

**Indiana Department of Natural Resources – Division of Forestry**  
**DRAFT**

**RESOURCE MANAGEMENT GUIDE**

STATE FOREST: Harrison Crawford

COMPARTMENT: 30 TRACT: 11

Date: February 14, 2012  
(Inventory – July, 2011)

Forester: Wayne Werne & John Segari

**INVENTORY SUMMARY**

**NUMBER OF STRATA:** 3      **Est. growth: 189 bd. ft/ac/yr\*\***  
**PERMANENT OPENINGS:** 0.0 ac      **Est. management cycle: 10-13 yrs**  
**TOTAL ACREAGE:** 94 ac  
**AVERAGE SITE INDEX:** 80-90 - for upland oaks, 95-100 – for yellow-poplar  
**AVERAGE BASAL AREA:** 123 sq. ft/ac

\*\*Growth was calculated by using 2011 volume MINUS cedar, subtracting the volume of 2600 bd ft/ac from the 1973 inventory and the 78,000 bd. ft. from the 1980 sale, and dividing by 38 years of growth. Cedar volume was figured using a different cedar log scale (much more volume from small trees), which was not used in 1973.

**TRACT 3011 TOTAL VOLUME (bd ft)**

SPECIES	CUT		LEAVE		TOTAL	
	per acre	total	per acre	total	per acre	total
American beech	182	17,053	33	3,092	215	20,146
Basswood	79	7,402	38	3,561	117	10,963
Bitternut hickory		-	24	2,249	24	2,249
Black cherry	24	2,249	33	3,092	57	5,341
Black locust	33	3,092		-	33	3,092
Black oak	497	46,569	340	31,858	837	78,427
Black walnut	19	1,780		-	19	1,780
Blue ash	43	4,029	32	2,998	75	7,028
Chestnut oak	121	11,338	224	20,989	345	32,327
Chinkapin oak	36	3,373	147	13,774	183	17,147
<i>Eastern redcedar*</i>	316	29,609		-	316	29,609
Mockernut hickory	53	4,966	28	2,624	81	7,590
Northern red oak	209	19,583	371	34,763	580	54,346
Persimmon		-	129	12,087	129	12,087
Pignut hickory	92	8,620	242	22,675	334	31,296
Red elm	40	3,748		-	40	3,748
Sassafras	15	1,406		-	15	1,406
Shagbark hickory		-	439	41,134	439	41,134
Sugar maple	309	28,953	502	47,037	811	75,991
Sycamore	12	1,124		-	12	1,124
White ash	1073	100,540	141	13,212	1,214	113,752
White oak	136	12,743	723	67,745	859	80,488
Yellow-poplar	1971	184,683	573	53,690	2,544	238,373
<b>TTOTAL</b>	<b>5,260</b>	<b>492,862</b>	<b>4,019</b>	<b>376,580</b>	<b>9,279</b>	<b>869,442</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 strata of small trees.*

**STRATUM 1 – Mixed mesophytic****ACREAGE: 45**

	<b>CUT</b>	<b>LEAVE</b>	<b>TOTAL</b>	<b>SNAG</b>
VOLUME/ACRE:	6,251	3,651	9,902	
TOTAL VOLUME:	281,295	164,295	445,590	
BASAL AREA/ACRE:	60.0	54.5	114.5	
# TREES/ACRE:	74	125	199	

**STRATUM 2 – Oak hickory****ACREAGE: 31**

	<b>CUT</b>	<b>LEAVE</b>	<b>TOTAL</b>	<b>SNAG</b>
VOLUME/ACRE:	4,121	5,027	9,148	
TOTAL VOLUME:	127,751	155,837	283,588	
BASAL AREA/ACRE:	55.4	70.9	126.3	
# TREES/ACRE:	120	236	356	

