**Indiana Department of Natural Resources - Division of Forestry**

**RESOURCE MANAGEMENT GUIDE**

**STATE FOREST**: Harrison Crawford **COMPARTMENT**: 29 **TRACT**: 12

**Date: July 21, 2010** **Forester: Wayne Werne & Beth Winsor**
**(Inventory - summer 2006)**

**INVENTORY SUMMARY**

**NUMBER OF STANDS:** **3** **Est. growth: ?? -**
**PERMANENT OPENINGS:** **0.0 ac** **Est. cutting cycle: ??**
**TOTAL ACREAGE:** **79.5 ac**
**AVERAGE SITE INDEX:** **70-80** (for upland oaks)
**AVERAGE BASAL AREA:** **125 sq. ft/ac**

There was no record of a previous inventory for this tract, so estimated growth and cutting cycle were not able to be calculated.

**TRACT 2912 TOTAL VOLUME (bd ft)**

| | CUT | | LEAVE | | TOTAL | |
|---|---|---|---|---|---|---|
| SPECIES | per acre | total | per acre | total | per acre | total |
| American beech | 23 | 1,805 | 31 | 2,441 | 53 | 4,245 |
| Basswood | 54 | 4,317 | | - | 54 | 4,317 |
| Bitternut hickory | 52 | 4,094 | 109 | 8,650 | 160 | 12,744 |
| Black cherry | 72 | 5,724 | | - | 72 | 5,724 |
| Black oak | 590 | 46,905 | 480 | 38,128 | 1,070 | 85,033 |
| Chinkapin oak | 141 | 11,217 | 60 | 4,754 | 201 | 15,972 |
| Mockernut hickory | 13 | 1,026 | 35 | 2,798 | 48 | 3,824 |
| Northern red oak | 302 | 23,985 | 582 | 46,285 | 884 | 70,270 |
| Pignut hickory | 116 | 9,246 | 796 | 63,250 | 912 | 72,496 |
| Red elm | | - | 23 | 1,805 | 23 | 1,805 |
| Sassafras | | - | 31 | 2,488 | 31 | 2,488 |
| Shagbark hickory | 35 | 2,798 | 241 | 19,183 | 277 | 21,982 |
| Sugar maple | 153 | 12,124 | 346 | 27,499 | 498 | 39,623 |
| White ash | 419 | 33,279 | 402 | 31,919 | 820 | 65,198 |
| White oak | 271 | 21,513 | 944 | 75,008 | 1,214 | 96,521 |
| Yellow-poplar | 481 | 38,255 | 862 | 68,505 | 1,343 | 106,761 |
| **TOTAL** | 2,721 | 216,288 | 4,940 | 392,714 | 7,660 | 609,002 |

**STAND 1 – Mixed mesophytic** **ACREAGE: 17.0**

| | CUT | LEAVE | TOTAL | SNAG |
|---|---|---|---|---|
| VOLUME/ACRE: | 1,982 | 4,731 | 6,713 | |
| TOTAL VOLUME: | 33,700 | 80,400 | 114,100 | |
| BASAL AREA/ACRE: | 27.6 | 78.6 | 106.2 | 26 |
| # TREES/ACRE: | 35 | 261 | 296 | 76 |

**STAND 2 – Oak hickory** **ACREAGE: 53.6**

| | CUT | LEAVE | TOTAL | SNAG |
|---|---|---|---|---|
| VOLUME/ACRE: | 3,362 | 5,729 | 9,091 | |
| TOTAL VOLUME: | 180,200 | 307,100 | 487,300 | |
| BASAL AREA/ACRE: | 49.0 | 82.5 | 131.5 | 6 |
| # TREES/ACRE: | 45 | 282 | 327 | 12 |

**STAND 3 – Rocky south slope** **ACREAGE: 8.9**

| | CUT | LEAVE | TOTAL | SNAG |
|---|---|---|---|---|
| VOLUME/ACRE: | 267 | 586 | 853 | |
| TOTAL VOLUME: | 2,400 | 5,200 | 7,600 | |
| BASAL AREA/ACRE: | 50.0 | 75.0 | 125.0 | 20 |
| # TREES/ACRE: | 102 | 473 | 575 | 468 |

**Note: Please reference the appendix for tables and graphs of various stand statistics**

**TRACT BOUNDARIES:** This tract is in the main chunk of the state forest in Sections 14 and 15, T4S, R2E. It is surrounded by other state forest tracts. The western boundary is a ridgeline that borders tracts 2806 and 2804, and has a horse trail forming part of the northern portion of it. The eastern boundary is a drainage that forms the border with tracts 2911 and 2913. Fire trail 303 runs through the northern portion of this tract.

**ACCESS:** Fire trail 303 provides access to the north portion of this tract not too far from Cold Friday Road. Since much of the southern portion of the tract is very steep, access would be very difficult in these areas.

**ACQUISITION HISTORY:** The land within this tract was acquired from several owners including Samuel Breeden in 1944 for an undisclosed sum, James Brewster in 1934 for a little over $5 per acre, and Joseph and Carrie Pfeister in 1931 for $5 per acre.

**TRACT DESCRIPTION:** This tract was divided into three stands based on cover type and past management. These stands include: mixed mesophytic, oak hickory, and rocky south slope. The rocky south slope had a noticeable amount of cedar, as these stands always seem to have. These stands will be described in detail below.

**Stand 1 – Mixed mesophytic**

This 17-acre stand was found primarily along the lower drainage slopes and near the ridgetop on the northern and western side of the tract.

The total volume of the stand (6713 bd. ft/ac) is composed overwhelmingly of yellow-poplar (4400 bd. ft/ac), and also sugar maple, (713 bd. ft/ac), pignut hickory (329 bd. ft/ac) and white ash (316 bd. ft/ac). The remaining 15% of the volume consists of other oak and hickory species, as well as various other species.

**Stand 2 - Oak hickory**

This 54-acre stand is the primary stand type in this tract, and is covers most of the east facing slopes in the tract.

The total volume of the stand (9091 bd. ft/ac) is composed primarily of white oak (1747 bd. ft/ac), black oak (1558 bd. ft/ac), northern red oak (1267 bd. ft/ac), and pignut hickory (1248 bd. ft/ac). The remaining 35% of the volume consists of white ash, yellow-poplar, sugar maple, and various other species.

