

FOREST MANAGEMENT PLAN

For the

PURDUE-MILLER MEMORIAL WOODLANDS

Prepared by Don Carlson-Purdue University Forester
OCTOBER 2021

1. Legal Description and Location

The Purdue University Miller Woodland is located approximately 2 miles east of Upland, Indiana. More specifically, it is composed of 180.085 acres in four separate compartments located in Sections 1 and 2, T23N, R9E, of Jefferson Township in Grant County, IN.

To get to the property from the intersection of I-69 and SR 22, take SR 22 east nearly three miles to point where SR 22 turns south. At this point, continue going east onto CR 500 South for approximately two miles to the northern edge of compartments 1 and 2.

2. Physical Description

- Soils: (Glynwood-Blount-Pewano)
Glynwood silty clay consists of deep, moderately well drained, slowly permeable soils with slopes ranging from 2-6%. These soils occupy the highest positions in the landscape and have few limitations. Site indexes (tree height at 50 years) are: Red, White, and Black oak- 80.

Blount silty clay loams soils are deep and relatively poorly drained. Slopes range from 0-3%. Windthrow is a concern on these soils. Site indexes are: Red and White oak- 65.

Pewano silty clay loam soils are deep, nearly level soils that occupy the lowest sites and drain poorly to the degree that water can accumulate during wet periods, especially in the spring. Due to the poor drainage, there will be equipment limitations and some windthrow potential. Site indexes are: Pin oak- 90, Red maple and white ash- 71, cottonwood- 98.

- Topography: The land is relatively flat with a few slightly rolling areas and some wet pockets. The maximum elevation change is roughly 30 feet.
- Acreage: The Miller Woodlands is divided into four, noncontiguous compartments. The total property contains 180 acres of which approximately 155 is established natural hardwood forest while the majority of the remaining 25 acres are old agricultural fields which were mostly planted to trees in 1991 or 2003.

MILLER PURDUE WOODLANDS

COMPARTMENT	TOTAL ACRES	NATURAL HARDWOODS ACRES	TREE PLANTING ACRES (PLANTING YEAR)	OTHER ACRES
1	45.5	36.9	8.6 (2000/ Replanted: 2003)	0
2	51.5	38.3	9.5 (1991)	3.7*
3	33.0	30.5	0	2.5
4	50.1	47.1	0	3***

*This area is in heavy grass / perennial weed cover. A portion of the area contains a functioning underground field tile that drains the agricultural field to the south.

**This is a 100 foot wide strip running along the west edge of the SE ¼, SE ¼, of Sec. 2 providing access from the road to the southwest corner of Compartment 3.

***This area was last farmed in 2002. In 2003 the area was planted to red oak and wildlife shrubs. The red oak planting failed leaving the field available for a future planting / research project. It was replanted to a demonstration tree planting with deer fence in the spring of 2006. See Installation of Research Plots below.

- Property lines: The property is bounded on the north by CR 500 South and on the south by CR 600 South. A railroad track forms the south boundary of Compartment 1 and the north boundary of Compartments 3 and 4. The western edge of Compartment 2 is CR 1150 East. The remaining property lines are bordered by agricultural lands. See attached map.

3. Forest Description

- Stand Characteristics: The majority of the forest has an even aged history and composition. Throughout much of the minimally disturbed forest, there is only a limited subcanopy as a result of heavy shade from the dominant trees and past fires and grazing which have killed many of the original shade tolerant species. The areas that have been disturbed through individual tree selection have begun to develop a more uneven age structure. Finally, the areas heavily harvested in the 1970-80s, have regenerated to quality stands containing a mix of pole-small saw log trees, except in the excessively wet areas. These wet areas are understocked with timber trees but provide opportunities for unique wildlife habitat.
- The 1991 blocked species tree planting in Compartment 2 (10 acres) has developed nicely. Several incomplete crown release thinnings have been implemented between 2003-2018. In 2020, the entire planting site was thinned to release crop trees. The understory is herbaceous at this time.
The 2000/2003 mixed hardwood tree planting in Compartment 1 (~8 acres) are well established. Canopy closure has occurred. Some release work was initiated in August 2021.
- Species Composition: Compartments 1, 2, and 4 are dominated by a white oak overstory mixed with some hickory and red, shumard, bur, swamp white, and chinkapin oak with a few scattered walnuts. The understory is mainly sugar maple and elm with a mix of other

species. Openings created during the 2003 timber harvest in Compartments 1 & 2 have naturally regenerated to a mix of elm, hackberry, maple, cherry, hickory, ironwood, basswood, with scattered competitive walnuts and red oak. Enrichment planting was not completed following the harvest.

The Comp 4 strip clearcuts from 1977 also have very little oak regeneration except for a few pockets with good pole sized red oaks. The Comp 1 clearcut area on the south end from 1992 has mixed regeneration success. Some are very well stocked with red oak being a primary overstory species.

Compartment 3 was heavily cut in 1977 using single tree selection. This cutting resulted in the present overstory mix of hickory, sugar maple, ash, and oak (red, white, bur, pin, and shingle). The understory contains primarily sugar maple and elm.

The 1991 tree planting in Compartment 2 contains a mix of oak including white, red, bur, swamp white, and swamp chestnut. A few cottonwoods have volunteered in the planting.

The 2000 / 2003 tree planting on the north end of Compartment 1 contains a nice mix of red, white, and bur oak with walnut and cherry mixed in. Some ash and dogwood have regenerated naturally.

- General Size Classes: The oak dominated overstory stands are in the large saw timber size class ranging from 22"-40+" dbh. Where the canopy is intact, there is little if any other size class besides the 1-12" sugar maple and elm..

In 1981 and 1987, a regeneration study was conducted on the southern half of Compartment 2. In this study a 1.78 acre area in the southwest corner was clearcut in 1981. In 1987, the adjacent 1.78 acre area to the east of the 1981 clearcut was clearcut. Both of these clearcut areas now contain 5-14" dbh trees, including a nice mix of red oak, hickory, cherry, elm, and sugar maple. Also in 1987, the six acre area to the west of the clearcuts was harvested to create a shelterwood. The understory at that time was controlled and some oaks were planted. The result was a broken overstory of 24-30" dbh trees and an understory of post sized maple, basswood, elm, cherry, red oak, and hickory.

The 2003 timber harvest on Compartments 1 & 2 created several regeneration openings, including the shelterwood area to the east of the Comp 2, 1987 clearcut. These openings now contain 2-5" dbh trees.

- Stocking: To keep the crop trees vigorously growing while maintaining quality, the BA should remain between 70-110.
According to the December 2018 forest inventory:
Compartment 1 (mature oak dominated 36.8 acres) has an overall stocking of 107 square feet of basal area (BA) and a standing volume of 8737 bd ft/acre.
Compartment 1 (1992 clearcut 7.3 acres) has a stocking of 93 square feet BA and 458 bd ft/acre.
Compartment 2 (mature oak dominated 28.3 acres) has 100 square feet of BA and 9,451 bd ft/acre.

Compartment 2 (1981 & 1987 clearcuts) has 110 square feet of BA and no present bd ft/acre. Note: Volume is tallied for trees starting at 14" DBH.

Compartment 3A (over mature oak stand NW projection of ~7 acres) has 123 square feet of BA and 9,109 bd ft/acre.

Compartment 4 (mature overstory 45 acres) can be essentially divided into two stands. The northern approximately 10 acres (north of the access road that transects the compartment) shows little sign of past harvesting and is over stocked with large, over mature trees. This area has experienced increased mortality in the last 20-30 years. South of the access road, the forest has undergone several harvests between 1956-77. Here, the forest is vigorously growing with a stocking in the range of 100 BA. The combined Compartment 4 inventory shows 108 square feet BA and 7,692 bd. ft/acre.

(see attached inventories for more detail)

- Inventory Data: The analyses of the 2001 CFI data and the 2018 variable plot inventory are attached.

4. Unique Features

- Physical: There are two legal easements for accessing Compartments 4 and 3. Each easement is 20 feet wide. The first runs along the gravel access lane connecting 1150 E. to Comp. 4. The second connects the northeast corner of Compartment 3 to the lane bisecting Compartment 4. Compartment 3 also contains a 100' wide strip of land (not an easement) connecting 600 S. to the southwest corner of Compartment 3.

There is an old pipeline that ran through the property years ago. It has been determined that the pipeline is no longer actively used and can be disregarded.

In Compartment 2, between the existing natural forest and the 9.5 acre tree planting is an underground tile that drains the crop field to the south of the compartment. The tile was repaired around 2010.

- Biological: All things considered, this forest provides good wildlife habitat for a variety of species, none of which are known to be endangered or threatened.
- Cultural: none

5. History

- Acquisition Date: 1938
- Fire: It is noted that Compartment 2 burned over in the spring of 1942 while Compartment 1 burned on March 29, 1945. No other fires have been noted since that time. Compartments 1, 2, and the northern portion of 4 show evidence of past fire. Numerous trees in these areas, especially sugar maple, red oak, and some ash, are hollow to some extent probably due in part to fire and/or grazing. Most of the white and bur oak appear to be undamaged by the fires. Many of the old white oak stumps in Compartment 1 and 2 show little fire damage.
- Grazing: The majority of the forest land was probably grazed until the early to mid 1930s'. When Purdue University acquired possession of the land in 1938, all cattle were excluded
- Inventory: Several inventories have been completed as listed: 1949 (20% inventory), 1957 (100% of 6.5"+ trees, Compartment 1), 1961 (variable plot, all Compartments), 1975 (permanent 1/5 acre CFI plots installed), 1979 (100 % of 14"+ trees, Compartment 4), 1986 and 2001 (CFI plots remeasured). In 2018, a variable plot inventory took the place of the prior CFI inventories.

- Installation of Research Plots: In 1981, Compartment 2 was divided into 11 blocks (60 X 120 meters, approximately 1.78 acres) to examine regeneration responses to various cultural treatments. Block 1 in the southwest corner of the woods was clearcut in 1981. In 1986, crop trees were selected on a 5 X 5 meter grid in 12 subplots. Crop trees were then subjected to one of four crop tree release treatments. Note: This 1.78 acre area looks great with a nice mix of species and has recently been thinned.

In 1987, Block 2 was clearcut to duplicate the 1981 study. Also, Blocks 3, 4, and 5 were shelterwood cut to examine the effects of subcanopy treatments on natural and planted oak regeneration. Note: Today there is very little oak regeneration in this area due to intense shading by larger sugar maple, basswood, and elm trees that were more competitive in the understory.

In 1939, 1-1.5 acre blocks were cleared in Compartments 2 and 3 and were planted to various strains of Asiatic chestnut. Regrettably, the Compartment 2 plot burned in 1942 and the trees were lost. Note: This area now is nicely stocked with 10-18" dbh red oak with a mix of equal size cherry, walnut, hickory, and sugar maple. The plot in Compartment 3 also failed with the last chestnut tree dying in 1978.

In the spring of 2006, demonstration tree plantings were established on Compartments 2 and 4 as part of educational outreach efforts. The plantings were established in the agriculture field on the west side of Compartment 4 and in a natural regeneration opening in Compartment 2. Each planting is intended to demonstrate the effects of deer on plantation establishment and natural regeneration by excluding the deer from ½ of each planting using 7 ½ foot deer fence. In addition, each planting is composed of rows containing proportional numbers of white and red oak, yellow poplar, and black walnut. To add potential value to the demonstration, two stock types of black walnut were planted. The two types are standard Vallonia State Tree Nursery stock (includes ~10% stock from DNR select seed orchards) and HTIRC select walnuts. Every other row contains only Vallonia stock while the opposite rows contain only HTIRC select stock.

- Harvests: The Purdue-Miller Woodlands has a long history of sustainable timber harvests. To summarize, since Purdue University acquired ownership in 1938, a total of at least 14 timber harvests have been completed yielding over 808,000 board feet. A timber harvest history table (Appendix A) is attached to provide a break down of harvests by compartments.

As far as can be determined from harvest records and the present condition of the woodlands, most of the harvests have been conducted on an individual tree or small group selection basis. However, several regeneration cuts have been made since 1977. In 1977, two strips were cleared in the southern portion of Compartment 4 north of the drainage ditch. Each strip was approximately 2 chains wide and 10 chains long (a chain is 66 feet). The strips were completed (everything greater than 1" dbh was cut) following the harvest. Today the strips contain 4-14" dbh trees, mainly soft maple and elm with scattered other species. Compartment 2 has two adjacent areas of 1.78 acres each that were clearcut in 1981 or 1987. This area now contains an excellent mix of high quality 3-8" dbh trees. Also in 1987, the 6 acres adjacent to the clearcuts were harvested to create a shelterwood. Finally, the south end of Compartment 1 was clearcut in 1991. This area has regenerated

poorly due to poorly drained soils, heavy herbaceous competition and a lack of thorough post-harvest tsi.

On December 16, 2003, the 14th timber harvest was initiated by the sale of 71 trees containing 24,715 BF in Compartment 1 and 167 trees containing 50,511 BF in Compartment 2. This harvest created several small openings in both compartments along with removing scattered individual crop trees where needed. In order to maintain a diversity of stand structure, species composition, and its aesthetic appeal to the community, large areas in each compartment were not be affected by this harvest that was completed in 2004.

- Specific Management Activities: The details of past management become more clearly defined in recent years compared to the early years of Purdue's 45 years of management. Early accounts seem to be vague or not present at all. Below is a list of recorded management (not including timber harvests or research projects) since 1938. Other management has undoubtedly been completed which was not recorded or records have not been found to date.

