RESOURCE MANAGEMENT GUIDE

STATE FOREST: Harrison Crawford **COMPARTMENT**: 6 **TRACT**: 05

Date: December 15, 2008 **Forester: Wayne Werne & Abby Irwin**

INVENTORY SUMMARY

NUMBER OF STANDS: **4** **Est. growth: 140-143 bd. ft/ac/yr****
PERMANENT OPENINGS: **0.0 ac** **Est. cutting cycle: 13-18 yrs**
TOTAL ACREAGE: **160.0 ac**
AVERAGE SITE INDEX: **70-80** (for upland oaks)
AVERAGE BASAL AREA: **116 sq. ft/ac**

****Growth** was calculated by using 2008 volume **MINUS cedar**, subtracting the volume of 2100 bd ft/ac from the 1981 inventory and the 103,500 bd. ft. from the 1981 sale, and dividing by 27 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 605 TOTAL VOLUME (bd ft)

	CUT		LEAVE		TOTAL	
SPECIES	per acre	total	per acre	total	per acre	total
American beech	70	11,200	10	1,600	80	12,800
American elm	10	1,600		-	10	1,600
Black cherry		-	20	3,200	20	3,200
Blackgum	60	9,600		-	60	9,600
Black oak	430	68,800	540	86,400	970	155,200
Chestnut oak	30	4,800		-	30	4,800
Chinkapin oak	20	3,200	30	4,800	50	8,000
*Eastern redcedar**	*620*	*99,200*	*10*	*1,600*	*630*	*100,800*
Northern red oak	140	22,400	380	60,800	520	83,200
Pignut hickory	130	20,800	120	19,200	250	40,000
Red maple	40	6,400	30	4,800	70	11,200
Scarlet oak	30	4,800		-	30	4,800
Shagbark hickory	50	8,000	110	17,600	160	25,600
Shingle oak	20	3,200		-	20	3,200
Sycamore	10	1,600	20	3,200	30	4,800
Sugar maple	370	59,200	320	51,200	690	110,400
Virginia pine	120	19,200		-	120	19,200
White ash	140	22,400	200	32,000	340	54,400
White oak	170	27,200	730	116,800	900	144,000
Yellow-poplar	370	59,200	520	83,200	890	142,400
TTOTAL	2,830	452,800	3,040	486,400	5,870	939,200

**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: 24.8**

	CUT	LEAVE	TOTAL	SNAG
VOLUME/ACRE:	2,880	2,880	5,760	
TOTAL VOLUME:	71,400	71,400	142,800	
BASAL AREA/ACRE:	45.6	64.2	109.8	
# TREES/ACRE:	38	379	417	

STAND 2 – Oak hickory **ACREAGE: 52.0**

	CUT	LEAVE	TOTAL	SNAG
VOLUME/ACRE:	3,820	4,850	8,670	
TOTAL VOLUME:	198,600	252,200	450,800	
BASAL AREA/ACRE:	58.1	71.7	129.8	
# TREES/ACRE:	83	267	350	

STAND 3 – Old field - hdwds **ACREAGE: 53.6**

	CUT	LEAVE	TOTAL	SNAG
VOLUME/ACRE:	1,420	2,170	3,590	
TOTAL VOLUME:	76,100	116,300	192,400	
BASAL AREA/ACRE:	44.5	65.9	110.4	
# TREES/ACRE:	130	476	606	

STAND 4 – Old field – VIP / ERC / YEP **ACREAGE: 29.6**

	CUT	LEAVE	TOTAL	SNAG
VOLUME/ACRE:	2,760	860	3,620	
TOTAL VOLUME:	81,700	25,500	107,200	
BASAL AREA/ACRE:	66.3	37.5	103.8	
# TREES/ACRE:	153	500	653	

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

TRACT BOUNDARIES: This tract is an outlying tract that is a square quarter section that is surrounded by private property on all sides. Burgess Circle Road touches the southwestern tip of this tract. There are old fence lines that apparently form the boundaries in parts or all of the south, east, and north lines, as well as a newer fence on part of the north boundary. There appears to be no old evidence of the boundary line on the west side. Additionally, the north line has been surveyed and marked by McCauley with capped rebar and carsonite posts. There is a cornerstone halfway down the eastern boundary line too. All surrounding section and quarter section corners in Section 12 are marked with either cornerstones, rebars, or signs, so any prospective future survey would have adequate evidence to tie into.

ACCESS: The only access point for this tract is via Burgess Circle Road on the southwestern corner of the tract. It might be possible to obtain access across private property on the northeastern corner if it is deemed necessary for complete timber sale access.

ACQUISITION HISTORY: The deed for this property is difficult to interpret, but it seems that the property was originally mortgaged from Brad and Letitia Medley to the state of Indiana (Harrison County) for the use of the common school fund for the sum of $660 in October 1927. Subsequently, in September, 1939, the land was transferred to the Division of Forestry for the sum of $800 ($5/acre) from Harrison County for the use of the county general fund. I interpret this as a sale of property for delinquent taxes of some sort.

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 – hardwoods, and old field – VIP / ERC / YEP. The old field stands gradated into each other, and were difficult to distinguish from each other, but there seemed to be a general differentiation between the more hardwood dominated old field and the cedar and pine dominated old field. These stands will be described in detail below.

