

EASTERN REGION
STATE FOREST LANDS
ANNUAL WORK PLAN
FISCAL YEAR 2019



Prepared:



(Forest Manager)

3/21/18
Date

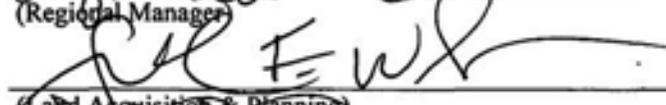
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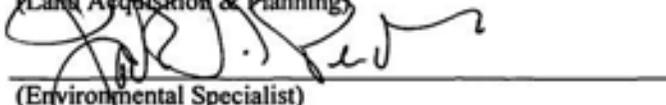
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A. FOREST OVERVIEW

CHESAPEAKE FOREST AND POCOMOKE STATE FOREST

The Chesapeake Forest which is owned by the State of Maryland and managed by the Maryland Forest Service through the Department of Natural Resources originally consisted of 58,000 acres of forest land. These lands were part of a 1999 divestment by the Chesapeake Forest Products Corporation. At that time, a partnership between the State of Maryland, The Conservation Fund, and Hancock Timber Resources Group moved to purchase the forests. The original 1999 plan was prepared by a 10-person technical team assembled by The Sampson Group, Inc. Oversight and decision making for the technical team was provided by a Steering Committee composed of representatives from Maryland Department of Natural Resources, The Conservation Fund, the Chesapeake Bay Foundation, and the local forest industry.

The Chesapeake Forest currently consists of 71,441 acres divided into 186 Management Units distributed across six counties. Chesapeake Forest also includes the Seth Demonstration Forest in Talbot County, Wicomico Demonstration Forest in Wicomico County, and Fred W. Besley Demonstration Forest in Dorchester County. In spite of this scattered character, the forests include some of the last large segments of unbroken forest in a region that is largely agricultural in nature. Chesapeake Forest Lands include more than 6,000 acres of wetlands or swamps and comprise portions of 23 separate watersheds, many of which have been given a high priority for conservation action under the Maryland Clean Water Action Plan. They contain established populations of threatened and endangered species, including the Delmarva fox squirrel (*Sciurus niger cinereus*), bald eagle, and some 150 other species that have been identified as rare, threatened, or endangered in the region. Abundant populations of deer, turkey, and waterfowl create the basis for extensive hunting opportunities and other recreational activities on the land.

The 18,206-acre Pocomoke State Forest is almost entirely contained within Worcester County, except for 388 acres in Somerset County and 154 acres in Wicomico County. The Chesapeake Forest has 18,038 acres within Worcester County, and several tracts from both Chesapeake Forest and Pocomoke State Forest adjoin each other offering greater habitat and recreational management opportunities. In addition, since both forests contain similar forest types, many of the same management guidelines and principles are used. There are differences between the two forests, however. Pocomoke State Forest contains many older tracts of forestland still in their natural state, nearly 5,000 acres of cypress and hardwood forest that borders a state scenic river, and areas of state designated Wildlands.

For additional information about Chesapeake Forest and Pocomoke State Forest please visit their respective web pages located at: <http://www.dnr.state.md.us/forests/mdforests.asp>.

HISTORIC FOREST CONDITIONS AND THE ROLE OF FIRE

The average pre-European-settlement fire frequency was on the order of 7-12 years for forests of the Eastern Shore of Maryland, with higher frequencies of 4-6 years in the southeastern Maryland counties of Wicomico, Worcester, Somerset, and Dorchester (Frost, 1998). These frequencies are high compared to most areas of the Northeast. Since it is unlikely that lightning was a significant contributor to these fires, Native American populations must have been. A conclusion is that fire in the Northeast was predominantly a phenomenon associated with human activity (Pyne, 1982).

The forest that covered the Eastern Shore in Indian times was primarily a hardwood one, though increasingly mixed with pine to the southward (Rountree & Davidson, 1997). The large patches of pine-dominated woods today are largely second growth, the result of extensive clearing in historic times. In aboriginal times, the woods of the Eastern Shore were likely to be oak-hickory, oak-gum, or oak-pine types, all of which still exist in second-growth form.

Captain John Smith said in the early seventeenth century, “A man may gallop a horse amongst these woods any waie, but where the creekes or Rivers shall hinder”. Father Andrew White wrote that the woods around St. Mary’s were so free of underbrush that a “coach and fower horses” could be driven through them (Rountree & Davidson, 1997). The open conditions could be partly attributed to the closed canopies of these mature forests, which shaded out undergrowth, but it is also likely that periodic fire helped to maintain the park-like conditions.

It is reasonable to assume that Eastern Shore tribes also used fire to periodically burn the marshes that were important sources of mollusks, fish, furbearers, waterfowl, edible tubers, and reeds for housing. Fire would have been useful for herding game, enhancing visibility or access, or retarding invasion of woody growth. More often than not, these fires would have spread into adjacent woodlands and, if of sufficient intensity, created the open seedbed conditions conducive to establishment of loblolly pine. Even today the pattern of loblolly pine “islands” and “stringers” in and adjacent to marshes of the lower Eastern Shore is common.

If, as Rountree and Davidson suggest, oaks were the most prevalent species in pre-settlement times, then the possible role of fire in maintaining these forest types must also be considered. Frost stated, “Light, understory fires may have been the norm for millions of hectares of eastern hardwood forest...” (Frost, 1998). Oak species range from slightly tolerant to intolerant of shade, indicating that disturbance is desirable to promote regeneration and growth. Furthermore, acorn germination and initial seedling establishment are most successful where light understory burns have scarified the seedbed and reduced competition (Burns & Honkala, 1990). The extensive presence of oaks on the Shore was an indicator that low-intensity understory fires were common, either intentionally set by Indians to create “open woods” or drive game, or the incidental result of land-clearing.

Natural stands of loblolly pine (*Pinus taeda*) became much more widespread around the turn of the 20th Century, particularly in the counties south of the Choptank River, largely due to the influence of economic factors. First was the abandonment of agricultural fields as farmers moved to more lucrative jobs in the towns and cities. Loblolly pine is an opportunistic species, which found the recently abandoned fields prime sites for reproduction by natural seeding. The second factor was the rise of large-scale commercial lumbering. Steam locomotives, often used to haul logs from the woods, were notorious for throwing sparks along the tracks and starting fires. Both the clearing of the forests by large-scale logging and the subsequent fires resulted in large areas of open, scarified land suitable for pine regeneration. By the middle of the twentieth century, loblolly pine had become the predominant forest cover type in the lower counties of the Eastern Shore.

FOREST TYPES AND SIZE CLASSES

Young loblolly pine forests mostly established since the early 1980’s are what characterize a high proportion of the Chesapeake Forest. Mixed pine and hardwood forests still occupy some of the lands, and many riparian areas and flood plains contain stands of mixed hardwoods. In general, the mixed pine-hardwood and hardwood stands are older, mature forests.

Mature mixed pine-hardwood, bottomland hardwood, and bald-cypress forests comprise the majority of the Pocomoke State Forest. In general, the mixed pine-hardwood, hardwood, and bald cypress stands are older, mature forests, while loblolly pine stands are more evenly distributed across all age classes.

Table 1 provides a habitat diversity matrix of both Eastern Region State Forests that provides a current baseline from which future changes in age structure or forest type diversity can be assessed for potential habitat or biodiversity effects.

Table 1. Forest Diversity Analysis

Acres of forest type and forest structure by structural groups, with percent of total area in each forest type/structure group combination.

Forest type	Structure stage							Total Area
	Open 0 - 5 yrs	Sapling 5 - 15 yrs	Growing 15 - 25 yrs	Maturing 25 - 35 yrs	Mature 35 - 50 yrs	Big Trees 50 - 75+ yrs	Uneven Aged	
Atlantic White Cedar	4	3	0	0	0	0	0	7
(Percent)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
Loblolly Pine	1,185	9,557	21,016	12,644	7,312	1,617	407	53,737
(Percent)	1.40%	11.28%	24.81%	14.93%	8.63%	1.91%	0.48%	63.44%
Shortleaf Pine	0	0	0	0	0	255	0	255
(Percent)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.30%
Mixed Pine/ Hardwood	721	886	933	717	1,563	7,568	22	12,410
(Percent)	0.85%	1.05%	1.10%	0.85%	1.85%	8.94%	0.03%	14.65%
Mixed Hardwoods	439	296	237	101	200	9,188	12	10,471
(Percent)	0.52%	0.35%	0.28%	0.12%	0.24%	10.85%	0.01%	12.36%
Bottomland Hardwoods/ Bald Cypress	0	0	0	0	20	3,855	0	3,875
(Percent)	0.00%	0.00%	0.00%	0.00%	0.02%	4.55%	0.00%	4.57%
Marsh/Field/ Power lines	3,946	0	0	0	0	0	0	3,946
(Percent)	4.66%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.66%
Total	6,295	10,741	22,186	13,462	9,095	22,483	441	85,533
(Percent)	7.43%	12.68%	26.19%	15.89%	10.74%	26.54%	0.52%	100.00%

UNIQUE COMMUNITY TYPES

INLAND SAND DUNE AND RIDGE WOODLANDS

This natural community occurs on dry, sandy dunes and ridges of the coastal plain. These landforms developed during the late Pleistocene when colder climate processes associated with Wisconsin glaciation influenced much of the region. At the time, prevailing northwest winds transported surficial sands across the Delmarva and deposited them on the east sides of the Nanticoke, Wicomico, and Pocomoke rivers and formed “dune fields” on uplands in the central part of the peninsula. Today, these landforms support woodland vegetation of pine and oak, as well as a variety of rare and threatened plant and animal species. Currently, there are two globally rare natural community types associated with inland sand dunes and ridges. One characterized by shortleaf pine (*Pinus echinata*) and another dominated by a mixture of hardwoods such as white oak (*Quercus alba*), black oak (*Quercus velutina*), and southern red oak (*Quercus falcata*). Both community types share many common associates such as Pitch pine (*Pinus rigida*), post oak (*Quercus stellata*), sand hickory (*Carya pallida*), and a variety of ericaceous shrubs. In general, the herbaceous layer is sparse and consists primarily of light-demanding species tolerant of dry,

sandy conditions. Examples of these species include yellow false indigo (*Baptisia tinctoria*) and the State threatened sundial lupine (*Lupinus perennis*). Frequent low-intensity fire is important in maintaining these natural communities and the distribution of species that depend upon them.

NON-RIVERINE SWAMPS

This natural community includes seasonally flooded “flatwoods” and depressions of the coastal plain. These habitats develop on flat, ancient estuarine terraces and shallow depressions with seasonally perched water tables. This results in standing water throughout the early part of the growing season followed by a period of drawdown. Hydroperiods are variable between swamps and largely dependent on rainfall and drought cycles. The forested canopy structure of flatwoods and depression swamps range from open to closed with composition ranging from hardwood dominated to a mixtures of hardwoods and pines. Swamps dominated by oak species such as willow oak (*Quercus phellos*), pin oak (*Quercus palustris*), swamp chestnut oak (*Quercus michauxii*), and cherrybark oak (*Quercus pagoda*) are considered highly rare because most have been logged and subsequently invaded by successional hardwoods such as red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), and black gum (*Nyssa sylvatica*). Pond pine (*Pinus serotina*) and loblolly pine (*Pinus taeda*) are prominent components of many flatwoods on the lower Coastal Plain. Nonriverine Swamps have been greatly reduced in Maryland through ditching, draining, logging, and conversion to agriculture.

ATLANTIC WHITE CEDAR SWAMPS

Atlantic white cedar (*Chamaecyparis thyoides*) swamps occur discontinuously along the Nanticoke, Wicomico, and Pocomoke Rivers. They are best developed above regular tidal influence between tidal swamp forests and sandy uplands where groundwater discharge and the accumulation peat over time provide favorable growing conditions. A few examples have also been documented from seasonally saturated to flooded basin wetlands associated with ancient estuarine terraces in the Pocomoke River watershed. Atlantic white cedar (*Chamaecyparis thyoides*), swamp tupelo (*Nyssa biflora*), pond pine (*Pinus serotina*), and sweetbay magnolia (*Magnolia virginiana*) often comprise the tree canopy. In the understory, shrubs and vines are common but variable, often including an abundance of common greenbrier (*Smilax rotundifolia*). The herbaceous layer is often sparse and may include species of sedges, manna-grasses, and rushes. Slightly elevated hummocks of sphagnum mosses (*Sphagnum* spp.) frequently form large patches. The extent of Atlantic white cedar has been greatly reduced over the past 200 years by logging. Today, remaining stands exist as patches representing only a fraction of historical estimates. All natural community types classified as Atlantic white cedar swamps are considered globally and state rare.

DELMARVA BAYS

Delmarva Bays are seasonally flooded wetland depressions on Maryland’s coastal plain. They developed from ancient interdunal depressions approximately 16,000 years ago when the climate of the Coastal Plain was very cold and windy and supported an extensive sand dune ecosystem. The majority of Delmarva Bays have been shaped by these wind and erosional processes into circular depressions up to one meter in depth with prominent sand rims. A perched water table and seasonal fluctuations in groundwater recharge and precipitation cause these wetlands to be irregularly flooded or seasonally inundated. During very dry seasons, surface water may be absent or limited to the deepest point within the bay. Likewise, during very wet years when rainfall is abundant, bays may retain water throughout the entire growing season. Depth and duration of seasonal inundation are apparently the most important factors influencing plant communities and the degree to which woody species become established. Dry-season fires in adjacent uplands may spread into Bays and may be another factor limiting the invasion of

woody species, although fire frequencies throughout the region have been much reduced in recent decades. The vegetation of Delmarva Bays is closely linked to its hydrologic regime. As water levels draw down or recede during the growing season, plant communities typically develop concentric rings from the outer edge towards the center or deepest point in the bay. Outer rings of a bay may include shrubs of buttonbush (*Cephalanthus occidentalis*), fetterbush (*Leucothoe racemosa*), swamp loosestrife (*Lysimachia terrestris*), and sweet pepper-bush (*Clethra alnifolia*) or nearly monospecific stands of Walter's sedge (*Carex striata*), maidencane (*Panicum hemitomon*), and Virginia chain fern (*Woodwardia virginica*). Interior portions of Bays may include species such as Eaton's panic-grass (*Dichantherium spretum*), warty panicgrass (*Panicum verrucosum*), and Virginia meadow-beauty (*Rhexia virginica*). Many of these species grade into the "draw down pocket" or lowest portion of a bay, which is the last to desiccate during the growing season. Common to this zone are slender fimbry (*Fimbristylis autumnalis*) and flood tolerant shrubs like buttonbush (*Cephalanthus occidentalis*). Many plants and animals considered rare in Maryland are known to occur in Delmarva Bays. Delmarva bays and their associated life zones have their own ESA designations identified and mapped.

BALD CYPRESS SWAMPS

Bald cypress swamps are forested wetlands that contain bald cypress (*Taxodium distichum*) as a dominant species in the canopy. In addition to bald cypress, swamp tupelo (*Nyssa biflora*) and pumpkin ash (*Fraxinus profunda*) are also characteristic in the canopy. Bald cypress swamps occur in the tidal and upper non-tidal reaches of the Pocomoke River in Maryland. These habitats are mostly freshwater and are periodically flooded by lunar tides. Stands are found in low floodplains, forming a corridor between open tidal marsh and non-tidal habitats. Due to flooding, these stands typically contain hummocks and hollows where the hollows are frequently flooded and hummocks are occasionally flooded. Due to the "drier" nature of the hummocks, they often support a diversity of woody and herbaceous species.

VERNAL POOLS

Vernal pools are small (~0.1-2 ha), non-tidal palustrine forested wetlands. They exhibit a well-defined, discrete basin and lack a permanent, above-ground outlet. The basin overlies a clay hardpan or some other impermeable soil or rock layer that impedes drainage. As the water table rises in fall and winter, the basin fills forming a shallow pool. By spring, the pool typically reaches maximum depth (~0.5-2.5 m) following snowmelt and the onset of spring rains. By mid- to late summer, the pool usually dries up completely, although some surface water may persist in relatively deep basins, especially in years with above average precipitation. This periodic seasonal drying prevents fish populations from becoming established, an important biotic feature of vernal pools. Many species have evolved to use these temporary, fish-free wetlands. Some are obligate vernal pool species, so-called because they require a vernal pool to complete all or part of their life cycle. vernal pools occur throughout the state as scattered, isolated habitats. They are most numerous on the lower coastal plain, especially on the mid to upper eastern shore, and uncommon west of the fall line. They are typically situated in low areas or depressions in a forest, but they can also occur in floodplain forests as isolated floodwaters, among backwaters of old beaver impoundments, old sinkholes, or as perched spring- or seep-fed basins along mountain slope benches, or at the base of slopes. vernal pools may persist in cleared areas such as cropland, pastures, and clearcuts, but usually in a highly degraded ecological state. Because vernal pools occur throughout the state in a variety of forest types and settings, the vegetation in and around these habitats varies considerably. However, many vernal pools exhibit similar vegetative structure. For example, pools tend to have a semi-open to closed forest canopy around them and the degree of canopy closure generally decreases with increasing pool size. The basin substrate consists of dense mats of submerged leaf litter and scattered, coarse woody debris. Herbaceous vegetation is usually absent

to sparse in and around the basin, although small mossy patches frequently occur along the basin edge. A dense shrub layer may occur along the shoreline or in small patches within the basin, especially on the coastal plain, but many pools also lack a well-developed shrub layer.

SOILS

The region features flat topography, near-sea level elevations, and poorly drained soils. Soils are naturally low in fertility, but soil erosion and sediment runoff for forestry activities is seldom a problem, given reasonable management care. Seasonally wet conditions affect the timing and type of forest management activities. For management activities on the Forest, the soils in the region were classified into 5 Soil Management Groups (SMG), based on soil characteristics. See Appendix A for a listing of soil types by soil management group and a listing by county of symbols used by soil survey reports.

The Five (5) Groups (SMG's) were defined as follows:

- SMG 1 - wet soils with firm sub-soils that can physically support machines when wet.
- SMG 2 - wet soils with non-firm sub-soils that cannot support machines when wet.
- SMG 3 - soils that are less wet than either 1 or 2; highly productive forest sites.
- SMG 4 - very sandy, often dry soils that are generally not highly productive forest sites.
- SMG 5 - very wet, low-lying soils that are too wet for forestry operations.

To facilitate plan development and future management, digital soils data was utilized from the USDA Natural Resources Conservation Service for, Caroline, Dorchester, Somerset, Talbot, Wicomico, and Worcester Counties.

B. ANNUAL WORK PLAN SUMMARY

INTRODUCTION

This section summarizes the proposed activities that will occur on all public forest lands (86,563 acres) managed by the Maryland Forest Service within the Eastern Region during the 2019 fiscal year. These lands include the Chesapeake Forest, Pocomoke State Forest, Wicomico Demonstration Forest, Seth Demonstration Forest, and Fred W. Besley Demonstration Forest. The fiscal year runs from July 1, 2018 to June 30, 2019. The following proposed activities are the results of a multi-agency effort. The multi-agency approach has ensured that all aspects of these lands have been addressed within the development of this plan.

All projects and proposals within this Plan have been developed to meet one or more of the Land Management Guidelines and Objectives as seen in the Chesapeake Forest and Pocomoke State Forest Sustainable Forest Management Plans including:

- **Forest Economy** - management activities with a purpose to maintain an economically sustainable forest and contribute to the local economy through providing forest-related employment and products.
- **Forest Conservation** - management activities with a purpose to protect significant or unique natural communities and elements of biological diversity, including Ecologically Significant Areas, High Conservation Value Forests and old growth Forests. Old growth forest management serves to restore and/or enhance old growth forest structure and function.
- **Water Quality** - management activities designed to protect or improve ecological functions in protecting or enhancing water quality.
- **Wildlife Habitat** - management activities with a purpose to maintain and enhance the ecological needs of the diversity of wildlife species and habitat types.
- **Recreation and Cultural Heritage** - management activities with a purpose to maintain and enhance areas that serve as visual, public camping, designated trails, and other high public use areas.

NETWORKING WITH DNR AND OTHER AGENCIES

MARYLAND DNR AGENCIES:

- Wildlife & Heritage – Identify and develop restoration projects, report and map potential Ecological Significant Areas (ESA) as found during fieldwork, release programs for game and non-game species. Mapping will be done with Global Positioning Systems (GPS). Participates on the Inter-Disciplinary Team (ID Team) and assists in the development of a forest monitoring program.
- Natural Resource Police – Enforcement of natural resource laws on the forest.
- Land Acquisition & Planning – Provides assistance in the development of plans, facilitates meetings with various management groups, develops Geographic Information System (GIS) maps for public review, and conducts deed research and boundary recovery. Also participates on the ID Team.
- Maryland Conservation Corps (MCC) – Assists in painting boundary lines, installing gates and trash removal.
- State Forest & Park Service – Participates on the ID Team.
- Chesapeake & Coastal Watershed Service – Develops watershed improvement projects, assists in the development of a forest monitoring programs and participates on the ID Team.

OTHER AGENCIES:

- DNR Contract Manager – Assists the Forest Manager in the designs and implementation of management activities on the donated portion of the forest. Also participates on the ID Team.
- Third party forest certification via annual audits
- The Chesapeake Bay Foundation – Identifies sites for future water quality improvement projects and assists in the implementation by providing volunteers for reforestation.
- National Wild Turkey Federation – Establishes and maintains handicap-hunting opportunities within the forest and provides funding for habitat protection and restoration.
- US Fish & Wildlife Service – Assists in prescribed burns for Delmarva Fox Squirrel (DFS) habitat. Also assists in maintaining open forest road conditions as fire breaks.
- Maryland Forest Association - Master Loggers Program provides training in Advanced Best Management Practices for Forest Product Operators (i.e. Foresters & Loggers) workshops on the forest.
- Network with Universities and Colleges
 - Maryland Environmental Lab, Horn Point – Conducts water quality monitoring on a first order stream not influenced by agriculture. These samples will serve as a local base line for other samples taken on other Delmarva streams.
 - Allegany College – Conduct annual field tour for forestry school student’s showcasing Sustainable Forest Management practices on the forest under dual third party certification.

C. MAINTENANCE PROJECTS

Forest roads will undergo general maintenance to maintain access for forest management activities (i.e. logging, prescribed burning, and wildfire control). Interior roads within each complex will be brush hogged where possible by the MFS & the WHS. Many of the roads have grown shut and require special heavy equipment to remove the larger trees. Brushing of these roads will improve access for the public and help maintain firebreaks for communities at risk from wildfire. Recreational trails will be mowed and cleared to meet the requirements of the specific user group(s).

Forest boundary lines will be maintained using the DNR yellow band markings. Signs will be placed along the boundary lines designating the type of public access to the property. New acquisitions will be converted from their previous ownership markings to the DNR yellow band markings.

Illegal trash dumps will continue to be removed off the forest as they are discovered. The average amount of trash removed from the forest each year has been 36 tons. In our efforts to control and eradicate this issue, we will continue to coordinate with Natural Resources Police (NRP), local sheriff departments, the State Highway Administration, and County Roads departments.

D. RECREATION PROJECTS

- Host the annual Chesapeake Forest lottery for vacant tracts designated for hunt club access only. Vacant tracts are those that existing clubs opted not to continue to lease or land that has recently become available due to acquisition or right-of-ways being opened.
- Continue to explore additional Resource Based Recreational (RBR) opportunities on the forest. This may include hunting, horseback riding; water trails, hiking trails, bird watching opportunities, geocaching, etc.
- Continue work on active Recreational Trails Grants
 - Chesapeake Forest – W23 – Greenhill trail marking

- Pocomoke State Forest – Furnace Town Loops
- Algonquin Cross County Trail Extension
- Mattaponi Pond Trails and Camping Project
- Pusey Branch Trail Extension and Enhancement Project
- Seth Demonstration Forest Trail Enhancement Project
- Perform general maintenance on the existing trail system

Submit and execute Recreational Trails Grants. Appendix B contains copies of the following grant applications for Calendar Year 2017-18:

- Algonquin Cross County Trail Extension
- Algonquin Trail Maintenance

E. SPECIAL PROJECTS

- Maintain dual forest certification. Summaries of the previous year’s audit findings can be found in Appendix C and Appendix D.
- Conduct information and educational opportunities on the forest.
- Update and maintain forest information in a GIS database, which will result in a new updated forest wide field map.
- Continue the effort to inventory and protect historic sites (i.e. cemeteries, old home sites, Native American Indian sites) using GPS and GIS technology.
- Collect native genotype pond pine (*Pinus serotina*) and short-leaf pine (*Pinus echinata*) on the forest in an effort to aid future management objectives on the Pocomoke and Chesapeake Forests.
- Provide assistance to the State Tree Nursery with maintenance of Seed Orchards on the Pocomoke State Forest.

