

**RESOURCE MANAGEMENT GUIDE**

STATE FOREST: Harrison Crawford

COMPARTMENT: 30 TRACT: 07

Date: February 17, 2010  
(Inventory – June, 2008)

Forester: Wayne Werne & Abby Irwin

**INVENTORY SUMMARY**

**NUMBER OF STANDS:** 4                      **Est. growth: 171 bd. ft/ac/yr\*\***  
**PERMANENT OPENINGS:** 0.0 ac                      **Est. cutting cycle: 11-15 yrs**  
**TOTAL ACREAGE:** 128.0 ac  
**AVERAGE SITE INDEX:** 70-90 (for upland oaks)  
**AVERAGE BASAL AREA:** 144 sq. ft/ac

**\*\*Growth** was calculated by using 2008 volume **MINUS cedar**, subtracting the volume of 2763 bd ft/ac from the 1973 inventory and the 137,000 bd. ft. from the 1974 and 1985 sales, and dividing by 35 years of growth. Cedar volume was figured using a different cedar log scale (much more volume from small trees), which was not used in 1981.

**TRACT 3007 TOTAL VOLUME (bd ft)**

SPECIES	CUT		LEAVE		TOTAL	
	per acre	total	per acre	total	per acre	total
American beech	110	14,080	120	15,360	230	29,440
Basswood	10	1,280	50	6,400	60	7,680
Bitternut hickory		-	100	12,800	100	12,800
Black cherry	10	1,280	10	1,280	20	2,560
Blackgum	30	3,840		-	30	3,840
Black oak	1,070	136,960	1,080	138,240	2,150	275,200
Black walnut		-	10	1,280	10	1,280
Blue ash	10	1,280	50	6,400	60	7,680
Chinkapin oak		-	220	28,160	220	28,160
<i>Eastern redcedar*</i>	920	117,760	100	12,800	1,020	130,560
Mockernut hickory		-	60	7,680	60	7,680
Northern red oak	460	58,880	560	71,680	1,020	130,560
Pignut hickory	30	3,840	270	34,560	300	38,400
Post oak	10	1,280	40	5,120	50	6,400
Red elm		-	10	1,280	10	1,280
Red maple	70	8,960		-	70	8,960
Scarlet oak	300	38,400	60	7,680	360	46,080
Shagbark hickory		-	60	7,680	60	7,680
Sugar maple	130	16,640	190	24,320	320	40,960
White ash	160	20,480	340	43,520	500	64,000
White oak	180	23,040	1,150	147,200	1,330	170,240
Yellow-poplar	290	37,120	440	56,320	730	93,440
<b>TTOTAL</b>	<b>3,790</b>	<b>485,120</b>	<b>4,920</b>	<b>629,760</b>	<b>8,710</b>	<b>1,114,880</b>

*\*Cedar volume was calculated using a special cedar scale that counts volume in trees 6" DBH and larger, which results in high volumes for stands of small trees.*

**STAND 1 – Mixed mesophytic****ACREAGE: 15.8**

	<b>CUT</b>	<b>LEAVE</b>	<b>TOTAL</b>	<b>SNAG</b>
VOLUME/ACRE:	3,940	5,560	9,500	
TOTAL VOLUME:	62,300	87,800	150,100	
BASAL AREA/ACRE:	60.0	70.6	130.6	
# TREES/ACRE:	49	220	269	

**STAND 2 – Oak hickory****ACREAGE: 73.9**

	<b>CUT</b>	<b>LEAVE</b>	<b>TOTAL</b>	<b>SNAG</b>
VOLUME/ACRE:	3,970	5,680	9,650	
TOTAL VOLUME:	293,400	419,800	713,100	
BASAL AREA/ACRE:	54.8	91.8	146.6	
# TREES/ACRE:	57	366	423	

**STAND 3 – Old field - cedar****ACREAGE: 32.8**

	<b>CUT</b>	<b>LEAVE</b>	<b>TOTAL</b>	<b>SNAG</b>
VOLUME/ACRE:	3,970	2,700	6,670	
TOTAL VOLUME:	130,200	88,600	218,800	
BASAL AREA/ACRE:	56.3	85.3	141.6	
# TREES/ACRE:	107	576	683	

**STAND 4 – Rocky south slope****ACREAGE: 5.5**

	<b>CUT</b>	<b>LEAVE</b>	<b>TOTAL</b>	<b>SNAG</b>
VOLUME/ACRE:	470	5,710	6,180	
TOTAL VOLUME:	2,600	31,400	34,400	
BASAL AREA/ACRE:	15.0	145.1	160.1	
# TREES/ACRE:	9	840	849	

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

**TRACT BOUNDARIES:** This tract is mostly surrounded by other tracts of state owned land. The western boundary is formed by a fire trail / horse trail that follows a ridge that divides this tract from tract 3006. The northern boundary is also formed by a fire / horse trail (307) that follows a ridge that divides this tract from tract 3005. The eastern boundary is formed by a drainage that divides it from tract 3008, and the south boundary is formed by a drainage that divides it from tracts 3010 and 3011. There is a little bit of private property bordering this tract in the southeast, and it appears that the line is an old road bed. There were some wooden survey lathes in place here, but no cornerstone was found.

**ACCESS:** This tract is generally accessed from the more substantial fire trail 307 on the north side, as well as by the connector road/trail that connects that fire trail to fire trail 308 farther south. That connector trail follows a ridge on the western side of the tract.