Stand 1 – Mixed mesophytic

This 25-acre stand was found primarily in the southwestern and northeastern corners of the tract, with a few smaller areas on the southeastern tip, and interior to the tract.

The total volume of the stand (5760 bd. ft/ac) is composed primarily of sugar maple (2060 bd. ft/ac), white ash (1190 bd. ft/ac), yellow-poplar (480 bd. ft/ac), and northern red oak (400 bd. ft/ac). The remaining 30% of the volume consists of white oak, black oak, beech, chinkapin oak, pignut hickory, and various other species.

Stand 2 - Oak hickory

This 52-acre stand covered a mid-slope position just above the mixed mesophytic stand. It followed this band of elevation on the slope very closely and distinctly up to the top of the ridge, where it transitioned clearly into the old field stands. There was also a band of this stand type in the northeastern portion of the tract adjacent to the mixed stand there.

The total volume of the stand (8670 bd. ft/ac) is composed primarily of white oak (2230 bd. ft/ac), black oak (1850 bd. ft/ac), and northern red oak (1010 bd. ft/ac). The remaining 40% of the volume consists of yellow-poplar, sugar maple, hickory, and various other species.

Stand 3 - Old field – hardwoods

This 54-acre stand is found on the ridgetop and north slopes in the north central portion of the tract, and represents former agricultural fields that have succeeded back to a stand

of mostly hardwoods with some eastern redcedar. Some of this stand had components of cedar and residual pine, and some was just early successional hardwoods, but delineation of these gradations was difficult.

The total stand volume (3590 bd. ft/acre) is composed primarily of yellow-poplar (1200 bd. ft/acre), eastern redcedar (850 bd. ft/acre) and black oak (520 bd. ft/acre). The remaining 30% of the volume consists of red oak, sugar maple, white ash, 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 - Old field – VIP / ERC / YEP

This 30-acre stand is also found on the ridgetop in the central portion of the tract, and represents former agricultural fields – some that were planted to Virginia pine and some that succeeded naturally to eastern redcedar and yellow-poplar. The areas of this stand that had the pine planted were referred to in the last inventory as an "impenetrable mess," and not much has changed in 25 years. The Virginia pine is stagnated and falling down from wind and snow and has refused to rot properly. Consequently, much of the area has down trees intermingled with dense undergrowth and is unpleasant to climb through. There is some good oak regeneration present in places that would benefit from the removal of all of the undesirable biomass currently present. A subcanopy of beech and other undesirable hardwoods is currently occupying much of the growing space opened up by declining Virginia pine.

The total stand volume (3620 bd. ft/acre) is composed primarily of eastern redcedar (1300 bd. ft/acre), yellow-poplar (850 bd. ft/acre), and Virginia pine (570 bd. ft/acre). The remaining 25% of the volume consists of black oak, sugar maple, 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.

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

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.

WeD3 Wellston silt loam, 12-18% slopes, severely 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.

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.

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.

Hm Haymond silt loam Yellow-poplar SI is 95-105, est. growth is 375-450 bd. ft/ac/yr. for yellow-poplar.

GuD5 Gilpin silt loam, 6-25% slopes, gullied Virginia pine SI is 53-72, est. growth is 100-200 bd. ft/ac/yr.

WbF Weikert-Berks channery silt loams, 35-60% slopes Virginia pine SI is 45-53, est. growth is 75-100 bd. ft/ac/yr.

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.

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.

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.

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.

RECREATION: This tract is an outlying piece north of the interstate and Blue River that is not joined to the rest of the larger part of the property. It is surrounded by private land, and has limited access from the road, and as such, probably receives little recreational use. It is likely that some hunting is done on this piece by neighbors and members of the public in general. But due to a lack of trails and connection to a larger block of public land, this is probably the extent of any recreation that actually takes place here.

WILDLIFE: This tract represents typical upland forest habitat, in addition to a component of old field successional habitat, with cedar and pine in places. 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 advanced old field stand. This stand provides 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 605:

	Number of trees per acre (present – harvest = residual)	
Tree type	**10 to 18 inches DBH**	**20 inch DBH and greater**
LIVE	36.8 – 16.3 = **20.5 (in 12-18" class)**	9.1 – 4.1 = **5.0**
SNAG	**5.3**	**0.5**

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 slightly 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. There may be some conversion of pine and cedar to temporarily open areas that will be allowed to succeed into native hardwoods, and this would change the character of the tract over time, but will not change it into a nonforested cover type. Creation of openings and/or conversion of pine/cedar areas into 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 an isolated outholding of 160 acres in size, it is unlikely that any forest management activities would disrupt any forest interior species by creating edge habitat for generalist species to "invade" the area. In the context of the surrounding landscape, this tract represents a moderate chunk of forest in a matrix of surrounding crop and pasture land, as well as other forest land.

WATERSHED / HYDROLOGY: The majority of the tract contains gentle to moderately steep slopes that drain into intermittent drainages that eventually drain into the Blue River about ¾ of a mile to the south. This area lies within a karst landscape with underground drainage, but this particular tract does not have nearly the sinkholes or caves that much of the rest of the state forest property does. The area may be high enough in elevation that a sandstone caprock layer overlies the limestone.