F. WATERSHED IMPROVEMENT PROJECTS

Work continues on the Indiantown/Brookview Ponds watershed improvement project from the FY2013 AWP.

G. SPECIAL WILDLIFE HABITAT PROJECTS

Planning and execution of the early successional habitat project on the Foster tract continues.

H. ECOSYSTEM RESTORATION PROJECTS

Various ecosystem restoration projects continue to proceed, including the Brookview Ponds ESA restoration, management of the Furnace Tract lupine site, and the Foster Estate pond restoration. In general, site preparation of high priority ESA sites and prescribed burning was performed when and where possible.

I. MONITORING PROJECTS

- Maryland Wood Duck Initiative – D03 – Little Blackwater – Cliff Brown
- Lupine and Frosted Elfin – Furnace Tract – WHS – Jennifer Selfridge
- Bat Study – Bats and Prescribed Burning – WHS – Dana Limpert
- DFS – Hunt Club Monitoring Project – USF&WS – Cherry Keller
- Trail Monitoring – Recreation Trail Grant trail counters
- Maryland Biological Stream Survey – Stream Sampling on Pocomoke State Forest – DNR Resource Assessment Service – Matt Ashton

J. REVIEW PROCESS

INTERDISCIPLINARY TEAM COMMENTS

CITIZEN’S ADVISORY COMMITTEE COMMENTS

PUBLIC COMMENTS

K. SILVICULTURAL PROJECTS

SILVICULTURAL ACTIVITY OVERVIEW

Tables 2 and 3 summarize the proposed silvicultural activities for the 2019 annual work plan on approximately 1,749 acres (2.4%) of the Chesapeake Forest and 302 acres (1.6%) of Pocomoke State Forest, for a total of 2,024 acres (2.3%) on both forests.

Table 2. 2019 Chesapeake Forest Silvicultural Activity Overview. (CF-19-S-1 – CF-19-S-28)

Activity	Acres
Final Harvest	165.4
First Thinning	1383.5
Second Thinning	199.8
Total	1748.7

Table 3. 2019 Pocomoke State Forest Silvicultural Activity Overview. (P-19-S-1 – P-19-S-2)

Activity	Acres
First Thinning	138.5
Second Thinning	163.9
Total	302.4

A 10-year silvicultural activity summary for both forests is located in Appendix F.

DEFINITIONS OF SILVICULTURAL ACTIVITIES

- **Reforestation** – Reforestation reestablishes forest cover either naturally or artificially (hand planting), and may be accompanied by some kind of site preparation during the same fiscal year. The nature of the site preparation will be determined by field examination. It is occasionally followed, in the same fiscal year, with grass control in the form of chemicals (hand-applied by ground crews). Site conditions will dictate application rates, etc., in each case.
- **Site Preparation/Regeneration** – While natural regeneration is the preferred method of reforesting harvested areas, alternative plans should be in place in case natural regeneration is unsuccessful. Alternatives include prescribed burning, herbicide, light mechanical disturbance, or a combination thereof followed by planting of native pines and/or hardwoods as the management zone dictates.
- **Pre-Commercial Thinning** – Pre-commercial thinning is the removal of trees to reduce overcrowded conditions within a stand. This type of thinning concentrates growth on more desirable trees while improving the health of the stand. This treatment is usually done on stands 6 to 10 years of age. The number of trees retained will depend on growth, tree species present, and site productivity. This activity is conducted with hand held power tools and not heavy equipment, thereby reducing adverse impact to the soil.
- **First Commercial Thinning** – Usually performed on plantations 20-25 years old. The objective is to facilitate forest health and promote development of larger trees over a shorter period of time. This is accomplished in plantations by removing every 5th row of trees and selectively thinning (poor form & unhealthy trees) between rows. In naturally regenerated stands, thinning corridors will be established every 50 feet and the stand will be selectively thinned along both sides of the corridor. Approximately 30-40% of the total stand volume will be removed in this process. Stocking levels are determined using a loblolly pine stocking chart based on the basal area, DBH, and trees per acre of the stand (USDA Forest Service, 1986). Crown ratio and site index are other factors that are used to decide whether to thin or not.
- **Second Commercial Thinning** – Usually performed on stands 35-40 years old. The objective is to lengthen the rotation age of the stand and produce larger, healthier trees. In some cases, this technique is used to improve habitat for the Delmarva Fox Squirrel (DFS) and Forest Interior Dwelling Species (FIDS). Approximately 25-30% of the total stand volume will be removed in this process.
- **Selection Harvest** – This includes the removal of single trees and groups of trees within a given stand. This method will be used to distribute age classes and to adjust species composition within a given stand (i.e. riparian buffers, ESA, DFS & FID areas).
- **Shelterwood Harvest** – The shelterwood method involves the gradual removal of the entire stand in a series of partial cuttings that extend over a fraction of the rotation (Smith, 1986). The number of trees retained during the first stage of the harvest depends on the average tree size (diameter at breast height) on the site. As with seed tree regeneration, the shelterwood method works best when overstory trees are more than 30 years old and in their prime period of seed production potential (Schulz, 1997).
- **Seed Tree Harvest** – This type of harvest is designed to regenerate pine on the site by leaving 12 to 14 healthy dominant trees per acre as a seed source. The seed trees are typically left on the site for another rotation, but can be removed once sufficient pine regeneration is achieved. The seed tree method regenerates loblolly pine effectively and inexpensively in the Coastal Plain, where seed crops are consistently heavy (Schulz, 1997).
- **Variable Retention Harvest** – This harvest type focuses on the removal of approximately 80 percent of a given stand in one cutting, while retaining approximately 20 percent as wildlife corridors/islands, visual buffers, and/or legacy trees. The preferred method of regeneration is by natural seeding from adjacent stands, or from trees cut in the clearing operation. Coarse woody debris (slash/tree tops) is left evenly across the site to decompose. A Variable Retention Harvest (VRH) is prescribed to help regulate the forest

growth over the entire forest, ensuring a healthy and vigorous forest condition. Harvesting of young loblolly pine stands is done to help balance the age class distribution across the forest. Currently, about 20% of the two forests is 19 years of age or younger. VRH are also used to regenerate mixed natural stands within ESA's, DFS & Core FIDS areas. If adequate natural regeneration is not obtained within 3 years of the harvest, hand planting of the site is typically required (not required for certain restoration projects, such as bay restoration).

- **Aerial Release Spraying** – An aerial spray of herbicide is used to reduce undesirable hardwood species (i.e. sweet gum & red maple) within the stand. In many cases, a reduced rate (well below the manufactures recommendation) is used. A reduced rate has been used on the CF successfully to kill the undesirable species while maintaining the desirable ones (yellow poplar & oaks). All forms of aerial spraying are based on precision GPS mapping and accompanied by on-board flight GPS controls. GPS-generated maps shows each pass of the aircraft and are provided by the contractor to demonstrate precision application. Aerial applications are not allowed in specially designated wetland areas or within 150 feet of riparian areas on the forest.
- **Prescribed Fire** – Prescribed fires are set deliberately by MFS personnel, under proper weather conditions, to achieve a specific management objective. Prescribed fires are used for enhancing wildlife habitat, encouraging fire-dependent plant species, reducing fuel loads that feed wildfires, and prepare sites for planting.
- **Riparian Buffer Zone Establishment** – Riparian buffer zones are vegetated areas adjacent to or influenced by a perennial or intermittent bodies of water. These buffers are established and managed to protect aquatic, wetland, shoreline, and/or terrestrial environments and ultimately the Chesapeake Bay. Boundaries of riparian buffer zones will be marked, surveyed (GPS) and mapped (GIS). Selective harvesting and/or thinnings may occur in these areas to encourage a mixed hardwood-pine composition.

SILVICULTURAL PRESCRIPTIONS & STAND DATA

CAROLINE COUNTY

[CF-19-S-01]

Proposal Name: C02 – Seipp – Stands 2 & 4**Harvest Area:** 53.6 acres**Forest Community Types and Development:** Overstocked loblolly pine plantations established in 1996 and 1975, first thinned in 1994**Habitats and Species of Management Concern:** ESA Zone 1, ESA Zone 3 Sawtimber, and Stream Buffer**Water Resources:** Unnamed stream that flows into Marshyhope Creek**Soil Resources:** CoA, FaA, GAE, HbB, HbC, IaA, IbB, IgA, and Za**Historic Conditions:** No known historic features**Silvicultural Prescription:** First and second thinnings

DORCHESTER COUNTY

[CF-19-S-02]

Proposal Name: D04 – W.T. Willis – Stand 2**Harvest Area:** 20.6 acres**Forest Community Types and Development:** Overstocked loblolly pine naturally regenerated in 1977, first thinned in 2000**Habitats and Species of Management Concern:** Stream Buffer and DFS Core**Water Resources:** Stream that flows into Buttons Creek**Soil Resources:** EmA and OkA**Historic Conditions:** No known historic features**Silvicultural Prescription:** Second thinning, retain all hard mast species

[CF-19-S-03]

Proposal Name: D04 – W.T. Willis – Stand 6**Harvest Area:** 30.8 acres**Forest Community Types and Development:** Overstocked loblolly pine plantation established in 1999**Habitats and Species of Management Concern:** DFS Core**Water Resources:** None**Soil Resources:** EmA and OtA**Historic Conditions:** No known historic features**Silvicultural Prescription:** First thinning, retain all hard mast species

[CF-19-S-04]

Proposal Name: D12 – Marshyhope – Stand 47**Harvest Area:** 27.7 acres**Forest Community Types and Development:** Overstocked loblolly pine plantation established in 1971**Habitats and Species of Management Concern:** ESA Zone 1, ESA Zone 3 Sawtimber, Stream Buffer, and DFS Core**Water Resources:** Stream that flows into Marshyhope Creek**Soil Resources:** HvA and PnA**Historic Conditions:** No known historic features**Silvicultural Prescription:** Second thinning, retain all hard mast species

[CF-19-S-05]

Proposal Name: D12 – Marshyhope – Stand 59

Harvest Area: 44.7 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 1995, sprayed in 1996

Habitats and Species of Management Concern: ESA Zone 1, ESA Zone 2, ESA Zone 3 Sawtimber, and DFS Core

Water Resources: Stream that flows into Marshyhope Creek

Soil Resources: GaB, HnA, HvA, KgB, PmA, PnA, RsA, and RsB

Historic Conditions: No known historic features

Sivilcultural Prescription: First thinning, retain all hard mast species

[CF-19-S-06]

Proposal Name: D18 – Apex – Stands 1, 2, 3 & 6

Harvest Area: 221.6 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established in 1995-1996, 1999

Habitats and Species of Management Concern: ESA Zone 1, ESA Zone 2, ESA Zone 3 Sawtimber, Stream Buffer, FIDS, and DFS Core

Water Resources: Stream that drains into Marshyhope Creek

Soil Resources: DnC, EwC, FaA, FmA, FmB, GaA, GaB, HnA, HvA, IgA, KgB, PnA, and Za

Historic Conditions: No known historic features

Sivilcultural Prescription: First thinning, retain all hard mast species

[CF-19-S-07]

Proposal Name: D19 – Revena – Stands 1, 2 & 3

Harvest Area: 107.4 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established in 1992, 1995, and 1998

Habitats and Species of Management Concern: ESA Zone 1, Stream Buffer, FIDS, and DFS Core

Water Resources: Stream that drains into Chicamacomico River

Soil Resources: FmB, GaA, HnA, HvA, IgA, and KgB

Historic Conditions: No known historic features

Sivilcultural Prescription: First thinning, retain all hard mast species

[CF-19-S-08]

Proposal Name: D26 – Lewis – Stands 10, 12 & 13

Harvest Area: 87.1 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established in 1987, 1996, and 1997

Habitats and Species of Management Concern: ESA Zone 1, ESA Zone 3 Sawtimber, and DFS Core

Water Resources: Island Pond

Soil Resources: EmA, EoA, and OkA

Historic Conditions: No known historic features

Sivilcultural Prescription: First thinning, retain all hard mast species

[CF-19-S-09]

Proposal Name: D30 – Besley & Rodgers – Stand 2

Harvest Area: 120.2 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 1976

Habitats and Species of Management Concern: DFS Core
Water Resources: Farm Creek
Soil Resources: EoA, OkA, and SuA
Historic Conditions: No known historic features
Silvicultural Prescription: First thinning, retain all hard mast species

SOMERSET COUNTY

[CF-19-S-10]

Proposal Name: S07 – Pusey – Stand 3
Harvest Area: 43.6 acres
Forest Community Types and Development: Overstocked loblolly pine naturally regenerated in 1996, pre-commercially thinned in 2001
Habitats and Species of Management Concern: Stream Buffer
Water Resources: Stream that drains into Monie Creek
Soil Resources: FgA, OKA, OtA, QuA, WdA, WpA
Historic Conditions: No known historic features
Silvicultural Prescription: First thinning

[CF-19-S-11]

Proposal Name: S31 – Westover – Stands 1, 6 & 9
Harvest Area: 34.6 acres
Forest Community Types and Development: Overstocked loblolly pine plantations established in 1987, 1998-1999
Habitats and Species of Management Concern: DFS Core
Water Resources: Back Creek
Soil Resources: AoB, MdA, OKA, QuA, UbB, and WpA
Historic Conditions: Mapped home site
Silvicultural Prescription: First thinning

[CF-19-S-12]

Proposal Name: S34 – Lankford – Stand 2
Harvest Area: 33.0 acres
Forest Community Types and Development: Overstocked loblolly pine stand naturally regenerated in 1996 and pre-commercially thinned in 2003
Habitats and Species of Management Concern: Stream Buffer and General Management
Water Resources: Costen Branch
Soil Resources: FgA, HbB, HmA, LO, MdA, QuA, and WdB
Historic Conditions: No known historic features
Silvicultural Prescription: First thinning

[CF-19-S-13]

Proposal Name: S46 – Cullen – Stands 2 & 4
Harvest Area: 84.7 acres
Forest Community Types and Development: Overstocked loblolly pine plantations established in 1987-88, first thinned in 2005
Habitats and Species of Management Concern: ESA Zone 1, ESA Zone 3 Pulpwood, and General management
Water Resources: None

Soil Resources: OKA and QuA
Historic Conditions: No known historic features
Sivilcultural Prescription: First thinning

[CF-19-S-14]

Proposal Name: S55 – Marumsco – Stand 11
Harvest Area: 27.6 acres
Forest Community Types and Development: Loblolly pine plantation established in 1981, first thinned in 1998, second thinned in 2008, released in 1984, and sprayed in 1998
Habitats and Species of Management Concern: General management
Water Resources: None
Soil Resources: OKA, OtA, and QuA
Historic Conditions: No known historic features
Sivilcultural Prescription: Final Harvest, natural regeneration may be supplemented with planting if suitable regeneration is not achieved per monitoring

WICOMICO COUNTY

[CF-19-S-15]

Proposal Name: W23 – Greenhill – Stands 1, 8, 9 & 13
Harvest Area: 133.1 acres
Forest Community Types and Development: Overstocked loblolly pine plantation established in 1999 and released in 2000; overstocked loblolly pine naturally regenerated in 1993 and pre-commercially thinned in 2000; overstocked loblolly pine plantation established in 1994
Habitats and Species of Management Concern: General management
Water Resources: None
Soil Resources: OtA and OKA
Historic Conditions: MHT Grid C457_R226
Sivilcultural Prescription: First thinning, retain all hard mast species

[CF-19-S-16]

Proposal Name: W44 – Warren-Dungan – Stand 10
Harvest Area: 19.4 acres
Forest Community Types and Development: Overstocked loblolly pine stand naturally regenerated in 1977 and first thinned in 1997
Habitats and Species of Management Concern: None
Water Resources: None
Soil Resources: AsA, KgB, MuA, and RsB
Historic Conditions: No known historic features
Sivilcultural Prescription: Final Harvest

[CF-19-S-17]

Proposal Name: W46 – Campbell – Stand 6
Harvest Area: 23.9 acres
Forest Community Types and Development: Overstocked loblolly pine plantation established in 1992, sprayed and controlled for grass in 1994
Habitats and Species of Management Concern: DFS Future
Water Resources: Campbell Ditch
Soil Resources: KfA, LgA, and MuA

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning, retain all hard mast species

[CF-19-S-18]

Proposal Name: W46 – Campbell – Stands 6, 8, 16, 28, 107 & 110

Harvest Area: 158.5 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established and naturally regenerated in 1991-1994 and 1998

Habitats and Species of Management Concern: ESA Zone 1, ESA Zone 3 Pulpwood, Stream Buffer, and DFS Future

Water Resources: Campbell Ditch

Soil Resources: BhA, EwB, FaA, FgA, KgB, MpA, RsA, RsB, WdA, and Zk

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning, retain all hard mast species

[CF-19-S-19]

Proposal Name: W46 – Campbell – Stand 37

Harvest Area: 42.8 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established in 1992

Habitats and Species of Management Concern: ESA Zone 1, ESA Zone 3 Pulpwood, and DFS Future

Water Resources: Campbell Ditch

Soil Resources: BhA, KgB, MuA, RsB, and W

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning, retain all hard mast species

WORCESTER COUNTY

[CF-19-S-20]

Proposal Name: WR10 – Cordery – Stands 2, 8 & 9

Harvest Area: 122.0 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established in 1983, 1997 and 1999

Habitats and Species of Management Concern: ESA Zone 1 and ESA Zone 3 Pulpwood

Water Resources: None

Soil Resources: AsA, BhA, EvB, EvD, KsA, KsB, LO, Ma, MuA, and RuB

Historic Conditions: MHT Grid – C502_R235

Silvicultural Prescription: First thinning

[CF-19-S-21]

Proposal Name: WR10 – Cordery – Stand 7

Harvest Area: 54.4 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 1971, first thinned in 2006

Habitats and Species of Management Concern: ESA Zone 1 and ESA Zone 3 Pulpwood

Water Resources: None

Soil Resources: AsA, BhA, KsA, Ma, MuA, and RuB

Historic Conditions: MHT Grid – C502_R235

Silvicultural Prescription: Second thinning

[CF-19-S-22]

Proposal Name: WR10 – Cordery – Stands 7 & 8

Harvest Area: 43.1 acres

Forest Community Types and Development: Well-stocked loblolly pine plantations established in 1971 and 1983, first thinned in 2006

Habitats and Species of Management Concern: ESA Zone 1 and ESA Zone 3 Pulpwood

Water Resources: None

Soil Resources: AsA, Ma, and MuA

Historic Conditions: No known historic features

Silvicultural Prescription: Final Harvest, retain hard mast species, natural regeneration may be supplemented with planting if suitable regeneration is not achieved per monitoring

[CF-19-S-23]

Proposal Name: WR11 – Shockley – Stand 7

Harvest Area: 29.6 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 1998

Habitats and Species of Management Concern: General management

Water Resources: None

Soil Resources: CeB, FaA, HmA, MuA, RuB, and WdA

Historic Conditions: MHT Grid – C511_R231

Silvicultural Prescription: First thinning

[CF-19-S-24]

Proposal Name: WR12 – Purnell – Stand 5

Harvest Area: 28.3 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 1997, pre-commercially thinned in 2007

Habitats and Species of Management Concern: ESA Zone 1 and ESA Zone 3 Pulpwood

Water Resources: None

Soil Resources: AsA, BhA, CeB, HmB, Ma, MuA, RuB

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning

[CF-19-S-25]

Proposal Name: WR39 – W.T. Byrd – Stands 1 & 11

Harvest Area: 49.4 acres

Forest Community Types and Development: Overstocked loblolly pine naturally regenerated in 1994 and pre-commercially thinned in 2001; overstocked loblolly pine plantation established in 1998, released in 2000, and pre-commercially thinned in 2001

Habitats and Species of Management Concern: ESA Zone 3 Pulpwood, Stream Buffer, and General Management

Water Resources: Ditches associated with emergent wetland ESAs

Soil Resources: AsA, CeB, FaA, MuA, and W

Historic Conditions: Cemetery located near the edge of the proposed harvest area

Silvicultural Prescription: First thinning

[CF-19-S-26]

Proposal Name: WR39 – W.T. Byrd – Stands 2, 4 & 7

Harvest Area: 35.7 acres

Forest Community Types and Development: Mature loblolly pine plantation established in 1950, first thinned in 1998, sprayed in 2000, and second thinned in 2004; overstocked loblolly pine naturally regenerated in 1973, first thinned in 1998, and second thinned in 2004

Habitats and Species of Management Concern: ESA Zone 3 Pulpwood, Stream Buffer, and General Management

Water Resources: Ditches associated with emergent wetland ESAs

Soil Resources: FaA

Historic Conditions: No known historic features

Silvicultural Prescription: Final harvest, select harvest allowed within the expanded riparian buffer. Natural regeneration may be supplemented with planting if suitable regeneration is not achieved per monitoring.

[CF-19-S-27]

Proposal Name: WR45 – Foster Estate – Stands 20, 22, 25, 26 & 63

Harvest Area: 158.5 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established in 1994, 1997, 1998, and 2002

Habitats and Species of Management Concern: G3, FIDS, and DFS Future Core

Water Resources: None

Soil Resources: AsA, BhA, CeB, EvA, EvB, EvD, FaA, GaB, HuA, KsA, KsB, Ma, MuA, RuA, RuB, and Za

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning, retain hard mast species

[CF-19-S-28]

Proposal Name: WR45 – Foster Estate – Stand 59

Harvest Area: 39.5 acres

Forest Community Types and Development: Mature and overstocked loblolly, shortleaf, and pond pine stand naturally regenerated in 1939

Habitats and Species of Management Concern: G3 and FIDS

Water Resources: None

Soil Resources: EvA, EvB, HmA, KsA, and MuA

Historic Conditions: No known historic features

Silvicultural Prescription: Final harvest, retain hard mast species and pond and shortleaf pines, especially in G3 areas. Natural regeneration may be supplemented with planting of appropriate species if suitable regeneration is not achieved per monitoring.

