

Big Piney and Pleasant Hill Ranger Districts
Plant Community Monitoring Report for
2011-12 and 2014-15



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January 2017

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Executive Summary

The ecosystem restoration project on the Big Piney and Pleasant Hill Ranger Districts of the Ozark-St. Francis National Forest encompasses eight project areas designed to reduce hazardous fuels and increase forest health. In order to assess changes in forest health over time, we monitored plant community structure and composition within the 102,120-acre ecosystem restoration project area using 127 randomly placed macroplots. Data were collected during summers 2003-2006 (baseline), 2007-2009 (1st re-measure), 2011-2012 (2nd re-measure), and 2014-15 (3rd re-measure). This report contains unreported data from 2011-2012 and 2014-2015. As in the previous report (submitted in 2010), data were stratified by topographic position and covertype.

Restoration activities (prescribed burning, commercial thinning and non-commercial midstory thinning) and natural disturbances (ice storms, tornados, insect outbreaks, etc.) have jointly driven the restoration area towards the desired ecological condition. Overall, overstory tree (>8" dbh) basal area/acre (BA) and midstory tree density (stems/acre) decreased significantly between baseline and the current condition (2014-15). The one exception to this was in unmanaged, riparian areas, where increases in overstory BA were observed over the same time period. Ground layer diversity (species richness) increased significantly since baseline. As expected, forest types or plant communities with more open vegetation structures (lower overstory basal area/acre, lower midstory stems/acre) had the higher, desired levels of herbaceous species richness present in the ground layer. Fire intolerant species, such as poison ivy, decreased significantly in importance in the ground layer since baseline. Non-native invasive species remained minor components of all natural communities and of the greater landscape.

There are still many changes needed to meet the desired ecological conditions, including a decrease in the percentage of oak forest and an increase in oak-pine woodland across the landscape. The ultimate response of the midstory vegetation, particularly regenerating oaks and pines, to restoration activities over the long-term is still unknown. Continuation of prescribed fire and other restoration activities is recommended, as these have, up until now, produced many of the desired ecological effects. For these reasons, it is recommended that plant community monitoring continue on the current schedule.

Background

This monitoring report applies to the fuel reduction and forest health enhancement project within the 102,120-acre Ecosystem Restoration project areas on the Big Piney and Pleasant Hill Ranger Districts of the Ozark-St. Francis National Forest. This project encompasses eight project areas (Middlefork, Rotary Ann, Piney, White Oak Mountain, Eastside, Southfork, West Morgan, and Little Piney), all designed to reduce hazardous fuels and increase forest health. Plant community monitoring is used to quantify the structure, diversity, and regeneration of plant communities (forest type groups) and will be used to assess changes over time. This monitoring report includes monitoring goals, project success criteria, methods, results of data collection, and discussion of results.

Forest Health

Forest health enhancement is an important component of the project. A healthy forest in the Ozark Mountains is defined as a suite of Ozark plant communities that include the following attributes:

1. The density and diversity of overstory and understory woody species are within (and representative of) the historic range of variation.
2. The existing set of plant communities is maintaining itself within the site and the regeneration of site-appropriate overstory tree species is ongoing.
3. Understory native herbaceous community diversity and coverage are within (and representative of) the historic range of variation.
4. Key ecological processes (like fire and forest pest insects) are maintained within their historic range of variation.
5. Selected site-specific native rare plant and animal species populations are maintained or increased.
6. Non-native species are not a dominant part of any native plant communities (or forest types).

These forest characteristics are used to quantify the desired ecological condition for any plant community or forest type. Specific treatment activities for these areas include prescribed fire and commercial, non-commercial, and pre-commercial silvicultural treatments.

Monitoring goals and success criteria

The goal of the monitoring program is to answer two questions:

1. Are treatment activities reducing hazardous fuels within the project area?
2. Is the health of the Ozark forest community within the project area being enhanced?

To determine if the forest plant community health is maintained or increased by project activities, the following success criteria were determined:

1. The restored landscape is composed of 15% closed canopy oak hickory forest, 39% oak pine woodland/savanna, 35% oak hickory woodland, 10% shortleaf pine woodland/savanna, and 1% glade/prairie.
2. The density and diversity of overstory and understory woody species are within (and representative of) the historic range of variation as described in each plant community conservation target description.
3. Regeneration of site-appropriate overstory tree species is sufficient to maintain forest type.
4. Understory native herbaceous community diversity and coverage are within (and representative of) the historic range of variation as described in each plant community conservation target description.
5. Non-native species comprise less than 10% of any plant community and non-native community types comprise less than 2% of the project area.

These forest characteristics are used to quantify the desired ecological condition for any plant community or forest type. Specific treatment activities for these areas include prescribed fire and commercial, non-commercial, and pre-commercial silvicultural treatments.

Methods

Determination of Desired Ecological Condition

The desired ecological (future) condition (DEC) metrics originated from the Forest Plan (numerical metrics and written desired conditions), LANDFIRE ecosystem modelling (most

landscape percentages), and from observing reference restoration sites within the Interior Highlands. These conditions reflect important characteristics of woodlands and forests undergoing management and restoration. Data can be analyzed in many ways depending on the questions asked. The metrics and statistical analyses used in this report reflect the common questions asked by personnel planning and implementing forest management.

Sampling design and stratification

Baseline plant community monitoring was conducted at eight restoration areas. Data were collected using a macroplot with nested plots design. Ninety-six macroplots were installed in the Big Piney Ranger District between the years 2003 and 2006. An additional 31 macroplots were installed in the Pleasant Hill Ranger District in 2005 and 2006. All 127 macroplots were re-measured in June between in 2007-2009 (1st remeasure), 2011-2012 (2nd remeasure), and 2014-2015 (3rd remeasure).

Macroplots are representative of the five topographic positions, which were used to stratify macroplot placement. In addition, glades were separated as a unique community. Current plant community types were grouped into six categories: ridgetop, south slope, north slope, toe slope, riparian, and glade (fig. 1). Macroplots were placed wholly within one topographic position. Macroplots were randomized 20 meters from existing forest roads, allowing for greater efficiency in rugged terrain. Macroplots were also stratified by forest covertype (pine woodland, pine forest, oak-pine woodland, oak-pine forest, oak-hickory woodland, and oak-hickory forest). Unexpectedly, eight plots in 2014-2015 were outside our original parameters for overstory condition. These plots had very low overstory cover (< 14 ft²/acre). We analyzed these "early seral" plots separately from the other covertypes.

Each macroplot consisted of a 10 m fixed radius tree plot, with 2 nested shrub plots and 4 ground layer plots within it (Appendix A). The center-points of macroplots were permanently marked with metal fence posts and their locations were recorded using a global positioning system (GPS). The corners of ground layer plots and the center-points of shrub plots were marked with rebar that had been bent in an L-shape for safety.

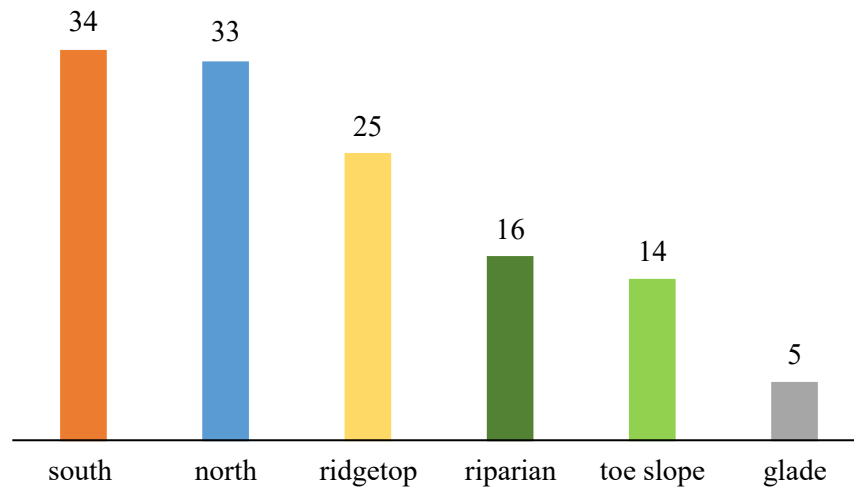


Figure 1. Counts of macroplots within each topographic position.

Data collection

Within each macroplot, species at all forest levels (overstory and midstory trees, shrubs, and ground layer) were recorded. Trees were defined as woody stems greater than one meter tall that had a diameter-at-breast-height (dbh) greater than 2 cm. All tree species that had stems with 50% of their bole, measured at breast height, within a 10 m radius were recorded and their dbh was measured and recorded. Shrubs included all woody stems greater than one meter tall that had a dbh of less than 2 cm and were recorded in two nested circular plots (within the 10 m radius tree plot), each with a 3.6 m radius. Ground layer species were recorded in four nested 1 m² quadrats and included all herbaceous species (forbs, graminoids and non-woody vines) and woody stems less than one meter tall. Each ground layer species was assigned a cover class value (Appendix B). In addition, a total cover class value was assigned to each nested ground layer plot and each shrub plot.

Two photos were taken at each macroplot, one of the entire macroplot from the 180° ground layer plot facing 0° (north) and one photo taken of the entire ground layer plot at 0°.

Summary tables

We used SAS STAT 9.4 (SAS Institute Inc., Cary, NC, USA) to generate all summary tables. The data were summarized separately for each monitoring effort (baseline 2003-2006, 2007-2009, 2011-2012 and 2014-2015). This report compares baseline with the 2011-2012 and

2014-2015 monitoring data. Within each year, we generated tables for 1) all data, 2) each topographic position and 3) each coertype. Coertypes were assigned based on overstory (8"+ dbh) basal area (BA) and species composition according to the following definitions: early seral (BA < 14), oak woodland/savanna (14 ≤ BA < 70, ≤ 25% BA pine), oak forest (70 ≤ BA, 0% ≤ pine BA ≤ 25%), oak-pine woodland/savanna (14 ≤ BA < 70, 25% < pine BA < 75%), oak-pine forest (70 ≤ BA, 25% < pine BA < 75%), pine woodland/savanna (14 ≤ BA < 70, BA pine ≥ 75%), pine forest (70 ≤ BA, BA pine ≥ 75%). Plots in glades were analyzed separately from these coertypes. The data were then separated into four vegetation strata: overstory trees (≥ 20.5 cm dbh), midstory trees (≥ 2 – 20.4 cm dbh), shrub layer (woody stems ≤ 2 cm and > 1 m tall), and ground layer (vascular herbaceous plants and woody plants ≤ 1 m tall).

Vegetation data were compiled into three main types of tables. The tables appearing first in each section of the results contain the total number of species (the grand total and values for each stratum of vegetation), average number of herbaceous species per macroplot (graminoids, forbs, and non-woody vines only), average number of species per macroplot for each vegetation stratum, basal areas (BA) (ft²/acre) for live midstory and overstory trees (first combined for a total and then separated by stratum), average cover class of ground layer and shrub layer species per nested plot, and stem densities (stems/acre) for all tree layers, and stem densities of snags by tree layer. For complete tables displaying this information across all years, topographic positions and coertypes, see Appendix C.

The second table presents current ecological conditions and compares them to the desired ecological conditions. These tables are only presented in the results for coertype. Information in these tables includes the percentage of the landscape in the given coertype, average number of herbaceous species per macroplot, average number of ground layer species per macroplot, ground layer percent cover, midstory stems/acre (live trees), midstory regeneration stems/acre (1"– 8" dbh, oak and pine species only), shrub total percent cover per plot, midstory BA/acre, percentage of overstory shortleaf pine or oak, percentage of overstory trees larger than 14 inches dbh, and percentage of overstory trees larger than 24 inches dbh. To calculate total percent cover in the ground layer, the two lowest cover categories (0%, and 0-1%) were combined with cover class 2 (2-5%) to conform with the standard Daubenmire cover classes. The midpoint values of the percent ranges were then averaged to get the total percent cover. To calculate the percent

total cover of shrub plots, the midpoints of the percent ranges were averaged, keeping zeros as true zeros.

The third table type is presented in Appendices D – G and includes full lists of species for each stratum sorted by importance value [Importance Value = (relative frequency + relative cover + relative density)/3]. Values for frequency (fraction of macroplots where given species was present), relative frequency, stem density, total BA, total BA per acre, relative BA, and relative density were also included in these tables for each woody species. Summary tables for herbaceous species were sorted by importance value [Importance Value = (relative cover + relative frequency)/2] and also included total cover (sum of cover class values across all nested ground layer plots), frequency (frequency across all nested ground layer plots), relative cover, and relative frequency.

Species nomenclature follows the Atlas of the Vascular Plants of Arkansas (2013).

Statistical analysis

We used SAS STAT 9.4 to conduct all statistical analyses. We analyzed changes between baseline conditions and current conditions (2014-2015) for overstory BA per macroplot, and the total number of ground layer species per macroplot. All modeling was done in PROC GLIMMIX. Since the same macroplots were measured in both sets of years we specified repeated measures using the RANDOM statement (random = residual, subject = macroplot). This gave us the correct number of subjects (plots) and maximum number observations per subject (2, one for each year). All dependent variables were analyzed using a log-normal distribution. The following independent variables were included in all models: topographic position (categorical, 6 levels), year (categorical; 1 = baseline, 2 = current) and the interaction term (year*topographic position). If the interaction term was statistically significant at $\alpha = 0.05$, the results were then interpreted by the interaction term alone. If the interaction term was not statistically significant, then interpretation of the results was based on the main effects (if they were statistically significant at $\alpha = 0.05$). To test for significant differences between years within specific topographic positions, we used the CONTRAST statement in PROC GLIMMIX, to do individual post-hoc tests. When interaction terms were not significant, but topographic position was a significant term in the model, we used the CONTRAST statement to explore differences among the different topographic positions.

We were interested in knowing what ecological variables best predicted the number of herbaceous species per macroplot across the landscape. To do this we used the Akaike Information Criterion (AIC_c) to select the best model among all possible combinations of a set of independent variables. The independent variables included were: covertype (categorical, 8 levels), topographic position (categorical, 6 levels), overstory BA, midstory stems/acre, and shrub stems/acre. Modeling was done in PROC GLIMMIX. The model with the lowest AIC_c value and that was at least 2 AIC_c values lower than the next lowest model was considered the best model. Herbaceous species richness per macroplot was modeled using the negative binomial distribution (log link function). The CONTRAST statement was used to explore differences among levels of categorical variables that were in the best model.

Results

Overall, 2nd re-measure (2011-12)

A total of 373 species were observed across all macroplots (N = 127) (fig. 2), with 350 species in the ground layer and 87 species in the tree and shrub layers (Table 1). In the ground layer, there was an average of 20 species per macroplot and an average cover class of 4.5 (50-75%). Each macroplot contained, on average, 10 herbaceous species. The ground layer was dominated by poison ivy (*Toxicodendron radicans*). Other common species included Virginia creeper (*Parthenocissus quinquefolia*), Bosc's rosette grass (*Dichanthelium boscii*), muscadine (*Vitis rotundifolia*), and red maple (*Acer rubrum*). Of the top ten most important species in the ground layer, two species were graminoids, one was a forb, four were woody vines, and three species were woody seedlings. Four non-native species were observed in ground layer plots, including Japanese honeysuckle (*Lonicera japonica*) (2% of nested plots), sericea lespedeza (*Lespedeza cuneata*) (< 1% of nested plots), Japanese stilt grass (*Microstegium vimineum*) (< 1% of nested plots), orchard grass (*Dactylis glomerata*) (< 1% of nested plots).

The shrub layer averaged 1966 stems per acre and contained eight species per macroplot. The dominant shrub layer species were red maple, black gum (*Nyssa sylvatica*), and mockernut hickory (*Carya tomentosa*). The average cover class in the shrub layer, per nested shrub plot, was 1.7 (25 – 50%).