1955- 2000 white pine and 2000 red oak seedlings were planted in Compartments 2 & 4.

1961- Some tsi took place following the 1959 timber sale.

1977- Post-harvest tsi in the clearcut strips.

1978- 50 black walnuts planted in opening in Compartment 3.

1981- 68 black walnuts planted in Compartment 2 in an opening by the county road.

1987- Limited post-harvest tsi completed in Compartment 2.

1991- 10 acre tree planting established on west side of Compartment 2.

1992- Limited post-harvest tsi completed in Compartment 1.

2000-3- Eight acre tree planting established on north side of Compartment 1.

2001- Grape vines controlled on all compartments.

2003- First thinning of 1991 tree planting in Compartment 2.

2003- Crop tree release in 1981-6 clearcut area in Compartment 2.

2006- Post harvest timber stand improvement completed on Compartments 1 & 2.

2006- Demonstration tree plantings established on Compartments 2 and 4.

~2010- Crop tree release of the 1981-6 clearcut in Comp 2.

2005-2018- partial crop tree release in the 1991 block tree planting.

2020- Completed thinning of the 1991 block tree planting.

2021- Timber marked for sale in Comp 1. To be sold in fall 2021.

2021- Timber marked for sale in Comp 4. No sale at this time due to implementing a forest regeneration study prior to overstory removal.

6. Forest Management Concerns

Purdue University’s long ownership history brings with it a big responsibility to demonstrate sound management that is balanced with maintaining aesthetic appeal, research opportunity, and quality wildlife habitat.

The benefits of long-term sustainable timber management (or lack of management) are made clear when we look at timber inventories on the Miller Woodlands. Below is a brief summary comparison of 17 years between the 2001 and 2018 inventories analyses.

Miller Woods Growth Comparison Between 2001 and 2018						
Compartment	2001 Inventory		2004 Timber Hrvest	2018 Inventory		Annual Growth in BF / Acre
	BA/Ac	BF/Ac	BF/Ac	BA/Ac	BF/Ac	
1	79	6,575	24,715	107	8,737	169
2	142	12,194	50,511	100	9415	-62
4	108	9207	None	108	7692	-89

Compartment 1 is growing productively due to controlled stocking and selective harvesting over the last 50 years.

Compartment 2 had been allowed to get extremely over stocked over the last 50 years. The overstocked woodland had a higher proportion of trees in poor health and timber quality that declined over the years. The decline continues.

Compartment 3 is an over mature woodland that is in decline. Timber harvesting has seriously lagged behind and new growth is offset by increasing mortality.

7. Management Objectives

The major goals for this forest are to determine appropriate management strategies to maintain the long history of sustainable timber harvesting while improving the quality and health of the forest and providing the opportunity for quality regeneration (especially white oak) to occur. In addition, providing the opportunity for forest and wildlife research must remain a high priority. Finally, the Miller-Purdue Woodlands should be used more to promote forest stewardship to forestry professionals and the public.

8. Implementation Plan

In order to meet the long-term goals while addressing the concerns will require a commitment to the implementation of this management plan.

Timber in Compartments 1 & 2 were sold in December 2003 and harvested in 2004. Post-harvest TSI was completed in 2006. There is significant acreage in both compartments that was not harvested to allow additional research and demonstration opportunities. Other areas were lightly cut while some isolated locations were regenerated. Opportunities exist for using prescribed fire to manage both the wildlife habitat and the regeneration of the forest.

Compartment 1 is marked for harvest and is to be sold in the fall of 2021. This sale of timber will harvest 191 trees containing 106,530 bd ft. Post-Harvest TSI will need to be completed immediately following the harvest. In the spring following the harvest, an enrichment planting heavy to oak and walnut should be installed with and without deer browse control measures to demonstrate effective means to regenerate quality species on rich sites.

It was noted in 2003 that the timber in the north portion of Compartment 4 is degrading due to over maturity, lack of timber management, and wet soil conditions. It continues to age and degrade. A timber harvest would help restore this to a productive woodland for timber resources. The harvest should be implemented with the stand's over mature status and lack of quality, advanced regeneration in mind. The plan being discussed is to implement a quality study to determine practical and effective ways to successfully regenerate the stand using silvicultural technics.

The southern portion of Compartment 4 has reached full stocking and is ready for harvesting. The north ~5 acres could join the study implemented on the northern Compartment 4 tract. The far southern end adjacent to the road and south of the ditch is highly visible and could be reasonably left to grow naturally with limited harvesting taking place. The clearcut strips of the southern half of Compartment 4 need timber stand improvement to release crop trees from excessive competition.

Compartments 2 & 3 are all fully stocked and should be harvested in the next five years. Methods to increase successful oak regeneration could be implemented to offer increased study potential. Input from forestry faculty and professionals will help guide implementation.

The 1991 and 2000/03 tree plantings should be maintained in a productive and effective fashion.

All compartments should be re-inventoried around 2025 using variable plot inventory methods.

Finally, efforts should be made to improve/maintain the forest's accessibility and use for management / demonstration purposes. 1) Access roads and/or skid yards should be maintained to allow vehicles to park and turn around. 2) As timber harvests are completed, some skid trails should be maintained through periodic clearing and mowing to allow easy access. 3) Invasive plants should be monitored and controlled.

9. Summary

Year	Task to be completed
2021	Sell marked timber in Compartments 1. Follow harvest with TSI and enrichment planting. Establish regeneration/harvest plan for Compartment 4.
2025	Re inventory all compartments.
2022-27	Conduct timber sale on Compartments 2,3, and 4. Follow up with TSI and enrichment plantings.
2022-2030	Monitor and control invasive plants as able.

Purdue-Miller Memorial Woodlands Timber Harvest Records
December 3, 2003

Year	Compartment	Type of Harvest	Board Feet (Doyle)	Income Generated
1939	2	-	5200	?
1939	3	-	13,500	?
1946	1	Salvage (fire killed trees)	9600	?
1955	4a,b	Farm use	6,800	0
1956	4a,b	Farm use	7,410	0
1959	4b	-	14,600	?
1959	4b	-	5,900	?
1959-60	1	Individual tree selection	27,236	?
1971	1-4	Walnut Sale	8,849 (Comp 1) 5,008 (Comp 2) 6,540 (Comp 3) 16,084 (Comp 4)	91,900
1976	1	Individual tree selection	163,120	37,398
1976	4	Clearcut Strips	50,398	7,567
1977	3 and 4c	Individual tree selection	143,000 (Comp 3) 64,484 (Comp 4c)	86,136
1979	4b	Farm use	6,435	0
1981	2	Clearcut	107,645	10,800
1987	2	Clearcut / shelterwood	49,900	8,243
1992	1	Individual tree selection	101,370	27,660
2003	1 & 2	Individual tree selection and group openings	24,715 (Comp. 1) 50,511 (Comp. 2)	56,800

**INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FORESTRY**

**SUMMARY AND ANALYSIS OF FOREST INVENTORY 2000
SUMMING ALL TREES**

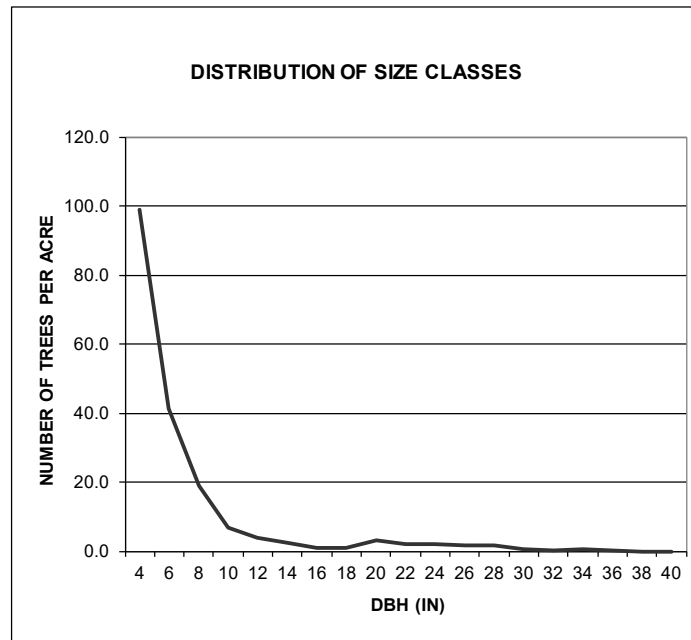
OWNER: Purdue University
TRACT: Miller- Comp. 1
ACRES: 35.30

DATE: June 2001
FORESTER: Don Carlson

This inventory was accomplished by measuring all trees greater than 3" within 1/5 acre plots over 16 sample points.

All figures for volume are in board-feet (bd-ft) Doyle, all figures for basal area (BA) are in feet², and all figures for diameter at breast height (dbh) are in inches.

SUMMARY BY SIZE CLASS			
DBH	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE
4		98.8	8.6
6		41.3	8.1
8		19.1	6.7
10		6.9	3.7
12	9	3.8	2.9
14	79	2.5	2.7
16	88	0.9	1.3
18	170	0.9	1.7
20	779	3.1	6.8
22	797	2.2	5.8
24	947	2.2	6.9
26	867	1.6	5.8
28	954	1.6	6.7
30	561	0.6	3.1
32	334	0.3	1.7
34	665	0.6	3.9
36	323	0.3	2.2
38			
40			
TOTAL	6575	186.6	78.6



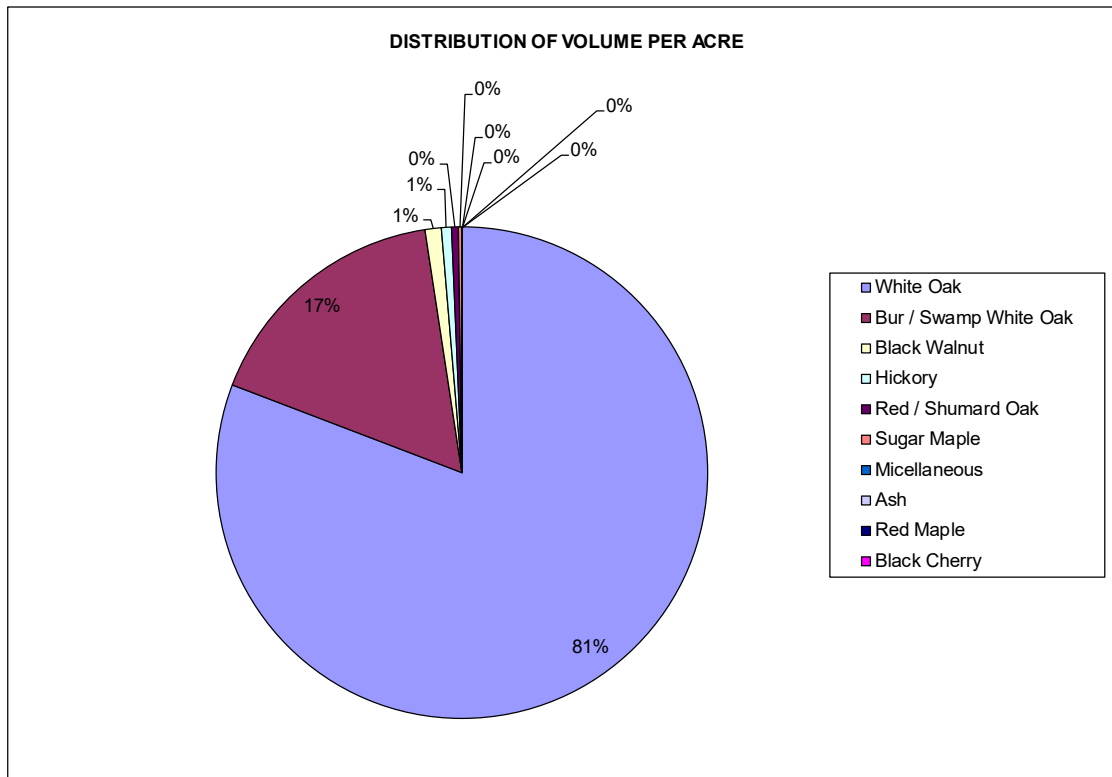
SUMMARY BY SPECIES									
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH		TOTAL STAND VOLUME
White Oak	5313	80.8%	12.8	6.9%	38.7	49.3%	23.5		187,553
Bur / Swamp White Oak	1104	16.8%	2.2	1.2%	7.0	9.0%	24.3		38,962
Black Walnut	70	1.1%	0.3	0.2%	0.7	0.9%	20.0		2,482
Hickory	43	0.7%	6.9	3.7%	3.7	4.7%	9.9		1,533
Red / Shumard Oak	29	0.4%	6.9	3.7%	1.5	1.8%	6.2		1,037
Sugar Maple	15	0.2%	75.0	40.2%	13.8	17.6%	5.8		530
Micellaneous			66.3	35.5%	10.3	13.0%	5.3		-
Ash			10.0	5.4%	1.6	2.0%	5.4		-
Red Maple			0.3	0.2%	0.2	0.3%	12.0		-
Black Cherry			5.9	3.2%	1.1	1.4%	5.9		-
PER ACRE TOTALS	6575	100.0%	186.6	100.0%	78.6	100.0%	8.8		232,098

OWNER: Purdue University
 TRACT: Miller- Comp. 1
 ACRES: 35.30

DATE:
 FORESTER:

June 2001
 Don Carlson

SUMMARY OF VOLUME PER ACRE BY SPECIES AND SIZE CLASS											
DBH	*** SPECIES LISTING ***										VOL. PER ACRE
	White Oak	Bur / Swamp White Oak	Black Walnut	Hickory	Red / Shumard Oak	Sugar Maple	Micellaneou us	Ash	Red Maple	Black Cherry	
12				9							9
14	15	15		34		15					79
16	59				29						88
18	170										170
20	627	82	70								779
22	797										797
24	947										947
26	699	168									867
28	782	172									954
30	281	281									561
32	334										334
34	279	386									665
36	323										323
38											
40											
VOL./ACRE	5313	1104	70	43	29	15					6575



SUMMARY AND ANALYSIS OF FOREST INVENTORY 2000

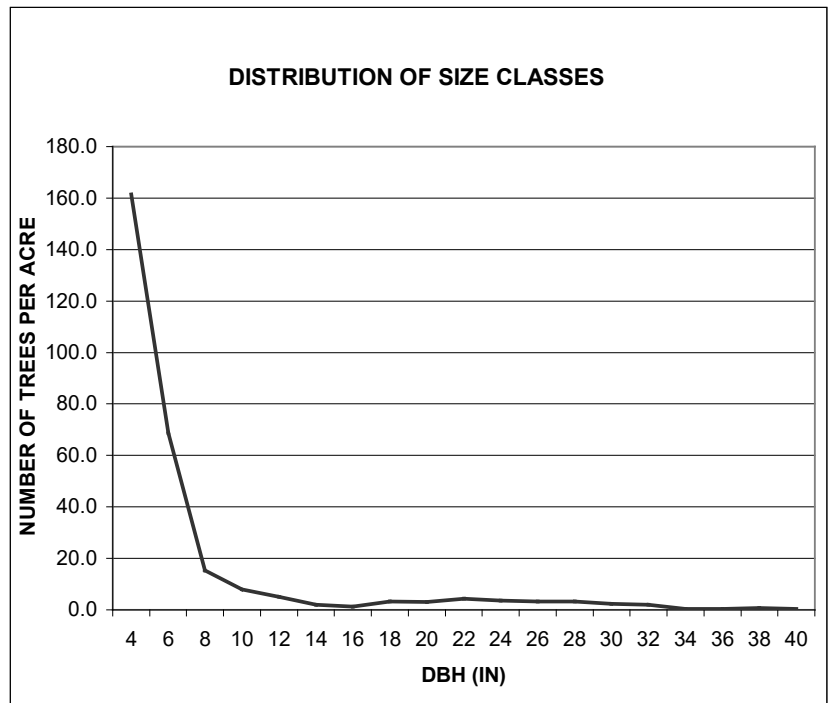
SUMMING ALL TREES

OWNER: Purdue University
TRACT: Miller- Comp. 2
ACRES: 32.88

DATE: June 2001
FORESTER: Don Carlson

This inventory was accomplished by measuring all trees greater than 3" within 1/5 acre plots over 15 sample points. All figures for volume are in board-feet (bd-ft) Doyle, all figures for basal area (BA) are in feet², and all figures for diameter at breast height (dbh) are in inches.

SUMMARY BY SIZE CLASS			
DBH	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE
4		161.3	14.1
6		68.7	13.5
8		15.3	5.4
10		8.0	4.4
12	29	5.0	3.9
14	32	2.0	2.1
16	140	1.3	1.9
18	607	3.3	5.9
20	668	3.0	6.5
22	1486	4.3	11.4
24	1557	3.7	11.5
26	1604	3.3	12.3
28	2030	3.3	14.3
30	1568	2.3	11.5
32	972	2.0	11.2
34	355	0.3	2.1
36	194	0.3	2.4
38	608	0.7	5.3
40	345	0.3	2.9
TOTAL	12194	288.7	142.4



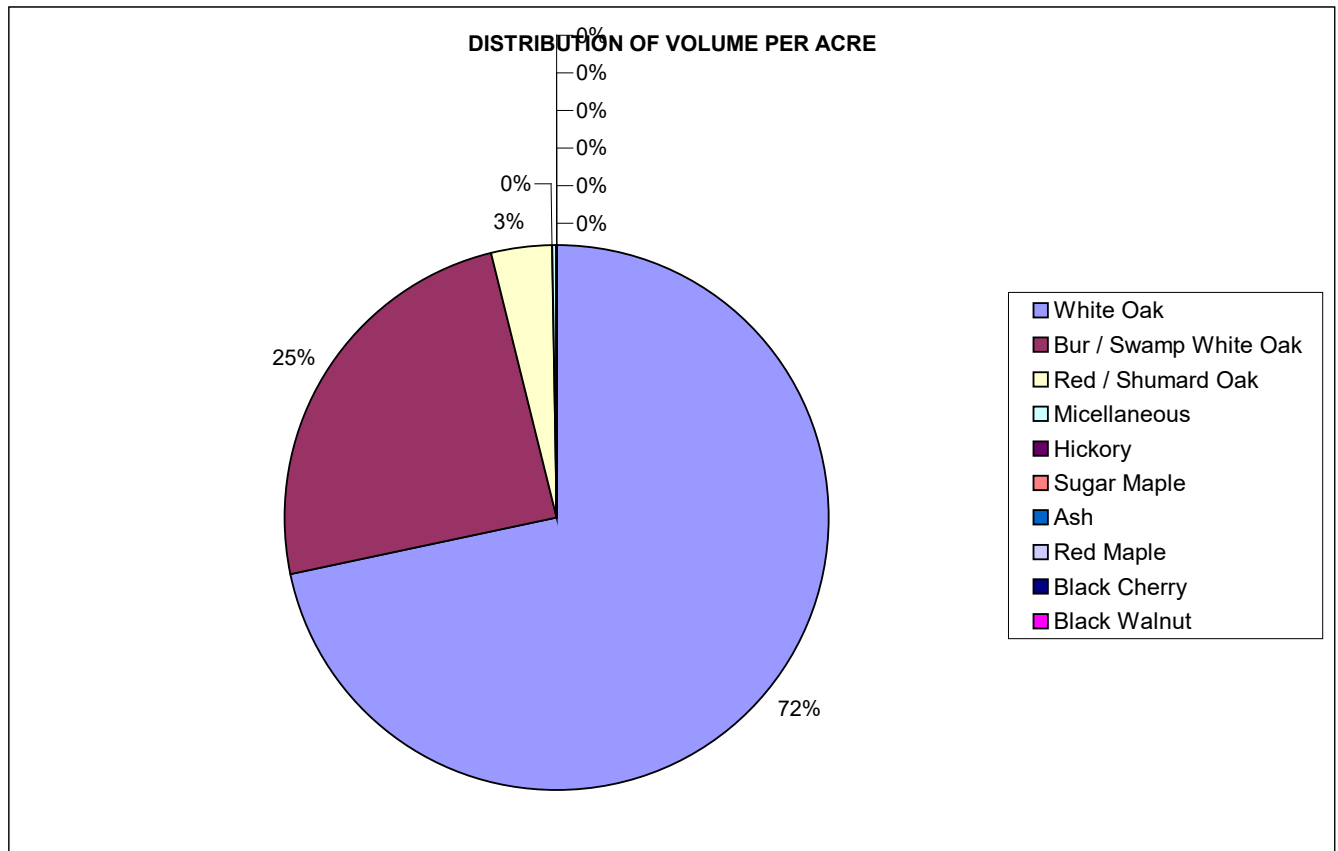
SUMMARY BY SPECIES								
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH	TOTAL STAND VOLUME
White Oak	8736	71.6%	21.7	7.5%	66.9	47.0%	23.8	287,251
Bur / Swamp White Oak	2990	24.5%	6.3	2.2%	26.8	18.8%	27.8	98,322
Red / Shumard Oak	426	3.5%	14.3	5.0%	7.5	5.3%	9.8	14,007
Micellaneous	26	0.2%	111.7	38.7%	17.3	12.2%	5.3	844
Hickory	16	0.1%	26.0	9.0%	7.9	5.5%	7.4	526
Sugar Maple			43.7	15.1%	6.0	4.2%	5.0	-
Ash			29.0	10.0%	4.5	3.2%	5.4	-
Red Maple			5.7	2.0%	0.8	0.6%	5.1	-
Black Cherry			29.0	10.0%	4.0	2.8%	5.0	-
Black Walnut			1.3	0.5%	0.6	0.4%	9.1	-
PER ACRE TOTALS	12194	100.0%	288.7	100.0%	142.4	100.0%	9.5	400,950

OWNER: Purdue University
 TRACT: Miller- Comp. 2
 ACRES: 32.88

DATE:
 FORESTER:

June 2001
 Don Carlson

SUMMARY OF VOLUME PER ACRE BY SPECIES AND SIZE CLASS											
DBH	*** SPECIES LISTING ***										VOL. PER ACRE
	White Oak	Bur / Swamp White Oak	Red / Shumard Oak	Micellaneou s	Hickory	Sugar Maple	Ash	Red Maple	Black Cherry	Black Walnut	
12			19	10							29
14				16	16						32
16	70		70								140
18	489	118									607
20	668										668
22	1273	213									1486
24	1485	72									1557
26	1298	153	153								1604
28	1518	328	184								2030
30	1130	439									1568
32	147	825									972
34	355										355
36		194									194
38	304	304									608
40		345									345
VOL./ACRE	8736	2990	426	26	16						12194



SUMMARY AND ANALYSIS OF FOREST INVENTORY 2000

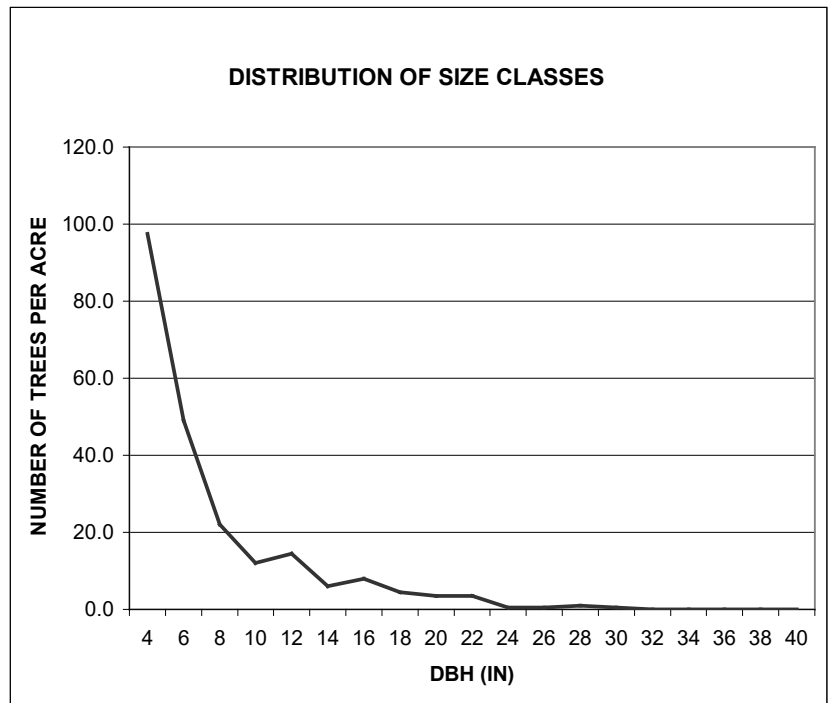
SUMMING ALL TREES

OWNER: Purdue University
TRACT: Miller- Comp. 3
ACRES: 21.00

DATE: June 2001
FORESTER: Don Carlson

This inventory was accomplished by measuring all trees greater than 3" within 1/5 acre plots over 10 sample points. All figures for volume are in board-feet (bd-ft) Doyle, all figures for basal area (BA) are in feet², and all figures for diameter at breast height (dbh) are in inches.

