

EASTERN REGION
STATE FOREST LANDS
ANNUAL WORK PLAN
FISCAL YEAR 2020

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Date

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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 73,724 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 18,198-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 19,978 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://dnr.maryland.gov/forests/Pages/mdforests.aspx>.

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 6 - 15 yrs	Growing 16 - 25 yrs	Maturing 26 - 40 yrs	Mature 41 - 60 yrs	Big Trees 61+ yrs	Uneven Aged	
Loblolly Pine	331	3,186	14,719	29,067	8,871	1,452	259	57,886
(Percent)	0.36%	3.47%	16.01%	31.62%	9.65%	1.58%	0.28%	62.97%
Shortleaf Pine	2	10	0	0	0	265	17	295
(Percent)	0.00%	0.01%	0.00%	0.00%	0.00%	0.29%	0.02%	0.32%
Mixed Pine (Pond, Pitch, Virginia, etc.)	20	0	0	0	0	102	75	197
(Percent)	0.02%	0.00%	0.00%	0.00%	0.00%	0.11%	0.08%	0.21%
Atlantic White Cedar	8	2	1	0	0	0	0	12
(Percent)	0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
Mixed Pine/Hardwood	41	1,324	1,958	1,099	1,955	8,179	14	14,570
(Percent)	0.04%	1.44%	2.13%	1.20%	2.13%	8.90%	0.02%	15.85%
Bottomland/Mixed Hardwoods	0	221	370	388	2,046	8,241	6	11,273
(Percent)	0.00%	0.24%	0.40%	0.42%	2.23%	8.97%	0.01%	12.26%
Bottomland Hardwoods/Bald Cypress	0	0	0	0	18	3,691	0	3,708
(Percent)	0.00%	0.00%	0.00%	0.00%	0.02%	4.02%	0.00%	4.03%
Cut/Marsh/Field/Powerline/Road	3,980	0	0	0	0	0	0	3,980
(Percent)	4.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.33%
Total	4,383	4,744	17,048	30,554	12,890	21,930	372	91,921
(Percent)	4.77%	5.16%	18.55%	33.24%	14.02%	23.86%	0.40%	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 mixture 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 of 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 panicgrass (*Dichanthelium 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 (91,922 acres) managed by the Maryland Forest Service within the Eastern Region during the 2020 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, 2019 to June 30, 2020. 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.
- Host the 4th Annual Ultra-Marathon “Algonquin 50K” race on Chesapeake Forest and Pocomoke State Forest.
- Host the Fat Tire Bike event with the Eastern Shore IMBA on Chesapeake Forest and Pocomoke State Forest.

- 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
 - 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

E. SPECIAL PROJECTS

- Maintain dual forest certification. Summaries of the previous year’s audit findings can be found in Appendix B.
- 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. Currently the project is in Phase IV, which deals with restoring the natural hydrology of the site through the use of ditch plugs.
- Initial hydrologic, terrain, and vegetation surveys on the Foster Estate pond restoration continues.

G. SPECIAL WILDLIFE HABITAT PROJECTS

- Initial site review and selection for possible quail management and habitat restoration.
- Planning and execution of the early successional habitat project on the Foster tract with prescribed burning and targeted herbicide applications continues.

H. ECOSYSTEM RESTORATION PROJECTS

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

XERIC HABITAT TREATMENT AND MONITORING PLAN (ABSTRACT)

SITE NAME:

Pocomoke State Forest – Furnace, Foster and Warren Tracts

CONTACT INFORMATION:

Project Contact: Jen Selfridge, Maryland Dept. of Natural Resources, Wildlife and Heritage Service, P.O. Box 68, 909 Wye Mills Road, Wye Mills, MD 21679. Office: 410-827-8612 x102 Email: jennifer.selfridge@maryland.gov

Pocomoke Forest Manager: Mike Schofield, Maryland Dept. of Natural Resources, Forest Service, 3461 Worcester Hwy, Snow Hill, MD 21863. Office: 410-632-3732 Email: mike.schofield@maryland.gov

EXPERIMENTAL DESIGN:

Number of plots or treatment units: Furnace (6), Foster (3), Warren (3)

Size of plots/units: The Furnace Tract comprises roughly 350 acres and the 6 treatment plots range from 43-85 acres each. The Foster Tract comprises 4800 acres and the main unit where the treatment plots will be located is 23.6 acres (the rest of the tract is heavily forested). This 23.6 acre area will be divided into 3 plots of different sizes. The Warren Tract is approximately 120 acres and the main unit we will work in is 30 acres. There will be 3 treatment plots within the 30 acre unit and each will be approximately 3 acres.

Please provide a brief explanation of the treatment plan for each plot/unit including a description of existing vegetation, the proposed work, timing, objectives, and rationale. Use the attached spreadsheet for estimated costs. Please include a site plan or sketch plan.

FURNACE: Most of the plots will be burned on a rotational basis and the cost of this work will be used for match. We are interested in the response of pollinators and vegetation on plots that are burned every 1-2 years versus every 3-4 years. Ideally we will burn 3 of the plots every year and 3 of the plots every 3rd year but this is heavily dependent on available fuel and on weather conditions. Of the 6 plots, 4 were burned in 2017, 1 was burned in 2018, and one has not yet been burned although a burn is scheduled for fall 2018.

In addition to burning we would like to take two of the plots and mechanically clear them in addition to burning. Finally, one plot (the one scheduled to burn in fall 2018) is a site for frosted elfins and cannot be burned in its entirety. This plot will be divided into 3 sub-plots, one of which will be burned in combination with herbicide treatments, while the other two will be managed by mechanical clearing and herbicides.

FOSTER: The 23.6 acre area was burned in 2018. We have not yet determined when or if it will be burned again during the course of this project. Of the burned area, a portion of it is targeted for herbicide treatments of gum and pine; the initial treatment was done in September 2018. A second portion will also be targeted for herbicide treatment as well as mowing where feasible (there are many stumps that need to be avoided). A third portion will serve as a control and will be treated only with prescribed fire.

WARREN: The 30 acre unit was burned in the spring of 2018. We will take 9 of the acres and divide them into three adjacent units. One will be burn only, one will be burn and mow, and the third will be burn and disc.

Maps of all three properties with sketches of the management units are attached.

MONITORING PLAN:

VEGETATION

Outline your vegetation monitoring protocol. If you are using the project protocol or something similar, please explain how you will locate your transects in relation to your treatment plots, number of transects, and the timing of your sampling. If you are using a different method, please briefly explain the differences.

We are using the line-point intercept sampling outlined as the preferred method for this study. We have no recent vegetation data for any of these plots. We did not collect any vegetation data this year but plan to start next year.

BEEES

Do you intend to continue or begin bee surveys in future years?

We did conduct bee surveys at both the Foster and Furnace Tracts in 2018. We did not (and cannot) put out bee bowls at the Furnace Tract during the spring survey because of the potential to kill frosted elfin butterflies. However we will still hand collect. We can do bee surveys at the Warren Tract if there is someone able to identify them. Our understanding was that each state could only submit 3 transects per season. This is hard for us because we are also working at Green Ridge State Forest, and have to this point been submitting 2 samples from Pocomoke and 1 from Green Ridge, but that will need to be revisited.



BUTTERFLIES AND MOTHS

Do you have an interest in surveying for butterflies and moths in future years?

It would be relatively easy to add butterfly surveys if they could overlap the time spent netting for bees or be added onto that time. It would be incredibly expensive and time consuming to add moth surveys. It would be great to have the data but it would probably not be feasible to trap, pin and identify moths without hiring someone to do this at a private contractor rate. Additionally, all of our locations are fairly remote with no light sources nearby; we may be attracting moths to lights from fair distances and could not confidently tie their presence to any of our management techniques.

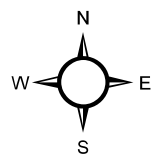


Legend

-  Chesapeake Forest
-  Pocomoke State Forest



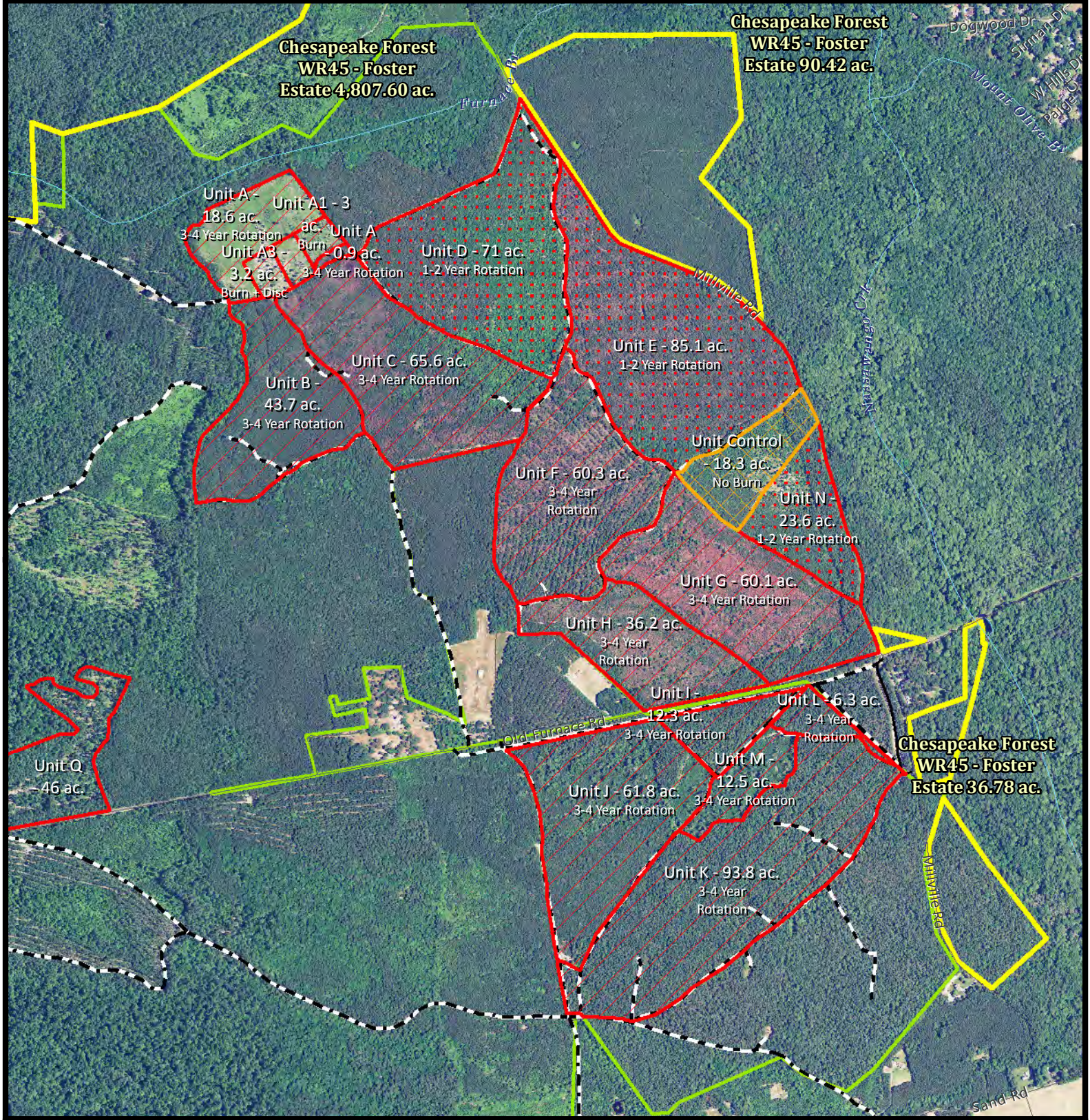
This map is for planning purposes only.
 This map is not a boundary survey





Foster Estate
 Proposed Burn Units

Scale: 1:3,960
 Date: 9/27/2018





Legend

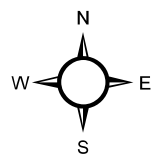
-  Chesapeake Forest
-  Pocomoke State Forest



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

Furnace, Nazareth Church, Warren tracts
Proposed Burn Units

Scale: 1:15,840
Date: 9/27/2018



Chesapeake Forest
WR45 - Foster
Estate 4,807.60 ac.

Furnace Br

Unit A - 18.6 ac.
3-4 Year Rotation

Unit A1 -
3 ac.
Burn

Unit A2 -
2.9 ac.
Burn + Mow

Unit A3 -
3.2 ac.
Burn + Disc



Unit A - 0.9 ac.
3-4 Year Rotation

Unit D - 71 ac.
1-2 Year
Rotation

Unit C - 65.6 ac.
3-4 Year Rotation

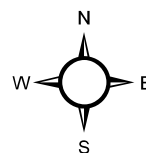
Unit B -
43.7 ac.
3-4 Year Rotation

Legend

-  Chesapeake Forest
-  Pocomoke State Forest



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



Warren tract
Proposed Burn Units

Scale: 1:3,960
Date: 9/27/2018



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
- Delmarva Fox Squirrel – 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



Larry Hogan, Governor
Boyd Rutherford, Lt. Governor
Mark Belton, Secretary
Joanne Throwe, Deputy Secretary

FY 2020 Annual Work Plan ID Team Field Review
10/10/2018
Sign In

Name	Unit
1. Dana Limpert	WHS
2. Stacey Esham	PFS
3. Brett Coakley	Fish + Boat
4. Alexander Clark	MFS
5. Skip Jones	PFS
6. Kenneth Jolly	FS
7. Mike Schofield	FS
8. Shyan	NRP
9. Paul Park	MFS
10. Kelly McCarthy	WHS
11.	
12.	
13.	
14.	
15.	

Eastern Region State Forest Lands – FY 2020 Annual Work Plan

Natural Heritage Program Comments 11/09/18

General Comments:

Final comments are provided in italics following the preliminary comments.

In reviewing the 2018 Sustainable Forest Management Plan for these properties, we found that the Riparian Buffer High Conservation Value Forest has been reduced significantly to match the Soil Conservation Service guidelines for riparian buffers. Those guidelines provide a 50ft buffer plus additional width where slopes are present within 50ft of the stream. Given the topography on the Eastern Shore, this results in a 50ft riparian buffer in most areas. It has been our understanding that riparian buffers had been 300ft wide on each side of streams on lands covered by the sustainable forest management plan. We have no record of being consulted about this change. The resulting 50ft buffer is not adequate to protect aquatic habitat structure and reduces habitat quality for FIDS and Delmarva fox squirrel. The Natural Heritage Program recommends that the 300ft buffer on each side of streams be applied to all lands within High Conservation Value Forest areas. We have highlighted in red those stands affected by this recommendation. *We appreciated the discussion of this during our October 10, 2018 field visit, and look forward to working with Forest Service staff over the winter to resolve this in order to provide better riparian wildlife habitat protection over the long-term on CFL and PSF.*

Regarding timing of logging in FIDS habitat, the plan includes the Critical Area Guidelines, which encourage landowners to log outside of the breeding season for FIDS, April 1-July 31. This timing also protects young, flightless bats. *The Natural Heritage Program recommends that the plan state that logging in FIDS habitat of mixed pine-hardwood or hardwood stands will be timed to avoid this breeding period unless, for a particular stand, it is determined, in consultation with the Natural Heritage Program, that logging within that window is preferable. We also recommend that, where feasible, logging in FIDS habitat identified as DFS core and future core areas that are mixed pine-hardwood or hardwood stands occur outside this breeding period.*

Substantial acreage has been added to the Chesapeake Forest Lands, and most of that acreage has not been surveyed for rare and declining species and significant natural communities. In order to assure that all High Conservation Value Forest on these lands is identified and managed sustainably, surveys should be funded. *Originally, the sustainable forest management plan called for 10% of timber revenue to be spent on monitoring annually, and no comprehensive monitoring has been completed since the first effort in 2004. The current plan recommends comprehensive monitoring every 10 years. Perhaps we could begin planning for comprehensive monitoring and survey work to be done in 2020 to be funded by timber revenue.*

Regarding the identification of High Conservation Value Forest on the roughly 20,000 acres of land acquired over the last 15 years, during our site visit we learned that the Forest Service is using DNR's general statewide FIDS data layer to identify FIDS Core areas. However, our staff worked with the Forest Service to create a more refined FIDS layer for the original 58,000 acres of CFL. We are willing to work with the Forest Service this winter to refine the existing FIDS layer so that targeted FIDS Core areas are truly high quality FIDS habitat, as well as to resolve the width of riparian buffers. Using the current approach may overestimate the acreage of FIDS habitat.

Stand-specific comments:

Our comments for each stand are provided below in **red**. Stands for which we had no comments are not included. Comments added since our original response of September 25, 2018 are italicized.

Dorchester County

[CF-20-S-02]

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

Recommendations: Stand 30 is within the Brookview Ponds ESA but is across the street from the Brookview Ponds restoration area. This stand also contains the Rhodesdale Powerline SE wetland of special state concern (WSSC). We recommend that a 100 ft. buffer be placed around the WSSC in addition to following WSSC BMPs. Logging should occur when the site is dry to reduce potential disturbance to the soil.

Somerset County

[CF-20-S-06]

Habitats and Species of Management Concern: **FIDS**, **Stream Buffer**, and General Management

[CF-20-S-09]

Habitats and Species of Management Concern: **FIDS**, **Stream Buffer**, and General Management

*Recommendations: Stand 30 is within the ESA known as Princess Anne Marshes which also contains a WSSC. We recommend that a 100 ft. boundary is placed around the WSSC and that WSSC BMPs are applied. Logging should occur when the site is dry to reduce disturbance to the soil. *Where the stream has been ditched and managed as a PDA, with a mowed buffer of 20ft or wider on each side, it is not necessary to maintain the undisturbed forested buffer. However, logging within the WSSC is required to follow the other best management practices identified by MDE for these designated wetlands.**

[CF-20-S-13]

Habitats and Species of Management Concern: **DFS Core** and **Stream Buffer**

Recommendations: As we mentioned in our correspondence of October 4, 2018, Marumscro Creek supports a population of Banded Sunfish, a Watch List and GCN species. There is no regulatory protection for this species, though we encourage public land managers to provide protection in order to reduce the likelihood of requiring

regulatory protection in the future. If the Forest Service is interested, we can discuss protection further when we discuss riparian buffers this winter.

[CF-20-S-14]

Habitats and Species of Management Concern: DFS Core and Stream Buffer

Wicomico County

[CF-20-S-20]

Recommendations: Stand 8 overlaps the ESA known as Johnson Sand Ridge that contains the shade-intolerant plant, Sandplain flax, state-listed as Threatened. We recommend that all the loblolly be cut on the sand ridge and would not recommend replanting the area with trees. Keeping this area open with periodic fire would provide the open, sunny habitat that this plant requires. The best time year to burn would be after September.

Worcester County

[CF-20-S-22]

Habitats and Species of Management Concern: ESA Zone 1, Stream Buffer, and General Management

Recommendations: Stand 1 overlaps Stevens Road Powerline very close to populations of shade-intolerant plants listed by the State as threatened or endangered. These plants are located in the powerline right-of-way so we support the final harvest of the trees in this stand. We do not recommend planting this small, triangular field with trees and we encourage keeping this stand open to give the plants room to expand as they are threatened by woody succession. Stand should be accessed by established roads and not by the right-of-way.

[CF-20-S-23]

Recommendations: Stand 1 overlaps Meadow Bridge Ridges which includes sand ridges, a fresh-tidal forested floodplain of Dividing Creek, a mesic powerline ROW, and an abandoned sandpit. There are three species tracked by NHP within the ESA, including a state threatened plant of sand ridges. The ESA contains the largest population of *Rhynchosia tomentosa*, (State listed as Threatened) on CF land but is entirely restricted to a roadside. With management, the population could be expanded from the roadside which would insure the long-term viability of the population at this site. The rare species located in the powerline ROW are very small populations of a watchlist and Threatened species. We recommend that this stand be thinned heavily and kept open especially along the ROW and on the sand dune ridges. Polygons will be drawn for the sand ridges within Meadow Bridge so Zone 1 will be further delineated.

[CF-20-S-24]

Recommendations: Stand 4 overlaps with the lower portion of Fleming Mill Complex which supports the state rare plant, pink milkwort. This plant occurs along the edge of the stand. This plant needs intermittent disturbance to retard woody succession and maintain grasses and forbs. We recommend the roadside edge be kept in grassy, herbaceous cover and that mowing and thinning of the stand should be done when the site is dry and, if possible, after September to avoid the flowering/fruitlet period of pink milkwort.

[CF-20-S-26]

Recommendations: A sand dune is present on both of these stands and a sand dune polygon will be delineated and provided to the Forest Service.

[CF-20-S-28]

Recommendations: This stand overlaps with the ESA known as Furnace, where extensive lupine and frosted elfin habitat restoration work has already occurred along the sand road bordering this stand. We encourage this final harvest with a burn following the harvest to keep the stand as open woodland. Sand dune polygons will be drawn and provided to Forest Service.

Pocomoke State Forest

[P-20-S-01]

Forest Community Types and Development: **Mature pine/hardwood naturally regenerated in 1921 and 1924**

Habitats and Species of Management Concern: **DFS Future Core**

Recommendations: These stands meet the Sustainable Management Plan's definition of 'nearly old growth', in which the oldest trees are slightly less than half of the projected maximum attainable age for the species. Given the age of these stands, that they are in a DFS Future Core area, and are high quality FIDS habitat of mixed pine-hardwood forest, NHP recommends retaining these stands and allowing them to succeed to old growth. This would accomplish both FIDS protection and DFS protection. There are few mixed pine-hardwood stands of this age on CFL and PSF, and the position of this stand along Pusey Branch, with intermittent drainages leading to Pusey Branch, increases the value of the forest as wildlife habitat.

[P-20-S-02]

Forest Community Types and Development: **Mature loblolly pine naturally regenerated in 1919**

Habitats and Species of Management Concern: **DFS Future Core**

Silvicultural Prescription: Final harvest, retain significant hard mast species, pond pine, and shortleaf pine. Although this stand is quite old, it has a small hardwood component and is not as high in quality as FIDS habitat as Stands 16 and 23. The Natural Heritage Program has no further comment on this stand.

[P-20-S-04]

Habitats and Species of Management Concern: **Stream Buffer and DFS Future Core**

Mike-

Thank you for the opportunity to review the Eastern Region FY2020 Annual Work Plan. Eight of the 66 proposed stands are within the headwaters or adjacent to streams with sensitive aquatic resources or within stronghold watersheds of rare aquatic species (see details below). To minimize impacts to these important aquatic resources, the proposed harvest efforts should aim to minimize impacts to the stream buffers – leaving trees that provide direct canopy cover to the stream channel to maintain cooler water temperatures and minimize potential stream bank erosion. Harvest of trees within the buffer zone should be done in a way that minimizes impacts to stream banks and channel. Additionally, movement of equipment through the stream or buffer zone should be avoided when possible during these harvest activities. Please contact the Natural Heritage Program for other BMP guidelines and recommendations associated with these rare aquatic species.