**ACQUISITION HISTORY:** The land that makes up this tract was primarily acquired from one previous landowner with a little bit coming mostly from two other acquisitions. The vast majority of this tract was acquired in 1934 (deed 131.9) through what appears to be a sale of that land for either unpaid taxes or an unpaid mortgage by Harrison County to the state of Indiana for purposes of the Township 5-Range 3 School Fund and the county general fund (for \$5 per acre). This land had apparently been mortgaged by George and Margaret Smith to Harrison County in 1917 with the payment due (and assuming unpaid) in 1928. A portion on the eastern side was acquired from Lillie Colvin in 1936 for an unknown sum of money (deed 131.13). A small portion on the western side was acquired from Robert Sample in 1936 for about \$5.28 per acre (deed 131.40).

**TRACT DESCRIPTION:** This tract was divided into four stands based on cover type and past management. These stands include: mixed mesophytic, oak hickory, old field – cedar, and rocky south slope. The old field stand did have a lot of cedar in portions, but it contained one small area of pine, and also gradated into young hardwoods in places. These stands will be described in detail below.

### **Stand 1 – Mixed mesophytic**

This 16-acre stand was found primarily in the north central portion of the tract, where there were sinkholes that allowed for more mesic species to punctuate the mostly oak hickory stand that covered most of the tract. Usually the mixed mesophytic stands are dominated with a mixture of yellow-poplar, white ash, and sugar maple, but this stand on this tract had a fairly high component of beech and sugar maple, so it might actually qualify as a true beech-maple stand in places.

The total volume of the stand (9500 bd. ft/ac) is composed primarily of yellow-poplar (1850 bd. ft/ac), American beech (1450 bd. ft/ac), black oak (1110 bd. ft/ac), and sugar maple (1010 bd. ft/ac). The remaining 43% of the volume consists of white ash, white oak, red maple, and various other species.

### **Stand 2 - Oak hickory**

This 74-acre stand covers the majority of the tract, with the exception of the lower areas along the drainage, and some of the rocky south facing slopes. In portions of the north central section, this stand gradated into the mixed mesophytic dominated stand, which also contained lesser quantities of the oak component.

The total volume of the stand (9650 bd. ft/ac) is composed primarily of black oak (2500 bd. ft/ac), white oak (1980 bd. ft/ac), and northern red oak (1580 bd. ft/ac). The remaining 37% of the volume consists of yellow-poplar, scarlet oak, white ash, hickory, and various other species.

### **Stand 3 - Old field – cedar**

This 33-acre stand is found on the lower slopes near the drainage, and represents former agricultural fields that have succeeded back to a mixture of hardwoods and eastern redcedar. Portions of this stand were heavily dominated with cedar, but it gradated into areas of young hardwoods, as well as some Virginia pine in the northwestern portion. There is some good oak regeneration present in places that would benefit from the removal of the cedar and undesirable hardwood component.

The total stand volume (6670 bd. ft/acre) is composed primarily of eastern redcedar (3250 bd. ft/acre) and black oak (2190 bd. ft/acre). The remaining 20% of the volume consists of yellow-poplar, chinkapin oak, scarlet oak, and various other species. It should be noted that the high volume of cedar is due to using a cedar log scale that results in a higher than Doyle volume, and includes trees down to 6" DBH as sawtimber volume.

### **Stand 4 – Rocky south slope**

This small 6-acre stand is found in the southeastern portion of the tract and occupies an area of shallow soils and exposed rock. It is a typical stand of this type and is dominated with small cedar, ash, and oak.

The total stand volume (6180 bd. ft/acre) is composed primarily of white ash (1730 bd. ft/acre), eastern redcedar (1470 bd. ft/acre), and white oak (1210 bd. ft/acre). The remaining 30% of the volume consists of post oak, chinkapin oak, and northern red oak. It should be noted that the high volume of cedar is due to using a cedar log scale that results in a higher than Doyle volume, and includes trees down to 6" DBH as sawtimber volume.

**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.

**HgD3 Hagerstown silty clay loam, 12-18% slopes, severely eroded** Upland oak SI is 85-95, Yellow-poplar SI is 90-105, est. growth is 300-375 bd. ft/ac/yr. for oaks and 335-450 bd./ ft/ac/yr. for yellow-poplar.

**HgE3 Hagerstown silty clay loam, 18-25% slopes, severely 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.

**HaD2 Hagerstown silt loam, 12-18% slopes, eroded** Upland oak SI is 85-95, Yellow-poplar SI is 90-105, est. growth is 300-375 bd. ft/ac/yr. for oaks and 335-450 bd. ft/ac/yr. 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.

**HaC2 Hagerstown silt loam, 6-12% slopes, eroded** Upland oak SI is 85-95, Yellow-poplar SI is 90-105, est. growth is 300-375 bd. ft/ac/yr. for oaks and 335-450 bd. ft/ac/yr. for yellow-poplar.

**GID2 Gilpin silt loam, 12-12% 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.

**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.

**BtD5 Gilpin silt loam, 6-25% slopes, gullied** Virginia pine SI is 53-72, est. growth is 100-200 bd. ft/ac/yr.

**RECREATION:** This tract, in conjunction with the area surrounding it, forms the largest contiguous portion of state owned land that makes up the forest, and as such, it probably receives a medium to high level of recreational use. The fire trail that forms the north boundary of this tract is a direct access to a large part of the property from Cold Friday Road. This fire trail also serves as a horse trail, as well as a disabled hunter trail. The trail that forms the western boundary of the tract is also a fire/horse trail, and would receive ample use as well.