SUMMARY BY SIZE CLASS			
DBH	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE
4		97.5	8.5
6		49.0	9.6
8		22.0	7.7
10		12.0	6.5
12	44	14.5	11.4
14	96	6.0	6.4
16	586	8.0	11.2
18	774	4.5	8.0
20	554	3.5	7.6
22	1039	3.5	9.2
24	147	0.5	1.6
26	230	0.5	1.8
28	551	1.0	4.3
30	329	0.5	2.5
32			
34			
36			
38			
40			
TOTAL	4348	223.0	96.3



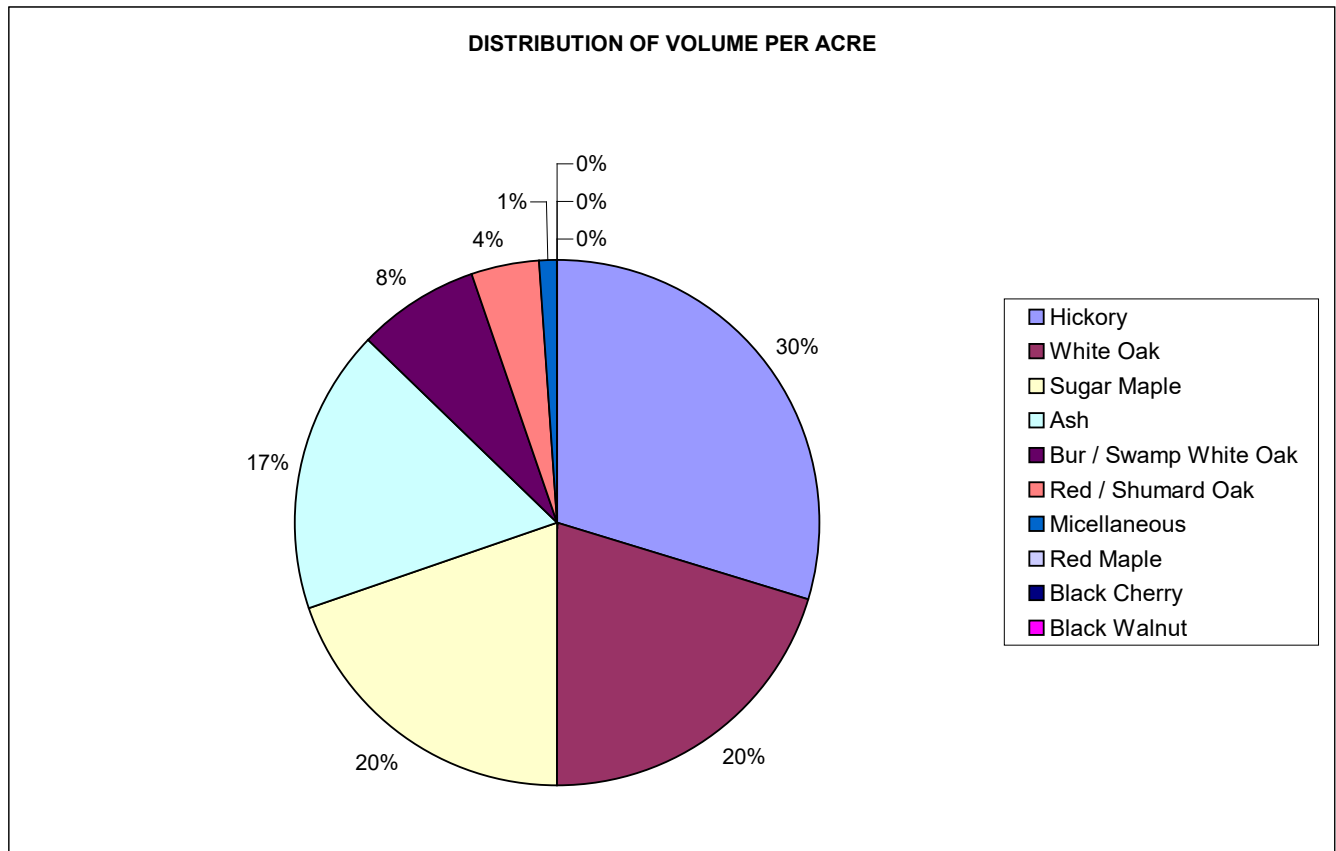
SUMMARY BY SPECIES								
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH	TOTAL STAND VOLUME
Hickory	1295	29.8%	13.0	5.8%	16.4	17.1%	15.2	27,195
White Oak	878	20.2%	2.5	1.1%	7.1	7.4%	22.8	18,428
Sugar Maple	865	19.9%	66.5	29.8%	27.0	28.1%	8.6	18,155
Ash	757	17.4%	28.0	12.6%	18.0	18.7%	10.9	15,887
Bur / Swamp White Oak	329	7.6%	0.5	0.2%	2.5	2.5%	30.0	6,909
Red / Shumard Oak	178	4.1%	8.5	3.8%	4.9	5.0%	10.2	3,738
Micellaneous	47	1.1%	94.5	42.4%	17.1	17.7%	5.8	987
Red Maple			5.5	2.5%	2.3	2.4%	8.8	-
Black Cherry			3.5	1.6%	0.7	0.7%	5.9	-
Black Walnut			0.5	0.2%	0.4	0.4%	12.0	-
PER ACRE TOTALS	4348	100.0%	223.0	100.0%	96.3	100.0%	8.9	91,298

OWNER: Purdue University
 TRACT: Miller- Comp. 3
 ACRES: 21.00

DATE:
 FORESTER:

June 2001
 Don Carlson

SUMMARY OF VOLUME PER ACRE BY SPECIES AND SIZE CLASS											
DBH	*** SPECIES LISTING ***										VOL. PER ACRE
	Hickory	White Oak	Sugar Maple	Ash	Bur / Swamp White Oak	Red / Shumard Oak	Micellaneous	Red Maple	Black Cherry	Black Walnut	
12	15		29								44
14			72	24							96
16	149		271	36		83	47				586
18	420		259			95					774
20	221	131		203							554
22	492	196	87	265							1039
24			147								147
26				230							230
28		551									551
30					329						329
32											
34											
36											
38											
40											
VOL./ACRE	1295	878	865	757	329	178	47				4348



SUMMARY AND ANALYSIS OF FOREST INVENTORY 2000

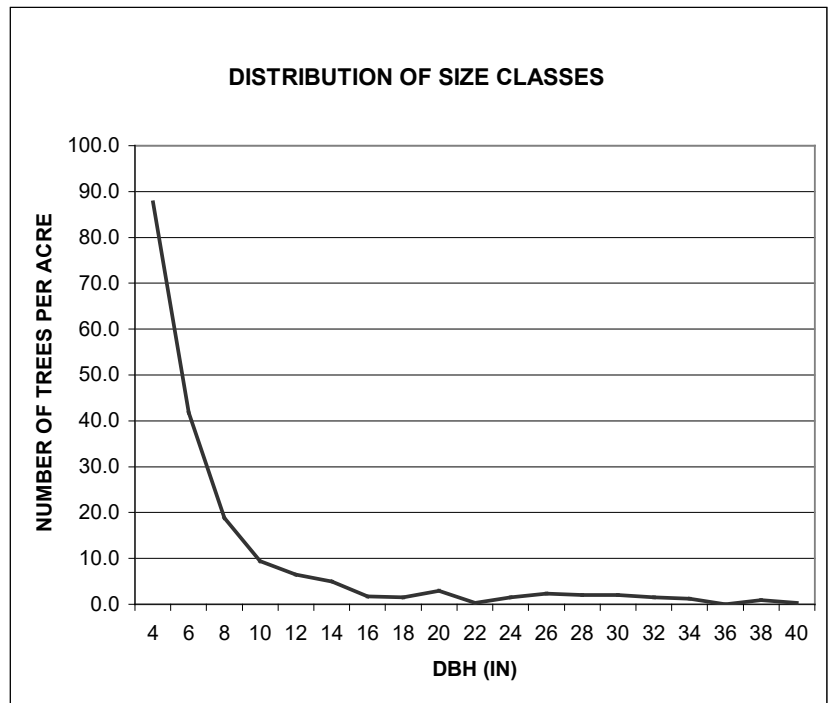
SUMMING ALL TREES

OWNER: Purdue University
TRACT: Miller- Comp. 4
ACRES: 45.70

DATE: June 2001
FORESTER: Don Carlson

This inventory was accomplished by measuring all trees greater than 3" within 1/5 acre plots over 17 sample points. All figures for volume are in board-feet (bd-ft) Doyle, all figures for basal area (BA) are in feet², and all figures for diameter at breast height (dbh) are in inches.

SUMMARY BY SIZE CLASS			
DBH	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE
4		87.6	7.6
6		41.8	8.2
8		18.8	6.6
10		9.4	5.1
12	9	6.5	5.1
14	188	5.0	5.3
16	153	1.8	2.5
18	204	1.5	2.6
20	511	2.9	6.4
22	69	0.3	0.8
24	637	1.5	4.6
26	1034	2.4	8.7
28	1158	2.1	8.8
30	1413	2.1	10.1
32	1214	1.5	8.2
34	1202	1.2	7.4
36			
38	1025	0.9	6.9
40	391	0.3	2.6
TOTAL	9207	187.4	107.6



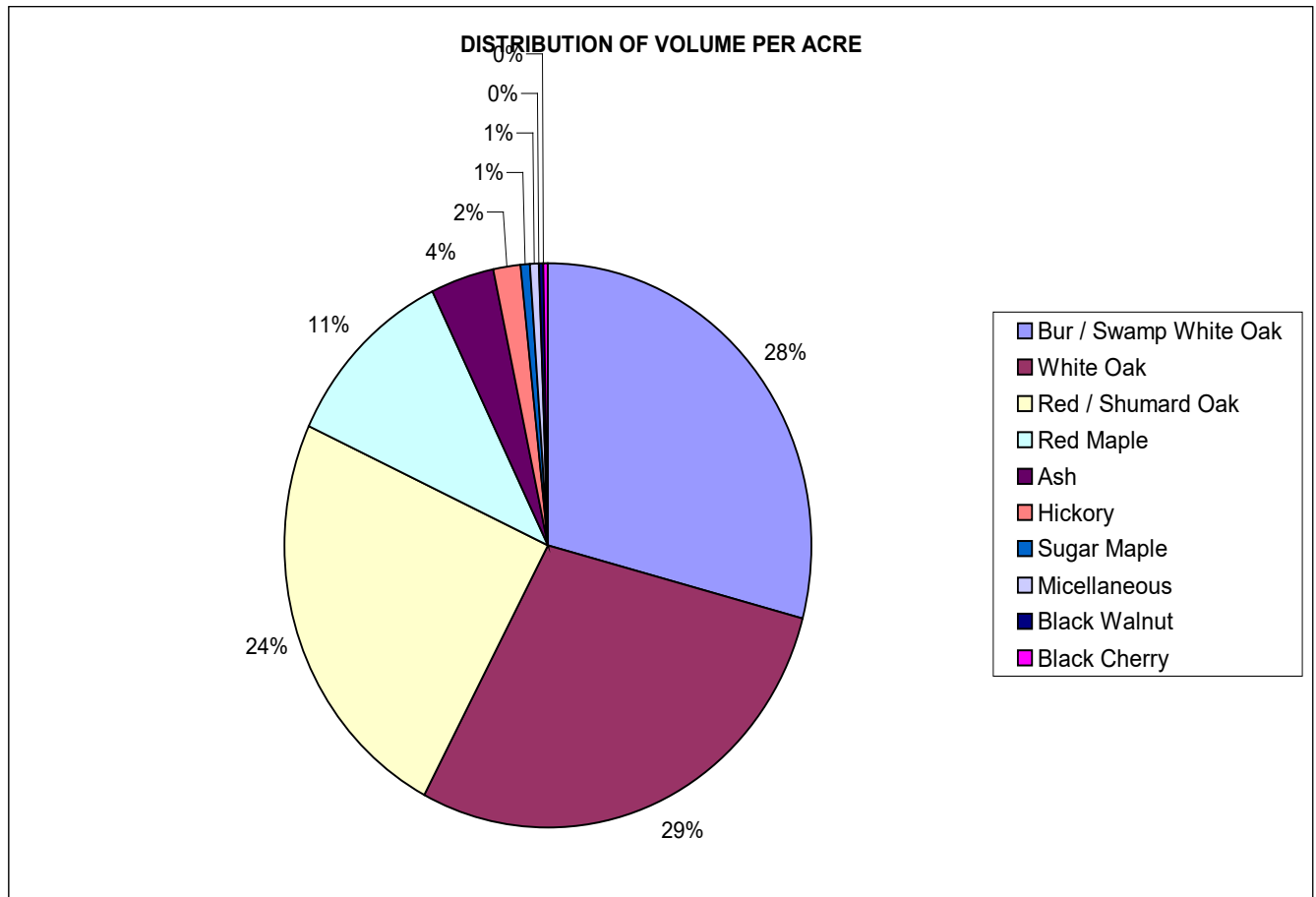
SUMMARY BY SPECIES								
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH	TOTAL STAND VOLUME
Bur / Swamp White Oak	2683	29.1%	4.1	2.2%	18.1	16.9%	28.4	122,597
White Oak	2628	28.5%	6.2	3.3%	20.5	19.1%	24.7	120,110
Red / Shumard Oak	2228	24.2%	7.1	3.8%	16.3	15.2%	20.6	101,803
Red Maple	994	10.8%	15.0	8.0%	14.5	13.5%	13.3	45,418
Ash	367	4.0%	32.6	17.4%	10.4	9.7%	7.6	16,788
Hickory	147	1.6%	9.7	5.2%	3.6	3.4%	8.3	6,734
Sugar Maple	64	0.7%	13.2	7.1%	5.4	5.0%	8.6	2,903
Micellaneous	54	0.6%	91.5	48.8%	16.2	15.0%	5.7	2,460
Black Walnut	28	0.3%	1.8	0.9%	0.9	0.9%	9.8	1,290
Black Cherry	14	0.2%	6.2	3.3%	1.6	1.5%	6.9	645
PER ACRE TOTALS	9207	100.0%	187.4	100.0%	107.6	100.0%	10.3	420,749

OWNER: Purdue University
 TRACT: Miller- Comp. 4
 ACRES: 45.70

DATE:
 FORESTER:

June 2001
 Don Carlson

SUMMARY OF VOLUME PER ACRE BY SPECIES AND SIZE CLASS											
DBH	*** SPECIES LISTING ***										VOL. PER ACRE
	Bur / Swamp White Oak	White Oak	Red / Shumard Oak	Red Maple	Ash	Hickory	Sugar Maple	Micellaneous	Black Walnut	Black Cherry	
12					9						9
14				46	14	28	42	14	28	14	188
16	28	28		76			21				153
18		96	48	59							204
20	66	132			154	119		40			511
22				69							69
24	127	401	109								637
26	159	476		400							1034
28	162	452	162	191	191						1158
30		651	610	152							1413
32	542	130	542								1214
34	939	263									1202
36											
38	268		756								1025
40	391										391
VOL./ACRE	2683	2628	2228	994	367	147	64	54	28	14	9207



**INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FORESTRY**

**SUMMARY AND ANALYSIS OF FOREST INVENTORY 2000
FOR LEAVE, HARVEST, AND TSI TREES**

OWNER: Purdue - Miller
TRACT: Compartment 1
ACRES: 36.50

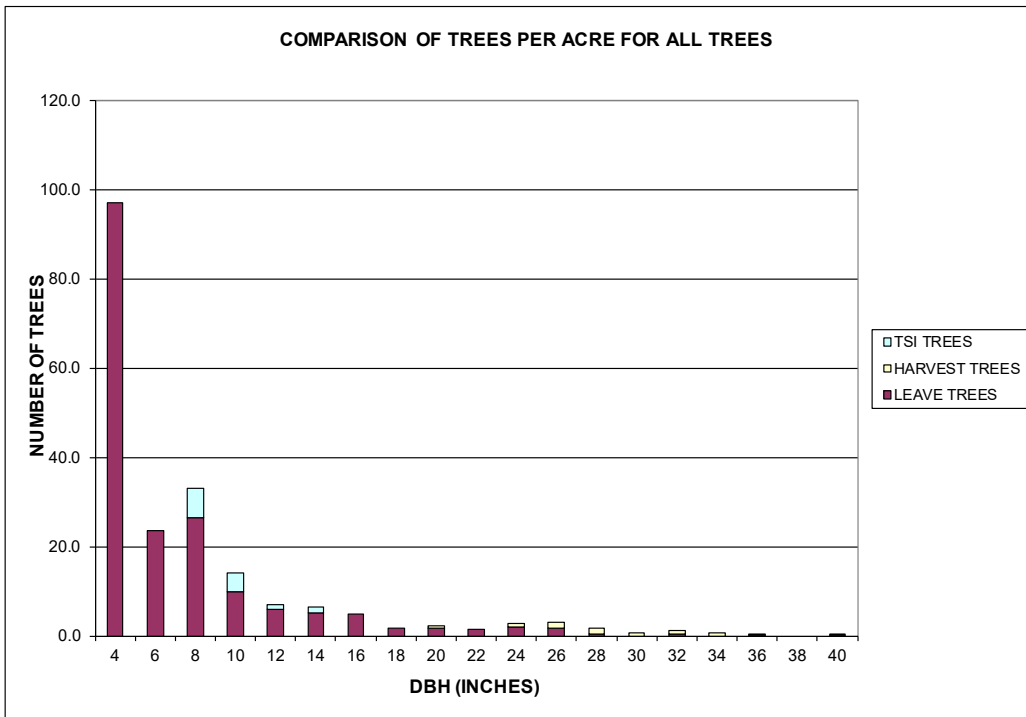
DATE: 12/26/2018
FORESTER: Sabrina Schuler
and Hunter

This inventory was accomplished using a wedge prism or angle gauge with a basal area factor of **10** over **13** sample points. All figures for volume are in board-feet (bd-ft) Doyle, all figures for basal area (BA) are in feet², and all figures for diameter at breast height (dbh) are in inches. *TSI* stands for timber stand improvement.

TRACT SUMMARY

Grape Vines / Acre: 19

SUMMARY OF ALL TREES											
DBH	LEAVE TREES			HARVEST TREES			TSI TREES		ALL TREES		
	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE	TREES PER ACRE	BASAL AREA / ACRE	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE
4		97.0	8.5							97.0	8.5
6		23.5	4.6							23.5	4.6
8		26.4	9.2				6.6	2.3		33.1	11.5
10		9.9	5.4				4.2	2.3		14.1	7.7
12		5.9	4.6				1.0	0.8		6.9	5.4
14	99	5.0	5.4				1.4	1.5	99	6.5	6.9
16	219	5.0	6.9						219	5.0	6.9
18	230	1.7	3.1						230	1.7	3.1
20	422	1.8	3.8	79	0.4	0.8			501	2.1	4.6
22	466	1.5	3.8						466	1.5	3.8
24	833	2.0	6.2	349	0.7	2.3			1182	2.7	8.5
26	950	1.7	6.2	742	1.3	4.6			1691	2.9	10.8
28	216	0.4	1.5	934	1.3	5.4			1150	1.6	6.9
30				725	0.8	3.8			725	0.8	3.8
32	162	0.3	1.5	1054	1.0	5.4			1216	1.2	6.9
34				769	0.6	3.8			769	0.6	3.8
36		0.1	0.8	172	0.1	0.8			172	0.2	1.5
38											
40	117	0.1	0.8	199	0.1	0.8			316	0.2	1.5
TOTAL	3714	182.1	72.3	5023	6.2	27.7	13.3	6.9	8737	201.5	106.9



OWNER: Purdue - Miller
 TRACT: Compartment 1
 ACRES: 36.50

DATE: 12/26/2018
 FORESTER: Sabrina Schuler and Hunter Johnstone

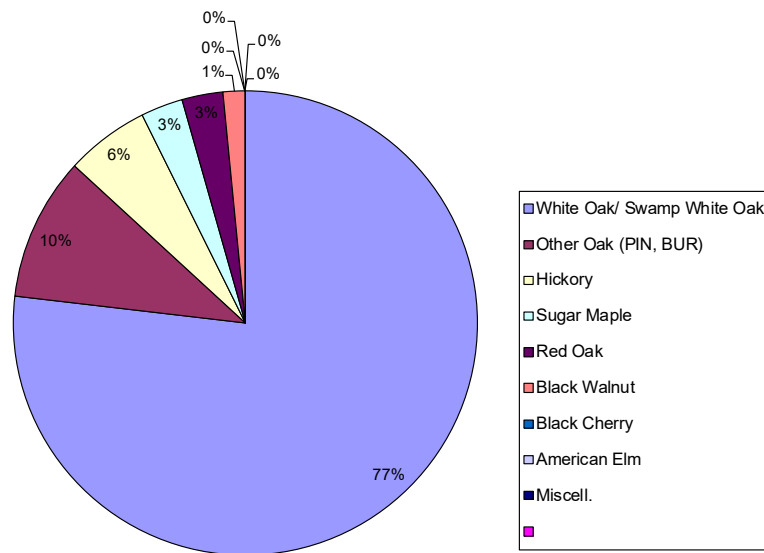
SUMMARY OF LEAVE TREES

SUMMARY OF LEAVE TREES BY SPECIES									
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH		TOTAL TRACT VOLUME
White Oak/ Swamp White Oak	2854	76.9%	9.0	5.0%	23.8	33.0%	22.0		104,177
Other Oak (PIN, BUR)	371	10.0%	3.4	1.9%	5.4	7.4%	17.1		13,529
Hickory	217	5.8%	7.6	4.2%	5.4	7.4%	11.4		7,911
Sugar Maple	109	2.9%	116.0	63.7%	28.5	39.4%	6.7		3,973
Red Oak	106	2.9%	0.2	0.1%	0.8	1.1%	24.0		3,870
Black Walnut	57	1.5%	0.4	0.2%	0.8	1.1%	18.0		2,097
Black Cherry			2.2	1.2%	0.8	1.1%	8.0		-
American Elm			14.1	7.8%	2.3	3.2%	5.5		-
Miscell.			29.1	16.0%	4.6	6.4%	5.4		-
PER ACRE TOTALS	3714	100.0%	182.1	100.0%	72.3	100.0%	8.5		135,558

Miscellaneous species include: WHA, LAA, IRO

SUMMARY OF VOLUME PER ACRE FOR LEAVE TREES BY SPECIES AND SIZE CLASS											
DBH	*** SPECIES LISTING ***										VOL. PER ACRE
	White Oak/ Swamp White Oak	Other Oak (PIN, BUR)	Hickory	Sugar Maple	Red Oak	Black Walnut	Black Cherry	American Elm	Miscell.		
12											
14	35			65							99
16	40	91	44	44							219
18	129		44			57					230
20	422										422
22	466										466
24	727				106						833
26	821		129								950
28	216										216
30											
32		162									162
34											
36											
38											
40		117									117
VOL./ACRE	2854	371	217	109	106	57					3714

DISTRIBUTION OF VOLUME PER ACRE FOR LEAVE TREES



OWNER: Purdue - Miller
 TRACT: Compartment 1
 ACRES: 36.50

DATE: 12/26/2018
 FORESTER: Sabrina Schuler and Hunter Johnstone

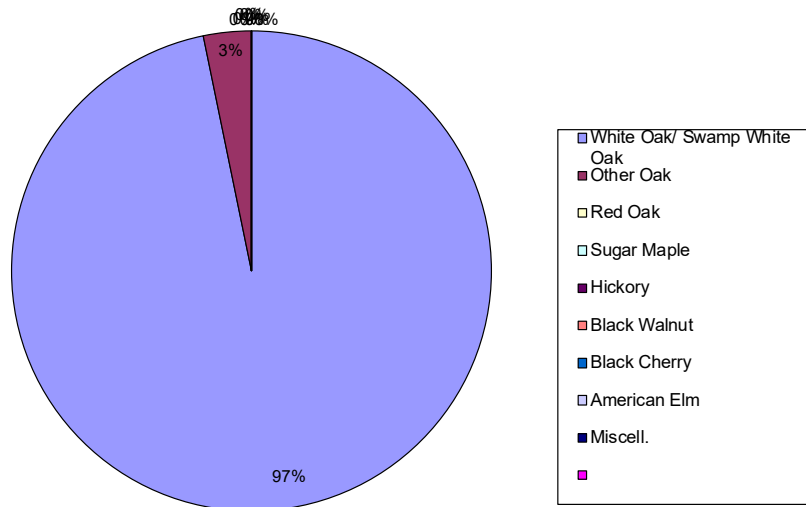
SUMMARY OF HARVEST TREES

SUMMARY OF HARVEST TREES BY SPECIES									
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH		TOTAL TRACT VOLUME
White Oak/ Swamp White Oak	4861	96.8%	6.0	97.8%	26.9	97.2%	28.6		177,433
Other Oak	162	3.2%	0.1	2.2%	0.8	2.8%	32.0		5,912
Red Oak									-
Sugar Maple									-
Hickory									-
Black Walnut									-
Black Cherry									-
American Elm									-
Miscell.									-
PER ACRE TOTALS	5023	100.0%	6.2	100.0%	27.7	100.0%	28.7		183,345

Miscellaneous species WHA, LAA, IRO include:

SUMMARY OF VOLUME PER ACRE FOR HARVEST TREES BY SPECIES AND SIZE CLASS											
DBH	*** SPECIES LISTING ***										VOL. PER ACRE
	White Oak/ Swamp White Oak	Other Oak	Red Oak	Sugar Maple	Hickory	Black Walnut	Black Cherry	American Elm	Miscell.		
12											
14											
16											
18											
20	79										79
22											
24	349										349
26	742										742
28	934										934
30	725										725
32	892	162									1054
34	769										769
36	172										172
38											
40	199										199
VOL./ACRE	4861	162									4824

DISTRIBUTION OF VOLUME PER ACRE FOR HARVEST TREES



**INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FORESTRY**

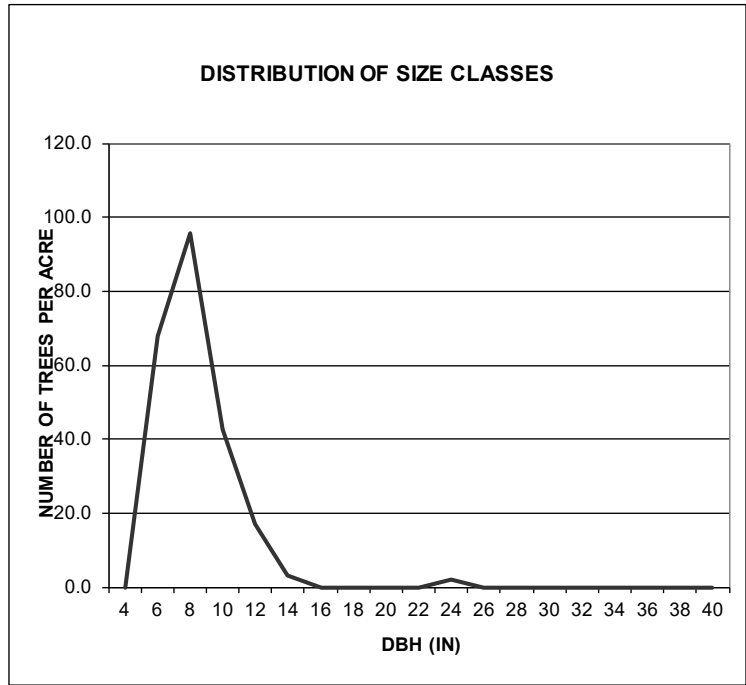
**SUMMARY AND ANALYSIS OF FOREST INVENTORY 2000
SUMMING ALL TREES**

OWNER: Purdue - Miller
TRACT: Compartment 1 - Clearcut (1992)
ACRES: 7.30

DATE: 12/26/2018
FORESTER: Sabrina Schuler
and Hunter

This inventory was accomplished using a wedge prism or angle gauge with a basal area factor of **10** over **3** sample points. All figures for volume are in board-feet (bd-ft) Doyle, all figures for basal area (BA) are in feet², and all figures for diameter at breast height (dbh) are in inches.