Let me know if you have any questions.
I will not need a site visit-

Jay

CF-20-S-13 (S46 – Cottage Grove – Stands 3, 5, & 6): These stands are located in the headwaters of Marumsco Creek known to support populations of Banded Sunfish (S2).

CF-20-S-15 (S32 – Haislip Greenhill – Stand 4): This stand is located adjacent to Marumsco Creek known to support a population of Banded Sunfish (S2)

CF-20-S-23 (WR19 – Priscilla Pusey – Stand 1): These stands are adjacent to tributaries to the Dividing Creek that are known to support populations of the state rare Swamp Darter (S2) and Banded Sunfish (S2). The Dividing Creek watershed (12-digit) is a Stronghold watershed for the Banded Sunfish.

CF-20-S-21 (WR02 – Littleton Fooks – Stands 15 & 16): These stands are adjacent to Longridge Branch, a tributary to the Upper Pocomoke River – a stronghold watershed known to support populations of the state rare Swamp Darter (S2), Mud Sunfish (S2), and Banded Sunfish (S2).

CF-20-S-22 (WR17 – Livingston – Stands 1, 4, & 9): These stands are adjacent to a headwater tributary to Dividing Creek – a stronghold watershed known to support populations of the state rare Swamp Darter (S2), Mud Sunfish (S2), and Banded Sunfish (S2).

CF-20-S-08 (S11 – Peters McAllen – Stand 15): This stand is adjacent to headwater tributaries to the Manokin River – a stronghold watershed known to support populations of the state rare Mud Sunfish (S2) and Banded Sunfish (S2).

CF-20-S-09 (S11 – Peters McAllen – Stand 2, 29, & 30): These stands are adjacent to headwater tributaries to the Manokin River – a stronghold watershed known to support populations of the state rare Mud Sunfish (S2) and Banded Sunfish (S2).

CF-20-S-07 (S10 – Seed Tick Farm – Stand 5): This stand is located in the Dividing Creek watershed – a stronghold watershed for the Banded Sunfish (S2).

Jay Kilian
Resource Assessment Service
Department of Natural Resources

After reviewing the draft FY20 AWP for Chesapeake Forest and Pocomoke State Forest, the following are my comments with regards to wildlife recommendations:

- Maximize the number of Snags on the harvested area by leaving all “safe” snags. (Habitat opportunities for many invertebrates, birds and mammals. Snags should be minimum of 20 feet tall)

- Leave coarse down woody debris scattered throughout the harvest area where possible. (Hiding and nesting for small mammals and furbearers, and habitat for invertebrates. Nutrient cycling)
- Leave woody debris piles near wetland sites in the harvested area where possible. (Habitat opportunities for small mammals, amphibians, reptiles, and invertebrate species)
- Leave “wildlife” trees scattered or in clumps throughout the harvested area. These include hard mast producing trees, trees with nests and or cavities. (Food sources for mammals and birds. Nesting and breeding habitat for birds and mammals)

Russ Hill
Biologist, Wildlife & Heritage Service
Department of Natural Resources

Mike - Thank you for your opportunity to comment on the FY20 work plan and organizing the review meeting and site visit. I was happy to hear that Forestry was using the updated MDE stream layer, which identifies more perennial and intermittent streams than previous layers. Ultimately, the use of this layer will help to better protect aquatic resources and water quality. That said, both Forestry and the contractors have always been very proactive in protecting un-mapped water features that are found while in the field. I do not expect this will change. Forestry's decision to adopt a statewide minimum standard for buffer widths is understandable. Given the site conditions found on most of Pocomoke and Chesapeake State Forests, 50' no cut buffers on streams should be sufficient in most cases to protect aquatic resources and water quality. Larger buffers may be needed at times in certain areas- and I am confident that Forestry would cooperate with us and other programs to extend them as needed, but I have not identified any such areas in the FY20 work plan.

I know a larger discussion of forest buffers and how to manage them is planned. I would like to participate in that discussion.

Regards,

Brett Coakley
Eastern Regional Manager
Freshwater Fisheries Program
Fishing and Boating Services
Department of Natural Resources

Jack and Mike: I have completed my final review of the FY19 AWP. As I commented on the Western Forests AWP, my focus is not the silvicultural projects. I figure the FS knows how to cut trees in a sustainable fashion. My interest is focused on the other management activities and this is where this plan falls short. In regards to recreation, I don't see any usage numbers for trail use or hunting and these are the two biggest public recreational activities. I don't see any monitoring results or how FS may have adapted management based on those results. Page 12 - Watershed Improvement project - we continue to live off of a project that was in the FY13 AWP.. In fact, page 12 contains very little new information. As far as the review of the plan, there is no information provided on page 13. I have not had a chance to review the FY20 AWP, but assume I will have similar comments. Hopefully the draft FY20 AWP can be revised to address these items. Thanks for the opportunity to review and comment.

John F. Wilson
Associate Director
Land Acquisition & Planning
Department of Natural Resources



Larry Hogan, Governor
Boyd Rutherford, Lt. Governor
Mark Belton, Secretary
Joanne Throwe, Deputy Secretary

CHESAPEAKE & POCOMOKE FOREST FY2020 ANNUAL WORK PLAN
MEETING ATTENDEES - FRIDAY, JANUARY 10, 2019

1. William Hester Jr
2. Michael Hyman
3. Gottie
4. De Fehrer
5. Larry Beauchamp
6. Mary Pines
7. Alexander Clark
8. Mike Schofield
9. _____
10. _____
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17. _____
18. _____
19. _____

Chesapeake and Pocomoke State Forests - 6572 Snow Hill Road, Snow Hill, Maryland 21863
Telephone (410) 632-3732 Fax (410) 632-3730 • www.dnr.maryland.gov • TTY users call via Maryland Relay

In addition to comments and discussions during the January 10th meeting of the Citizens Advisory Committee, I will make the following comments regarding the 2020 annual work plan.

1. Work plan comprises a good mix of maintenance, research, recreational, habitat restoration, and timber harvest projects.
2. I would encourage the Forest Service to continue to allow harvest of mature pine forest in order to supplement the operating budget of the Chesapeake Forestlands and to continue the thinning and stand reduction harvests at the current rates to maximize the overall goal of producing healthy and diverse timberstands on the Forest. I recognize this is a challenge due to the restrictions placed on the harvests by department standards. However there must be some flexibility to allow accomplishment of that goal. The goal of providing a mix of age class mixed species forest on these lands was and is still one of the major reasons that the endangered Delmarva Fox Squirrel was delisted as endangered and taken from the Endangered Species list by the U.S. Fish and Wildlife Service. The Fox Squirrel Recovery Team, of which I was a member recognized that the Chesapeake Forest properties provided both the current and future stability of lands for the Fox squirrel.
3. I would encourage the Forest Service to work with the Wildlife Dept. to maximize the harvest of deer on the Chesapeake lands in order to relieve the problem of deer depredations on adjacent private croplands.
4. I encourage the Forest Service to continue their efforts to monitor and document native American and historical sites on the Forest and to protect those from disturbance.
5. I was pleased to see the effort proposed to provide sites for the continued study and monitoring of endangered, threatened wildlife and plant species as well as bees, butterflies and moth species.

Overall, I think the staff should be commended for providing a thorough and balanced work plan that can be accomplished despite the maze of restrictions and requirements placed on the accomplishment of the goals of the Forest.

I submit these comments for consideration as a member of the Citizens Advisory Board. Thank you for the opportunity to comment and please continue to inform the board of developments and changes which may impact future management of the Forest.

William M Giese Jr.

Mr. Michael Schofield
Chesapeake and Pocomoke State Forest Manager
MD DNR Forest Service
6572 Snow Hill Rd
Snow Hill, MD 21863

February 8, 2019

Dear Mike,

I want to thank you and Alex for the overview of the FY 2020 Eastern Region State Forest Lands Annual Work Plan as presented at the CAC meeting on January 11, 2019.

General comments:

- A) The harvest area maps are extremely helpful but could be more so if the map legends were clearer and more inclusive.
- B) Regarding the conversation the CAC had relative to state mandated buffers [Waters of the State]; I urge that these and future guidelines be followed, with the buffer areas respected and free from harvest.
- C) The restoration of hydrological function (ditch plugging etc.) should be encouraged to the extent possible on the Chesapeake and Pocomoke Forest Lands, as should the continued use of controlled burns. Both have been proven to improve plant and animal biodiversity and restore ecological function.
- D) Using natural regeneration should be the preferred alternative to re-establish more natural mixed hardwood/pine stands and plantings of native hardwoods should be encouraged.
- E) Your continued effort to map and identify historic sites within the state's land holdings should be commended.

Chesapeake Forest Lands:

I have no explicit recommendations for the work as planned on the tracts specified, or, for the proposed silvicultural activities in this plan as presented, other than.

- 1) It remains incumbent on the Forest Manager, to fully delineate wetland buffers and ensure strict compliance from your contractors to protect all wetlands, streams, creeks and watercourses from inadvertent timber harvest, sediment and other forms of runoff into those waterbodies.

It should also be a priority to ensure that all logging and maintenance equipment entering onto these properties is thoroughly clean and free of invasive seed and plant material.

- 2) I'm very pleased to see DNR Forestry continuing its work with such a broad group of partners within DNR, Academia, as well as local and national NGO's. The restoration projects highlighted as part of the FY 2020 Plans, specifically those addressed on page 12 (sections E through H) page 13 (Experimental Design) and page 14 (Monitoring Plan) are encouraging. Projects of this sort add significantly to the continued stewardship of the Chesapeake [and Pocomoke State Forest] Lands and should be expanded on as time and funds permit.

- 3) Developing and enhancing recreational use of the Chesapeake Lands should be continued; these should include uses other than hunting where appropriate. As was mentioned at the CAC meeting in January; the need to improve canoe and kayak access areas on Chesapeake Forest Lands, where applicable, such as the tract upstream of Brookview and adjoining Puckum Rd. should be vigorously investigated.

Pocomoke State Forest:

There are two specific harvest areas within the Plan that I'd like to address;

P-20-S-01 Nazareth Church – Tract 5 – Stands 16 and 23: This area is described as mature pine/hardwood naturally regenerated in 1921 & 1924, thus making the stand over 95 years old. While perhaps not as ecologically important as other "old growth" forest areas within the state, on the Lower Shore these are unique. I would advocate for protection of this area and recommend its removal from the Work Plan.

Given the age class of these stands (16 & 23) it should be incumbent on the Forest Managers to consider retaining the timber throughout the stands; timber of this age class (95 plus years) is infrequent at best across the Lower Shore. However, if these stands are harvested, I strongly recommend leaving large areas of "tree islands" (multiple tree clusters) scattered at random across the site, these would be very beneficial to wildlife now and into the future and add texture and structure to the forest canopy.

P-20-S-02 Nazareth Church – Tract 5 – Stand 25: The area as described is mature loblolly pine naturally regenerated in 1919, making this stand 100 years old. My comments for this tract and stand mirror those above. *Again, I adamantly recommend the removal of this tract (5) and stand (25) from the Work Plan, as I do with Tract 5, Stands 16 & 23 above.*

Sincerely,

Joseph W. Fehrer

3816 Old Furnace Rd. Snow Hill, MD 21863

DORCHESTER COUNTY
FOREST CONSERVANCY DISTRICT BOARD

February 11, 2019

Mr. Jack Perdue
Forest Stewardship
Forestry Service
508 Taylor Avenue, E-1
Annapolis, MD 21401

jack.perdue@maryland.gov

RE : Comments on Annual Work Plan Chesapeake/Pocomoke State Forest

Dear Mr. Perdue,

As Chairperson of the Dorchester County Forestry Board it is my duty to express the board's opinion on forestry issues in our area. Our board members include landowners, farmers, industry representatives, and concerned citizens. The diversity of our membership has led to sound management recommendations that suit not only industry needs, which is where my background and expertise is, but also recreational and conservation needs as well. It is an honor, and a pleasure to take this knowledge and share it on a more regional level by serving on the Citizens Advisory Committee for the annual work plan for the Chesapeake and Pocomoke State Forest.

On January 11, 2019 the committee met at the Chesapeake State Forest Office to review the plan. Forest Manager, Mike Schofield was present to explain the process and was able to sufficiently answer all my questions. Below are my comments-

GENERAL COMMENTS

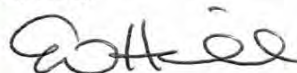
FORESTRY- The plan has a variety of harvest types from thinnings to final harvests, none of which seem to be controversial. The proposed harvests should help supplement the needs of the entire industry on the shore, by supplying varying ages of timber that can be used for pulpwood, poles, and saw logs. These harvests will not only improve timber stands but also help maintain and diversify plant and wildlife habitat.

INDUSTRY- As the forest products industry on the Eastern Shore has continued to shrink (the closing of Cropper Brothers Lumber last year) I feel very strongly that the State of Maryland has a duty to make available a variety of timber to the remaining industry to ensure that the industry itself remains healthy and profitable, therefore making it available to assist in the management of these state lands in the future. I am particularly glad to see P-20-S-01 and P-20-S-02 included in the work plan. Without a healthy industry you cannot have a healthy forest. The same is true for markets, I fear that the possibility of ECI being converted from wood chips to natural gas will leave the state forests, especially those where prescribed burns have been performed with no market, since those trees cannot be utilized by the paper companies. I hope that state is able develop a new advanced wood combustion system here on the Eastern Shore so that these state lands can continue to be managed sustainably.

RECREATION- Discussion was had at the meeting to add a soft boat launch somewhere in the north Dorchester area, that could be used by kayakers. There is a lack such places in this area, and I feel that would be a great addition to the state lands. Although I am an avid supporter of hunting on both private and public lands, I remain opposed to Sunday hunting on State Forests. Sundays should be left open for citizens to safely enjoy other recreational uses such as horseback riding, birding, and biking. I do support Sunday hunting on private lands.

Thank you for the opportunity to review and comment.

Respectfully,



Elizabeth D. Hill, Chairperson
lumber1girl@gmail.com

Cc: Michael Schofield
mike.schofield@maryland.gov

PUBLIC COMMENTS

January 30, 2019

jack.perdue@maryland.gov

I am writing to comment on the 2020 work plan for the Chesapeake/Pocomoke State Forest. I was the Ecology **representative on the Citizen's Advisory Committee for ten** years, so I am very familiar with both the forest and the management plans for this forest.

Please remove P-20-S-01 and P-20-S-02 from the work plans. The majority of the Chesapeake/Pocomoke State Forest is young pine monoculture and thereby lacking in biodiversity; but these two stands are much older, approaching or reaching 100 years, and they are composed of a native mixed forest of various tree species. It is just this sort of forest that we should be allowing to mature further and continue the trajectory it has begun in recovering its original biodiversity. A book I authored: ***Nature's Temples: the Complex World of Old-Growth Forests***, shares the scientific references for my viewpoint.

These views are not mine alone, they are shared by over 900 members of the Old-Growth Forest Network who live in Maryland. We understand the need for logging some forests, but older forests on our public lands should be maintained for carbon sequestration, biodiversity, and recreation. I look forward to hearing that these stands have been removed from the work plan.

For the forests,

Joan Maloof *Executive Director*, [Old-Growth Forest Network](#)

Professor Emeritus, Salisbury University

Hi Jack,

I have spent a good bit of time over the course of many years enjoying the forests of Somerset County. One observation after hunting 40 years in both Kent & Somerset for deer: never seen a deer eat a pine cone but they sure do like acorns ! Kent county has acorns and a lot more deer per acre of forest.

Hope the forest plans consider the importance of nut bearing trees and plant more of them.

Do the state owned forest need to make a profit or be financially substantial in any way ?

Same question for Chesapeake Forest lands.

Thanks

Greg H.



February 21, 2019

Mr. Jack Perdue Program Manager
Forest Resource Planning
Maryland Forest Service
580 Taylor Ave., E-1
Annapolis MD 21401

Dear Jack and Mike,

Thank you for the opportunity to comment on the 2020 Annual Work Plan for the Chesapeake Forest Lands and the Pocomoke State Forest. We are happy to offer the following suggestions.

First, thanks for your attention and actions on some of our previous comments. We appreciate the more realistic display of the income and expenses associated with managing the Pocomoke State Forests and Chesapeake lands. That is helpful, particularly since we remain concerned over the continued acquisition of lands with no commensurate increase in staff capabilities. That is an issue we intend to pursue through Maryland Forest Service and Association of Forest Industries over the next year.

Second, as we pointed out in previous comments, we see the need for a more visible relationship between the goals of the overall management plan and how the projects envisioned for FY 2020 contribute toward their achievement. In addition, much has changed over the years since the preparation of the management plan. While we agree that it may be unnecessary to completely revise the management plan, it is important to incorporate new data. Specifically, we would like to see an analysis of the findings of the most recent growth and yield study for these lands and how that might be used to establish a sustainable annual allowable harvest. If completed, then such an analysis should be a major guide in determining the volumes, locations and types of timber harvests in the future.

We also remain unclear on what happens to planned actions that are not accomplished in the year for which they were planned. Do they simply carry over into the next year and become part of the planned actions for that year or do they remain as a backlog of work with already approved projects that can be completed at any time? If the latter is the case, then should there not be a "catalog" of sorts that lists projects which, at one time, were approved but for whatever reason were not completed? For example, we recently purchased some timber on the E. Mace Smith tract, which, if we understand Skip correctly, was part of a much earlier work plan but which didn't sell as scheduled. Now, it can apparently be easily "called up" again and sold without much additional effort. Frankly, we don't see much wrong with such an approach as long as these "unaccomplishments" don't get lost. Right now, we'd have a real interest in looking through past projects that were not completed but which could be reconsidered even if not

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part of the current work plan, particularly if some of them are on ground that is workable in wet weather.

It would really be helpful if the annual work plan included a tentative schedule that shows when individual projects would be available for bids. This would allow us and other forest products companies to better plan site visits and any needed discussions with MFS staff or consultants.

We have become aware of some controversy over two proposed final harvests in the Pocomoke Forest, specifically PS-20-S01 and S02. Apparently, these are stands about 100 years in age, with attendant concerns over harvesting "old growth". It's important that the State doesn't inadvertently establish a de facto "veto" capability for anyone who simply opposes a given project within the approved plans. That's a slippery slope once the precedent is set for removing a project based upon the volume of public comments in opposition.

At the annual plan level, we would suggest that project decisions are relatively bulletproof, given the scrutiny each project has been given up to that point, along with the criteria in the overall management plan under which each project has been developed. Once those have been debated and approved, we would submit that projects, so long as they are in compliance with the plans and criteria, are no longer subject to "go" or "no go" arguments. This is important to building credibility and confidence in the State's management of these lands. So, the decision of "if" the project is to proceed should be off the table. However, there is certainly room to discuss "how" the project can best proceed to meet the plan's goals.

For these particular projects, some further discussion about how the proposed management complies with "old growth" and "nearly old growth" objectives in the most current version of the management plan is probably warranted, given the fairly unique nature of these stands. Also, consider management alternatives such as small group clearcuts, shelterwood cuts or even selection harvests. For years Dierk's Forest Products in Arkansas successfully managed loblolly pine through all-aged selection harvest (Joe, showing his age here). Discussion of such alternatives might be worthwhile, not to mention giving us all a silviculture refresher course, which won't do any harm. Bottom line is that we do support your harvest decisions for these stands but suggest that MFS document that they are fully justified, and you've at least considered alternatives.

Again, thank you for the opportunity to offer these comments and we look forward to working with you during the coming year.

Sincerely,

Tom Johnson

Tom Johnson,
President

3667 St. Lukes Road, Salisbury, Maryland 21804 (410) 742-5540; www.esforest.com

Hello Mr. Perdue,

I am a resident of the mid-atlantic, and regularly recreate in Maryland's excellent state forest system. I am also a forestry professional in Northern Virginia.

Please see these short comments on the plans put forth by your department:

Chesapeake Forest: I am very concerned with the focus of converting mixed hardwood/pine forests to primarily pine stands. This will have a negative impact on a wide variety of wildlife that calls these forests home. While pine is obviously a part of the Chesapeake forest, forest management from the state should focus on improving the habitat of the forest, even within silvicultural management. Some of the previously overstocked loblolly pines should be selectively harvested and begin to transition back to a more valuable ecosystem of mixed pine/hardwood

Thank you for the opportunity to comment.

Sincerely,

Vincent Verweij



MARYLAND ORNITHOLOGICAL SOCIETY

February 21, 2019

Mr. Jack Perdue
Forest Service
Maryland Department of Natural Resources
580 Taylor Ave, E-1
Annapolis MD 21401
jack.perdue@maryland.gov

Dear Mr. Perdue:

The Maryland Ornithological Society has the pleasure of submitting the following comments on four FY 2020 draft work plans for state forests, namely Green Ridge, Savage River, Potomac-Garrett, and Chesapeake Forest/Pocomoke. We compliment the Maryland Forest Service for the level of detail in describing the silvicultural projects, including maps and descriptions of the work to be done.

The Maryland Ornithological Society is a statewide nonprofit organization established in 1945 and devoted to the study and conservation of birds. Currently we have 15 chapters and approximately 1,800 members. Some are scientists and naturalists, but our membership includes people of all ages and all walks of life, from physicists to firefighters, legislators to landscapers. Birding is one of the fastest growing types of outdoor recreation.

We recommend two additions to be included in each of the four work plans:
Bird Checklists: The Maryland Ornithological Society recommends adding a project for each state forest, to develop and publish a checklist of the birds found in each state forest. This would be comparable to bird checklists published by the National Park Service for many units of the National Park System and by the U.S. Forest Service for many national forests. Such bird lists, posted online and printed for distribution at state forest offices, will help to increase recreational use of the forests and give the Maryland Forest Service another opportunity to interact with visitors. An example is the checklist for Shenandoah National Park, posted online at: https://www.nps.gov/shen/learn/nature/upload/SHEN_Animals_Birds-508.pdf
A simpler checklist for the Monongahela National Forest is posted by the Forest Service at: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5090781.pdf
The DNR Wildlife and Heritage Service has the expertise to develop such lists.

Unauthorized Off-road Vehicles: In each state forest, the Forest Service should identify incidents of trespass by unauthorized off-road vehicles. Even in the last two years MOS members have seen evidence of ORVs trespassing on state lands

where they are prohibited. It is a constant problem that needs to be addressed promptly to prevent erosion and destruction and fragmentation of wildlife habitat. In the past, DNR wisely has closed several ORV trails because of unacceptable impacts, including trails in Green Ridge SF and Pocomoke SF.

When trespass is detected, the Natural Resources Police should be called to undertake enforcement action, where this is possible. Then rehabilitation work should be scheduled quickly to erase impacts, restore natural watershed contours, and replant native vegetation.

Pollinators

Each of the forest management plans under consideration should more specifically address pollinator protection and enhancement. Pollinator habitat throughout Maryland is under threat and Maryland's public forests can play an important role in restoring and maintaining quality pollinator habitat, especially through monitoring projects and ecosystem restoration. Wildlife openings and grasslands are especially suitable for enhanced pollinator habitat, but the health of forest pollinators should be considered as well.