Table 1. Comparison of vegetation data across years, all macroplots, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

Diversity	Baseline	2011-2012	2014-2015
Total number of species	330	373	377
Total number of ground layer species	314	350	360
Total number of midstory tree species*	N/A	62	60
Total number of overstory tree species*	N/A	30	27
Total number of shrub layer species*	N/A	75	67
Total number of woody species	80	87	79
Average number of herbaceous species/plot*	N/A	10	11
Average number of ground layer species/plot	18	20	22
Average number of midstory tree species/plot*	N/A	6	5
Average number of overstory tree species/plot*	N/A	3	3
Average number of shrub layer species/plot	6	8	8

Cover	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	106	91	84
Total midstory live basal area/acre	23	14	10
Total overstory live basal area/acre	83	77	73
Average cover class of shrub layer species**	N/A	1.7	1.6
Average cover class of ground layer species**	N/A	4.5	4.6

Density	Baseline	2011-2012	2014-2015
Total live tree stems/acre	439	298	262
Total live midstory tree stems/acre	342	216	190
Total live overstory tree stems/acre	97	81	73
Total midstory snag stems/acre	38	30	28
Total overstory snag stems/acre	5	4	4
Total shrub layer stems/acre	1118	1966	1776

*A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous years (see Appendix B for cover class definitions).

On average there were six midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by snags, white oak (*Quercus alba*), black gum, and mockernut hickory. Live stem density was 216 stems per acre and snag stem density was 30 stems per acre. The average BA of live midstory trees was 14 square feet per acre.

The overstory tree layer (dbh ≥ 8") averaged 81 live stems per acre and had an average BA of 77 square feet per acre. There were, on average, three overstory tree species per macroplot. The dominant overstory tree species were white oak and shortleaf pine (*Pinus*

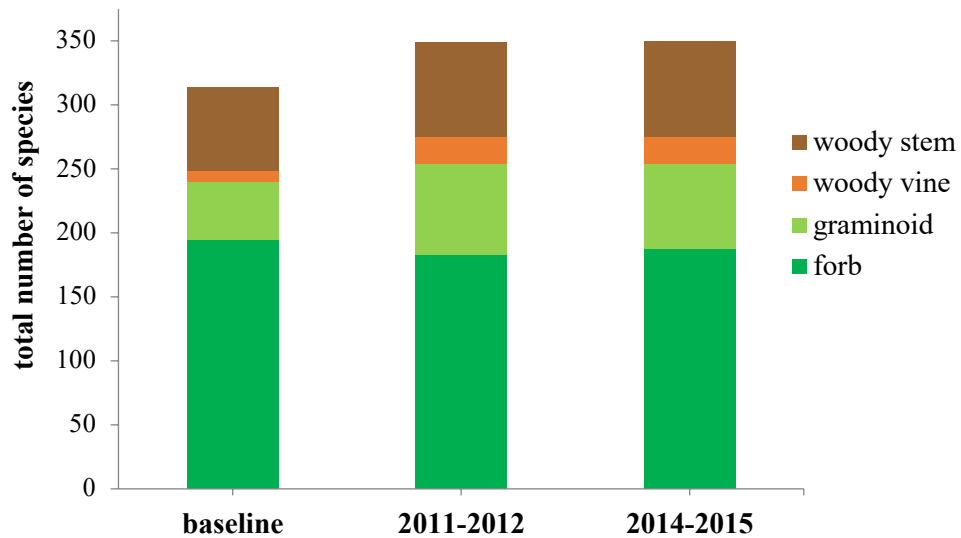


Figure 2. Total number of ground layer species of each growthform, baseline to present.

echinata). Other common species included northern red oak (*Quercus rubra*), sweetgum (*Liquidambar styraciflua*), and mockernut hickory.

Overall, 3rd re-measure (2014-15)

One macroplot (ID = WM03, south slope), was inaccessible in 2015 due to a landslide, so no data was collected in it. Plot 3066 was missing tree data, so it was not included in any tree layer analyses.

A total of 377 species were observed across all macroplots (N = 126) (fig. 2), with 360 species in the ground layer and 79 species in the tree and shrub layers (Table 1). In the ground layer, there was an average of 22 species per macroplot and an average cover class of 4.6 (50-75%) (fig. 3). Each macroplot contained, on average, 11 herbaceous species. Common species in the ground layer included poison ivy, Virginia creeper, Bosc's rosette grass, muscadine, and red maple. Of the top ten most important species in the ground layer, one species was a graminoid, one was a non-woody vine, five were woody vines, and three were woody seedlings. Three non-native species were observed in ground layer plots, including Japanese honeysuckle (2% of nested plots), Japanese stilt grass (2% of nested plots), and sericea lespedeza (< 1% of nested plots).

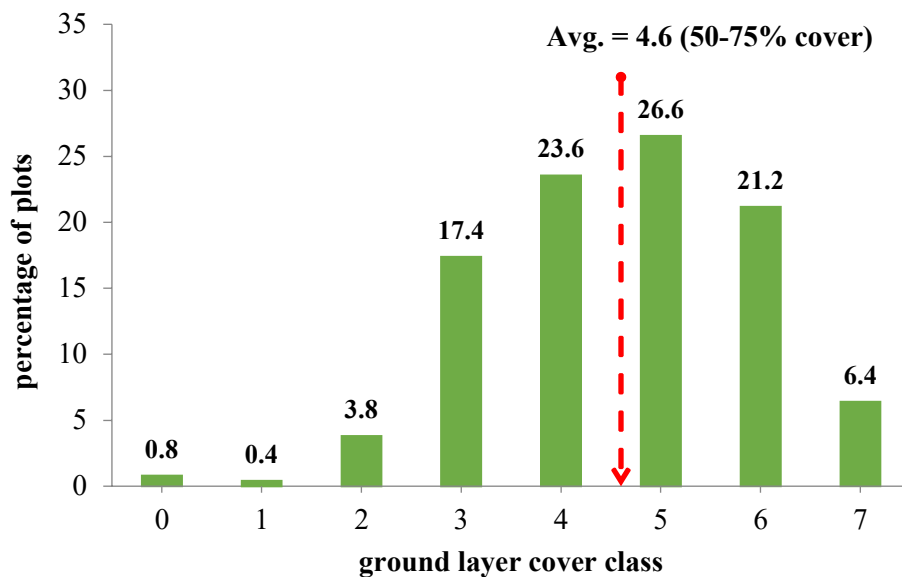


Figure 3. Distribution of total cover class values for all ground layer plots in 2014-2015. The red vertical line is the average total cover class per plot (N = 501). Cover class definitions: 0 (no plants), 1 (0-1%), 2 (2-5%), 3 (6-25%), 4 (26-50%), 5 (51-75%), 6 (76-95%), 7 (96-100%).

Three variables best explained the variation in herbaceous species richness per macroplot across the landscape: overstory BA, midstory stems/acre, and topographic position. Herbaceous species richness increased significantly with decreasing overstory tree cover and midstory stem density (fig. 4 and fig. 5, respectively). Herbaceous species richness varied significantly between topographic positions (fig. 6).

The shrub layer averaged 1776 stems per acre and contained eight species per macroplot. The dominant shrub layer species were red maple, mockernut hickory, black gum and northern red oak. The average cover class in the shrub layer, per nested shrub plot, was 1.6 (25 – 50%) (fig. 7).

On average there were five midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by snags. White oak, mockernut hickory, black gum and red maple were also common in the midstory. Live stem density was 190 stems per acre and snag stem density was 28 stems per acre. The average BA of live midstory trees was 10 square feet per acre.

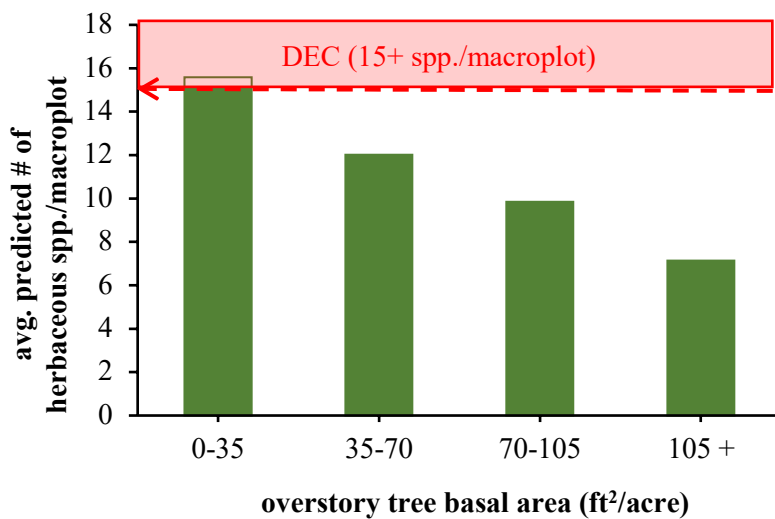


Figure 4. Overstory basal area was one of the best predictors of herbaceous species richness per macroplot in 2014-2015 (model selection based on AIC_c). There was a significant decrease in herbaceous species richness per macroplot with increasing overstory basal area (ft²/acre) (df = 110, F = 22.29, p = < 0.0001).

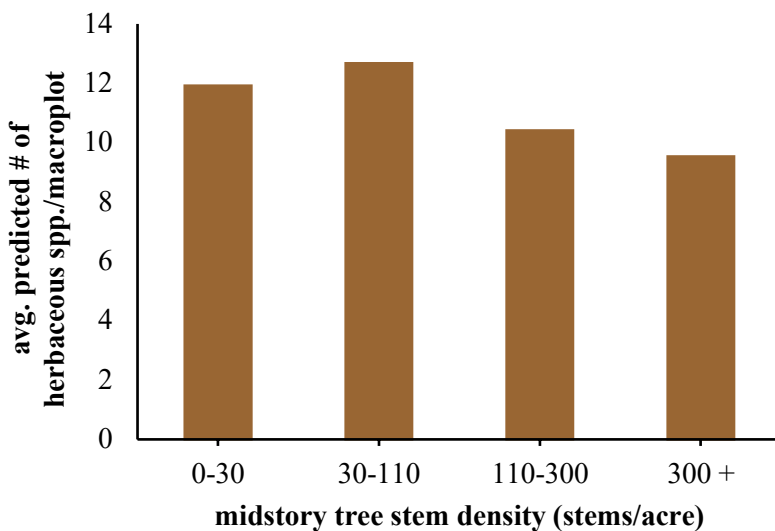


Figure 5. Midstory stem density was one of the best predictors of herbaceous species richness per macroplot in 2014-2015 (model selection based on AIC_c). There was a significant decrease in herbaceous species richness per macroplot with increasing midstory stem density (stems/acre) (df = 110, F = 6.46, p = 0.0124).

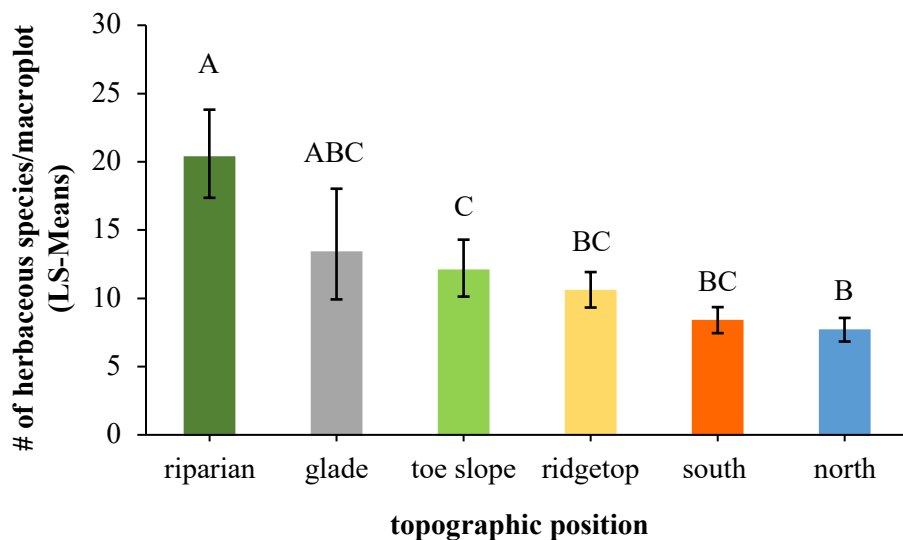


Figure 6. Topographic position was one of the best predictors of herbaceous species richness per macroplot in 2014-2015 (model selection based on AIC_c). There were significant differences in the number of herbaceous species per macroplot between topographic positions (df = 110, F = 5.03, p = 0.0003). Thick bars are least-squares means from the model. Error bars are standard errors. Bars that share the same letters are not significantly different at $\alpha = 0.05$.

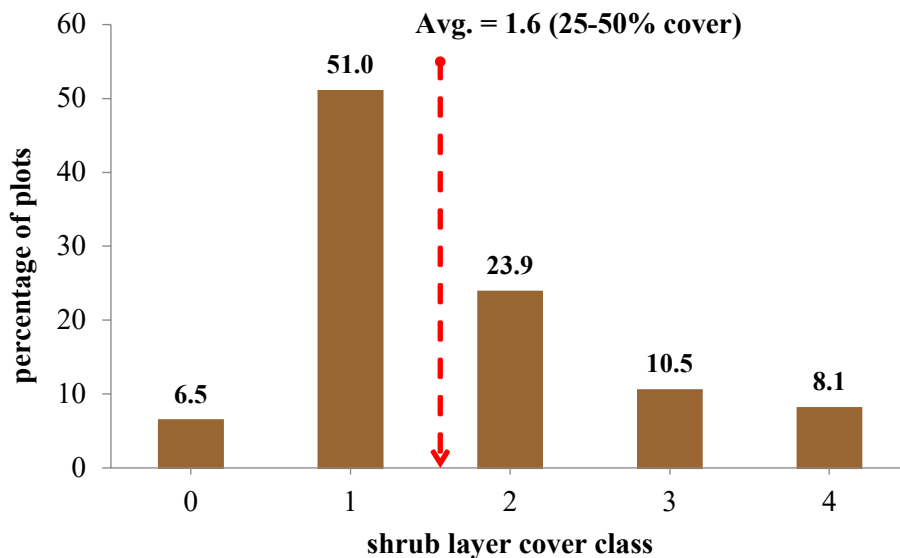


Figure 7. Distribution of total cover class values for all shrub layer plots in 2014-2015. The red vertical line is the average total cover class per plot (N = 247). Cover class definitions: 0 (no shrubs), 1 (0-25%), 2 (26-50%), 3 (51-75%), 4 (75-100%).

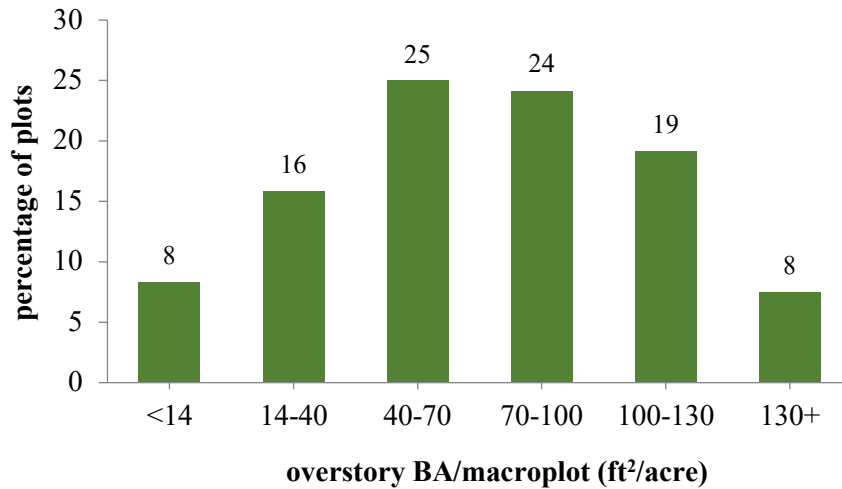


Figure 8. Distribution of overstory BA per macroplot in 2014-2015. The average BA per macroplot was 73 ft²/acre.

The overstory tree layer (dbh \geq 8") averaged 73 live stems per acre and had an average BA of 73 square feet per acre. There were, on average, 3 overstory tree species per macroplot. The dominant overstory tree species were white oak and shortleaf pine. Other common species included northern red oak, snags, and mockernut hickory.

Summary of changes between years, overall

Comparing baseline to 2014-2015 conditions, there was a 14% increase in the total number of species recorded in all vegetation layers. Most of this change occurred in the ground layer, which experienced a 15% increase in species since baseline. The average number of ground layer species in macroplots increased by 22%. This increase in ground layer species per macroplot was statistically significant (fig. 9). The relative cover of poison ivy decreased significantly since baseline, making it much less dominant in the ground layer despite its current high importance (Appendix C). Unexpectedly, some graminoids became much less common in the ground layer since baseline, including little bluestem and sedges.