SUMMARY BY SIZE CLASS			
DBH	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE
4			
6		67.9	13.3
8		95.5	33.3
10		42.8	23.3
12		17.0	13.3
14		3.1	3.3
16			
18			
20			
22			
24	458	2.1	6.7
26			
28			
30			
32			
34			
36			
38			
40			
TOTAL	458	228.4	93.3



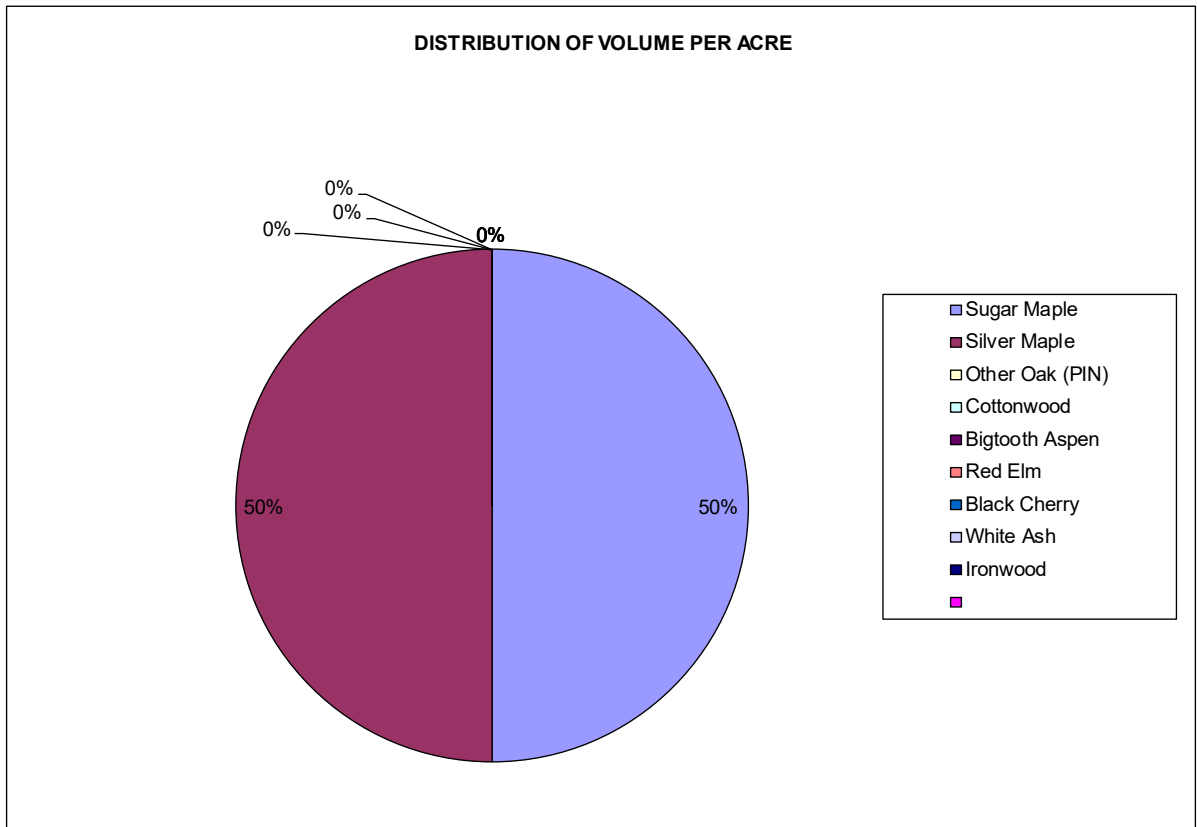
SUMMARY BY SPECIES									
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH		TOTAL STAND VOLUME
Sugar Maple	229	50.0%	62.9	27.5%	23.3	25.0%	8.2		1,673
Silver Maple	229	50.0%	1.1	0.5%	3.3	3.6%	24.0		1,673
Other Oak (PIN)			65.5	28.7%	30.0	32.1%	9.2		-
Cottonwood			13.8	6.0%	6.7	7.1%	9.4		-
Bigtooth Aspen			10.4	4.5%	6.7	7.1%	10.9		-
Red Elm			19.1	8.4%	6.7	7.1%	8.0		-
Black Cherry			6.1	2.7%	3.3	3.6%	10.0		-
White Ash			6.1	2.7%	3.3	3.6%	10.0		-
Ironwood			43.5	19.0%	10.0	10.7%	6.5		-
PER ACRE TOTALS	458	100.0%	228.4	100.0%	93.3	100.0%	8.7		3,346

SUMMARY OF VINES	
27 vines per acre	

OWNER: Purdue - Miller
 TRACT: Compartment 1 - Clearcut (1992)
 ACRES: 7.30

DATE: 12/26/2018
 FORESTER: Sabrina Schuler and Hunter Johnstone

SUMMARY OF VOLUME PER ACRE BY SPECIES AND SIZE CLASS											
DBH	*** SPECIES LISTING ***										VOL. PER ACRE
	Sugar Maple	Silver Maple	Other Oak (PIN)	Cottonwood	Bigtooth Aspen	Red Elm	Black Cherry	White Ash	Ironwood		
12											
14											
16											
18											
20											
22											
24	229	229									458
26											
28											
30											
32											
34											
36											
38											
40											
VOL./ACRE	229	229									458



**INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FORESTRY**

**SUMMARY AND ANALYSIS OF FOREST INVENTORY 2000
FOR LEAVE, HARVEST, AND TSI TREES**

OWNER: Purdue - Miller
TRACT: 2 - Mature Timber
ACRES: 28.30

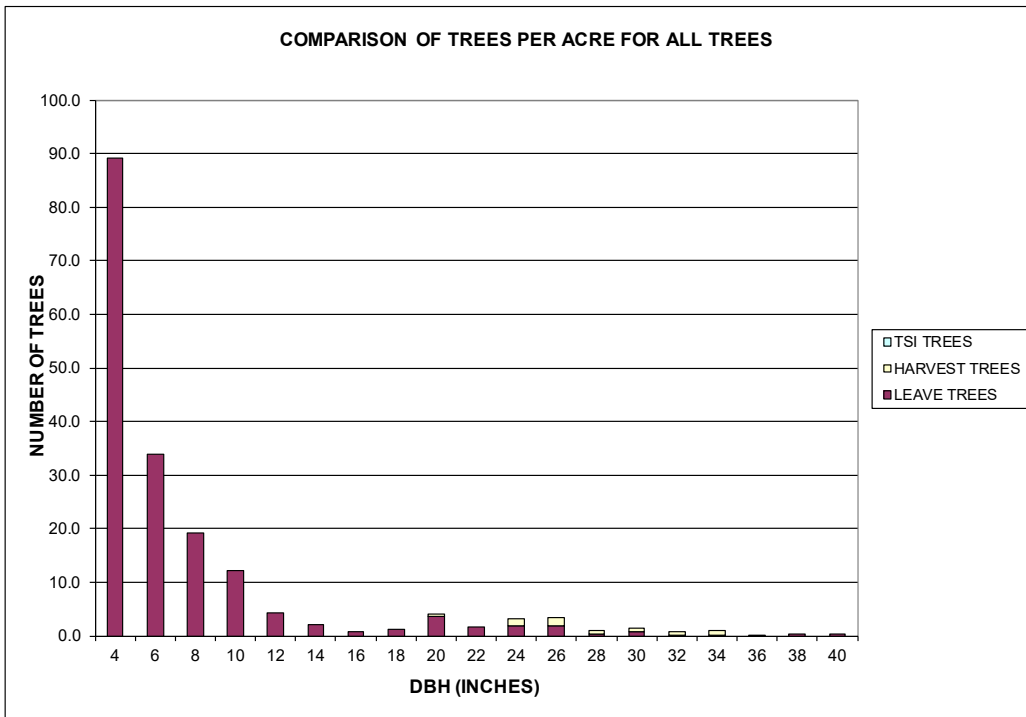
DATE: 12/26/2018
FORESTER: Johnstone, Schuler

This inventory was accomplished using a wedge prism or angle gauge with a basal area factor of **10** over **9** sample points. All figures for volume are in board-feet (bd-ft) Doyle, all figures for basal area (BA) are in feet², and all figures for diameter at breast height (dbh) are in inches. *TSI* stands for timber stand improvement.

TRACT SUMMARY

Grape Vines / Acre: 33

SUMMARY OF ALL TREES											
DBH	LEAVE TREES			HARVEST TREES			TSI TREES		ALL TREES		
	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE	TREES PER ACRE	BASAL AREA / ACRE	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE
4		89.1	7.8							89.1	7.8
6		34.0	6.7							34.0	6.7
8		19.1	6.7							19.1	6.7
10		12.2	6.7							12.2	6.7
12		4.2	3.3							4.2	3.3
14	100	2.1	2.2						100	2.1	2.2
16	57	0.8	1.1						57	0.8	1.1
18	146	1.3	2.2						146	1.3	2.2
20	811	3.6	7.8	115	0.5	1.1			926	4.1	8.9
22	579	1.7	4.4						579	1.7	4.4
24	810	1.8	5.6	679	1.4	4.4			1490	3.2	10.0
26	1017	1.8	6.7	759	1.5	5.6			1775	3.3	12.2
28	169	0.3	1.1	595	0.8	3.3			764	1.0	4.4
30	149	0.7	3.3	602	0.7	3.3			751	1.4	6.7
32	154	0.2	1.1	601	0.6	3.3			755	0.8	4.4
34	158	0.2	1.1	843	0.9	5.6			1001	1.1	6.7
36				272	0.2	1.1			272	0.2	1.1
38	428	0.3	2.2						428	0.3	2.2
40	406	0.3	2.2						406	0.3	2.2
TOTAL	4984	173.5	72.2	4467	6.5	27.8			9451	180.0	100.0



OWNER: Purdue - Miller
 TRACT: 2 - Mature Timber
 ACRES: 28.30

DATE:
 FORESTER:

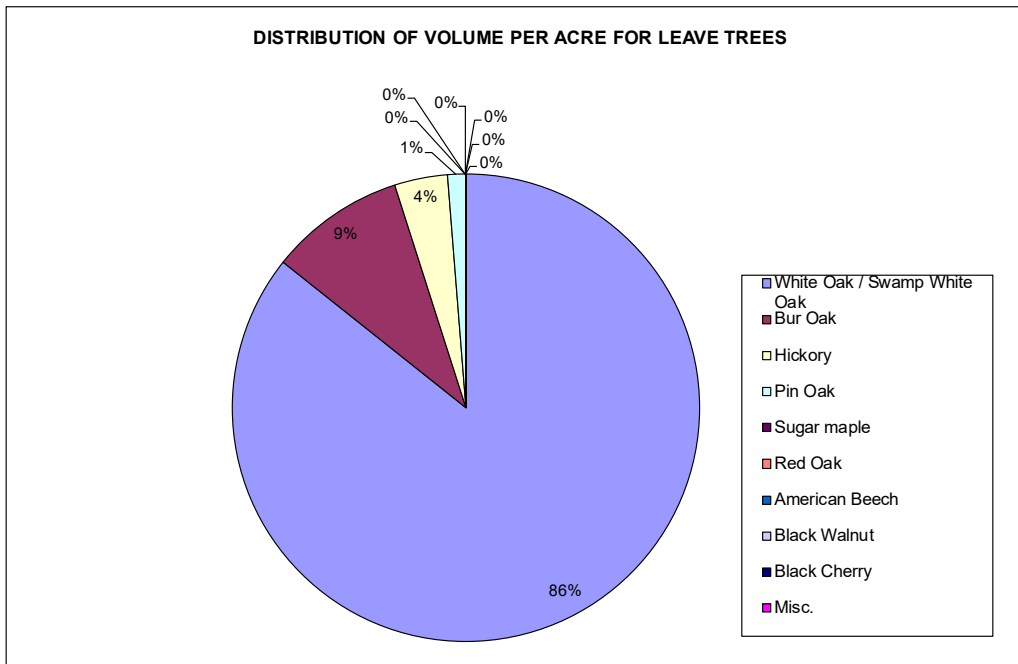
12/26/2018
 Johnstone, Schuler

SUMMARY OF LEAVE TREES

SUMMARY OF LEAVE TREES BY SPECIES								
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH	TOTAL TRACT VOLUME
White Oak / Swamp White Oak	4271	85.7%	11.0	6.3%	33.3	46.2%	23.6	120,873
Bur Oak	467	9.4%	0.3	0.2%	2.2	3.1%	39.0	13,223
Hickory	183	3.7%	25.3	14.6%	14.4	20.0%	10.2	5,173
Pin Oak	63	1.3%	0.6	0.4%	1.1	1.5%	18.0	1,779
Sugar maple			67.2	38.7%	10.0	13.8%	5.2	-
Red Oak			1.4	0.8%	1.1	1.5%	12.0	-
American Beech								-
Black Walnut								-
Black Cherry			18.4	10.6%	2.2	3.1%	4.7	-
Misc.			49.3	28.4%	7.8	10.8%	5.4	-
PER ACRE TOTALS	4984	100.0%	173.5	100.0%	72.2	100.0%	8.7	141,048

Miscellaneous species include: American Elm, White Ash, Eastern Cottonwood, Chinkapin Oak

SUMMARY OF VOLUME PER ACRE FOR LEAVE TREES BY SPECIES AND SIZE CLASS											
DBH	*** SPECIES LISTING ***										VOL. PER ACRE
	White Oak / Swamp White Oak	Bur Oak	Hickory	Pin Oak	Sugar maple	Red Oak	American Beech	Black Walnut	Black Cherry	Misc.	
12											
14			100								100
16	57										57
18			83	63							146
20	811										811
22	579										579
24	810										810
26	1017										1017
28	169										169
30	149										149
32	154										154
34	158										158
36											
38	198	231									428
40	169	237									406
VOL./ACRE	4271	467	183	63							4984



OWNER: Purdue - Miller
 TRACT: 2 - Mature Timber
 ACRES: 28.30

DATE:
 FORESTER:

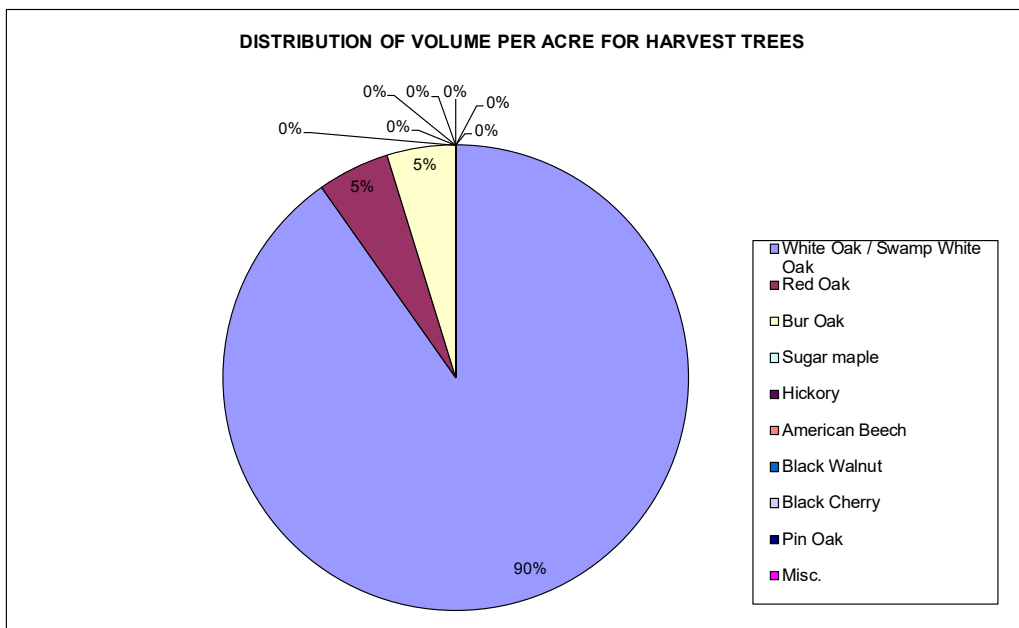
12/26/2018
 Johnstone, Schuler

SUMMARY OF HARVEST TREES

SUMMARY OF HARVEST TREES BY SPECIES								
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH	TOTAL TRACT VOLUME
White Oak / Swamp White Oak	4030	90.2%	5.5	83.6%	24.4	88.0%	28.7	114,044
Red Oak	224	5.0%	0.8	12.4%	2.2	8.0%	22.4	6,330
Bur Oak	213	4.8%	0.3	4.0%	1.1	4.0%	28.0	6,030
Sugar maple								-
Hickory								-
American Beech								-
Black Walnut								-
Black Cherry								-
Pin Oak								-
Misc.								-
PER ACRE TOTALS	4467	100.0%	6.5	100.0%	27.8	100.0%	27.9	126,404

Miscellaneous species include: American Elm, White Ash, Eastern Cottonwood, Chinkapin Oak

SUMMARY OF VOLUME PER ACRE FOR HARVEST TREES BY SPECIES AND SIZE CLASS											
DBH	*** SPECIES LISTING ***										VOL. PER ACRE
	White Oak / Swamp White Oak	Red Oak	Bur Oak	Sugar maple	Hickory	American Beech	Black Walnut	Black Cherry	Pin Oak	Misc.	
12											
14											
16											
18											
20		115									115
22											
24	679										679
26	650	109									759
28	382		213								595
30	602										602
32	601										601
34	843										843
36	272										272
38											
40											
VOL./ACRE	4030	224	213								4467



**INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FORESTRY**

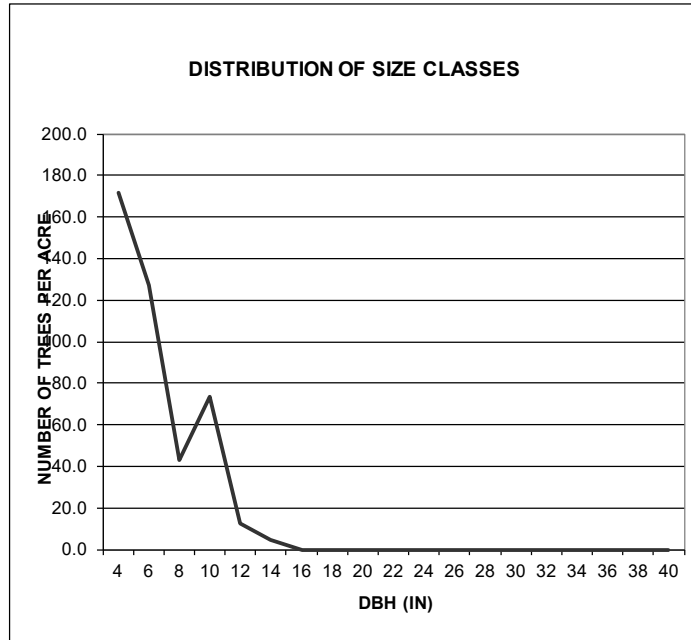
**SUMMARY AND ANALYSIS OF FOREST INVENTORY 2000
SUMMING ALL TREES**

OWNER: Purdue - Miller
TRACT: Compartment 2 - Clearcut (1981 & 87)
ACRES: 5.40

DATE: 12/26/2018
FORESTER: Sabrina Schuler
and Hunter

This inventory was accomplished using a wedge prism or angle gauge with a basal area factor of **10** over **2** sample points. All figures for volume are in board-feet (bd-ft) Doyle, all figures for basal area (BA) are in feet², and all figures for diameter at breast height (dbh) are in inches.

SUMMARY BY SIZE CLASS			
DBH	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE
4		171.9	15.0
6		127.3	25.0
8		43.0	15.0
10		73.3	40.0
12		12.7	10.0
14		4.7	5.0
16			
18			
20			
22			
24			
26			
28			
30			
32			
34			
36			
38			
40			
TOTAL		432.9	110.0



SUMMARY BY SPECIES									
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA / ACRE	PCT. OF PER ACRE BA	AVG. DBH		TOTAL STAND VOLUME
Sugar Maple			248.3	57.3%	30.0	27.3%	4.7		-
Red Oak			126.5	29.2%	60.0	54.5%	9.3		-
Black Cherry			39.8	9.2%	10.0	9.1%	6.8		-
Red Elm			9.2	2.1%	5.0	4.5%	10.0		-
Hickory			9.2	2.1%	5.0	4.5%	10.0		-
									-
									-
									-
									-
									-
PER ACRE TOTALS			432.9	100.0%	110.0	100.0%	6.8		-

**INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FORESTRY**

**SUMMARY AND ANALYSIS OF FOREST INVENTORY 2000
FOR LEAVE, HARVEST, AND TSI TREES**

OWNER: Purdue - Miller
TRACT: 3A
ACRES: 6.70

DATE: 12/27/2018
FORESTER: Johnstone, Schuler

This inventory was accomplished using a wedge prism or angle gauge with a basal area factor of **10** over **3** sample points. All figures for volume are in board-feet (bd-ft) Doyle, all figures for basal area (BA) are in feet², and all figures for diameter at breast height (dbh) are in inches. *TSI* stands for timber stand improvement.

TRACT SUMMARY

Grape Vines / Acre:

SUMMARY OF ALL TREES											
DBH	LEAVE TREES			HARVEST TREES			TSI TREES		ALL TREES		
	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE	TREES PER ACRE	BASAL AREA / ACRE	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE
4		38.2	3.3							38.2	3.3
6		67.9	13.3							67.9	13.3
8		38.2	13.3							38.2	13.3
10		24.4	13.3							24.4	13.3
12											
14											
16											
18											
20	413	3.1	6.7	275	1.5	3.3	1.5	3.3	688	6.1	13.3
22											
24											
26				487	0.9	3.3			487	0.9	3.3
28											
30	961	1.4	6.7	1197	1.4	6.7			2157	2.7	13.3
32				1101	1.2	6.7			1101	1.2	6.7
34				843	1.1	6.7			843	1.1	6.7
36	1558	1.4	10.0	976	0.9	6.7			2534	2.4	16.7
38											
40	1299	2.3	20.0						1299	2.3	20.0
TOTAL	4230	176.9	86.7	4878	7.0	33.3	1.5	3.3	9109	185.4	123.3



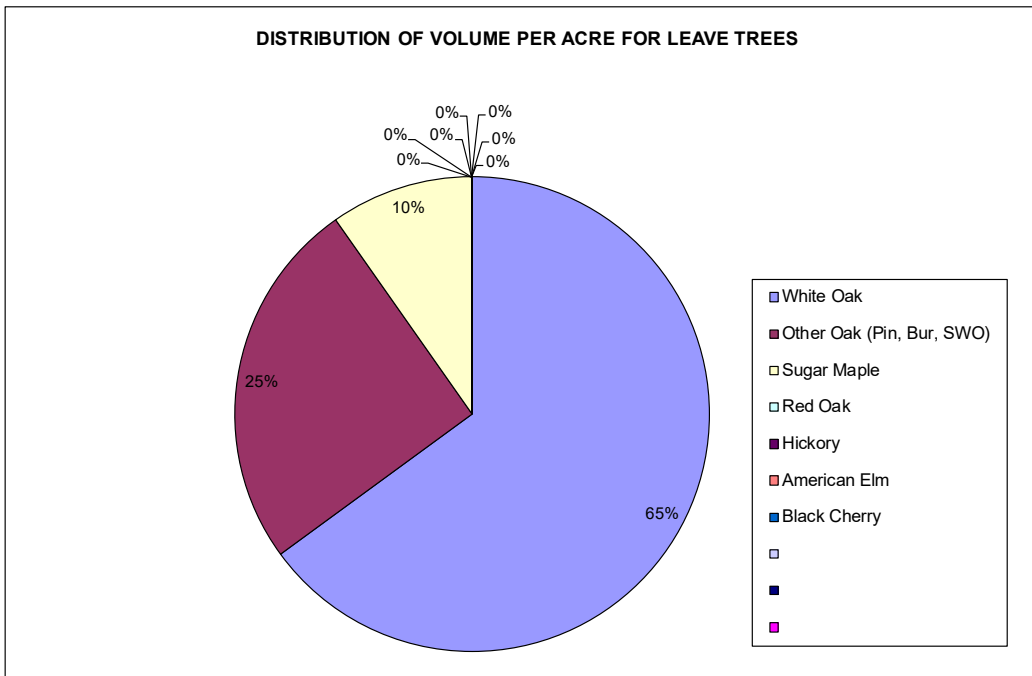
OWNER: Purdue - Miller
 TRACT: 3A
 ACRES: 6.70

DATE: 12/27/2018
 FORESTER: Johnstone, Schuler

SUMMARY OF LEAVE TREES

SUMMARY OF LEAVE TREES BY SPECIES									
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH		TOTAL TRACT VOLUME
White Oak	2748	65.0%	3.7	2.1%	26.7	30.8%	36.2		18,410
Other Oak (Pin, Bur, SWO)	1070	25.3%	0.9	0.5%	6.7	7.7%	36.0		7,169
Sugar Maple	413	9.8%	75.2	42.5%	16.7	19.2%	6.4		2,764
Red Oak			16.0	9.1%	10.0	11.5%	10.7		-
Hickory									-
American Elm			64.0	36.2%	23.3	26.9%	8.2		-
Black Cherry			17.0	9.6%	3.3	3.8%	6.0		-
									-
									-
PER ACRE TOTALS	4230	100.0%	176.9	100.0%	86.7	100.0%	9.5		28,343

SUMMARY OF VOLUME PER ACRE FOR LEAVE TREES BY SPECIES AND SIZE CLASS											
DBH	*** SPECIES LISTING ***										VOL. PER ACRE
	White Oak	Other Oak (Pin, Bur, SWO)	Sugar Maple	Red Oak	Hickory	American Elm	Black Cherry				
12											
14											
16											
18											
20			413								413
22											
24											
26											
28											
30	961										961
32											
34											
36	488	1070									1558
38											
40	1299										1299
VOL./ACRE	2748	1070	413								4230



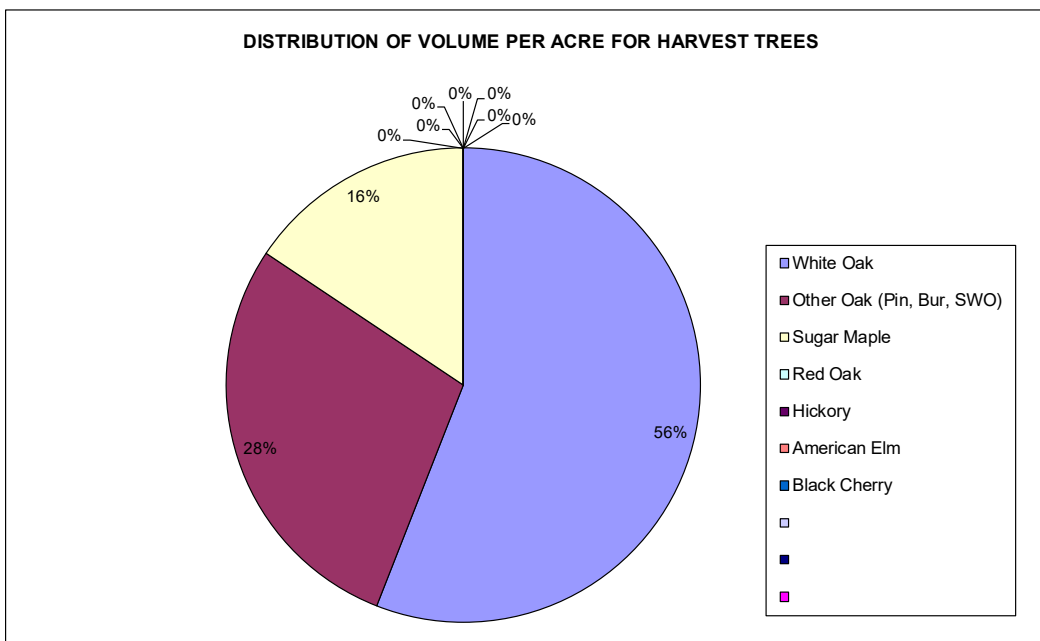
OWNER: Purdue - Miller
 TRACT: 3A
 ACRES: 6.70