Additionally, the adventure hiking trail goes through a lot of this tract, and would consequently receive backpacking and other hiking use. There is also a rudimentary “shelter” along the adventure trail within this tract that may receive some overnight camping use. It is likely that a fair amount of hunting use is also received by this tract as well – especially since it is along a disabled hunter trail.

**WILDLIFE:** This tract represents typical upland forest habitat, in addition to a small component of old field 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. The categories of optimal and maintenance guideline numbers were broken down by size class subcategory, but are inclusive of size classes above that. In other words, the maintenance guideline for number of snags in the 6” class and larger was 4 per acre, but of that number 0.5 per acre should be 20”+ and 3 should be 10’-18” or greater. This was done because larger trees are more valuable and less common, and were given the greater importance when calculating total guideline numbers.

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

<b># of live trees per acre</b>	<b>Guidelines maintenance</b>	<b>Tract 3007 actual present – harvest = residual</b>
<b>12”-18” DBH class</b>	<b>6</b>	<b>39.9 – 10.3 = 29.6</b>
<b>20” DBH and greater</b>	<b>3</b>	<b>16.3 - 7.6 = 8.7</b>
<b>Total</b>	<b>9</b>	<b>56.2 - 17.9 = 38.3</b>

<b># snags per acre</b>	<b>Guidelines maintenance</b>	<b>Guidelines optimal</b>	<b>Tract 3010 actual</b>
<b>6” - 8” DBH class</b>	<b>1</b>	<b>1</b>	<b>18.6</b>
<b>10”-18” DBH class</b>	<b>2.5</b>	<b>5</b>	<b>4.7</b>
<b>20” DBH and greater</b>	<b>0.5</b>	<b>1</b>	<b>0.8</b>
<b>Total</b>	<b>4</b>	<b>7</b>	<b>23.2</b>

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 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 and/or conversion of the cedar areas 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.

Since this tract does not border a major stream, there should be no disruption of any potential travel corridors by forest management activities. The habitat on this tract in the context of the surrounding landscape does not represent any special component that would be used more preferentially or exclusively by wildlife for traveling or dispersion, as riparian habitat might be, or as forest in a non-forested landscape might be.

Since this tract represents a component 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 then drains into Indian Creek about a half mile to the east, which eventually drains into the Ohio River. This area lies within a karst landscape with underground drainage, and there are several sinkholes and caves scattered within the tract. There were two karst features that might be classified as caves found in the north central portion of the tract. There was also a small pond located in the western portion of the tract as well.

**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 natural heritage database check did not show any rare, threatened, or endangered plant or animal species documented within this tract or nearby.

**EXOTICS:** There were several pockets of ailanthus found primarily in the northern half of this tract during inventory. There are very likely more occurrences of this species throughout the tract. Ailanthus seems to pop up wherever there is any kind of opening – even with one windthrown tree – and its prolific seed production usually ensures that there will be seedlings or saplings present in these openings wherever they happen to be.

There are zones of Japanese stilt grass invasion – primarily along the fire and horse trails – as well, and there may also be some of this invasive found interior to the tract wherever there has been disturbance that has opened up the canopy to sunlight and exposed the mineral soil.

#### **SILVICULTURAL HISTORY AND PRESCRIPTION:**

**General:** Utilizing records of the past history of this tract, an inventory done in 1973 indicated a total standing volume of 2763 board feet per acre. There was also a management plan written in 1991, but there seems to be no inventory information recorded for it. Subsequent to the 1973 inventory, there was a timber sale marked and sold in 1974, which removed 97,000 board feet – mostly black oak, beech, and red oak. There is a note in the 1991 plan that TSI was performed after this sale. There was another timber sale in 1985 that encompassed both tracts 3007 and 3008, which removed 39,600 board feet from 3007 – mostly scarlet oak, black oak, and red oak. TSI was marked and completed in 1986.

The 2008 inventory shows 7690 board feet per acre (8710 bd. ft/ac including cedar), and this figures out to a growth rate of 171 board feet per acre per year, after taking into account the volume removed in the 1974 and 1985 sales and 35 years of growth since then. Cedar volume was figured using a different cedar log scale (much more volume from small trees), which was not used in 1973, and this is why cedar volume is being excluded from growth calculations, as it was probably given marginal volume in 1973.

The growth figures are respectable and may have higher potential if more frequent management is applied to the tract, since it may be suffering from slowed or stagnated growth with almost 25 years since the last harvest. It is hoped and assumed that this growth rate can be increased into the future with the continued management and encouragement of vigorous and healthy crop trees.



Number of trees per acre and basal area per acre figures indicate that stands 1 and 2 are overstocked at between 115% to 135%. Stands 3 and 4 are off the charts at near 155-165%. Removal of trees tallied as “cut” either via a timber sale or TSI would reduce the stocking levels to about 70-90% stocking in the merchantable stands (1,2,3), while stand 4 showed limited reduction due to merchantability and topography limitations. Stocking levels would be reduced to a level considered fully stocked above the B-line for the first three stands and still overstocked for stand 4.

Due to the amount of volume being carried on the majority of the tract (7700 bd. ft/ac – not including cedar), the length of time since the last managed sale (25 years back to 1985), and the general size and condition of the overstory trees in the majority of the tract, the initial impression was that an improvement harvest could be undertaken in this tract at any time. This would produce a sale volume of about 365,000 board feet (not including cedar) or about 2850 board feet per acre and leave about 615,000 board feet of hardwood plus 130,000 board feet of cedar, or about 4800 board feet per acre of hardwood and 1000 board feet per acre of cedar (according to the cedar log scale).

