine	—	—	
	White oak	70	52.00	
	Yellow-poplar	97	102.00	
Edneyville, stony	Black oak	—	—	Eastern white pine, Northern red oak, Yellow-poplar
	Chestnut oak	—	—	
	Eastern white pine	90	166.00	
	Northern red oak	92	74.00	
	Scarlet oak	73	55.00	
	Virginia pine	—	—	
	Yellow-poplar	97	102.00	

Forestland Productivity—Wilkes County, North Carolina				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber <i>Cu ft/ac/yr</i>	
CsD—Cowee-Saluda complex, 8 to 25 percent slopes, stony				
Cowee, stony	Black oak	—	—	Eastern white pine, Shortleaf pine
	Chestnut oak	55	38.00	
	Eastern white pine	78	139.00	
	Northern red oak	—	—	
	Pitch pine	52	72.00	
	Scarlet oak	54	38.00	
	Shortleaf pine	—	—	
	Virginia pine	63	96.00	
	White oak	—	—	
	Yellow-poplar	80	71.00	
Saluda, stony	Chestnut oak	—	—	Eastern white pine, Shortleaf pine
	Eastern white pine	—	—	
	Pitch pine	—	—	
	Shortleaf pine	—	—	
	Virginia pine	—	—	
	Yellow-poplar	—	—	

Forestland Productivity—Wilkes County, North Carolina				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber <i>Cu ft/ac/yr</i>	
CsE—Cowee-Saluda complex, 25 to 60 percent slopes, stony				
Cowee, stony	Black oak	—	—	Eastern white pine, Shortleaf pine
	Chestnut oak	55	38.00	
	Eastern white pine	78	139.00	
	Northern red oak	—	—	
	Pitch pine	52	72.00	
	Scarlet oak	54	38.00	
	Shortleaf pine	—	—	
	Virginia pine	63	96.00	
	White oak	—	—	
	Yellow-poplar	80	71.00	
Saluda, stony	Chestnut oak	—	—	Eastern white pine, Shortleaf pine
	Eastern white pine	—	—	
	Pitch pine	—	—	
	Shortleaf pine	—	—	
	Virginia pine	—	—	
	Yellow-poplar	—	—	
ErD—Evard gravelly sandy loam, 15 to 25 percent slopes				
Evard	Eastern white pine	91	168.00	Chestnut oak, Eastern white pine, Shortleaf pine, White oak
	Hickory	—	—	
	Northern red oak	—	—	
	Pitch pine	—	—	
	Shortleaf pine	73	116.00	
	Southern red oak	75	57.00	
	Virginia pine	70	109.00	
	White oak	75	57.00	
	Yellow-poplar	95	98.00	

Forestland Productivity--Wilkes County, North Carolina				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
			<i>Cu ft/ac/yr</i>	
EsD—Evard-Cowee complex, 8 to 25 percent slopes, stony				
Evard, stony	Eastern white pine	91	168.00	Chestnut oak, Eastern white pine, Shortleaf pine, White oak
	Hickory	—	—	
	Northern red oak	—	—	
	Pitch pine	—	—	
	Shortleaf pine	73	116.00	
	Southern red oak	75	57.00	
	Virginia pine	70	109.00	
	White oak	75	57.00	
	Yellow-poplar	95	98.00	
Cowee, stony	Black oak	—	—	Eastern white pine, Shortleaf pine
	Chestnut oak	55	38.00	
	Eastern white pine	78	139.00	
	Northern red oak	—	—	
	Pitch pine	52	72.00	
	Scarlet oak	54	38.00	
	Shortleaf pine	—	—	
	Virginia pine	63	96.00	
	White oak	—	—	
Yellow-poplar	80	71.00		

Forestland Productivity—Wilkes County, North Carolina				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber	
			<i>Cu ft/ac/yr</i>	
EsE—Evard-Cowee complex, 25 to 60 percent slopes, stony				
Evard	Eastern white pine	91	188.00	Eastern white pine, Scarlet oak, Shortleaf pine, White oak
	Hickory	—	—	
	Pitch pine	—	—	
	Scarlet oak	—	—	
	Shortleaf pine	73	116.00	
	Southern red oak	75	57.00	
	Virginia pine	70	109.00	
	White oak	75	57.00	
	Yellow-poplar	95	98.00	
Cowee	Black oak	—	—	Eastern white pine, Shortleaf pine
	Chestnut oak	55	38.00	
	Eastern white pine	78	139.00	
	Pitch pine	52	72.00	
	Scarlet oak	54	38.00	
	Shortleaf pine	—	—	
	Virginia pine	63	96.00	
	White oak	—	—	

Forestland Productivity—Wilkes County, North Carolina				
Map unit symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site Index	Volume of wood fiber Cu ft/ac/yr	
GrD—Greenlee-Ostin, frequently flooded complex, 3 to 40 percent slopes, very stony				
Greenlee	Black locust	—	—	Eastern white pine, Yellow-poplar
	Eastern hemlock	—	—	
	Eastern white pine	98	182.00	
	Northern red oak	—	—	
	Red maple	—	—	
	White oak	80	62.00	
	Yellow-poplar	101	109.00	
Ostin	American sycamore	—	—	American sycamore, Black walnut, Eastern white pine, Yellow-poplar
	Black cherry	—	—	
	Black locust	—	—	
	Eastern hemlock	—	—	
	Eastern white pine	—	—	
	Red maple	—	—	
	River birch	—	—	
	Virginia pine	—	—	
	Yellow-poplar	100	107.00	
TaD—Tate fine sandy loam, 8 to 25 percent slopes				
Tate	Black locust	—	—	Eastern white pine, Yellow-poplar
	Eastern hemlock	—	—	
	Eastern white pine	89	164.00	
	Northern red oak	—	—	
	White oak	—	—	
	Yellow-poplar	92	83.00	

Data Source Information

Soil Survey Area: Wilkes County, North Carolina
 Survey Area Data: Version 23, Sep 16, 2019