POCOMOKE STATE FOREST

[P-19-S-01]

Proposal Name: P02 – Nazareth Church – Tract 32 – Stand 1

Harvest Area: 138.5 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 1991

Habitats and Species of Management Concern: DFS Future Core

Water Resources: None

Soil Resources: AsA, BhA, KsA, KsB, MuA, RuA, and RuB

Historic Conditions: MHT Grid – C494_R246

Silvicultural Prescription: First thinning, retain hard mast species

[P-19-S-02]

Proposal Name: P02 – Nazareth Church – Tract 33 – Stand 1

Harvest Area: 163.9 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 1995, partially first thinned in 2007

Habitats and Species of Management Concern: DFS Future Core

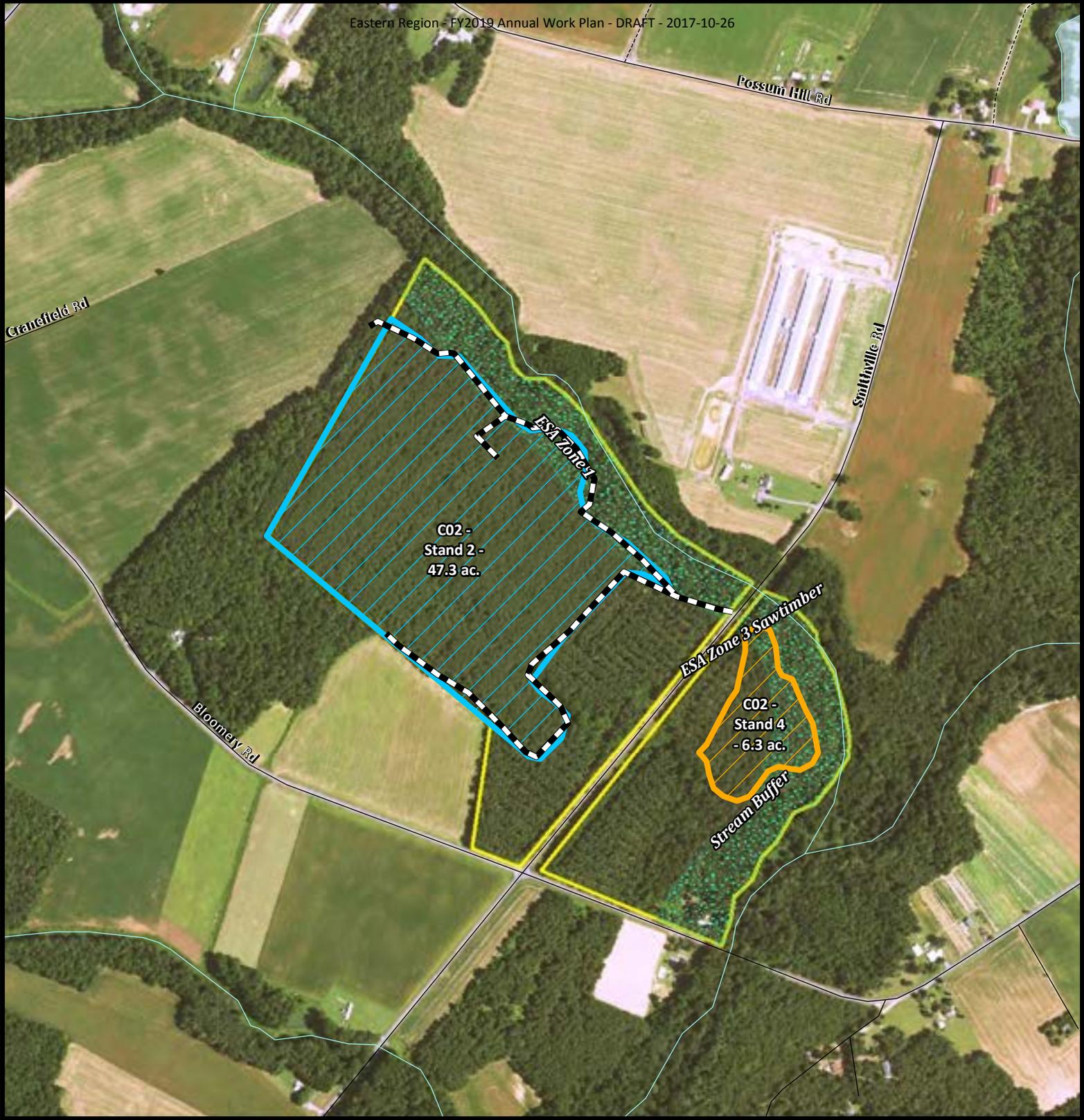
Water Resources: None

Soil Resources: AsA, BhA, CeB, EvD, FaA, HuA, KsA, KsB, MuA, OtA, RoB, RuA, RuB, and WdA

Historic Conditions: MHT Grid – C494_R247, C494_R248, C495_R247, C495_R248, C496_R248

Silvicultural Prescription: Second thinning, retain hard mast species

SILVICULTURAL SITE MAPS



Legend

CF AWP Activity

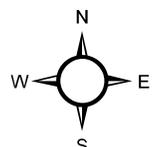
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

CF-19-S-01

Scale: 1:7,920
Date: 10/2017



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This map is not a boundary survey





Legend

CF AWP Activity

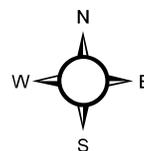
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-  2019 Final Harvest

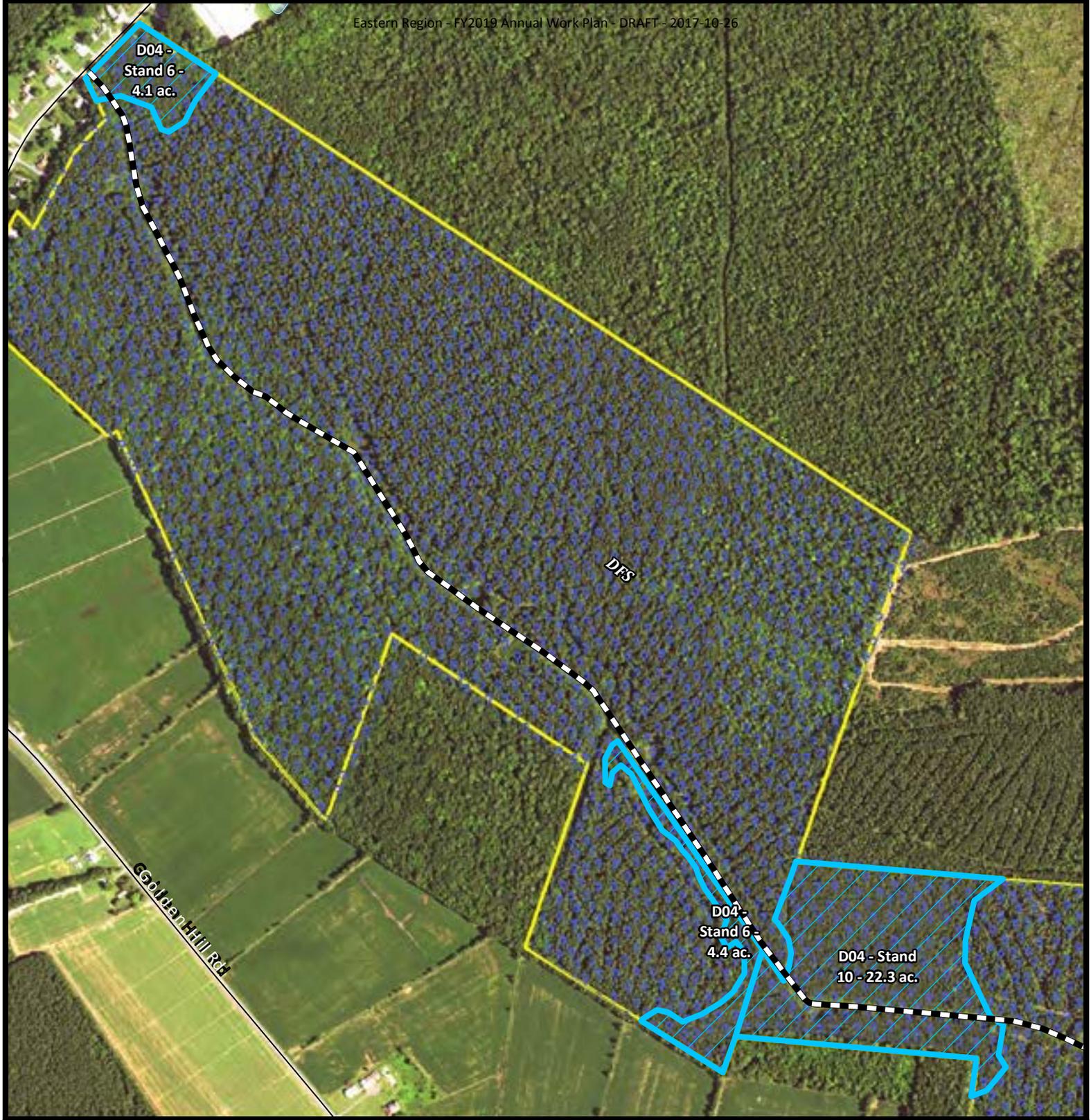
CF-19-S-02

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Date: 10/2017



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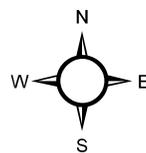
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-  2019 Final Harvest

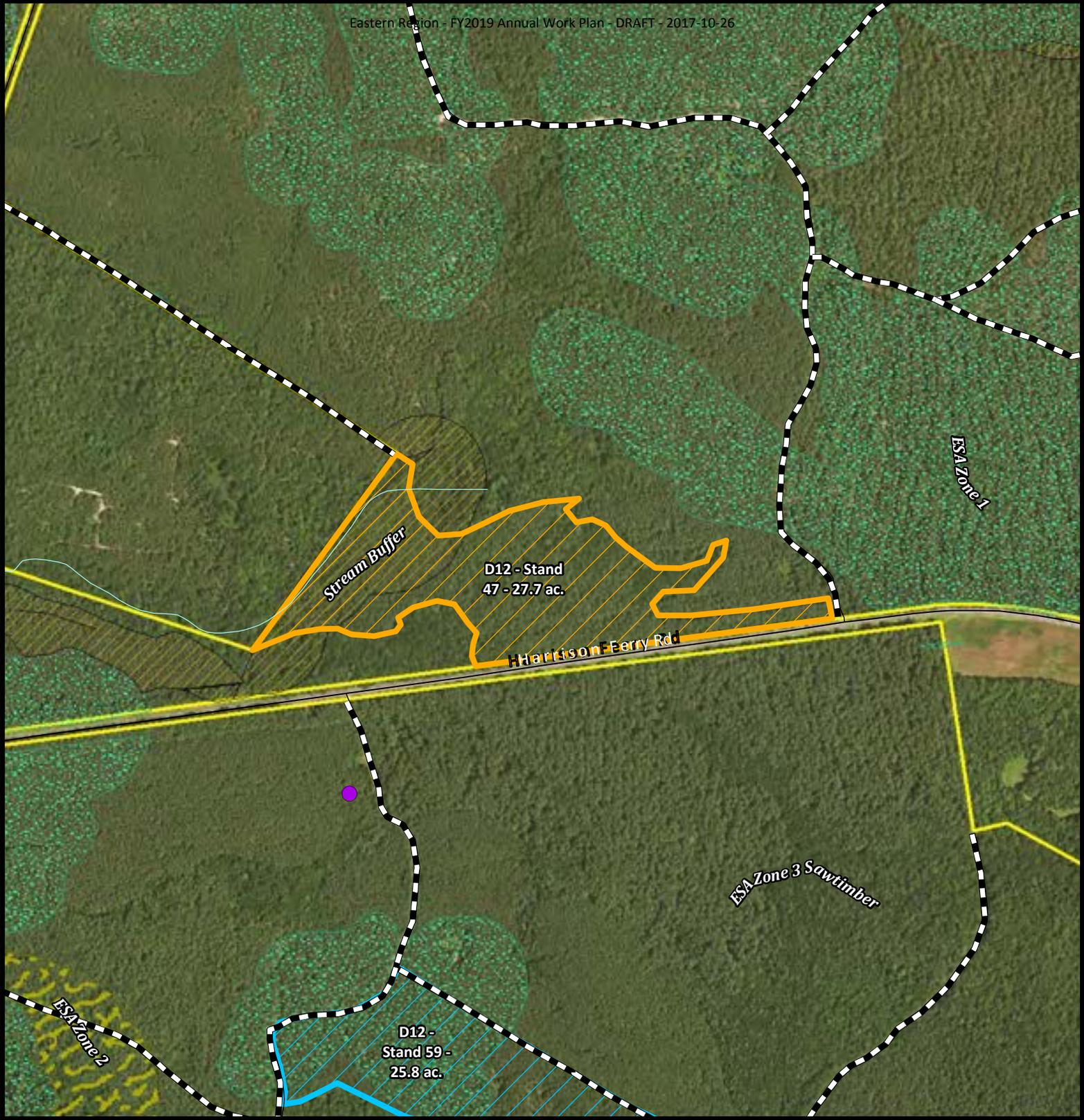


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CF-19-S-03

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Date: 10/2017





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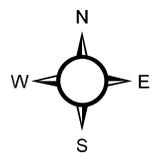
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-  2019 Final Harvest

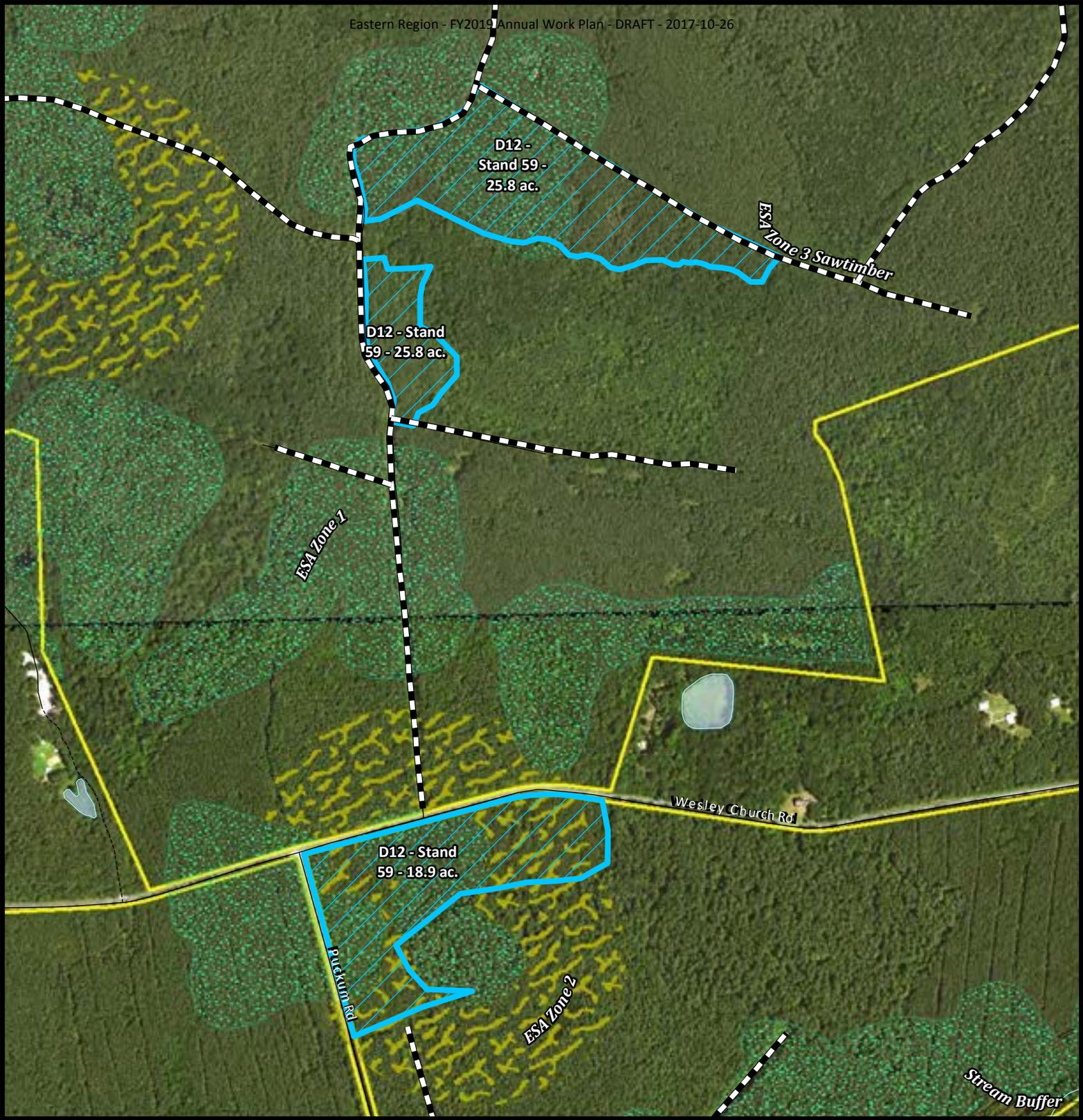
CF-19-S-04

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Date: 10/2017



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Legend

CF AWP Activity

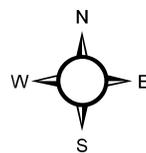
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

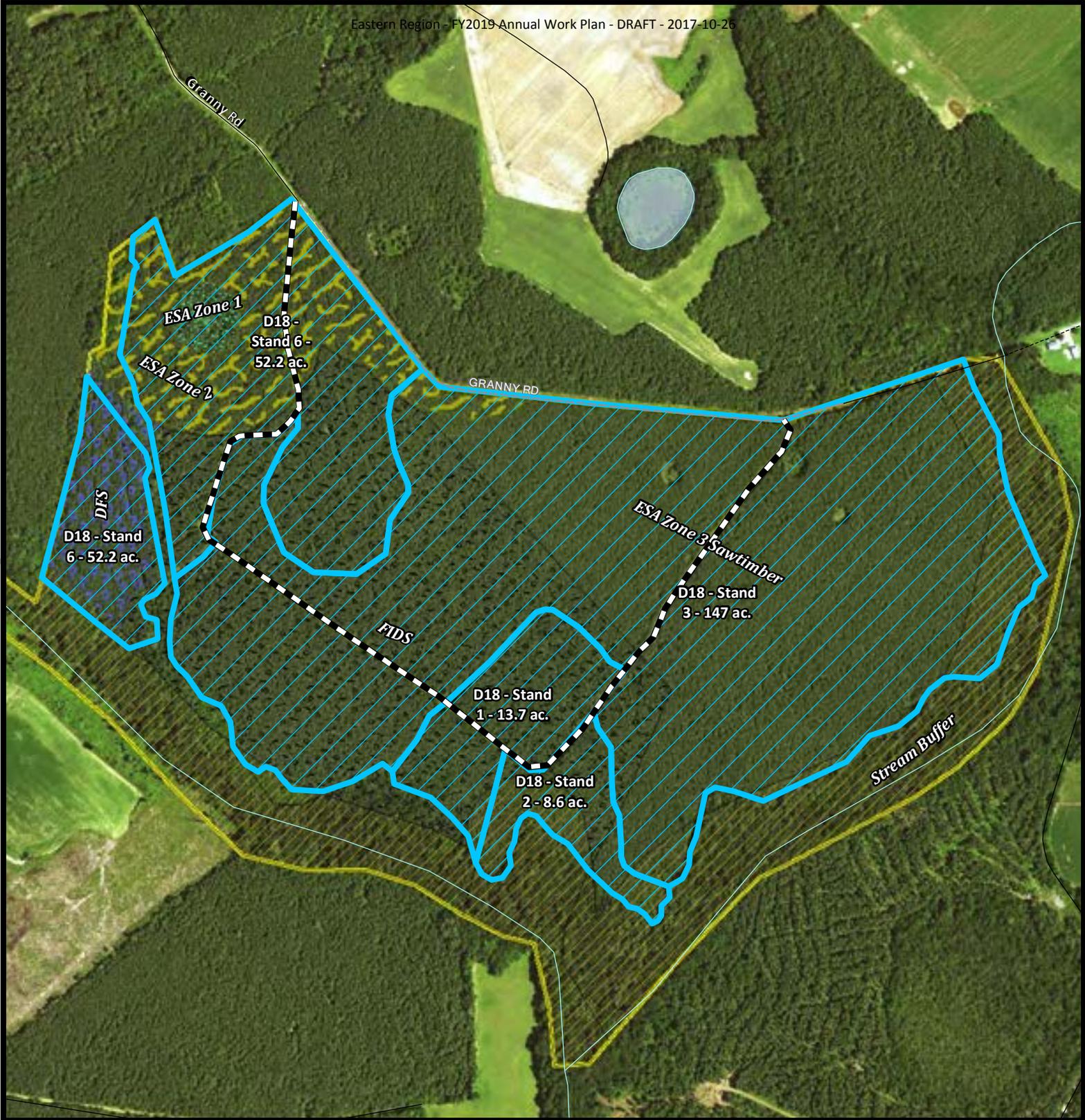


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CF-19-S-05

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Date: 10/2017





Legend

CF AWP Activity

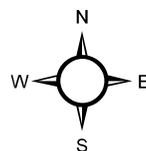
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-  2019 Final Harvest

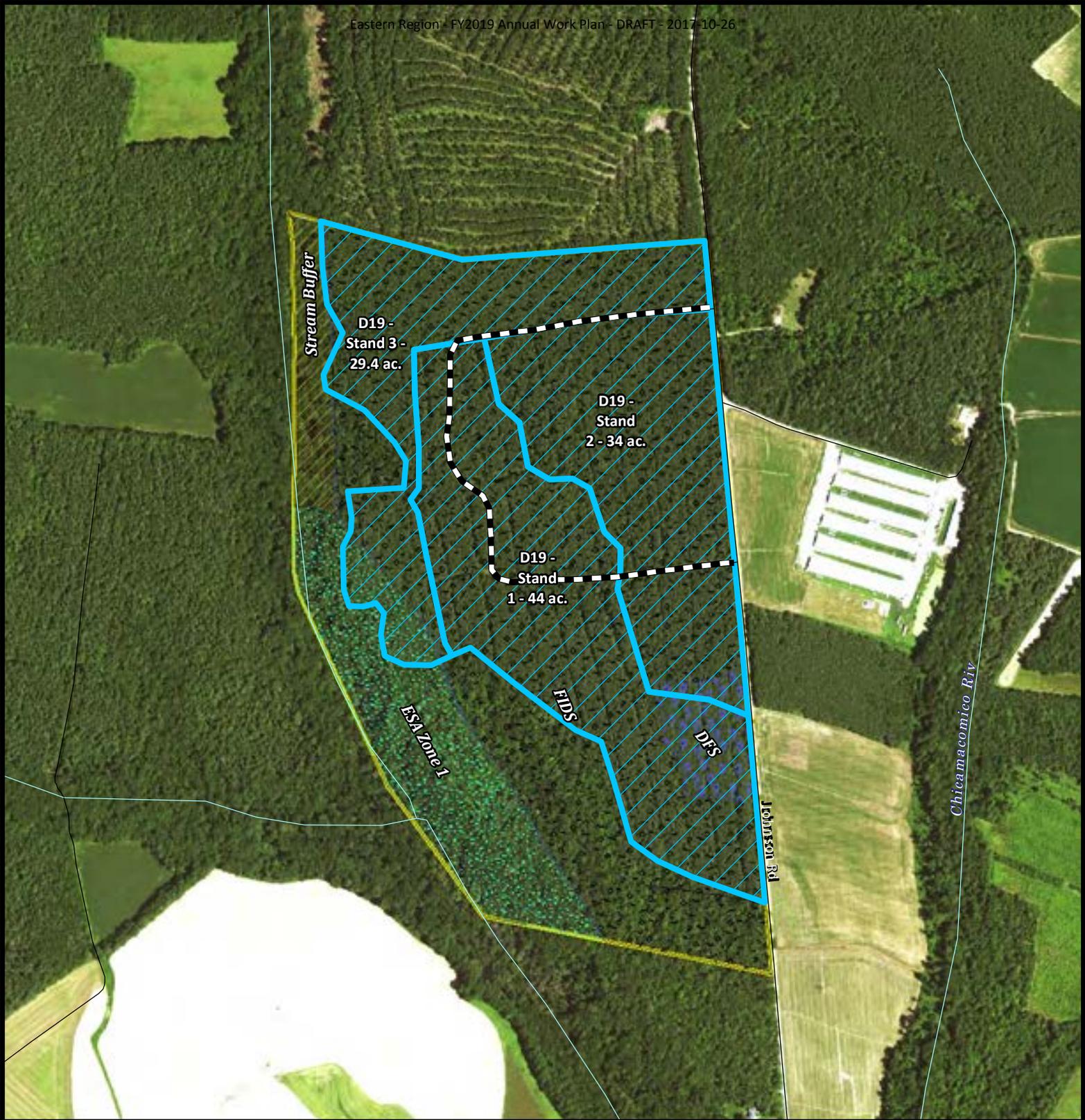


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CF-19-S-06

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Date: 10/2017





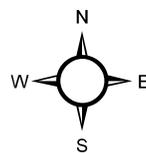
Legend

CF AWP Activity

-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest



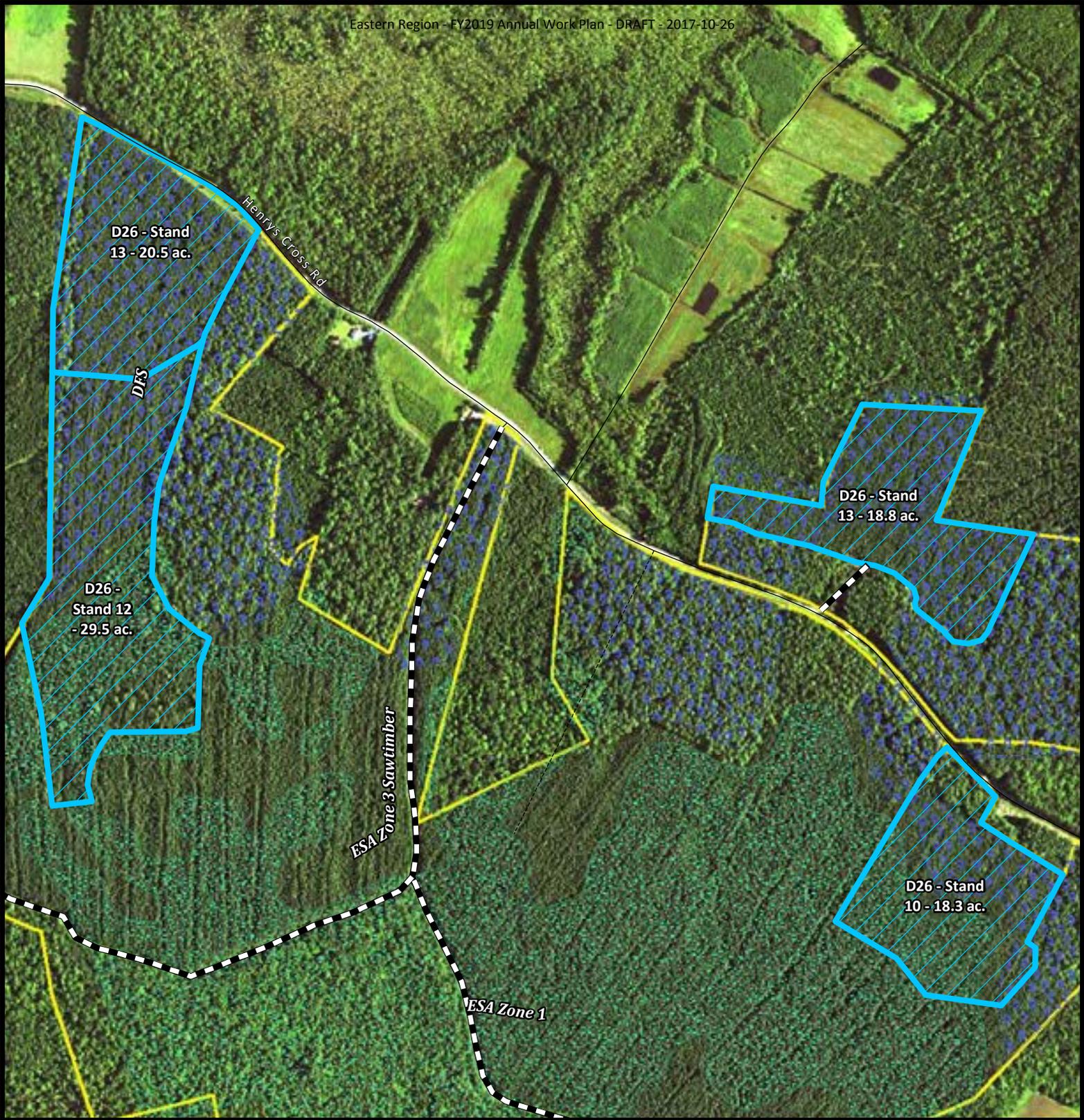
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CF-19-S-07

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Date: 10/2017





Legend

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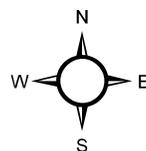
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest



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CF-19-S-08

Scale: 1:7,920
Date: 10/2017



Andrews Rd

D30 - Stand 2
- 120.2 ac.
D30 -
Stand 2 -
120.2 ac.