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 pockets of ailanthus noted at the time of inventory – mostly in the eastern half of the tract. All ailanthus should be killed pre-harvest.

### **Stand 1: Mixed mesophytic**

This 16-acre stand contains a high volume of 9500 board feet per acre of which 3940 was classified as harvestable and 5560 was classified as residual. This would remove 60 square feet of basal area, which would leave the residual stand with 71 sq. ft. Stocking would drop from 115% to about 68% with the indicated management (fully stocked above the B-line).

Since the last harvest in this tract was 25 years ago, and because it currently contains a very high 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 and 4. The majority (70%) of the harvest volume for stand 1 (3940 bd. ft/ac) would be contained in yellow-poplar (750 bd. ft/ac), black oak (730 bd. ft/ac), beech (700 bd. ft/ac) and red maple (630 bd. ft/ac). The remainder would be contained in red oak, white ash, sugar maple, and blackgum.

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. A fair amount of understory control may be necessary to limit the amount of beech that currently occupies it and to prevent too much shade in the stand. As always, any ailanthus present should also be treated and eliminated.

### **Stand 2: Oak hickory**

This 52-acre stand covers over half of the tract, and contains a high volume of 9650 board feet per acre of which 3970 was classified as harvestable and 5680 was classified as residual. This would remove 55 square feet of basal area, which would leave the residual stand with 92 sq. ft. Stocking would drop from 135% to about 90% with the indicated management (fully stocked above the B-line). These figures DO include some cedar as figured according to the cedar log scale.

Since the last harvest in this tract was 25 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 (66%) of the harvest volume for stand 2 (3970 bd. ft/ac) would be contained in black oak (1490 bd. ft/ac), northern red oak (670 bd. ft/ac), and scarlet oak (470 bd. ft/ac), with yellow-poplar, white oak, white ash, 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, 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.

### **Stand 3: Old field - cedar**

This 33-acre stand covers about 25% of the tract, and contains a volume of 6670 board feet per acre of which 3970 was classified as harvestable and 2700 was classified as residual. This would remove 56 square feet of basal area, which would leave the residual stand with 85 sq. ft. Stocking would drop from 150% to about 90% 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. Black oak and yellow-poplar would be the primary species to be marked within this younger stand, and these would account for a low volume of 580 board feet per acre. Most of the harvest volume tallied in this stand (3170 bd. ft/ac) is represented by eastern redcedar due to use of the cedar scale. A separate cedar sale would probably have to be undertaken to achieve optimal management, as most of these cedar would be removed to encourage poplar and the oak regeneration that is usually found in the understory of such stands. Ultimately, this site should be completely converted to hardwoods due to recovery of the site from former agricultural activities and erosion.

Much of this stand is dominated with yellow-poplar and some oak and sugar maple in the overstory with an abundance of eastern redcedar, beech, sassafras, and red maple in the midstory and understory. In places, there is oak regeneration in the understory ranging from seedling to sapling size. Timber harvest and post harvest TSI should concentrate on releasing this oak regeneration – mostly with larger openings and follow-up TSI.

Likely, a separate hardwood sale would be conducted from an exclusive cedar sale. The hardwood component would be marked in conjunction with stands 1 and 2 first. Subsequently, a cedar sale could be conducted to help release the oak regeneration that is present in this stand. Finally, TSI would remove any leftover competing trees and allow a new stand of oak and poplar to establish itself and grow here.

#### **Stand 4: Rocky south slope**

This 6-acre stand contains a volume of 6180 board feet per acre of which 470 was classified as harvestable and 5710 was classified as residual. This would remove 15 square feet of basal area, which would leave the residual stand with 145 sq. ft. Stocking would drop from 165% to about 155% with the indicated management (way overstocked). These figures DO include cedar as figured according to the cedar log scale.

Since this stand represents a small area of shallow soils, exposed rock, and stunted trees, it is unlikely that many trees would be selected from this area to include in a harvest. There is some cedar here that might be sold in a separate cedar sale, but with low priority. TSI would not be a priority here either due to the site limitations for growing timber.

#### **PROPOSED ACTIVITIES LISTING**

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Summer 2008	Field inventory
Winter 2009 – Spring 2010	Write mgmt plan
Spring 2010 - Fall 2010	Basal bark treat ailanthus
Winter 2010 – Spring 2011	Mark timber sale
Fall 2011 - Spring 2012	Sell timber sale

2012 / 2013  
2016  
2024-2027

Post harvest TSI  
Recon & monitor for exotics  
Inventory for next mgmt cycle

**To submit a comment on this document, click on the following link:**  
[http://www.in.gov/surveytool/public/survey.php?name=dnr\\_forestry](http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry)

You **must** indicate 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.

## **APPENDIX**

**(Various tables and graphs describing tract 3007)**

A SUMMARY OF VARIOUS STATISTICS FOR TRACT 3007

Summary of basal area (sq ft per acre)

STAND	LEAVE	CUT	(SNAG)	TOTAL (live)
Mixed mesophytic	70.6	60.0	??	130.6
Oak hickory	91.8	54.8	??	146.6
Old field - cedar	85.3	56.3	??	141.6
Rocky south slope	145.1	15.0	??	160.1

Summary of volume (bd ft per acre)

