

RESOURCE MANAGEMENT GUIDE

Compartment: 5
County: Martin

Tract: 4
Section: 10 & 15

Township: 3N

Range: 3W

FORESTER'S NARRATIVE

By: Andrew S. Fox

ROADS AND BOUNDARIES:

This tract is bounded on three sides by major drainages and by the forest road on the fourth side. The northern boundary of the tract is formed by a major drainage that flows west from Williams Rd. and past the front of hardwood lake. Firelane eight parallels this drainage along most of the northern border, which helps to define the tract. Firelane eight extends west from its intersection with fire lane seven.

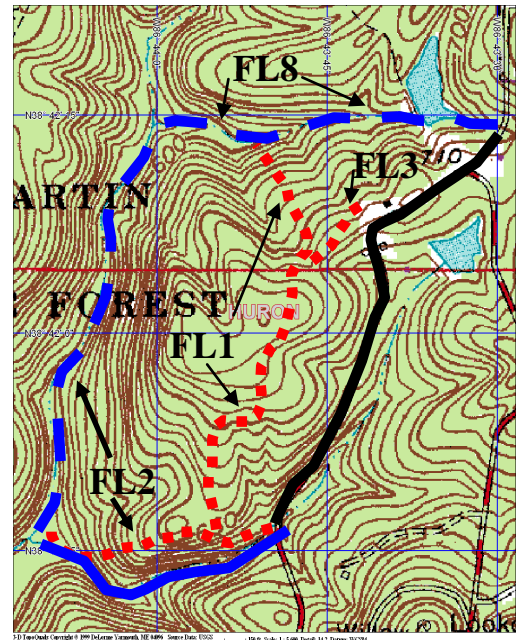
Williams Road is a gravel county road that is well maintained and extends north from the forest loop road, which is a paved state road in Martin State Forest. From the northeast corner of the tract as described above, Williams Road and the MSF Loop Road run south to make up the east boundary which is approximately 2/3 of a mile long.

The southeast corner of the tract is made up of a large drainage that flows to the west from the Loop Road. Firelane two runs westward, parallel to the large drainage for about 670 feet, at which point it turns north and follows another large drainage that makes up the western boundary of the tract. Finally firelane two intersects with firelane eight to help make up the northwestern corner of the tract.

Firelanes one and three also pass thru this tract. Firelane one parallels the loop road extending north along the ridge from firelane two and connecting with firelane eight. Firelane three only runs a few hundred feet into this tract and acts as a service entrance from the property residence.

TRACT DESCRIPTION:

The highest point in this tract is nearly in the center of the tract, giving the tract one central ridge, that result in aspects of all directions. On this central ridge there are many large rock out croppings mostly along the north and western sides of the ridge. Some of these rock out-crops are twenty plus feet tall and more than thirty yards in width.

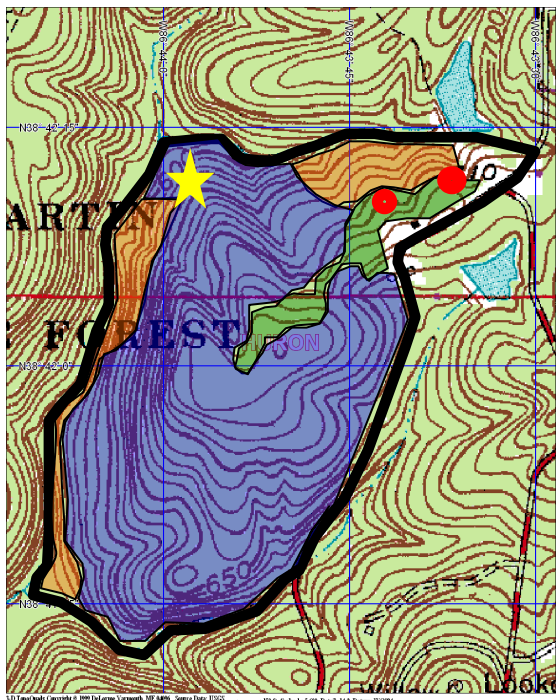


Invasive shrubs species autumn (Russian) olive and Asian bush honeysuckle were noted throughout this tract and were found to be well established, with plants approximately 4-8 ft tall, in at least four different points on the tract. The autumn olive was noticed on the west side of firelane one, just to the north of where firelane three intersects with firelane one. The Asian bush honeysuckle was noted throughout the tract but three major infestations are present, one being along the northern edge of firelane two just east of where firelane two intersects with firelane one. Another point of bush honeysuckle was found just south of the first location, along the south slope of the ridge here. Finally the third point where Asian bush honeysuckle was found was near the southwestern portion of the pine plantation on top of the ridge, where most of the pines had blow down and only large yellow-poplars remained.