**Stand 3 – Rocky south slope**

This 9-acre stand is found mostly on the exposed south slope of the ridge. This area has shallow soil and exposed rock that has always had natural low productivity, and contains the typical assemblage of cedar, ash, and chinkapin oak.

The marginal total stand volume (853 bd. ft/acre) is composed primarily of white ash (394 bd. ft/acre), northern red oak (267 bd. ft/ac), and chinkapin oak (192 bd. ft/acre). There is a significant component of cedar in this stand, but all of it is small and did not show up on the tally of volume since this stand was not tallied using the cedar log scale.

**SOILS:** The following soils are found on the tract in approximate order of importance.

**CoF Corydon stony silt loam, 20-60% slopes** Upland oak SI is 65-75, Yellow-poplar SI is 80-90, est. growth is 155-220 bd. ft/ac/yr. for oaks and 260-335 bd. ft/ac/yr. for yellow-poplar.

**GpF Gilpin-Berks complex, 18-30% slopes** Upland oak SI is 70-80, Yellow-poplar SI is 70-80, est. growth is 185-260 bd. ft/ac/yr. for oaks and for yellow-poplar.

**HaE2 Hagerstown silt loam, 18-25% slopes, eroded** Upland oak SI is 85-95, Yellow-poplar SI is 95-105, est. growth is 300-375 bd. ft/ac/yr. for oaks and 375-450 bd./ ft/ac/yr. for yellow-poplar.

**TlB2 Tilsit silt loam, 2-6% slopes, eroded** Upland oak SI is 70-80, Yellow-poplar SI is 85-95, est. growth is 185-260 bd. ft/ac/yr. for oaks and 300-375 bd./ ft/ac/yr. for yellow-poplar.

**ZaC3 Zanesville silt loam, 6-12% slopes, severely eroded** Upland oak SI is 70-80, Yellow-poplar SI is 85-95, est. growth is 185-260 bd. ft/ac/yr. for oaks and 300-375 bd./ ft/ac/yr. for yellow-poplar.

**WeC2 Wellston silt loam, 6-12% slopes, eroded** Upland oak SI is 70-80, Yellow-poplar SI is 90-100, est. growth is 185-260 bd. ft/ac/yr. for oaks and 335-415 bd./ ft/ac/yr. for yellow-poplar.

**RECREATION:** This tract is located in the heart of the largest contiguous block of forest comprising Harrison-Crawford State Forest. A horse trail traverses the north end, and the Adventure Hiking Trail winds through the southern reaches of it, as well. Cold Friday road gives nearby access via the firelane. Consequently, there is probably a high amount of usage of this tract by trail riders and hikers, as well as hunters during the fall season. Limekiln Hollow cave is located within this tract, so there is also use of this area by cavers as well.

**WILDLIFE:** This tract represents typical upland forest habitat, in addition to a small component of rocky south slopes with cedar and smaller hardwoods. Consequently, it likely receives use from a typical assemblage of common game and nongame wildlife species such as white-tailed deer, wild turkey, squirrels, songbirds, snakes, box turtles, and others. Hard mast food sources are provided by the oak hickory stand, but another habitat component would come from the scattered cedar trees. These areas provide cover and bedding areas, especially during the winter months.

Snags were tallied in this inventory for potential uses by wildlife. The following tables summarize guidelines and actual data with regard to the new strategy for consideration of the Indiana bat. As a note, the numbers for the live tree densities were calculated using all species of trees and not just the list of 14 "preferred" species that have been documented as being used by the Indiana bat. The reasoning behind this is that once a tree dies, regardless of the species, the bark starts to separate from the wood and produces potentially suitable habitat for maternity usage by bats. Indeed, species has never been a consideration with regard to either actual tallies or recommendations for optimal number of snags. Consequently, it is assumed that any species of live tree can potentially serve as dead snag habitat if natural mortality occurs. Additionally, limiting live tree counts to only 14 species will likely result in a deficit from recommended target numbers – especially larger trees.

Guidelines for preferred density of live and dead trees for use by Indiana bat:

| | **Number of trees per acre** | |
|---|---|---|
| **Tree type** | **10 to 18 inches DBH** | **20 inch DBH and greater** |
| **LIVE** | **6 (in 12-18" class)** | **3** |
| **SNAG** | **3** | **0.5** |

Actual numbers from tract 2912:

| | **Number of trees per acre (present – harvest = residual)** | |
|---|---|---|
| **Tree type** | **10 to 18 inches DBH** | **20 inch DBH and greater** |
| **LIVE** | 41.7 – 16.7 = **25.0 (in 12-18" class)** | 13.3 – 5.3 = **8.0** |
| **SNAG** | **4.5** | **0.6** |

These numbers show that both live tree densities as well as snag densities meet guidelines on this tract. The result for large snags is consistent with several other recently completed inventories on other tracts of the forest, where large snag densities are below one per acre, though the density here is definitely higher than on other tracts where densities seem to hover at about 0.3 per acre. The vast majority of snags are in the smaller size classes, which makes them unsuitable for most nesting or roosting purposes, but some feeding use might be gained from them.

Management activities will not intentionally remove snags, with a few exceptions of large recently dead trees or storm damage when possible, so the timber sale will not negatively impact that below target component significantly. Creation of more snags in this size class could be undertaken by girdling large cull trees in a post-harvest TSI operation.

Additionally, management activities involving a timber sale should not affect this habitat long-term from the perspective of any wildlife utilizing it due to the maintenance of a

forested habitat on the tract. Creation of openings will create early successional forest habitat that will be beneficial to certain groups of wildlife dependent upon this habitat. Likely, early successional habitat created with such management will also benefit a wider segment of wildlife species that preferentially utilize such habitat for feeding and cover more so than later successional stage habitat.

This tract does come close to bordering a major stream – the Ohio River, but there should be no disruption of any potential travel corridors by forest management activities. This is due to fact that this portion of the Ohio River corridor is generally and heavily forested, and management in this area will not eliminate or isolate this habitat. The habitat on this tract in the context of the surrounding landscape does represent a component that would be used more preferentially by wildlife for traveling or dispersion, as riparian habitat can be. But, again, it is not an isolated fragment of forest that would be unduly impacted with management activities.