Climate change and forest resiliency

As a rule, MOS recommends that there be a greater consideration and more specific recommendations within the forest management planning process regarding longer-term actions to ensure that Maryland's publicly-owned forest lands are climate-resilient. Forest management plans provide a unique opportunity to advance long-term strategies to achieve climate resiliency and to address adaptation and mitigation strategies to protect and enhance Maryland's forests,

CHESAPEAKE FOREST and POCOMOKE

These two forests consist of the Chesapeake Forest of 73,724 acres in 186 units across six counties and the 18,198-acre Pocomoke State Forest in three counties. They contain some of the last large segments of unbroken forest in a predominantly agricultural region. Wildlife habitats include wetlands and swamps as well as pine, cypress and hardwood forest. They support established populations of threatened and endangered species, including some 150 other species that have been identified as rare, threatened, or endangered in the region. Among those species are the formerly federally endangered Bald Eagle and Delmarva fox squirrel, both of which are no longer listed at either state or federal level, though the latter is still considered "critically imperiled/high state risk" by DNR.

Both the Chesapeake Forest and Pocomoke, although intensively managed for timber production historically also contain many acres of undisturbed high quality wetlands and unique natural areas. MOS endorses management and ecosystem restoration activities that will buffer and maintain these uniquely important natural areas. In light of this consideration, MOS recommends continued evaluation of aerial release and other forms of herbicide application areas.

We support the early successional wildlife habitat project on the Foster Tract (page 11) and the monitoring projects (page 12), including one for Wood Duck.

As with other state forest plans under consideration, MOS recommends creating and maintaining additional areas of pollinator habitat in forest successional areas, wildlife openings, and grasslands.

The section on Recreation Projects (page 11) calls for more trails to support bird and wildlife watching. This is an excellent step forward.

Silvicultural projects under the plan would total 1,974 acres in various-sized units, some over 100 acres.

Thank you for the opportunity to review and comment on the draft work plans.

Sincerely,

Kurt R. Schwarz
Conservation Chair
Maryland Ornithological Society
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K. SILVICULTURAL PROJECTS

SILVICULTURAL ACTIVITY OVERVIEW

Tables 2 and 3 summarize the proposed silvicultural activities for the 2020 annual work plan on approximately 1,862 acres (2.5%) of the Chesapeake Forest and 112 acres (0.6%) of Pocomoke State Forest, for a total of 1,974 acres (2.1%) on both forests.

Table 2. 2020 Chesapeake Forest Silvicultural Activity Overview. (CF-20-S-1 – CF-20-S-28)

Activity	Acres
Final Harvest	90.4
Second Final Harvest	72.1
First Thinning	1108.9
Second Thinning	418.7
Pre-Commercial Thinning	171.8
Total	1861.8

Table 3. 2020 Pocomoke State Forest Silvicultural Activity Overview. (P-20-S-1 – P-20-S-4)

Activity	Acres
Final Harvest	84.0
Pre-Commercial Thinning	28.1
Total	112.1

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

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 & FIDS 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 manufacturer's 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 show 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

DORCHESTER COUNTY

[CF-20-S-01]

Proposal Name: D09 – James – Stand 2

Harvest Area: 42.3 acres

Forest Community Types and Development: Overstocked loblolly pine planted in 1998, pre-commercially thinned in 2009

Habitats and Species of Management Concern: DFS Core

Water Resources: Marshyhope Creek watershed

Soil Resources: FaA, PmA, and PnA

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning, retain all hard mast species

[CF-20-S-02]

Proposal Name: D14 – Indiantown – Stands 30 & 31

Harvest Area: 48.9 acres

Forest Community Types and Development: Overstocked loblolly pine planted in 1996 and 1997

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

Water Resources: Chicone Creek, Nanticoke River watershed

Soil Resources: HnA, HvA, IgA, KgB, and PnA

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning, retain all hard mast species

[CF-20-S-03]

Proposal Name: D14 – Indiantown – Stand 25

Harvest Area: 15.1 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 1971, first thinned in 1996

Habitats and Species of Management Concern: DFS Core

Water Resources: Marshyhope Creek and Nanticoke River watersheds

Soil Resources: FaA, FmA, HvA, KgB, and PmA

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning, retain all hard mast species

SOMERSET COUNTY

[CF-20-S-04]

Proposal Name: S01 – Eden – Stands 1, 2 & 7

Harvest Area: 96.8 acres

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

Habitats and Species of Management Concern: DFS Core

Water Resources: Wicomico Creek watershed

Soil Resources: CRA, FgA, FhA, HvA, IgB, KgB, RwB, and RxB

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning, retain all hard mast species

[CF-20-S-05]

Proposal Name: S03 – Covington – Stand 5

Harvest Area: 40.2 acres

Forest Community Types and Development: Overstocked loblolly pine naturally regenerated in 2010, sprayed in 2012

Habitats and Species of Management Concern: General Management

Water Resources: Monie Bay watershed

Soil Resources: OKA and QuA

Historic Conditions: No known historic features

Silvicultural Prescription: Pre-commercial thinning

[CF-20-S-06]

Proposal Name: S09 – Adkins Porter – Stands 3 & 4

Harvest Area: 98.5 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 1979 and first thinned in 2001; overstocked loblolly pine naturally regenerated in 1981, first thinned in 2002, and sprayed in 2004

Habitats and Species of Management Concern: FIDS, Stream Buffer, and General Management

Water Resources: Somerset Creek, Tangs Creek, Wicomico Creek watershed

Soil Resources: CRA, FgA, FhA, HgB, HvA, MuA, OKA, and QuA

Historic Conditions: No known historic features

Silvicultural Prescription: Second thinning

[CF-20-S-07]

Proposal Name: S10 – Seed Tick Farm – Stand 5

Harvest Area: 42.9 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 1998 and sprayed in 2000

Habitats and Species of Management Concern: Stream Buffer and General Management

Water Resources: Ditch that drains into Dividing Creek, Dividing Creek watershed, Wicomico River watershed

Soil Resources: FgA, FhA, HuA, HvA, KgB, and MuA

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning

[CF-20-S-08]

Proposal Name: S11 – Peters McAllen – Stands 15

Harvest Area: 47.1 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 2010

Habitats and Species of Management Concern: FIDS and General Management

Water Resources: Manokin River watershed

Soil Resources: FgA, FhA, OKA, and QuA

Historic Conditions: No known historic features

Silvicultural Prescription: Pre-commercial thinning

[CF-20-S-09]

Proposal Name: S11 – Peters McAllen – Stands 2, 29 & 30

Harvest Area: 52.0 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established in 1997 and 1999
Habitats and Species of Management Concern: FIDS, Stream Buffer, and General Management
Water Resources: Loretta Branch, Manokin River watershed
Soil Resources: FgA, KpA, OKA, OtA, QuA, and WdA
Historic Conditions: No known historic features
Silvicultural Prescription: First thinning

[CF-20-S-10]

Proposal Name: S11 – Peters McAllen – Stand 16
Harvest Area: 47.0 acres
Forest Community Types and Development: Overstocked loblolly pine plantation established in 1985, first thinned in 2004, and sprayed in 2009
Habitats and Species of Management Concern: General Management
Water Resources: Manokin River watershed
Soil Resources: FgA, HmA, IgB, OtA, and QuA
Historic Conditions: No known historic features
Silvicultural Prescription: Second thinning

[CF-20-S-11]

Proposal Name: S16 – Howard Price – Stand 9
Harvest Area: 72.1 acres
Forest Community Types and Development: Loblolly pine overstory established in 1968, seed tree harvested in 2009
Habitats and Species of Management Concern: FIDS and General Management
Water Resources: Dividing Creek watershed
Soil Resources: CRA, HgB, HmA, HvA, and MuA
Historic Conditions: None
Silvicultural Prescription: Seed tree removal

[CF-20-S-12]

Proposal Name: S23 – Elmwood – Stand 2
Harvest Area: 17.0 acres
Forest Community Types and Development: Overstocked loblolly pine stand naturally regenerated in 1993 and sprayed in 1996
Habitats and Species of Management Concern: General Management
Water Resources: Manokin River watershed
Soil Resources: OtA, QuA, and SuA
Historic Conditions: No known historic features
Silvicultural Prescription: First thinning

[CF-20-S-13]

Proposal Name: S29 – Cottage Grove – Stands 3, 5 & 6
Harvest Area: 185.0 acres
Forest Community Types and Development: Overstocked loblolly pine plantations established in 1981, 1992, and 2000
Habitats and Species of Management Concern: DFS Core and Stream Buffer
Water Resources: Marumsc Creek, Big Annessex River and Pocomoke Sound watersheds
Soil Resources: LO, MdA, OKA, and QuA
Historic Conditions: No known historic features
Silvicultural Prescription: First thinning, retain all hard mast species

[CF-20-S-14]

Proposal Name: S29 – Cottage Grove – Stands 2 & 8

Harvest Area: 107.5 acres

Forest Community Types and Development: Loblolly pine plantation established in 1981, first thinned in 1995 and 2000

Habitats and Species of Management Concern: DFS Core and Stream Buffer

Water Resources: Marumsko Creek, Big Annamessex River and Pocomoke Sound watersheds

Soil Resources: QuA

Historic Conditions: No known historic features

Silvicultural Prescription: Second thinning, retain all hard mast species

[CF-20-S-15]

Proposal Name: S32 – Haislip Greenhill – Stand 4

Harvest Area: 27.3 acres

Forest Community Types and Development: Overstocked loblolly pine naturally regenerated in 2012

Habitats and Species of Management Concern: DFS Core

Water Resources: Manokin River watershed

Soil Resources: QuA

Historic Conditions: No known historic features

Silvicultural Prescription: Pre-commercial thinning, retain all hard mast species

WICOMICO COUNTY

[CF-20-S-16]

Proposal Name: W10 – Athol – Stands 2, 5, 15 & 25

Harvest Area: 112.3 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 1996, 1999, and 2000

Habitats and Species of Management Concern: FIDS and General Management

Water Resources: Nanticoke River watershed

Soil Resources: AsA, BhA, FaA, HnA, HvA, MuA, and WdA

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning

[CF-20-S-17]

Proposal Name: W14 – Helmick – Stand 7

Harvest Area: 46.2 acres

Forest Community Types and Development: Mature loblolly pine plantation established in 1971, first thinned and sprayed in 1999, fertilized in 2000, and second thinned in 2006

Habitats and Species of Management Concern: FIDS

Water Resources: Nanticoke River watershed

Soil Resources: CoA, FgA, and OtA

Historic Conditions: No known historic features

Silvicultural Prescription: Final harvest, natural regeneration may be supplemented with planting if suitable regeneration is not achieved per monitoring

[CF-20-S-18]

Proposal Name: W14 – Helmick – Stand 5

Harvest Area: 55.9 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established in 1986 and first thinned in 2002

Habitats and Species of Management Concern: FIDS and General Management

Water Resources: Nanticoke River watershed

Soil Resources: CoA and OtA

Historic Conditions: No known historic features

Silvicultural Prescription: Second thinning

[CF-20-S-19]

Proposal Name: W50 – Piney Grove – Stand 2

Harvest Area: 105.6 acres

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

Habitats and Species of Management Concern: FIDS and General Management

Water Resources: Nassawango Creek watershed

Soil Resources: HvA, KgB, and MuA

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning

[CF-20-S-20]

Proposal Name: W50 – Piney Grove – Stand 8

Harvest Area: 46.1 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established in 1983 and first thinned in 2002. A portion of this stand was burned in 2011.

Habitats and Species of Management Concern: ESA Zone 1, FIDS, and General Management

Water Resources: Nassawango Creek watershed

Soil Resources: EwC, HvA, KgB, MuA, RsB, and RuB

Historic Conditions: No known historic features

Silvicultural Prescription: Second thinning

WORCESTER COUNTY

[CF-20-S-21]

Proposal Name: WR02 – Littleton Fooks – Stands 15 and 16

Harvest Area: 54.4 acres

Forest Community Types and Development: Overstocked loblolly pine naturally regenerated in 2007 and 2011

Habitats and Species of Management Concern: Stream Buffer and General Management

Water Resources: Upper Pocomoke River watershed

Soil Resources: AsA, BhA, FaA, MuA, and WdA

Historic Conditions: No known historic features

Silvicultural Prescription: Pre-commercial thinning

[CF-20-S-22]

Proposal Name: WR17 – Livingston – Stands 1, 4 & 9

Harvest Area: 17.7 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established in 1970, first thinned in 1992 and 1995, sprayed in 1997 and 2000. Stand 9 was burned in 2011.

Habitats and Species of Management Concern: ESA Zone 1, Stream Buffer, and General Management

Water Resources: PDA that drains into Dividing Creek, Dividing Creek watershed

Soil Resources: EkA, EmA, FaA, KeA, KsA, 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-20-S-23]

Proposal Name: WR19 – Priscilla Pusey – Stand 1

Harvest Area: 29.6 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, ESA Zone 1 Sand Ridge, ESA Zone 3 Sawtimber, and General Management

Water Resources: Dividing Creek watershed

Soil Resources: AsA, BhA, CeB, EvB, EvD, GaB, HmA, KsA, KsB, MuA, RuA, RuB, and UzB

Historic Conditions: MHT Grid – C487_R242

Silvicultural Prescription: First thinning, retain all hard mast species

[CF-20-S-24]

Proposal Name: WR25 – Creek – Stands 1, 3, 4 & 5

Harvest Area: 252.2 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established in 1993, 1994, and 1996, sprayed in 1996, and pre-commercially thinned in 2005

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

Water Resources: Stream that drains into Dividing Creek, Dividing Creek watershed

Soil Resources: CeA, EvB, FaA, HbA, HmA, HmB, HuA, KsA, KsB, Ma, Pk, RoA, RoB, SaB, WdA, and Za

Historic Conditions: MHT Grid – C488_R255 and C490_R255

Silvicultural Prescription: First thinning, retain all hard mast species

[CF-20-S-25]

Proposal Name: WR38 – Jones – Stands 1, 4 & 6

Harvest Area: 14.3 acres

Forest Community Types and Development: Overstocked pine/hardwood naturally regenerated in 1971, and loblolly pine plantations established in 1978 and 1998

Habitats and Species of Management Concern: Stream Buffer and General Management

Water Resources: Redden Creek, Lower Pocomoke River watershed

Soil Resources: CeB, EvB, FaA, and MuA

Historic Conditions: No known historic features

Silvicultural Prescription: First thinning

[CF-20-S-26]

Proposal Name: WR38 – Jones – Stands 2 & 3

Harvest Area: 30.8 acres

Forest Community Types and Development: Overstocked loblolly pine plantations established in 1971 and 1978, and first thinned in 2003

Habitats and Species of Management Concern: Stream Buffer and General Management

Water Resources: Redden Creek, Lower Pocomoke River watershed

Soil Resources: EvB, FaA, and MuA

Historic Conditions: No known historic features

Silvicultural Prescription: Second thinning

[CF-20-S-27]

Proposal Name: WR42 – Mason – Stand 2

Harvest Area: 32.3 acres

Forest Community Types and Development: Overstocked loblolly pine naturally regenerated in 2012 and sprayed in 2013

Habitats and Species of Management Concern: General Management

Water Resources: Lower Pocomoke River watershed

Soil Resources: FaA, KeA, MtA, OtA, and WdA

Historic Conditions: No known historic features

Silvicultural Prescription: Pre-commercial thinning

[CF-20-S-28]

Proposal Name: WR45 – Foster Estate – Stand 122

Harvest Area: 86.8 acres

Forest Community Types and Development: Overstocked loblolly pine plantation established in 1997 and sprayed in 2000

Habitats and Species of Management Concern: ESA Zone1, ESA Zone 3 Pulpwood, DFS Future Core

Water Resources: Furnace Branch, Nassawango Creek watershed

Soil Resources: AsA, EvA, EvB, EvD, GaA, GaC, KsA, KsB, RuA, and RuB

Historic Conditions: MHT Grid – C499_R242, C500_R242, and C500_R243

Silvicultural Prescription: Final harvest in ESA Zone 3 Pulpwood areas, retain hard mast species and pond and shortleaf pines if found (44.2 acres). Natural regeneration may be supplemented with planting of appropriate species if suitable regeneration is not achieved per monitoring. First thinning in all other parts of the stand (42.7 acres).

POCOMOKE STATE FOREST

[P-20-S-01]

Proposal Name: P02 – Nazareth Church – Tract 5 – Stands 16 & 23

Harvest Area: 48.2 acres

Forest Community Types and Development: Mature pine/hardwood naturally regenerated in 1921 and 1924

Habitats and Species of Management Concern: DFS Future Core

Water Resources: Dividing Creek watershed

Soil Resources: AsA, BhA, CeB, HuA, KsA, LO, MuA, RuA, and WdA

Historic Conditions: No known historic features

Silvicultural Prescription: Final harvest, retain significant hard mast species, pond pine, and shortleaf pine

[P-20-S-02]

Proposal Name: P02 – Nazareth Church – Tract 5 – Stand 25

Harvest Area: 35.8 acres

Forest Community Types and Development: Mature loblolly pine naturally regenerated in 1919

Habitats and Species of Management Concern: DFS Future Core

Water Resources: Pusey Branch, Dividing Creek watershed

Soil Resources: AsA, CeB, KsA, KsB, Ma, MuA, and RuB

Historic Conditions: No known historic features

Silvicultural Prescription: Final harvest, retain significant hard mast species, pond pine, and shortleaf pine

[P-20-S-03]

Proposal Name: P02 – Nazareth Church – Tract 6 – Stand 7

Harvest Area: 10.2 acres

Forest Community Types and Development: Overstocked pine/hardwood naturally regenerated in 2008

Habitats and Species of Management Concern: DFS Future Core

Water Resources: Dividing Creek watershed

Soil Resources: AsA, BhA, CeA, HuA, and MuA

Historic Conditions: No known historic features

Silvicultural Prescription: Pre-commercial thinning

[P-20-S-04]

Proposal Name: P02 – Nazareth Church – Tract 7 – Stand 18

Harvest Area: 17.9 acres

Forest Community Types and Development: Overstocked loblolly pine naturally regenerated in 2010

Habitats and Species of Management Concern: Stream Buffer and DFS Future Core

Water Resources: Stream that drains into Pusey Branch, Dividing Creek watershed

Soil Resources: AsA, BhA, KsB, and MuA

Historic Conditions: No known historic features

Silvicultural Prescription: Pre-commercial thinning



CF-20-S-01

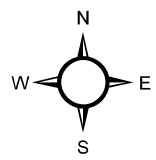
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Date: 01/2019

Legend

- CF AWP Activity**
-  2020 First Thinning
- CF Management**
-  DFS Core



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This map is not a boundary survey





Legend

CF AWP Activity

2020 First Thinning

CF Management

DFS Core

ESA Zone 1

ESA Zone 2



ESA Zone 3 PW



Stream Buffer 50'



Stream Buffer 300'

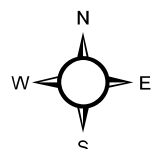
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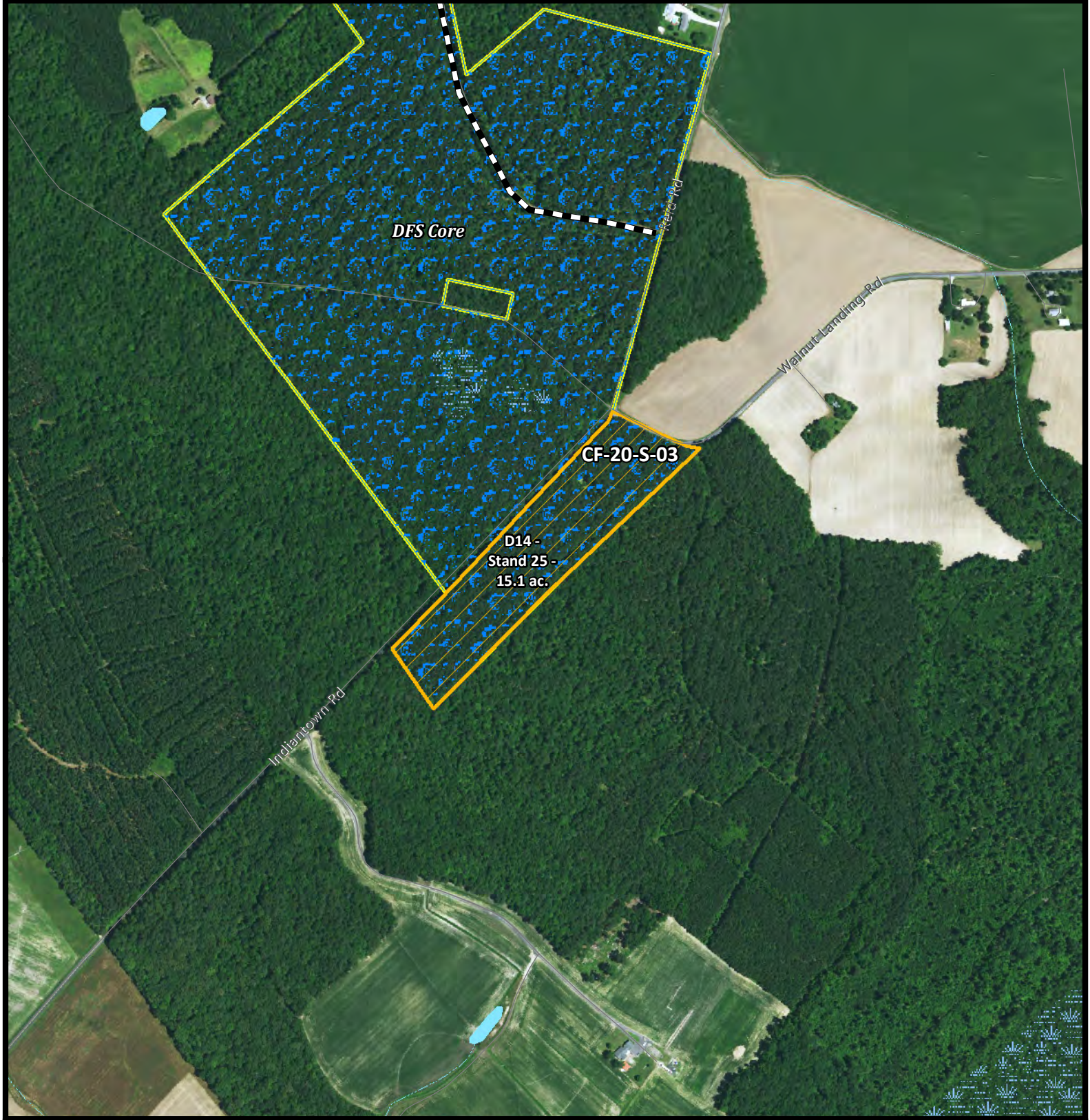
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CF-20-S-03

