

Forestry Management Plan

Type:	PUV: Forestry (+ Wildlife)	Date:	May 7th, 2020	Tract #:	
Tract:	Daugherty Tract / Tree Farm	County:	Caswell- NC	FSA Farm #:	
Lat/Lon:	36.272 , -79.145	Location:	Casville / Locust Hill		
Total Tract:	42.43 GIS acres	Intersect:	Park Springs Rd & Big Oak Farm Rd		
Author:	Brandon L. Price, NCRF #1624	Owner 1	Daugherty Tree Farm LLC	Property	
CO/Agency	Wildland Forestry & Env. Inc	Address	455 Great Eno Path	8500* Park Springs Rd	
Address	6437 Beulah Church Rd	Address2	Hillsborough, NC 27278	Ruffin, NC	
Address2	Liberty, NC 27298				
Prim. Ph:	(919) 414-8046	Phone:	317-450-3020	Parcel Ident. Number	Deeded Ac
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Goal Priority	Category	Short Description and Operational Methods	Primary Targets
Objective 1:	Timber	Provide long term sustainable timber production with endemic forest communities through conservation oriented forestry practices. Produce high-value timber products which are less common in nearby local markets (dense oak timbers, heart pine, veneer); maintain sufficient stock to take advantage of niche markets.	white oak, pine pole-stock
Objective 2:	Wildlife	Improve habitat productivity across all forest and grassland communities for large game species, migratory birds, and native fauna. Enhance native browse and cover suitability. Improve vertical diversity (layering) in existing stands and increase snag abundance for foraging species and cavity nesters (canopy gaps, uneven aged, mixed stands). Increase proportion of early-successional habitat in forests and surrounding cover.	white-tailed deer, Eastern wild turkey, American woodcock
Objective 3:	Aesthetics & Rec.	Preserve and enhance visual appeal of different forests by selective treatments to alter species dominance, understory composition, and stand density reduction. Decrease undesirable parasites, such as ticks, through cover manipulation and use of prescribed fire. Increase accessibility through trail installation and recreational area development.	Access trails, parasite control
Objective 4:	Consv.	Maintain and enhance natural forest communities by managing stocking, use of natural disturbance regimes, preserving unique forest features, suppression of invasive species, and conservation of unique forests (oak-hickory woodlands, bottomland floodplain, cove hardwoods, etc). Establish native forest (shortleaf pine, chesnut oak) and plant (plum thickets, piedmont prairie) communities where diversity is lacking.	oak-hickory, shortleaf pine, piedmont prairie
Objective 5:	Health	Encourage resilience and general forest health through proactive monitoring of stands, harvest of high-risk trees, implementation of prescribed burns, encouragement of tolerant native species, removal of mesic invaders, and management of forest stocking. Reduce ectoparasite populations (pine density reduction, fire-adapted forests).	restorative fire, invasive species
Objective 6:	Water Quality	Protect water quality of through plant community health and disturbance selection (SMZ's, canopy retention, establishment of riparian shrubs). Decrease erosion potential by use of best management practices.	riparian buffers, erosion

General Description of Tract/Property			Keywords
Region & Generalized Area	Situated in the northern piedmont near the Virginia border, Caswell county is generally rural with abundant small agricultural units. This tract is located in a transitional area which is characterized by having both shallow and steep topographic features, with species composition highly dependent on aspect and slope position. It has been heavily influenced by both natural and anthropogenic processes. Major features such as ridges and floodplains are fairly broad, though hillsides can be abruptly steep.		Piedmont, Caswell county
Location & Vicinity	Generally referred to as part of Casville, but just as close in proximity to the community of Allison, NC. Tract entrance is located on west side of Park Springs Rd, 1.9 miles north of Quick Rd and 0.4 miles south of Big Oak Farm Rd. A single lane gravel/dirt road, situated between 2 houses, leads west to the old tobacco barn.		Casville, Allison; tract entrance
History	This tract appears to have been passed through direct descendants of the Daniel family as far back as the late 1800's until being sold to the present ownership in March of 2020. It is unlikely that the tributaries were utilized for trade given their size. Records indicate a variety of crops being produced on the property, but the only cleared field which still exists has been in hay production for more than 20 years. Interestingly, there is little evidence of pasture, with no abandoned fencelines present along field margins or in the forested sections. It is assumed that tobacco was the chief crop based on the sole building being a curing barn. A small refuse (dump) site can be found just west of small clearing in the center of the property, but no other evidence has been found to suggest a homesite. The current tract is smaller than the previous tract based on a forest management plan dated 1999. A timber harvest occurred in 2006, focused on thinning a majority of the 25 year old pine stands and clearcutting 20-30 acres of hardwoods, about half of which was regenerated with loblolly pines.		Van Womack Daniel, tobacco, barn, homesite
Stand/Unit	Acres	Characteristics / Description	Measurements
General Recommendations			