Shrub stem density increased significantly, by 59%, compared to the baseline condition. However, total shrub cover per plot appeared to change little between years. Most of the common species in the shrub layer remained the same between years. Two species, winged

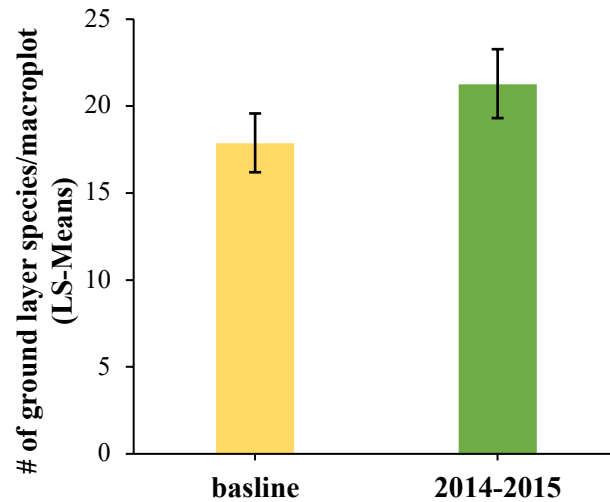


Figure 9. There was a significant increase in the number of ground layer species per macroplot between baseline and 2014-2015 ($df = 110$, $F = 6.73$, $p = 0.0108$). Thick bars are least-squares means from the model. Error bars are 95% confidence intervals.

sumac (*Rhus copallinum*) and sassafras (*Sassafras albidum*), increased significantly in stems/acre and are now much more important in the shrub layer than they were at baseline.

The overstory and midstory experienced a steady decline in basal area since baseline monitoring, decreasing 12% and 57%, respectively. The combined effect of these changes on the average total basal area (all trees) was a decline of 14%. Similarly, overstory and midstory tree stem densities declined by 25% and 44%, respectively. Overall, the monitoring area experienced a 40% decline in live tree stems/acre. The dominant overstory tree species at baseline remained the same between years. Midstory species composition experienced changes, most notably an increase in importance of snags relative to live midstory trees. This change was due to declines in stem density and BA of live midstory trees, not an increase in the number of snags overall.

Topographic position

Ridgetop, 2011-2012

A total of 165 species were recorded in 25 macroplots on ridgetops (fig. 1), with 145 species in the ground layer and 48 species in the tree and shrub layers (Table 2). In the ground layer, there was an average of 20 species per macroplot and an average cover class of 4.8 (50-

Table 2. Comparison of vegetation data across years, ridgetops, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

<i>Diversity</i>	Baseline	2011-2012	2014-2015
Total number of species	147	165	175
Total number of ground layer species	132	145	163
Total number of midstory tree species*	N/A	31	29
Total number of overstory tree species*	N/A	12	12
Total number of shrub layer species*	N/A	42	37
Total number of woody species	46	48	40
Average number of herbaceous species/plot*	N/A	10	11
Average number of ground layer species/plot	18	20	22
Average number of midstory tree species/plot*	N/A	4	4
Average number of overstory tree species/plot*	N/A	2	2

<i>Cover</i>	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	110	83	76
Total midstory live basal area/acre	25	12	8
Total overstory live basal area/acre	85	71	68
Average cover class of shrub layer species**	N/A	2.3	2.0
Average cover class of ground layer species**	N/A	4.8	4.6

<i>Density</i>	Baseline	2011-2012	2014-2015
Total live tree stems/acre	473	248	230
Total live midstory tree stems/acre	368	172	159
Total live overstory tree stems/acre	105	76	71
Total midstory snag stems/acre	43	28	36
Total overstory snag stems/acre	6	4	4
Total shrub layer stems/acre	1337	3389	2419

*A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous years (see Appendix B for cover class definitions).

75%). Each macroplot contained, on average, 10 herbaceous species. Dominant species in the ground layer included poison ivy and Virginia creeper. Bosc's rosette grass, red maple and muscadine were also common. Of the top ten most important species in the ground layer, two species were graminoids, five were woody vines, and three were woody seedlings. One non-native species, Japanese honeysuckle, was observed in 16% of nested ground layer plots.

The shrub layer was very dense with 3389 stems per acre and it contained nine species per macroplot. The dominant shrub layer species were red maple, black gum and mockernut

hickory. Sassafras and black cherry (*Prunus serotina*) were also common. The average cover class in the shrub layer, per nested shrub plot, was 2.3 (50 – 75%).

On average there were four midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by snags, white oak, and black gum. Live stem density was 172 stems per acre and snag stem density was 28 stems per acre. The average BA of live midstory trees was 12 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 76 live stems per acre and had an average BA of 71 square feet per acre. There were, on average, two overstory tree species per macroplot. The dominant overstory tree species were white oak and shortleaf pine. Other common species included post oak (*Quercus stellata*), loblolly pine (*Pinus taeda*), and snags.

Ridgetop, 2014-2015

A total of 175 species were recorded in 25 macroplots on ridgetops, with 163 species in the ground layer and 40 species in the tree and shrub layers (Table 2). In the ground layer, there was an average of 22 species per macroplot and an average cover class of 4.6 (50-75%). Each macroplot contained, on average, 11 herbaceous species. Dominant species in the ground layer included Virginia creeper and poison ivy. Bosc's rosette grass, northern dewberry (*Rubus flagellaris*), and red maple were also common. Of the top ten most important species in the ground layer, two species were graminoids, five were woody vines, and three were woody seedlings. One non-native species, Japanese honeysuckle, was observed in 12% of nested ground layer plots.

The shrub layer was very dense with 2419 stems per acre and it contained 8 species per macroplot. The dominant shrub layer species was red maple. Mockernut hickory, black gum and northern red oak were also common. The average cover class in the shrub layer, per nested shrub plot, was 2.0 (50 – 75%).

On average there were four midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by snags. Red maple, white oak, and black gum were also common species. Live stem density was 159 stems per acre and snag stem density was 36 stems per acre. The average BA of live midstory trees was eight square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 71 live stems per acre and had an average BA of 76 square feet per acre. There were, on average, two overstory tree species per macroplot.

The dominant overstory tree species were white oak and shortleaf pine. Other important species included post oak (*Quercus stellata*) and loblolly pine (*Pinus taeda*).

North slope, 2011-2012

A total of 171 species were recorded in 33 macroplots on north slopes, with 154 species in the ground layer and 55 species in the tree and shrub layers (Table 3). In the ground layer, there was an average of 18 species per macroplot and an average cover class of 4.7 (50-75%). Each macroplot contained, on average, eight herbaceous species. Dominant species in the ground layer included poison ivy and Virginia creeper. Red maple, hog-peanut (*Amphicarpaea bracteata*), and muscadine were also common. Of the top ten most important species in the ground layer, one was a graminoid, two were forbs, four were woody vines, and three were woody seedlings. Three non-native species, sericea lespedeza (1% of nested plots), Japanese stilt-grass (<1% of nested plots), and orchard grass (< 1% of nested plots) were present on north-facing slopes.

The shrub layer contained 1657 stems per acre and seven species per macroplot. The dominant shrub layer species were red maple, black gum and sassafras. Black cherry and muscadine were also common. The average cover class in the shrub layer, per nested shrub plot, was 1.6 (25 – 50%).

On average there were five midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by mockernut hickory, white oak, snags, and black gum. Live stem density was 215 stems per acre and snag stem density was 29 stems per acre. The average BA of live midstory trees was 15 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 84 live stems per acre and had an average BA of 86 square feet per acre. There were, on average, three overstory tree species per macroplot. The dominant overstory tree species was white oak. Northern red oak and black oak (*Quercus velutina*) were also common.

North slope, 2014-2015

A total of 198 species were recorded in 33 macroplots on ridgetops, with 181 species in the ground layer and 53 species in the tree and shrub layers (Table 3). In the ground layer, there was an average of 20 species per macroplot and an average cover class of 4.6 (50-75%). Each

Table 3. Comparison of vegetation data across years, north slopes, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

<i>Diversity</i>	Baseline	2011-2012	2014-2015
Total number of species	149	171	198
Total number of ground layer species	128	154	181
Total number of midstory tree species*	N/A	35	40
Total number of overstory tree species*	N/A	18	17
Total number of shrub layer species*	N/A	49	43
Total number of woody species	56	55	53
Average number of herbaceous species/plot*	N/A	8	8
Average number of ground layer species/plot	15	18	20
Average number of midstory tree species/plot*	N/A	5	5
Average number of overstory tree species/plot*	N/A	3	3
Average number of shrub layer species/plot	5	7	7

<i>Cover</i>	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	111	101	96
Total midstory live basal area/acre	21	15	12
Total overstory live basal area/acre	90	86	84
Average cover class of shrub layer species**	N/A	1.6	1.5
Average cover class of ground layer species**	N/A	4.7	4.6

<i>Density</i>	Baseline	2011-2012	2014-2015
Total live tree stems/acre	444	299	299
Total live midstory tree stems/acre	349	215	228
Total live overstory tree stems/acre	95	84	72
Total midstory snag stems/acre	52	29	24
Total overstory snag stems/acre	7	4	5
Total shrub layer stems/acre	844	1657	1551

*A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous (see Appendix B for cover class definitions).

macroplot contained, on average, eight herbaceous species. Dominant species in the ground layer included poison ivy and Virginia creeper. Red maple was also common in the ground layer. Of the top ten most important species in the ground layer, one was a graminoid, one was a forb, three were woody vines, and four were woody seedlings. Three non-native species, sericea lespedeza (<1% of nested plots), Japanese stilt-grass (<1% of nested plots), and Japanese honeysuckle (<1% of nested plots) were present on north-facing slopes.

The shrub layer contained 1551 stems per acre and seven species per macroplot. The dominant shrub layer species was red maple. The average cover class in the shrub layer, per nested shrub plot, was 1.5 (25 – 50%).

On average there were five midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by mockernut hickory, white oak, and snags. Live stem density was 228 stems per acre and snag stem density was 24 stems per acre. The average BA of live midstory trees was 12 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 72 live stems per acre and had an average BA of 96 square feet per acre. There were, on average, three overstory tree species per macroplot. The dominant overstory tree species was white oak. Northern red oak was also common.

South slope, 2011-2012

A total of 180 species were recorded in 34 macroplots on south slopes, with 165 species in the ground layer and 46 species in the tree and shrub layers (Table 4). In the ground layer, there was an average of 18 species per macroplot and an average cover class of 4.2 (50-75%). Each macroplot contained, on average, nine herbaceous species. Common species in the ground layer included poison ivy, muscadine, Virginia creeper, white oak and Bosc's rosette grass. Of the top ten most important species in the ground layer, two were graminoids, five were woody vines, and three were woody seedlings. One non-natives species, Japanese honeysuckle, was found in 1% of nested plots on south-facing slopes.

The shrub layer contained 1820 stems per acre and eight species per macroplot. The dominant shrub layer species was red maple. Black gum, northern red oak, and mockernut hickory were common species. The average cover class in the shrub layer, per nested shrub plot, was 1.8 (25 – 50%).

On average there were four midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by white oak, snags and black gum. Mockernut hickory was also a common species. Live stem density was 108 stems per acre and snag stem density was 24 stems per acre. The average BA of live midstory trees was nine square feet per acre.

Table 4. Comparison of vegetation data across years, south slopes, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

<i>Density</i>	Baseline	2011-2012	2014-2015
Total number of species	129	180	173
Total number of ground layer species	114	165	156
Total number of midstory tree species*	-	25	26
Total number of overstory tree species*	-	13	12
Total number of shrub layer species*	-	42	39
Total number of woody species	45	46	44
Average number of herbaceous species/plot*	-	9	10
Average number of ground layer species/plot	14	18	19
Average number of midstory tree species/plot*	-	4	4
Average number of overstory tree species/plot*	-	2	2
Average number of shrub layer species/plot	6	8	8

<i>Cover</i>	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	109	77	73
Total midstory live basal area/acre	23	9	7
Total overstory live basal area/acre	86	68	65
Average cover class of shrub layer species**	N/A	1.8	1.9
Average cover class of ground layer species**	N/A	4.2	4.6

<i>Density</i>	Baseline	2011-2012	2014-2015
Total live tree stems/acre	375	182	184
Total live midstory tree stems/acre	273	108	117
Total live overstory tree stems/acre	102	74	67
Total midstory snag stems/acre	33	24	16
Total overstory snag stems/acre	4	5	3
Total shrub layer stems/acre	994	1820	2135

*A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous (see Appendix B for cover class definitions).

The overstory tree layer (dbh ≥ 8") averaged 74 live stems per acre and had an average BA of 68 square feet per acre. There were, on average, two overstory tree species per macroplot. South slopes were co-dominated by white oak and shortleaf pine in the overstory.

South slope, 2014-2015

A total of 173 species were recorded in 33 macroplots on south slopes, with 156 species in the ground layer and 44 species in the tree and shrub layers (Table 4). In the ground layer,

there was an average of 19 species per macroplot and an average cover class of 4.6 (50-75%). Each macroplot contained, on average, 10 herbaceous species. Common species in the ground layer included poison ivy, Virginia creeper, muscadine, and Bosc's rosette grass. Of the top ten most important species in the ground layer, two were graminoids, two were forbs, four were woody vines, and one was a woody sapling. Two non-natives species, Japanese stilt grass and sericea lespedeza, were each in less than 1% of nested plots on south-facing slopes.

The shrub layer contained 2135 stems per acre and eight species per macroplot. The dominant shrub layer species was red maple. Mockernut hickory, black gum, and northern red oak were common species. The average cover class in the shrub layer, per nested shrub plot, was 1.9 (25 – 50%).

On average there were four midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by white oak, snags and black gum. Live stem density was 117 stems per acre and snag stem density was 16 stems per acre. The average BA of live midstory trees was seven square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 67 live stems per acre and had an average BA of 65 square feet per acre. There were, on average, two overstory tree species per macroplot. South slopes were co-dominated by white oak and shortleaf pine in the overstory.

Riparian, 2011-2012

A total of 198 species were recorded in 16 macroplots in riparian areas, with 174 species in the ground layer and 57 species in the tree and shrub layers (Table 5). In the ground layer, there was an average of 29 species per macroplot and an average cover class of 4.3 (50-75%). Each macroplot contained, on average, 16 herbaceous species. The ground layer was dominated by poison ivy. Other common species in the ground layer included bearded shorthusk (*Brachyelytrum erectum*), Bosc's rosette grass, Virginia creeper, and Canadian black-snakeroot (*Sanicula canadensis*). Of the top ten most important species in the ground layer, two were graminoids, two were forbs, three were woody vines, and three were woody seedlings. One non-native species, Japanese stilt grass, was present in 3% of nested ground layer plots in riparian areas.

The shrub layer contained 1411 stems per acre and eight species per macroplot. The dominant shrub layer species were ironwood (*Carpinus caroliniana*) and hop

Table 5. Comparison of vegetation data across years, riparian areas, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

Diversity	Baseline	2011-2012	2014-2015
Total number of species	179	198	196
Total number of ground layer species	159	174	177
Total number of midstory tree species*	N/A	37	39
Total number of overstory tree species*	N/A	20	18
Total number of shrub layer species*	N/A	41	40
Total number of woody species	58	57	55
Average number of herbaceous species/plot*	N/A	16	16
Average number of ground layer species/plot	28	29	30
Average number of midstory tree species/plot*	N/A	10	8
Average number of overstory tree species/plot*	N/A	4	4
Average number of shrub layer species/plot	9	8	7

Cover	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	107	122	108
Total midstory live basal area/acre	29	29	20
Total overstory live basal area/acre	78	94	89
Average cover class of shrub layer species**	N/A	1.4	1.2
Average cover class of ground layer species**	N/A	4.3	4.4

Density	Baseline	2011-2012	2014-2015
Total live tree stems/acre	585	566	422
Total live midstory tree stems/acre	484	460	324
Total live overstory tree stems/acre	101	106	98
Total midstory snag stems/acre	32	52	48
Total overstory snag stems/acre	6	3	9
Total shrub layer stems/acre	1706	1411	951

*A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous (see Appendix B for cover class definitions).

hornbeam (*Ostrya virginiana*). Black gum and White ash (*Fraxinus americana*) were also common. The average cover class in the shrub layer, per nested shrub plot, was 1.4 (25 – 50%).