DATE: 12/27/2018
 FORESTER: Johnstone, Schuler

SUMMARY OF HARVEST TREES

SUMMARY OF HARVEST TREES BY SPECIES								
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH	TOTAL TRACT VOLUME
White Oak	2730	56.0%	2.9	41.1%	16.7	50.0%	32.6	18,288
Other Oak (Pin, Bur, SWO)	1387	28.4%	1.7	24.0%	10.0	30.0%	33.0	9,290
Sugar Maple	762	15.6%	2.4	34.8%	6.7	20.0%	22.4	5,108
Red Oak								-
Hickory								-
American Elm								-
Black Cherry								-
PER ACRE TOTALS	4878	100.0%	7.0	100.0%	33.3	100.0%	29.6	32,685

SUMMARY OF VOLUME PER ACRE FOR HARVEST TREES BY SPECIES AND SIZE CLASS										
DBH	*** SPECIES LISTING ***									VOL. PER ACRE
	White Oak	Other Oak (Pin, Bur, SWO)	Sugar Maple	Red Oak	Hickory	American Elm	Black Cherry			
12										
14										
16										
18										
20			275							275
22										
24										
26			487							487
28										
30	668	528								1197
32	1101									1101
34	473	370								843
36	488	488								976
38										
40										
VOL./ACRE	2730	1387	762							4878



**INDIANA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FORESTRY**

**SUMMARY AND ANALYSIS OF FOREST INVENTORY 2000
FOR LEAVE, HARVEST, AND TSI TREES**

OWNER: Purdue - Miller
TRACT: Compartment 4
ACRES: 45.00

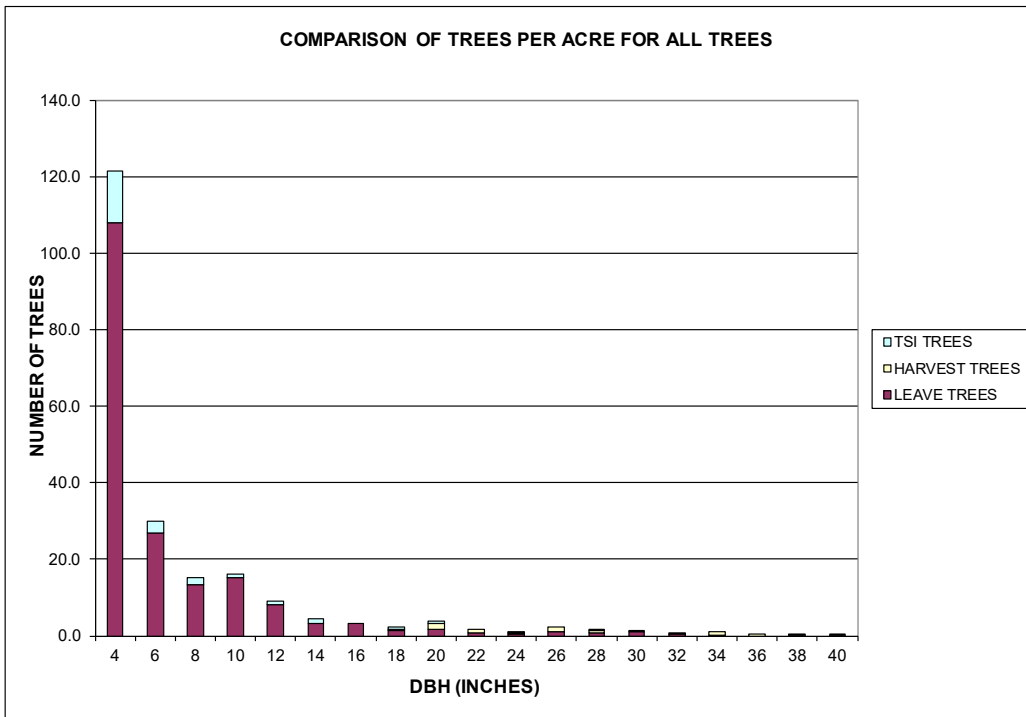
DATE: 12/28/2018
FORESTER: Schuler & Johnstone

This inventory was accomplished using a wedge prism or angle gauge with a basal area factor of **10** over **17** sample points. All figures for volume are in board-feet (bd-ft) Doyle, all figures for basal area (BA) are in feet², and all figures for diameter at breast height (dbh) are in inches. *TSI* stands for timber stand improvement.

TRACT SUMMARY

Grape Vines / Acre: 31

SUMMARY OF ALL TREES											
DBH	LEAVE TREES			HARVEST TREES			TSI TREES		ALL TREES		
	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE	TREES PER ACRE	BASAL AREA / ACRE	VOL. PER ACRE	TREES PER ACRE	BASAL AREA / ACRE
4		107.9	9.4				13.5	1.2		121.3	10.6
6		27.0	5.3				3.0	0.6		30.0	5.9
8		13.5	4.7				1.7	0.6		15.2	5.3
10		15.1	8.2				1.1	0.6		16.2	8.8
12		8.2	6.5				0.7	0.6		9.0	7.1
14	59	3.3	3.5				1.1	1.2	59	4.4	4.7
16	143	3.4	4.7						143	3.4	4.7
18	136	1.3	2.4	44	0.3	0.6	0.7	1.2	180	2.3	4.1
20	240	1.6	3.5	267	1.6	3.5	0.5	1.2	507	3.8	8.2
22	241	0.9	2.4	195	0.7	1.8			436	1.6	4.1
24	179	0.6	1.8	40	0.2	0.6	0.2	0.6	219	0.9	2.9
26	543	1.1	4.1	558	1.1	4.1			1101	2.2	8.2
28	388	0.7	2.9	355	0.6	2.4	0.1	0.6	743	1.4	5.9
30	559	1.0	4.7	387	0.5	2.4			946	1.4	7.1
32	470	0.5	2.9	124	0.1	0.6			594	0.6	3.5
34	149	0.2	1.2	810	0.7	4.7			959	0.9	5.9
36				493	0.4	2.9			493	0.4	2.9
38	117	0.1	1.2	485	0.4	2.9			602	0.5	4.1
40	265	0.2	1.8	443	0.3	2.4			708	0.5	4.1
TOTAL	3490	186.5	71.2	4203	6.9	28.8	22.6	8.2	7692	216.0	108.2



OWNER: Purdue - Miller
 TRACT: Compartment 4
 ACRES: 45.00

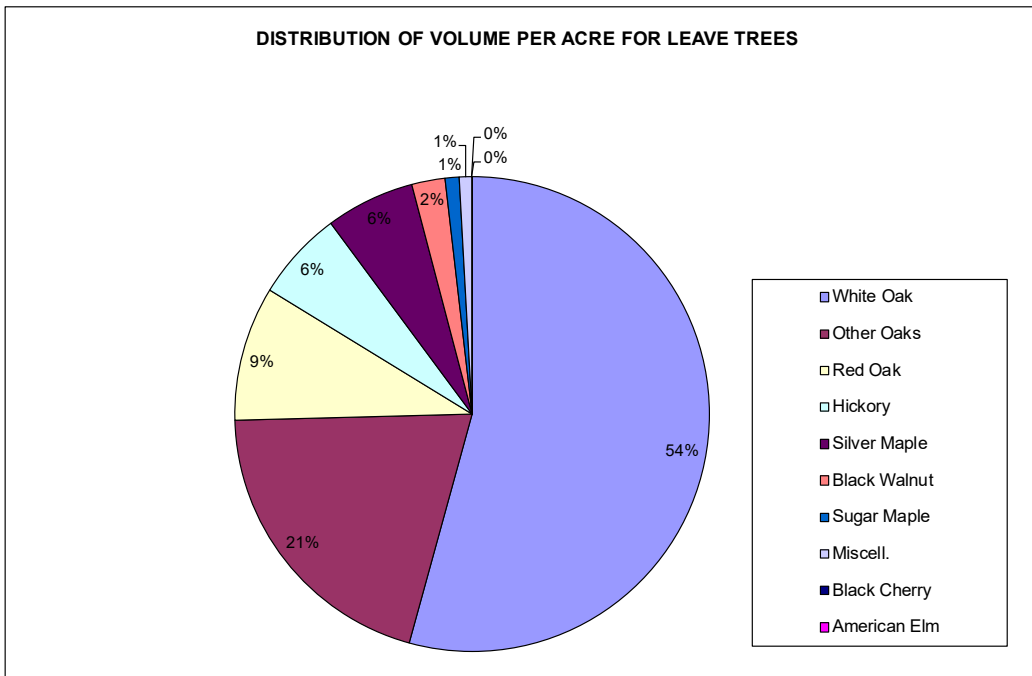
DATE: 12/28/2018
 FORESTER: Schuler & Johnstone

SUMMARY OF LEAVE TREES

SUMMARY OF LEAVE TREES BY SPECIES									
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH		TOTAL TRACT VOLUME
White Oak	1894	54.3%	4.0	2.1%	14.7	20.7%	26.0		85,226
Other Oaks	709	20.3%	1.0	0.6%	5.3	7.4%	30.6		31,897
Red Oak	320	9.2%	2.0	1.1%	3.5	5.0%	18.0		14,382
Hickory	213	6.1%	35.8	19.2%	8.2	11.6%	6.5		9,587
Silver Maple	211	6.1%	18.6	9.9%	14.1	19.8%	11.8		9,509
Black Walnut	79	2.3%	1.1	0.6%	1.8	2.5%	17.1		3,564
Sugar Maple	33	1.0%	23.2	12.4%	8.2	11.6%	8.1		1,501
Miscell.	30	0.9%	28.0	15.0%	5.9	8.3%	6.2		1,365
Black Cherry			15.6	8.4%	2.4	3.3%	5.3		-
American Elm			57.3	30.7%	7.1	9.9%	4.8		-
PER ACRE TOTALS	3490	100.0%	186.5	100.0%	71.2	100.0%	8.4		157,032

Miscellaneous species include: SWG, ASP, ELM, FLD

SUMMARY OF VOLUME PER ACRE FOR LEAVE TREES BY SPECIES AND SIZE CLASS											
DBH	*** SPECIES LISTING ***										VOL. PER ACRE
	White Oak	Other Oaks	Red Oak	Hickory	Silver Maple	Black Walnut	Sugar Maple	Miscell.	Black Cherry	American Elm	
12											
14	26				17		17				59
16					17	79	17	30			143
18	63			33	40						136
20	61		61	61	58						240
22	77		66	77	22						241
24	40	69	69								179
26	357	86		42	58						543
28	312	76									388
30	280	155	124								559
32	373	97									470
34	149										149
36											
38	49	68									117
40	107	157									265
VOL./ACRE	1894	709	320	213	211	79	33	30			3490



OWNER: Purdue - Miller
 TRACT: Compartment 4
 ACRES: 45.00

DATE: 12/28/2018
 FORESTER: Schuler & Johnstone

SUMMARY OF HARVEST TREES

SUMMARY OF HARVEST TREES BY SPECIES								
SPECIES	VOL. PER ACRE	PCT. OF PER ACRE VOL.	TREES PER ACRE	PCT. OF PER ACRE TREES	BASAL AREA/ ACRE	PCT. OF PER ACRE BA	AVG. DBH	TOTAL TRACT VOLUME
White Oak	1911	45.5%	2.1	31.2%	11.2	38.8%	30.9	86,013
Other Oaks	863	20.5%	0.9	13.1%	5.3	18.4%	32.9	38,831
Red Oak	789	18.8%	1.4	19.9%	5.9	20.4%	28.1	35,495
Silver Maple	330	7.9%	1.7	24.9%	4.1	14.3%	21.0	14,861
Miscell.	139	3.3%	0.1	1.0%	0.6	2.0%	40.0	6,246
Hickory	86	2.0%	0.2	2.3%	0.6	2.0%	26.0	3,870
Sugar Maple	44	1.0%	0.3	4.8%	0.6	2.0%	18.0	1,977
Black Walnut	40	1.0%	0.2	2.7%	0.6	2.0%	24.0	1,820
Black Cherry								-
American Elm								-
PER ACRE TOTALS	4203	100.0%	6.9	100.0%	28.8	100.0%	27.7	189,114

SUMMARY OF VOLUME PER ACRE FOR HARVEST TREES BY SPECIES AND SIZE CLASS											
DBH	*** SPECIES LISTING ***										VOL. PER ACRE
	White Oak	Other Oaks	Red Oak	Silver Maple	Miscell.	Hickory	Sugar Maple	Black Walnut	Black Cherry	American Elm	
12											
14											
16											
18							44				44
20			49	218							267
22	77		66	52							195
24							40				40
26	271	86	116			86					558
28	193		103	60							355
30	294	93									387
32		124									124
34	314	298	199								810
36	234	172	86								493
38	314		171								485
40	215	90			139						443
VOL./ACRE	1911	863	789	330	139	86	44	40			3274

