PIEDMONT NATIONAL WILDLIFE REFUGE

Forest Management Prescription for Compartment 22
FY 2006

GENERAL DESCRIPTION

Compartment 22 is located in Jones County, about one mile south of the refuge headquarters. It is bounded on the north by Round Oak/Juliette Road, on the east by Caney Creek Road, on the south by Rock Branch and on the west by the refuge's public use wildlife drive and an old abandoned county road. According to the refuge's GIS, the compartment is 1,055 acres.

Drainage is to the south into Rocky Branch, a tributary of Falling Creek. Congaree and Toccoa soils are found throughout the drainage system. Site index for yellow poplar is 105 (base 50), sweetgum 100 (base 50) and loblolly 90 (base 25). Suitability of these soils for elements of wildlife habitat is good for grasses, legumes and other herbaceous plants, shrubs, vines, and hardwood trees. It is fair for pine trees. These highly productive sites are better suited to hardwoods than pines.

Davidson clay loam soils (by far the majority of the acreage in the compartment) are found on the uplands and slopes. The slopes range up to 25 percent. Erosion has removed all or nearly all of the original surface layer. Some shallow and deep gullies are present. The hazard of further erosion is severe unless the surface is protected. Davidson clay loams are low to moderate in natural fertility. Loblolly pine site index is 70, shortleaf pine site index 60 (base 25). Suitability of these soils for elements of wildlife habitat is only fair for grasses, legumes and other herbaceous plants, shrubs, vines, and hardwood trees, but it is good for pine trees. Pine and pine-hardwood habitats are easily created and maintained on these moderately productive soils; however, erosion gullies and surface clay may limit management options.

On November 22, 1992 a tornado significantly damaged 429 acres of the refuge. One hundred acres were in compartment 22. They were salvage harvested under a per-ton sale in 1993.

Past silvicultural treatments in compartment 22 include:

Harvesting:

1993 – 100 acres tornado damage salvage harvested, volume unknown
1990 – 326 cords pine, acres unknown
1989 – 298,248 board feet pine on 110 acres
1972 – 727,436 bdft pine and 99,071 bdft hardwood on 310 acres
1970 – 53,734 bdft pine and 42,255 bdft hardwood on 6 acres (clearcut?)
1964 – approximately 84 cords hardwood on 50 acres
1964 – 890 cords pine on 255 acres
1963 – 827 cords pine on 222 acres

1963 – 365,345 bdft pine and 58,416 bdft hardwood on 275 acres
1962 – 475,960 bdft pine and 59,161 bdft hardwood on 270 acres
1962 – 792 cords pine and 13 cords hardwood on 430 acres
1962 – 418,360 bdft pine and 41,478 bdft hardwood on 160 acres
1952 – 268 cords pine on 92 acres

Prescribed Burning:

2005 – 515 acres
2003 – 261
2002 – 289
2000 – 45
1997 – 36
1995 – 45
1994 – 280
1989 – 600
1984 – 250
1978 – 591
1974 – 600
1973 – 70
1970 – 630

There are three RCW cluster sites in compartment 22 – P22-1, P22-2R and P22-3R.

STAND DESCRIPTIONS and SILVICULTURAL RECOMMENDATIONS

The foremost goal of forest management on the refuge is to produce a sustained, uniform flow of RCW habitat. The RCW prefers mature, open canopy pine stands, with 40 to 80 square feet of basal area per acre and limited midstory vegetation. When only considering overstory, P3C and P3B stands at the lower percent crown closure are ideal RCW habitat. P3A and P3B stands at the upper percent crown closure require thinning. P3C and P3B stands that have a heavy midstory are not ideal RCW habitat and need prescribed fire.