Since this tract represents a component of a relatively sizeable acreage of contiguous forest, it is possible that forest management activities might disrupt any forest interior species by creating edge habitat for generalist species to "invade" the area. This would possibly occur if regeneration openings were put in place that offered a habitat preferred by such generalist species which might move in and start using such habitat. In the context of the surrounding landscape, this tract represents a moderate chunk of forest in a matrix of surrounding forest land.

**WATERSHED / HYDROLOGY:** The majority of the tract contains gentle to moderately steep slopes that drain into an intermittent drainage that very shortly drains into the Ohio River to the south. This area lies within a karst landscape with underground drainage, and there are several sinkholes scattered within the tract. There is also a short cliff line in the eastern portion of the tract.

There are two definite caves located in this tract that accentuate the karst topography – Limekiln Hollow Cave and Limekiln Pit Cave. The pit is not extensive, but Limekiln Hollow Cave goes for at least a half mile underground – mostly in a crawling passage, but it contains some canyon passage as well as speleotherms.

**HISTORICAL AND CULTURAL:** Cultural resources may be present on the tract but their location is protected. Adverse impacts to significant cultural resources will be avoided during any management or construction projects.

**RARE, THREATENED, OR ENDANGERED SPECIES:** The database shows a large circle centered on the northern tip of this tract, but inclusive of a large surrounding area that overlaps much of this tract, for which three species were listed – Bachman's sparrow (observed 1953), rough rattlesnake root (observed 1945), and hooded warbler (observed 1988). The size of these circles would seem to indicate a poor (nonspecific) location point. Also, the length of time since the first two species were recorded indicates that these species likely may not be present any longer. The hooded warbler sighting was also

over 20 years ago as well, and an individual bird sighting indicates only that one individual was at that particular location at that time.

These records seem to indicate occasional use of the area in general by certain species over time rather than a permanent inhabitation of tract 2912 in particular by any of these species of concern.

In addition to these three species for which there is nonspecific location data, there was also a host of cave related species that showed up in the database that were associated specifically with Limekiln Hollow Cave and Limekiln Hollow Pit. These include the following invertebrate species: *Sinella alata* (springtail), *Carychium riparium* (floodplain thorn), *Cicurina arcuata* (funnel-web weaver), *Calymmaria cavicola* (cave funnel-web spider), *Erebomaster flavescens* (golden cave harvestman), *Sphalloplana weingartneri* (Weingartner's cave flatworm), *Orconectes inermis inermis* (troglobytic crayfish), *Pseudotremia indianae* (Blue River cave millipede), and *Milktoniscus barri* (Barr's terrestrial isopod). Additionally, there was the mammal species – Eastern woodrat – associated with this cave.

It is anticipated that all of these species would not be affected by any surface management activities with the exception of the woodrat, which would venture from the cave into the forest for foraging. Likely, single tree selection would have very limited effect on this species as well, as long as mast producing trees are maintained as the main canopy in the area. Any ground disturbing activities such as timber sales would have to be sure to avoid any siltation into the cave or modification of the entrance, and all of the invertebrates should see no effect as a result due to their inhabitation of the subterranean environment, rather than the forest habitat surrounding it.

**EXOTICS:** There are numerous pockets of ailanthus scattered throughout this tract – usually along the fire trail, and where small openings have opened up the canopy. These are small trees, but are producing seed, and so should be treated as soon as possible so as to better control the seed source and potential future problems. There is also some infestation of stilt grass along the edges of the trails in places, and in some of the openings.

## SILVICULTURAL HISTORY AND PRESCRIPTION:

**General:** The records in the file for this tract appear to be incomplete, but seem to indicate that an inventory was done in about 1979, though there is no plan or numbers from this inventory in the file. There are records of two sales shortly thereafter in January and May of 1980, the first of which was a sawtimber sale, and the second of which was a veneer sale – both sold to Chester Stem – that covered 36 acres along the northern portion. The sawtimber sale consisted of 166 trees – mostly made up of black oak, sugar maple, and red oak – which totaled 46,000 bd ft. The veneer sale consisted of 21 trees – white, red, and black oak – which totaled 11,000 bd ft.

Since there was no previous inventory to base growth on, and no increment cores were taken, the growth rate of this tract remains unknown, but may closely approximate the neighboring tract 2804, which was calculated as 188 bd ft/ac per year.

Number of trees per acre and basal area per acre figures indicate that all stands are fully to overstocked at between 99% to 130%. Removal of trees tallied as "cut" either via a timber sale or TSI would reduce the stocking levels to between 75% to 80% (fully stocked above the B-line).

Due to the amount of volume being carried on the majority of the tract (7660 bd. ft/ac – not including cedar), the length of time since the last managed sale (30 years back to 1980), and the general condition of the overstory trees in the majority of the tract, the initial impression was that a medium level harvest could be undertaken in this tract at any time. This would produce a sale volume of about 215,000 board feet or about 2700 board feet per acre and leave about 390,000 board feet, or about 4900 board feet per acre.

It is recommended that Timber Stand Improvement (TSI) be undertaken in this tract after the harvest to accomplish a variety of tasks, including completion of any marked openings. TSI of pole-size trees may be required for thinning in places, and to open up the understory for potential oak regeneration to take hold or be released. Vines did not seem to be a big problem in this tract, but need to be kept at bay with TSI activities as well. Extensive understory treatment of shade tolerant species will be necessary to encourage oak regeneration where present. Ailanthus needs to be monitored and eliminated when found to be present or establishing itself. There were several small areas of ailanthus noted at the time of inventory – mostly scattered around in the northern half.

**Stand 1: Mixed mespophytic**

This 17-acre stand contains a volume of 6710 board feet per acre of which 1980 was classified as harvestable and 4730 was classified as residual. This would remove 28 square feet of basal area, which would leave the residual stand with 79 sq. ft. Stocking would drop from 99% to about 75% with the indicated management (fully stocked above the B-line).

Since the last harvest in this tract was 30 years ago, and because it currently contains a moderate volume of harvestable material and a high volume of residual growing stock, the recommendation would be to rank this stand as a medium to high priority for conducting a harvest. Any timber sale would primarily include this entire stand as well as all of stand 2, with some trees from stands 3. The majority (71%) of the harvest volume for stand 1 (1982 bd. ft/ac) would be contained in yellow-poplar (1414 bd. ft/ac). The remainder would be contained in sugar maple, black cherry, and black oak.