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Date: 01/2019

Legend

CF AWP Activity

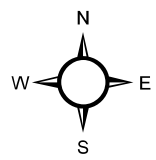
 2020 Second Thinning

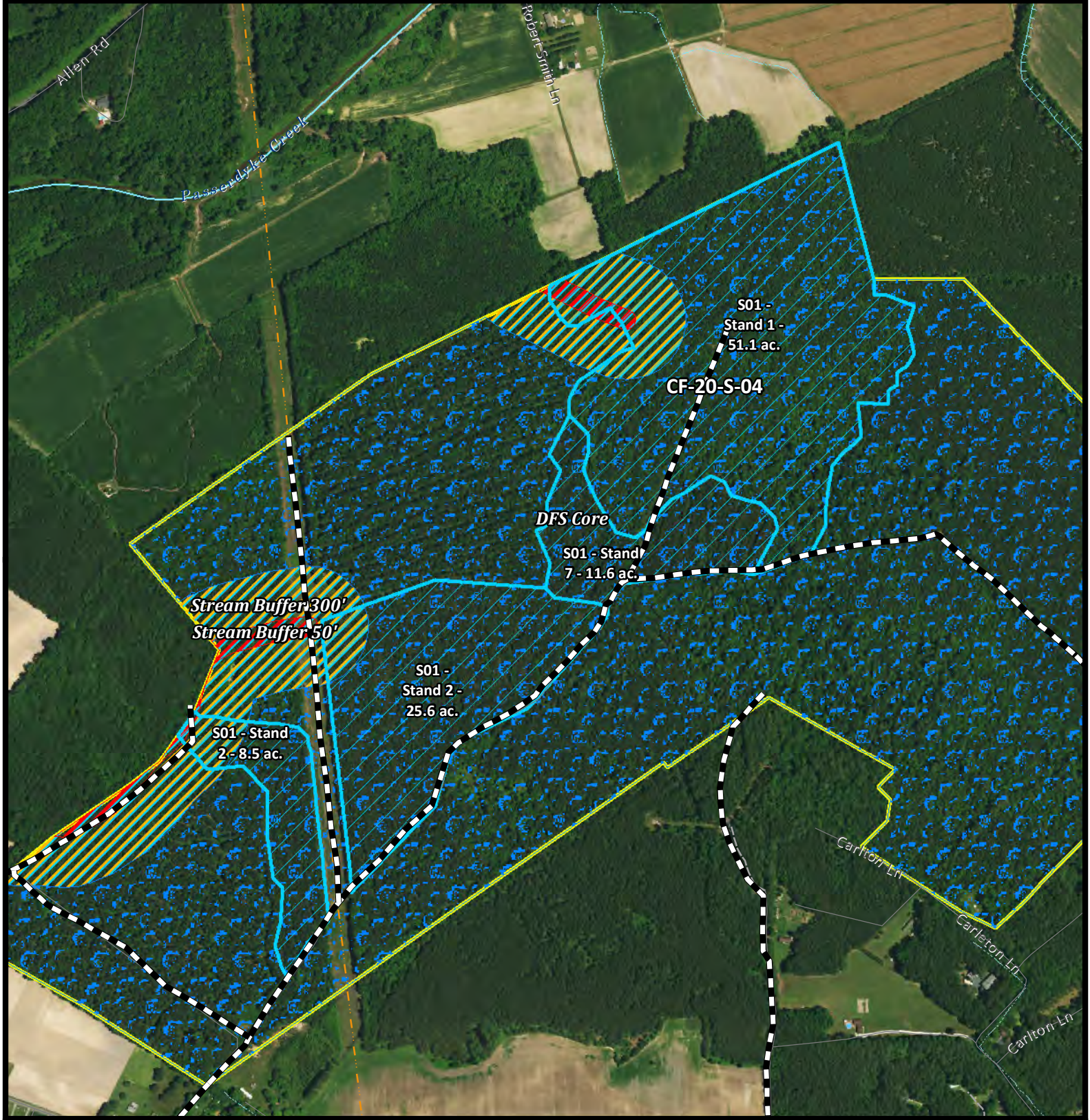
CF Management

 DFS Core



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CF-20-S-04

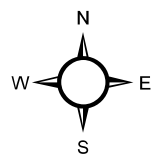
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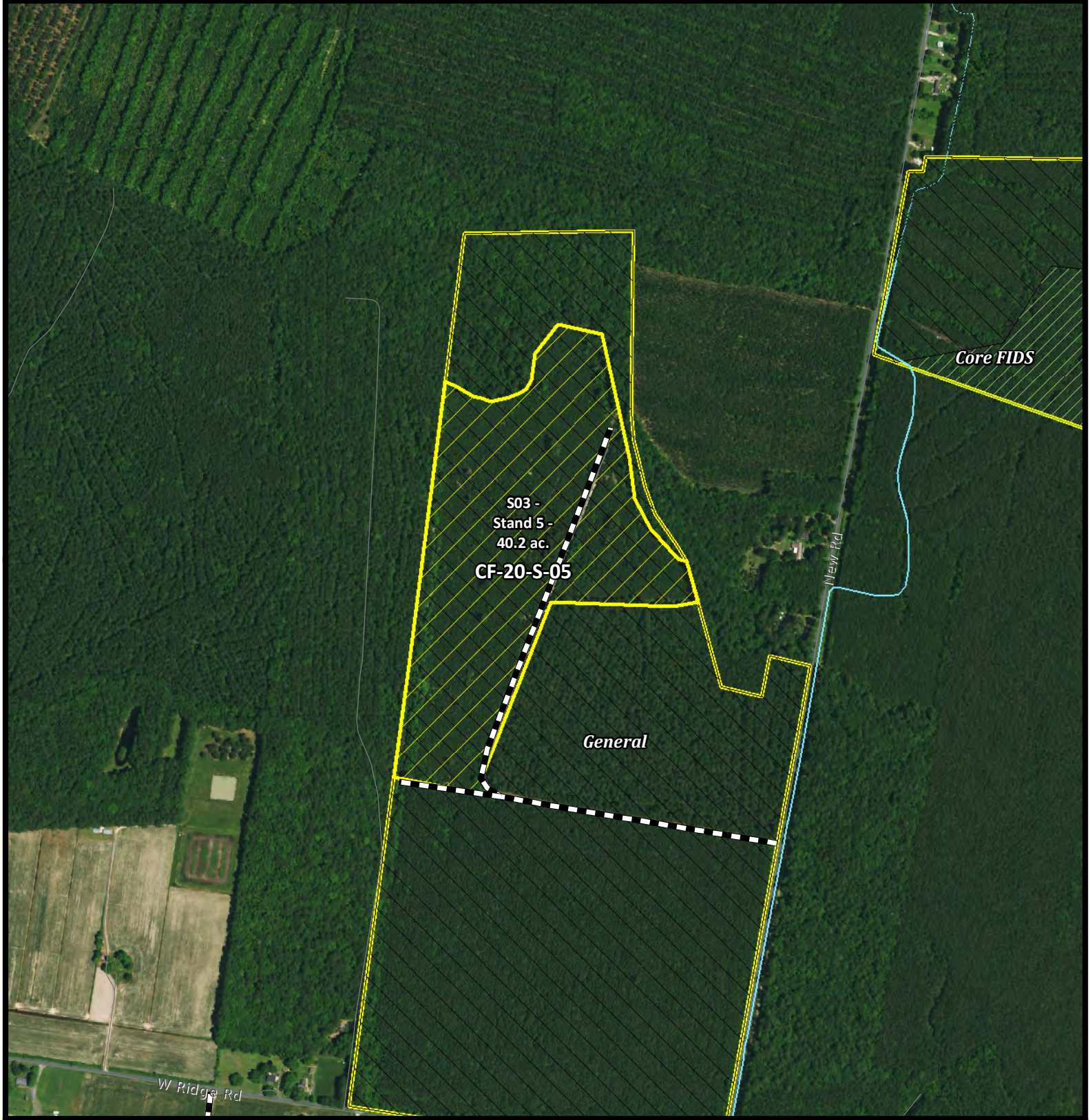
Legend

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|--|--|--|
| CF AWP Activity | CF Management |  Stream Buffer 50' |
|  2020 First Thinning |  DFS Core |  Stream Buffer 300' |



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CF-20-S-05

Scale: 1:7,920
Date: 01/2019

Legend

CF AWP Activity

 2020 Pre-Commercial Thinning

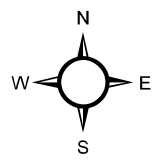
CF Management

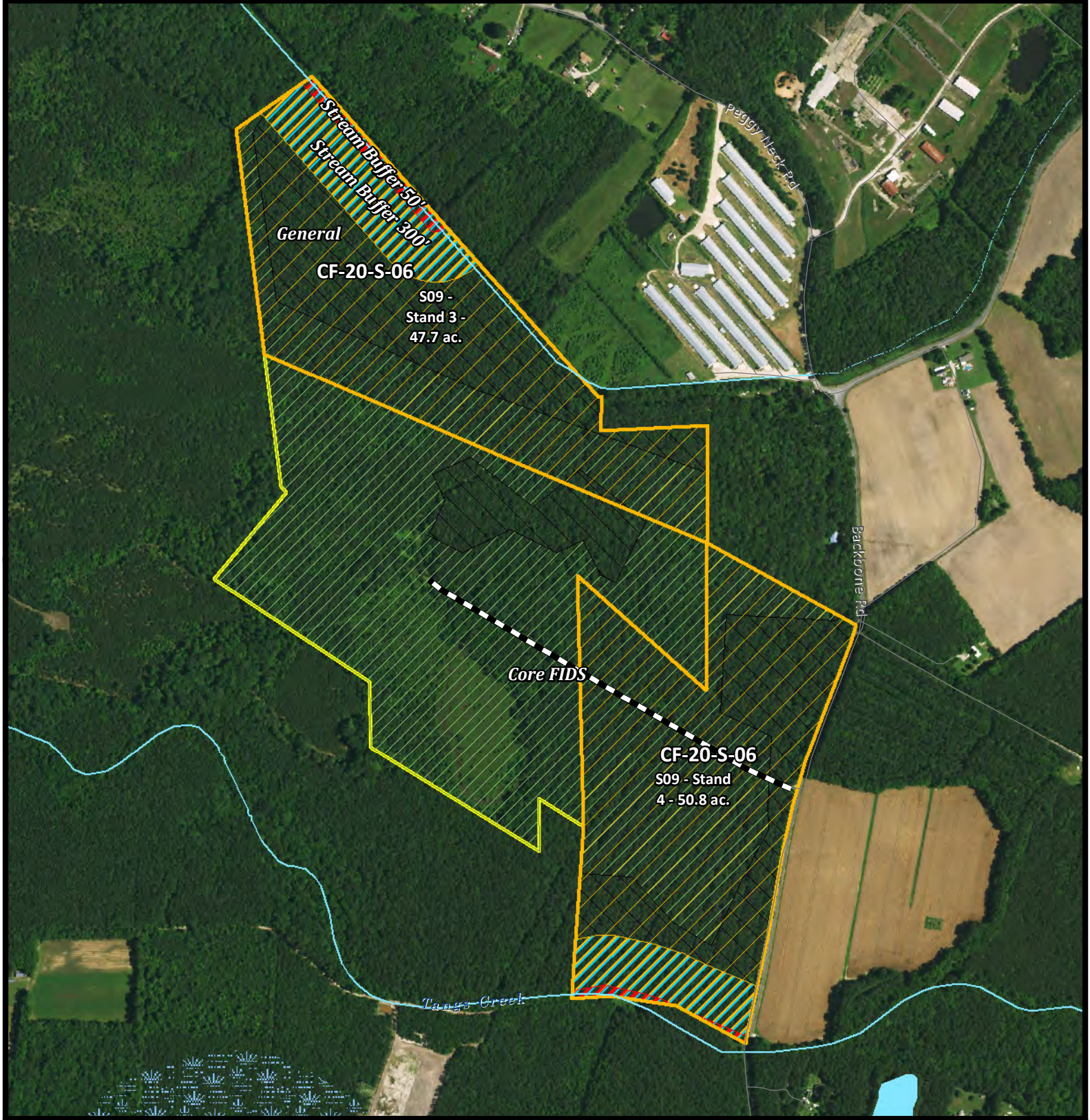
 Core FIDS

 General



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CF-20-S-06

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Date: 01/2019

Legend

CF AWP Activity

2020 Second Thinning

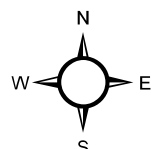
CF Management

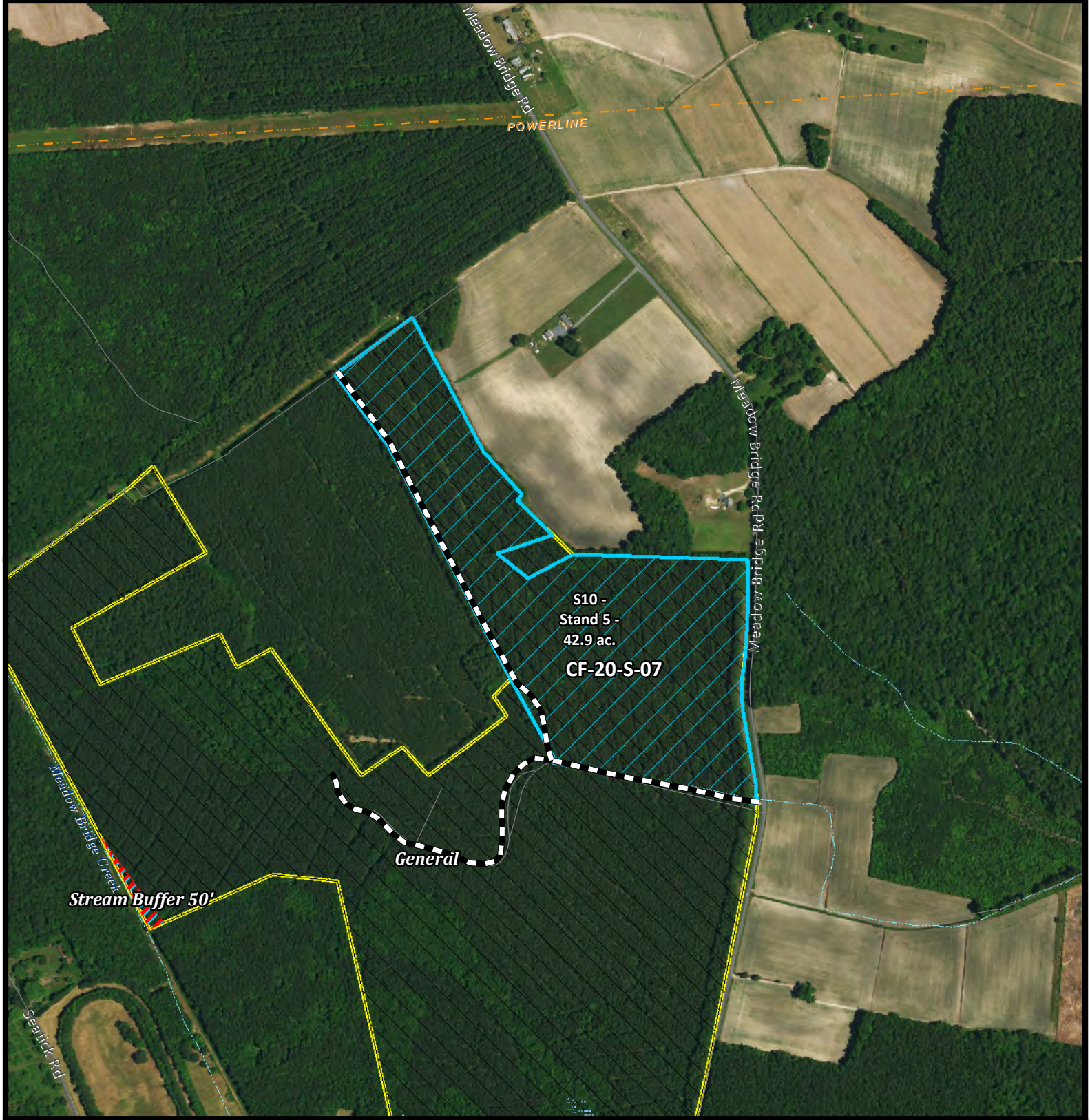
Core FIDS
 General

Stream Buffer 50'
 Stream Buffer 300'



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CF-20-S-07


Scale: 1:7,920
Date: 01/2019


Legend

CF AWP Activity

 2020 First Thinning

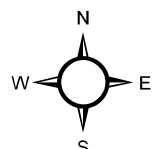
CF Management

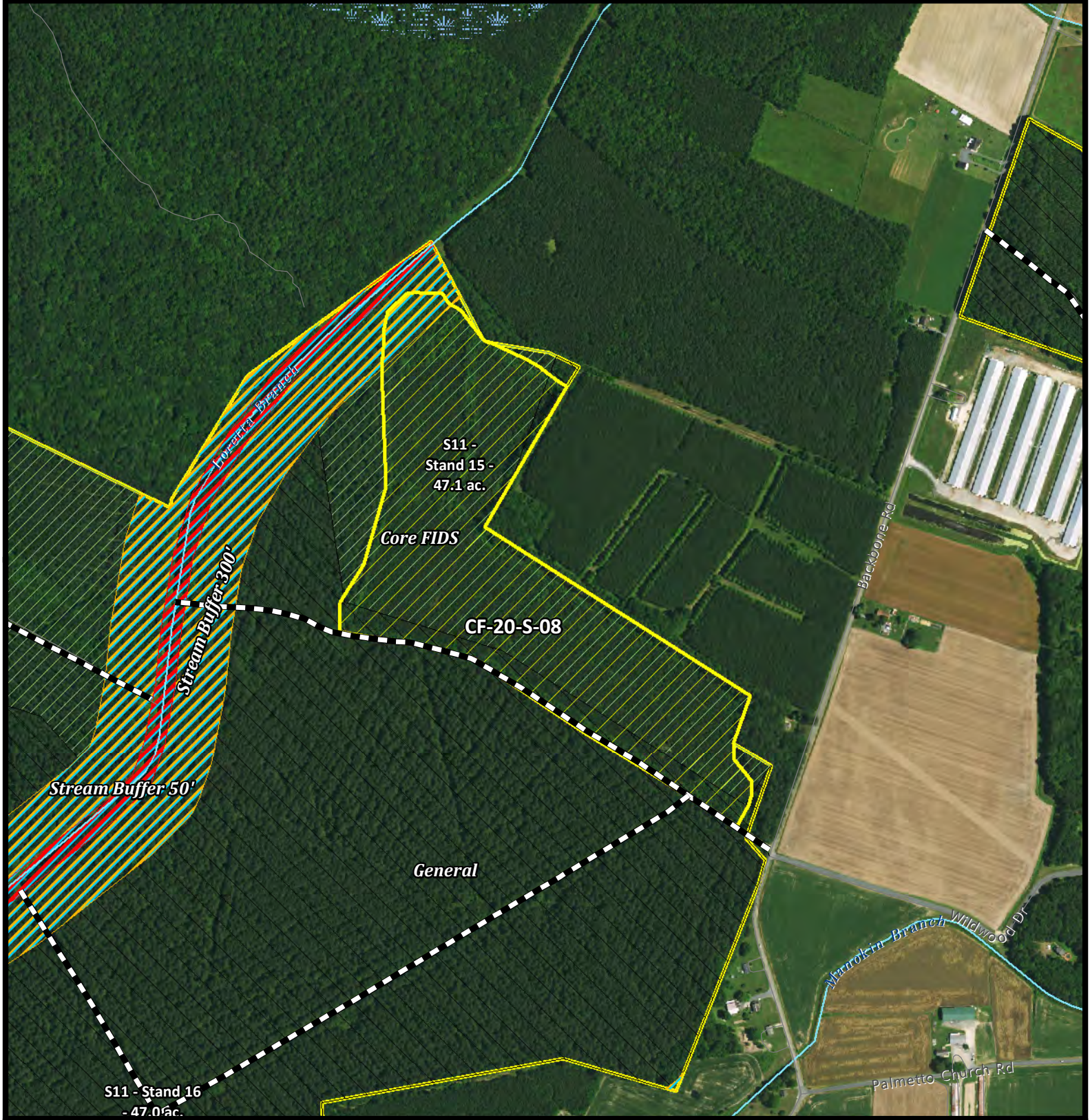
 General

 Stream Buffer 50'









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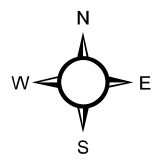
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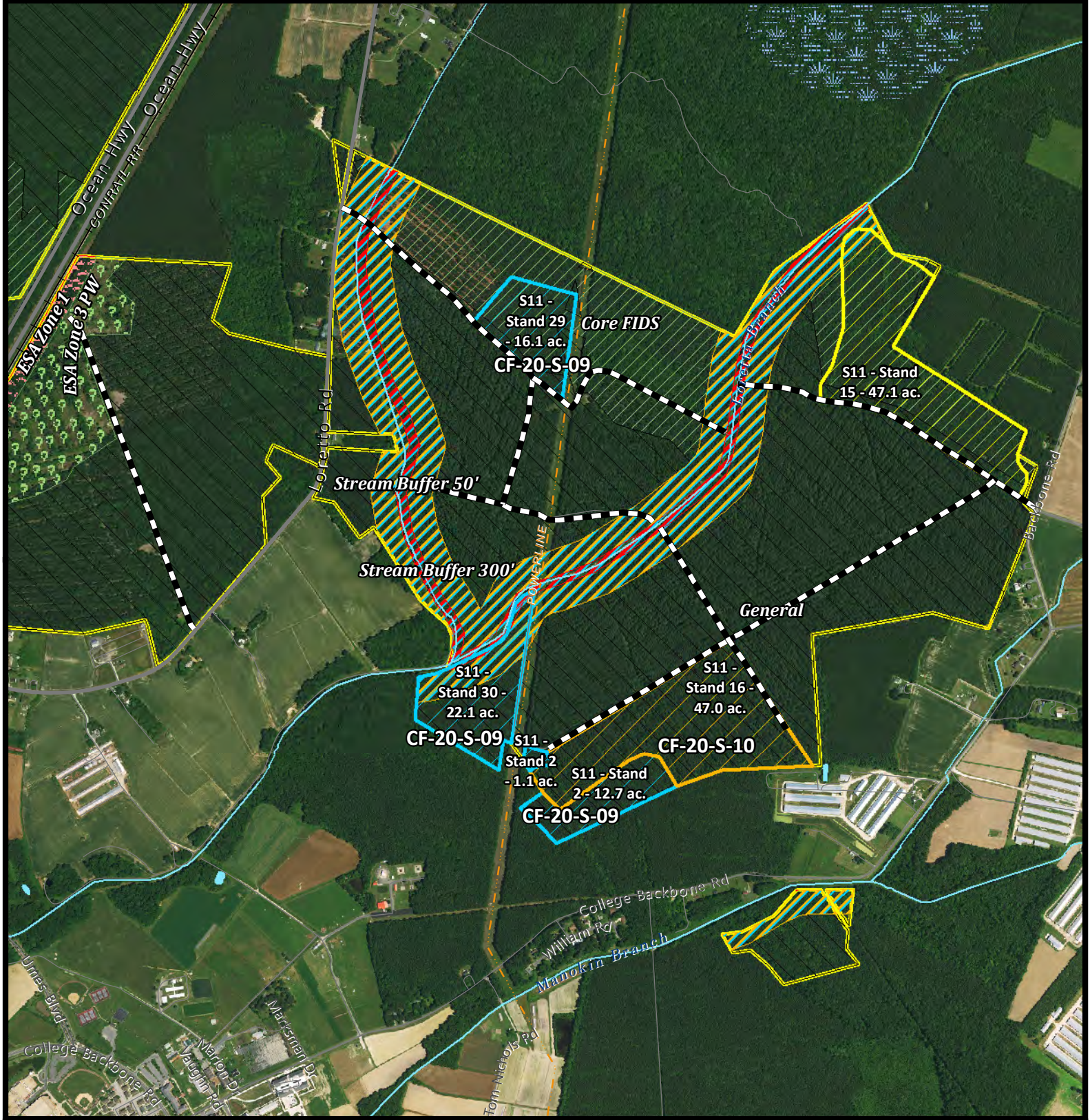
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- | | | | |
|--|------------------------------|---|--------------------|
| CF AWP Activity | | CF Management | |
|  | 2020 Pre-Commercial Thinning |  | Core FIDS |
|  | 2020 Second Thinning |  | General |
| | |  | Stream Buffer 50' |
| | |  | Stream Buffer 300' |