**STRATUM 3 – Old field - advanced****ACREAGE: 18**

	<b>CUT</b>	<b>LEAVE</b>	<b>TOTAL</b>	<b>SNAG</b>
VOLUME/ACRE:	5,054	2,562	7,616	
TOTAL VOLUME:	90,972	46,116	137,088	
BASAL AREA/ACRE:	87.5	52.5	140.0	
# TREES/ACRE:	243	207	450	

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

**TRACT BOUNDARIES:** This tract is partially surrounded by other tracts of state owned land. The northern and western boundaries are formed by a drainage that divides this tract from tracts 3007 and 3010. The southern boundary is formed by a fire trail (308) that follows a ridge that divides this tract from tract 3105. The eastern side of this tract is bounded by private land along a straight line.

**ACCESS:** This tract is generally accessed from the more substantial fire trail 308 on the south side, which runs along the ridge.

**ACQUISITION HISTORY:** The land that makes up this tract was primarily acquired from Fleetie and Ford Smith in 1935 for an unknown sum (deed 131.38). The southeast portion was acquired from William and Fannie Pease in 1940 for an unknown sum (deed 131.109) as well as from Roy and Gail Enlow in 1963 (deed 131.96) – also for an unknown sum. There was a small portion along the north portion that 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.

**TRACT DESCRIPTION:** This tract was divided into three strata based on cover type and past management. These strata include: mixed mesophytic, oak hickory, and old field - advanced. These strata will be described in detail below.

### **Stratum 1 – Mixed mesophytic**

This 45-acre stratum was the primary cover type on this tract with some transitioning into oak hickory at several disjunct places throughout the tract. Due to the dominance of yellow-poplar, it might have been typed as poplar in places.

The very high total volume of the stratum (9902 bd. ft/ac) is composed primarily of yellow-poplar (4068 bd. ft/ac), white ash (1712 bd. ft/ac), and sugar maple (1389 bd. ft/ac). The remaining 25% of the volume consists of white oak, northern red oak, American beech, black oak, and various other species.

### **Stratum 2 - Oak hickory**

This 31-acre stratum occupied a mid-slope position throughout the tract as it intermingled with the mixed mesophytic type.

The (also) very high total volume of the area (9148 bd. ft/ac) is composed primarily of white oak (1471 bd. ft/ac), black oak (1340 bd. ft/ac), shagbark hickory (1132 bd. ft/ac), and white ash (974 bd. ft/ac). The remaining 45% of the volume consists of northern red oak, chestnut oak, yellow-poplar, and various other species.

### **Stratum 3 - Old field**

This 18-acre stratum is found primarily in the northern and eastern portion of the tract where former agricultural fields occupied the lower slopes along the drainage along with some ridgetop area. This area was primarily identified by pockets of cedar interspersed with early successional hardwoods.

The total volume (7616 bd. ft/acre) is composed primarily of eastern redcedar (2089 bd. ft/acre), yellow-poplar (1987 bd. ft/acre), and black oak (1182 bd. ft/acre). The remaining 30% of the volume consists of pignut hickory, mockernut hickory, and a few 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.

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

**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.

**WeD2 Wellston silt loam, 12-18% 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.

**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.

**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.

**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

**ZaC2 Zanesville silt loam, 6-12% 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

**Hm Haymond silt loam** Yellow-poplar SI is 95-105, est. growth is 375-450 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.

**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.

**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 south 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.

Additionally, the adventure hiking trail traverses north-south through the middle of this tract, and would consequently receive backpacking and other hiking use. It is likely that a fair amount of hunting use is also received by this tract as well.

**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 type, 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 3011 actual present – harvest = residual</b>
<b>12"-18" DBH class</b>	<b>6</b>	<b>33.3 – 11.1 = 22.2</b>
<b>20" DBH and greater</b>	<b>3</b>	<b>17.3 - 10.5 = 6.8</b>
<b>Total</b>	<b>9</b>	<b>50.6 - 21.6 = 29.0</b>

<b># snags per acre</b>	<b>Guidelines maintenance</b>	<b>Guidelines optimal</b>	<b>Tract 3011 actual</b>
<b>6" - 8" DBH class</b>	<b>1</b>	<b>1</b>	<b>16.6</b>
<b>10"-18" DBH class</b>	<b>2.5</b>	<b>5</b>	<b>12.7</b>
<b>20" DBH and greater</b>	<b>0.5</b>	<b>1</b>	<b>0.9</b>
<b>Total</b>	<b>4</b>	<b>7</b>	<b>30.2</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 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.