On average there were ten midstory tree species (1" – 8" dbh) per macroplot. The midstory was dominated by sweetgum, hop hornbeam, ironwood, eastern red cedar (*Juniperus virginiana*), and sugar maple (*Acer saccharum*). Live stem density was 460 stems per acre and snag stem density was 52 stems per acre. The average BA of live midstory trees was 29 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 106 live stems per acre and had an average BA of 94 square feet per acre. There were, on average, four overstory tree species per macroplot. Sweetgum dominated the overstory of riparian areas, making up 25% of the overstory BA, on average. Common species also included shortleaf pine, eastern red cedar and white oak.

Riparian, 2014-2015

A total of 196 species were recorded in 16 macroplots in riparian areas, with 177 species in the ground layer and 55 species in the tree and shrub layers (Table 5). In the ground layer, there was an average of 30 species per macroplot and an average cover class of 4.4 (50-75%). Each macroplot contained, on average, 16 herbaceous species. The ground layer was dominated by poison ivy. Other common species in the ground layer included bearded shorthusk, Bosc's rosette grass, Virginia creeper, and Canadian black-snakeroot. Of the top ten most important species in the ground layer, two were graminoids, two were forbs, three were woody vines, and three were woody seedlings. One non-native species, Japanese stilt grass, was present in 9% of nested ground layer plots in riparian areas.

The shrub layer contained 951 stems per acre and seven species per macroplot. The dominant shrub layer species were ironwood. Hop hornbeam, Carolina buckthorn (*Frangula caroliniana*), witch-hazel (*Hamamelis virginiana*), and red maple were also common. The average cover class in the shrub layer, per nested shrub plot, was 1.2 (25 – 50%).

On average there were eight midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by sweetgum and snags. Other common species included hop hornbeam, ironwood, and sugar maple. Live stem density was 324 stems per acre and snag stem density was 48 stems per acre. The average BA of live midstory trees was 20 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 98 live stems per acre and had an average BA of 89 square feet per acre. There were, on average, four overstory tree species per macroplot. Sweetgum, shortleaf pine and snags dominated the overstory of riparian areas.

Toe slope, 2011-2012

A total of 157 species were recorded in 14 macroplots on toe slopes, with 147 species in the ground layer and 49 species in the tree and shrub layers (Table 6). In the ground layer, there

Table 6. Comparison of vegetation data across years, toe slopes, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

Diversity	Baseline	2011-2012	2014-2015
Total number of species	148	159	165
Total number of ground layer species	135	147	150
Total number of midstory tree species*	N/A	34	28
Total number of overstory tree species*	N/A	15	19
Total number of shrub layer species*	N/A	40	42
Total number of woody species	51	49	49
Average number of herbaceous species/plot*	N/A	12	13
Average number of ground layer species/plot	23	26	26
Average number of midstory tree species/plot*	N/A	8	6
Average number of overstory tree species/plot*	N/A	3	4
Average number of shrub layer species/plot	6	8	9

Cover	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	112	110	91
Total midstory live basal area/acre	20	16	10
Total overstory live basal area/acre	92	94	80
Average cover class of shrub layer species**	N/A	1.4	1.6
Average cover class of ground layer species**	N/A	4.8	4.4

Density	Baseline	2011-2012	2014-2015
Total live tree stems/acre	487	432	281
Total live midstory tree stems/acre	384	336	200
Total live overstory tree stems/acre	103	96	82
Total midstory snag stems/acre	38	31	33
Total overstory snag stems/acre	3	1	7
Total shrub layer stems/acre	1336	1438	1832

*A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous (see Appendix B for cover class definitions).

was an average of 26 species per macroplot and an average cover class of 4.8 (50-75%). Each macroplot contained, on average, 12 herbaceous species. The ground layer was dominated by poison ivy. Other common species in the ground layer included sedges (*Carex* sp.), Virginia creeper, Bosc's rosette grass, and red maple. Of the top ten most important species in the ground layer, two were graminoids, two were forbs, two were woody vines, and four were woody seedlings. One non-native species, Japanese honeysuckle, was present in 4% of nested ground layer plots on toe slopes.

The shrub layer contained 1438 stems per acre and eight species per macroplot. The dominant shrub layer species were red maple, hop hornbeam, Carolina buckthorn, black gum and ironwood. The average cover class in the shrub layer, per nested shrub plot, was 1.4 (25 – 50%).

On average there were eight midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by mockernut hickory, white oak, snags, black gum and flowering dogwood (*Cornus florida*). Live stem density was 336 stems per acre and snag stem density was 31 stems per acre. The average BA of live midstory trees was 16 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 96 live stems per acre and had an average BA of 94 square feet per acre. There were, on average, three overstory tree species per macroplot. White oak dominated the overstory of toe slopes, making up 38% of the total BA, on average. Other common species included northern red oak, black oak and black gum.

Toe slope, 2014-2015

A total of 165 species were recorded in 14 macroplots on toe slopes, with 150 species in the ground layer and 49 species in the tree and shrub layers (Table 6). In the ground layer, there was an average of 26 species per macroplot and an average cover class of 4.4 (50-75%). Each macroplot contained, on average, 13 herbaceous species. The ground layer was dominated by poison ivy. Other common species in the ground layer included Bosc's rosette grass and Virginia creeper. Of the top ten most important species in the ground layer, two were graminoids, four were forbs, two were woody vines, and two were woody seedlings. One non-native species, Japanese honeysuckle, was present in 4% of nested ground layer plots on toe slopes.

The shrub layer contained 1832 stems per acre and nine species per macroplot. The dominant shrub layer species were hop hornbeam, red maple, Carolina buckthorn, and black gum. The average cover class in the shrub layer, per nested shrub plot, was 1.6 (25 – 50%).

On average there were six midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by mockernut hickory, white oak, snags, red maple and black gum. Live stem density was 200 stems per acre and snag stem density was 33 stems per acre. The average BA of live midstory trees was 10 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 82 live stems per acre and had an average BA of 80 square feet per acre. There were, on average, four overstory tree species per macroplot.

White oak dominated the overstory of toe slopes, making up 30% of the total overstory BA, on average. Other common species included northern red oak, black gum and shortleaf pine.

Glade, 2011-2012

A total of 47 species were recorded in five macroplots in glades, with 38 species in the ground layer and 15 species in the tree and shrub layers (Table 7). In the ground layer, there was an average of 11 species per macroplot and an average cover class of 3.6 (25-50%). Each macroplot contained, on average, seven herbaceous species. The ground layer was dominated by little bluestem (*Schizachyrium scoparium*). Other common species in the ground layer included hairy rosette grass (*Dichanthelium acuminatum*), poverty oat grass (*Danthonia spicata*), and woodland sunflower (*Helianthus divaricatus*). Of the top ten most important species in the ground layer, three were graminoids, four were forbs, and three were woody seedlings. No non-native species were observed in glade plots in 2011-2012.

The shrub layer contained 636 stems per acre and four species per macroplot. The dominant shrub layer species were winged sumac and winged elm (*Ulmus alata*). The average cover class in the shrub layer, per nested shrub plot, was 1.1 (25 – 50%).

On average there were four midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by post oak and winged elm. Other common species included bitternut hickory (*Carya cordiformis*) and eastern red cedar. Live stem density was 117 stems per acre and snag stem density was 18 stems per acre. The average BA of live midstory trees was 9 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 21 live stems per acre and had an average BA of 17 square feet per acre. There were, on average, two overstory tree species per macroplot. Common species in the glades included eastern red cedar, shortleaf pine, bitternut hickory, and white ash.

Glade, 2014-2015

A total of 95 species were recorded in five macroplots in glades, with 87 species in the ground layer and 15 species in the tree and shrub layers (Table 7). In the ground layer, there was

Table 7. Comparison of vegetation data across years, glades, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

<i>Diversity</i>	Baseline	2011-2012	2014-2015
Total number of species	89	47	95
Total number of ground layer species	80	38	87
Total number of midstory tree species*	N/A	11	11
Total number of overstory tree species*	N/A	4	4
Total number of shrub layer species*	N/A	12	9
Total number of woody species	17	15	15
Average number of herbaceous species/plot*	N/A	7	19
Average number of ground layer species/plot	20	11	25
Average number of midstory tree species/plot*	N/A	4	3
Average number of overstory tree species/plot*	N/A	2	2
Average number of shrub layer species/plot	3	4	3

<i>Cover</i>	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	30	26	24
Total midstory live basal area/acre	13	9	8
Total overstory live basal area/acre	17	17	16
Average cover class of shrub layer species**	N/A	1.1	0.7
Average cover class of ground layer species**	N/A	3.6	5.4

<i>Density</i>	Baseline	2011-2012	2014-2015
Total live tree stems/acre	204	138	161
Total live midstory tree stems/acre	183	117	143
Total live overstory tree stems/acre	21	21	18
Total midstory snag stems/acre	0	18	16
Total overstory snag stems/acre	0	0	0
Total shrub layer stems/acre	337	636	358

*A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous (see Appendix B for cover class definitions).

an average of 25 species per macroplot and an average cover class of 5.4 (75-95%). Each macroplot contained, on average, 19 herbaceous species. The ground layer was dominated by little bluestem. Other common species in the ground layer included rushfoil (*Croton wildenowii*), poverty oat grass, hairy rosette grass, and woodland sunflower. Of the top ten most important species in the ground layer, three were graminoids, five were forbs, and two were woody seedlings. No non-native species were observed in glade plots in 2014-2015.

The shrub layer contained 358 stems per acre and three species per macroplot. The dominant shrub layer species was winged elm. The average cover class in the shrub layer, per nested shrub plot, was 0.7 (< 25%).

On average there were three midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by winged elm and post oak. Other common species included eastern red cedar, snags and mockernut hickory. Live stem density was 143 stems per acre and snag stem density was 16 stems per acre. The average BA of live midstory trees was 8 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 18 live stems per acre and had an average BA of 24 square feet per acre. There were, on average, two overstory tree species per macroplot. Common species in the glades included white ash, shortleaf pine, pignut hickory (*Carya glabra*), and eastern red cedar.

Summary of changes between years, topographic position

Total ground layer species richness increased in north slopes, south slopes, riparian areas, and glades since the baseline and since 2007-2009 monitoring. In terms of ground layer species richness, little change occurred on toe slopes and ridgetops. Total ground layer cover per plot remained virtually the same in all topographic positions compared to baseline. There were significant differences in ground layer species diversity between topographic positions (df = 110, F = 6.73, p = 0.0108) (fig. 10). The 2011-2012 monitoring detected a significant decrease in ground layer species diversity in glades due to drought conditions. Ground layer species diversity then rebounded in 2014-2015, rising to levels above those observed at baseline (fig. 11). Poison ivy decreased in importance in all topographic positions. On south facing slopes, one graminoid, poverty oat-grass, increased significantly in importance and was one of the top ten most important species. There was a decrease in importance of some fire-intolerant, woody species, including red maple and black gum on south-facing slopes. In riparian areas, one non-native species, Japanese stilt-grass, increased in frequency between 2011-2012 and 2014-2015, from 3% of all nested ground layer plots to 9% of plots.

Shrub layer stem density increased in ridgetops, north slopes, south slopes, and toe slopes compared to baseline. Shrub stem density decreased in riparian areas and remained about the same in glades compared to baseline conditions. There were many significant changes in species importance in the shrub layer and these changes varied by topographic position. On ridgetops,

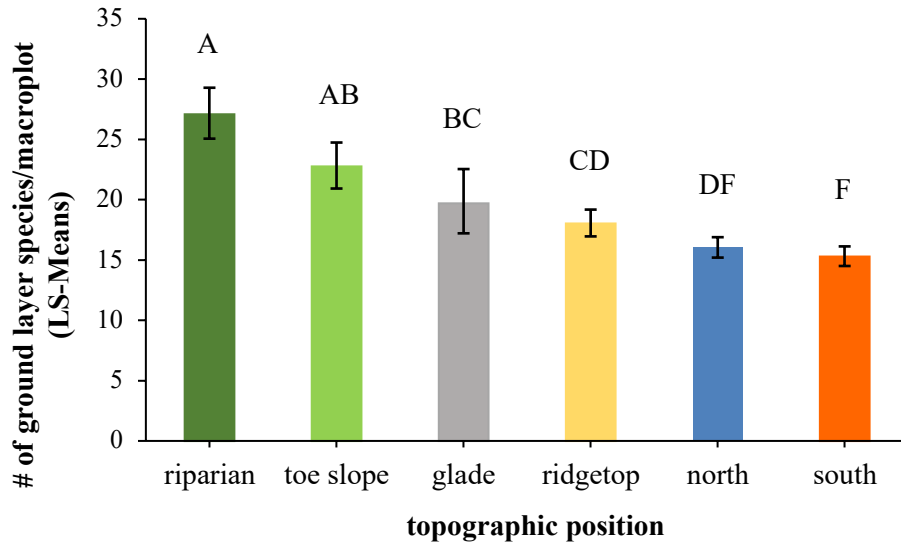


Figure 10. There were significant differences between topographic positions in the number of ground layer species per macroplot ($df = 110$, $F = 6.73$, $p = 0.0108$). Thick bars are least-squares means from the model. Error bars are standard errors. Bars that share the same letter(s) are not significantly different at $\alpha = 0.05$.

white oak, black oak, northern red oak, winged sumac, and smooth sumac (*Rhus glabra*) increased in importance. On north slopes, red maple, black gum, northern red oak and black cherry increased in importance, while flowering dogwood decreased in importance compared to baseline. On south slopes, white oak, mockernut hickory, black gum and smooth sumac increased in importance. On toe slopes, red maple decreased in importance and was superceded by hop hornbeam as the most important species in the shrub layer. Northern red oak and winged sumac increased in importance and ironwood decreased in importance on toe slopes. In riparian areas, flowering dogwood and Carolina buckthorn (*Frangula caroliniana*) decreased in importance, while hop hornbeam, witchazel (*Hamamelis virginiana* /*H. vernalis*), and mockernut hickory increased in importance. In glades, winged elm, northern red oak, and farkleberry (*Vaccinium arboreum*) increased in importance, while eastern red cedar, winged sumac, white ash, and black locust (*Robinia pseudoacacia*) decreased in importance.

The midstory tree layer experienced reductions in stem density across all topographic positions (compared to baseline and 2007-2009). Snags increased in importance in all topographic positions, with the exception of north slopes, where snags were equally important in 2014-2015 as they were at baseline. On ridgetops, white oak, flowering dogwood, and

mockernut hickory decreased in importance, while red maple increased in importance. Mockernut hickory increased in importance on north slopes between years, while white oak and flowering dogwood decreased in importance. On south slopes, post oak increased in importance, while flowering dogwood and mockernut hickory declined. Mockernut hickory, white oak, black gum, and red maple increased on toe slopes, while eastern red cedar, flowering dogwood, and hop hornbeam declined in importance. In riparian areas, sweetgum increased in importance, while eastern red cedar and ironwood decreased in importance. Eastern red cedar and white ash decreased in importance on glades, while winged elm, black locust, and loblolly pine increased in importance.

There were significant changes in overstory basal area between baseline and 2014-2015, but these changes varied by topographic position (fig. 12). Glades, ridgetops, and south slopes experienced significant reductions in overstory BA. The average overstory BA on north slopes also decreased, but this change only approached statistical significance ($df=116$, $F= 3.76$, $p = 0.0549$). Toe slopes experienced a reduction in overstory BA, on average, but this change was not statistically significant. Riparian areas were the only topographic position that experienced an increase in average overstory BA, though it wasn't statistically significant ($df=116$, $F= 0.23$, $p = 0.6358$). Changes in important overstory species varied by topographic position. On ridgetops, post oak and shortleaf pine increased in importance, while black oak, red oak and red maple experienced declines. Shortleaf pine and mockernut hickory declined in importance on north slopes. On south slopes white oak increased in importance and black oak declined. White oak, northern red oak, black gum and snags all increased in importance on toe slopes, while shortleaf pine decreased in importance. In riparian areas, snags, shortleaf pine, and white oak increased in importance, while sweetgum, and mockernut hickory and American sycamore (*Platanus occidentalis*) experienced declines since baseline. In glades, eastern red cedar decreased in importance, while white ash increased in importance in the overstory.