D30 - Stand
2 - 120.2 ac.

Legend

CF AWP Activity

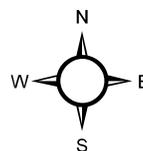
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-  2019 Second Thinning
-  2019 Final Harvest

CF-19-S-09

Scale: 1:7,920
Date: 10/2017



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W Ridge Rd
DRS

S07 - Stand
3 - 43.6 ac.

Stream Buffer

Mount Vernon Rd

Legend

CF AWP Activity

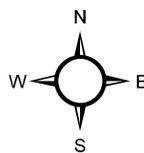
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

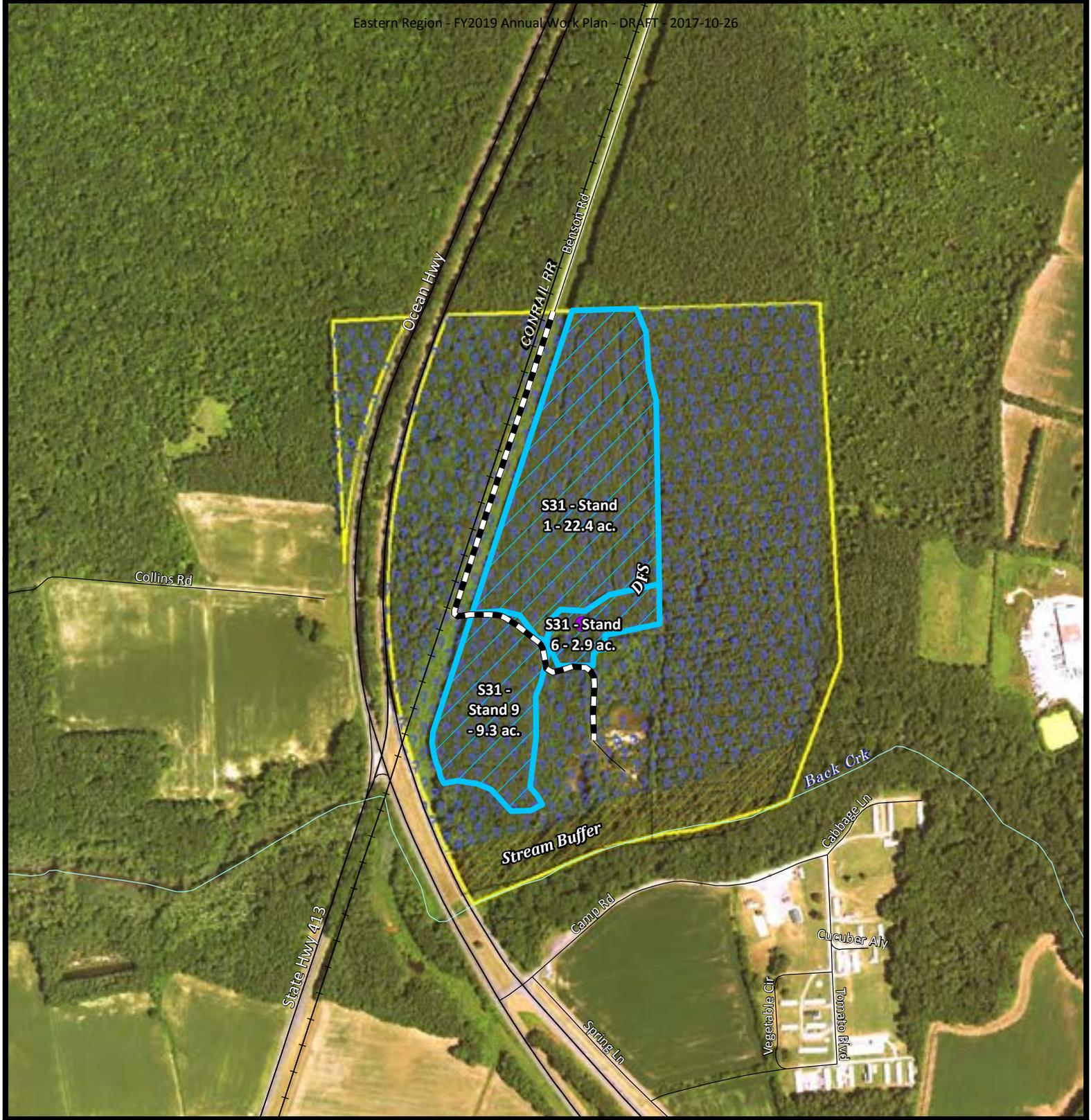


This map is for planning purposes only.
This map is not a boundary survey

CF-19-S-10

Scale: 1:7,920
Date: 10/2017





Legend

CF AWP Activity

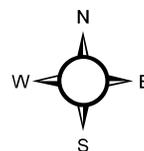
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

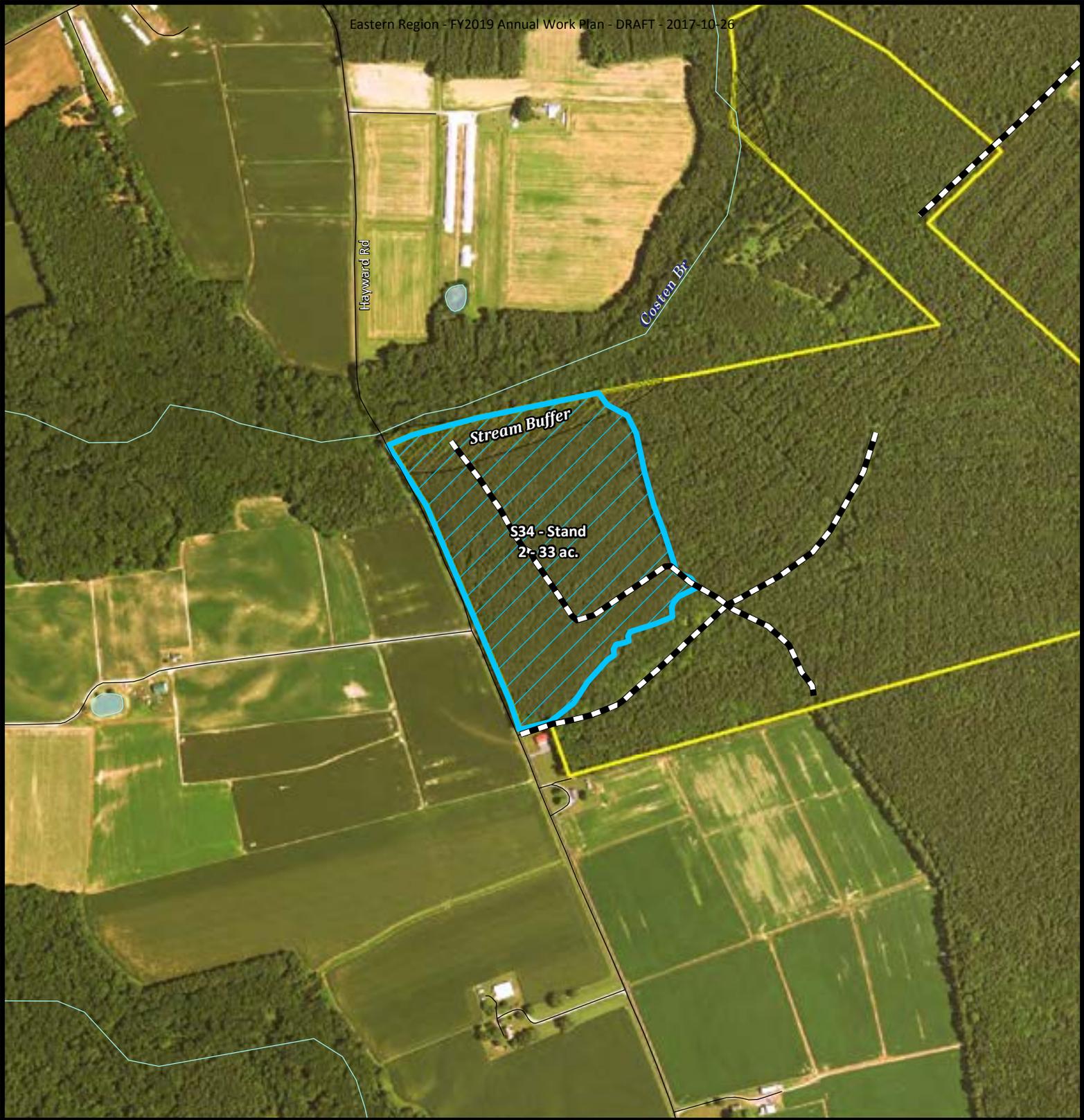
CF-19-S-11

Scale: 1:7,920
Date: 10/2017



This map is for planning purposes only.
This map is not a boundary survey





Legend

CF AWP Activity

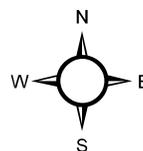
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

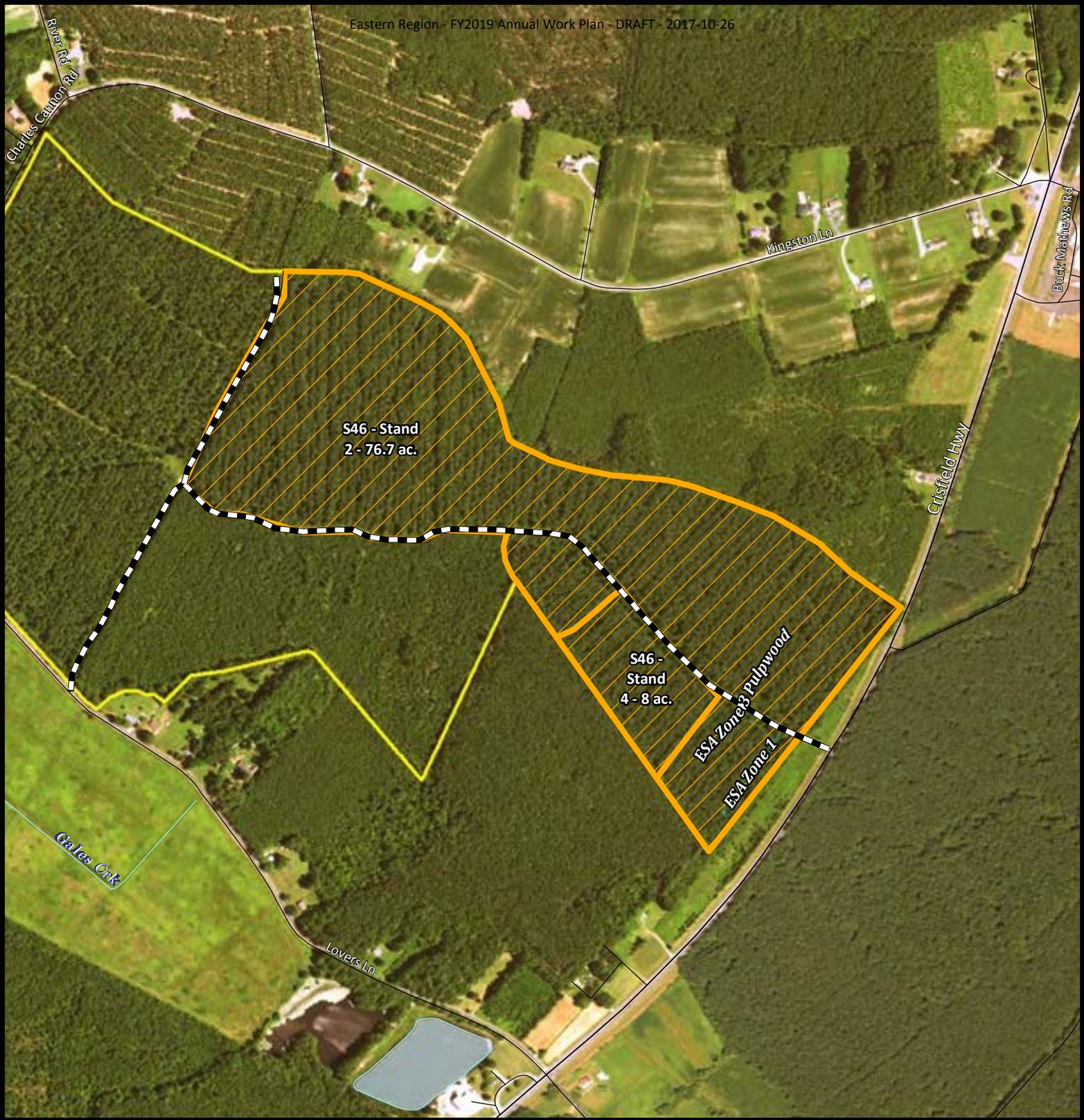
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Scale: 1:7,920
Date: 10/2017



This map is for planning purposes only.
This map is not a boundary survey





Legend

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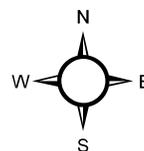
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

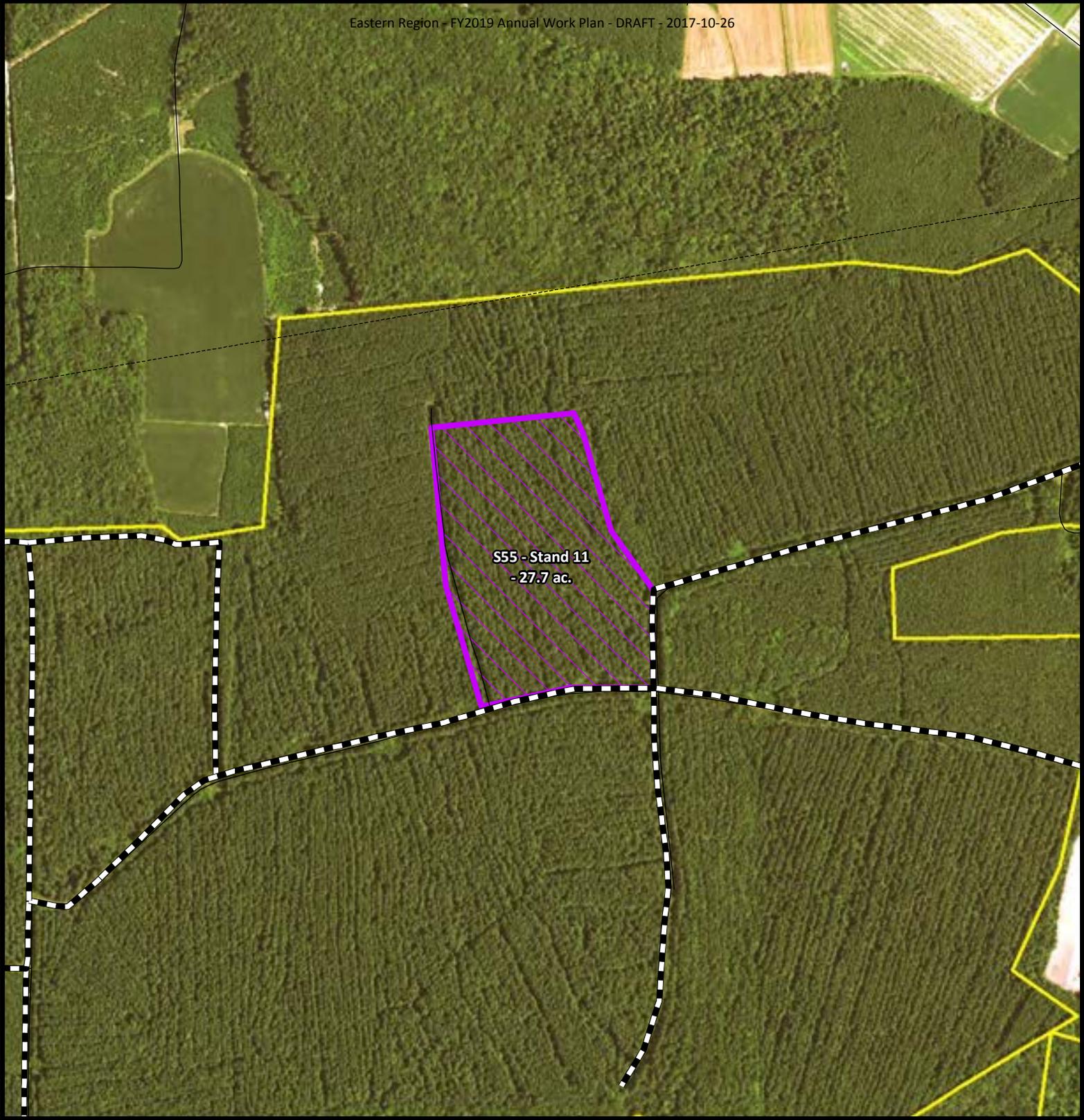
CF-19-S-13

Scale: 1:7,920
Date: 10/2017



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This map is not a boundary survey





Legend

CF AWP Activity

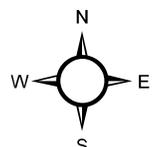
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

CF-19-S-14

Scale: 1:7,920
Date: 10/2017



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This map is not a boundary survey



Brot-Matt Rd

Head of Creek Rd

W23 -
Stand 42
- 6.1 ac.

DFS Future

Legend

CF AWP Activity

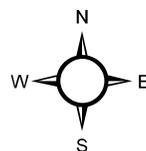
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

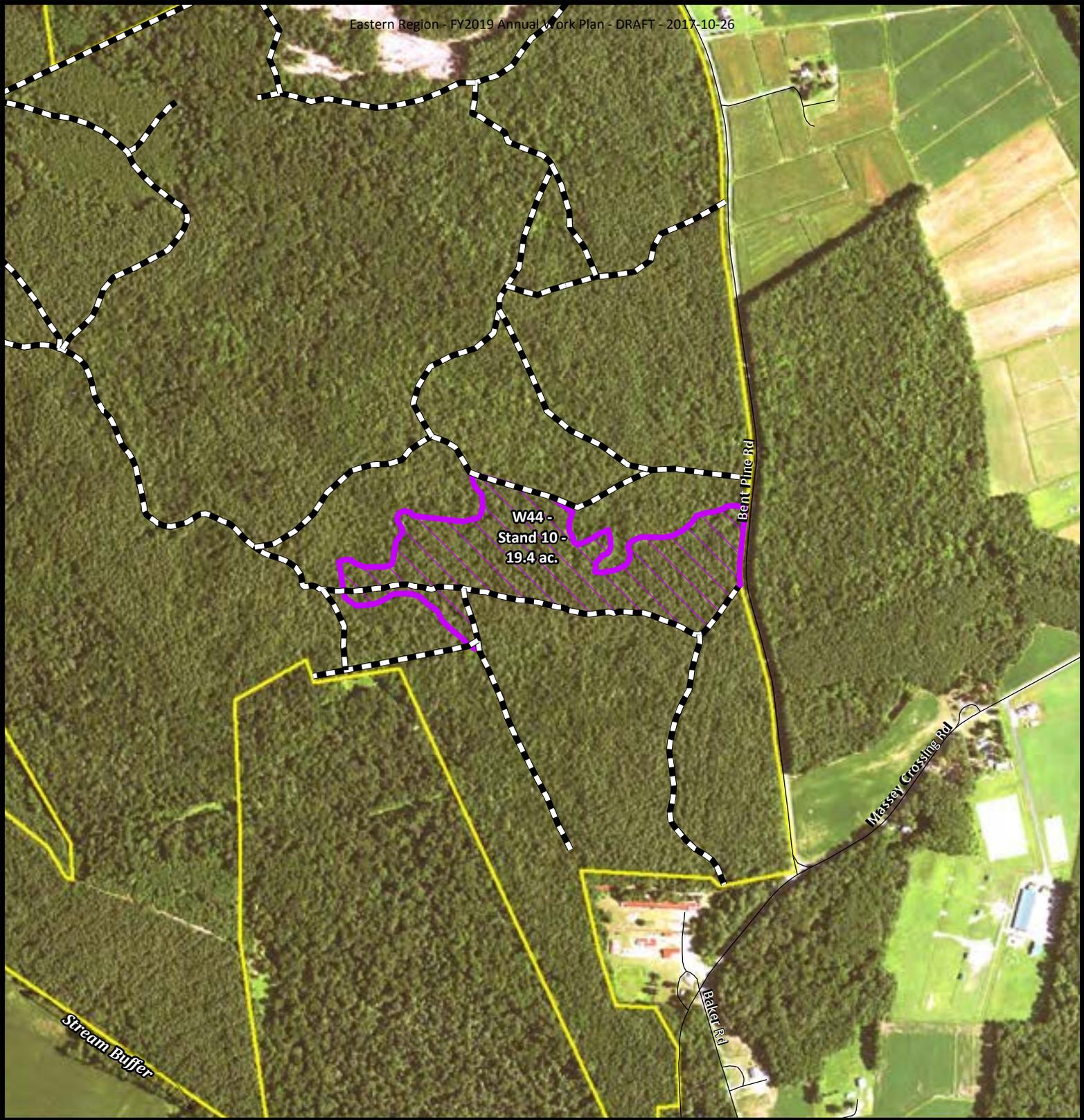


This map is for planning purposes only.
This map is not a boundary survey

CF-19-S-15

Scale: 1:7,920
Date: 10/2017





Legend

CF AWP Activity

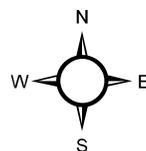
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