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 is a small pocket of some ailanthus along the western boundary in the south part of the tract, and a larger pocket in the northeastern corner that is spreading from along the boundary into the tract in that area. These should be treated as soon as possible. There are also some spreading areas of stilt grass within the tract where trees have blown down from recent windstorms. There is not much to be done about that without substantial cost and effort. There are also some areas of multiflora rose in places, but this is minor.

SILVICULTURAL HISTORY AND PRESCRIPTION:

General: Utilizing records of the past history of this tract, an inventory done in 1981 indicated a total standing volume of 2100 board feet per acre. There was also an inventory apparently done in 1971 as well, but the records in the file are sketchy and the volume per acre does not seem to have been calculated. Subsequent to the 1981 inventory, there was a timber sale marked and sold also in 1981, which removed 103,500 board feet – mostly black oak, beech, yellow-poplar, and red oak. There is a note in the file that TSI was performed in the summer of 1981.

The 2008 inventory shows between 5240 and 5300 board feet per acre (no cedar), and this figures out to a growth rate of between 140 to 143 board feet per acre per year, after taking into account the volume removed in the 1981 sale and 27 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 1981, and this is why cedar volume is being excluded from growth calculations, as it was probably given marginal volume in 1981.

The growth figures are respectable considering about half of this tract is quite degraded. 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, and conversion of much of the low grade hardwood and pine and cedar trees to a better crop of hardwood trees.

Number of trees per acre and basal area per acre figures indicate that all stands are overstocked at 110% to 120%. Removal of trees tallied as "cut" either via a timber sale or TSI would reduce the stocking levels to about 70% stocking with the exception of stand 4 that would be reduced to less than 50% stocking due to liquidation of the cedar component. Stocking levels would be reduced to a level considered fully stocked above the B-line for the first three stands and understocked between the B and C-lines for stand 4.

Due to the amount of volume being carried on the majority of the tract (5240 bd. ft/ac – not including cedar), the length of time since the last managed sale (27 years back to 1981), and the general condition of the overstory trees in the older hardwood portions 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 between 270,000 to 350,000 board feet (not including cedar) or about 1700 to 2200 board feet per acre and leave between 490,000 to 570,000 board feet plus 100,000 board feet of cedar, or between 3060 to 3560 board feet per acre of hardwood and 625 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 two small areas of ailanthus noted at the time of inventory - near the western boundary and at the northeastern corner. The latter area is a bigger threat, and all ailanthus should be killed pre-harvest.

Stand 1: Mixed mespophytic

This 25-acre stand contains a volume of 5760 board feet per acre of which 2880 was classified as harvestable and 2880 was classified as residual. This would remove 46 square feet of basal area, which would leave the residual stand with 64 sq. ft. Stocking would drop from 110% to about 70% with the indicated management (fully stocked above the B-line).

Since the last harvest in this tract was 27 years ago, and because it currently contains a moderate volume of harvestable material and a moderate volume of residual growing stock, the recommendation would be to rank this stand as a medium 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 (60%) of the harvest volume for stand 1 (2880 bd. ft/ac) would be contained in sugar maple (1100 bd. ft/ac) and white ash (650 bd. ft/ac). The remainder would be contained in various oak species, beech, hickory, and yellow-poplar.

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 is one small area on the western end where ailanthus is present, and a larger area in the northeastern corner where it is spreading into the woods from along the boundary.

Stand 2: Oak hickory

This 52-acre stand covers about a third of the tract, and is located primarily along a mid slope position on the southwest facing slope of the tract. It contains a higher volume of 8670 board feet per acre of which 3820 was classified as harvestable and 4850 was classified as residual. This would remove 58 square feet of basal area, which would leave the residual stand with 72 sq. ft. Stocking would drop from 120% to about 70% 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 27 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 (60%) of the harvest volume for stand 2 (3820 bd. ft/ac) would be contained in black oak (1030 bd. ft/ac), yellow-poplar (480 bd. ft/ac), sugar maple (420 bd. ft/ac), and white oak (390 bd. ft/ac), with cedar, hickory, red oak, 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. There is an area in the northeastern corner where ailanthus is spreading into the woods from along the boundary.

Stand 3: Old field - hardwoods

This 54-acre stand covers about another third of the tract, and contains a volume of 3590 board feet per acre of which 1420 was classified as harvestable and 2170 was classified as residual. This would remove 45 square feet of basal area, which would leave the residual stand with 66 sq. ft. Stocking would drop from 115% to about 70% 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. Yellow-poplar would be the primary species to be marked within this younger stand, and it would account for a low volume of 370 board feet per acre. Most of the harvest volume tallied in this stand (820 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: Old field – VIP / ERC / YEP

This 30-acre stand contains a volume of 3620 board feet per acre of which 2760 was classified as harvestable and 860 was classified as residual. This would remove 66 square feet of basal area, which would leave the residual stand with 38 sq. ft. Stocking would drop from 115% to about 48% with the indicated management (understocked between the B-line and C-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. Yellow-poplar and maybe Virginia pine would be the primary species to be marked within this younger stand, and would account for a low volume of 920 board feet per acre. Most of the harvest volume tallied in this stand is represented by eastern redcedar (1300 bd. ft/ac) due to use of the cedar scale. Most all of the cedar was tallied for removal to open this area up to more sunlight, resulting in the understocked residual stand. 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, Virginia pine, and some oak in the overstory with an abundance of eastern redcedar, beech, dogwood, sassafras, and red maple in the midstory and understory. The Virginia pine is falling apart, and much of it is either dead standing or fallen over from wind and snow damage. In places, there is excellent 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. It would be preferable to almost completely open this area up to encourage more desirable tree species regeneration and growth.