Post harvest TSI should be performed to eliminate any residual cull or small pole-sized trees not cut during the harvest, as well as thin where necessary, complete any

regeneration openings, and kill grapevines where present. As always, any ailanthus present should also be treated and eliminated. There are pockets of ailanthus scattered primarily in the northern half of this tract.

**Stand 2: Oak hickory**

This 54-acre stand covers two thirds of the tract, and is located primarily along the slopes south of the fire trail. It contains a volume of 9091 board feet per acre of which 3362 was classified as harvestable and 5729 was classified as residual. This would remove 49 square feet of basal area, which would leave the residual stand with 83 sq. ft. Stocking would drop from 120% to about 80% with the indicated management (fully stocked above the B-line).

Since the last harvest in this tract was 30 years ago, and because it also currently contains a high volume of both harvestable material and residual growing stock, it should be included with stand 1 as a medium to high priority for conducting a harvest. The majority (68%) of the harvest volume for stand 2 (3362 bd. ft/ac) would be contained in black oak (847 bd. ft/ac), white ash (621 bd. ft/ac), red oak (403 bd. ft/ac), and white oak (402 bd. ft/ac), with yellow-poplar, chinkapin oak, sugar maple, and various other species making up of the remainder of the harvest volume.

Most of the stand would probably be harvested under a single tree selection routine with larger regeneration openings targeting groups of low-grade trees or multiple large trees growing together. When possible, selection should also favor releasing future crop trees. The residual stand should be heavier to white oak – the primary residual tree species, with a lesser component of other oak species, as well as mesophytic species.

Post harvest TSI should be performed to eliminate any residual cull or small pole-sized trees not cut during the harvest, as well as thin where necessary, complete any regeneration openings, and treat the understory to eliminate shade tolerant species in favor of oaks and other more desirable species. As always, any ailanthus present should also be treated and eliminated. There are several pockets of ailanthus scattered throughout the northern half of this tract – mostly within this stand.

**Stand 3: Rocky south slope**

This 9-acre stand is located on a south rock exposure, and contains a volume of 832 board feet per acre of which 267 was classified as harvestable and 586 was classified as residual. This would remove 50 square feet of basal area, which would leave the residual stand with 75 sq. ft. Stocking would drop from 130% to about 80% with the indicated management (fully stocked above the B-line). These figures DO include cedar as figured according to the cedar log scale.

Since this stand intermingles with the more merchantable hardwood stands, there would likely be some trees included from here along with any timber sale taking place in stands 1 and 2. All of the harvest volume tallied in this stand (267 bd. ft/ac) is represented by

northern red oak. Since the cedar scale was not used for this inventory, most of the volume would actually be represented by cedar (which didn't show up in the tally), and a separate cedar sale would probably have to be undertaken to actually market and remove this cedar. Since it is a small area on a rocky south slope, it likely will be left alone to maintain some habitat diversity, with the exception of some hardwood trees along the edges that might be included in any hardwood sale. White ash and chinkapin oak make up the hardwood remainder of the stand.

There was one patch of ailanthus growing in and near part of this stand that should be included in any tract-wide ailanthus control that should be done in this tract.

**PROPOSED ACTIVITIES LISTING**

| | |
|---|---|
| Fall 2006 | Field inventory |
| Summer 2010 | Write mgmt plan |
| Winter 2010 - Summer 2011 | Basal bark treat ailanthus |
| Summer 2011 – Fall 2011 | Mark timber sale |
| Winter 2011 - Spring 2012 | Sell timber sale |
| 2012 / 2013 | Post harvest TSI |
| 2015 | Recon & monitor for exotics |
| 2020-2025 | Inventory for next mgmt cycle |

**To submit a comment on this document, click on the following link:**
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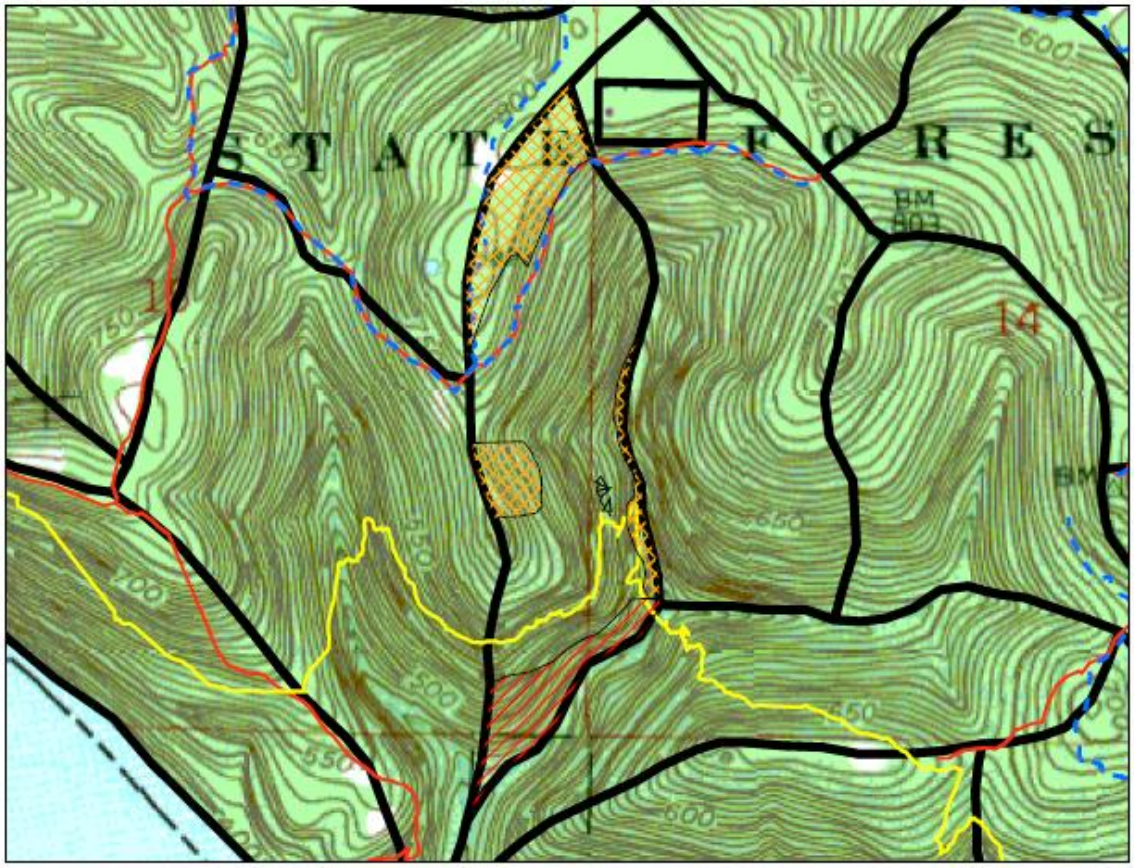
You **must** indicate the State Forest Name, Compartment Number and Tract Number in the "Subject or file reference" line to ensure that your comment receives appropriate consideration. Comments received within 30 days of posting will be considered.