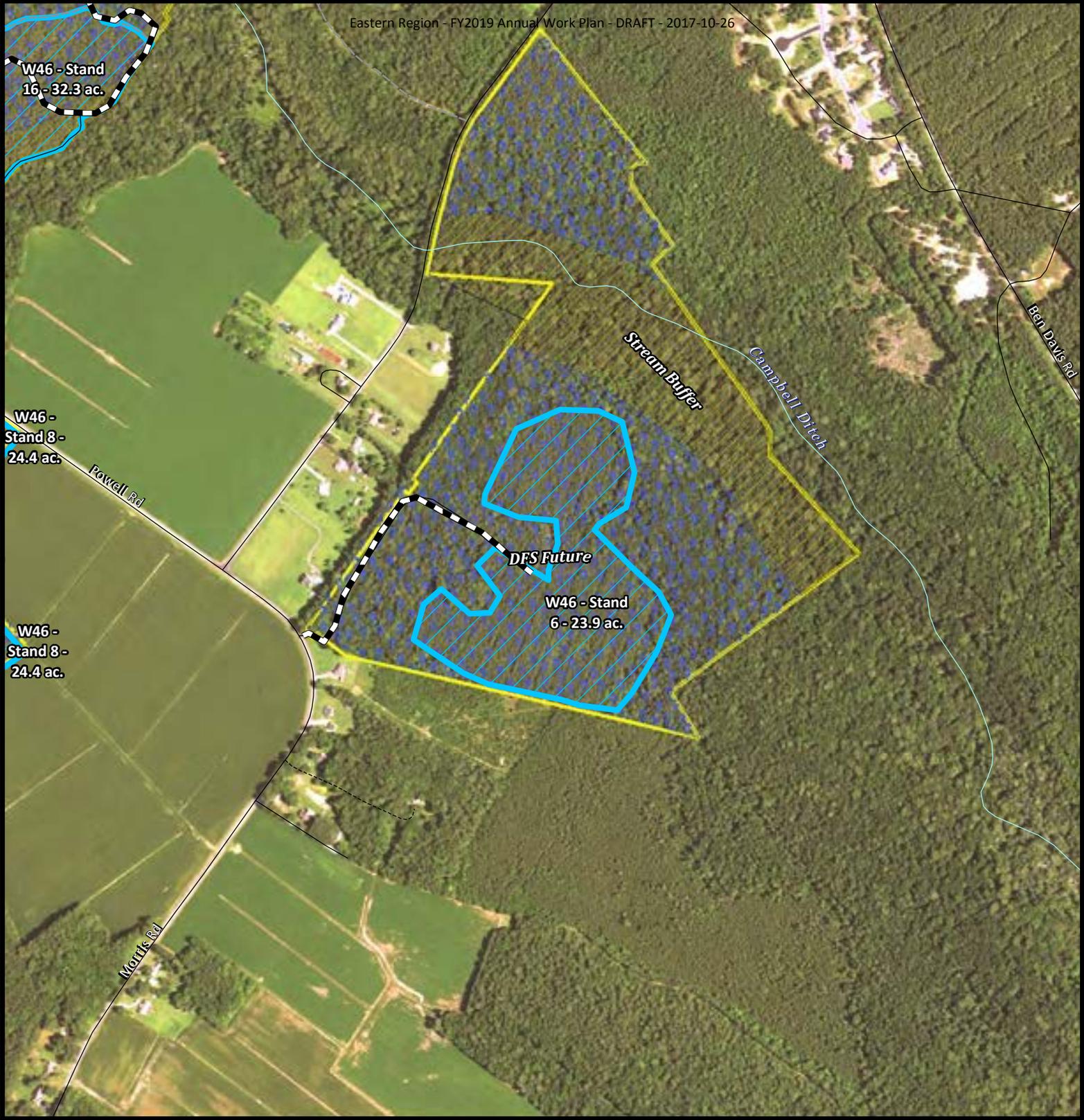


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This map is not a boundary survey

CF-19-S-16

Scale: 1:7,920
Date: 10/2017





Legend

CF AWP Activity

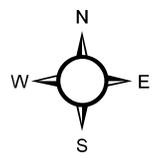
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

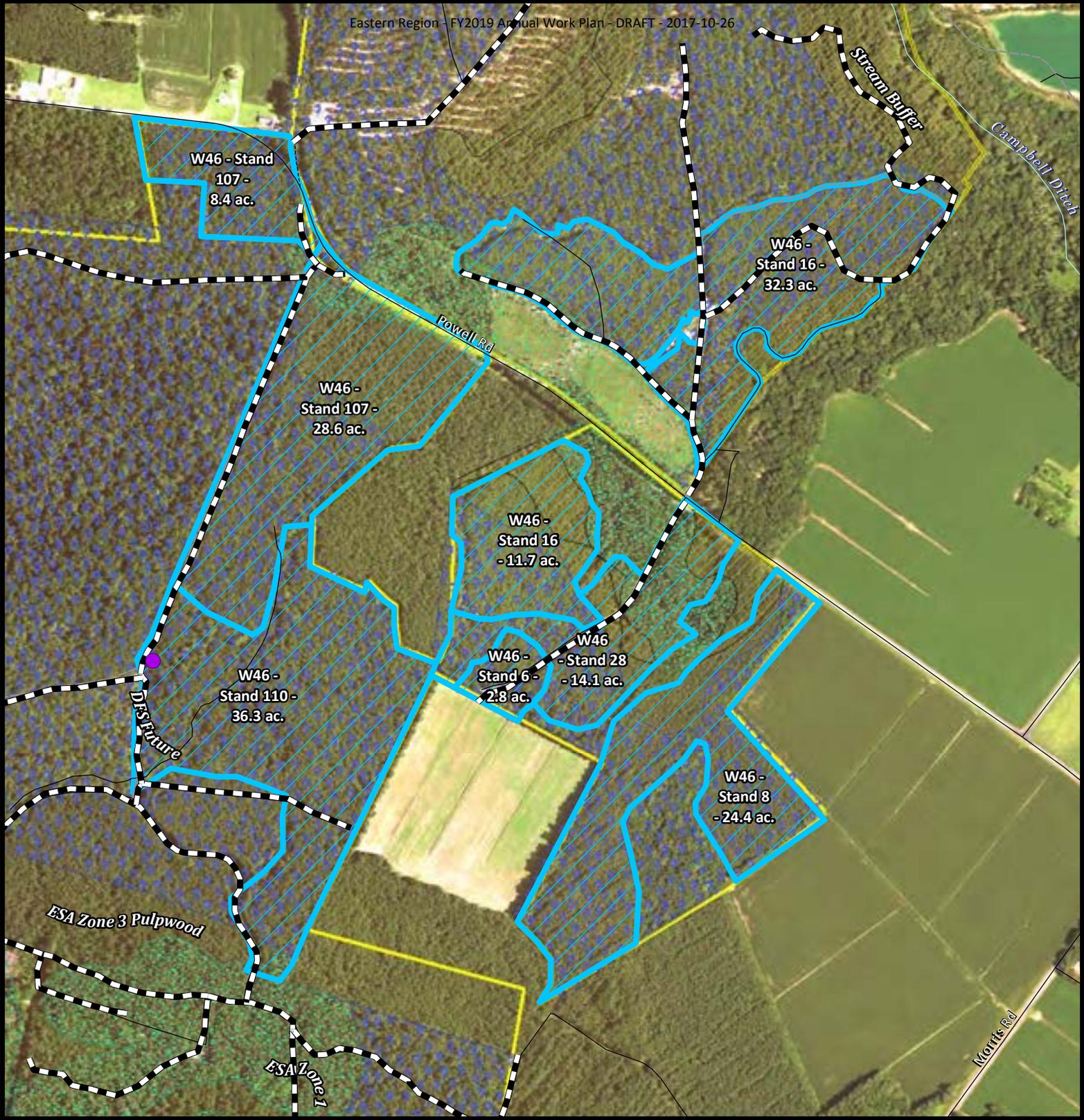
CF-19-S-17

Scale: 1:7,920
Date: 10/2017



This map is for planning purposes only.
This map is not a boundary survey





Legend

CF AWP Activity

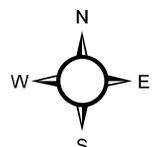
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

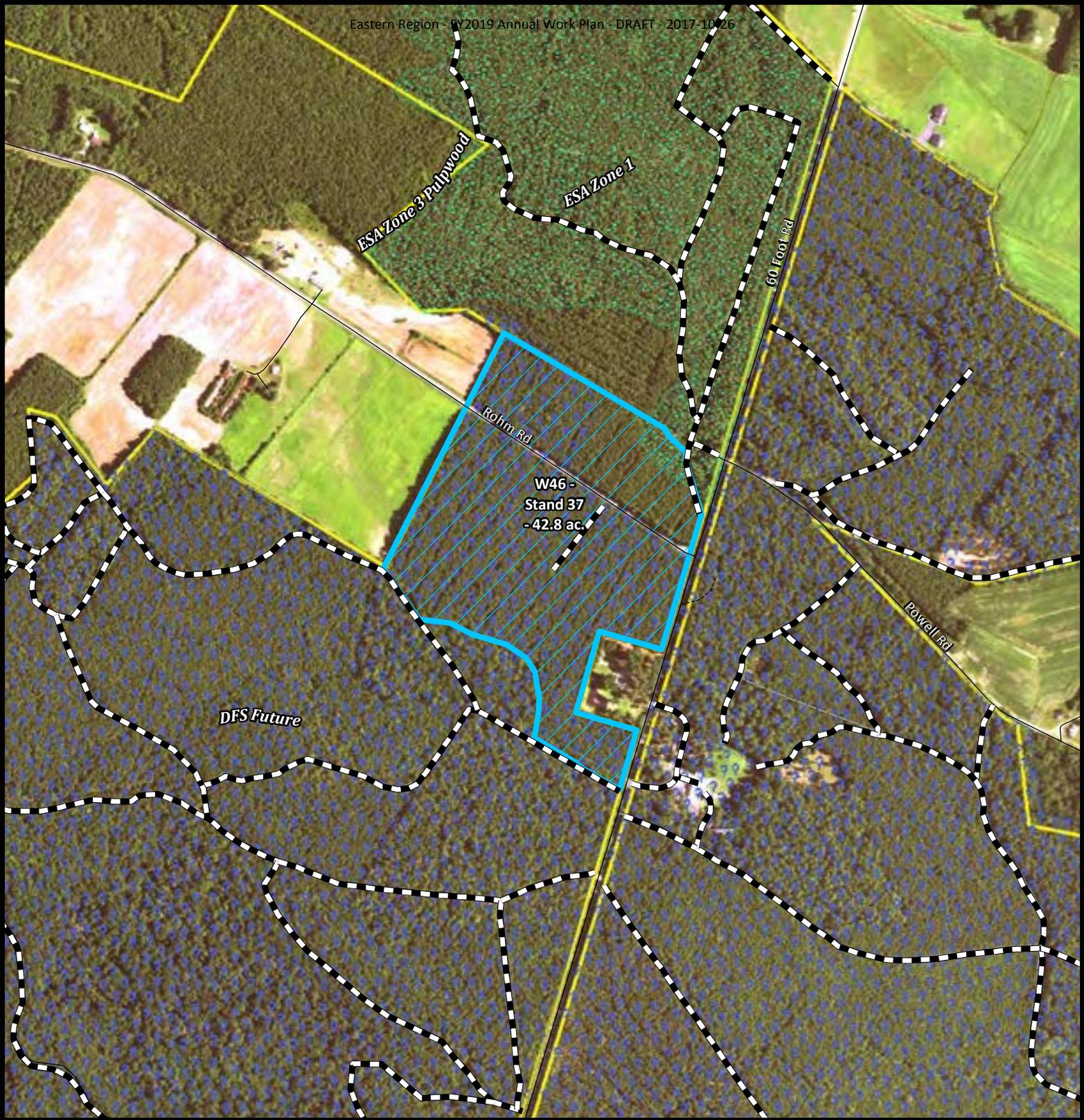
CF-19-S-18

Scale: 1:7,920
Date: 10/2017



This map is for planning purposes only.
This map is not a boundary survey





Legend

CF AWP Activity

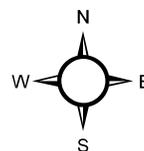
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

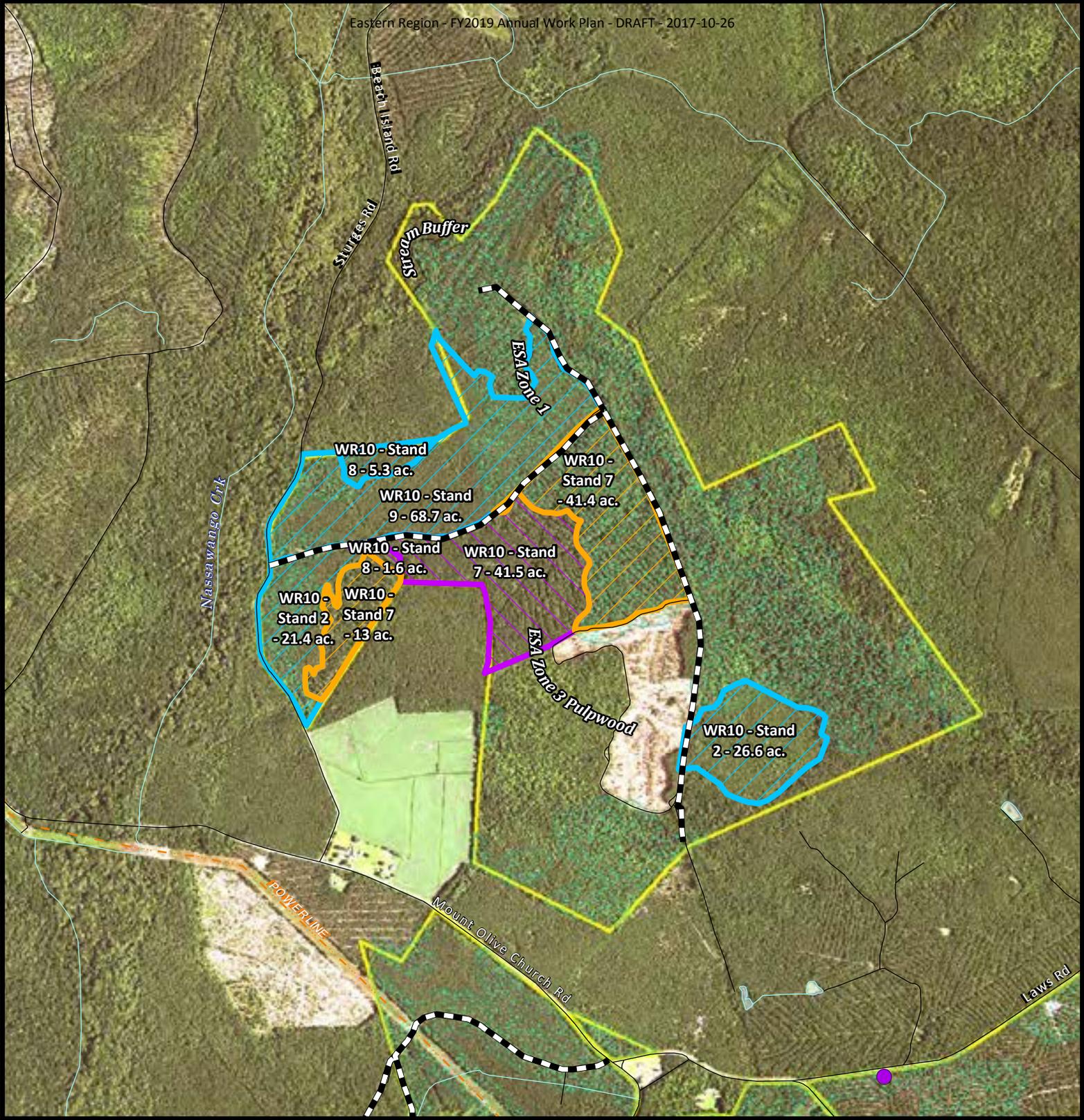
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Scale: 1:7,920
Date: 10/2017



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This map is not a boundary survey





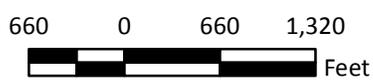
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CF AWP Activity

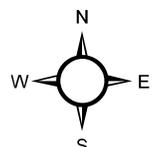
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

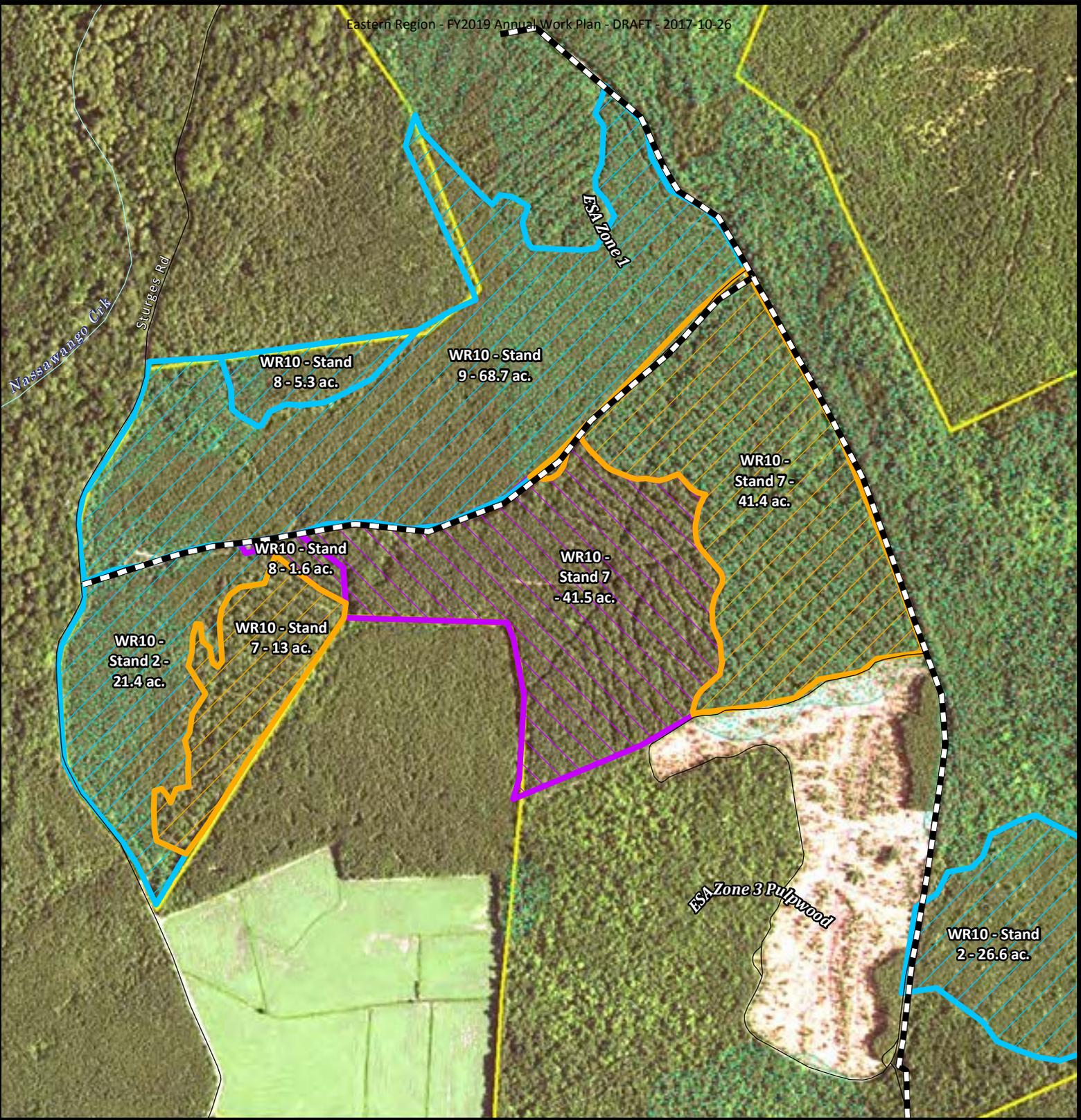
CF-19-S-20

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Date: 10/2017



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This map is not a boundary survey





Legend

CF AWP Activity

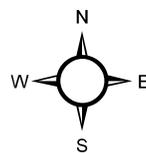
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

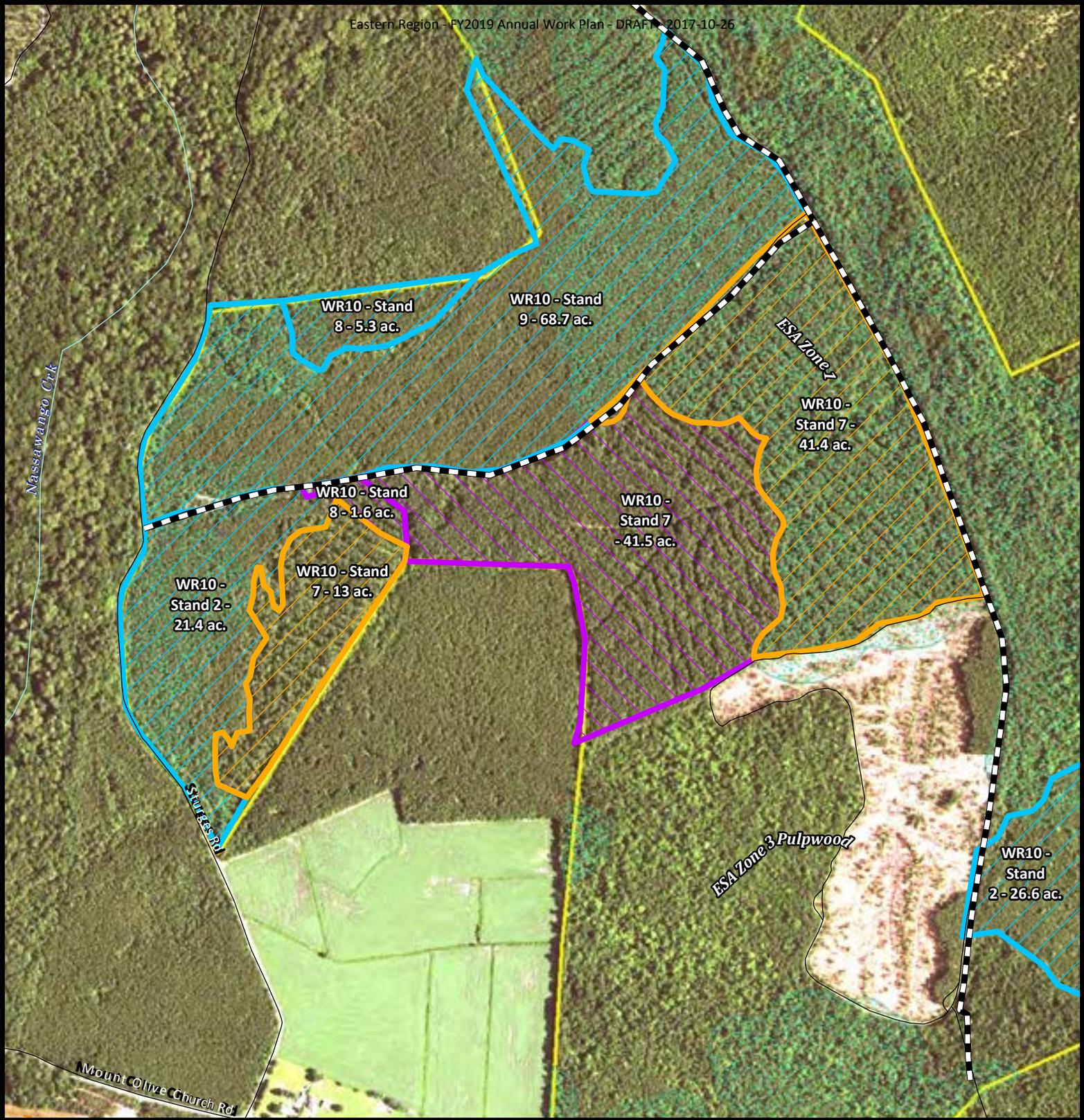


This map is for planning purposes only.
This map is not a boundary survey

CF-19-S-21

Scale: 1:7,920
Date: 10/2017





Legend

CF AWP Activity

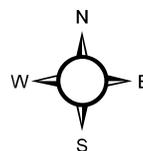
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