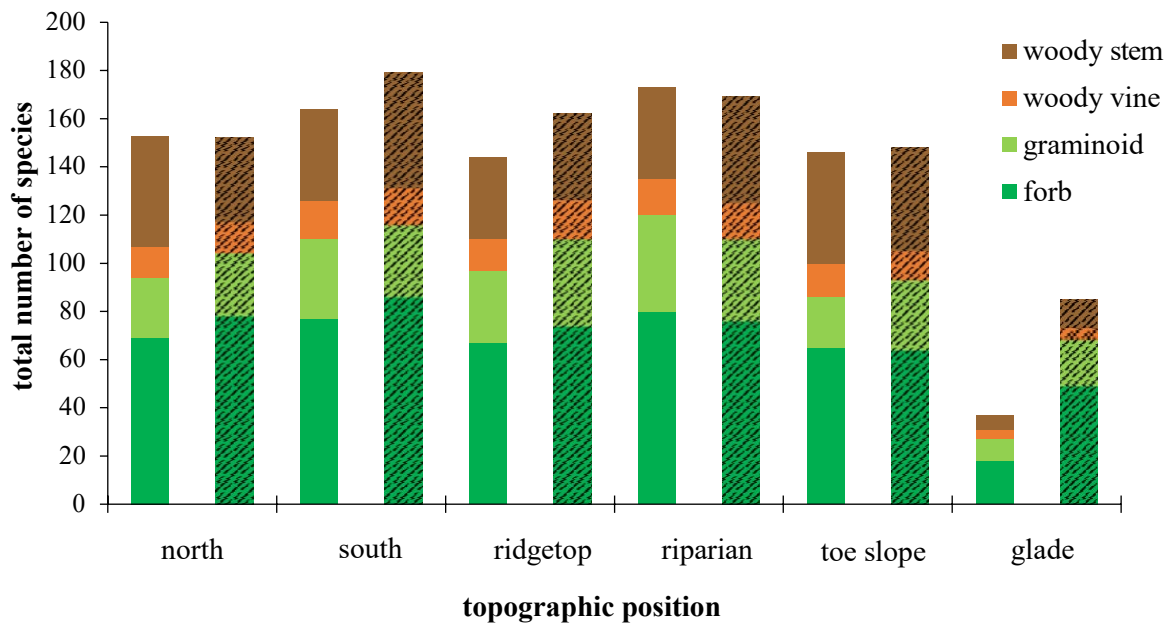


Figure 11. Species counts in the ground layer for each growthform and by topographic position for 2011-2012 and 2014-2015. Bars with no pattern (solid fill only) are for 2011-2012 and bars with slanted line pattern are for 2014-2015.

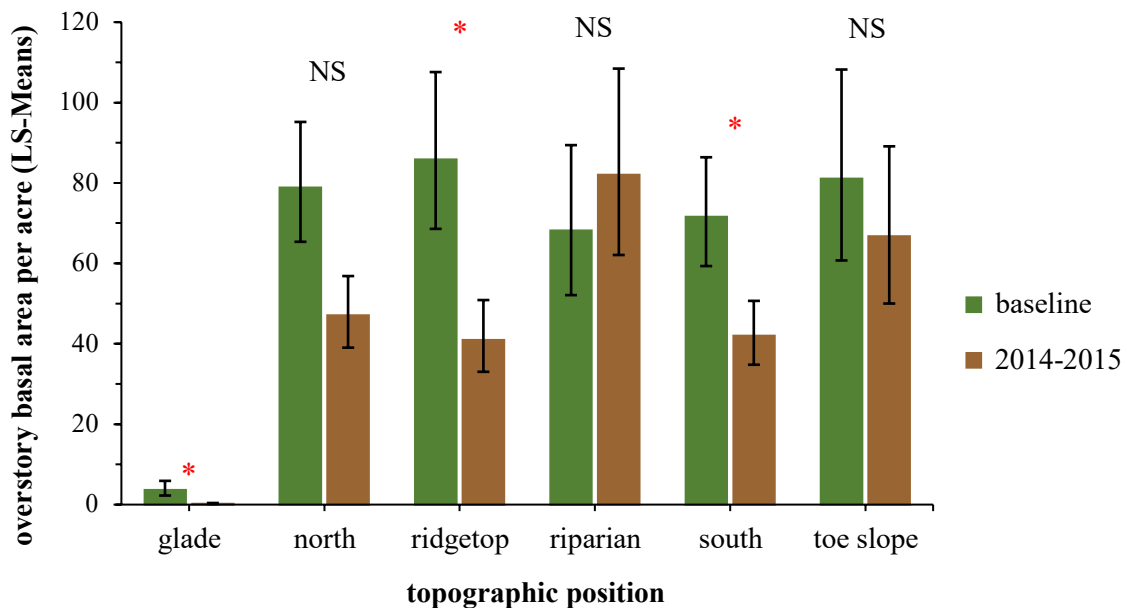


Figure 12. There were significant changes in overstory BA between years, depending on topographic position ($df = 116$, $F = 2.88$, $p = 0.017$). Thick bars are least-squares means from the model. Error bars are standard errors. Asterisks (*) indicate a statistically significant difference ($\alpha = 0.05$) in overstory BA between years, within a given topographic position (otherwise, NS = not significant).

Covertime

Early seral, 2011-2012

Four macroplots were assigned to the early seral covertime in 2011-2012 (3% of all macroplots) (fig. 13). A total of 58 species were observed in the early seral covertime, with 51 species in the ground layer and 17 species in the tree and shrub layers (Table 8). In the ground layer, there was an average of 19 species per macroplot and an average cover class of 3.7 (25-50%). Each macroplot contained, on average, nine herbaceous species. Common species in the ground layer included poison ivy, northern dewberry, variable rosette grass (*Dichanthelium commutatum*), and blackberry/raspberry (*Rubus* sp.). Of the top ten most important species in the ground layer, two species were graminoids, one was a non-woody vine, one was a woody vine, and six species were woody seedlings. There were no non-native species found in early seral plots in 2011-2012.

The shrub layer averaged 2298 stems per acre and contained eight species per macroplot. The dominant shrub layer species was red maple. Other common species included black gum, mockernut hickory, white oak, and northern red oak. The average cover class in the shrub layer, per nested shrub plot, was 2.4 (50 – 75%).

On average there were three midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by northern red oak and snags. Post oak, winged elm, and mockernut hickory were also common. Live stem density was 59 stems per acre and snag stem density was 39 stems per acre. The average BA of live midstory trees was five square feet per acre.

The overstory tree layer (dbh \geq 8") averaged three live stems per acre and had an average BA of three square feet per acre. On average, there was one overstory tree species per macroplot. The overstory was dominated by snags, which made up 77% of the total BA. The only live tree species found in the overstory was northern red oak.

Early seral, 2014-2015

Ten macroplots were assigned to the early seral covertime in 2014-2015 (8% of all macroplots) (fig. 13). A total of 124 species were observed in the early seral covertime, with 114 species in the ground layer and 35 species in the tree and shrub layers (Table 8). In the ground layer, there was an average of 23 species per macroplot and an average cover class of 4.2 (50-75%). Each macroplot contained, on average, 12 herbaceous species. Common species in the

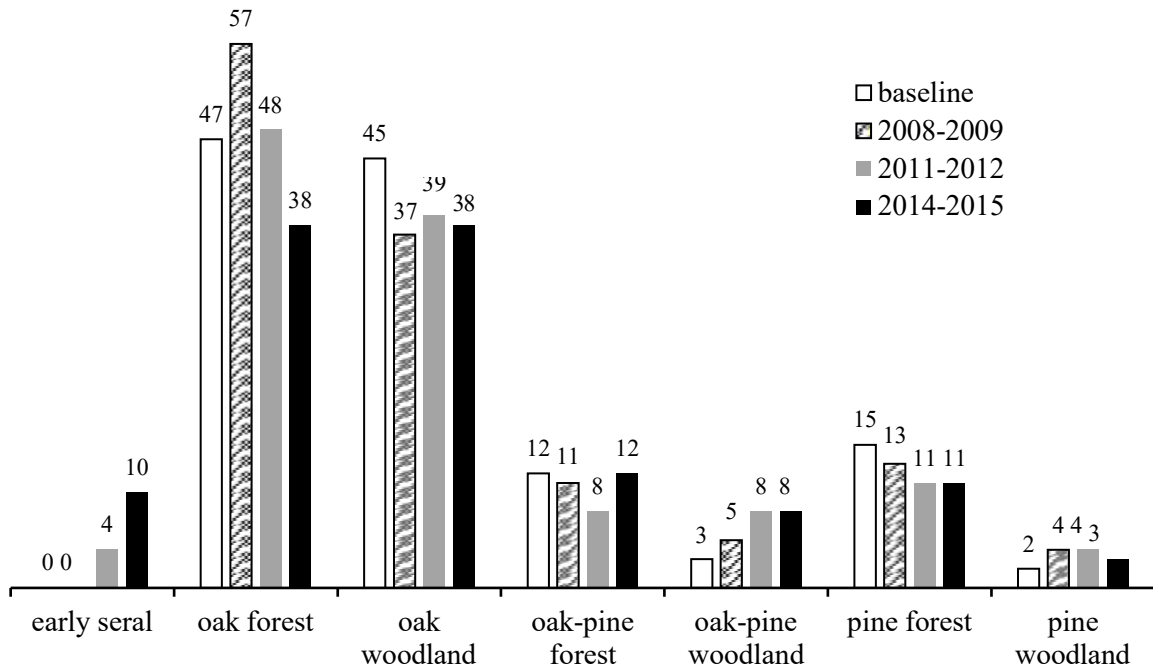


Figure 13. Counts of macroplots in each covertype (based on overstory basal area and species composition), baseline to present, on the Big Piney and Pleasant Hill Ranger districts.

ground layer included Virginia creeper, poison ivy, muscadine and sedges. Of the top ten most important species in the ground layer, two species were graminoids, four were woody vines, and four species were woody seedlings. Two non-native species, Japanese stilt grass and sericea lespedeza, were found in 5% and 3% of nested ground layer plots, respectively.

The shrub layer averaged 2465 stems per acre and contained nine species per macroplot. The dominant shrub layer species was red maple. Other common species included black gum, black cherry, sassafras, and mockernut hickory. The average cover class in the shrub layer, per nested shrub plot, was 2.1 (50 – 75%).

On average there were three midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by black gum, mockernut hickory and red maple. Live stem density was 211 stems per acre and snag stem density was seven stems per acre. The average BA of live midstory trees was four square feet per acre.

The overstory tree layer (dbh ≥ 8") averaged nine live stems per acre and had an average BA of four square feet per acre. There was, on average, one overstory tree species per macroplot. Snags and white oak dominated the overstory, making up 82% of the total overstory BA.

Table 8. Comparison of vegetation data across years, *early seral community*, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

<i>Diversity</i>	2011-2012	2014-2015
Total number of species	58	124
Total number of ground layer species	51	114
Total number of midstory tree species	8	18
Total number of overstory tree species	1	4
Total number of shrub layer species	16	32
Total number of woody species	17	35
Average number of herbaceous species/plot	9	12
Average number of ground layer species/plot	19	23
Average number of midstory tree species/plot	3	3
Average number of overstory tree species/plot	1	1
Average number of shrub layer species/plot	8	9

<i>Cover</i>	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	8	9
Total midstory live basal area/acre	5	4
Total overstory live basal area/acre	3	4
Average cover class of shrub layer species	2.4	2.1
Average cover class of ground layer species	3.7	4.2

<i>Density</i>	2011-2012	2014-2015
Total live tree stems/acre	62	220
Total live midstory tree stems/acre	59	211
Total live overstory tree stems/acre	3	9
Total midstory snag stems/acre	39	7
Total overstory snag stems/acre	7	8
Total shrub layer stems/acre	2298	2465

Shortleaf pine woodland/savanna (PW), 2011-2012

Four macroplots were assigned to the pine woodland covertype in 2011-2012 (3% of all macroplots) (fig. 13). A total of 61 species were observed in pine woodland, with 47 species in the ground layer and 30 species in the tree and shrub layers (Table 9). In the ground layer, there was an average of 17 species per macroplot and an average cover class of 4.5 (50-75%). Each macroplot contained, on average, six herbaceous species. The ground layer was dominated by poison ivy. Other common species included cat greenbrier (*Smilax glauca*), muscadine, black gum, and Japanese honeysuckle. Of the top ten most important species in the ground layer, one

Table 9. Comparison of vegetation data across years, *pine woodland/savanna*, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

<i>Diversity</i>	Baseline	2011-2012	2014-2015
Total number of species	40	61	49
Total number of ground layer species	30	47	36
Total number of midstory tree species*	N/A	17	14
Total number of overstory tree species*	N/A	3	4
Total number of shrub layer species*	N/A	27	20
Total number of woody species	15	30	23
Average number of herbaceous species/plot*	N/A	6	6
Average number of ground layer species/plot	20	17	15
Average number of midstory tree species/plot*	N/A	8	6
Average number of overstory tree species/plot*	N/A	2	2
Average number of shrub layer species/plot	7	11	9

<i>Cover</i>	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	89	78	60
Total midstory live basal area/acre	25	16	7
Total overstory live basal area/acre	64	62	52
Average cover class of shrub layer species**	N/A	2.0	1.9
Average cover class of ground layer species**	N/A	4.8	4.5

<i>Density</i>	Baseline	2011-2012	2014-2015
Total live tree stems/acre	354	377	334
Total live midstory tree stems/acre	290	319	290
Total live overstory tree stems/acre	64	59	43
Total midstory snag stems/acre	26	10	17
Total overstory snag stems/acre	0	3	4
Total shrub layer stems/acre	1157	2721	2303

*A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous (see Appendix B for cover class definitions).

species was a graminoid, five were woody vines, and four species were woody seedlings. One non-native species, Japanese honeysuckle, was found in 33% of nested ground layer plots.

The shrub layer averaged 2721 stems per acre and contained 11 species per macroplot. The dominant shrub layer species were black gum, red maple and white oak. The average cover class in the shrub layer, per nested shrub plot, was 2.0 (50 – 75%).

On average there were eight midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated sweetgum and black gum. Shortleaf pine, red maple and flowering

dogwood were also common. Live stem density was 319 stems per acre and snag stem density was 10 stems per acre. The average BA of live midstory trees was 16 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 59 live stems per acre and had an average BA of 62 square feet per acre. There were, on average, two overstory tree species per macroplot. Shortleaf pine dominated the overstory, making up 90% of the total BA.

Shortleaf pine woodland/savanna, 2014-2015

Three macroplots were assigned to the pine woodland covertype in 2011-2012 (2% of all macroplots) (fig. 13). A total of 49 species were observed in pine woodland, with 36 species in the ground layer and 23 species in the tree and shrub layers (Table 9). In the ground layer, there was an average of 15 species per macroplot and an average cover class of 4.5 (50-75%). Each macroplot contained, on average, six herbaceous species. The ground layer was dominated by poison ivy. Other common species included cat greenbrier, muscadine, and Japanese honeysuckle. Of the top ten most important species in the ground layer, two species were graminoids, six were woody vines, and two species were woody seedlings. One non-native species, Japanese honeysuckle, was found in 25% of nested ground layer plots.

The shrub layer averaged 2303 stems per acre and contained nine species per macroplot. The dominant shrub layer species were black gum, red maple and white oak. The average cover class in the shrub layer, per nested shrub plot, was 1.9 (25 – 50%).

On average there were six midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by serviceberry (*Amelanchier arborea*) and red maple. Black hickory, black gum, and white oak were also common. Live stem density was 290 stems per acre and snag stem density was 17 stems per acre. The average BA of live midstory trees was seven square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 43 live stems per acre and had an average BA of 52 square feet per acre. There were, on average, two overstory tree species per macroplot. Shortleaf pine dominated the overstory, making up 70% of the total BA.