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Legend

CF AWP Activity

- 2020 Pre-Commercial Thinning
- 2020 First Thinning
- 2020 Second Thinning

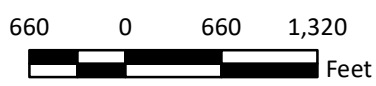
CF Management

- Core FIDS
- ESA Zone 1
- ESA Zone 3 PW

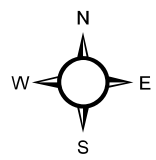
- General
- Stream Buffer 50'
- Stream Buffer 300'

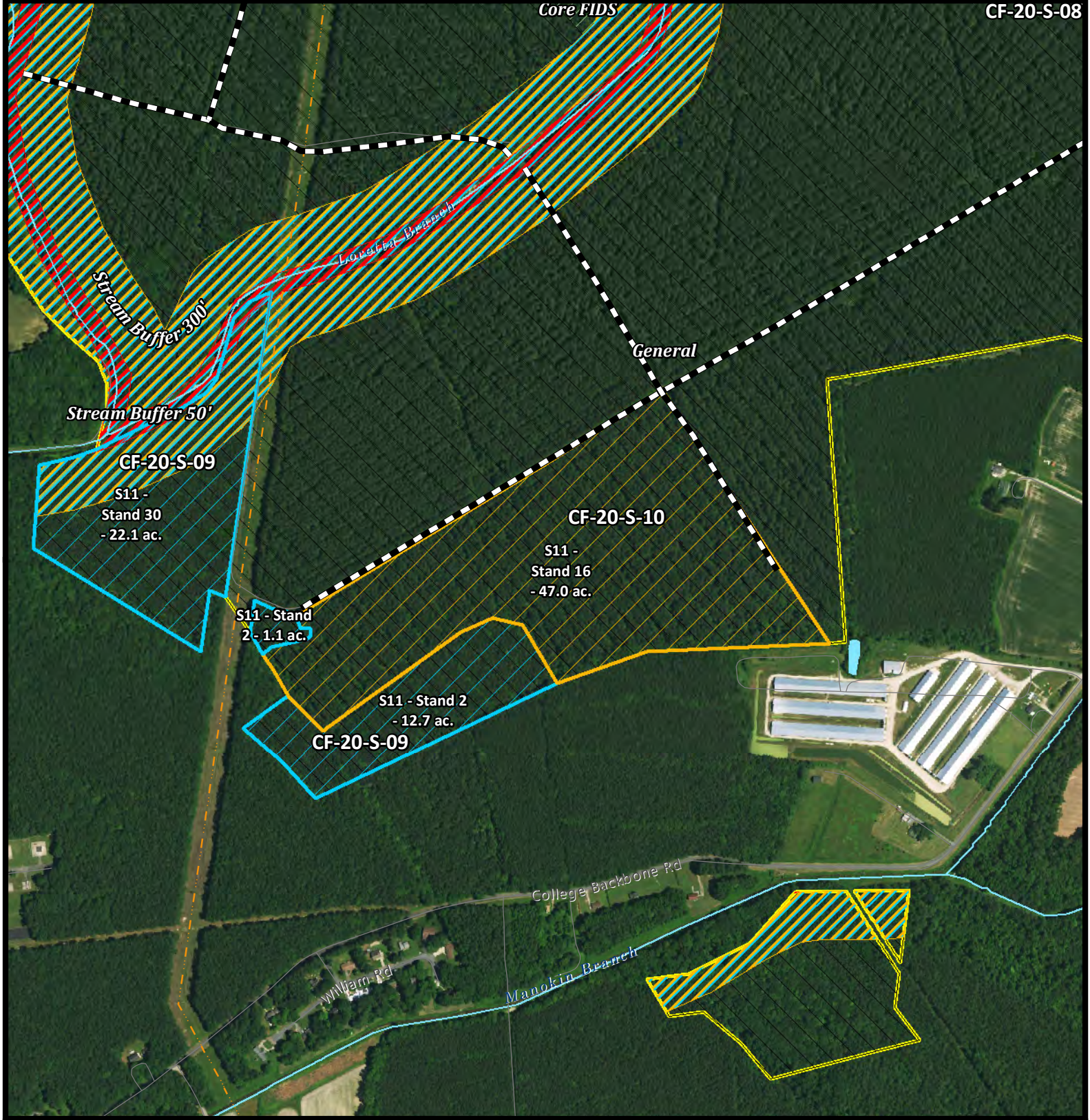
CF-20-S-09

Scale: 1:15,840
Date: 01/2019






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Legend

CF AWP Activity

-  2020 Pre-Commercial Thinning
-  2020 First Thinning
-  2020 Second Thinning

CF Management

-  Core FIDS
-  General

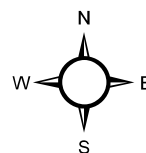
-  Stream Buffer 50'
-  Stream Buffer 300'

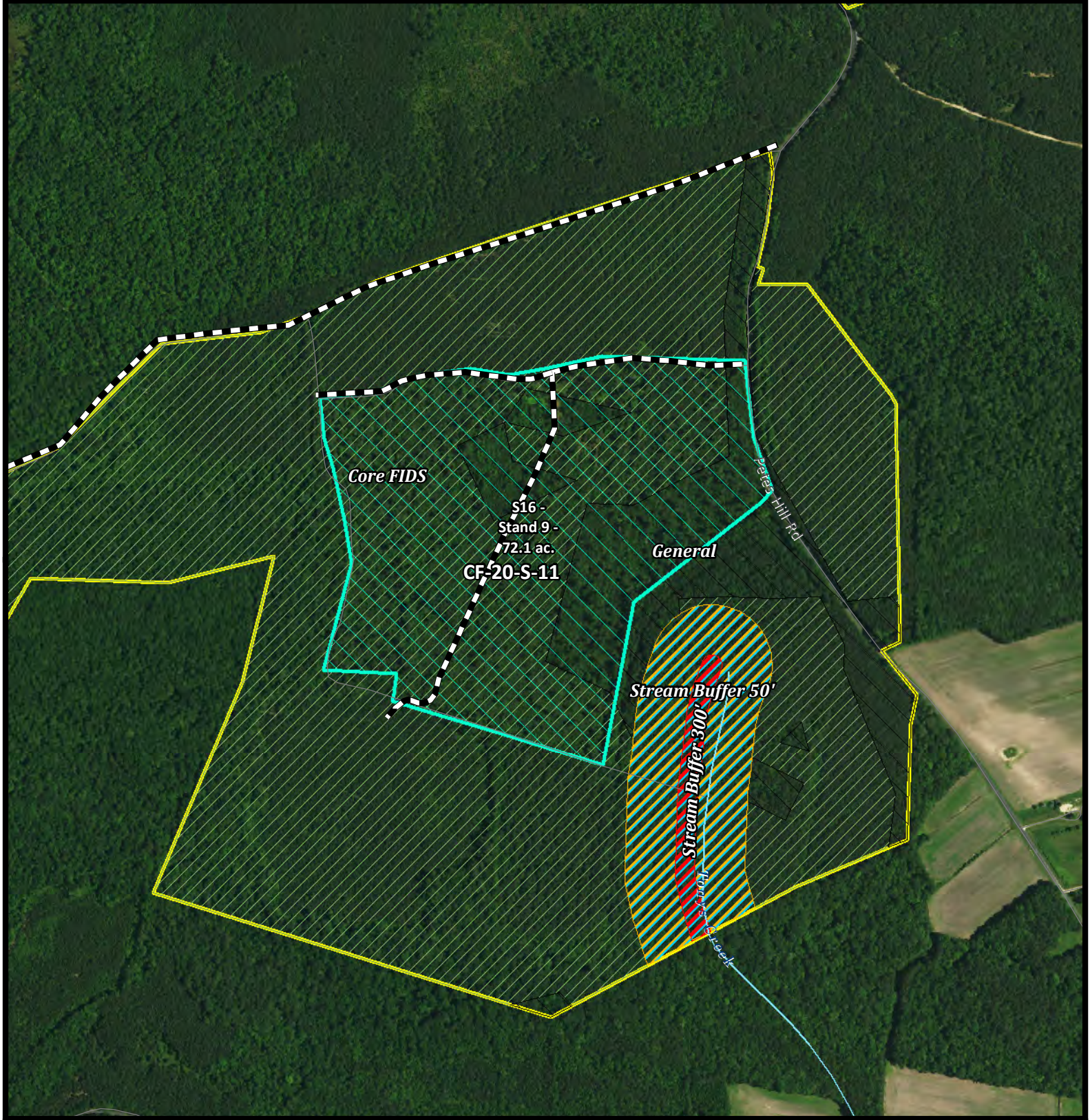
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Scale: 1:7,920
Date: 01/2019



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CF-20-S-11

Scale: 1:7,920
Date: 01/2019

Legend

CF AWP Activity

2020 Second Final Harvest

CF Management

Core FIDS

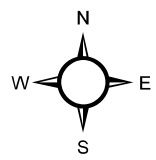
General

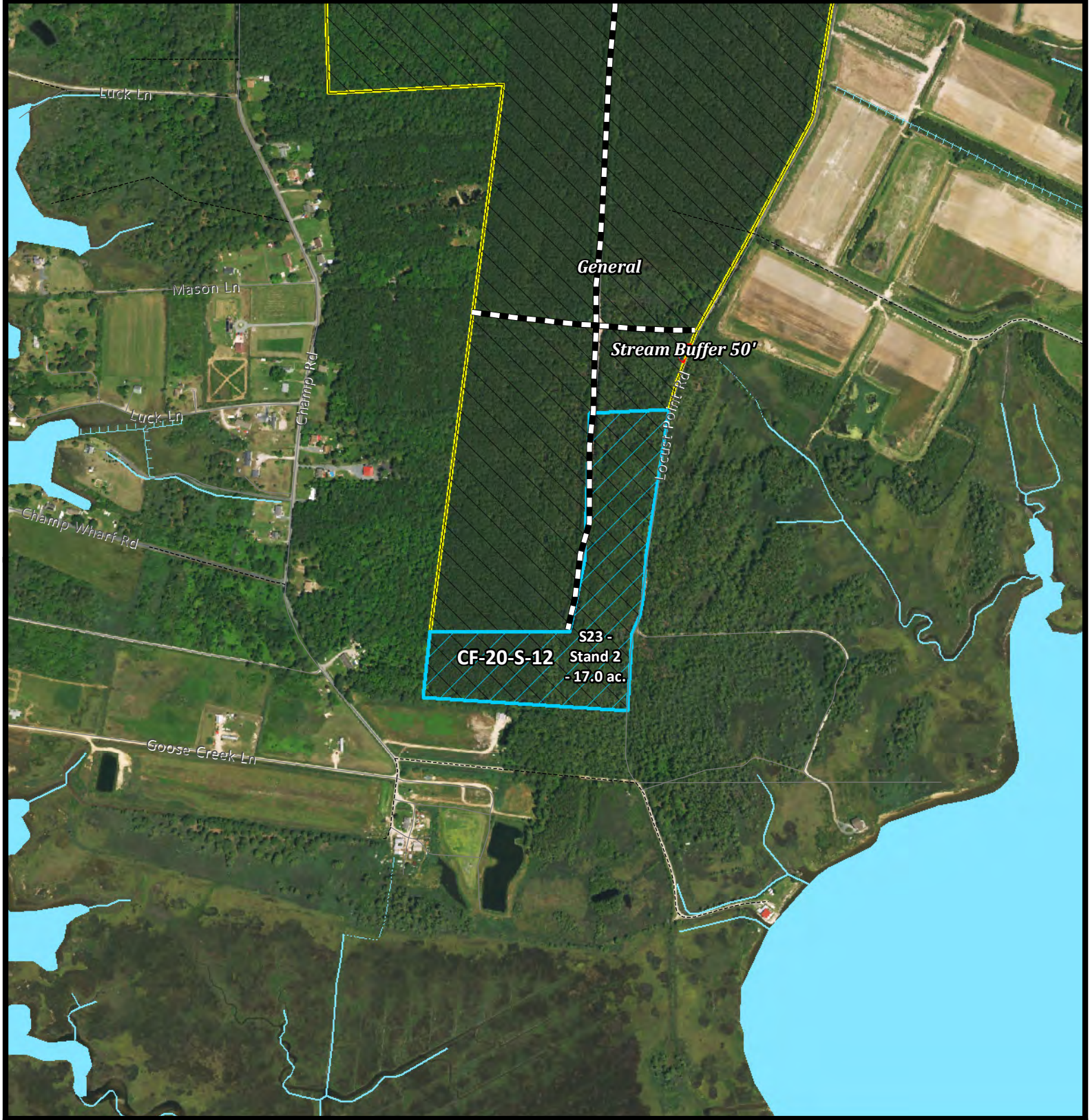
Stream Buffer 50'

Stream Buffer 300'



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CF-20-S-12

Scale: 1:7,920
Date: 01/2019

Legend

CF AWP Activity

2020 First Thinning

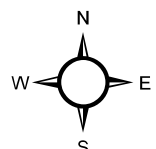
CF Management

General

Stream Buffer 50'



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CF-20-S-13

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Date: 01/2019

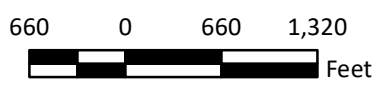
Legend

CF AWP Activity

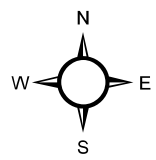
- 2020 First Thinning
- 2020 Second Thinning

CF Management

- DFS Core
- Stream Buffer 50'
- Stream Buffer 300'



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CF-20-S-14

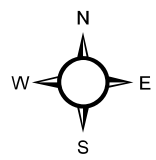
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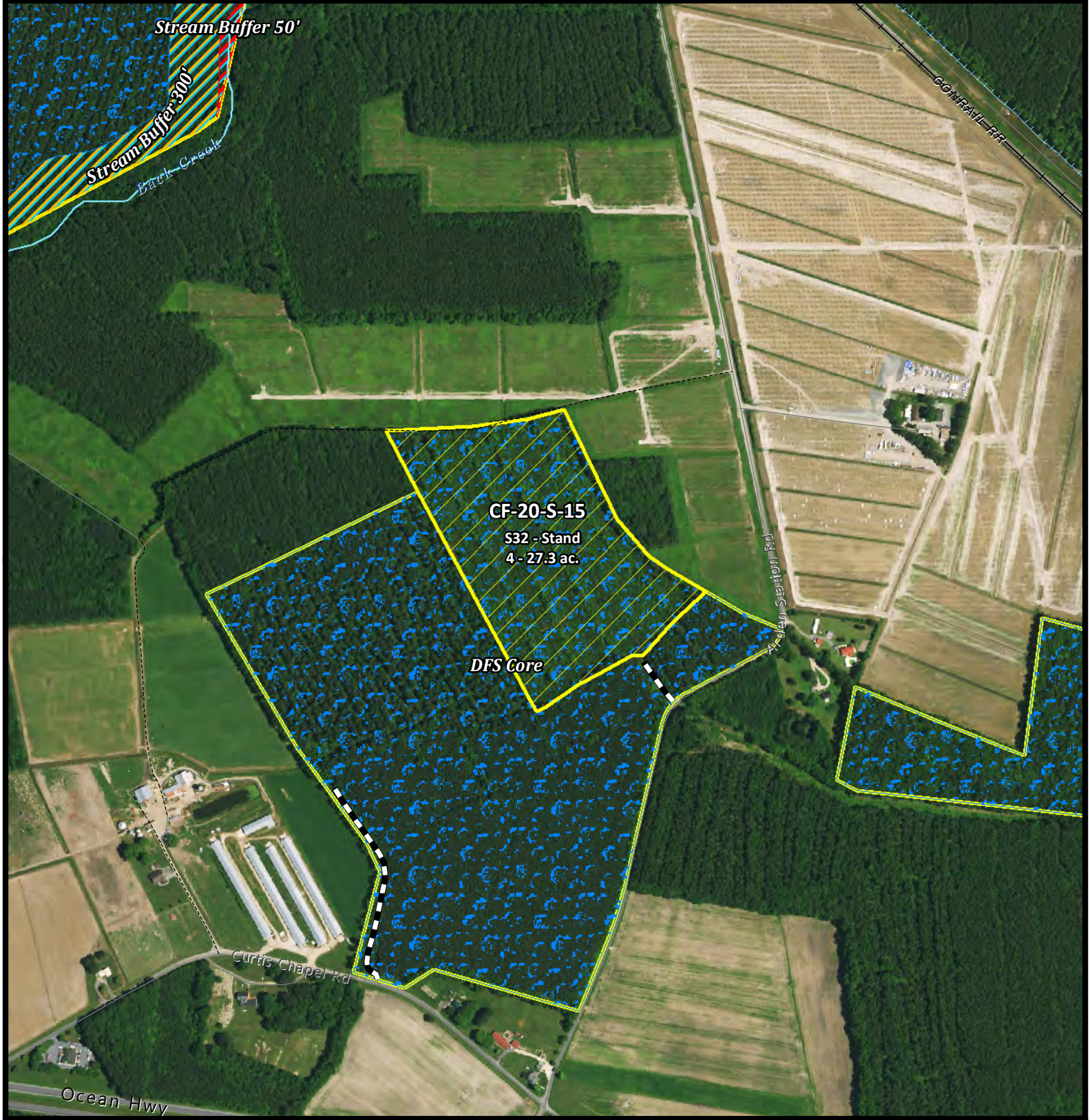
Legend

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|------------------------|----------------------|--------------------|
| CF AWP Activity | CF Management | Stream Buffer 50' |
| 2020 First Thinning | DFS Core | Stream Buffer 300' |
| 2020 Second Thinning | | |



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CF-20-S-15

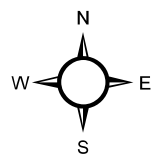
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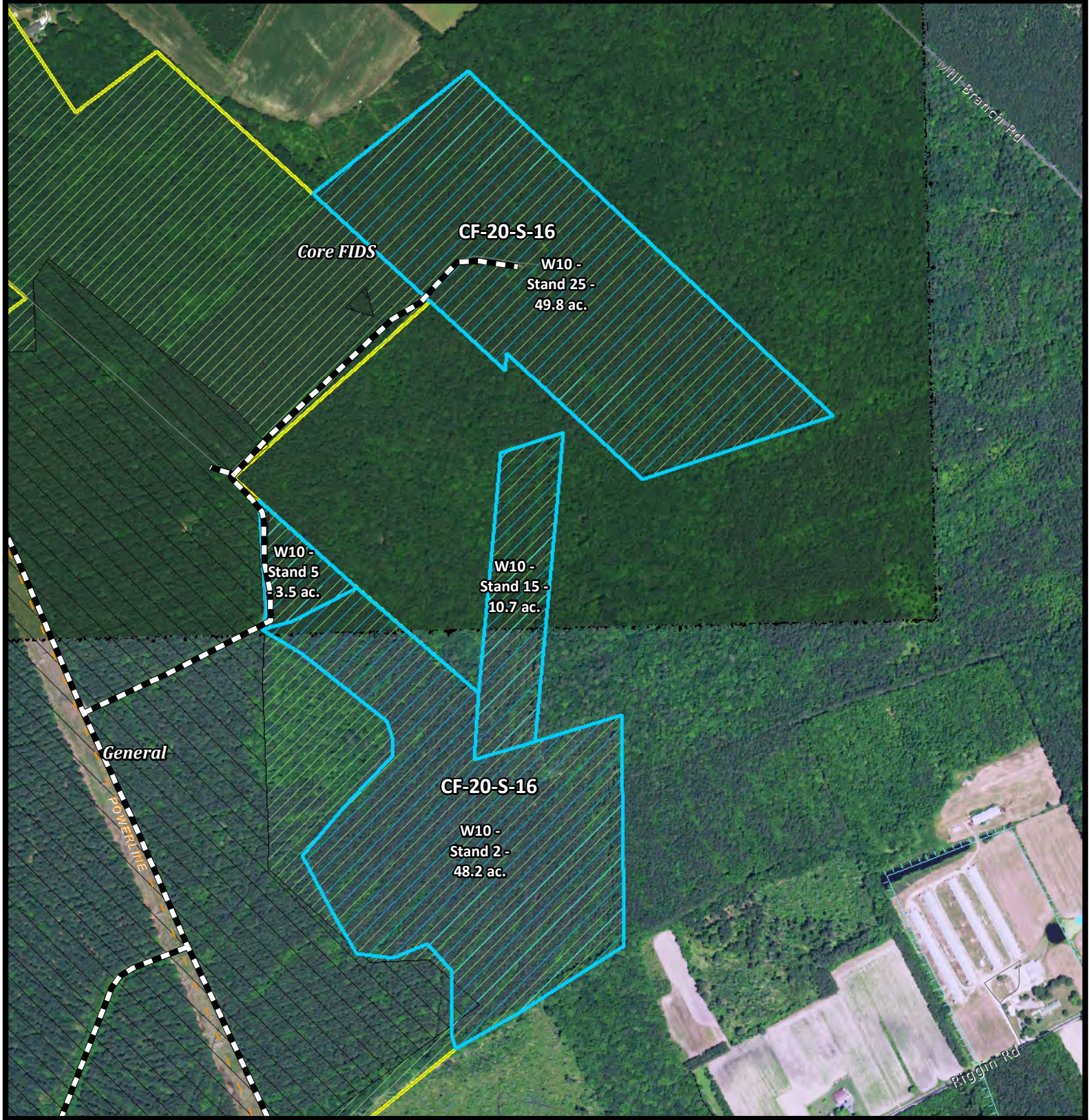
Legend

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|---|--|--|
| CF AWP Activity | CF Management |  Stream Buffer 50' |
|  2020 Pre-Commercial Thinning |  DFS Core |  Stream Buffer 300' |