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.

PROPOSED ACTIVITIES LISTING

Summer 2008	Field inventory
Winter 2008	Write mgmt plan
Winter 2008 - Summer 2009	Basal bark treat ailanthus
Spring 2009	Mark timber sale

Winter 2009 - Spring 2010	Sell timber sale
2010 / 2011	Post harvest TSI
2015	Recon & monitor for exotics
2020-2025	Inventory for next mgmt cycle

APPENDIX

(Various tables and graphs describing tract 605)

A SUMMARY OF VARIOUS STATISTICS FOR TRACT 605

Summary of basal area (sq ft per acre)

STAND	LEAVE	CUT	(SNAG)	TOTAL (live)
Mixed mesophytic	64.2	45.6	??	109.8
Oak hickory	71.7	58.1	??	129.8
Old field - hdwds	65.9	44.5	??	110.4
Old field - VIP / ERC / YEP	37.5	66.3	??	103.8

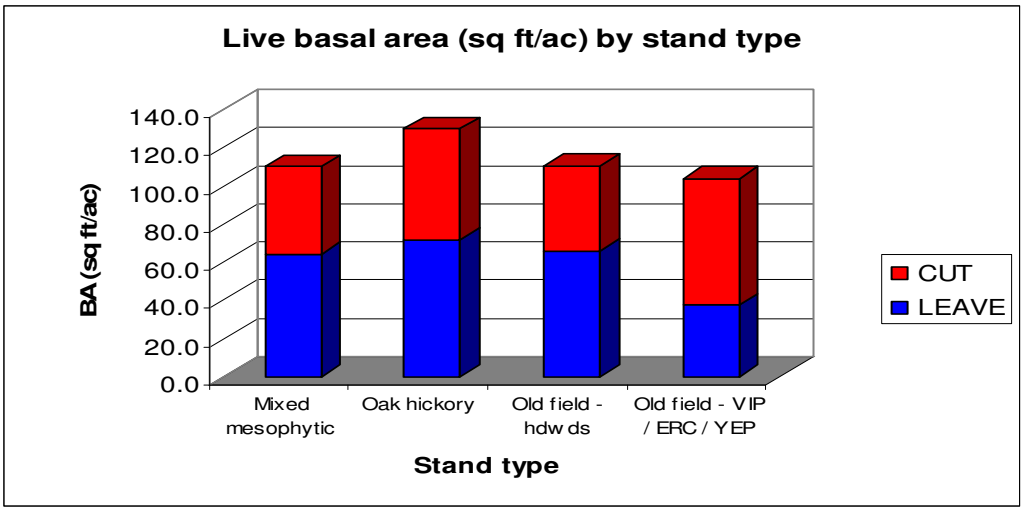
Summary of volume (bd ft per acre)

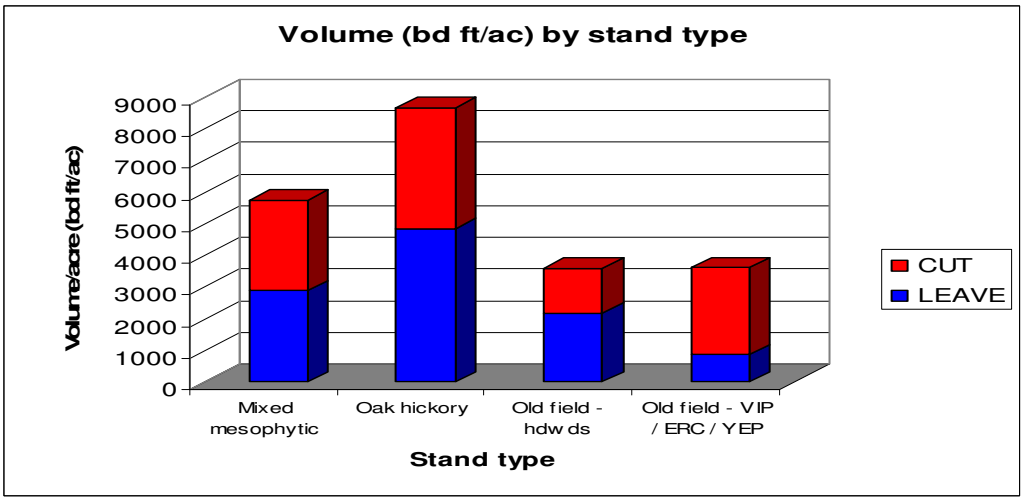
STAND	LEAVE	CUT	TOTAL (live)
Mixed mesophytic	2880	2880	5760
Oak hickory	4850	3820	8670
Old field - hdwds	2170	1420	3590
Old field - VIP / ERC / YEP	860	2760	3620