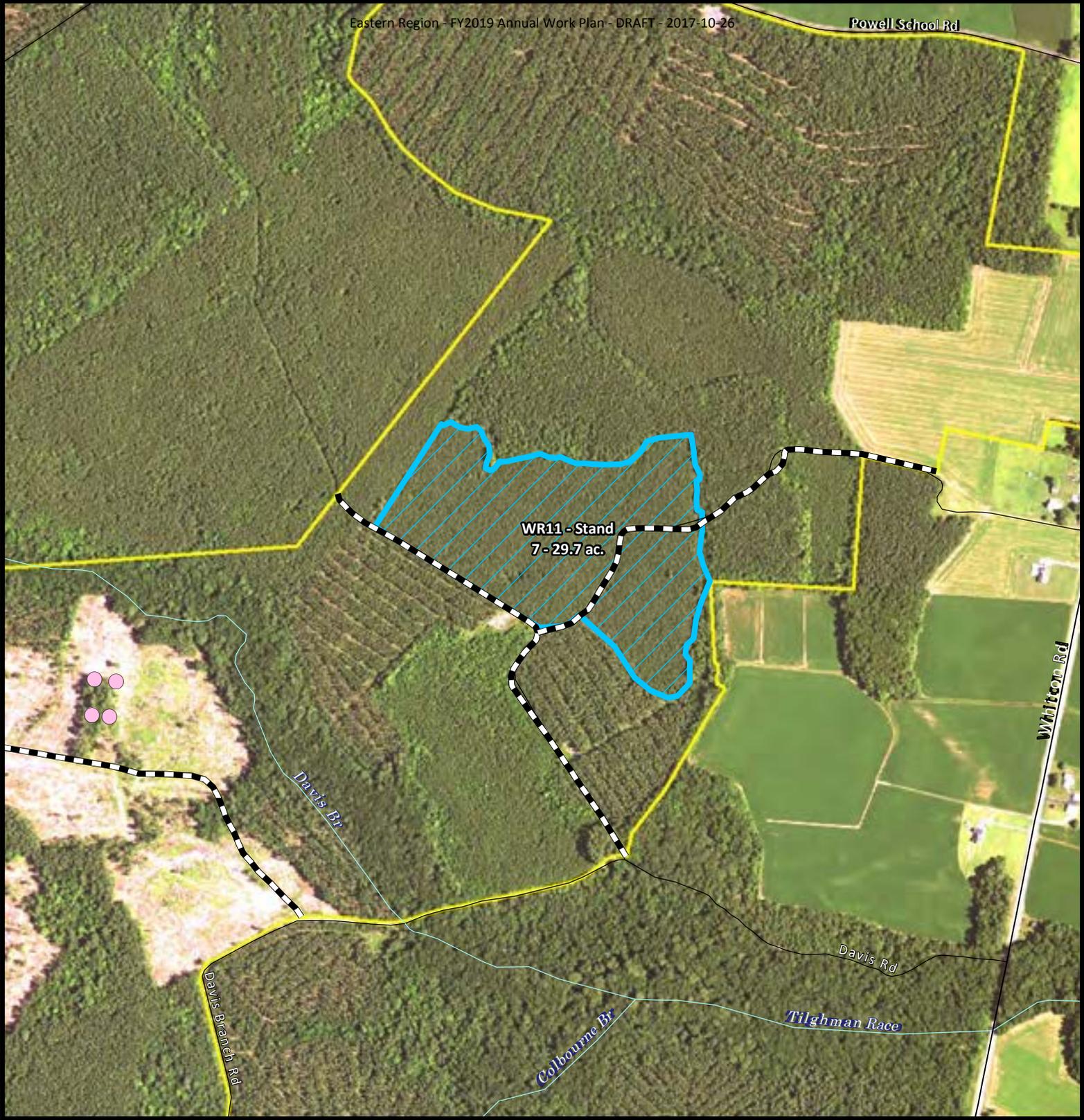
CF-19-S-22

Scale: 1:7,920
Date: 10/2017



This map is for planning purposes only.
This map is not a boundary survey





Legend

CF AWP Activity

-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

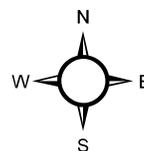
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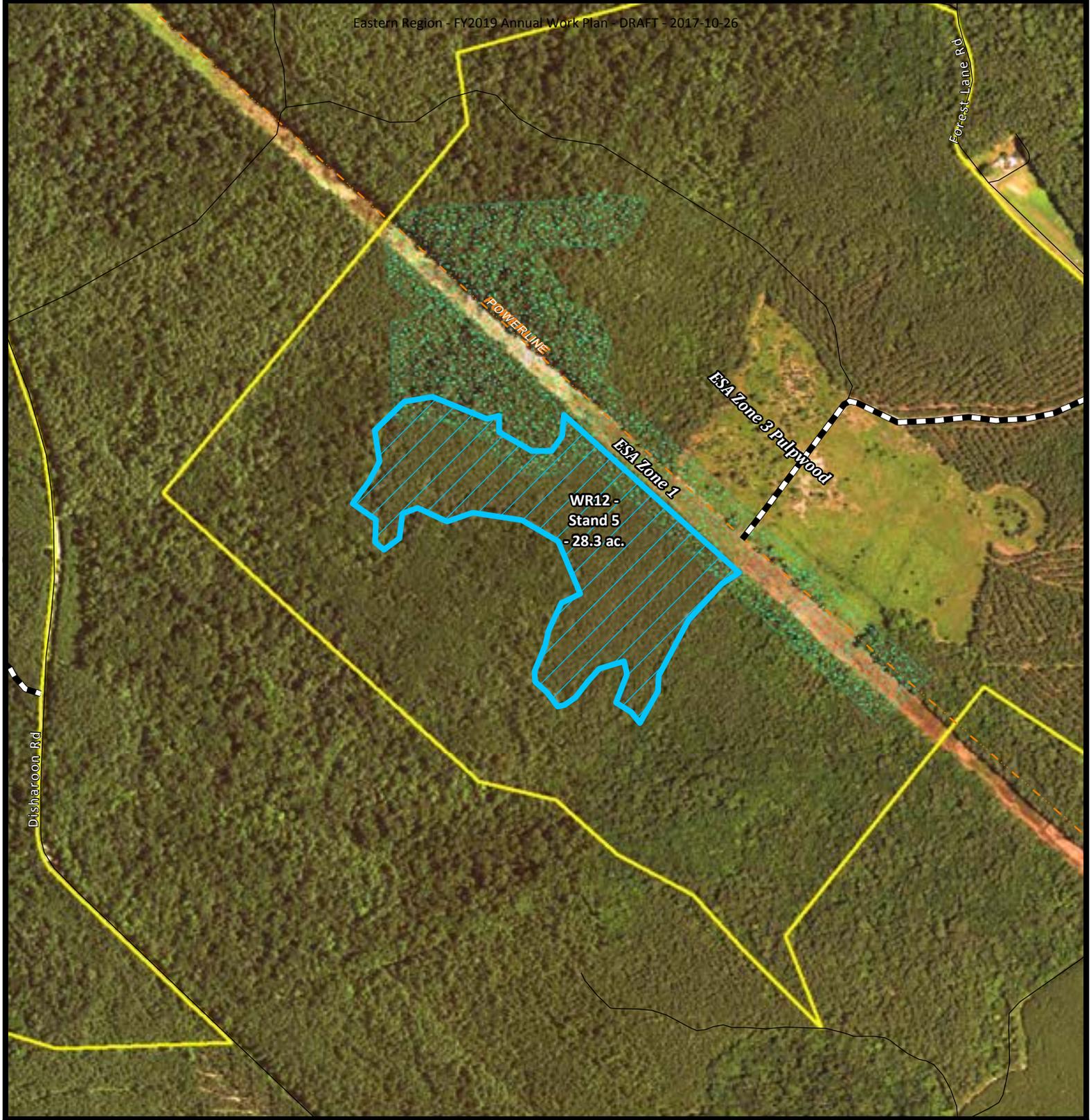
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Date: 10/2017



This map is for planning purposes only.
This map is not a boundary survey





Legend

CF AWP Activity

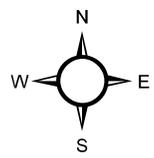
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

CF-19-S-24

Scale: 1:7,920
Date: 10/2017



This map is for planning purposes only.
This map is not a boundary survey



Stuckton Rd

Esuck Harbor Ct

Laytons Dr

Esuck Harbor Rd

WR39 - Stand 1 - 34.4 ac.

WR39 - Stand 11 - 15 ac.

WR39 - Stand 4 - 21.4 ac.

WR39 - Stand 7 - 10.1 ac.

WR39 - Stand 2 - 4.3 ac.

Stream Buffer

ESA Zone 1

ESA Zone 3 Pulpwood

Legend

CF AWP Activity

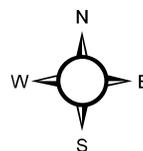
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

CF-19-S-25

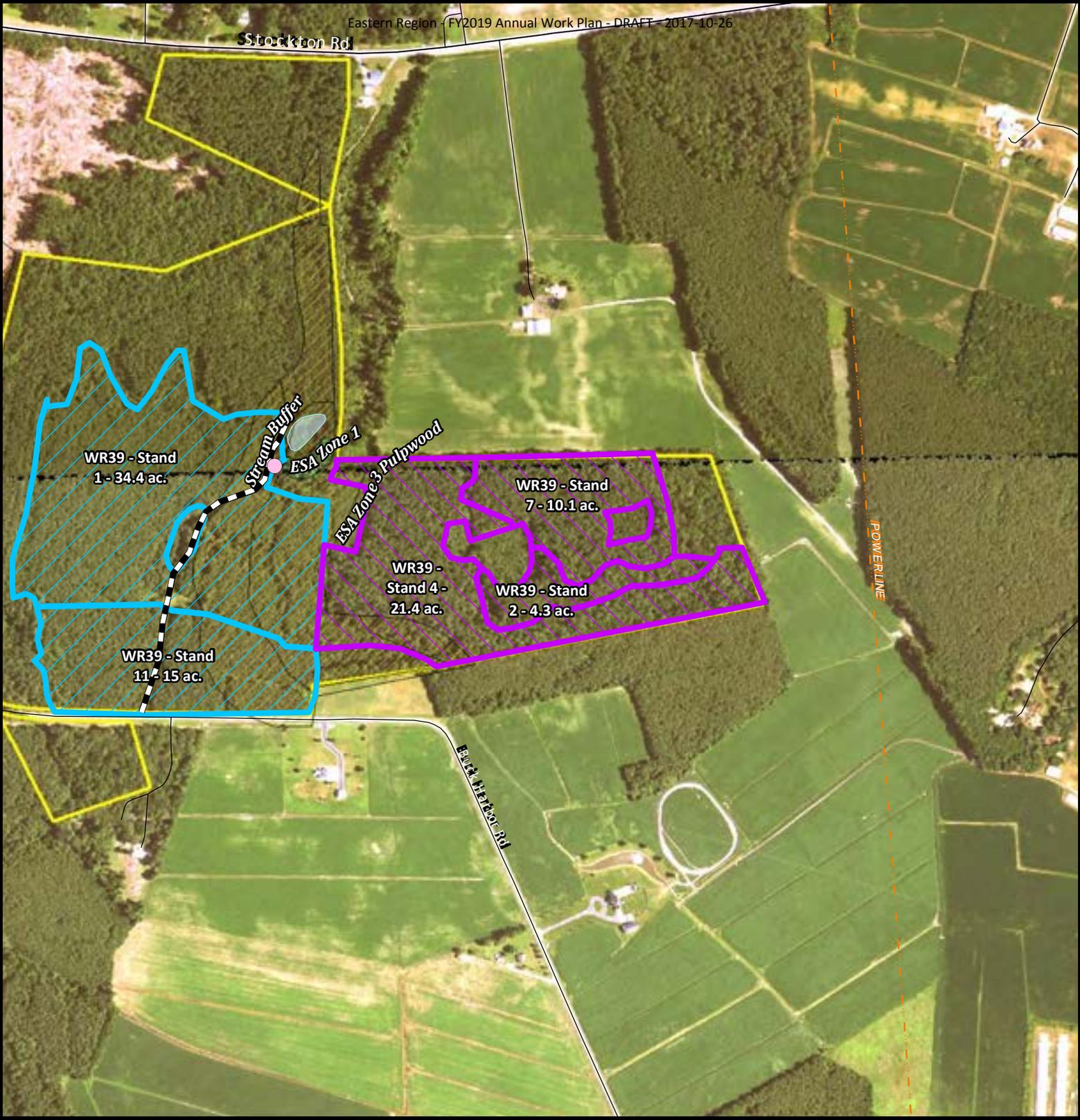
Scale: 1:7,920
Date: 10/2017



This map is for planning purposes only.
This map is not a boundary survey



Stockton Rd



Legend

CF AWP Activity

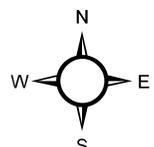
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

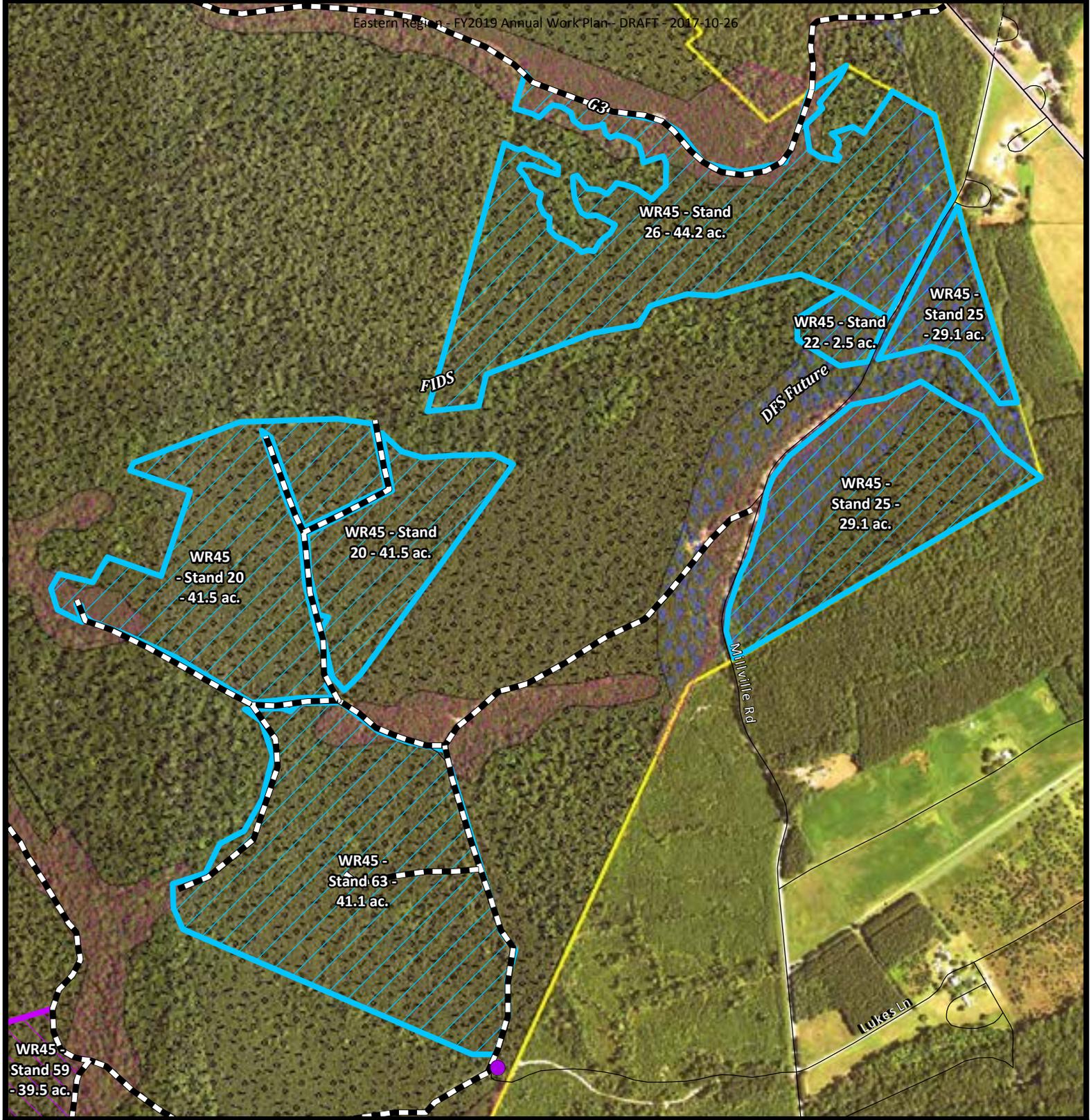
CF-19-S-26

Scale: 1:7,920
Date: 10/2017



This map is for planning purposes only.
This map is not a boundary survey





Legend

CF AWP Activity

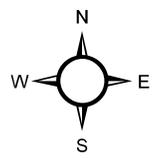
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

CF-19-S-27

Scale: 1:7,920
Date: 10/2017



This map is for planning purposes only.
This map is not a boundary survey



WR45 - Stand 20 - 41.5 ac.

WR45 - Stand 20 - 41.5 ac.

WR45 - Stand 63 - 41.1 ac.

WR45 - Stand 59 - 39.5 ac.

ESA Zone 1

FDS

63

Stream Buffer

Furnace Br

Legend

CF AWP Activity

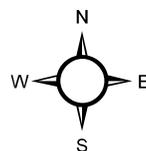
-  2019 First Thinning
-  2019 Second Thinning
-  2019 Final Harvest

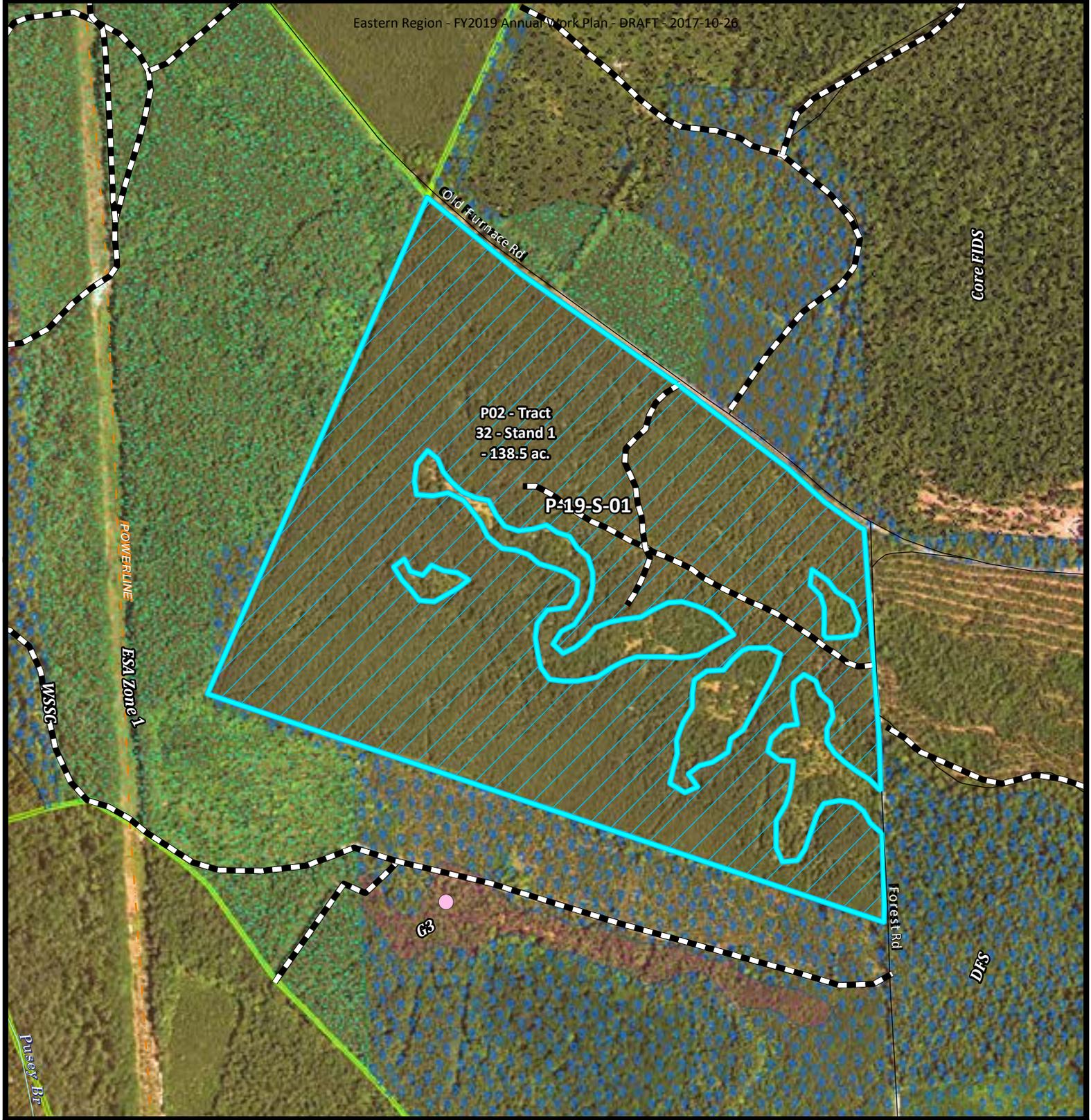
CF-19-S-28

Scale: 1:7,920
Date: 10/2017



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This map is not a boundary survey





P-19-S-01

Scale: 1:7,920
Date: 10/2017

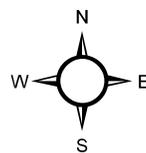
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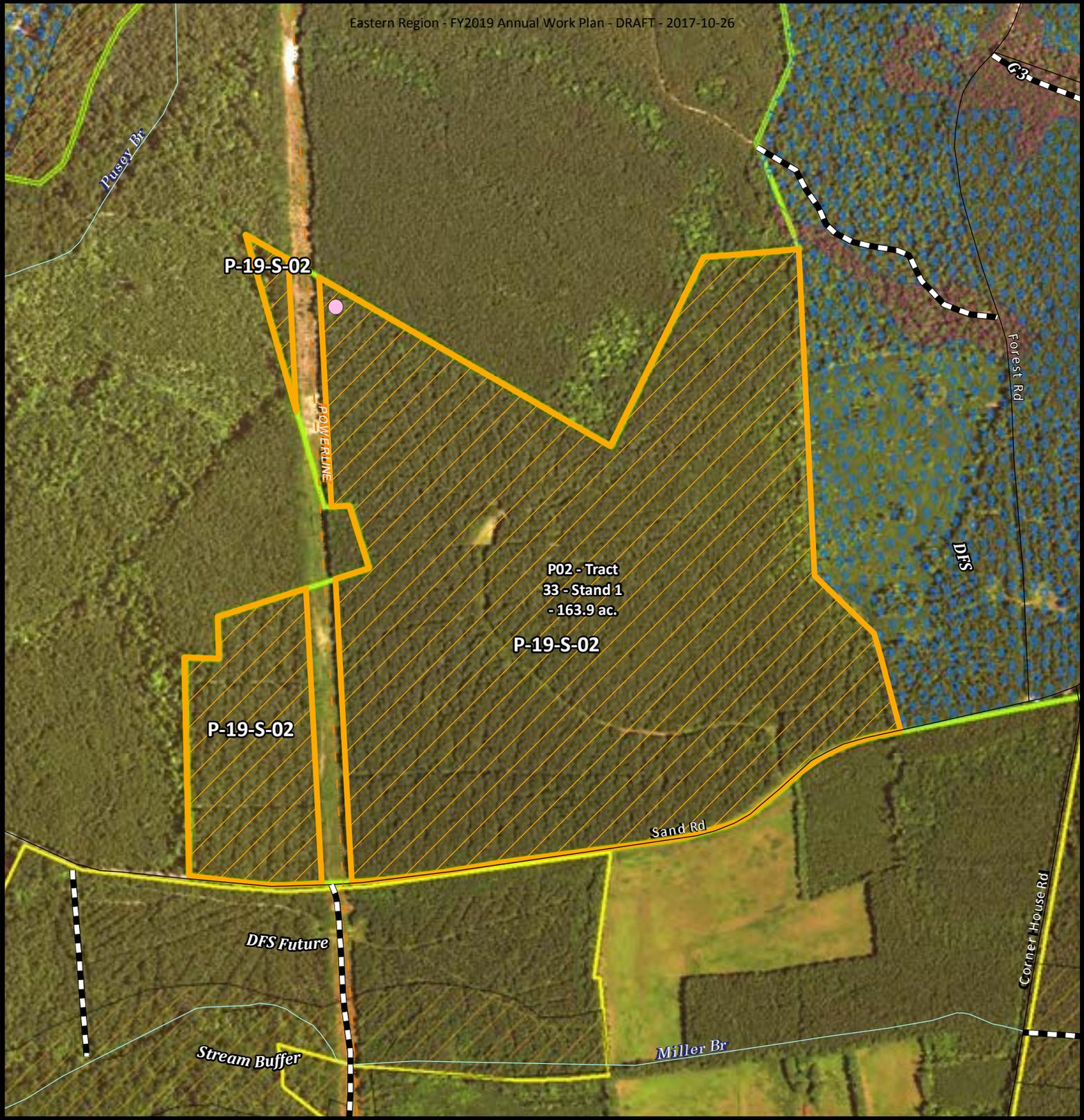
PSF AWP Activity