Table 10. Comparison of baseline, current (2014-15), and desired ecological conditions for the *shortleaf pine woodland/savanna* coevtype.

shortleaf pine woodland/savanna	Baseline	Current	Desired
Percent of landscape	1.6%	2%	10%
Herbaceous spp./macroplot*	-	6	15+
Ground layer spp./macroplot	20	15	20+
Ground layer percent cover	31%	48%	80%+
Midstory stems/acre (live trees)	290	290	< 150
Midstory regeneration** stems/acre	77 (17% pine)	91 (0% pine)	50-100 SA (75% pine)
Shrub layer percent cover	20%	34%	< 30
Overstory basal area/acre (live trees)	64	52; 33%	14-69; 30% 14-44
Percent of overstory pine (from BA)	96%	84%	70%+ pine BA
Percent of overstory trees > 14" dbh	60%	63%	50%
Percent of overstory trees > 24" dbh	0%	0%	10%

* herbaceous species richness/macroplot was not calculated prior to 2011-12

** regeneration is oak and pine species only

Shortleaf pine woodland/savanna DEC's

The percent shortleaf pine woodland in the landscape was lower than desired and changed little compared to the baseline condition (Table 10). Herbaceous species richness per macroplot was much lower than the desired 15 or more species per macroplot. Total ground layer species richness (including woody species) was also lower than desired. Overall, the ground layer contained too many woody species. Ground layer cover was lower than desired, though it increased since the baseline.

Shrub layer cover increased since baseline and was slightly higher than the desired. Midstory stem density was much higher than desired and did not change since baseline. Though midstory regeneration (stem density of oak and pine species) was at appropriate levels, that regeneration was composed entirely of hardwood species, not the desired 75% pine regeneration.

The overstory tree BA was within the desired condition, following a decrease since baseline. The percent of macroplots in open woodland/savanna condition was also at the desired level. The percentage of overstory BA contributed by pine trees was within the desired condition, though it decreased since baseline. The percent of overstory trees in the 14" dbh and above size class increased slightly since baseline and was in the desired condition. There were no overstory trees in the largest size class (24"+ dbh), well below the desired 10%.

Shortleaf pine forest, 2011-2012

Eleven macroplots were assigned to the pine forest coertype in 2011-2012 (9% of all macroplots) (fig. 13). A total of 99 species were observed in pine forests, with 79 species in the ground layer and 41 species in the tree and shrub layers (Table 11). In the ground layer, there was an average of 15 species per macroplot and an average cover class of 3.7 (25-50%). Each macroplot contained, on average, eight herbaceous species. The ground layer was dominated by muscadine and poison ivy. Other common species included red maple and cat greenbrier. Of the top ten most important species in the ground layer, two species were graminoids, five were woody vines, and three species were woody seedlings. No non-native species were found in the ground layer in 2011-2012.

The shrub layer averaged 1504 stems per acre and contained eight species per macroplot. The dominant shrub layer species was red maple. Other common species included mockernut hickory black gum, black oak and white oak. The average cover class in the shrub layer, per nested shrub plot, was 1.5 (25 – 50%).

On average there were six midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by snags. White oak, sweetgum, and American beech (*Fagus grandifolia*) were also common. Live stem density was 210 stems per acre and snag stem density was 43 stems per acre. The average BA of live midstory trees was 15 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 110 live stems per acre and had an average BA of 122 square feet per acre. There were, on average, two overstory tree species per macroplot. Shortleaf pine dominated the overstory, making up 75% of the total BA. Loblolly pine was also common, contributing 15% of the total basal area in pine forests.

Shortleaf pine forest, 2014-2015

Eleven macroplots were assigned to the pine forest coertype in 2014-2015 (9% of all macroplots) (fig. 13). A total of 105 species were observed in pine forests, with 88 species in the ground layer and 38 species in the tree and shrub layers (Table 11). In the ground layer, there was an average of 17 species per macroplot and an average cover class of 4.0 (50-75%). Each macroplot contained, on average, 7 herbaceous species. The ground layer was dominated by poison ivy. Other common species included muscadine, cat greenbrier, and Virginia creeper. Of

Table 11. Comparison of vegetation data across years, *pine forest*, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

<i>Density</i>	Baseline	2011-2012	2014-2015
Total number of species	117	99	105
Total number of ground layer species	102	79	88
Total number of midstory tree species*	N/A	27	26
Total number of overstory tree species*	N/A	8	8
Total number of shrub layer species*	N/A	33	35
Total number of woody species	43	41	38
Average number of herbaceous species/plot*	N/A	8	7
Average number of ground layer species/plot	16	15	17
Average number of midstory tree species/plot*	N/A	6	7
Average number of overstory tree species/plot*	N/A	2	2
Average number of shrub layer species/plot	9	8	10

<i>Cover</i>	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	154	137	139
Total midstory live basal area/acre	23	15	13
Total overstory live basal area/acre	131	122	126
Average cover class of shrub layer species**	N/A	1.5	1.6
Average cover class of ground layer species**	N/A	3.7	4.0

<i>Density</i>	Baseline	2011-2012	2014-2015
Total live tree stems/acre	466	320	343
Total live midstory tree stems/acre	338	210	233
Total live overstory tree stems/acre	128	110	110
Total midstory snag stems/acre	36	43	48
Total overstory snag stems/acre	1	1	4
Total shrub layer stems/acre	2198	1504	2272

*A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous (see Appendix B for cover class definitions).

the top ten most important species in the ground layer, one species was a graminoid, five were woody vines, and four species were woody seedlings. No non-native species were found in the ground layer in 2014-2015.

The shrub layer averaged 2272 stems per acre and contained 10 species per macroplot. The dominant shrub layer species was red maple. Other common species included northern red oak, mockernut hickory and black gum. The average cover class in the shrub layer, per nested shrub plot, was 1.6 (25 – 50%).

On average, there were seven midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by snags. Red maple, sweetgum, and white oak were also common. Live stem density was 233 stems per acre and snag stem density was 48 stems per acre. The average BA of live midstory trees was 13 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 110 live stems per acre and had an average BA of 126 square feet per acre. There were, on average, two overstory tree species per macroplot. Shortleaf pine dominated the overstory, making up 73% of the total BA. Loblolly pine was also common, contributing 15% of the total basal area in pine forests.

Shortleaf pine forest, DECs

The percent of the landscape in shortleaf pine forest was higher than desired, though there was a slight decrease since baseline (Table 12). Herbaceous species richness per macroplot was much lower than the desired 15 or more species per macroplot. Total ground layer species richness (which includes woody species) was also lower than desired. Overall, the ground layer contained too many woody species. Ground layer cover decreased since baseline, remaining lower than desired.

Shrub layer cover decreased since baseline and was in the desired condition. Midstory stem density decreased since baseline, but remained higher than desired. The amount of midstory regeneration (stem density of oak and pine species) was at the desired level, but was composed mostly of hardwood species, not the desired 75% pine composition. The amount of pine regeneration compared to hardwood regeneration decreased since baseline, moving it further away from the desired condition.

The overstory tree BA decreased since baseline, but remained much higher than desired. The percentage of overstory BA contributed by pine trees was within the desired condition, remaining in a similar condition to baseline. The percent of overstory trees in the 14" dbh and above size class increased and was in the desired condition. There were no overstory trees in the largest size class (24"+ dbh), which was well below the desired 10%.

Oak-pine woodland/savanna, 2011-2012

Eight macroplots were assigned to the oak-pine woodland covertype in 2011-2012 (6% of all macroplots) (fig. 13). A total of 92 species were observed in oak-pine woodlands, with 78

Table 12. Comparison of baseline, current (2014-15), and desired ecological conditions for the *shortleaf pine forest* coevtype.

Shortleaf pine forest	Baseline	Current	Desired
Percent of landscape	12%	9%	0%
Herbaceous spp./macroplot*	-	7	15+
Ground layer spp./macroplot	16	17	20+
Ground layer percent cover	49%	43%	80%+
Midstory stems/acre (live trees)	340	233	< 150
Midstory regeneration** stems/acre	106 (28%)	53 (18%)	50-100 SA (75% pine)
Shrub layer percent cover	32%	28%	< 30%
Overstory basal area/acre (live trees)	131; 0%	126; 0%	14-69; 30% 14-44
Percent of overstory pine (from BA)	88%	91%	70%+ pine BA
Percent of overstory trees > 14" dbh	43%	52%	50%
Percent of overstory trees > 24" dbh	17%	0%	10%

* herbaceous species richness/macroplot was not calculated prior to 2011-12

** regeneration is oak and pine species only

species in the ground layer and 32 species in the tree and shrub layers (Table 13). In the ground layer, there was an average of 17 species per macroplot and an average cover class of 3.6 (25-50%). Each macroplot contained, on average, nine herbaceous species. The ground layer was dominated by poison ivy. Other common species included muscadine, Bosc's rosette grass, and red maple. Of the top ten most important species in the ground layer, two species were graminoids, three were woody vines, and six species were woody seedlings. No non-native species were found in the ground layer in 2011-2012.

The shrub layer averaged 2845 stems per acre and contained eight species per macroplot. The dominant shrub layer species was red maple. Other common species included black cherry, black gum, mockernut hickory and white oak. The average cover class in the shrub layer, per nested shrub plot, was 1.8 (25 – 50%).

On average there were five midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated white oak. Ironwood, mockernut hickory, and snags were also common. Live stem density was 143 stems per acre and snag stem density was 13 stems per acre. The average BA of live midstory trees was nine square feet per acre.

The overstory tree layer (dbh ≥ 8") averaged 65 live stems per acre and had an average BA of 60 square feet per acre. There were, on average, three overstory tree species per

Table 13. Comparison of vegetation data across years, *oak-pine woodland/savanna*, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

<i>Density</i>	Baseline	2011-2012	2014-2015
Total number of species	85	92	106
Total number of ground layer species	79	78	93
Total number of midstory tree species*	N/A	20	23
Total number of overstory tree species*	N/A	8	8
Total number of shrub layer species*	N/A	28	26
Total number of woody species	20	32	32
Average number of herbaceous species/plot*	N/A	9	11
Average number of ground layer species/plot	29	17	21
Average number of midstory tree species/plot*	N/A	5	6
Average number of overstory tree species/plot*	N/A	3	3
Average number of shrub layer species/plot	5	8	8

<i>Cover</i>	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	76	69	54
Total midstory live basal area/acre	16	9	8
Total overstory live basal area/acre	60	60	46
Average cover class of shrub layer species**	N/A	1.81	1.6
Average cover class of ground layer species**	N/A	3.63	4.7

<i>Density</i>	Baseline	2011-2012	2014-2015
Total live tree stems/acre	387	208	223
Total live midstory tree stems/acre	327	143	167
Total live overstory tree stems/acre	60	65	55
Total midstory snag stems/acre	17	13	37
Total overstory snag stems/acre	4	3	3
Total shrub layer stems/acre	1157	2845	2342

*A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous (see Appendix B for cover class definitions).

macroplot. Shortleaf pine and white oak dominated the overstory, together making up 71% of the total BA.

Oak-pine woodland/savanna, 2014-2015

Eight macroplots were assigned to the oak-pine woodland covertype in 2014-2015 (6% of all macroplots) (fig. 13). A total of 106 species were observed in oak-pine woodlands, with 93 species in the ground layer and 32 species in the tree and shrub layers (Table 13). In the ground

layer, there was an average of 21 species per macroplot and an average cover class of 4.7 (50-75%). Each macroplot contained, on average, 11 herbaceous species. The ground layer was dominated by poison ivy. Other common species included Virginia creeper, Bosc's rosette grass, muscadine, and red maple. Of the top ten most important species in the ground layer, one species was a graminoid, one was a forb, four were woody vines, and four species were woody seedlings. One non-native species, Japanese stilt grass, was found in 9% of nested ground layer plots in 2014-2015.

The shrub layer averaged 2342 stems per acre and contained eight species per macroplot. The dominant shrub layer species was red maple. Other common species included northern red oak, black gum, devil's-walkingstick (*Aralia spinosa*), and white oak. The average cover class in the shrub layer, per nested shrub plot, was 1.6 (25 – 50%).

On average there were six midstory tree species (1"– 8" dbh) per macroplot. The midstory was dominated by snags. Black gum, red maple, and white oak were also common. Live stem density was 167 stems per acre and snag stem density was 37 stems per acre. The average BA of live midstory trees was eight square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 55 live stems per acre and had an average BA of 46 square feet per acre. There were, on average, three overstory tree species per macroplot. Shortleaf pine and white oak dominated the overstory, together making up 71% of the total BA.

Oak-pine woodland/savanna, DECs

The percent of the landscape that was oak-pine woodland/savanna was much lower than desired, despite a slight increase from baseline (Table 14). Herbaceous species richness per macroplot was lower than the desired 15 or more species per macroplot. Total ground layer species richness (which includes woody species) was in the desired condition. However, the ground layer contained too many woody species. Ground layer cover decreased significantly since baseline and was no longer in the desired condition.

Shrub layer cover increased significantly since baseline but remained in the desired, less than 30%, total cover. Midstory stem density decreased by 49% since baseline and was slightly higher than desired. The amount of midstory regeneration (stem density of oak and pine species) was well below the desired level and had more hardwood regeneration than desired. The

Table 14. Comparison of baseline, current (2014-15), and desired ecological conditions for the *oak-pine woodland* coevertype.

oak-pine woodland	Baseline	Current	Desired
Percent of landscape	2%	6%	39%
Herbaceous spp./macroplot*	N/A	11	15+
Ground layer spp./macroplot	29	21	20+
Ground layer percent cover	85%	53%	80%+
Midstory stems/acre (live trees)	326	167	< 150
Midstory regeneration** stems/acre	60 (93% oak/ 7% pine)	16 (80% oak/ 20% pine)	50-100 SA (oak ≤ 70%, pine ≥ 30%)
Shrub layer percent cover	8%	28%	< 30%
Overstory BA/acre (live trees)	62	46; 38%	14-69; 30% 14-44
Percent of overstory oak/pine BA	54% pine 27% oak	53% pine 31% oak	30-70% BA pine 30-70% BA oak
Percent of overstory trees > 14" dbh	21%	28%	50%
Percent of overstory trees > 24" dbh	0%	0%	10%

* herbaceous species richness/macroplot was not calculated prior to 2011-12

** regeneration is oak and pine species only

proportion of regeneration composed of pine species moved closer to the desired condition since baseline.

Overstory tree BA decreased since baseline and remained well within the desired condition. The proportion of the landscape in open woodland/savanna condition was within the desired condition. The proportion of overstory BA contributed by pine and oak trees was within the desired condition. The percent of overstory trees in the 14" dbh and above size class increased since baseline, but remained lower than desired. There were no overstory trees in the largest size class (24"+ dbh), which was well below the desired 10%.

Oak-pine forest, 2011-2012

Eight macroplots were assigned to the oak-pine forest coevertype in 2011-2012 (6% of all macroplots) (fig. 13). A total of 78 species were observed in oak-pine forest, with 64 species in the ground layer and 32 species in the tree and shrub layers (Table 15). In the ground layer, there was an average of 18 species per macroplot and an average cover class of 3.9 (25-50%). Each macroplot contained, on average, seven herbaceous species. White oak, muscadine, poverty oat grass, black gum and low-bush blueberry (*Vaccinium pallidum*) were common species in the

Table 15. Comparison of vegetation data across years, *oak-pine forest*, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

<i>Diversity</i>	Baseline	2011-2012	2014-2015
Total number of species	134	78	148
Total number of ground layer species	118	64	132
Total number of midstory tree species*	N/A	18	21
Total number of overstory tree species*	N/A	7	11
Total number of shrub layer species*	N/A	27	36
Total number of woody species	37	32	41
Average number of herbaceous species/plot*	N/A	7	12
Average number of ground layer species/plot	20	18	23
Average number of midstory tree species/plot*	N/A	5	4
Average number of overstory tree species/plot*	N/A	3	3
Average number of shrub layer species/plot	7	6	8

<i>Cover</i>	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	134	114	113
Total midstory live basal area/acre	24	14	10
Total overstory live basal area/acre	110	100	103
Average cover class of shrub layer species**	N/A	1.3	1.4
Average cover class of ground layer species**	N/A	3.9	4.4

<i>Density</i>	Baseline	2011-2012	2014-2015
Total live tree stems/acre	516	323	255
Total live midstory tree stems/acre	381	215	148
Total live overstory tree stems/acre	135	109	106
Total midstory snag stems/acre	34	37	27
Total overstory snag stems/acre	3	2	3
Total shrub layer stems/acre	1144	1342	1445

*A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous (see Appendix B for cover class definitions).

ground layer. Of the top ten most important species, two species were graminoids, two were forbs, three were woody vines, and three species were woody seedlings. One non-native species, Japanese honeysuckle, was found in 3% of nested ground layer plots in 2011-2012.