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 scattered within the tract. Additionally, there were a couple of small waterfall formations in the southern portion of the tract.

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

**RARE, THREATENED, OR ENDANGERED SPECIES:** A Natural Heritage Database review was obtained for this tract. If rare, threatened or endangered species were identified for this area, the activities prescribed in this guide will be conducted in a manner that will not threaten the viability of those species.

**EXOTICS:** There were at least 4 distinct pockets of ailanthus found throughout 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 2600 board feet per acre. Subsequent to the 1973 inventory, there was a timber sale marked and sold in 1980 that included tract 3011 as well as 3010. The total volume for this sale was 158,000 board feet, of which it seems that 77,000 board feet came from tract 3011 – mostly yellow-poplar, black oak, and northern red oak. There is a note in the file that TSI was performed after the sale by YACC in 1981.

The 2011 inventory shows 8960 board feet per acre (not including cedar), and this figures out to a growth rate of 189 board feet per acre per year, after taking into account the volume removed in the 1980 sale and 38 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 over 30 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, or the re-establishment of a younger area of poplar where much larger and older poplar now stands.

Number of trees per acre and basal area per acre figures indicate that all strata are fully to overstocked at between 100% to 130%. Removal of trees tallied as “cut” either via a timber sale or TSI would reduce the stocking levels to between 50% to 68% stocking. This would leave the oak hickory stratum fully stocked, but reduce the old field and mixed mesophytic strata to an understocked state due to removal of all cedar and the majority of the mature poplar and ash currently present there. The drastic reduction of stocking would be generally confined to limited areas of regeneration openings and small conversion areas, while overall the tract as a whole should remain generally fully stocked and maintain the majority of its canopy cover. Some adjustment to the marking strategy can be adopted to reserve more basal area in areas of better timber to compensate for the reduction in areas of cedar or regeneration openings, thereby keeping the stocking level above 60%.

Due to the amount of volume being carried on the majority of the tract (8960 bd. ft/ac – not including cedar), the length of time since the last managed sale (32 years back to 1980), 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 approximately 465,000 board feet (not including cedar) or about 4960 board feet per acre and leave approximately 373,000 board feet (plus 30,000 bd. ft of cedar), or 3985 board feet per acre (4100 bd. ft/ac with cedar).

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 in the less mesic sites. 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, and there are probably several more pockets scattered throughout the tract. Ideally, all the ailanthus should be treated pre-harvest, and then follow-up should be done to treat any new seedlings and sprouts that come up in newly opened up parts of the tract. Long term monitoring will be necessary to keep this exotic at bay.

### **Stratum 1: Mixed mesophytic**

This 45-acre stratum contains a very high volume of 9900 board feet per acre of which 6250 was classified as harvestable and 3650 was classified as residual. This would remove 60 square feet of basal area, which would leave the residual with 55 sq. ft. Stocking would drop from 100% to about 50% with the indicated management, which



would technically leave this area as understocked. The heavy cutting and resultant understocked status is the result of a large number of large yellow-poplar trees in this area that have all reached maturity and are declining due to drought, as well as large ash that would be susceptible to EAB attack. Likely this stratum would contain several regeneration openings, which would result in the overall appearance of an understocked area. Additional reserve trees can be left in the oak hickory type to make up for the reduction of basal area in this area.