-  2019 First Thinning
-  2019 Second Thinning



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This map is not a boundary survey





P-19-S-02

Scale: 1:7,920

Date: 10/2017

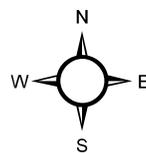
Legend

PSF AWP Activity

-  2019 First Thinning
-  2019 Second Thinning



This map is for planning purposes only.
This map is not a boundary survey



L. BUDGET

<i>Cost of Management (*Costs will vary from year to year)</i>	
State CF Salaries & Contract Management	\$ 300,000
Land Operation	\$ 400,000
Inventory & Monitoring Program	\$ 70,000
Sustainable Forest Certification	\$ 15,000
Watershed Improvement & Other Restoration Projects	\$ 80,000
County Payment (15% of revenues)	\$ 160,000
Fixed Cost (ditch drainage payments to counties)	\$ 8,000
Total	\$1,033,000

<i>Operating Revenues & State Funding</i>	
Forest Product Sale Revenues	\$ 650,000
Hunt Club Revenues	\$ 400,000
State Funding	\$ 100,000
Total	\$1,150,000

APPENDIX A – SOIL SERIES MANAGEMENT GROUPS, ABBREVIATIONS, AND SYMBOLS

Soil Series	SMG	Caroline	Dorchester	Somerset	Wicomico	Worcester
Acquango sand	4					AcB, AcC
Annessex-Manokin complex	1			AoA, AoB		
Askecksy loamy sand	1	AsA			AsA	As
Askecksy-Urban land complex	1				AtA	
Beaches	-		Be	Be	Be	Be
Berryland mucky loamy sand	2				BhA	BhA
Bestpitch and Transquaking	5		BT			
Boxiron and Broadkill soils	1			BX		BX
Broadkill mucky silt loam	1					Br
Brockatonorton sand	3					BkA, BkB
Cedartown loamy sand	4	CdA, CdB			CdA	
Cedartown-Rosedale complex	4					CeA, CeB
Chicone mucky silt loam	5		Ch			Ch
Corsica and Fallsington soils	2			CRA		
Corsica mucky loam	1	CoA			CoA	
Corsica mucky loam, Carolina Bay	1	CrA				
Downer loamy sand	3		DnC			
Downer sandy loam	3		DoA, DoB	DoA, DoB		
Elkton loam	1		EkA			
Elkton mucky silt loam	1		EoA			
Elkton sandy loam	1					EkA
Elkton silt loam	1	EmA	EmA	EmA		EmA
Endoquepts and Sulfaquepts	5			EQB	EQB	
Evesboro loamy sand	4					EvA, EvB, EvC
Evesboro sand	4	EwA, EwB	EwC, EwE		EwA, EwB, EwC	
Evesboro-Galestown complex	4			EzB		
Fallsington loam	2	FgA		FgA	FgA	
Fallsington sandy loam	2	FaA	FaA	FaA	FaA	FaA
Fallsinston-Glassboro complex	2			FhA		
Fort Mott loamy sand	3		FmA, FmB		FmA, FmB	FmA, FmB
Fort Mott, Evesboro, and Downer soils	3		FNE			
Fort Mott-Urban land complex	3				FuA, FuB	
Galestown loamy sand	4	GaA, GaB	GaA, GaB	GaB	GaA, GaB	GaA, GaB, GaC
Galestown and Rosedale soils	4	GAE				
Glassboro loam	2			GIA		
Hambrook loam	3	HcA	HcA, HcB	HcA		
Hambrook sandy loam	3	HbA, HbB, HbC		HbB	HbA, HbB	HbA, HbB
Hambrook-Sassafras complex	3					
Hammonton loamy sand	3			HmA		HmA, HmB
Hammonton sandy loam	3	HnA	HnA	HnA	HnA	
Hammonton-Fallsington-Corsica complex	2	HoB				
Hammonton-Glassboro complex	3			HgB		
Honga peat	5		Ho	Ho	Ho	
Hurlock loamy sand	2			HuA		HuA
Hurlock sandy loam	2	HvA	HvA	HvA	HvA	
Ingleside loamy sand	3	IeA, IeB, IeC			IeA, IeB	
Ingleside sandy loam	3	IgA, IgB, IgC	IgA, IgB	IgA, IgB		
Ingleside-Runclint complex	3			IkC		
Kentuck silt loam	5					KeA
Keyport fine sandy loam	3				KfA, KfB	
Keyport silt loam	3		KpA	KpA		
Klej loamy sand	2					KsA, KsB
Klej-Galloway complex	2	KgB	KgB	KgB	KgB	
Lenni loam	2	LgA			LgA	
Lenni sandy loam	2	LhA			LfA	
Longmarsh and Indiantown soils	5	LO		LO	LO	LO
Manahawkin muck	5	Ma		Ma	Ma	Ma
Manokin silt loam	3			MdA, MdB		
Matapeake fine sandy loam	3					MeA, MeB

Soil Series	SMG	Caroline	Dorchester	Somerset	Wicomico	Worcester
Matapeake silt loam	3					MkA, MkB
Mattapex fine sandy loam	3		MpA		MpA	MpA, MpB
Mattapex silt loam	3	MtA, MtB	MtA, MtB		MtA, MtB	MtA, MtB
Miscellaneous water	-	M-W		M-W	M-W	
Mullica-Berryland complex	2			MuA	MuA	MuA
Nanticoke and Mannigton soils	5	NM	NM	NM	NM	NM
Nassawango fine sandy loam	3				NnA, NnB	NnA, NnB
Nassawango silt loam	3	NsA, NsB	NsA, NsB		NsA, NsB	NsA, NsB
Othello and Kentuck soils	1		OkA	OKA	OKA	
Othello silt loam	1		OtA	OtA	OtA	OtA
Othello silt loam, loamy substratum	1			OoA		
Othello-Fallsington complex	2			OvA		
Pepperbox-Rockawalkin complex	3				PrA, PrB	
Pone mucky loam	2		PmA			
Pone mucky sandy loam	2		PnA			
Puckum mucky peat	5	Pk	Pk	Pk	Pk	Pk
Purnell peat	5					Pu
Queponco loam	3			QbB		
Queponco silt loam	3			QeA, QeB		
Quindocqua silt loam	1			QuA		
Rockawalkin loamy sand	3	RkA			RkA, RkB	
Rockawalkin-Urban land complex	3				RnA, RnB	
Rosedale loamy sand	4	RoA, RoB			RoA	RoA, RoB
Runclint loamy sand	4				RuA, RuB	RuA, RuB
Runclint sand	4		RsA, RsB	RsB	RsA, RsB	
Runclint-Cedartown complex	4			RwB, RwC	RwA, RwB	
Runclint-Evesboro complex	4			RxB		
Runclint-Urban land complex	4				RzA, RzB	
Sassafras loam	3		SnA			
Sassafras sandy loam	3	SaA, SaB				SaA, SaB, SaC
Sunken mucky silt loam	5		SuA	SuA	SuA	SuA
Tangier mucky peat	5			Ta		
Transquaking and Mispillion soils	5	TP		TP	TP	TP
Udorthents	4	Ubb, Uff, UoB	UzB	Ubb, Ufb, Uff, UgB, UoB, UwB	Ubb, Ufb, UoB	UzB
Unicorn-Sassafras complex	3					
Urban Land	-	Up			Up	UpB
Urban Land-Acquango complex	-					UcB
Urban Land-Askecksy complex	-					UmA
Urban Land-Brockatonorton complex	-					UnA
Urban Land-Evesboro complex	-				UrB	
Urban Land-Fort Mott complex	-				UsB	
Urban Land-Rockawalkin complex	-				UtB	
Urban Land-Runcline complex	-				UuB	
Urban Land-Udorthents complex	-				UwB	UwB
Water	-	W	W	W	W	W
Woodstown loam	3	WoA, WoB	WoA	WoA		
Woodstown sandy loam	3	WdA, WdB	WdA, WdB	WdA, WdB	WdA	WdA, WdB
Woodstown-Glassboro complex	3			WpA		
Zekiah sandy loam	5	Za	Za			Za
Zekiah silt loam	5				Zk	Zk

CHESAPEAKE FOREST/POCOMOKE STATE FOREST: SOIL MANAGEMENT GROUPS

This is a forest management grouping designed specifically for the Chesapeake Forest and Pocomoke State Forest Sustainable Forest Management Plans, based on the soil series descriptions contained in the six county surveys.

Management Group 1 – Poorly and very poorly drained medium textured soils with heavy subsoils.

Soils:	Annessex-Manokin complex	Elkton sandy loam
	Askecksy loamy sand	Elkton silt loam
	Corsica mucky loam	Othello and Kentuck soils
	Corsica mucky loam, Carolina Bay	Othello silt loam
	Crosiadore silt loam	Othello silt loam, loamy substratum
	Elkton loam	Quindocqua silt loam
	Elkton mucky silt loam	

Description: These are poor and very poorly drained, medium textured soils that have a fine-textured subsoil. They are generally found in broad upland flats, depressions, and swales. Slopes are 0 to 2%. Ponding may occur after heavy rains, and high water table may limit access from December through May. These soils may have seasonal limitations for wetness, but the firm subsoils may allow mechanical operations, particularly with low-impact equipment, that allows them to be managed with intensive forestry methods.

Management Group 2 – Poorly and very poorly drained loam and sandy loam soils with sandy and medium textured subsoils.

Soils:	Berryland mucky loamy sand	Klej-Galloway complex
	Corsica and Fallsington soils	Klej-Hammonton complex
	Fallsington loam and sandy loam	Lenni loam and sandy loam
	Fallsington-Glassboro complex	Mullica-Berryland complex
	Glassboro loam	Othello-Fallsington complex
	Hurlock loamy sand and sandy loam	Pone mucky loam and mucky sandy loam
	Klej loamy sand	

Description: Medium and sandy-textured, poorly and very poorly drained soils on upland flats. Small areas in depressions will pond in very wet periods. Many of these soils lack firm subsoils, and when saturated may be very subject to soil rutting by equipment. This leads to shorter-season access, which may limit their use. With appropriate seasonal scheduling, these soils are suited for intensive forest management.

Management Group 3 – Well drained and moderately well drained sandy and loamy soils that formed in sandy materials and have sandy loam to silty or sandy clay subsoils.

Soils:	Downer loamy sand and sandy loam	Matapeake fine sandy loam and silt loam
	Fort Mott loamy sand	Mattapex fine sandy loam and silt loam
	Hambrook loam and sandy loam	Nassawango fine sandy loam and silt loam
	Hambrook-Sassafras complex	Pepperbox-Rockawalkin complex
	Hammonton loamy sand and sandy loam	Queponco loam and silt loam
	Hammonton-Glassboro complex	Rockawalkin loamy sand
	Ingleside loamy sand and sandy loam	Sassafras sandy loam
	Ingleside-Runclint complex	Woodstown sandy loam
	Keyport fine sandy loam and silt loam	Woodstown-Glassboro complex
	Manokin silt loam	

Description: Well drained soils that are generally better-suited to pine than to hardwoods. These may occur on slopes of 0 to 10 percent. On the steeper slopes erosion potential needs to be addressed. Rutting and soil damage by machine operations

are minor problems and most sites will have good access and operability most of the year. These are the best suited soils for intensive forest management.

Management Group 4 – Deep, sandy soils that are well to excessively well drained.

Soils:	Cedartown loamy sand	Rosedale loamy sand
	Evesboro loamy sand and sand	Runclint loamy sand and sand
	Evesboro-Galestown complex	Runclint-Cedartown complex
	Galestown loamy sand	Runclint-Evesboro complex
	Galestown and Rosedale soils	Udorthents

Description: These sandy soils have few operating limitations due to soil wetness, and can provide sites for mechanical activities during wet seasons. Productivity is low, and some sites may be occupied by Virginia or shortleaf pine. Some may occur in a landscape pattern of sand ridges interspersed with low wet soils or Delmarva Bays, and provide an important habitat type, particularly for herpivores and invertebrates. Some may have slopes of up to 10-15%, which may limit management. Udorthents are soils that have been mechanically altered and may occur mainly as borrow pits, landfills, or other re-worked areas. Intensive forest management is probably limited on many of these soils.

Management Group 5 – Low-elevation, poorly and very poorly drained soils that formed in organic materials. They may lie in flood plains, freshwater wetlands, or areas that can be affected by tidal flooding.

Soils:	Chicone mucky silt loam	Nanticoke and Mannington soils
	Honga peat	Nanticoke silt loam
	Johnston loam	Puckum mucky peat
	Kentuck mucky silt loam	Sunken mucky silt loam
	Kentuck silt loam	Tangier mucky peat
	Longmarsh and Indiantown soils	Transquaking and Mispillion soils
	Manahawkin muck	Zekiah sandy loam and silt loam

Description: These poorly drained soils occupy flood plains and both fresh and brackish marshes. Some lie at elevations where flooding by salt water during high tides or storms is a possibility and trees may be affected by salt spray. The sites are marginal in terms of timber or pulpwood productivity, and access is often very restricted. Many of these areas will be riparian forests and other water-related areas that should be managed primarily for water quality and wildlife purposes.

Other types without Management Groups – Other map units that are too small, are comprised of minor soil types, or are not suitable for forest management.

Soils:	Beaches	Urban Land
	Miscellaneous water	Water

APPENDIX B – RECREATION TRAIL GRANTS

FY 2018 RECREATIONAL TRAILS PROGRAM

FUNDING APPLICATION

Maryland State Highway Administration / Office of Planning and Preliminary Engineering
 Attention: Samantha Biddle
 707 N. Calvert Street Baltimore, Maryland 21202 Phone: 410-545-5560

Application Submission Deadline: June 30, 2017

Please email Samantha Biddle, sbiddle@sha.state.md.us, with any questions about this application.

Project Title:

Algonquin Cross County Trail Maintenance Project

Trail Uses:

Check all that apply

Diverse Motorized Recreational Non-motorized Recreational Transportation Trail

Project Types

Check only one category

Construction

- Construction of new trail or facilities
 Maintenance of trail or facilities

If new construction is to occur, please describe the following, if the information can be provided: length, width, proposed materials, drainage, removal of resources, etc.

Conduct maintenance on three distinct sections of the existing Algonquin Cross County Trail. The total trail length to be repaired is 2.1 miles long and approximately 4'-6' wide. Clean limestone gravel will be used to fill and stabilize low wet sections of the trail creating a passable condition. Natural drainage adjacent to the trail will not be altered and there will be no removal of live trees.

Non-Construction

- Purchase or lease of equipment
 Interpretive/educational programs/facilities

Project Sponsor (Applicant/Point of Contact)

Please provide contact information for the Project Sponsor Entity and the Project Manager.

Project Sponsor Entity	Department of Natural Resources
Project Manager	Michael Schofield
Title	Forest manager
Organization	Forest Service
Address 1	6572 Snow Hill Road, Snow Hill, MD 21863
Address 2	
Telephone	(410)632-3732
Cell Phone	(410)713-5091
Fax	(410)632-3730
E-mail	Mike.schofield@maryland.gov

FY 2018 RECREATIONAL TRAILS PROGRAM

FUNDING APPLICATION

Maryland State Highway Administration / Office of Planning and Preliminary Engineering
 Attention: Samantha Biddle
 707 N. Calvert Street Baltimore, Maryland 21202 Phone: 410-545-5560

Application Submission Deadline: June 30, 2017

Project Sponsor Prior Projects:

Describe the status of any previously funded National Recreational Trail funded projects.

- Include the year that the prior project was funded or prior project Recreational Trail number (RT#).
- If there are delays with the prior projects, please explain why they occurred.
- Describe any relationship between this project and previously funded National Recreational Trail Program projects.
- Describe how the proposed work relates to any multi-year work or comprehensive plans that may have been developed.

Rec Trail Project Number	Year Awarded	Grant Amount	Status
RT07-41	2007	\$3,500	Closed Out
RT08-26	2008	\$28,000	Closed Out
RT09-25	2009	\$26,052	Closed Out
RT07-46	2007	\$12,000	Closed Out
RT10-31	2010	\$30,000	Closed Out
RT11-32	2011	\$20,000	Closed Out
RT11-34	2011	\$30,000	Closed Out
RT12-28	2012	\$32,000	Closed Out
RT12-31	2012	\$30,000	Closed Out
RT13-31	2013	\$25,000	Closed Out
RT13-51	2013	\$23,000	Closed Out
RT13-54	2013	\$17,000	Closed Out
RT14-32	2014	\$30,000	Closed Out
RT14-41	2014	\$30,000	Closed Out
RT14-49	2014	\$10,000	Closed Out
RT14-51	2014	\$30,000	Closed Out
RT15-33	2015	\$30,000	Closed Out
RT15-45	2015	\$30,000	Project complete. Close Out submitted to SHA 5-2-17.
RT15-51	2015	\$30,000	Closed Out
RT15-52	2015	\$30,000	Closed Out
RT16-33	2016	\$30,000	40% complete. Expected close out by August 2017.
RT16-24	2016	\$30,000	10% complete. Expected close out by January 2018.
RT17-35	2017	\$22,000	Waiting on MOU & notice to proceed from SHA.
Rt17-39	2017	\$24,000	Waiting on MOU & notice to proceed from SHA.

This proposed project will provide much needed repair to the popular and **previously funded RT13-31** Algonquin Cross County Trail system. This is the longest trail system on the Eastern Shore of Maryland and has been used extensively by horseback riders, hikers, extreme marathon runners, etc. The tree segments in need of repair are currently impassable during much of the winter.

FY 2018 RECREATIONAL TRAILS PROGRAM

FUNDING APPLICATION

Maryland State Highway Administration / Office of Planning and Preliminary Engineering
 Attention: Samantha Biddle
 707 N. Calvert Street Baltimore, Maryland 21202 Phone: 410-545-5560

Application Submission Deadline: June 30, 2017

1. Benefits to Maryland: *Describe how the project will benefit trail users and the State of Maryland. Is the project a missing link or potentially part of the State Transportation Trail network? (Visit <http://www.mdot.maryland.gov/Planning/Trails/trails.html> for more information). Does the project enhance tourism/economic development opportunities, particularly for towns? Does the project provide access to a regional land or water system?*

This trail enhances tourism to the town of Snow Hill. Extreme adventure races have used this trail in the past and there are two events scheduled to take place in 2017 and another major event in 2018. The trail system is also heavily used by horseback riders every weekend. Trail monitoring counters have established the fact that this is the most used trail system on the Eastern Shore. This trail begins in the Chesapeake & Pocomoke State Forest and ends at the wild & scenic Pocomoke River access point in the Milburn Landing State Park.

2. Project Location: *Describe the limits of the project, including the City and the County. The map must have a north arrow, scale and the title of the project. It should clearly show the project location, property lines, public facilities, state roads, and any other relevant information. The Map must clearly identify the proposed project site with beginning and ending points.*

This project is located in Worcester County Maryland on the Chesapeake & Pocomoke State Forest. The trail system is located just 6 miles outside of the town of Snow Hill and just 10 miles south of the city of Salisbury (population 30,343). The trail head is located off Route 12. See attached map.

3. Project Description: *Please provide a comprehensive description of the scope of work. Please state the proposed work to be completed with the awarded federal funds.*

Section 1 is 1.1 miles in length (US Rout 12 to mile marker 0), which is the primary access path for the popular Algonquin Cross County Trail and the connection portion to the Old Furnace II trail on the Pocomoke State Forest. This section has numerous large pot holes and ruts and requires 200 tones of gravel and grading to repair. The finished width of this path will be 6-8' in width. Section 2 is 0.75 miles in length (mile marker 2.5 to Old Furnace Road). This section of trail has large wet holes in the trail that will require 80 tons of gravel to repair and make the trail passable for the entire year. Gravel will be delivered by grant funded workers utilizing State owned dump trucks. The grave will be spread and graded utilizing a combination of heavy equipment (dozers, tractors and/or Bobcat) owned by the State. All low hanging brush and/or branches will be removed by hand with chainsaws and other hand tools. The finished surface of this section of trail will be 4-6' in width. Section 3 is 0.25 miles in length (mile marker 6 to Sand Road). A small portion of the trail has been improved, but an additional 74 tons of gravel will be needed to improve this section so that it is completely passable. Gravel will be delivered by grant funded workers utilizing State owned dump trucks. The grave will be spread and graded utilizing a combination of heavy equipment (dozers, tractors and/or Bobcat) owned by the State. All low hanging brush and/or branches will be removed by hand with chainsaws and other hand tools. The finished surface of this section of trail will be 4-6' in width. Only damaged or missing trail side markers & fence posts will be replaced along the entire 12.9 miles of this Algonquin Cross County Trail.

What is the length of the project? *Be very clear what the beginning and end points are and the limits of disturbance.*

The total project length is 2.1 miles. Section 1 is 1.1 miles, Section 2 is 0.75 miles and Section 3 is 0.25 miles.

FY 2018 RECREATIONAL TRAILS PROGRAM

FUNDING APPLICATION

Maryland State Highway Administration / Office of Planning and Preliminary Engineering

Attention: Samantha Biddle

707 N. Calvert Street Baltimore, Maryland 21202 Phone: 410-545-5560

Application Submission Deadline: June 30, 2017

How will the project be built and what is the proposed surface?

The project will be built by grant funded employees utilizing a combination of heavy equipment and hand tools. The surface of the trail is dirt.

Are there anticipated impacts with the project? *Please fill out the checklist below that will later assist the SHA Environmental coordinator.*

- a. No Permits are anticipated for the project
- b. No Impacts to trees are anticipated with the project
 - i. ___ Approximate square footage
- c. No Project is in a Maryland identified Critical Area
- d. No Historic resources may be impacted by the project
- e. No Impacts anticipated to wetlands and waterways
 - i. ___ Approximate square footage

There are no impacts related to this project that will require permitting.

4. Detailed Project Work Plan: *List by task and completely describe all the major elements of your proposed project in a concise manner. Although the program does not cover the cost of planning, design, engineering and permitting, please include these items in your summary, even if these tasks are part of the project.*

Task Name	Start Date	Duration	Responsible Party	Justification
NEPA Started	June 1, 2017	3 months	Ken Jolly	Grant list submitted
PCA Assigned	Dec. 1, 2017	1 month	Shanika Dyson	Applies to Acct for #
Hire contractual labor for trail work	Jan. 2018	1 month	Mike Schofield	Go through procurement process
Replace damaged fencing & posts	Feb. 2018	2 months	Mike Schofield	Safety
Gravel / grade trail sections	April 2018	6 months	Mike Schofield	Safety
Clear brush & debris from trail	June 2018	6 months	Mike Schofield	Safety
In kind match obtained	Feb. 2018	11 months	Mike Schofield	Match logged and time scheduled
Prepare and submit close out packet	Dec. 2018	1 month	Mike Schofield	Reimbursement
Close out packet processed in Headquarters	Jan. 2019	1 month	Shanika Dyson	Verification and then submission to SHA
Grant Closed	Feb. 2019	1 month	SHA	

FY 2018 RECREATIONAL TRAILS PROGRAM

FUNDING APPLICATION

Maryland State Highway Administration / Office of Planning and Preliminary Engineering
 Attention: Samantha Biddle
 707 N. Calvert Street Baltimore, Maryland 21202 Phone: 410-545-5560

Application Submission Deadline: June 30, 2017

5. Project Status:

Has any planning, design, right-of-way acquisition or construction activities already occurred on the job?