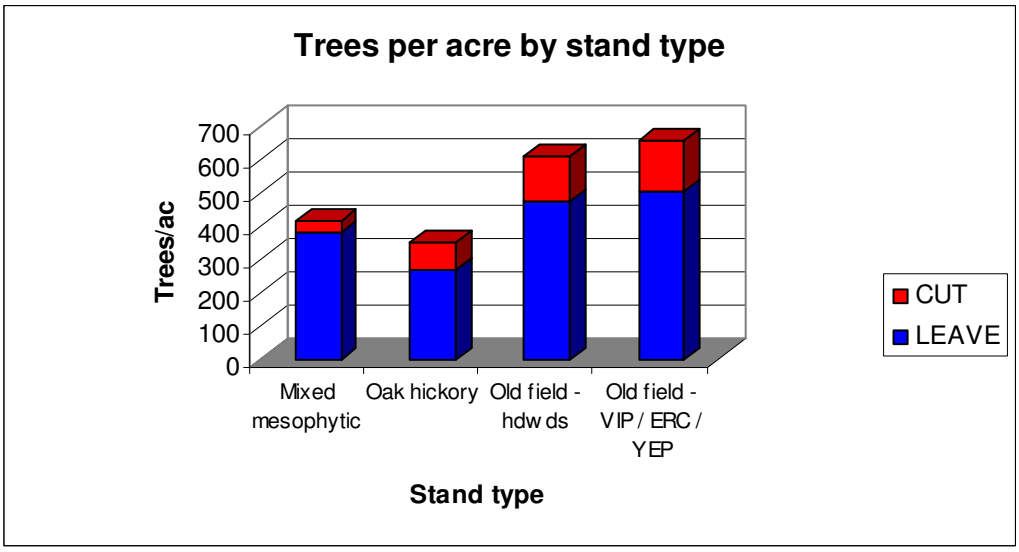
Summary of number of trees per acre

STAND	LEAVE	CUT	(SNAG)*	TOTAL (live)
Mixed mesophytic	379	38	?	417
Oak hickory	267	83	?	350
Old field - hdwds	476	130	?	606
Old field - VIP / ERC / YEP	500	153	?	653

*snags/acre >= 9" DBH = 6.4/acre across entire tract


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
Old field - hdw ds
Old field - VIP / ERC / YEP
Stand type
CUT
LEAVE


Volume (bd ft/ac) by stand type
Volume/acre (bd ft/ac)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Mixed mesophytic
Oak hickory
Old field - hdw ds
Old field - VIP / ERC / YEP
Stand type
CUT
LEAVE



A SUMMARY OF VOLUME PER ACRE (bd ft/ac) BY SPECIES FOR TRACT 605

Stand 1: Mixed mesophytic

Volume (bd ft/ac)

Species	CUT	LEAVE	TOTAL
AMB	240		240
BLC		110	110
BLG	140		140
BLO		300	300
ZCO	110	110	220
NRO	130	270	400
PIH	200		200
SUM	1160	900	2060
SYC		70	70
WHA	650	540	1190
WHO	110	240	350
YEP	140	340	480
TOTAL	2880	2880	5760

Stand 2: Oak hickory

Volume (bd ft/ac)

Species	CUT	LEAVE	TOTAL
AMB	70	40	110
AME	20		20
BLG	80		80
BLO	1030	820	1850
CHO	90		90
ZCO		30	30

Stand 3: Old field - hdwds

Volume (bd ft/ac)

Species	CUT	LEAVE	TOTAL
BLO		520	520
ERC	820	30	850
NRO	50	170	220
PIH		110	110
REM	30	100	130
SHH		110	110
SUM		200	200
SYC	20		20
VIP	50		50
WHA	80	100	180
YEP	370	830	1200
TOTAL	1420	2170	3590