Since the last harvest in this tract was 32 years ago, and because it currently contains a very high volume of harvestable material and a moderate volume of residual growing stock, the recommendation would be to rank this area as a medium to high priority for conducting a harvest. Any timber sale would primarily include this entire stratum as well as all of stratum 2, with possibly some trees from stratum 3. The majority (73%) of the harvest volume for stratum 1 (6250 bd. ft/ac) would be contained in yellow-poplar (3110 bd. ft/ac) and white ash (1470 bd. ft/ac). The remainder would be contained in sugar maple, American beech, black oak, as well as various other species.

Most of the area 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. Yellow-poplar especially would be marked more aggressively due to size, maturity, and drought damage with imminent mortality likely. When possible, selection should also favor releasing future crop trees. The residual should still be heavy to poplar and maple with a mix of other species making up the remainder.

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.

## **Stratum 2: Oak hickory**

This 31-acre stratum also contains a very high volume of 9148 board feet per acre of which 4121 was classified as harvestable and 5027 was classified as residual. This would remove 55 square feet of basal area, which would leave the residual with 71 sq. ft. Stocking would drop from 120% to about 68% with the indicated management (fully stocked above the B-line).

Since the last harvest in this tract was 32 years ago, and because it also currently contains a high volume of both harvestable material and residual growing stock, it should be included with stratum 1 as a medium to high priority for conducting a harvest. The majority (66%) of the harvest volume for stratum 2 (4121 bd. ft/ac) would be contained in white ash (908 bd. ft/ac), black oak (849 bd. ft/ac), yellow-poplar (553 bd. ft/ac), and northern red oak (408 bd. ft/ac), with chestnut oak, white oak, and various other species making up of the remainder of the harvest volume.

Most of the area would probably be harvested under a single tree selection routine with 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 should be a mix of various species, dominated with white oak, shagbark hickory, and northern red oak, along with a variety of other 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.

### **Stratum 3: Old field - advanced**

This 18-acre stratum occupies a smaller portion of the tract, and contains a volume of 7616 board feet per acre of which 5054 was classified as harvestable and 2562 was classified as residual. This would remove 88 square feet of basal area, which would leave the residual with 53 sq. ft. Stocking would drop from 130% to about 55% with the indicated management (understocked). These figures DO include cedar as figured according to the cedar log scale. Cedar contributes the majority of the volume to this stratum, and it was all tallied for removal, which is what led to the drastic reduction to an understocked state. Though, this is an advanced old field site clearly transitioning to yellow-poplar and other hardwoods, so removal of the cedar seemed appropriate. Additional reserve trees can be left in the oak hickory type to make up for the reduction of basal area in this area.

Since this type intermingles with the more merchantable hardwoods (and resembles it in places with the exception of cedar mixed in), there would likely be trees included from here along with any timber sale taking place in strata 1 and 2. Most of the harvest volume tallied in this stratum (5054 bd. ft/ac) is represented by eastern redcedar (2089 bd. ft/ac) - due to use of the cedar scale, and yellow-poplar (1733 bd. ft/ac). 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 areas. Ultimately, this site should be completely converted to hardwoods due to recovery of the site from former agricultural activities and erosion.

Much of this area is dominated with poplar, oak, hickory, and other hardwoods 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 strata 1 and 2 first.

Subsequently, a cedar sale could be conducted to help release the oak regeneration that is present in this type. Finally, TSI would remove any leftover competing trees and allow a new area of oak and poplar to establish itself and grow here.

### **PROPOSED ACTIVITIES LISTING**

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Summer 2011	Field inventory
Summer 2012	Write mgmt plan
Spring 2012 - Fall 2012	Basal bark treat ailanthus
Summer 2012 - Fall 2012	Mark timber sale
Fall 2012 - Spring 2013	Sell timber sale
2013 / 2014	Post harvest TSI
2016	Recon & monitor for exotics
2026-2027	Inventory for next mgmt cycle

### **APPENDIX**

**(Various tables and graphs describing tract 3011)**

A SUMMARY OF VARIOUS STATISTICS FOR TRACT 3011

Summary of basal area (sq ft per acre)