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CF-20-S-16

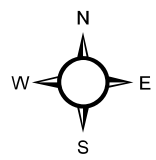
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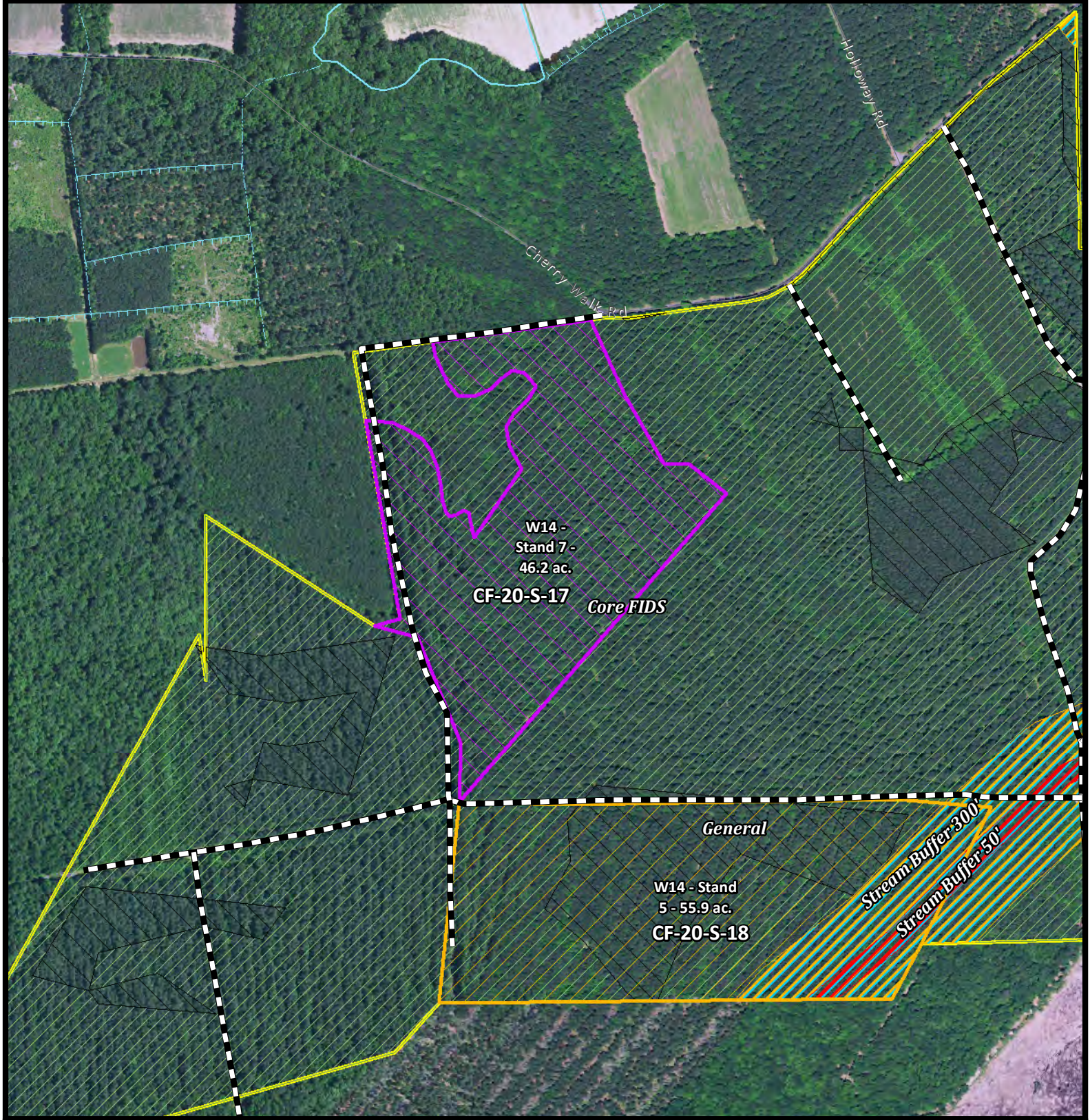
Legend

- | | | |
|--|---|---|
| CF AWP Activity | CF Management |  General |
|  2020 First Thinning |  Core FIDS | |





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Legend

CF AWP Activity

-  2020 Second Thinning
-  2020 Final Harvest

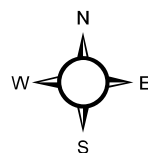
CF Management

-  Core FIDS
-  General

-  Stream Buffer 50'
-  Stream Buffer 300'



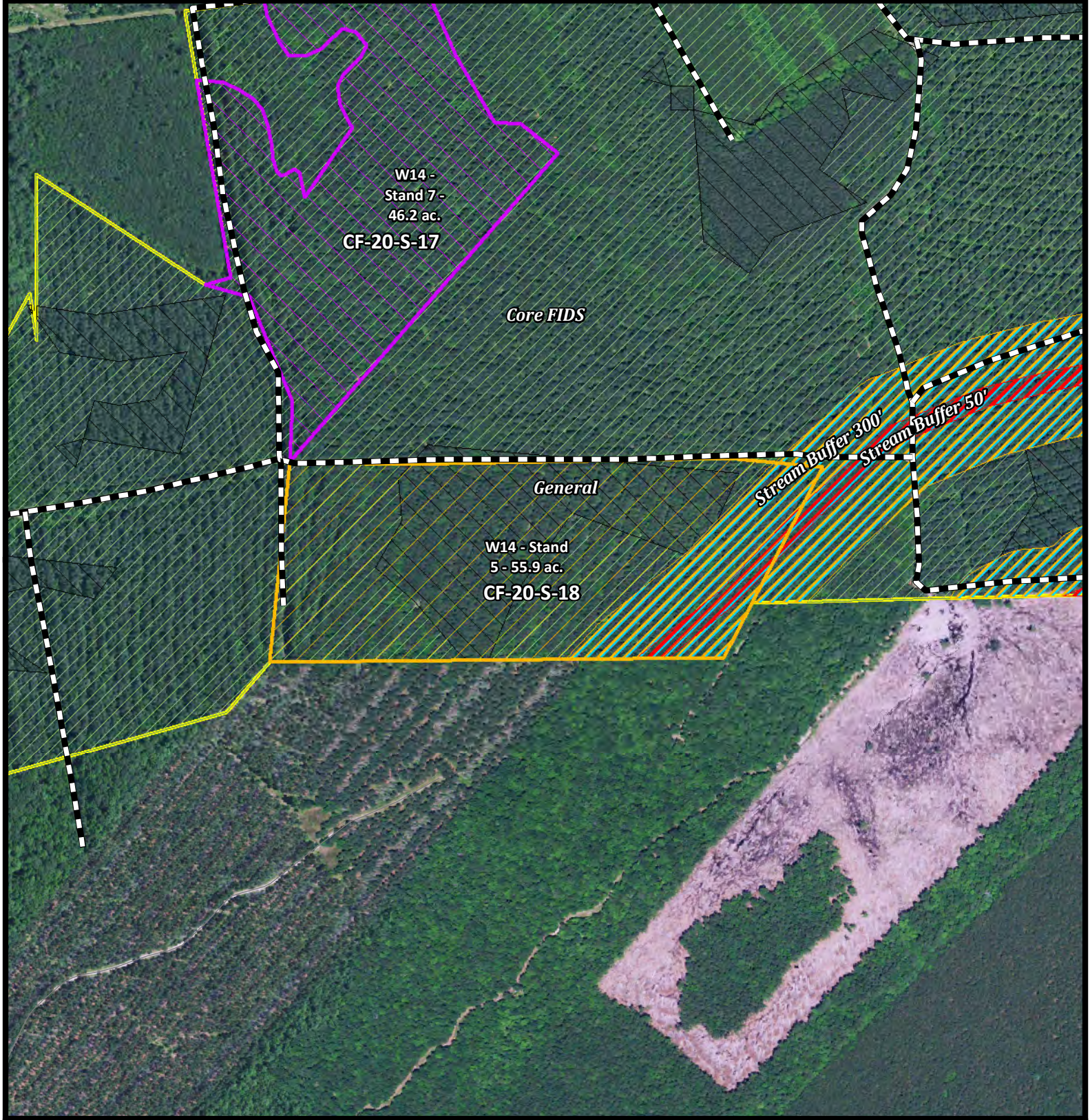
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CF-20-S-17



Scale: 1:7,920
Date: 01/2019







Legend

CF AWP Activity

-  2020 Second Thinning
-  2020 Final Harvest

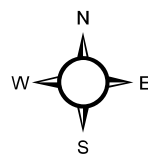
CF Management

-  Core FIDS
-  General

-  Stream Buffer 50'
-  Stream Buffer 300'



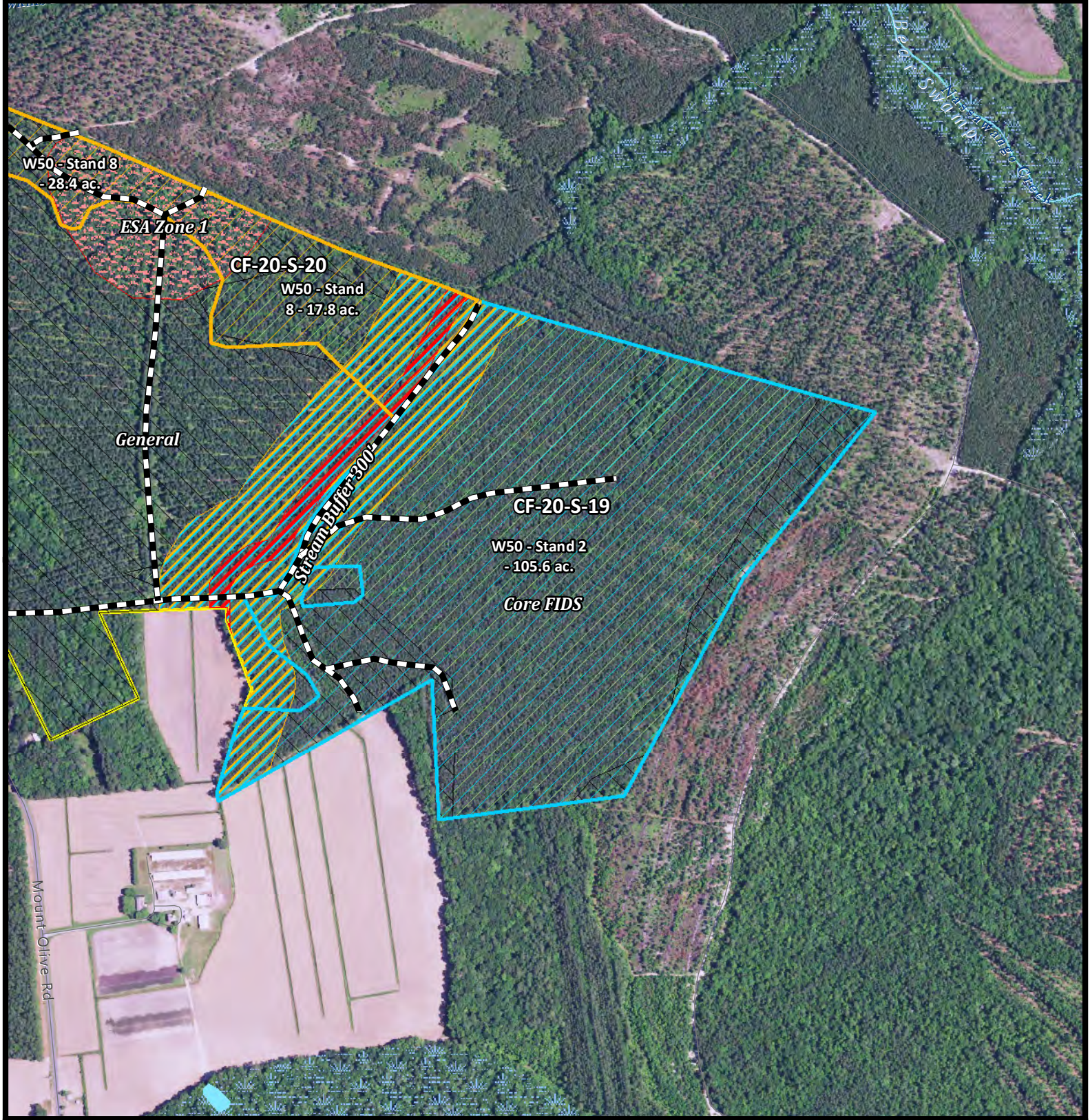
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Date: 01/2019







CF-20-S-19

Scale: 1:7,920
Date: 01/2019

Legend

CF AWP Activity

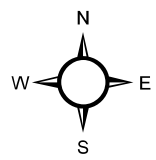
-  2020 First Thinning
-  2020 Second Thinning

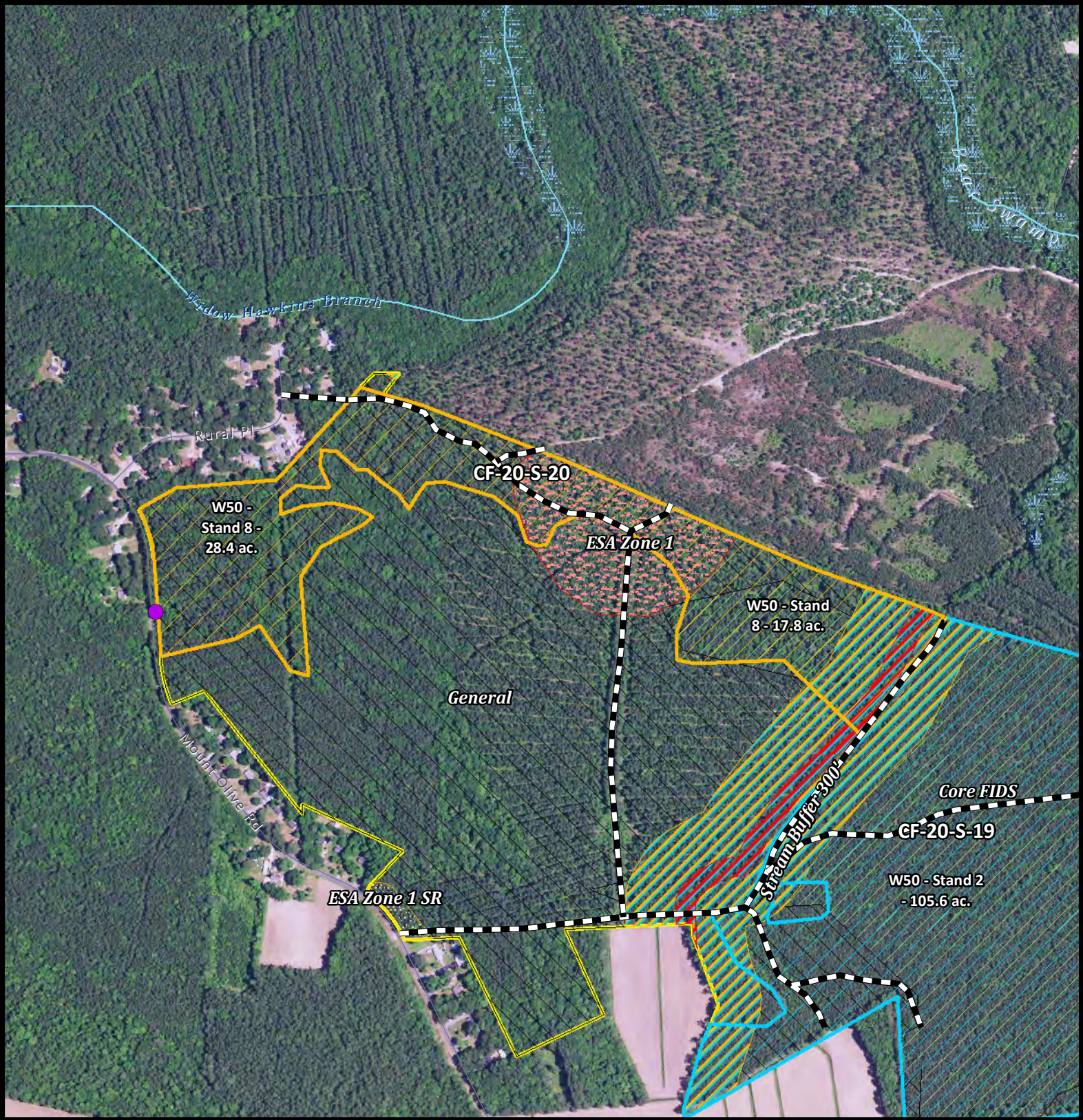
CF Management

-  Core FIDS
-  ESA Zone 1
-  General
-  Stream Buffer 50'
-  Stream Buffer 300'



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Legend

CF AWP Activity

- 2020 First Thinning
- 2020 Second Thinning

CF Management

- Core FIDS
- ESA Zone 1
- ESA Zone 1 SR
- Home Sites

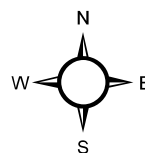
- General
- Stream Buffer 50'
- Stream Buffer 300'

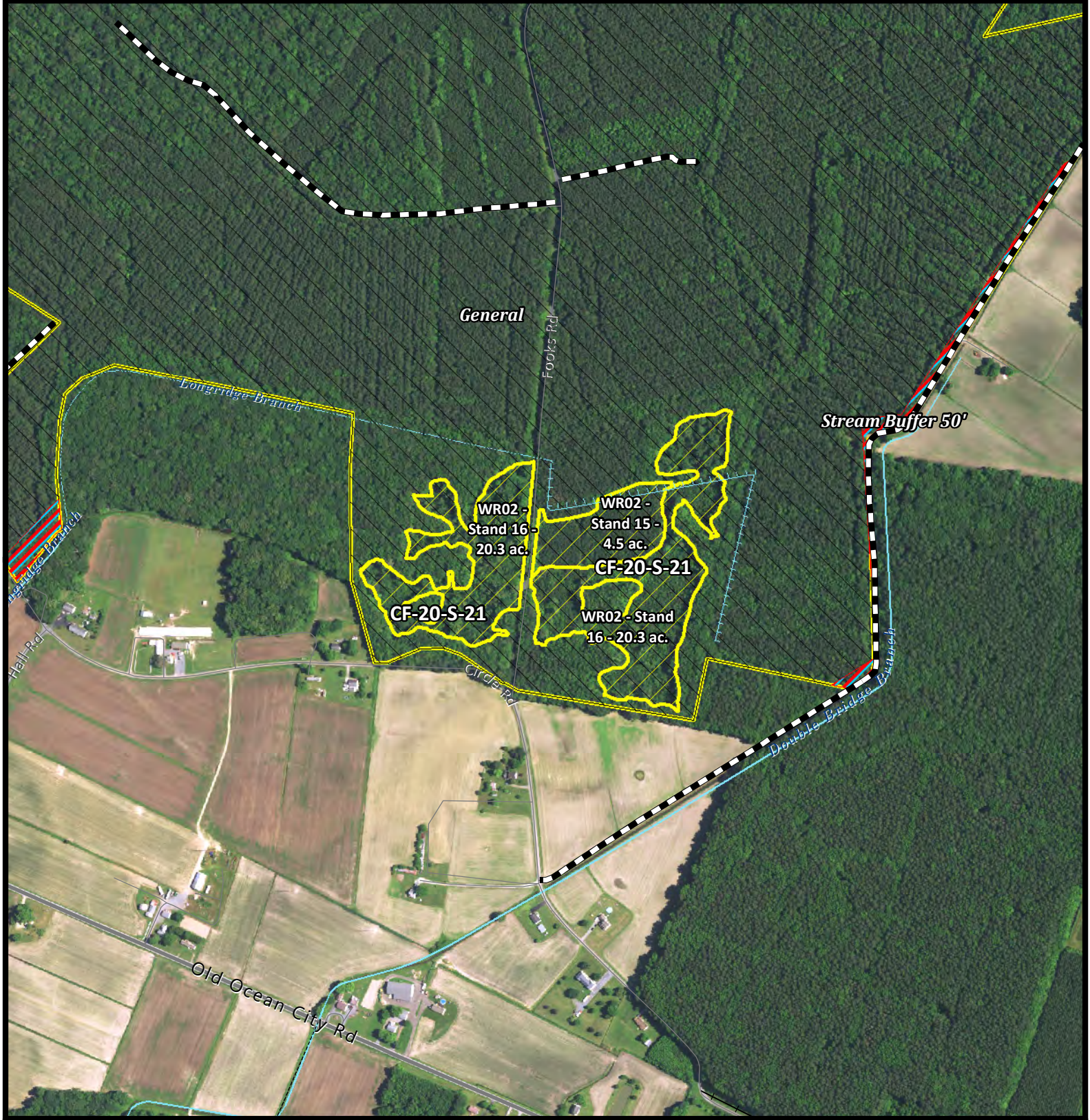
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Scale: 1:7,920
Date: 01/2019



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CF-20-S-21


Scale: 1:7,920
Date: 01/2019


Legend

CF AWP Activity

 2020 Pre-Commercial Thinning

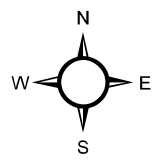
CF Management

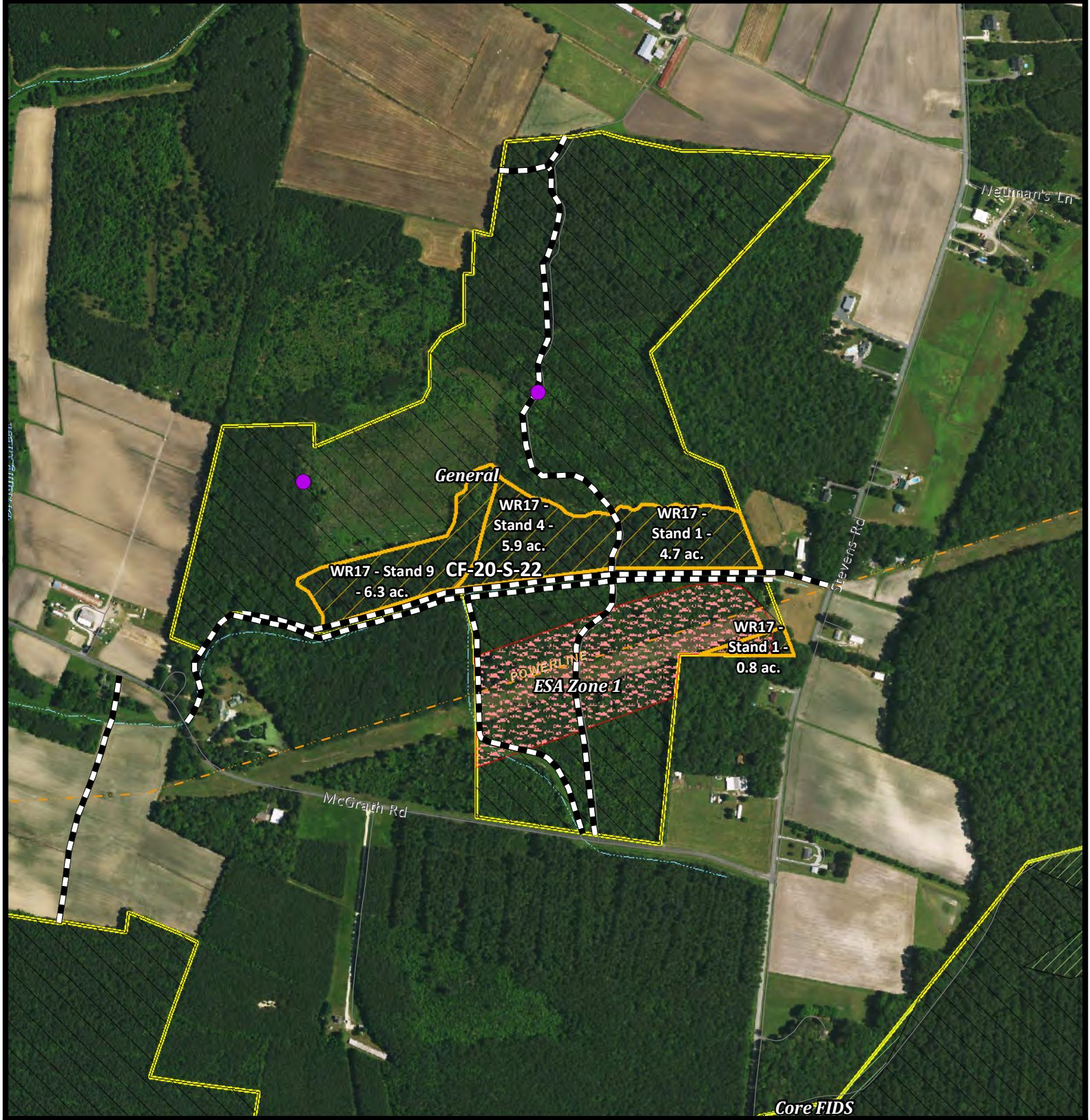
 General

 Stream Buffer 50'