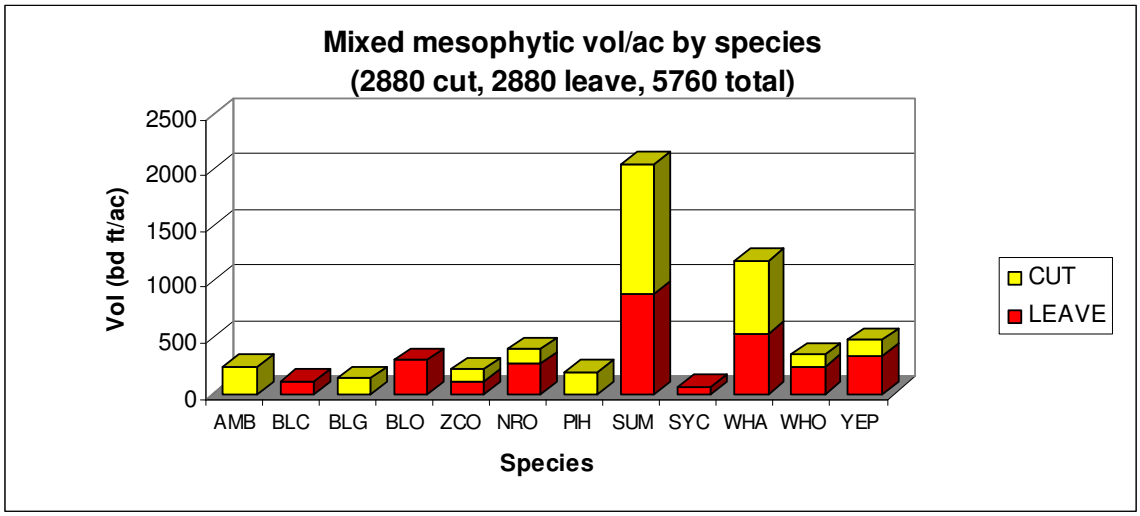
Stand 4: Old field - VIP / ERC / YEP

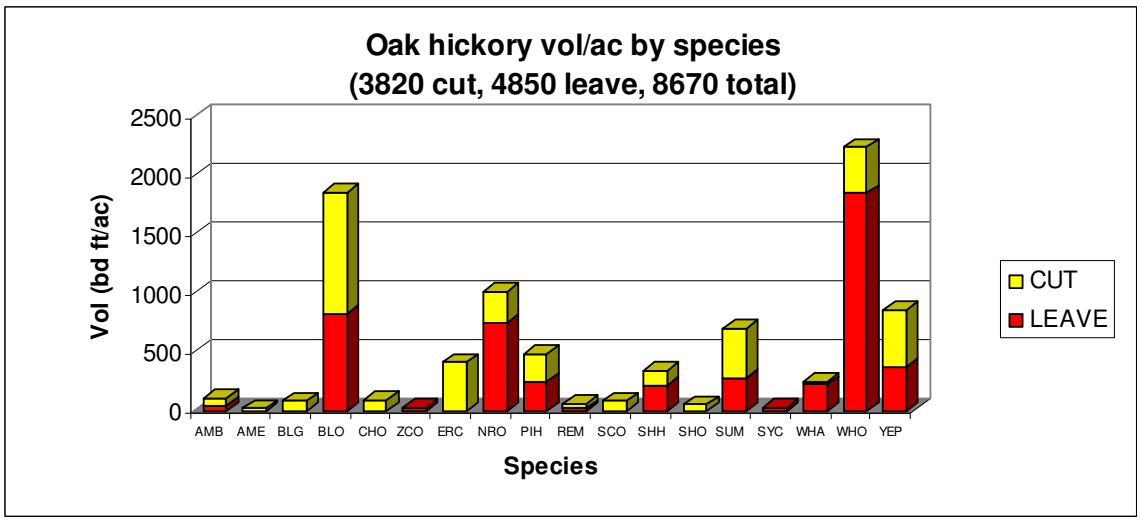
Volume (bd ft/ac)

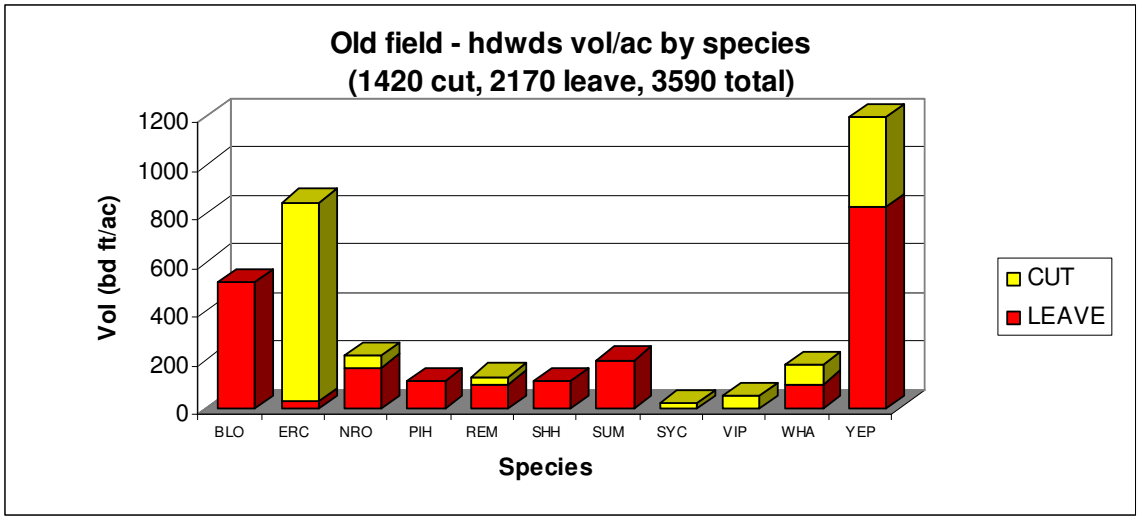
Species	CUT	LEAVE	TOTAL
BLG	70		70
BLO	220	220	440
ERC	1300		1300
NRO		90	90
PIH	50		50
REM	80		80