N/A

6. Right-of Way: *The Project shall be constructed on property owned by and/or on permanent easements held by the Project Sponsor. If a non-profit is partnering with a Park Manager, please include an email or letter by Park Manager explaining that there is, or will be, an agreement. This will need to be verified by the Maryland Department of Transportation.*

N/A

Task Name	Requested Funds	Sponsor Match		Total Task Cost
		Value	Type (in-kind or cash)	
NEPA Started				
PCA Assigned				
Hire contractual labor for trail work (1226 hours @ \$15.50/hour)	\$19,000	\$4,750	In-kind	\$23,750
Replace damaged fencing & posts (40 sections @ \$50/section)	\$2,000	\$500	In-kind	\$2,500
Gravel / grade trail & parking areas (354 tons @ \$25.40/ton)	\$9,000	\$2,250	In-kind	\$1,1250
Clear brush & debris from trail				
In kind match obtained				
Prepare and submit close out packet				
Close out packet processed in Headquarters				
Grant Closed				
Total Cost	\$30,000	\$7,500		\$37,500

FY 2018 RECREATIONAL TRAILS PROGRAM

FUNDING APPLICATION

Maryland State Highway Administration / Office of Planning and Preliminary Engineering
Attention: Samantha Biddle
707 N. Calvert Street Baltimore, Maryland 21202 Phone: 410-545-5560

Application Submission Deadline: June 30, 2017

7. Project Budget: *Provide a cost estimate for each task listed in question #4, note whether it is anticipated to be reimbursable or used towards the required match. The match must be 20% of the total cost of the project. The value of any soft match must be a part of the total project cost. Cash match must be used for all equipment purchases. Please refer to the labor rates in the 2018 Recreational Trail Guidelines for not to exceed rates for volunteer hours, project management hours, etc.*

8. Submission

It is preferred that applications be submitted electronically to sbiddle@sha.state.md.us by **4 p.m. on June 30, 2017**. Because our email server rejects most attachments larger than 6 MB, please use an FTP site or file sharing service, to transmit the application and any large attachments. Confirmation will be sent when the application is received. Please contact us at the email above with any questions about submissions or to discuss potential projects. The Recreational Trail Advisory Committee will meet to review projects in August. Awards will be announced in the Fall.

Options for Submission include:

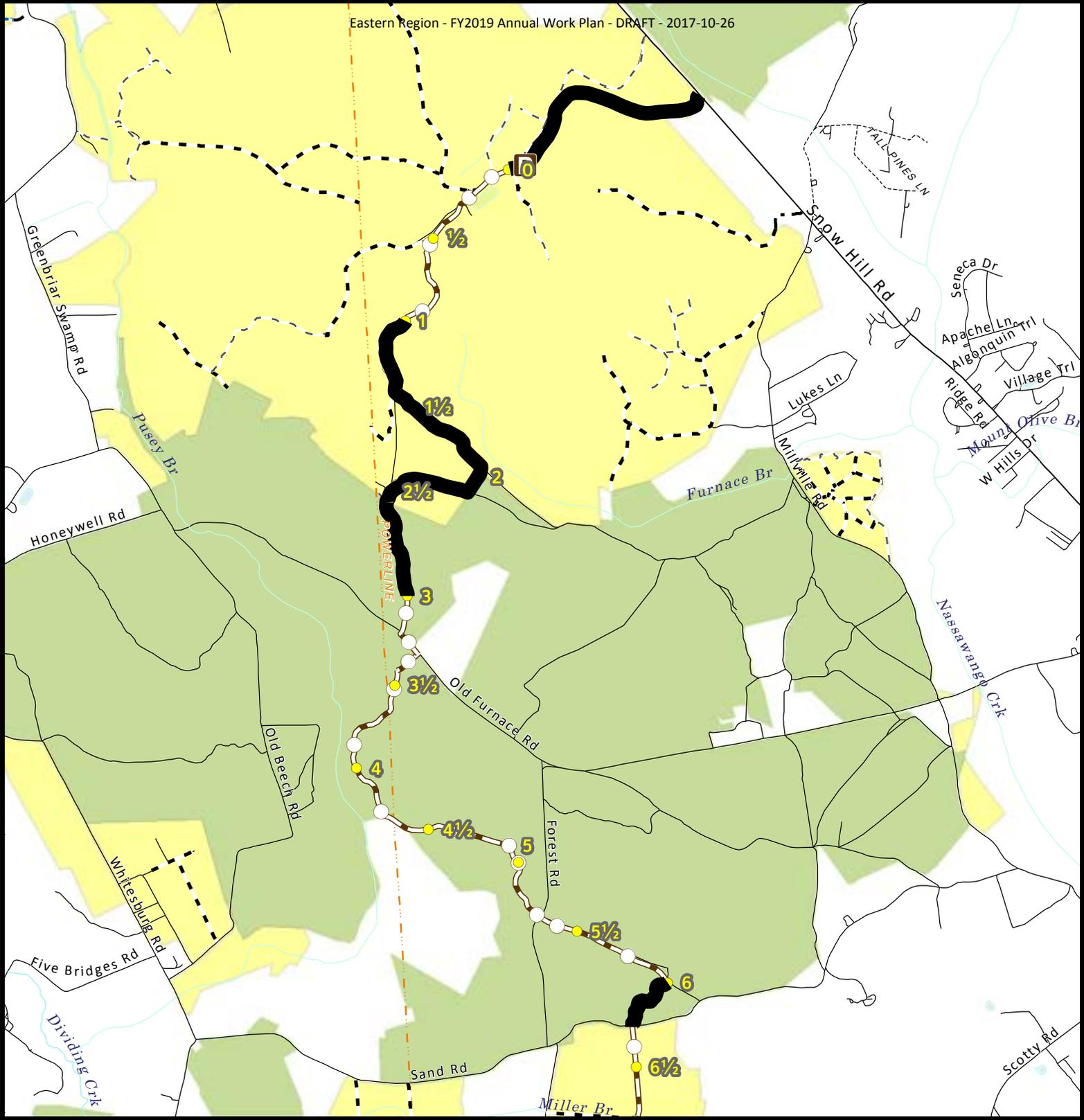
Internet/E-mail (preferred)

- Complete the form on your computer and save the file on your computer.
- Email the file as an attachment to: Samantha Biddle at sbiddle@sha.state.md.us
- Use an FTP site or file sharing service to transmit the application and any large attachments.

U.S. Mail

- Mail a completed application to:

Samantha Biddle
Assistant Division Chief
Recreational Trails Program
Maryland State Highway Administration
707 N. Calvert Street, MS C-502
Baltimore, MD 21202



Legend

Trail



Algonquin CC Trail

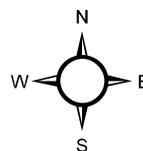


Trail sections requiring maintenance

-  Chesapeake Forest
-  Pocomoke State Forest



This map is for planning purposes only.
This map is not a boundary survey



Chesapeake Forest
Pocomoke State Forest
Algonquin Cross County Trail

Scale: 1:39,600
Prepared by: DNR Forest Service
Date: 06/2017



FY 2018 RECREATIONAL TRAILS PROGRAM

FUNDING APPLICATION

Maryland State Highway Administration / Office of Planning and Preliminary Engineering
 Attention: Samantha Biddle
 707 N. Calvert Street Baltimore, Maryland 21202 Phone: 410-545-5560

Application Submission Deadline: June 30, 2017

Please email Samantha Biddle, sbiddle@sha.state.md.us, with any questions about this application.

Project Title:

Northern Extension Algonquin Cross County Trail

Trail Uses:

Check all that apply

Diverse Motorized Recreational Non-motorized Recreational Transportation Trail

Project Types

Check only one category

Construction

- Construction of new trail or facilities
 Maintenance of trail or facilities

If new construction is to occur, please describe the following, if the information can be provided: length, width, proposed materials, drainage, removal of resources, etc.

The trail extension length is 5 miles long and 4'-6' wide with a natural dirt surface. Clean limestone gravel will be used to fill and stabilize low wet sections of the trail. Natural drainage adjacent to the trail will not be altered and there will be no removal of resources.

Non-Construction

- Purchase or lease of equipment
 Interpretive/educational programs/facilities

Project Sponsor (Applicant/Point of Contact)

Please provide contact information for the Project Sponsor Entity and the Project Manager.

Project Sponsor Entity	Department of Natural Resources
Project Manager	Michael Schofield
Title	Forest manager
Organization	Forest Service
Address 1	6572 Snow Hill Road, Snow Hill, MD 21863
Address 2	
Telephone	(410)632-3732
Cell Phone	(410)713-5091
Fax	(410)632-3730
E-mail	Mike.schofield@maryland.gov

FY 2018 RECREATIONAL TRAILS PROGRAM

FUNDING APPLICATION

Maryland State Highway Administration / Office of Planning and Preliminary Engineering
 Attention: Samantha Biddle
 707 N. Calvert Street Baltimore, Maryland 21202 Phone: 410-545-5560

Application Submission Deadline: June 30, 2017

Project Sponsor Prior Projects:

Describe the status of any previously funded National Recreational Trail funded projects.

- *Include the year that the prior project was funded or prior project Recreational Trail number (RT#).*
- *If there are delays with the prior projects, please explain why they occurred.*
- *Describe any relationship between this project and previously funded National Recreational Trail Program projects.*
- *Describe how the proposed work relates to any multi-year work or comprehensive plans that may have been developed.*

Rec Trail Project Number	Year Awarded	Grant Amount	Status
RT07-41	2007	\$3,500	Closed Out
RT08-26	2008	\$28,000	Closed Out
RT09-25	2009	\$26,052	Closed Out
RT07-46	2007	\$12,000	Closed Out
RT10-31	2010	\$30,000	Closed Out
RT11-32	2011	\$20,000	Closed Out
RT11-34	2011	\$30,000	Closed Out
RT12-28	2012	\$32,000	Closed Out
RT12-31	2012	\$30,000	Closed Out
RT13-31	2013	\$25,000	Closed Out
RT13-51	2013	\$23,000	Closed Out
RT13-54	2013	\$17,000	Closed Out
RT14-32	2014	\$30,000	Closed Out
RT14-41	2014	\$30,000	Closed Out
RT14-49	2014	\$10,000	Closed Out
RT14-51	2014	\$30,000	Closed Out
RT15-33	2015	\$30,000	Closed Out
RT15-45	2015	\$30,000	Project complete. Close Out packet sent to SHA on 5/1/17.
RT15-51	2015	\$30,000	Closed Out
RT15-52	2015	\$30,000	Closed Out
RT16-33	2016	\$30,000	40% complete. Expected close out by August 2017.
RT16-24	2016	\$30,000	10% complete. Expected close out by January 2018.
RT17-35	2017	\$22,000	Waiting on MOU & notice to proceed from SHA.
Rt17-39	2017	\$24,000	Waiting on MOU & notice to proceed from SHA.

This proposed project will enhance the popular and **previously funded RT13-31 Algonquin Cross County Trail** system. This is the longest trail system on the Eastern Shore of Maryland and has been used extensively by horseback riders, hikers, extreme marathon runners, etc. This project will extend the existing 12.9 mile trail to a new length of 17.9 miles long. This new section of trail will connect to a utility owned corridor that connects to the city of Salisbury (population 30,343). A connection trail from Salisbury to the Algonquin Cross County Trail was the top priority project recently identified at the Lower Shore Trail Workshop held in Cambridge on March 3, 2017 (See attached summary and sign in).

FY 2018 RECREATIONAL TRAILS PROGRAM

FUNDING APPLICATION

Maryland State Highway Administration / Office of Planning and Preliminary Engineering
 Attention: Samantha Biddle
 707 N. Calvert Street Baltimore, Maryland 21202 Phone: 410-545-5560

Application Submission Deadline: June 30, 2017

1. Benefits to Maryland: *Describe how the project will benefit trail users and the State of Maryland. Is the project a missing link or potentially part of the State Transportation Trail network? (Visit <http://www.mdot.maryland.gov/Planning/Trails/trails.html> for more information). Does the project enhance tourism/economic development opportunities, particularly for towns? Does the project provide access to a regional land or water system?*

This trail extension will enhance tourism to the town of Snow Hill. Extreme adventure races have used the trail in the past (marathon race) and there are two events scheduled to take place in 2017. The trail system is also heavily used by horseback riders every weekend. Trail monitoring counters have established the fact that this is the most popular trail system on the Eastern Shore. This trail begins in the Chesapeake & Pocomoke State Forest and ends at the wild & scenic Pocomoke River access point in the Milburn Landing State Park.

2. Project Location: *Describe the limits of the project, including the City and the County. The map must have a north arrow, scale and the title of the project. It should clearly show the project location, property lines, public facilities, state roads, and any other relevant information. The Map must clearly identify the proposed project site with beginning and ending points.*

This project is located in Worcester County Maryland on the Chesapeake & Pocomoke State Forest. The trail system is located just 6 miles outside of the town of Snow Hill and just 10 miles south of the city of Salisbury (population 30,343). The trail head is located off Route 12. See attached map. This project is possible due to a recent land acquisition by the State, which connects old abandoned existing trail systems.

3. Project Description: *Please provide a comprehensive description of the scope of work. Please state the proposed work to be completed with the awarded federal funds.*

The forest access roads abandoned in the mid 1900's will be cleared of brush and debris to create a 4-6' wide passable condition for trail users. Low wet areas will be filled with material to stabilize the trail and make it passable during wet conditions. A new high visibility trail head will be established off Route 12 in Worcester County complete with parking and an informational sign. New sections of single track trail will be constructed to connect existing trails to the new extension. Trail side markers will be installed indicating the name and mile marker if the trail. QRL's will be located on the trail side markers so that users can instantly access a trail map to find their location with a smart phone.

What is the length of the project? *Be very clear what the beginning and end points are and the limits of disturbance.*

The proposed new trail extension is 5 miles long by 4'-6' wide. There are two existing trail heads; one is located within the Foster tract, off US Route 12 within the State Forest near the Wicomico/Worcester county line and the other is located adjacent to the Pocomoke River in the Milburn Landing State Park.

How will the project be built and what is the proposed surface?

The trail surface is dirt. Hand tools such as shovels, rakes, brush axes and chain saws will be used to clear and stabilize the trail. Some areas may require the use of a small bobcat machine to spread and level material.

FY 2018 RECREATIONAL TRAILS PROGRAM

FUNDING APPLICATION

Maryland State Highway Administration / Office of Planning and Preliminary Engineering
 Attention: Samantha Biddle
 707 N. Calvert Street Baltimore, Maryland 21202 Phone: 410-545-5560

Application Submission Deadline: June 30, 2017

Are there anticipated impacts with the project? *Please fill out the checklist below that will later assist the SHA Environmental coordinator.*

- a. No Permits are anticipated for the project
- b. No Impacts to trees are anticipated with the project
 - i. N/A Approximate square footage
- c. No Project is in a Maryland identified Critical Area
- d. No Historic resources may be impacted by the project
- e. No Impacts anticipated to wetlands and waterways
 - i. N/A Approximate square footage

There are no impacts related to this project that will require permitting. _____

4. Detailed Project Work Plan: *List by task and completely describe all the major elements of your proposed project in a concise manner. Although the program does not cover the cost of planning, design, engineering and permitting, please include these items in your summary, even if these tasks are part of the project.*

Task Name	Start Date	Duration	Responsible Party	Justification
NEPA Started	June 1, 2017	3 months	Ken Jolly	Grant list submitted
PCA Assigned	Dec. 1, 2017	1 month	Shanika Dyson	Applies to Acct for #
Hire contractual labor for trail work	Jan. 2018	1 month	Mike Schofield	Go through procurement process
Gravel / grade trail & parking areas	Feb. 2018	2 months	Mike Schofield	Safety
Clear brush & debris from trail with contractual labor	April 2018	6 months	Mike Schofield	Safety
Install trail side markers and trail head sign	June 2018	6 months	Mike Schofield	Safety
Prepare and submit close out packet	Feb. 2018	11 months	Mike Schofield	Match logged and time scheduled
Close out packet processed in Headquarters	Dec. 2018	1 month	Mike Schofield	Reimbursement
Grant Closed	Jan. 2019	1 month	Shanika Dyson	Verification and then submission to SHA
Grant Closed	Feb. 2019	1 month	SHA	

FY 2018 RECREATIONAL TRAILS PROGRAM

FUNDING APPLICATION

Maryland State Highway Administration / Office of Planning and Preliminary Engineering
 Attention: Samantha Biddle
 707 N. Calvert Street Baltimore, Maryland 21202 Phone: 410-545-5560

Application Submission Deadline: June 30, 2017

5. Project Status:

Has any planning, design, right-of-way acquisition or construction activities already occurred on the job?

No _____

6. Right-of Way: *The Project shall be constructed on property owned by and/or on permanent easements held by the Project Sponsor. If a non-profit is partnering with a Park Manager, please include an email or letter by Park Manager explaining that there is, or will be, an agreement. This will need to be verified by the Maryland Department of Transportation.*

N/A _____

7. Project Budget: *Provide a cost estimate for each task listed in question #4, note whether it is anticipated to be reimbursable or used towards the required match. The match must be 20% of the total cost of the project. The value of any soft match must be a part of the total project cost. Cash match must be used for all equipment purchases. Please refer to the labor rates in the 2018 Recreational Trail Guidelines for not to exceed rates for volunteer hours, project management hours, etc.*

Task Name	Requested Funds	Sponsor Match		Total Task Cost
		Value	Type (in-kind or cash)	
NEPA Started				
PCA Assigned				
Hire contractual labor for trail work				
Gravel / grade trail & parking areas (315 tons @ \$25.40/ton)	\$8,000	\$2,000	In-kind	\$10,000
Clear brush & debris from trail with contractual labor (1935 hours @ \$15.50/hour)	\$30,000	\$7,500	In-kind	\$37,500
Install trail side markers and trail head sign (\$500 trail head sign & 100 side markers @ \$15ea)	\$2,000	\$500	In-kind	\$2,500
Prepare and submit close out packet				
Close out packet processed in Headquarters				
Grant Closed				
Total Cost	\$40,000	\$10,000		\$50,000

FY 2018 RECREATIONAL TRAILS PROGRAM

FUNDING APPLICATION

Maryland State Highway Administration / Office of Planning and Preliminary Engineering
Attention: Samantha Biddle
707 N. Calvert Street Baltimore, Maryland 21202 Phone: 410-545-5560

Application Submission Deadline: June 30, 2017

8. Submission

It is preferred that applications be submitted electronically to sbiddle@sha.state.md.us by **4 p.m. on June 30, 2017**. Because our email server rejects most attachments larger than 6 MB, please use an FTP site or file sharing service, to transmit the application and any large attachments. Confirmation will be sent when the application is received. Please contact us at the email above with any questions about submissions or to discuss potential projects. The Recreational Trail Advisory Committee will meet to review projects in August. Awards will be announced in the Fall.

Options for Submission include:

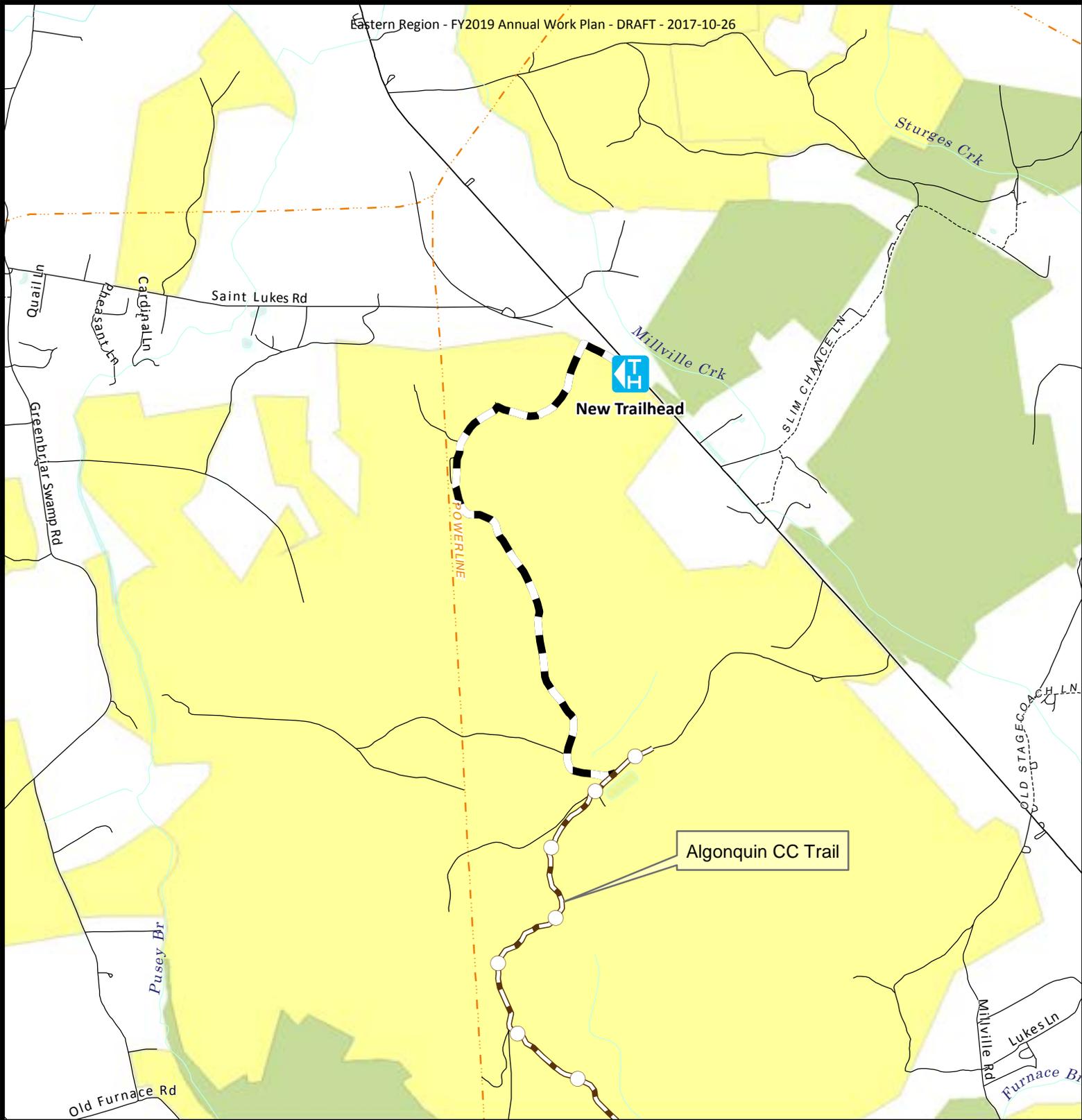
Internet/E-mail (preferred)

- Complete the form on your computer and save the file on your computer.
- Email the file as an attachment to: Samantha Biddle at sbiddle@sha.state.md.us
- Use an FTP site or file sharing service to transmit the application and any large attachments.

U.S. Mail

- Mail a completed application to:

Samantha Biddle
Assistant Division Chief
Recreational Trails Program
Maryland State Highway Administration
707 N. Calvert Street, MS C-502
Baltimore, MD 21202



Legend

Trail



Algonquin CC Trail



New Trail Construction - 2.52 mi.

-  Chesapeake Forest
-  Pocomoke State Forest

Chesapeake Forest
 Pocomoke State Forest
 Algonquin Cross County Trail

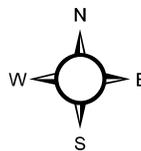
Scale: 1:31,680

Prepared by: DNR Forest Service

Date: 09/2017



This map is for planning purposes only.
 This map is not a boundary survey



APPENDIX C – AUDIT SUMMARIES – 2017

Reserved

APPENDIX D – SILVICULTURAL ACTIVITY SUMMARIES

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- Rountree, H. C., & Davidson, T. E. (1997). *Eastern Shore Indians of Virginia and Maryland*. University Press of Virginia.
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