Young Pine	11.4	This main unit and smaller isolated patch were planted with loblolly pine in 2006/7 following a clearcut. Given the scarcity of Virginia pine and the prevalence of hardwood saplings, it is assumed that these areas were formerly hardwood. The patch is developing predictably for a young plantation. The main area has areas with similar growth, but there is a significant area which is suffering from invasive species encroachment (kudzu and <i>Ailanthus altissima</i>).	Age: 13-14 BA/ac: 170-100, Dbh: 4-9", Avg Dbh: 6" Dom. Ht: 30-45 ft TPA: 275-450	Evaluate for thinning in 2024 in all areas. Prescribed burn in dormant season in 2020/2021 to topkill invasive species, followed by either hack-n-squirt treatments on larger stems or foliar-applied herbicides on resprouts the following growing season.
Mid-rotation loblolly pine	2.6	This stand appears to have been converted from an agriculture field and planted with improved loblolly pine in the early 2000's (2002-2005) as part of the CRP program. Rows are easily seen and tree sizes are fairly uniform. Crown closure is complete, though most trees have more than 25% live crown. Understory is very sparse and midstory minimal. Limited wildlife productivity except as bedding areas and thermal cover.	Age: 15-18 BA/ac: 110-140, Dbh: 5-11", Avg Dbh: 9" Dom. Ht: 55- 65 ft TPA: 300-400	This stand should be considered for a 3rd row thinning in the next 4 years. Additional trees may be removed for wildlife habitat benefit as long as residual BA/ac values remain at/above 55 sf/ac. Prescribed burning can be conducted safely at any time.
Mature Loblolly pine stands	21.0	Unknown stand initiation, though all areas appear to have been fields at one time. Likely planted during late 1970's, but possibly as late as 1990 (no core data taken). NCFS report indicates unit to the northwest was CRP. Previously thinned in 2006, removing approximately 40% of volume. Stands are well-developed with 90% canopy closure. Few other species exist within stand boundaries, with the exception of sweetgum and yellow-poplar saplings (1-3").	Age: 35-44 BA/ac: 180-220, Dbh: 9-19", Avg Dbh: 14" Dom. Ht: 75-90 ft TPA: 175-240	These stands should be harvested with an aggregated retention system within 4 years, whereby removing 75% of existing overstory in unit (30-40 residual BA/ac) with pockets of protected areas 0.5 acres in size. Retention zones should be increased along western and southern sides of roads/trails. Alternatively, a shelterwood harvest to reduce stocking by 60% could be employed. Areas should be prescribed burned every 2-4 years post-harvest.
Mixed Hdwd-Pine	3.3	Unique for this tract, these two areas are largely the only semi-mature timber stands which include both hardwoods and conifers. The northern unit (1.9 ac) has co-dominant loblolly pine with oaks, yellow-poplar, and other hardwoods and is a product of both poor pine survival and pine thinning. The eastern unit (1.4ac) has developed from old-field succession and contains Virginia pine along with a plethora of upland hardwoods, being more xeric in nature given it's southwestern aspect. Sporadic shortleaf pine also can be found, though not in any significant quantity. Both areas have a relatively dense midstory of regeneration and upland shrubs, though only fair diversity.	Age: 35-50 BA/ac: 120-160, Dbh: 6-14", Avg. Dbh: 9" Dom. Ht: 60-75 ft TPA: 140-250	Given their small size and relative inaccessibility, these stands should be considered for group-selection to improve vertical diversity. Virginia pine should be harvested if over 8" dbh. Prescribed fire may be appropriate to improve browse quality, reduce Virginia pine regeneration, and encourage understory development.
Young Hardwood Regeneration	8.2	These areas are relatively small areas which were clearcut in 2006 that were not planted in pine or where loblolly survival was very poor. Diverse species composition including yellow-poplar, sweetgum, Am. Hornbeam, white oak, redbud, dogwood, blackgum, red maple, and occasional Virginia pine.	Age: 13-14 BA/ac: 40-70, Dbh: 3-9", Avg. Dbh: 5" Dom. Ht: 20-40 ft TPA: 300-800	These units offer decent wildlife browse and nesting cover for migratory birds. Allow to develop for 5-10 years and evaluate for precommercial thinning. SE unit should be treated with a combination of mechanical and herbicide application to remove wisteria. Low-intensity prescribed fire in the dormant season will favor oaks.
Slope and Transition Hardwoods	22.5	As expected, these areas are generally located between upland hardwoods and riparian communities, with a broad mix of tree species based on specific microsite topography or aspect. Understory plants are also diverse. Timber quality varies considerably, but excellent specimens exist where previous harvest ceased along edges.	Age: 25-70 BA/ac: 120-180, Dbh: 5-26", Avg. Dbh: 14" Dom. Ht: 50-90 ft TPA: 80-350	These units will benefit from low-intensity selective thinning and blended into adjacent units. Topography is limiting and care should be taken to reduce erosion potential. Snag creation can be considered for low-value species.