# Tract 2912




## Legend

- Caves
- Historic Sites
- Rock line
- Fire Trail
- Horse Trail
- Adv. Hiking Trail
- Cliff line

N
W
E
S

- Stand 1: Mixed Mesophytic (17 ac)
- Stand 2: Oak/Hickory (54 ac)
- Stand 3: Rocky south slope (9 ac)

## APPENDIX

## (Various tables and graphs describing tract 2912)

A SUMMARY OF VARIOUS STATISTICS FOR TRACT 2912

Summary of basal area (sq ft per acre)

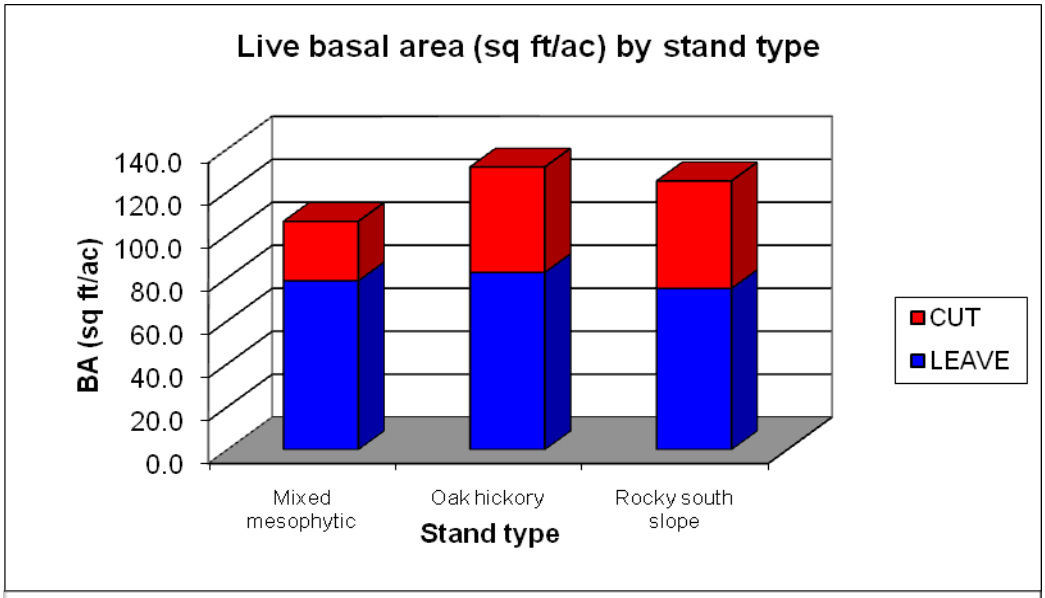
| STAND | LEAVE | CUT | (SNAG) | TOTAL (live) |
|---|---|---|---|---|
| Mixed mesophytic | 78.6 | 27.6 | 26.3 | 106.2 |
| Oak hickory | 82.5 | 49.0 | 6.0 | 131.5 |
| Rocky south slope | 75.0 | 50.0 | 20.0 | 125.0 |

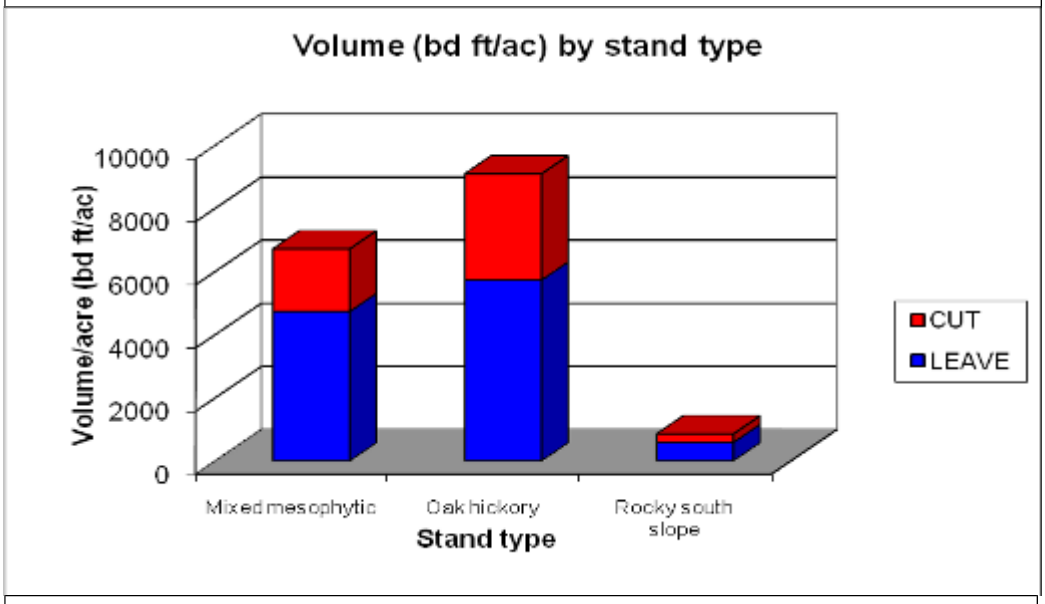
Summary of volume (bd ft per acre)

| STAND | LEAVE | CUT | TOTAL (live) |
|---|---|---|---|
| Mixed mesophytic | 4731 | 1982 | 6713 |
| Oak hickory | 5729 | 3362 | 9091 |
| Rocky south slope | 586 | 267 | 853 |