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CF-20-S-22

Scale: 1:7,920
Date: 01/2019

Legend

CF AWP Activity

2020 Second Thinning

CF Management

Core FIDS

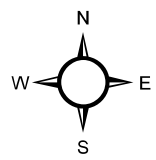
ESA Zone 1

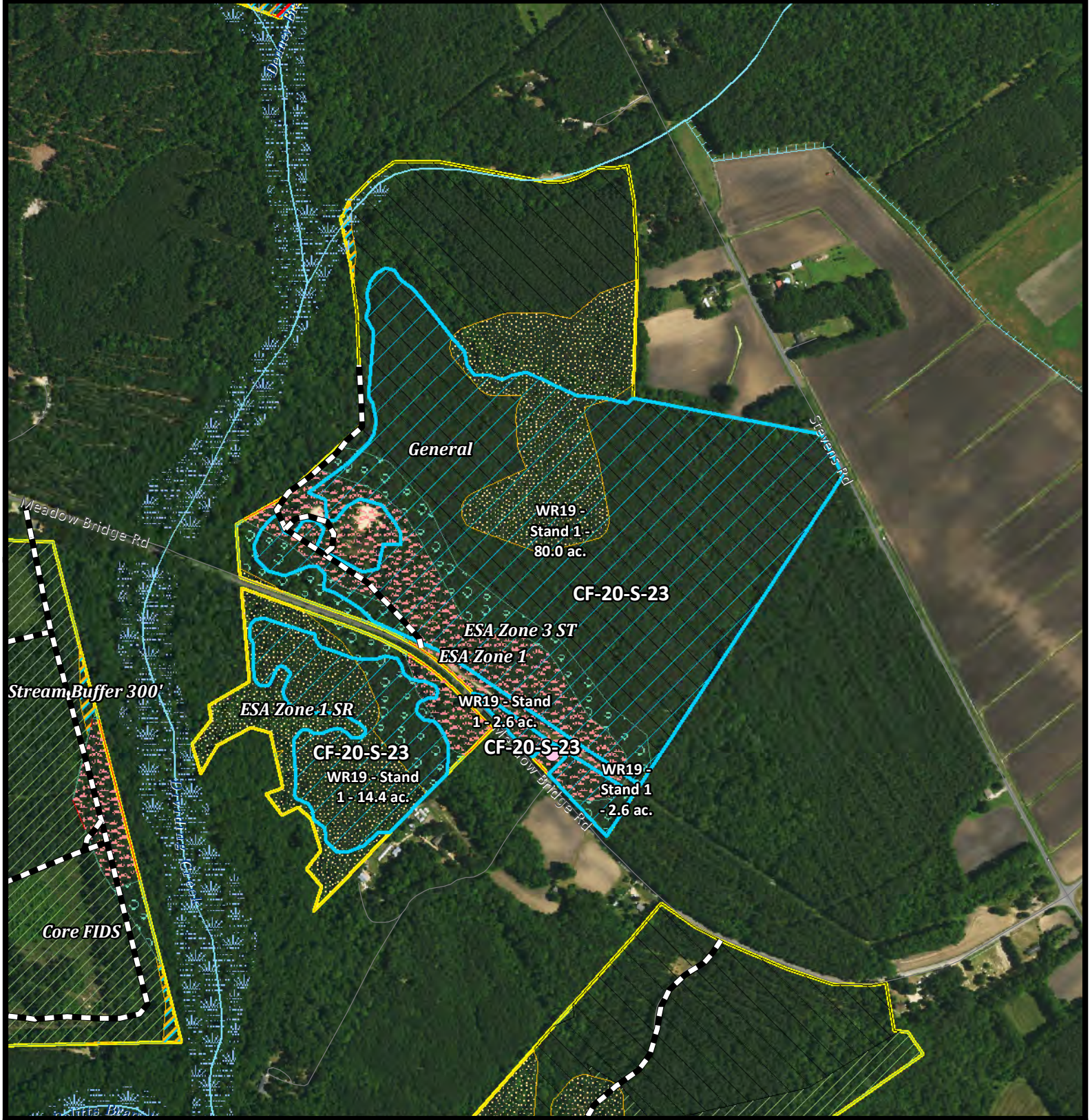
General

Home Sites



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Legend

CF AWP Activity

2020 First Thinning

CF Management

Core FIDS

ESA Zone 1

ESA Zone 1 SR

ESA Zone 3 ST

General

Stream Buffer 50'

Stream Buffer 300'

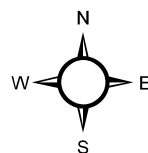
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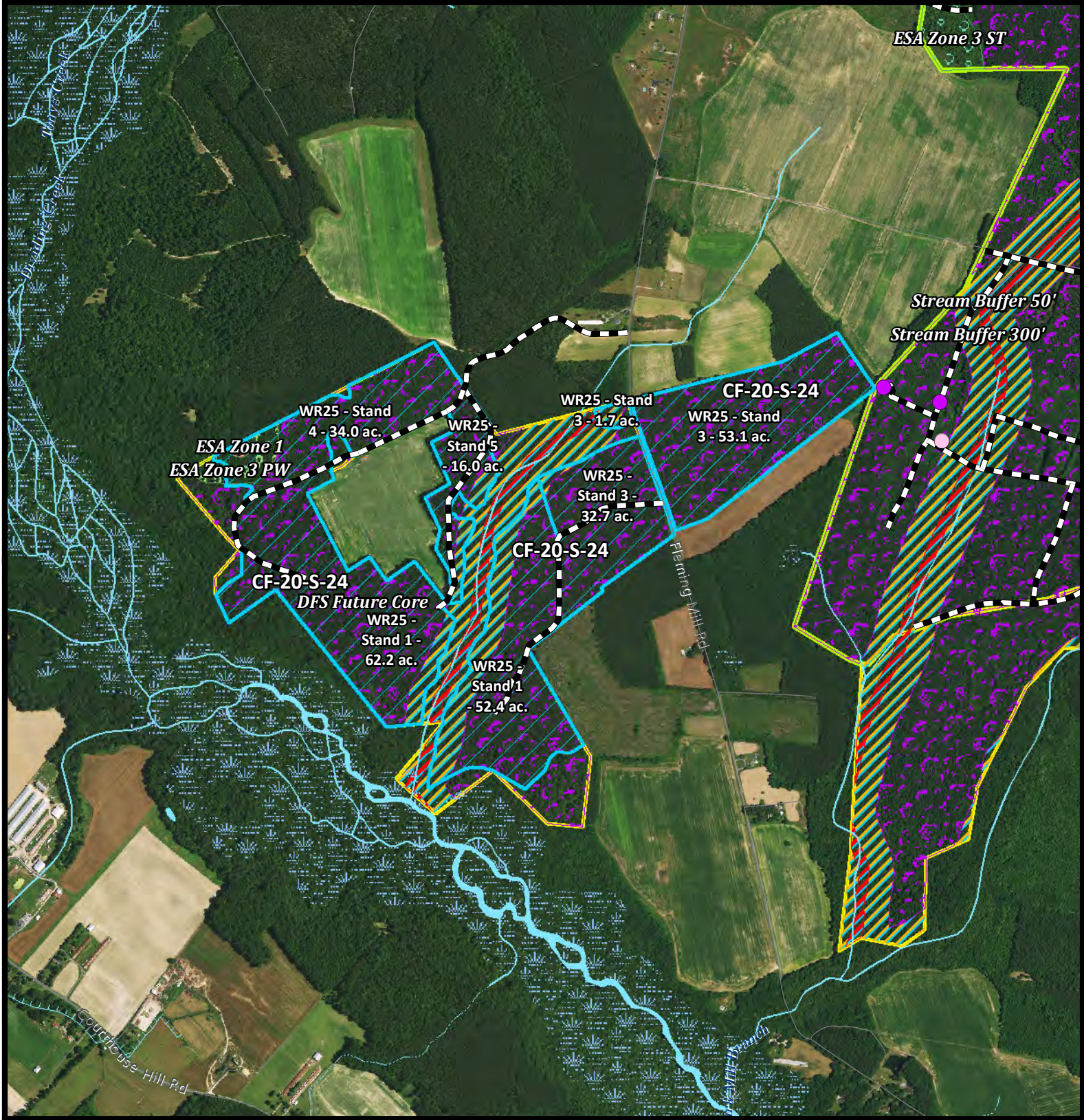
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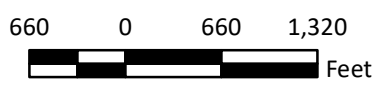


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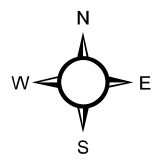
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Date: 01/2019

Legend

- | | | |
|------------------------|----------------------|--------------------|
| CF AWP Activity | CF Management | ESA Zone 3 PW |
| 2020 First Thinning | DFS Future Core | Stream Buffer 50' |
| | ESA Zone 1 | Stream Buffer 300' |





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Legend

CF AWP Activity

-  2020 First Thinning
-  2020 Second Thinning

CF Management

-  General

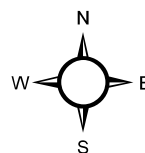
 Stream Buffer 50'

CF-20-S-25

Scale: 1:7,920
Date: 01/2019



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CF-20-S-26

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Date: 01/2019

Legend

CF AWP Activity

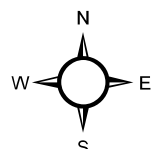
-  2020 First Thinning
-  2020 Second Thinning

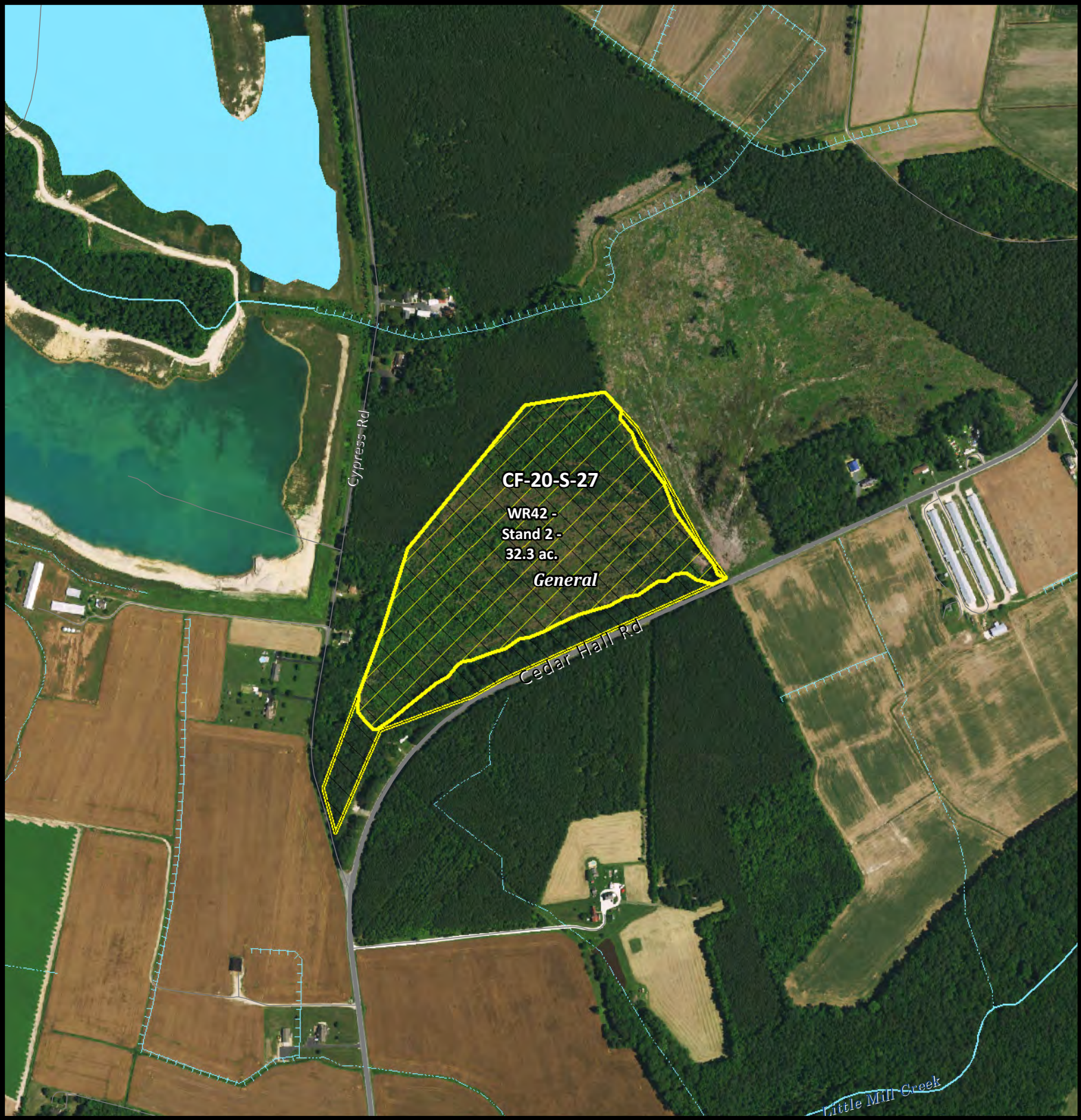
CF Management

-  Stream Buffer 50'
-  General



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






CF-20-S-27

Scale: 1:7,920
Date: 01/2019

Legend

CF AWP Activity

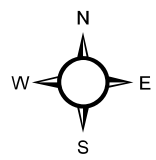
 2020 Pre-Commercial Thinning

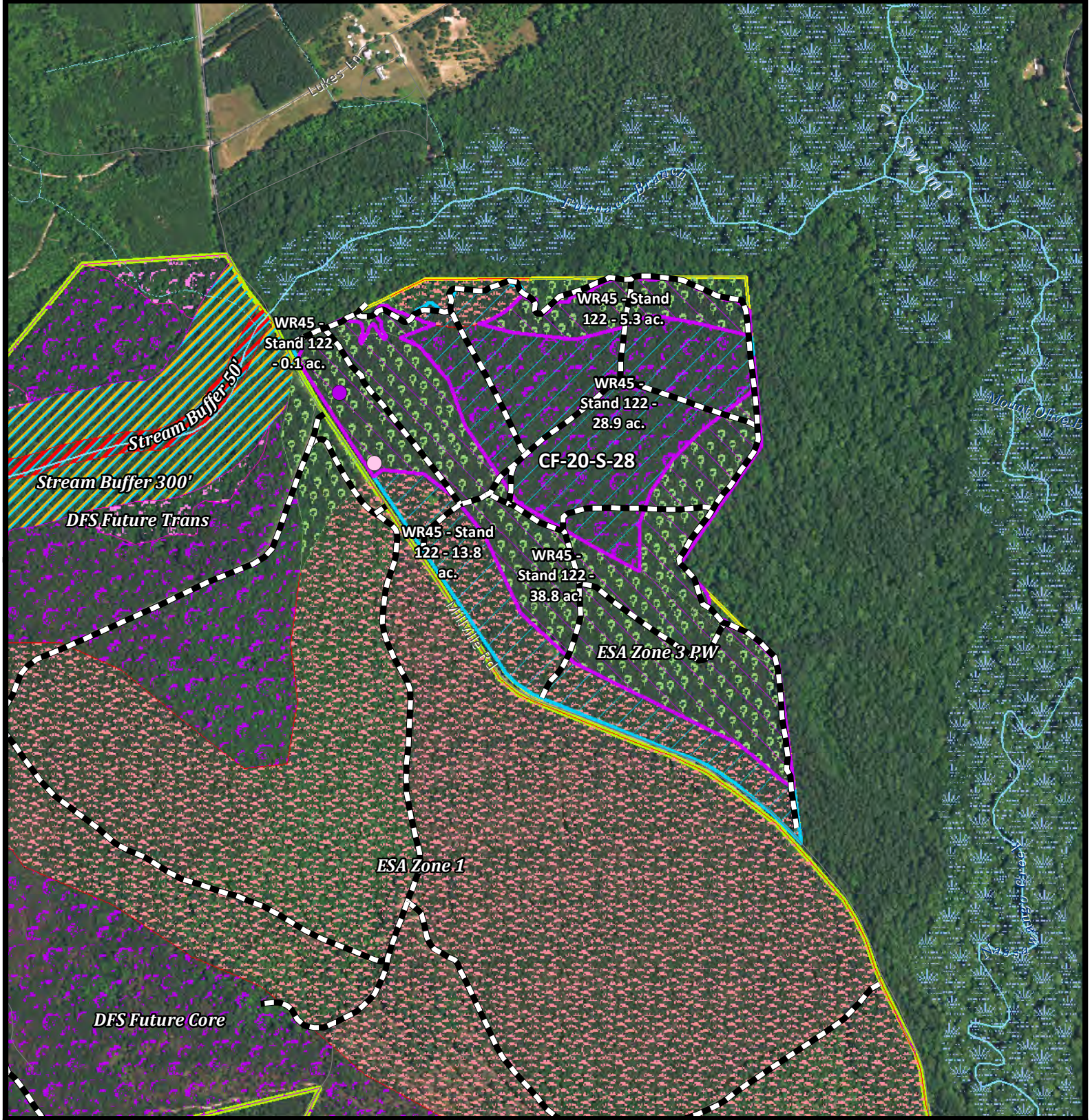
CF Management

 General



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





CF-20-S-28

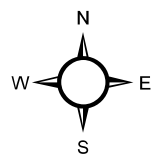
Scale: 1:7,920
Date: 01/2019

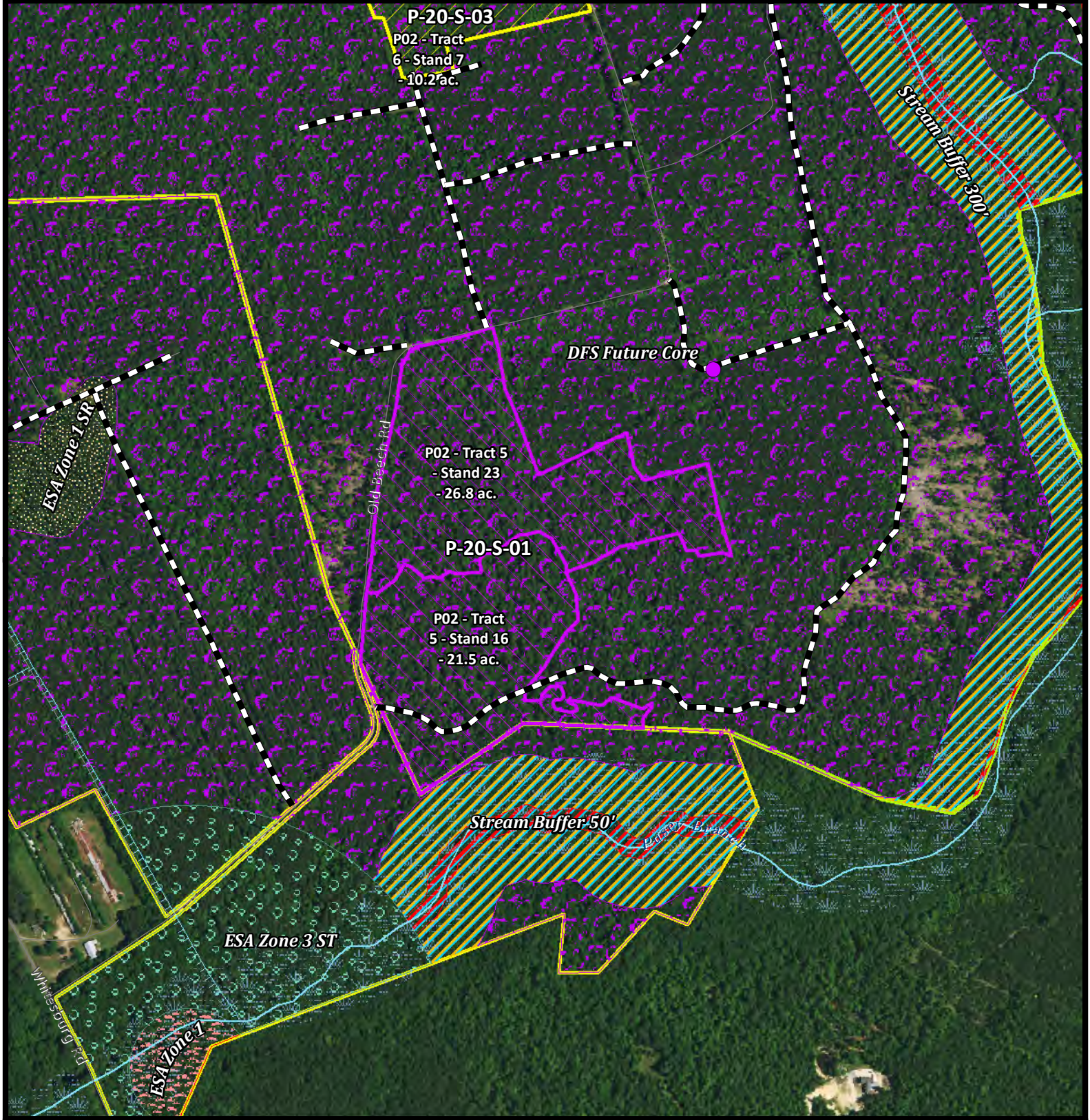
Legend

- | | | |
|------------------------|----------------------|--------------------|
| CF AWP Activity | CF Management | ESA Zone 3 PW |
| 2020 First Thinning | DFS Future Core | Stream Buffer 300' |
| 2020 Final Harvest | ESA Zone 1 | Home Sites |