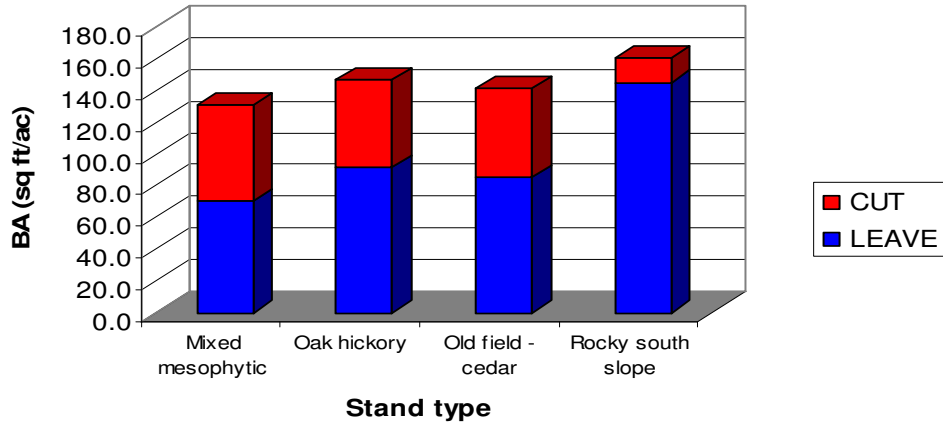
STAND	LEAVE	CUT	TOTAL (live)
Mixed mesophytic	5560	3940	9500
Oak hickory	5680	3970	9650
Old field - cedar	2700	3970	6670
Rocky south slope	5710	470	6180

Summary of number of trees per acre

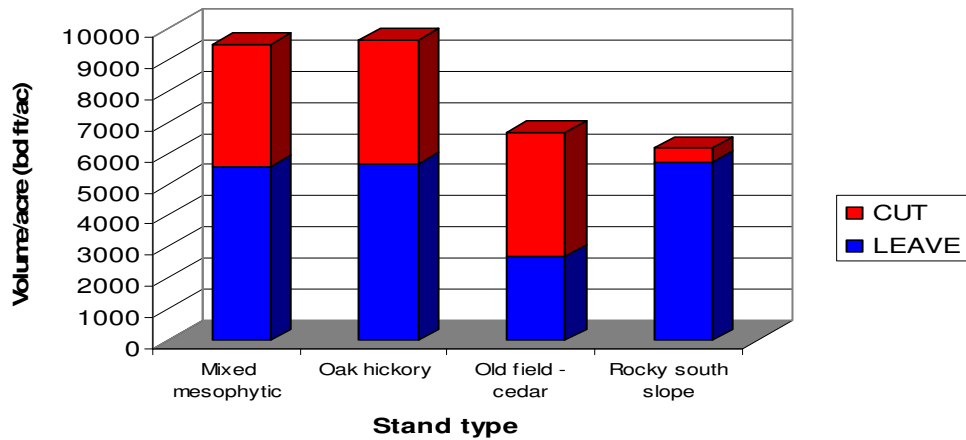
STAND	LEAVE	CUT	(SNAG)*	TOTAL (live)
Mixed mesophytic	220	49	?	269
Oak hickory	366	57	?	423
Old field - cedar	576	107	?	683
Rocky south slope	840	9	?	849

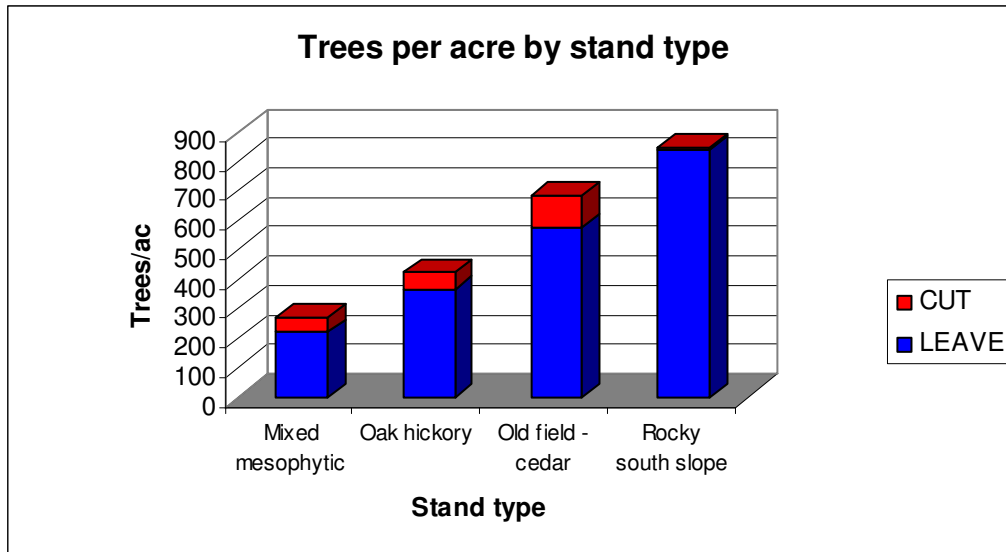
\*snags/acre  $\geq$  9" DBH = 6.4/acre across entire tract

**Live basal area (sq ft/ac) by stand type**



**Volume (bd ft/ac) by stand type**





### A SUMMARY OF VOLUME PER ACRE (bd ft/ac) BY SPECIES FOR TRACT 3007

#### Stand 1: Mixed mesophytic

Volume (bd ft/ac)

Species	CUT	LEAVE	TOTAL
AMB	700	750	1450
BAS		450	450
BIH		280	280
BLG	150		150
BLO	730	380	1110
BLW		120	120
ZCO		440	440
NRO	400		400
REM	630		630
SHH		160	160
SUM	240	770	1010
WHA	340	450	790
WHO		660	660
YEP	750	1100	1850
<b>TOTAL</b>	<b>3940</b>	<b>5560</b>	<b>9500</b>