Summary of number of trees per acre

| STAND | LEAVE | CUT | (SNAG) | TOTAL (live) |
|---|---|---|---|---|
| Mixed mesophytic | 261 | 35 | 76 | 296 |
| Oak hickory | 282 | 45 | 12 | 327 |
| Rocky south slope | 473 | 102 | 468 | 575 |


Live basal area (sq ft/ac) by stand type
BA (sq ft/ac)
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Mixed mesophytic
Oak hickory
Rocky south slope
Stand type
CUT
LEAVE


Volume (bd ft/ac) by stand type
Volume/acre (bd ft/ac)
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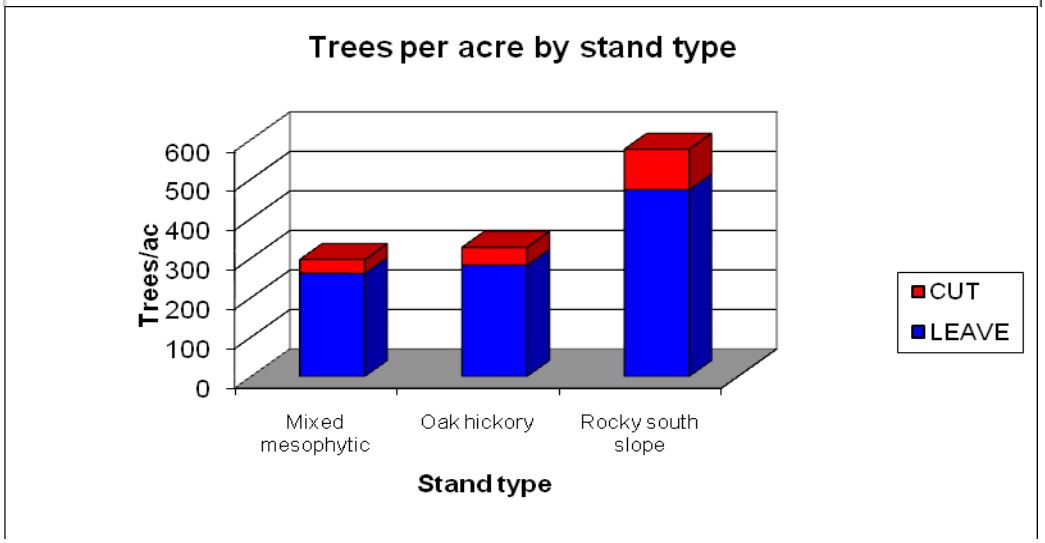
8000
6000
4000
2000
0
Mixed mesophytic
Oak hickory
Rocky south slope
Stand type
CUT
LEAVE


Trees per acre by stand type
Trees/ac
600
500
400
300
200
100
0
Mixed mesophytic
Oak hickory
Rocky south slope
Stand type
CUT
LEAVE

A SUMMARY OF VOLUME PER ACRE (bd ft/ac) BY SPECIES FOR TRACT 2912

Stand 1: Mixed mesophytic

Volume (bd ft/ac)

| Species | CUT | LEAVE | TOTAL |
|---|---|---|---|
| BLC | 106 | | 106 |
| BLO | 89 | | 89 |
| ZCO | | 179 | 179 |
| PIH | | 329 | 329 |
| SAS | | 146 | 146 |
| SHH | | 267 | 267 |
| SUM | 373 | 340 | 713 |
| WHA | | 316 | 316 |
| WHO | | 170 | 170 |
| YEP | 1414 | 2984 | 4398 |
| TOTAL | 1982 | 4731 | 6713 |

Stand 2: Oak hickory

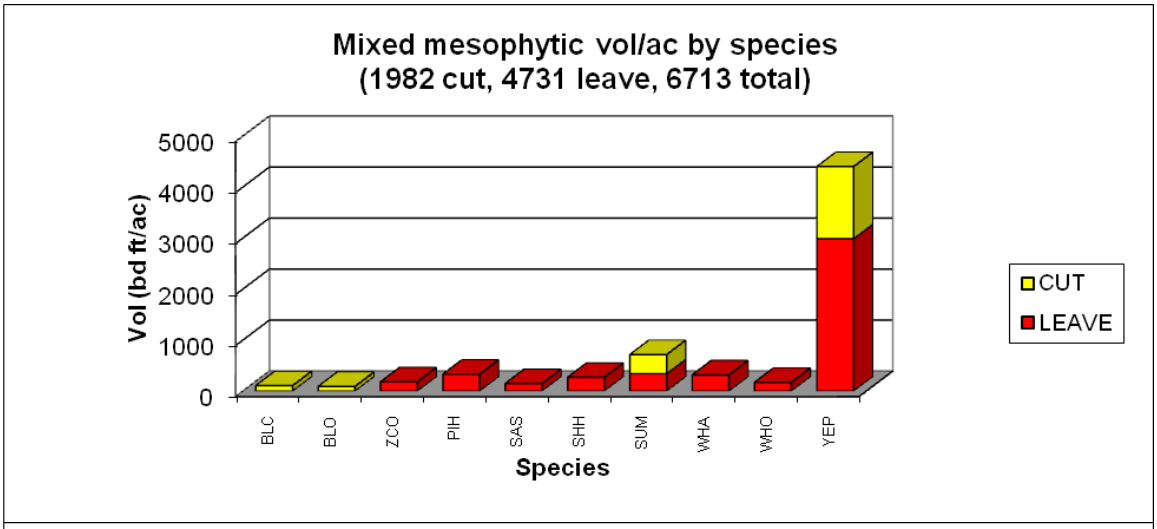
Volume (bd ft/ac)