Upland Hardwood	34.2	These units differ somewhat from typical piedmont upland hardwood forests, as they are largely located on upper portions of north facing hillsides, which tends them toward mesic hardwood forests. The 'edge' unit along the southern boundary is more typical, dominated by xeric species such as scarlet oak, white oak (prevalent across all uplands), southern red oak, mockernut hickory. The remaining upland units of forest contain these species at lower frequencies with mixed dominance by yellow-poplar, black oak, red maple, blackgum, pignut hickory, northern red oak, and occasional elms. Timber quality is fair to excellent, largely dependent on individual position and tree history. Little evidence of large-scale harvesting is present and diameter distribution shows signs of uneven-aged stand. Given the aspect, the lack of understory development is not surprising and very little midstory is present.	Age: 50-80 BA/ac: 160-200, Dbh: 9-24", Avg. Dbh: 15" Dom. Ht: 70-90 ft TPA: 90-150	Despite its mesic tendencies, this stand should be considered for a shelterwood harvest or gap selection to favor oaks and mast-producing species. Harvest should reduce stocking to 70-100 BA/ac overall and should target mesic hardwoods such as yellow-poplar and red maple which show early signs of stain or butt-rot in lower logs. Prescribed burning to encourage oak regeneration is recommended 2-3 years post-harvest. Canopy gaps greater than 1.0 acre in size may be reforested with shortleaf pine.
Bottomland Hardwoods	24.60	This unit is actually two riparian corridors along converging tributaries of Hogan's Creek, each having slightly different characteristics, though they will be managed similarly. Both areas are chiefly influenced by a stream channel and are highly mesic in nature. The portion along the western boundary is broad, covering 350 feet at the widest point, and is an obvious floodplain. Additional drains from the east enter this unit and then meander and assimilate into the floodplain without definition. Apart from the main channel, soil hydrology is variable main component of this forest type lies along South Hyco Creek and the adjacent floodplain. This stand is well-developed and offers decent species diversity. Along the floodplain and adjacent shoulders, forest overstory is dominated by red maple, American sycamore, and sweetgum. Other tree species include yellow-poplar, bitternut hickory, green ash, black willow, river birch, slippery elm, and boxelder. Form and quality varies throughout with minor defects common but occasional species exhibiting excellent timber quality. Understory is well-developed with a sparse midstory, pawpaw and spicebush being the most common shrubs.	Age: 45 - 75 years; BA/ac: 90-180, Dbh: 8.0- 32" Avg. Dbh: 16", Dom. Ht: 95 ft TPA: 140- 180	Thinning or select cutting would benefit the stand for the production of sawtimber, but soils present operational challenges and water quality concerns are significant. These stands should be evaluated for selective harvest only when soils are extremely dry, which may require an drought period. Care should be employed to retain 40-50% of canopy cover, with removals focused on less desirable species such as sweetgum, sycamore and red maple. Baldcypress and Atlantic whitecedar are viable species for planting in open areas and should be considered if regeneration is necessary. This area is largely safe from any fire activities and firebreaks are not necessary.
Marsh	2.70	Found in southern portions of eastern creek boundary, adjacent/intermixed with bottomland hardwoods. Periodically flooded soils unsuitable for timber growth.	Age: unknown	Maintain as wetland openings. Consider planting native wet prairie plants to improve ecosystem function. Use of wheeled equipment strongly discouraged due to rutting potential.
Pond	0.85	This pond formerly served to support agriculture operations. The dam has numerous trees, 3-10" dbh, growing along the upper portion and the water level appears to be 1-2 below bankfull. Drain pipe is intact, though could not be clearly seen for inspection.	Age: >40 years	Continue algae and weed management. Cut all woody material from dam face every 2-3 years or treat with a woody herbicide such as Triclopyr.
Field	36.10	Large agriculture field which has planted in tall fescue, harvested twice annually for hay production (round and square bales). Native grasses persist in xeric areas and along unshaded field borders.		Convert 20-40% of field to native warm season grasses which can be utilized for hay but reduces total acreage
Barn	1.00	This is a 50+ year old tobacco barn which has had minimal modifications (door, supports) to make it suitable for equipment and tool storage. Floor is dirt with gravel around entrance to control erosion.	Built: 50+ years	Roof may need replaced in 1-5 years.
	168.85			