#### Stand 2: Oak hickory

Volume (bd ft/ac)

Species	CUT	LEAVE	TOTAL
AMB	60	80	140
BAS	20		20
BIH		120	120
BLC	20	20	40
BLG	20		20
BLO	1490	1010	2500
ZBA	20	90	110
ZCO		170	170
ERC	170		170
MOH		100	100
NRO	670	910	1580
PIH	50	380	430
REE		20	20
SCO	470	40	510
SHH		80	80
SUM	190	180	370
WHA	210	370	580
WHO	270	1710	1980
YEP	310	400	710
<b>TOTAL</b>	<b>3970</b>	<b>5680</b>	<b>9650</b>

#### Stand 3: Old field - cedar

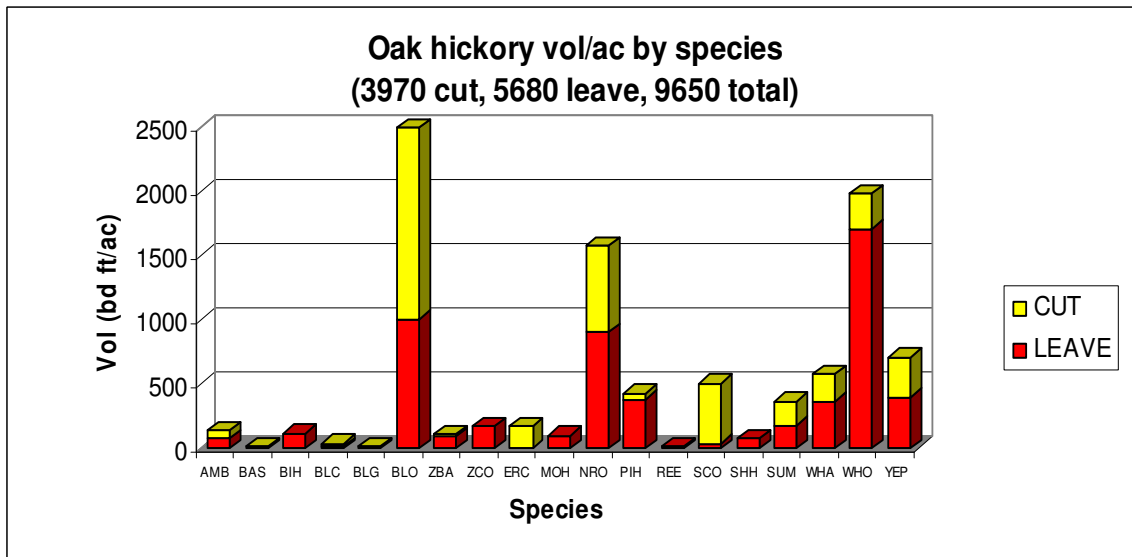
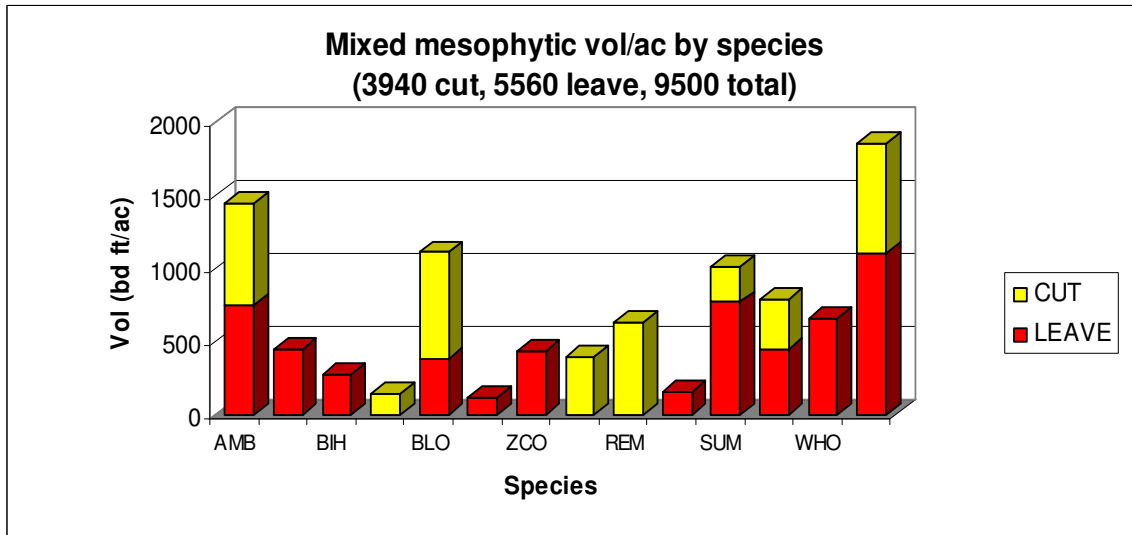
Volume (bd ft/ac)