The shrub layer averaged 1342 stems per acre and contained six species per macroplot. The dominant shrub layer species were black gum and red maple. Other common species included hop hornbeam, white oak and ironwood. The average cover class in the shrub layer, per nested shrub plot, was 1.3 (25 – 50%).

On average there were five midstory tree species (1"– 8" dbh) per macroplot. Snags and white oak dominated the midstory. Shortleaf pine, black gum and eastern red cedar were also common species. Live stem density was 215 stems per acre and snag stem density was 37 stems per acre. The average BA of live midstory trees was 14 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 109 live stems per acre and had an average BA of 100 square feet per acre. There were, on average, three overstory tree species per macroplot. Shortleaf pine and white oak dominated the overstory, accounting for 51% and 27% of the total BA, respectively. Other common species included post oak and eastern red cedar.

Oak-pine forest, 2014-2015

Twelve macroplots were assigned to the oak-pine forest coevertype in 2014-2015 (9% of all macroplots) (fig. 13). A total of 148 species were observed in oak-pine forest, with 132 species in the ground layer and 41 species in the tree and shrub layers (Table 15). In the ground layer, there was an average of 23 species per macroplot and an average cover class of 4.4 (50-75%). Each macroplot contained, on average, 12 herbaceous species. Virginia creeper, shortleaf pine, poison ivy and poverty oat grass were common species in the ground layer. Of the top ten most important species, two species were graminoids, one was a forb, three were woody vines, and four species were woody seedlings. One non-native species, Japanese stilt grass, was found in 4% of nested ground layer plots in 2014-2015.

The shrub layer averaged 1445 stems per acre and contained eight species per macroplot. The dominant shrub layer species was red maple. Other common species included mockernut hickory, northern red oak, white oak, and Carolina buckthorn. The average cover class in the shrub layer, per nested shrub plot, was 1.4 (25 – 50%).

On average there were four midstory tree species (1"– 8" dbh) per macroplot. Snags and white oak dominated the midstory. Hop hornbeam, sweetgum, and shortleaf pine were also common species. Live stem density was 148 stems per acre and snag stem density was 27 stems per acre. The average BA of live midstory trees was 10 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 106 live stems per acre and had an average BA of 103 square feet per acre. There were, on average, three overstory tree species per

Table 16. Comparison of baseline, current (2014-15), and desired ecological conditions for the *oak-pine forest* covertype.

oak-pine forest	Baseline	Current	Desired
Percent of landscape	9%	9%	0%
Herbaceous spp./macroplot*	N/A	12	15+
Ground layer spp./macroplot	20	23	20+
Ground layer percent cover	36%	48%	80%+
Midstory stems/acre (live trees)	381	148	< 150
Midstory regeneration** stems/acre	81 (81% oak/ 19% pine)	22 (55% oak/ 45% pine)	50-100 SA (oak ≤ 70%, pine ≥ 30%)
Shrub layer percent cover	29%	23%	< 30%
Overstory BA/acre (live trees)	112; 0%	103; 0%	14-69; 30% 14-44
Percent of overstory oak/pine BA	48% pine 37% oak	47% pine 30% oak	30-70% BA pine 30-70% BA oak
Percent of overstory trees > 14" dbh	27%	34%	50%
Percent of overstory trees > 24" dbh	0%	0%	10%

* herbaceous species richness/macroplot was not calculated prior to 2011-12

** regeneration is oak and pine species only

macroplot. Shortleaf pine and white oak dominated the overstory, accounting for 47% and 24% of the total BA, respectively. Other common species included eastern red cedar and post oak.

Oak-pine forest, DECs

The percentage of oak-pine forest in the landscape was higher than desired, and did not change since baseline (Table 16). Herbaceous species richness per macroplot was lower than the desired 15 or more species per macroplot. Total ground layer species richness (which includes woody species) was in the desired condition. However, the ground layer contained too many woody species. Ground layer cover increased since baseline, but remained below the desired condition.

Shrub layer cover decreased since baseline and was in the desired condition. Midstory stem density decreased by 61% since baseline and was in the desired condition. The amount of midstory regeneration (stem density of oak and pine species) was well below the desired level and there was more pine regeneration than desired (compared to oak regeneration). The proportions of oak and pine regeneration moved farther from the desired conditions since baseline.

Overstory tree BA decreased since baseline, but remained higher than desired. The proportion of overstory BA contributed by pine and oak trees was within the desired condition. The percent of overstory trees in the 14" dbh and above size class increased since baseline, but remained lower than desired. There were no overstory trees in the largest size class (24"+ dbh), which was well below the desired 10%.

Oak woodland/savanna, 2011-2012

Thirty-nine macroplots were assigned to the oak woodland coertype in 2011-2012 (31% of all macroplots) (fig. 13). A total of 267 species were observed in oak woodlands, with 242 species in the ground layer and 65 species in the tree and shrub layers (Table 17). In the ground layer, there was an average of 23 species per macroplot and an average cover class of 5.0 (75-95%). Each macroplot contained, on average, 12 herbaceous species. The ground layer was dominated by poison ivy and Virginia creeper. Other common species included Bosc's rosette grass, northern dewberry, and hog-peanut. Of the top ten most important species in the ground layer, two species were graminoids, one was a forb, four were woody vines, and three species were woody seedlings. Two non-native species, Japanese honeysuckle and Japanese stilt grass, were each found in 1% of nested ground layer plots in 2011-2012.

The shrub layer averaged 2392 stems per acre and contained 8 species per macroplot. The dominant shrub layer species were red maple and black gum. Other common species included sassafras, mockernut hickory, and black cherry. The average cover class in the shrub layer, per nested shrub plot, was 1.8 (25 – 50%).

On average there were 5 midstory tree species (1"– 8" dbh) per macroplot. White oak, snags, and mockernut hickory were all important species in the midstory. Live stem density was 180 stems per acre and snag stem density was 25 stems per acre. The average BA of live midstory trees was 13 square feet per acre.

The overstory tree layer (dbh \geq 8") averaged 47 live stems per acre and had an average BA of 47 square feet per acre. There were, on average, 3 overstory tree species per macroplot. White oak dominated the overstory, accounting for 27% of the total BA. Other common species included mockernut hickory, snags, and northern red oak.

Table 17. Comparison of vegetation data across years, oak woodland/savanna, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

<i>Diversity</i>	Baseline	2011-2012	2014-2015
Total number of species	249	267	246
Total number of ground layer species	236	242	228
Total number of midstory tree species*	N/A	39	40
Total number of overstory tree species*	N/A	20	17
Total number of shrub layer species*	N/A	55	47
Total number of woody species	61	65	59
Average number of herbaceous species/plot*	N/A	12	13
Average number of ground layer species/plot	19	23	23
Average number of midstory tree species/plot*	N/A	5	5
Average number of overstory tree species/plot*	N/A	3	2
Average number of shrub layer species/plot	5	8	8

<i>Cover</i>	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	67	60	55
Total midstory live basal area/acre	24	13	9
Total overstory live basal area/acre	44	47	46
Average cover class of shrub layer species**	N/A	1.8	1.7
Average cover class of ground layer species**	N/A	5.0	4.9

<i>Density</i>	Baseline	2011-2012	2014-2015
Total live tree stems/acre	366	237	215
Total live midstory tree stems/acre	305	180	160
Total live overstory tree stems/acre	61	57	55
Total midstory snag stems/acre	46	25	20
Total overstory snag stems/acre	8	5	4
Total shrub layer stems/acre	767	2392	1766

* A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous (see Appendix B for cover class definitions).

Oak woodland/savanna, 2014-2015

Thirty-eight macroplots were assigned to the oak woodland coetype in 2014-2015 (30% of all macroplots) (fig. 13). A total of 246 species were observed in oak woodlands, with 228 species in the ground layer and 59 species in the tree and shrub layers (Table 17). In the ground layer, there was an average of 23 species per macroplot and an average cover class of 4.9 (50-75%). Each macroplot contained, on average, 13 herbaceous species. The ground layer was dominated by poison ivy and Virginia creeper. Other common species included Bosc's rosette

Table 18. Comparison of baseline, current (2014-15), and desired ecological conditions for the *oak woodland* covertype.

Oak woodland	Baseline	Current	Desired
Percent of landscape	35%	30%	35%
Herbaceous spp./macroplot*	-	13	15+
Ground layer spp./macroplot	19	23	20+
Ground layer percent cover	65%	56%	80%+
Midstory stems/acre (live trees)	305	160	< 150
Midstory regeneration** stems/acre	58	37	50-100 SA oak
Shrub layer percent cover	20%	30%	< 30%
Overstory BA/acre (live trees)	44	46	14-69
Percent of overstory BA oak	60%	64%	70%+ BA oak
Percent of overstory trees > 14" dbh	12%	26%	50%
Percent of overstory trees > 24" dbh	0%	0%	10%

* herbaceous species richness/macroplot was not calculated prior to 2011-12

** regeneration is oak and pine species only

grass and hog-peanut. Of the top ten most important species in the ground layer, one species was a graminoid, three were forbs, three were woody vines, and three species were woody seedlings. Two non-native species, Japanese honeysuckle and sericea lespedeza, were each found in 2% of nested ground layer plots in 2014-2015.

The shrub layer averaged 1766 stems per acre and contained eight species per macroplot. The dominant shrub layer species was red maple. Other common species included black gum, mockernut hickory, northern red oak and black cherry. The average cover class in the shrub layer, per nested shrub plot, was 1.7 (25 – 50%).

On average there were five midstory tree species (1"– 8" dbh) per macroplot. Snags, mockernut hickory and white oak were all important species in the midstory. Live stem density was 160 stems per acre and snag stem density was 20 stems per acre. The average BA of live midstory trees was nine square feet per acre.

The overstory tree layer (dbh ≥ 8") averaged 55 live stems per acre and had an average BA of 46 square feet per acre. There were, on average, two overstory tree species per macroplot. White oak dominated the overstory, accounting for 32% of the total BA. Other common species included mockernut hickory, snags, and northern red oak.

Oak woodland/savanna, DECs

The percentage of oak woodland/savanna in the landscape was slightly lower than desired, having decreased since baseline (Table 18). Herbaceous species richness per macroplot was slightly lower than the desired 15 or more species per macroplot. Total ground layer species richness (which includes woody species) was in the desired condition. However, the ground layer contained too many woody species. Ground layer cover decreased since baseline and was lower than the desired condition.

Shrub layer cover increased since baseline but remained in the desired condition. Midstory stem density decreased by 48% since baseline and was slightly higher than desired. The amount of midstory oak regeneration was lower than desired, having decreased since baseline.

Overstory tree BA remained the same as baseline conditions and was within the desired condition. The proportion of overstory BA contributed by oak species was slightly lower than desired. The percent of overstory trees in the 14" dbh and above size class doubled since baseline, but remained lower than desired. Currently, there were no overstory trees in the largest size class (24"+ dbh), well below the goal of 10%.

Oak Forest, 2011-2012

Forty-eight macroplots were assigned to the oak forest covertype in 2011-2012 (38% of all macroplots) (fig. 13). A total of 245 species were observed in oak forests, with 226 species in the ground layer and 68 species in the tree and shrub layers (Table 19). In the ground layer, there was an average of 20 species per macroplot and an average cover class of 4.6 (50-75%). Each macroplot contained, on average, nine herbaceous species. The ground layer was dominated by poison ivy. Other common species included Virginia creeper, red maple, Bosc's rosette grass, and muscadine. Of the top ten most important species in the ground layer, two species were graminoids, one was a forb, three were woody vines, and four species were woody seedlings. Four non-native species were present in oak forest plots, including Japanese honeysuckle (2% of nested plots) sericea lespedeza (2% of nested plots), Japanese stilt grass (1% of nested plots), and orchard grass (<1% of nested plots).

The shrub layer averaged 1649 stems per acre and contained seven species per macroplot. The dominant shrub layer species was red maple. Other common species included black gum,

Table 19. Comparison of vegetation data across years, *oak forest*, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

<i>Diversity</i>	Baseline	2011-2012	2014-2015
Total number of species	209	245	214
Total number of ground layer species	187	226	198
Total number of midstory tree species*	N/A	47	42
Total number of overstory tree species*	N/A	26	26
Total number of shrub layer species*	N/A	54	48
Total number of woody species	68	68	60
Average number of herbaceous species/plot*	N/A	9	10
Average number of ground layer species/plot	18	20	23
Average number of midstory tree species/plot*	N/A	6	6
Average number of overstory tree species/plot*	N/A	3	3
Average number of shrub layer species/plot	6	7	7

<i>Cover</i>	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	125	120	123
Total midstory live basal area/acre	23	17	14
Total overstory live basal area/acre	102	103	110
Average cover class of shrub layer species**	N/A	1.7	1.6
Average cover class of ground layer species**	N/A	4.6	4.5

<i>Density</i>	Baseline	2011-2012	2014-2015
Total live tree stems/acre	487	376	315
Total live midstory tree stems/acre	372	271	217
Total live overstory tree stems/acre	115	105	99
Total midstory snag stems/acre	34	34	36
Total overstory snag stems/acre	4	3	5
Total shrub layer stems/acre	1162	1649	1635

* A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous (see Appendix B for cover class definitions).

sassafras, black cherry and mockernut hickory. The average cover class in the shrub layer, per nested shrub plot, was 1.7 (25 – 50%).

On average there were 6 midstory tree species (1"– 8" dbh) per macroplot. Black gum, snags, flowering dogwood, and hop hornbeam were all important species in the midstory. Live stem density was 271 stems per acre and snag stem density was 34 stems per acre. The average BA of live midstory trees was 17 square feet per acre.

The overstory tree layer ($\text{dbh} \geq 8''$) averaged 105 live stems per acre and had an average BA of 103 square feet per acre. There were, on average, three overstory tree species per macroplot. White oak dominated the overstory, accounting for 44% of the total BA. Other common species included northern red oak, sweetgum, and black gum.

Oak Forest, 2014-2015

Thirty-eight macroplots were assigned to the oak forest coertype in 2014-2015 (30% of all macroplots) (fig. 13). A total of 214 species were observed in oak forests, with 198 species in the ground layer and 60 species in the tree and shrub layers (Table 19). In the ground layer, there was an average of 23 species per macroplot and an average cover class of 4.6 (50-75%). Each macroplot contained, on average, 10 herbaceous species. The ground layer was dominated by poison ivy. Other common species included Virginia creeper, red maple, muscadine, and Bosc's rosette grass. Of the top ten most important species in the ground layer, two species were graminoids, two were forbs, four were woody vines, and two species were woody seedlings. One non-native species, Japanese honeysuckle (2% of nested plots), was present in oak forest plots in 2014-2015.

The shrub layer averaged 1635 stems per acre and contained seven species per macroplot. The dominant shrub layer species was red maple. Other common species included sassafras, mockernut hickory, flowering dogwood and black cherry. The average cover class in the shrub layer, per nested shrub plot, was 1.6 (25 – 50%).

On average there were six midstory tree species (1"– 8" dbh) per macroplot. Snags dominated the midstory layer. Other common species included hop hornbeam, red maple, white oak, and black gum and flowering dogwood. Live stem density was 217 stems per acre and snag stem density was 36 stems per acre. The average BA of live midstory trees was 14 square feet per acre.

The overstory tree layer ($\text{dbh} \geq 8''$) averaged 99 live stems per acre and had an average BA of 110 square feet per acre. There were, on average, three overstory tree species per macroplot. White oak dominated the overstory, accounting for 40% of the total BA. Other common species included northern red oak, sweetgum, and snags.

Table 20. Comparison of baseline, current (2014-15), and desired ecological conditions for the *oak forest* coevtype.