STRATUM	LEAVE	CUT	(SNAG)	TOTAL (live)
Mixed mesophytic	54.5	60.0	?	114.5
Oak hickory	70.9	55.4	?	126.3
Old field - advanced	52.5	87.5	?	140.0

Summary of volume (bd ft per acre)

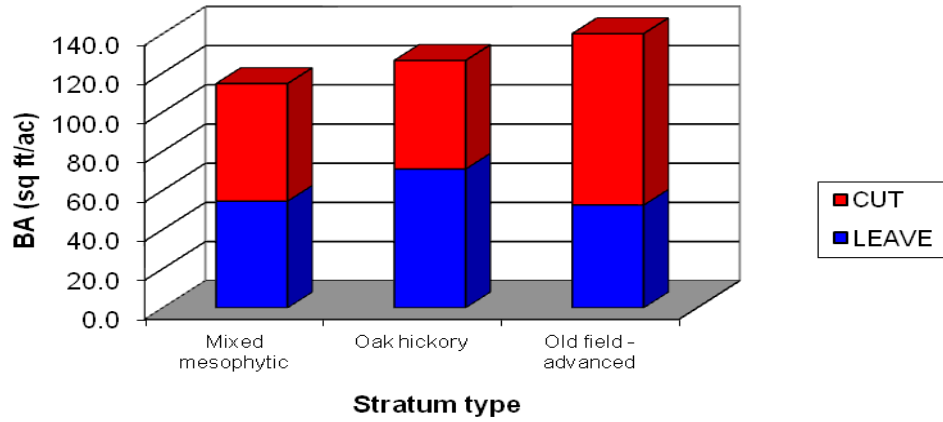
STRATUM	LEAVE	CUT	TOTAL (live)
Mixed mesophytic	3651	6251	9902
Oak hickory	5027	4121	9148
Old field - advanced	2562	5054	7616

Summary of number of trees per acre

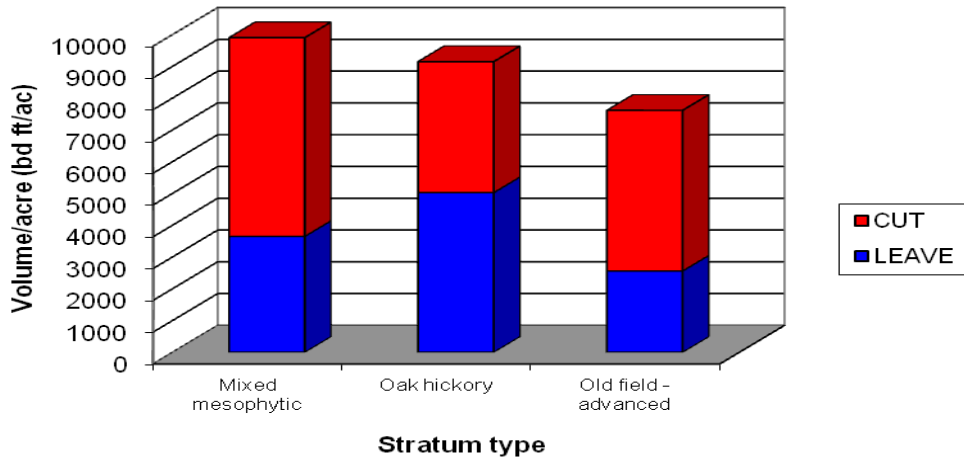
STRATUM	LEAVE	CUT	(SNAG)*	TOTAL (live)
Mixed mesophytic	125	74	?	199
Oak hickory	236	120	?	356
Old field - advanced	207	243	?	450