Grapevines were present on the tract but only in patchy areas where the canopy has been fairly open for many years (i.e. Creek Bottoms). Fire on the other hand was noted throughout the tract, in the forms of swollen and sometimes hollow boles in several of the more mature trees. The trees with fire damage should be targeted in any future harvest as many of these trees are already overly mature and beginning to die, but also to help improve the over all timber quality of the tract.

There are at least three different timber types on this tract, of which a couple could probably be broken down into sub-types. The three major types are beech/maple, oak/hickory, and finally pine plantations. When looking at the tract as a whole, the oak/hickory component makes up 73% of the merchantable saw timber while the beech/maple and pine components make up 7% and 3%. In the pole size class the percentages look like this; beech/maple 29%, oak/hickory 42%, pine 11%. Poplar was another large component of the tract as secondary growth, especially in the pine plantations, so much so that by itself it held 14% percent of the merchantable saw timber volume and 9% of the pole size volume.

The Beech-Maple component of the tract (highlighted in orange on the map below) was mostly located in two sections of the tract. One of these sections is located along the northern boarder of the tract between the hardwood lake area and firelane 1. The area around Hardwood Lake is heavily used for recreation and as such will more than likely not be harvested. The second section runs along a good portion of the western boundary of the tract, where the rocky out crops make harvesting difficult. Due to the difficulty of harvesting in these areas most of the American beech trees are becoming overly mature, with some turning to cull trees.



Judging from property sale records, history of the area, and biology of the trees, the pine plantations (green on the map) were most likely planted in the late 1930's after the state purchased the property. The pines were most likely planted by the civilian conservation corps, in efforts to prevent erosion on old farm fields. At this time the plantations are in a state of decay as natural hardwood regeneration is over taking many of the pines and as a result the pines are being shaded out. In a couple sections of the pine plantations major wind events have blown down nearly all of the pine in a one acre area. In other areas one or two trees have died out due to shading. The shading and wind throw have resulted in some desirable regeneration. Oak, hickory, and black cherry seedlings were all observed in several of the areas where more light was able to penetrate due to the mortality and wind throw.

Finally the oak/hickory component of timber (shown in

blue to the left) on the tract covers the largest portion of the acreage, at nearly 106 acres. The oak/hickory portion of this tract has developed into a rather high quality stand in most portions, with the exception of some fire damage. Fire damaged trees have been targeted in previous harvests in order to try to increase wood quality and stand vigor. Unfortunately many of the oaks in the stand are beginning to become over mature, and are either exhibiting signs of low vigor or dieback. Mortality has actually become rather wide spread in the oaks throughout the tract, resulting in an almost post harvest appearance in much of the tract. Part of the wide spread mortality may be due to a severe drought that occurred last summer (2007). In areas where mortality has occurred heavy growth of green brier has become established to the point that nearly no tree regeneration can become established.

SOILS:

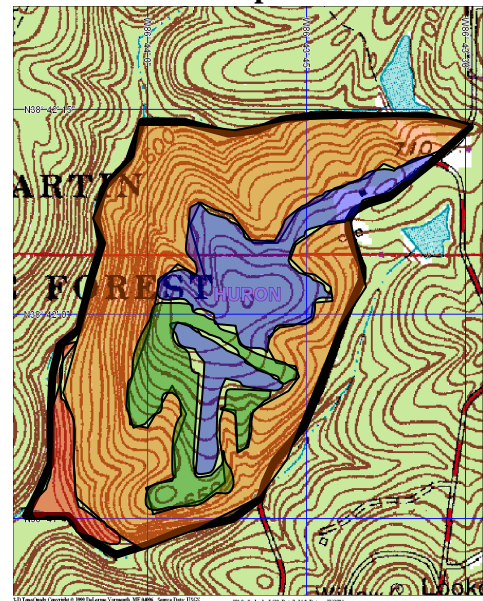
There are four soil types found on this tract although only two comprise the majority of the tract. The soil type that comprises the most acreage on the tract is the **Wellston-Berks-Gilpin complex, 18-70 percent slopes**, which coordinates with the orange shaded area on the map to the right. Individual areas are usually about 47 percent Wellston soil, 25 percent Berks soil and 18 percent Gilpin soil, but the mix of soil types is so intricate that it's impractical to map them separately. These well-drained soils are found on most of the side slopes in this tract and are characteristically deep to moderately deep. The surface layer is typically silt or channery silt loam and the subsoil, which is roughly 36" deep, is silt loam (Wellston), channery silt loam (Gilpin) or channery loam (Berks). Available water capacity is very low in the Berks soil, low in the Gilpin soil and high in the Wellston soil. Permeability is moderate to moderately rapid, and surface runoff is rapid to very rapid. Organic matter content in the surface layer is moderate to moderately low. Erosion hazards

are moderate to severe on these soils, but can be compensated for by using gentle grades for skid trails and by installing water bars and out sloping the roads to remove water. Site indices for these soils are 70 to 80 for Northern Red Oak and 90 to 95 for Yellow Poplar. **Zanesville silt loam, 2 to 6 percent slopes**

coded blue on the map is the second largest soil type found within this tract. As is the case with tract C5T4, this soil type is usually found on the ridgetops. It is a gently sloping, deep, well drained to moderately well drained soil. The surface layer is an eight-inch thick brown silt loam underlain by a roughly three-foot thick silty clay loam subsoil. A firm fragipan, which restricts root penetration, exists in the lower part of the subsoil. In some areas, the lower portion of the subsoil is extremely acid. Available water capacity is moderate and permeability is moderate above the fragipan and slow in the fragipan. This slow permeability restricts downward water movement through the soil and often results in the soil being saturated in the winter and spring. Surface runoff is medium. Organic matter content in the surface layer is moderate. Erosion hazards and equipment limitations are slight for this soil; however, winter/spring logging may be restricted due to the saturated soil conditions. Site index for Northern Red Oak on this soil is fairly low at 68.

The third soil type that is found on the tract is the **WeC2-Wellston silt loam, 6 to 12 percent slopes, eroded**. This soil is coded green on the map and is a moderately sloping, deep, well-drained soil found on some ridgetops and side slopes. The surface layer is typically a three to six-inch thick layer of grayish brown silt loam. The subsoil is around 42 inches and is a friable silt loam. Available water capacity is high and permeability is moderate. Surface runoff is rapid, requiring measures such as water

Soils Map



turnouts and bars to properly remove water from roads and yards. The organic matter content is moderate in the surface layer. Erosion and equipment use hazards are slight on this soil. Site index is 71 for Northern Red Oak and 90 for Yellow Poplar.

The last soil present on this tract is in the drainage bottoms along the east corner of the tract.

Burnside loam, occasionally flooded. This soil, which is shaded red on the map, is a nearly level, deep, well-drained soil found along the stream. It is flooded for brief periods throughout the year. The typical surface layer is a nine-inch thick brown loam. This is followed by a friable loam over very channery loam subsoil layer that is about 20 inches thick. In some areas the surface layer is channery or gravelly, while in other places the surface layer and subsoil are silt loam. Some areas of this soil have strongly to very strongly acid layers. Available water capacity is low, permeability is moderate and surface runoff is slow in this soil. The organic matter content in the surface layer is moderately low. Erosion and equipment limitation hazards are slight on this soil. Site index for this soil is 95 for yellow poplar.

HISTORY:

The property that makes up this tract was sold to the state by several private individuals. One of whom was Mr. Frank Peters, who sold eighty acres to the state on May 22, 1934, for an unknown amount of money. The rest of the property that makes up this tract was sold to the state by Rita and Thomas Cox, who held the power of attorney for the John M. Ritter family. Approximately 312 acres were sold to the state, again for an unknown sum.