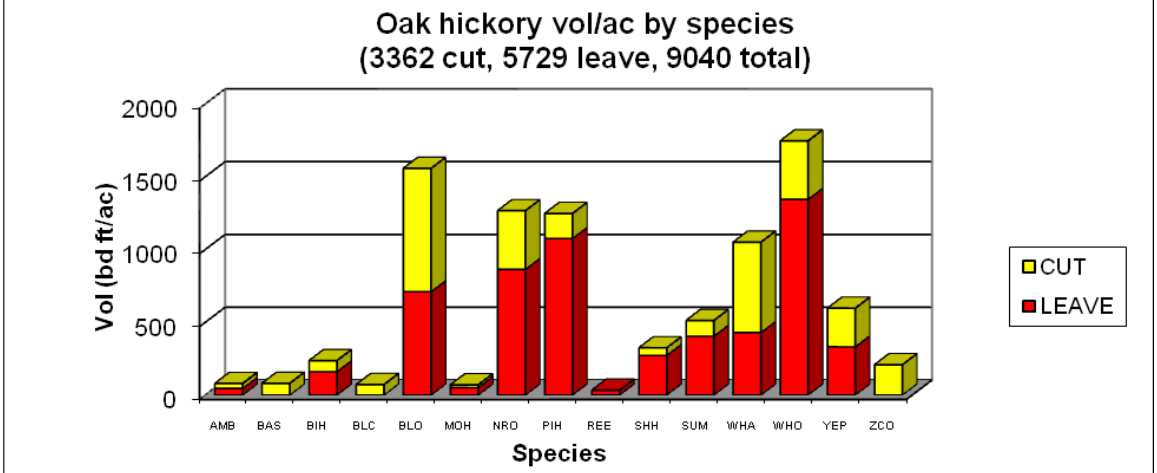
| Species | CUT | LEAVE | TOTAL |
|---|---|---|---|
| AMB | 34 | 46 | 80 |
| BAS | 81 | | 81 |
| BIH | 76 | 161 | 237 |
| BLC | 73 | | 73 |
| BLO | 847 | 711 | 1558 |
| MOH | 19 | 52 | 71 |
| NRO | 403 | 864 | 1267 |
| PIH | 172 | 1076 | 1248 |
| REE | | 34 | 34 |
| SHH | 52 | 273 | 325 |
| SUM | 108 | 405 | 513 |
| WHA | 621 | 430 | 1051 |
| WHO | 402 | 1345 | 1747 |
| YEP | 265 | 332 | 597 |
| ZCO | 209 | | 209 |
| TOTAL | 3362 | 5729 | 9091 |

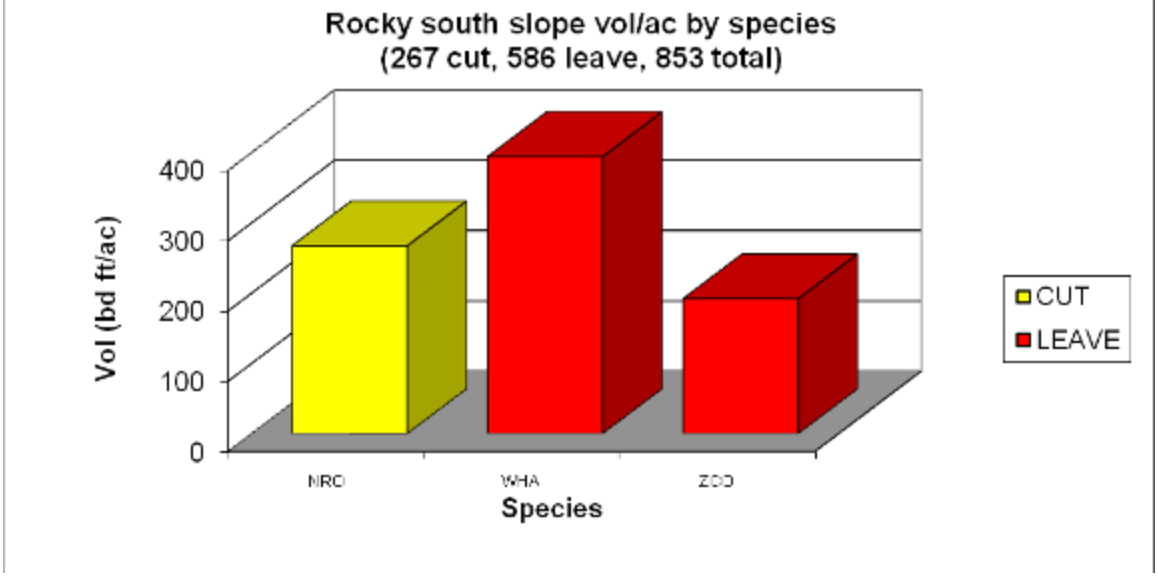
Stand 3: Rocky south slope

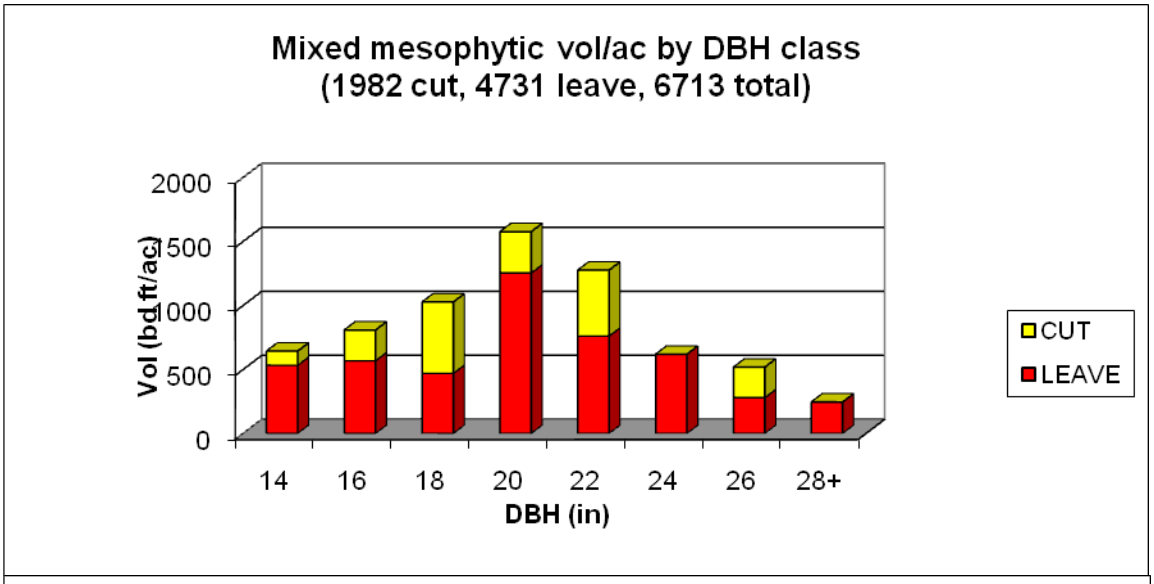
Volume (bd ft/ac)