\*snags/acre  $\geq$  9" DBH = 13.6/acre across entire tract

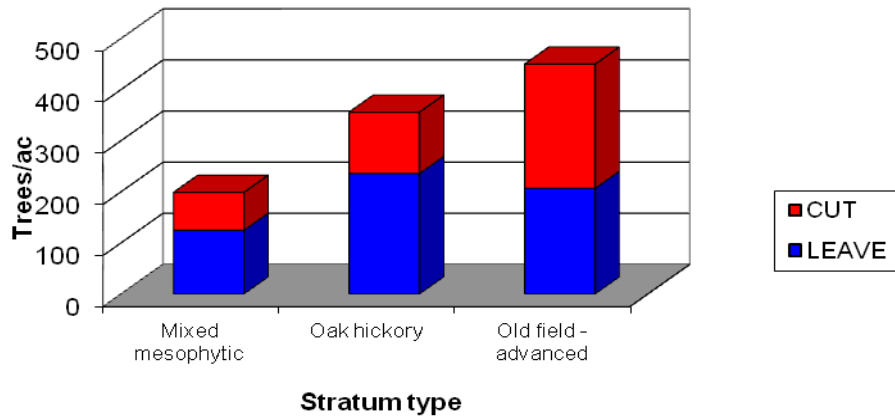
Live basal area (sq ft/ac) by stand type



Volume (bd ft/ac) by stand type



Trees per acre by stand type



A SUMMARY OF VOLUME PER ACRE (bd ft/ac) BY SPECIES FOR TRACT 3011

Stratum 1: Mixed mesophytic

Volume (bd ft/ac)

Species	CUT	LEAVE	TOTAL
AMB	310	68	378
BAS	162		162
ZBA		65	65
BLC	49	68	117
BLL	68		68
BLO	307	45	352
CHO		73	73
NRO	125	345	470
PER		158	158
PIH		102	102
REE	30		30
SAS	32		32
SHH		57	57
SUM	523	866	1389
WHA	1470	242	1712
WHO	64	605	669
YEP	3111	957	4068
TOTAL	6251	3651	9902

Stratum 2: Oak hickory

Volume (bd ft/ac)

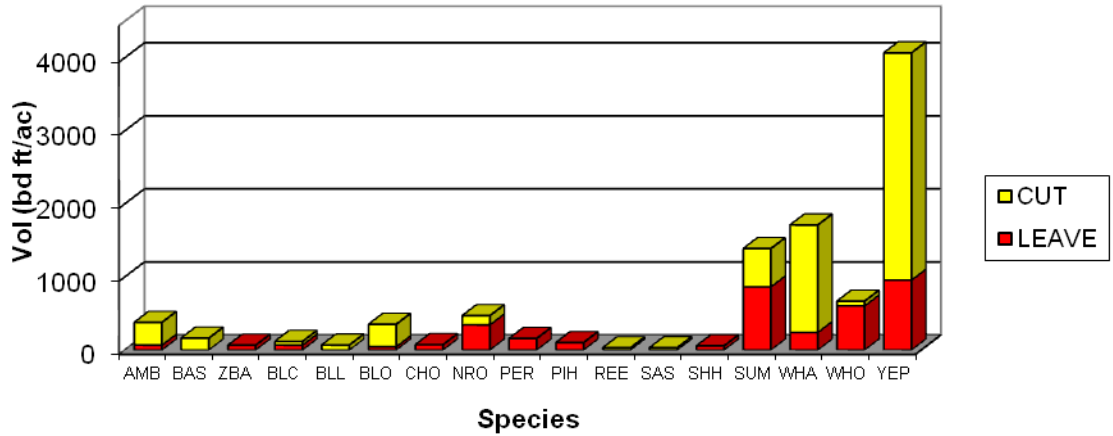
Species	CUT	LEAVE	TOTAL
AMB	56		56
BAS		106	106
BLO	849	491	1340
BLW	51		51
ZBA	118		118
CHO	333	519	852
ZCO	99	262	361
NRO	408	561	969
PER		143	143
PIH	109	238	347
REE	71		71
SHH	94	1038	1132
SUM	153	225	378
SYC	32		32
WHA	908	66	974
WHO	287	1184	1471
YEP	553	194	747
TOTAL	4121	5027	9148