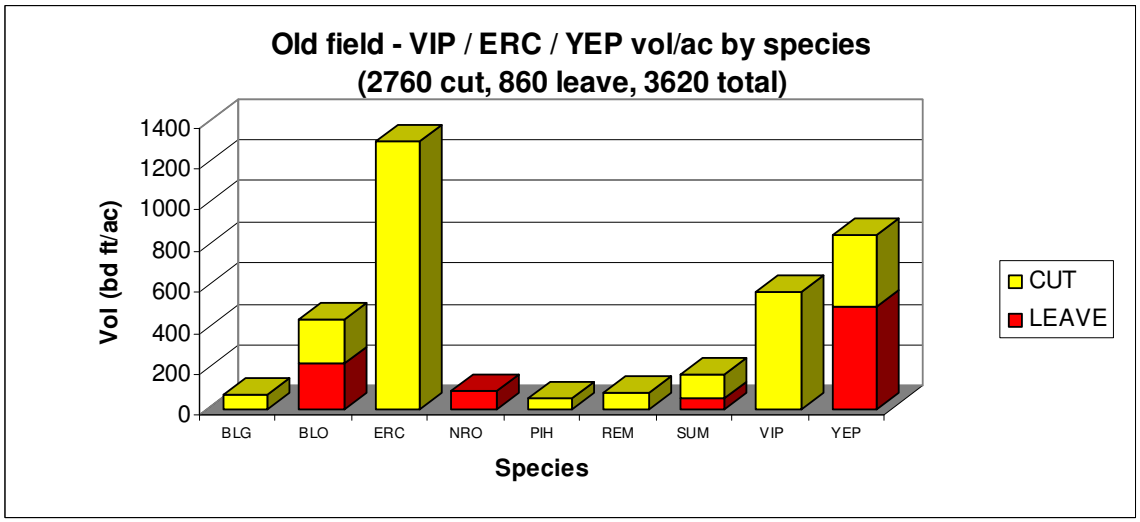
ERC	410		410
NRO	270	740	1010
PIH	230	250	480
REM	40	20	60
SCO	80		80
SHH	130	210	340
SHO	50		50
SUM	420	280	700
SYC		30	30
WHA	30	220	250
WHO	390	1840	2230
YEP	480	370	850
TOTAL	3820	4850	8670

SUM	120	50	170
VIP	570		570
YEP	350	500	850
TOTAL	2760	860	3620





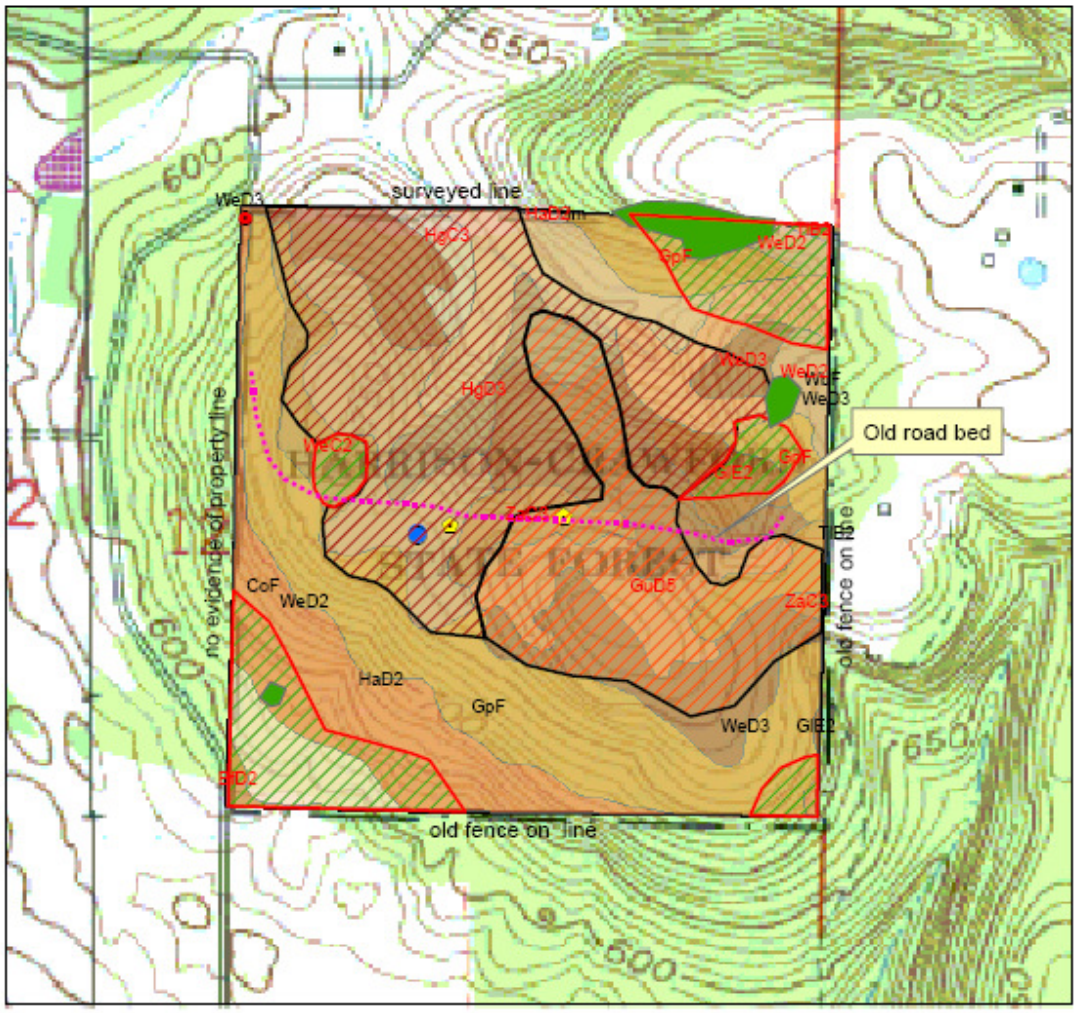




To submit a comment on this document, click on the following link:
http://www.in.gov/surveytool/public/survey.php?name=dnr_forestry