P3B (pine sawtimber, 40-70% canopy closure, 0 DBH ∃9.0") – 589 acres. These loblolly pine or pine-hardwood uplands are the fundamental RCW management area. The stands in these uplands range in age from 60 to 80+ years old. One hundred ninety-six acres of these stands need a thinning to open the canopy, allowing sunlight onto the ground. Using the RCW recovery plan as a guide, marking standards are:

Cluster Sites:

- Retain all pines greater than 60 years old within the cluster site, unless the pine basal area is greater than 80 ft^2/acre.
- Reduce overstory hardwood BA to ≤10 ft^2/acre. Retain upland oaks if less than the above BA and if located away from cavity trees.

Foraging Habitat:

- Provide 18 or more pines/acre that are at least 14 inches DBH.
- Maintain a BA of all pines ≥ 4 in DBH between 40 and 80 ft^2.
- Reduce the BA of all pines 4 to 10 in DBH to less than 10ft^2 and less than 20 stems/acre.
- Keep hardwoods to < 20% of the canopy trees in pine stands.
- Be within ½ mile of the cluster site; be contiguous with the cluster site.

A simple rule of thumb is to remove ½ of the trees and ⅓ of the volume. This promotes a thinning from below, concentrating on the trees ≥ 10 inch DBH, at the same time as providing enough larger trees to make the sale more marketable while creating or maintaining the openness desired by the RCW.

P2 (pine pulpwood, 0 DBH >5.5"<9.0") – 104 acres. These stands are primarily pine with a small hardwood component. While there is some merchantable material, there is not enough per acre to make it marketable. No management is planned.

P1 (pine regeneration, 0 DBH # 5.5") – 100 acres. This is the 1992 tornado area that was salvage harvested in 1993. No new regeneration area is planned with this prescription.

Upland Hardwood – 36 acres. White oak, black oak and northern red oak compromise a majority of the stocking in the upland hardwood forests. While there are some small upland hardwoods stands, upland hardwood management is primarily part of the P3B stand management. Where individual oaks or clumps of upland oaks are to be managed, use a crown touching release to increase the acorn production of good quality oaks. White oak, black oak, red oak and scarlet oak are good acorn producers. Large, senescent trees are usually poor acorn producers. Select red oaks no larger than 20"DBH, and white and scarlet oaks no larger than 26" DBH. Select the largest black oaks available. After selecting a leave tree, mark for removal all trees that touch or are too close (<5') to the crown of the leave tree. This treatment will be applied opportunistically rather than systematically.

Bottomland Hardwood – 203 acres. Sweetgum and yellow-poplar compromise a majority of the overstory stocking in the bottomland forests. Sweetgum, however, usually occurs with greater frequency. The primary management needed is to remove scattered low quality hardwoods, mostly sweetgum, and to remove pines that overtop oak trees. This should release mast-producing trees, increasing acorn production. This treatment will be applied opportunistically rather than systematically.

OTHER ITEMS

1) The compartment should be prescribed burned within 2-3 years after the harvest. Waiting at least one growing season after harvest before burning gives the logging slash time to cure, allowing better fuel consumption. It also lets leaf litter and needle cast cover skid trails, permitting the fire to better carry across the unit. Burning before three or more growing seasons have passed takes advantage of the open nature caused by logging to better achieve the stated

objectives.

2) Georgia's *Best Management Practices for Forestry* will be followed to protect water quality and site productivity and to improve the composition and quality of the future forest.

3) Silvicultural activities planned for the pine sawtimber stands in this unit have been determined to contribute to the accomplishment of National Fire Plan Hazardous Fuel Reduction objectives. The following activities will help mitigate the effects of a wildfire that is large, intense or difficult to control: harvesting 70 acres of pine stands adjacent to private land with inhabited structures and other improvements. This will break up the continuity of both the surface and aerial fuels, as well as reduce ladder fuels. These activities have also been determined to contribute to the mitigation of wildland fire hazards for the following Wildland-Urban Interface community: Round Oak, GA. See attached Hazardous Fuel Reduction Worksheet and the Summary Matrix.