Stratum 3: Old field - advanced

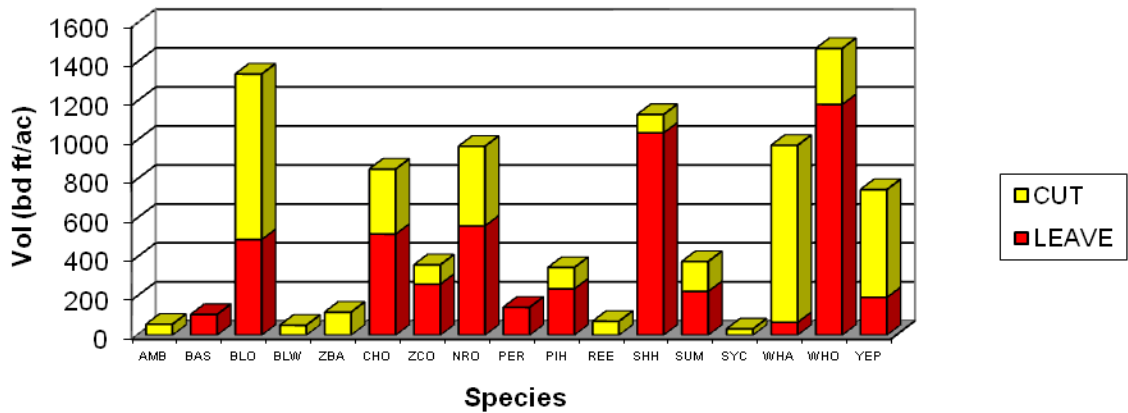
Volume (bd ft/ac)

Species	CUT	LEAVE	TOTAL
AMB	77		77
BIH		158	158
BLO	260	922	1182
ZCO		342	342
ERC	2089		2089
MOH	349	185	534
PIH	349	701	1050
WHA	197		197
YEP	1733	254	1987
TOTAL	5054	2562	7616

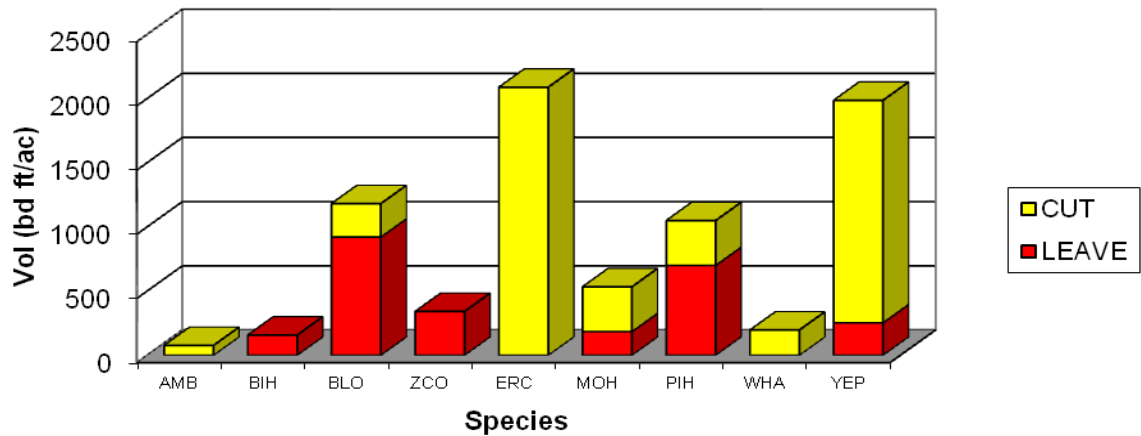
**Mixed mesophytic vol/ac by species  
(6251 cut, 3651 leave, 9902 total)**



**Oak hickory vol/ac by species  
(4121 cut, 5027 leave, 9148 total)**



**Old field - advanced vol/ac by species  
(5054 cut, 2562 leave, 7616 total)**



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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.

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