Species	CUT	LEAVE	TOTAL
BLO	440	1750	2190

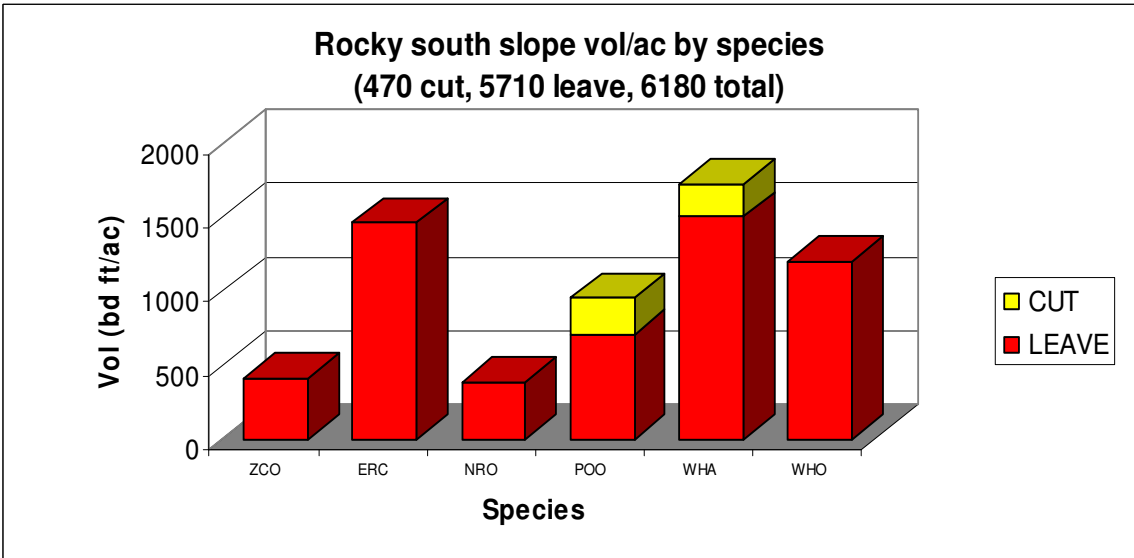
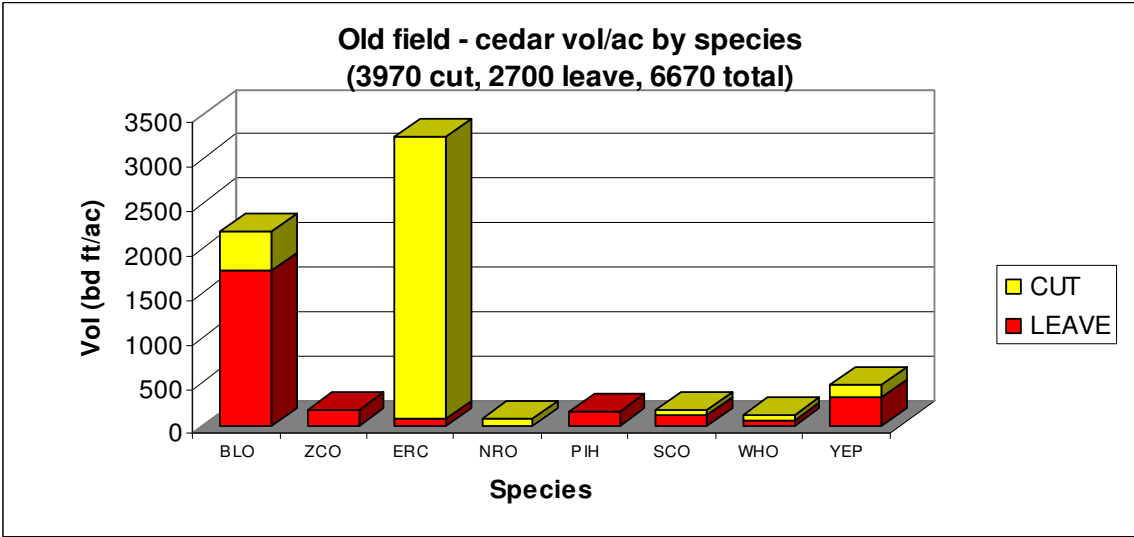
ZCO		190	190
ERC	3170	80	3250
NRO	90		90
PIH		160	160
SCO	60	130	190
WHO	70	60	130
YEP	140	330	470
TOTAL	3970	2700	6670

Stand 4: Rocky south slope  
Volume (bd ft/ac)

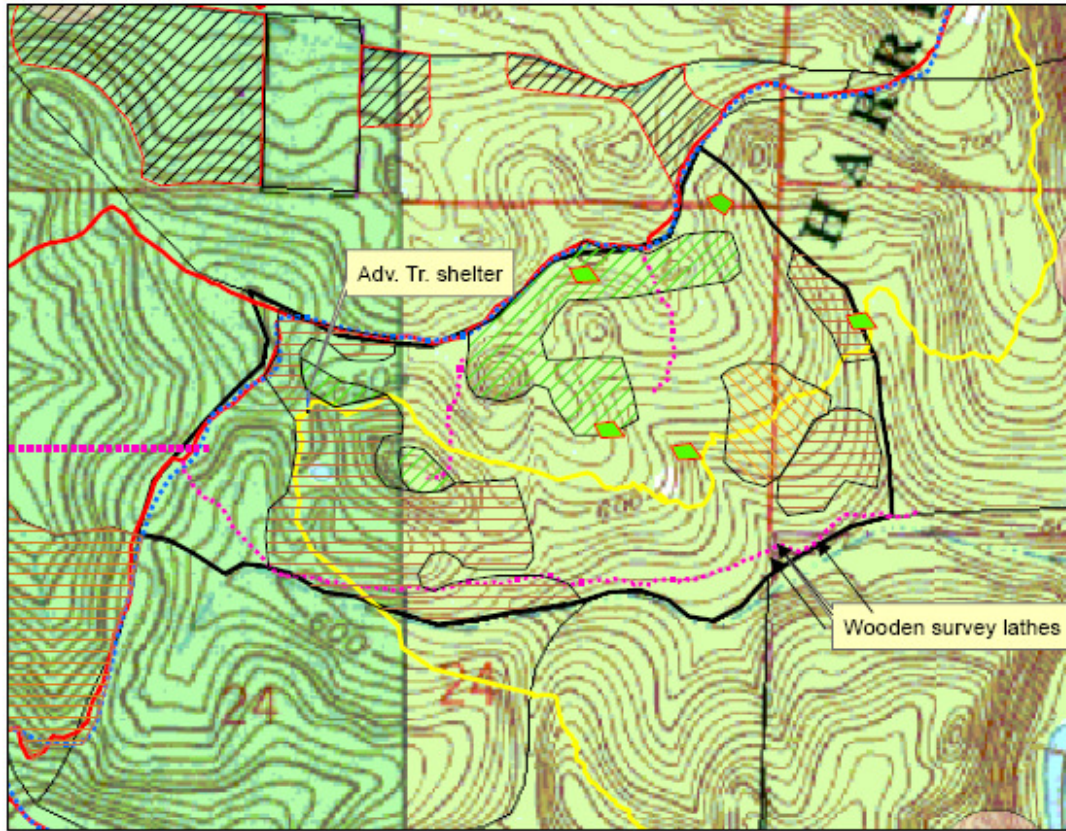
Species	CUT	LEAVE	TOTAL
ZCO		420	420
ERC		1470	1470
NRO		390	390
POO	250	710	960
WHA	220	1510	1730
WHO		1210	1210
TOTAL	470	5710	6180