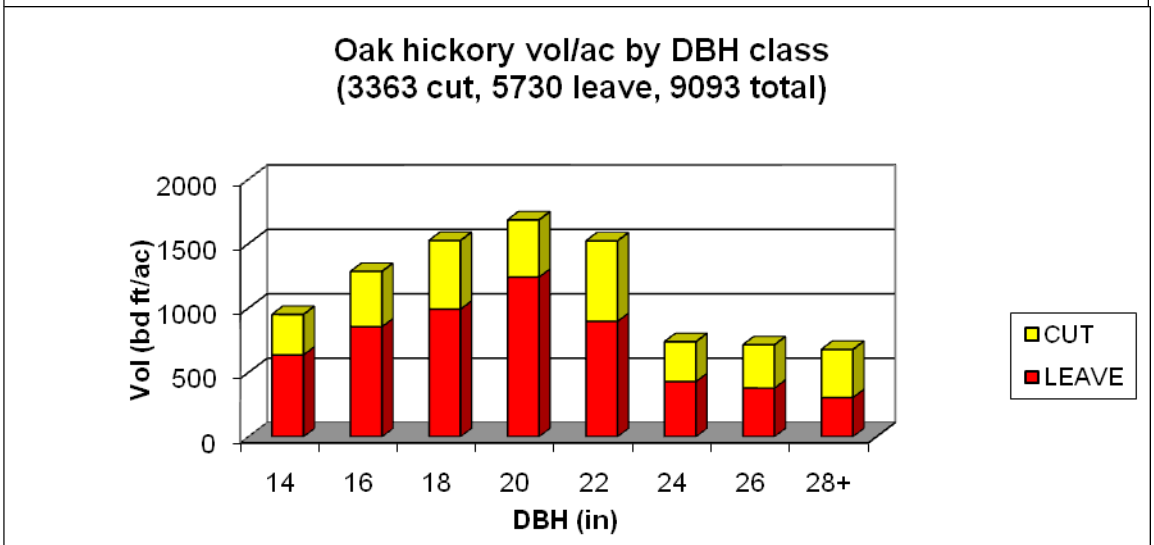
| Species | CUT | LEAVE | TOTAL |
|---|---|---|---|
| NRO | 267 | | 267 |
| WHA | | 394 | 394 |
| ZCO | | 192 | 192 |
| TOTAL | 267 | 586 | 853 |

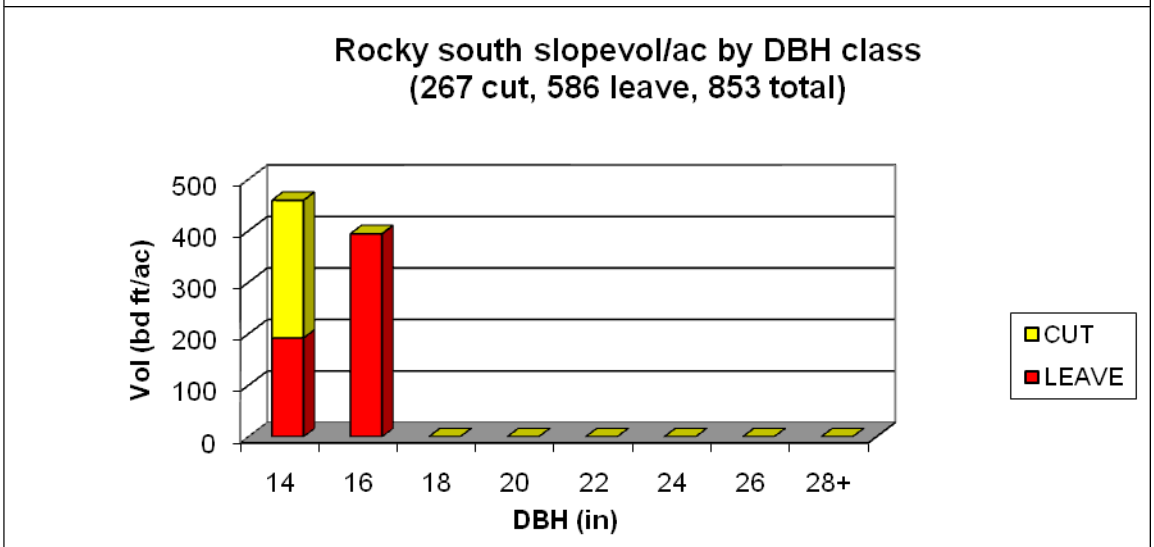

Mixed mesophytic vol/ac by species
(1982 cut, 4731 leave, 6713 total)
Vol (bd ft/ac)
5000
4000
3000
2000
1000
0
BLC
BLO
ZCO
PIH
SAS
SHH
SUM
WHA
WHO
YEP
Species
CUT
LEAVE


Oak hickory vol/ac by species
(3362 cut, 5729 leave, 9040 total)
Vol (bd ft/ac)
2000
1500
1000
500
0
AMB
BAS
BIH
BLC
BLO
MOH
NRO
PIH
REE
SHH
SUM
WHA
WHO
YEP
ZCO
Species
CUT
LEAVE


Rocky south slope vol/ac by species
(267 cut, 586 leave, 853 total)
Vol (bd ft/ac)
400
300
200
100
0
NRO
WHA
ZCO
Species
CUT
LEAVE


Mixed mesophytic vol/ac by DBH class
(1982 cut, 4731 leave, 6713 total)
Vol (bd ft/ac)
2000
1500
1000
500
0
14
16
18
20
22
24
26
28+
DBH (in)
CUT
LEAVE


Oak hickory vol/ac by DBH class
(3363 cut, 5730 leave, 9093 total)
Vol (bd ft/ac)
2000
1500
1000
500
0
14
16
18
20
22
24
26
28+
DBH (in)
CUT
LEAVE


Rocky south slopevol/ac by DBH class
(267 cut, 586 leave, 853 total)
Vol (bd ft/ac)
500
400
300
200
100
0
14
16
18
20
22
24
26
28+
DBH (in)
CUT
LEAVE