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





P-20-S-01

Scale: 1:7,920
Date: 01/2019

Legend

PSF AWP Activity

- 2020 Pre-Commercial Thinning
- 2020 Final Harvest

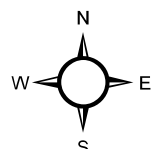
PSF Management

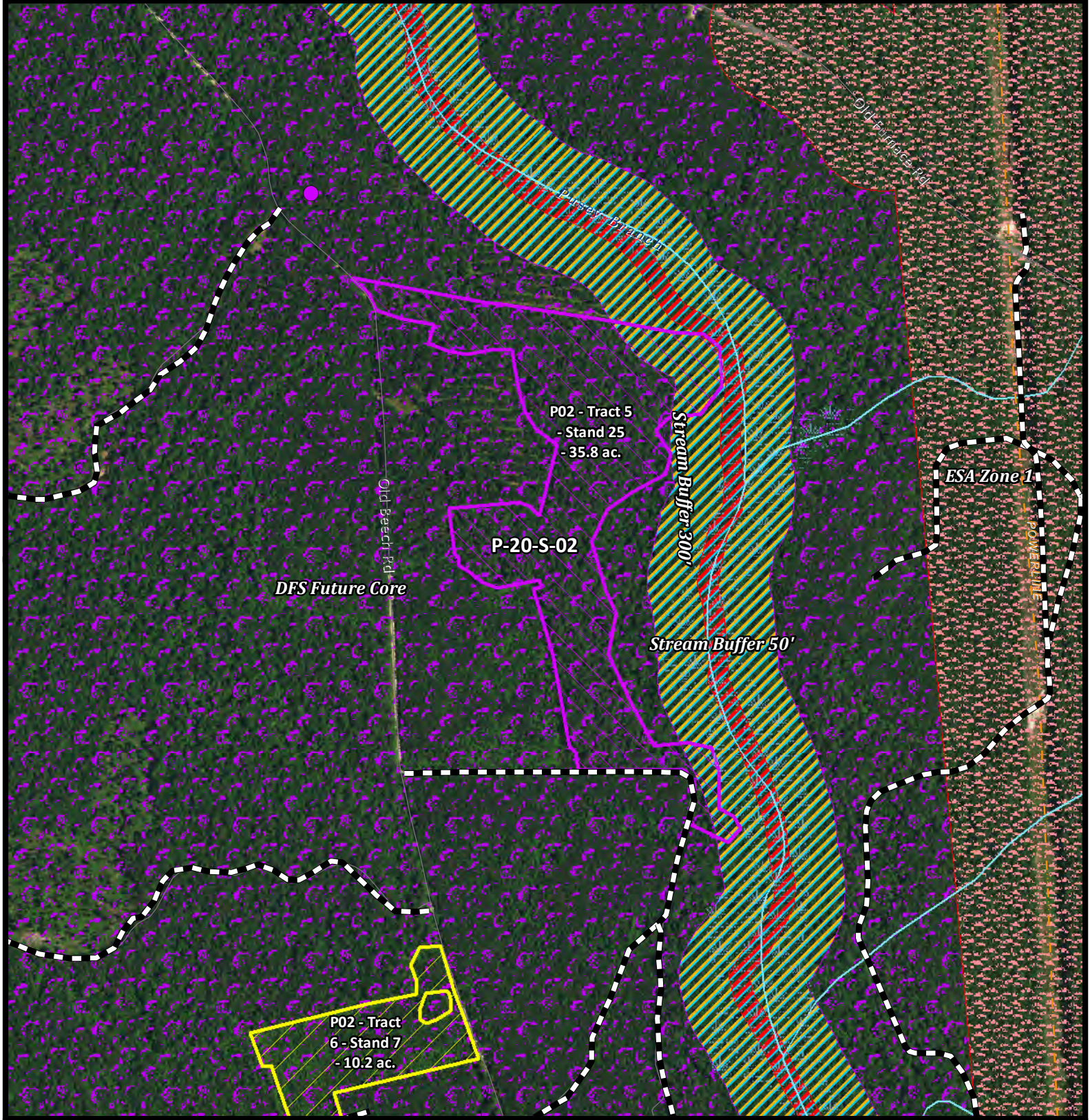
- DFS Future Core
- ESA Zone 1

- Stream Buffer 50'
- Stream Buffer 300'
- Home Sites



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







P-20-S-02



Scale: 1:7,920
Date: 01/2019




Legend

PSF AWP Activity

-  2020 Pre-Commercial Thinning
-  2020 Final Harvest

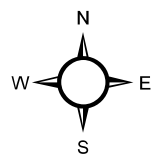
PSF Management

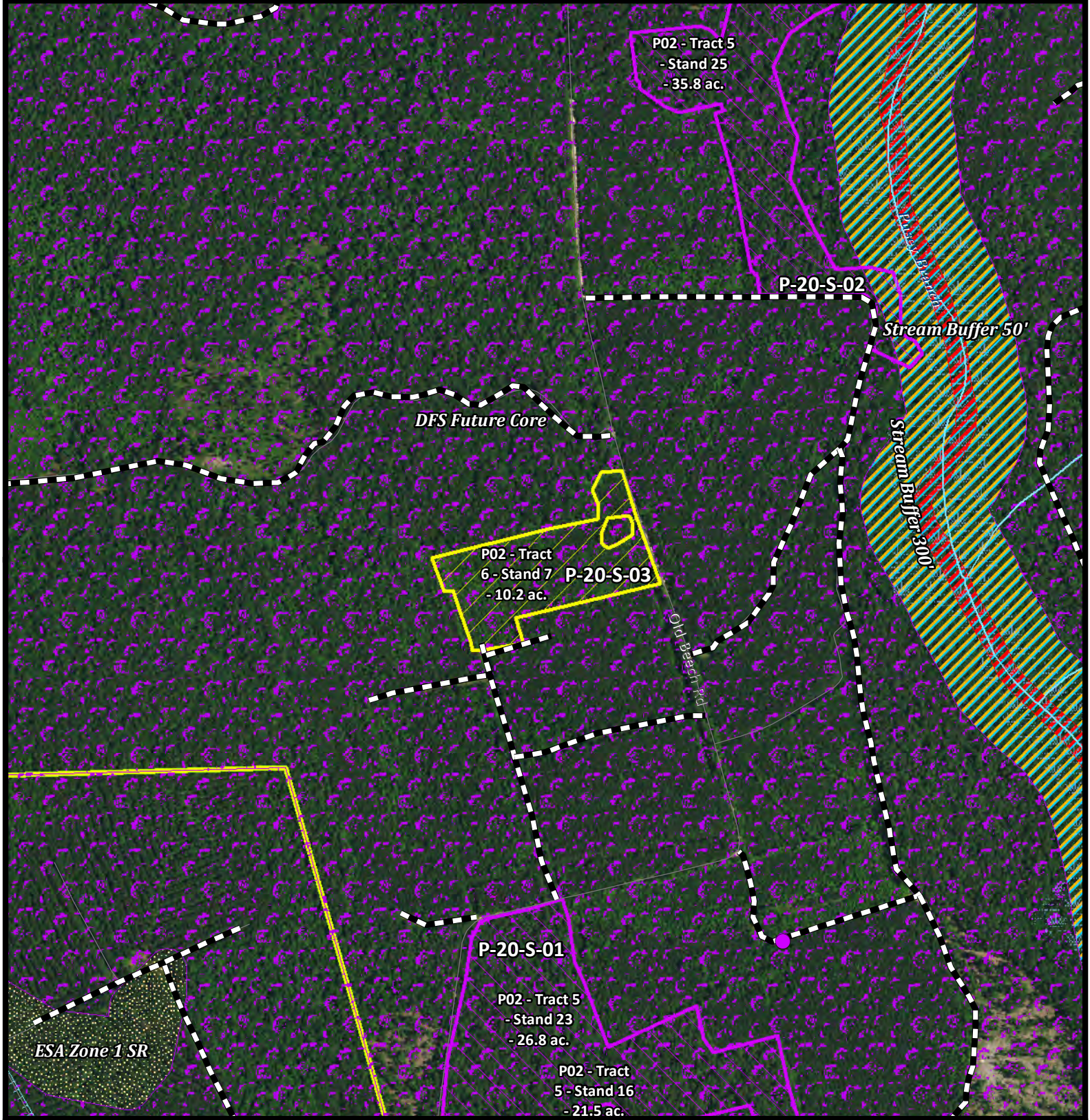
-  DFS Future Core
-  ESA Zone 1

-  Stream Buffer 50'
-  Stream Buffer 300'
-  Home Sites



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





P02 - Tract 5
- Stand 25
- 35.8 ac.

P-20-S-02

Stream Buffer 50'

Stream Buffer 300'

DFS Future Core

P02 - Tract 6 - Stand 7
- 10.2 ac. P-20-S-03

Old gear rd

P-20-S-01

P02 - Tract 5
- Stand 23
- 26.8 ac.

P02 - Tract 5 - Stand 16
- 21.5 ac.



ESA Zone 1 SR

P-20-S-03

Scale: 1:7,920
Date: 01/2019

Legend

PSF AWP Activity

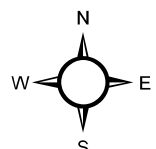
-  2020 Pre-Commercial Thinning
-  2020 Final Harvest

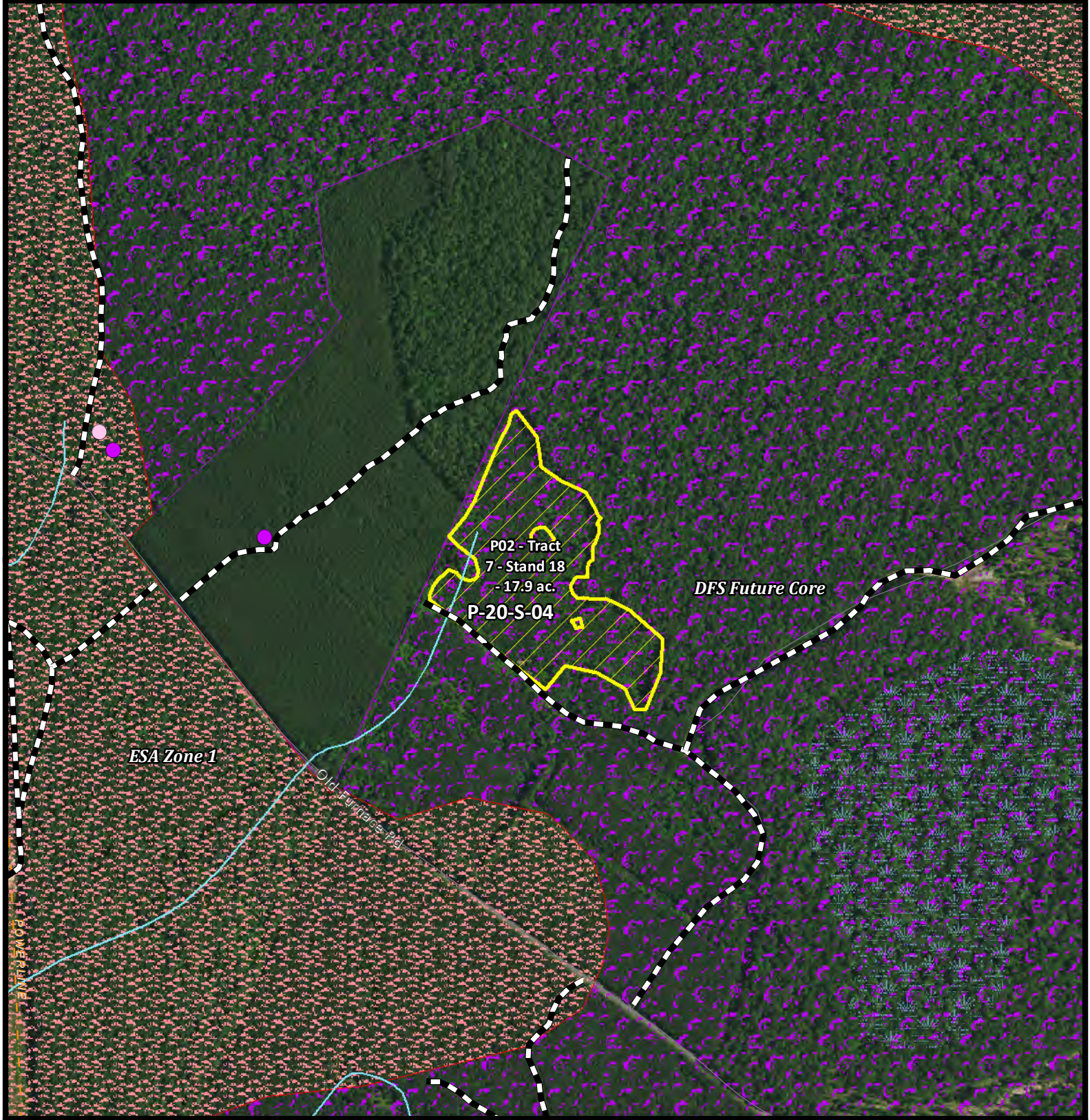
PSF Management

-  DFS Future Core
-  Stream Buffer 50'
-  Stream Buffer 300'
-  Home Sites



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





P-20-S-04

Scale: 1:7,920
Date: 01/2019

Legend

PSF AWP Activity

2020 Pre-Commercial Thinning

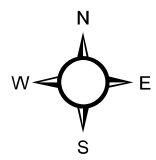
PSF Management

DFS Future Core

ESA Zone 1
 Home Sites



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



L. BUDGET

Introduction

This section of the plan is designed to cover the annual funding sources and costs associated with the operational management of the Chesapeake Forest and the Pocomoke State Forest (CF/PSF).

The numbers expressed in this section are approximates typically found from one year to the next. Variations do occur based on management prescriptions, economic conditions, weather, certification audit year, and public use of the forest.

Funding Sources

1. General Fund – Monies generated from Maryland State taxes. These funds are appropriated by the General Assembly through the annual state budgeting process.
2. Timber Revenue – Monies generated from the sale of forest products such as sawtimber, poles, pilings and pulpwood.
3. Hunting Leases – Monies generated by the Chesapeake Forest Hunting Lease Program.
4. Agricultural Leases – Monies generated from leasing agricultural fields on the forest to local farmers.
5. Grants – Monies generated from outside agencies/groups through a competitive grant request process.

Operational Costs

1. State Employee Salaries – There are four classified (full time) state employees assigned to the CF/PSF: Forest Manager, GIS Forester, Forest Technician, and an Administrative Assistant.
2. Contractual Employee Salaries – There are typically four contractual employees working 10 to 12 months per year on the forest.
3. Land Management – This includes the cost of contract management services and payments to loggers for harvesting and delivering forest products to processing mills.
4. Land Operations – This includes costs for road maintenance, non-commercial harvesting, tree planting, herbicide application, monitoring, equipment purchase & maintenance, etc.
5. County Payments – All counties except for Worcester are paid at a rate of 15% of the total revenue in lieu of property taxes. In Worcester County, 25% of the revenue generated off the forest is paid to the county since the total acreage of Park and Forestry properties exceeds 10% of the total County land base.
6. Public Drainage Association (PDA) Fees – This is a fee collected for large public drainage ditches that are present on the forest. Monies are used by the PDA to maintain the ditches.
7. Forest Certification – Monies used to maintain state forest lands certification through annual third party audits. Every fifth year is a full recertification audit, which costs \$40,000. Subsequent surveillance audits cost \$20,000.

Chesapeake Forest/Pocomoke State Forest Budget

Funding Sources	
1. General	\$ 439,956
2. Timber Revenue	\$ 1,100,000
3. Hunting Leases	\$ 576,778
4. Agricultural Leases	\$ 33,202
5. Recreation Trail Grant(s)	\$ 30,000
Total	\$ 2,179,936

Operational Costs	
1. State Employee Salaries	\$ 285,049
2. Contractual Employee Salaries	\$ 83,062
3. Land Management	\$ 981,034
4. Land Operations	\$ 438,242
5. County Payments	\$ 171,770
6. Public Drainage Association Fees	\$ 9,647
7. Forest Certification	\$ 19,605
Total	\$ 1,988,409

Net Revenue	\$ 191,527
--------------------	-------------------

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			PhA		
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 – AUDIT SUMMARIES – 2018

Full reports and summaries of the 2018 Forest Certification Audits can be found here:

<http://dnr.maryland.gov/forests/Pages/forestcert.aspx>

APPENDIX C – SILVICULTURAL ACTIVITY SUMMARIES

The following summary compares the work scheduled in each annual work plan against the amount of work implemented/completed in the field. Annual Work Plans (AWPs) are developed 18 months in advance of any work being implemented in the field to allow time for an internal departmental and public review process. Activities listed in the AWPs are many times not accomplished due to several unforeseen factors. Rainfall has the greatest effect on limiting the implementation of forestry work on Delmarva each year with wet soil conditions frequently restricting access to approved harvest sites with heavy logging equipment. Another factor that affects commercial forestry practices is the limited number of trained logging crews available to carry out thinning operations. Other types of planned practices, such as site preparation, tree planting, herbicide applications, and fertilization are occasionally not implemented due to changes in the field since the plan was written. An example would be a harvested area that regenerated itself naturally (won't require planting) and experienced little or no competition with undesirable species (won't require herbicide application).

Chesapeake Forest Silvicultural Activity Summary By Annual Work Plan

Workplan Activity	2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		10 Year Total	
	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.
Final Harvests	244	35	294	47	152		239	256	180	94	81	84	96	67	52	12	74		54	76	1,391	746
Various Select Harvests &/or other treatments	52								139	121	22	31							48		261	152
First Thinning	1,831	385	1,847	986	1,602	387	924	956	970	729	117	505	451	573	2,036	756	1,262	766	1,049	757	12,088	6,800
Second Thinning	257	30	257	151	113	65	86	299	106	88	55	38	350	74	331	49	710	38	39	90	2,303	922
Site Preparation	167		106																		273	-
Tree Planting	167				42		11			14				199		40	54				209	317
Regeneration Release	199																			64	199	64
Grass Control					42						25										67	-
Mid Rotation Release	24		160	48																	184	48
Fertilization			71																		71	-
Natural Regeneration		87						62		181						36					-	449
Pre Commercial Thinning	573	298	573	197	139		81	94	10	10	186	125	49	49	76	81			57		1,744	843
Prescribed Fire	47	553	202		76		29		31	31	48	48		63	427	72	84			131	397	1,366
Boundary Maintenance		2,108				10,945		6,162		3,644		3,392				3,400	1,276			6,478	-	50,013
Restoration Projects	26	362					130	130	143	143	328	41		20	168						627	864
Watershed Imp. Projects	20	50	351	351																	371	401
Harvests within HCVF areas*	1,384	447	1,782	883	1,651	454	1,235	599	566	321	391	380	335	509	961	659	921	565	431	308	9,656	5,124
Harvest Totals†	2,410	812	2,398	1,185	1,867	451	1,379	1,641	1,537	1,175	603	700	898	734	2,418	985	1,972	877	1,189	923	16,671	9,483

* High Conservation Value Forests (HCVF) were initially identified and designated in 2007 on the Chesapeake Forest. The current designation includes Ecologically Significant Areas (ESA) Zone 1 & 2, Core Forest Interior Dwelling Bird (FIDS) Habitat, Core Delmarva Fox Squirrel (DFS) Habitat, and Riparian Forested Buffers. Management activities within the HCVF have been designed to maintain or enhance the attributes that define such forests. Activities thus far have included the conversion of loblolly pine plantations to natural mixed forest conditions for DFS habitat or the removal of woody plant material from xeric dune and Carolina bay communities (ESA Zone 1 & 2).

† Harvest totals are derived from Final Harvests, Various Select Harvests and/or Other Treatments, First and Second Thinnings, and Restoration Projects.

The following summary compares the work scheduled in each annual work plan against the amount of work implemented/completed in the field. Annual Work Plans (AWPs) are developed 18 months in advance of any work being implemented in the field to allow time for an internal departmental and public review process. Activities listed in the AWPs are many times not accomplished due to several unforeseen factors. Rainfall has the greatest effect on limiting the implementation of forestry work on Delmarva each year with wet soil conditions frequently restricting access to approved harvest sites with heavy logging equipment. Another factor that affects commercial forestry practices is the limited number of trained logging crews available to carry out thinning operations. Other types of planned practices, such as site preparation, tree planting, herbicide applications, and fertilization are occasionally not implemented due to changes in the field since the plan was written. An example would be a harvested area that regenerated itself naturally (won't require planting) and experienced little or no competition with undesirable species (won't require herbicide application).

Pocomoke State Forest Silvicultural Activity Summary By Annual Work Plan

Workplan Activity	2008		2009		2010		2011		2012		2013		2014		2015		2016		2017		10 Year Total	
	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.	Plan Acres	Acres Comp.
Final Harvests	115	62	51		105	71	112	24	33	11	149	27	31	23	25	26	95	16	34	640	372	
Various Select Harvests &/or other treatments			64		15	17	19		42		38	47	85		226					490	64	
First Thinning	57		100				305		120	114	623	248	586	212	75	370	216	60	55	2,019	1,214	
Second Thinning									26	120								25		145	26	
Site Preparation																						
Tree Planting							15							23	4							42
Regeneration Release																						
Grass Control																						
Mid Rotation Release																						
Fertilization																						
Natural Regeneration		77		44		62		43		46		12		74		20						378
Pre Commercial Thinning	21	20	20		21		59	59	18	18	18	18	45	45		45					229	142
Prescribed Fire							35		22											379		436
Boundary Maintenance Restoration Projects		2,606				280					100			634	185		270			458		4,533
Watershed Imp. Projects											12										12	
Harvests within HCVF areas					53	42	176	23	86	51	181	96	114	177	27	74	123	32	17	939	602	
Harvest Totals†	172	62	216	-	121	88	436	24	196	150	942	322	702	235	300	395	310	101	89	3,305	1,675	

* High Conservation Value Forests (HCVF) were initially identified and designated in 2007 on the Chesapeake Forest. The current designation includes Ecologically Significant Areas (ESA) Zone 1 & 2, Core Forest Interior Dwelling Bird (FIDS) Habitat, Core Delmarva Fox Squirrel (DFS) Habitat, and Riparian Forested Buffers. Management activities within the HCVF have been designed to maintain or enhance the attributes that define such forests. Activities thus far have included the conversion of loblolly pine plantations to natural mixed forest conditions for DFS habitat or the removal of woody plant material from xeric dune and Carolina bay communities (ESA Zone 1 & 2).

† Harvest totals are derived from Final Harvests, Various Select Harvests and/or Other Treatments, First and Second Thinnings, and Restoration Projects.

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