Since then this tract has had a lot of activity on it. In 1974 the first known inventory was conducted on the tract by Ben Hubbard. Hubbard found there to be 472,528 Bd. Ft. on 112 acres of the tract, and called for a harvest of over mature trees as soon as possible. A harvest was conducted in 1975, in which 608 trees containing approximately 105,473 Bd Ft of volume were sold to Housewood Inc. for a sum of \$8,507.00.

The tract was then inventoried in the summer of 1989 by Janet Eger. At the time there was found to be an estimated volume of 627,911 Bd Ft on 110 acres of commercial forest. It was recommended that there be a harvest conducted, and this was done in 1990. The sale consisted of 578 trees and 146 culls, with an estimated volume of 118,128 Bd. Ft. which was bought by DMI Furniture, Inc. for \$28,600.

RECREATION AND WILDLIFE:

This is a great tract for recreation as there are several areas established just for this purpose. Hardwood Lake is a well stocked fishing pond located near the northeast corner of the tract. The lake contains mostly large mouth bass, various species of pan fish and catfish. The lake is about two acres in size and also provides areas for hiking, picnicking and campfires. Throughout the rest of the tract hiking is probably the most utilized activity, with just under a mile of firelanes running through the tract and just under two miles of firelane/county road running along the boundary of the tract. Most of these fire lanes can also be used for mountain biking as well. There is a parking unit near the middle of the eastern boundary and another parking unit at Hardwood Lake. The first parking unit serves both the Arboretum and the mountain bike trailhead.

During the time of inventory there was an abundance of wildlife observed, but it is realized that there is more than likely much more present than was observed. White-tailed deer, red-tailed hawk, several species of salamanders, toads, squirrels, and wild turkeys, are just a few of the species observed. Other wildlife that most likely inhabits this tract includes but is not limited to: coyote, raccoons, opossum, various song birds, snakes, turtles etc. A request for information was sent to the Natural Heritage Database

to see if there were any threatened or endangered species that were known to be present on this tract, and the query came back negative (see attached map).

WATERSHED:

Due to the location the central ridge on this tract water tends to flow in all directions off this tract. Along the northern border of the tract water flows north into the drainage which makes up the border here. Hardwood Lake also flows into the drainage that makes up the northern border. This drainage flows to the west for about a quarter mile until it intersects with the drainage that makes up the western boundary of the tract. From the intersection of the northern and western boundary drainages water flows south along the western border of the tract. Water flowing south off this tract empties into the large drainage that makes up the southern border of the tract. In the southwestern corner of the tract, the southern drainage empties into the western boundary drainage, and then continues to flow south, eventually flowing into Beaver Creek approximately one mile away.

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SILVICULTURAL PRESCRIPTION

By: Andrew S. Fox
Reviewed by: Jim Lauck

While grapevines were not noticed to be a large problem on the tract a timber stand improvement project to eradicate them should be scheduled before any harvest. It would be wise to try and remove any invasive plant infestations at the same time of the grapevine TSI in order to improve efficiency. To accomplish these tasks cutting of the vines/plants and herbicide treatments should be used in concert with each other to help insure eradication.

A timber harvest should be scheduled as soon as possible for this tract, in order to capture some of the mortality of overly mature trees. Although due to the large amount of mortality, and the resulting canopy openings that were seen in a majority of the oak/hickory portion of the tract during the time of the inventory, a full harvest may not be practical. Instead, a *light* single tree selection cut of only 1,000-1,500 Bd. Ft. per acre combined with one or more group selection regeneration cuts should be planned and then followed-up with a post-harvest Timber Stand Improvement project. After the harvest all log yards and skid-trails should be treated to prevent erosion, either by planting with a native grass and/or wildflower mixture or by installing water diversions.

In areas of the tract that are highly visible to the public and heavily used for recreation (i.e. the Hardwood Lake area), it may be nice to implement a strategy that encourages old growth/large diameter timber, as this is the dynamic that the public tends to want for viewing pleasure. The area around Hardwood Lake is already headed in this direction with many large beech and maple trees. Both of these species will be able to help sustain an old growth management system, due to their shade tolerance, and thus should be promoted in these areas.

Finally, erosion control measures on firelane two near the southeast corner of the tract should be re-examined and restored through the use of water bars and the addition of stone if necessary.

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You **must** indicate the State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.