You **must** indicate "Harrison-Crawford C6 T5" 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 605 Soils



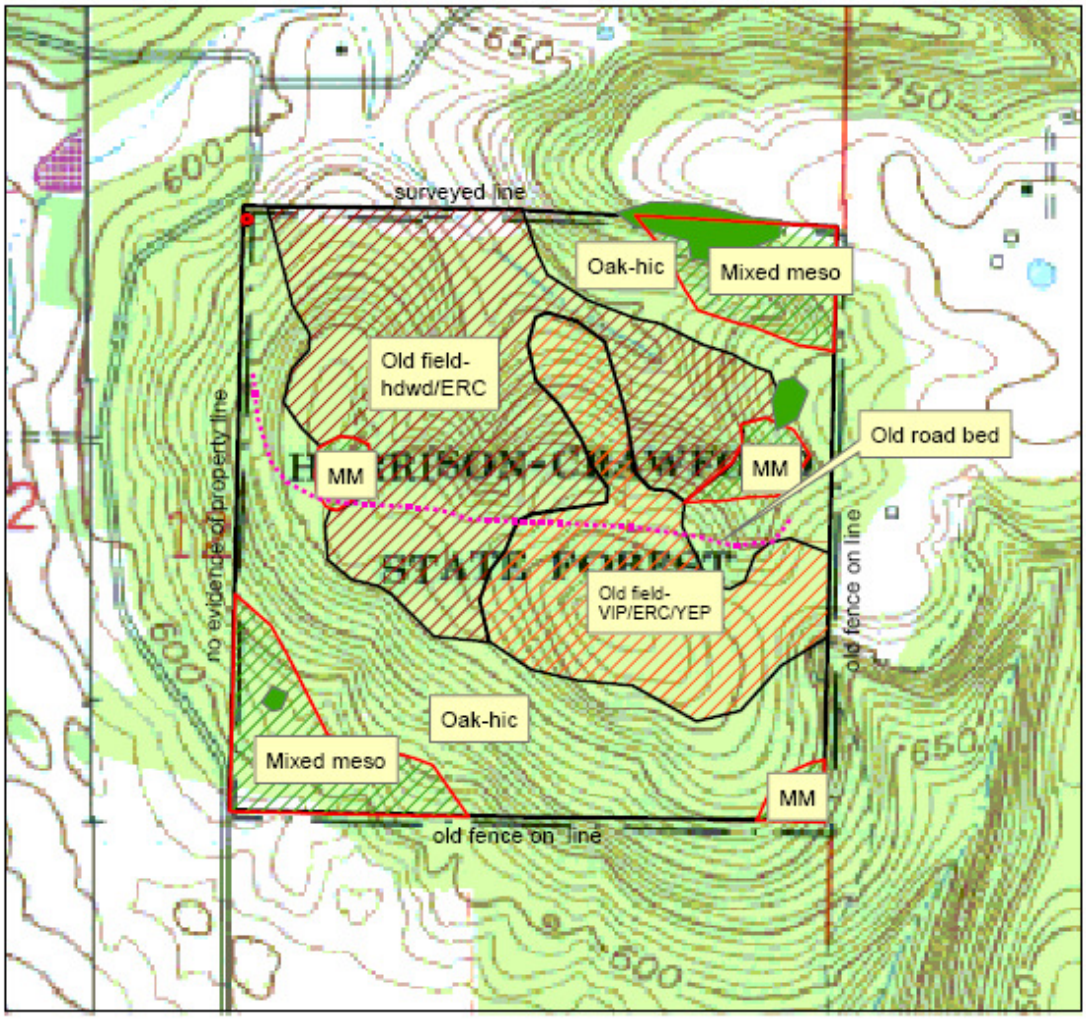
0 800 1,600 2,400 3,200 4,000 Feet

Legend

- homesite 1
- homesite 2
- old well
- NW corner
- Tracts
- Ailanthus areas
- Old road
- Stand 1: Mixed mesophytic
- Stand 2: Oak hickory
- Stand 3: Old field - hdwds / ERC
- Stand 4: Old field - VIP / ERC / YEP

N W E S

Tract 605



0 800 1,600 2,400 3,200 4,000 Feet

Legend

- homesite 1
- homesite 2
- old well
- NW corner
- Tracts
- Ailanthus areas
- Old road

- Stand 1: Mixed mesophytic
- Stand 2: Oak hickory
- Stand 3: Old field - hdwds / ERC
- Stand 4: Old field - VIP / ERC / YEP

N W E S