# Tract 3007



0 1,000 2,000 3,000 4,000 5,000 Feet

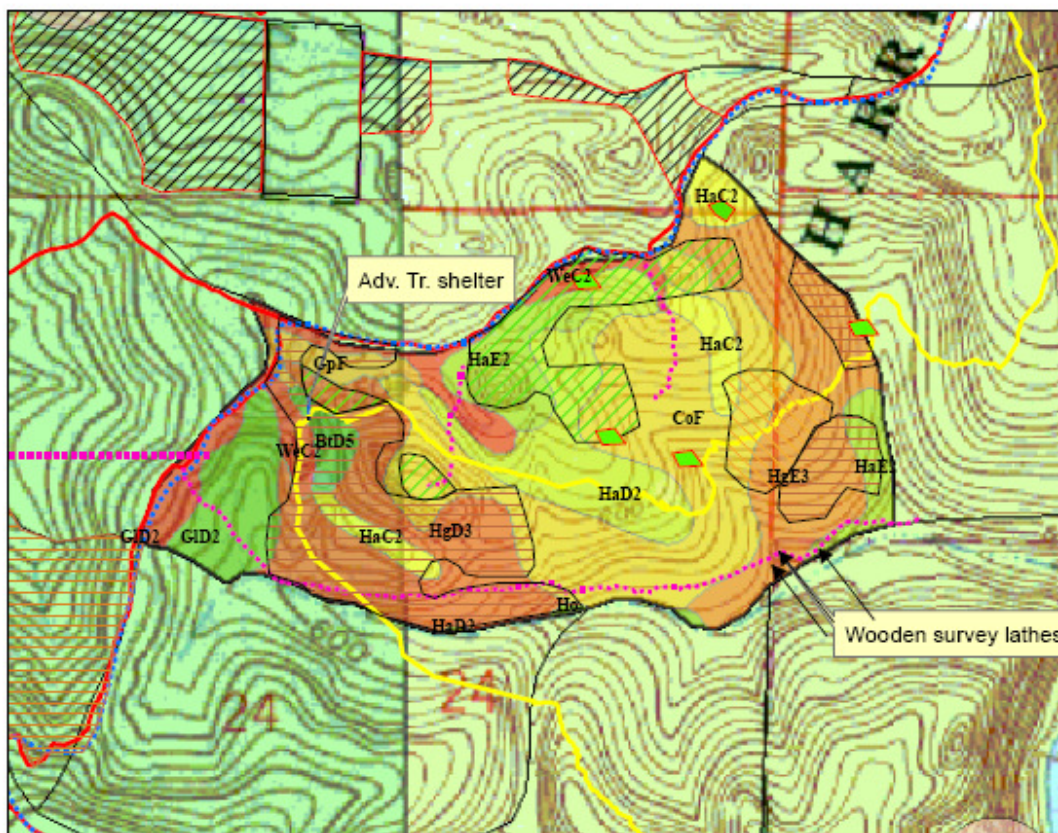
**Legend**

- ) Homesite
- ( Cave
- ) Historic sites
- Adv Hiking Tr
- ⋯ Old roadbeds
- ⋯ Horse trails
- Firelanes
- ▭ Tract 3007
- ▭ Tracts

-  Stand 1: Mixed mesophytic - 16 ac
-  Stand 2: Oak hickory - 74 ac
-  Stand 3: Old field - cedar - 33 ac
-  Stand 4: Rocky south slope - 6 ac
-  Ailanthus areas



# Tract 3007 Soils



0 1,000 2,000 3,000 4,000 5,000 Feet

**Legend**

- ) Homesite
- ( Cave
- ) Historic sites
- Adv Hiking Tr
- Old roadbeds
- Horse trails
- Firelanes
- ▭ Tract 3007
- ▭ Tracts

- ▨ Stand 1: Mixed mesophytic - 16 ac
- ▨ Stand 2: Oak hickory - 74 ac
- ▨ Stand 3: Old field - cedar - 33 ac
- ▨ Stand 4: Rocky south slope - 6 ac
- ▨ Ailanthus areas