Oak Forest	Baseline	Current	Desired
Percent of landscape	37%	38%	16%
Herbaceous spp./macroplot*	M/A	10	15+
Ground layer spp./macroplot	18	23	20+
Ground layer percent cover	53%	49%	80%+
Midstory stems/acre (live trees)	372	233	150-300
Midstory regeneration** stems/acre	35 (2% pine)	42 (0% pine)	50-100 SA (< 30% pine)
Shrub layer percent cover	22%	30%	40%–80%
Overstory BA/acre (live trees)	105	110	70+
Percent of overstory BA oak	69% oak 2% pine	66% oak 3% pine	70%+ BA oak 0-30% BA Pine
Percent of overstory trees > 14" dbh	25%	27%	50%
Percent of overstory trees > 24" dbh	1%	1%	10%

* herbaceous species richness/macroplot was not calculated prior to 2011-12

** regeneration is oak and pine species only

Oak forest, DECs

The percentage of oak forest in the landscape was higher than desired, having changed little since baseline (Table 20). Herbaceous species richness per macroplot was lower than the desired 15 or more species per macroplot. Total ground layer species richness (which included woody species) was in the desired condition. However, the ground layer contains too many woody species. Ground layer cover decreased slightly since baseline and was not in the desired condition.

Shrub layer cover increased since baseline and remained lower than the desired 40%-80% cover. Midstory stem density decreased by 37% since baseline, but remained higher than desired. The amount of midstory regeneration (stem density of oak and pine species) was below the desired level, despite having increased since baseline. The proportion of regeneration contributed by pine species remained in the desired condition.

Overstory tree BA increased slightly since baseline and remained within the desired 70 ft²/acre or higher. The proportion of overstory BA contributed by oak species was slightly lower than desired, while the proportion of BA contributed by pine species remained in the desired condition. The percent of overstory trees in the 14" dbh and above size class remained about the

same as baseline and was lower than desired. One percent of trees were in the largest size class (24"+ dbh), representing little change since baseline and still well below the desired 10%.

Covertypes, summary of changes

One of the most significant changes in covertypes across the landscape was an increase in early seral plots (BA < 14), which made up 8% of all plots in the monitored area in 2014-2015. Most of this change occurred between the 2007-2009 and 2014-2015 monitoring efforts. There was a concomitant reduction in the oak forest covertype across the landscape, which was at 48% in 2011-2012 and decreased to 38% by 2014-2015. Even greater was the decline in oak forest since the high point reached 2007-2009, when it covered 57% of the landscape. The oak-pine covertype increased to 6% of the landscape, up from 2% at baseline. Other changes were smaller, on the magnitude of 1-3% between years.

Ground layer diversity (species richness per macroplot) decreased in the oak-pine woodland and pine woodland covertypes, compared to baseline and 2007-2009. Both of these communities experienced significant increases in shrub stem density since baseline, which may explain the decline in ground layer species richness. Ground layer diversity increased in oak woodland, oak forest, and oak-pine forest. Reductions in midstory and/or overstory BA may have contributed to these increases. Overall, there was little change in ground layer species diversity in pine forests since baseline. Ground layer total cover decreased in oak woodland, pine forest, oak-pine woodland, and oak forest, and increased in pine woodland and oak-pine forest. For a comparison of different covertypes in the proportions of total species within each growth form (forb, graminoids, woody vine, and woody stems), see figures 14 and 15.

Total shrub cover per plot increased in oak woodlands, oak-pine woodlands, pine woodlands, and oak forest. Shrub cover in oak-pine forest was lower than at baseline, though it increased since 2007-2009. There was little change in shrub cover in pine forests between years. Live midstory stems decreased in number in all covertypes. In most covertypes there was a decrease in oak and pine regeneration relative to other hardwood species, despite the levels of stem density being at the desired level. Under a continued frequent fire regime and given the desired open vegetation structure, fire-tolerant species would be expected to increase in dominance over time through out-competing shade-tolerant, less fire-tolerant hardwoods.

There was little change in overstory BA between years in pine woodlands and oak woodlands. Pine forest, oak-pine woodland, and oak-pine forest had lower overstory BA in 2014-2015 compared to baseline. Oak forests increased in overstory BA since baseline, despite having fewer stems per acre than at baseline (a shift towards fewer, but larger stems).

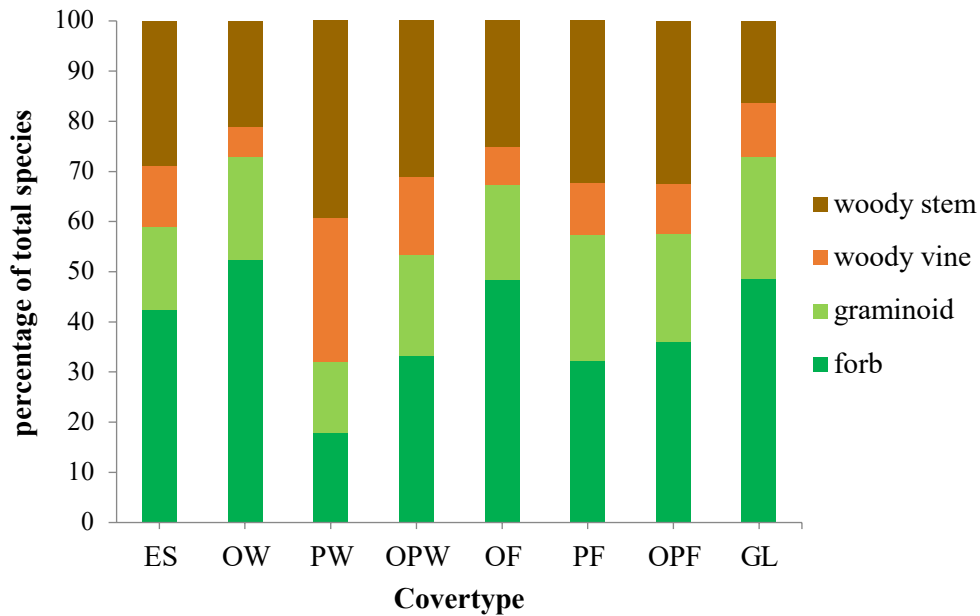


Figure 14. Percentage of species in the ground layer of each growthform and by covertime in 2011-2012. ES = Early seral, OW = Oak woodland, PW = Pine woodland, OPW = Oak-pine woodland, OF = Oak forest, PF = Pine forest, OPF = Oak-pine forest, GL = Glade.

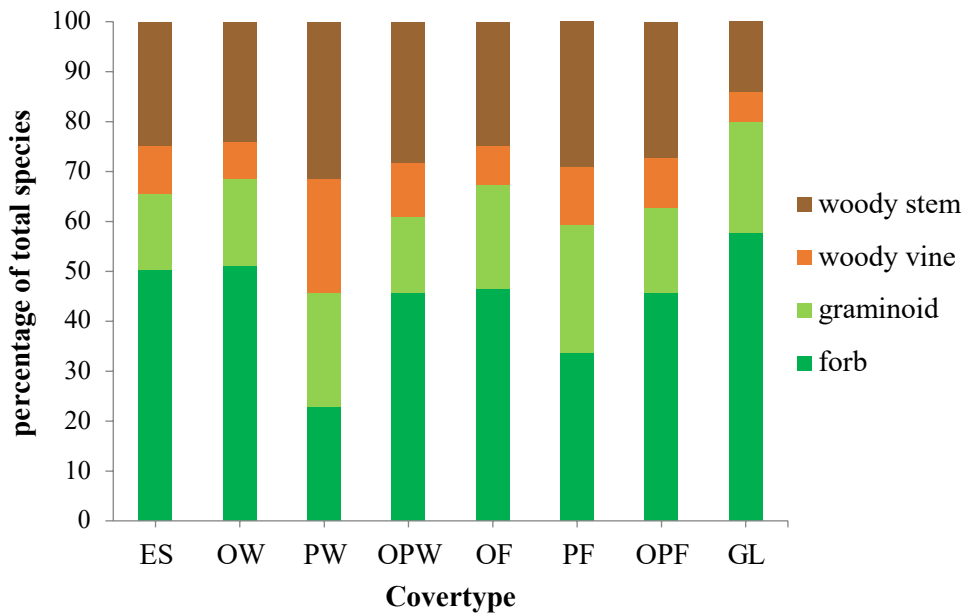
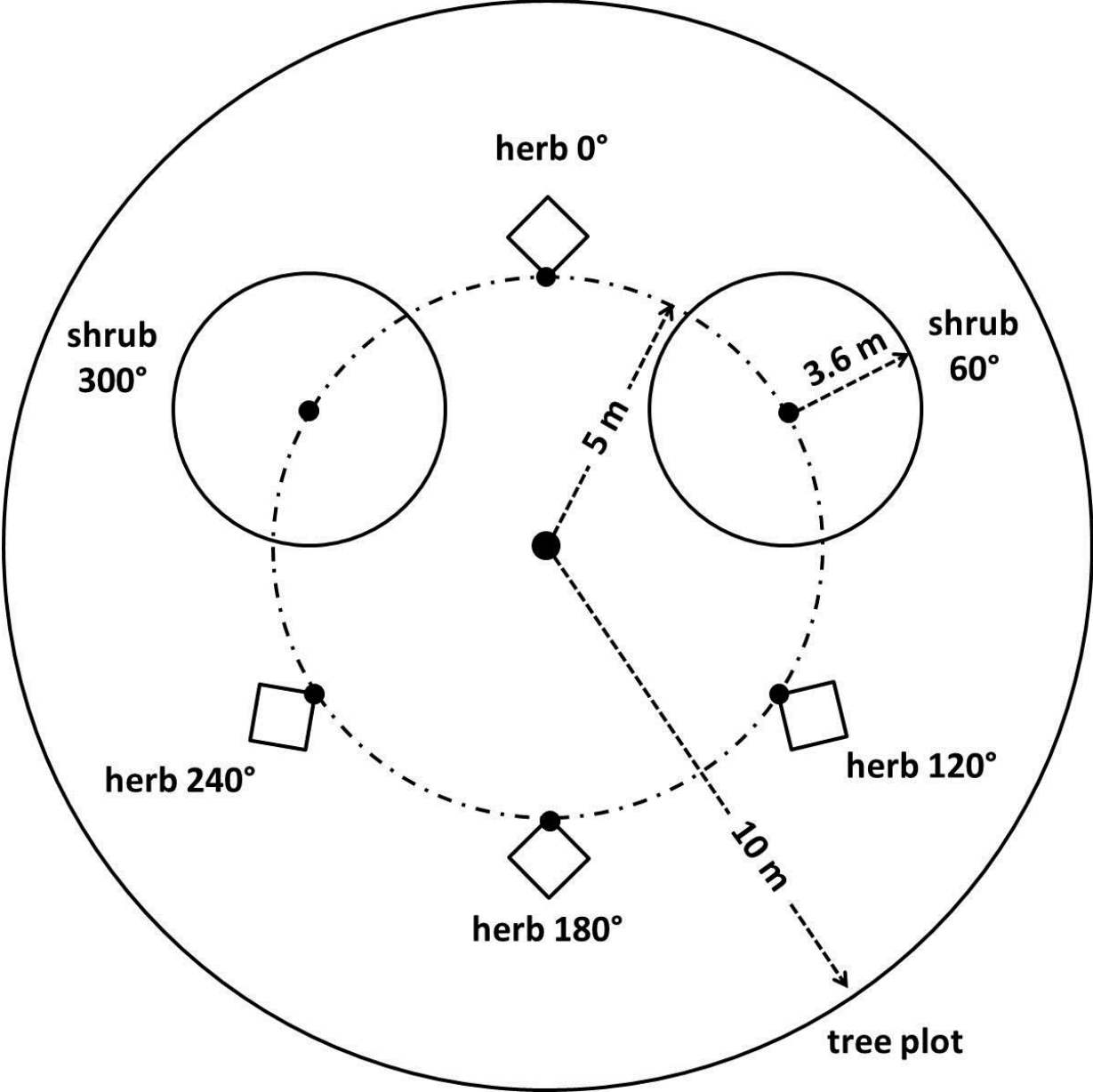


Figure 15. Percentage of species in the ground layer of each growthform and by covertime in 2014-2015. ES = Early seral, OW = Oak woodland, PW = Pine woodland, OPW = Oak-pine woodland, OF = Oak forest, PF = Pine forest, OPF = Oak-pine forest, GL = Glade.

APPENDIX A. Macroplot design.



APPENDIX B. Cover class values for shrub and ground layer species.

Cover class definitions for shrub layer plots.

Class	Percent Cover
0	no shrubs
1	1-25%
2	26-50%
3	51-75%
4	76-100%

Cover class definitions for ground layer species and nested plots.

Class	Percent Cover
0	none
1	0-1%
2	2-5%
3	6-25%
4	26-50%
5	51-75%
6	76-95%
7	96-100%

APPENDIX C. Overview tables for all data, topographic position, and covertime for 2011-2012 and 2014-2015.

Table C1. Comparison of vegetation data across years, *all macroplots*, for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest.

<i>Diversity</i>	Baseline	2011-2012	2014-2015
Total number of species	330	373	377
Total number of ground layer species	314	350	360
Total number of midstory tree species*	N/A	62	60
Total number of overstory tree species*	N/A	30	27
Total number of shrub layer species*	N/A	75	67
Total number of woody species	80	87	79
Average number of herbaceous species/plot*	N/A	10	11
Average number of ground layer species/plot	18	20	22
Average number of midstory tree species/plot*	N/A	6	5
Average number of overstory tree species/plot*	N/A	3	3
Average number of shrub layer species/plot	6	8	8

<i>Cover</i>	Baseline	2011-2012	2014-2015
Total live basal area/acre (ft ² /acre)	106	91	84
Total midstory live basal area/acre	23	14	10
Total overstory live basal area/acre	83	77	73
Average cover class of shrub layer species**	N/A	1.7	1.6
Average cover class of ground layer species**	N/A	4.5	4.6

<i>Density</i>	Baseline	2011-2012	2014-2015
Total live tree stems/acre	439	298	262
Total live midstory tree stems/acre	342	216	190
Total live overstory tree stems/acre	97	81	73
Total midstory snag stems/acre	38	30	28
Total overstory snag stems/acre	5	4	4
Total shrub layer stems/acre	1118	1966	1776

*A new metric, not previously calculated or included in reports before 2011-2012.

** In 2011-2012 and beyond a new method of analyzing cover class was employed, making it not directly comparable to previous years.

Table C2. Comparison of vegetation data by *covertype* for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest, 2011-2012.

<i>Diversity</i>	Early Seral	Oak Woodland	Pine Woodland	Oak-Pine Woodland	Oak Forest	Pine Forest	Oak-Pine Forest	Glade
Total number of species (spp.)	58	267	61	92	245	99	78	47
Total number of ground layer spp.	51	242	47	78	226	79	64	38
Total number of midstory tree spp.	8	39	17	20	47	27	18	11
Total number of overstory tree spp.	1	20	3	8	26	8	7	4
Total number of shrub layer spp.	16	55	27	28	54	33	27	12
Total number of woody spp.	17	65	30	32	68	41	32	15
Avg. number of herbaceous spp./plot	9	12	6	9	9	8	7	7
Avg. number of ground layer spp./plot	19	23	17	17	20	15	18	11
Avg. number of midstory tree spp./plot	3	5	8	5	6	6	5	4
Avg. number of overstory tree spp./plot	1	3	2	3	3	2	3	2
Avg. number of shrub layer spp./plot	8	8	11	8	7	8	6	4

<i>Cover</i>	Early Seral	Oak Woodland	Pine Woodland	Oak-Pine Woodland	Oak Forest	Pine Forest	Oak-Pine Forest	Glade
Total live basal area/acre (ft ² /acre)	8	60	78	69	120	137	114	26
Total midstory live basal area/acre	5	13	16	9	17	15	14	9
Total overstory live basal area/acre	3	47	62	60	103	122	100	17
Avg. cover class of shrub layer spp.	2.4	1.8	2.0	1.8	1.7	1.5	1.3	1.1
Avg. cover class of ground layer spp.	3.7	5.0	4.8	3.6	4.6	3.7	3.9	3.6

<i>Density</i>	Early Seral	Oak Woodland	Pine Woodland	Oak-Pine Woodland	Oak Forest	Pine Forest	Oak-Pine Forest	Glade
Total live tree stems/acre	62	237	377	208	376	320	323	138
Total live midstory tree stems/acre	59	180	319	143	271	210	215	117
Total live overstory tree stems/acre	3	57	59	65	105	110	109	21
Total midstory snag stems/acre	39	25	10	13	34	43	37	18
Total overstory snag stems/acre	7	5	3	3	3	1	2	0
Total shrub layer stems/acre	2298	2392	2721	2845	1649	1504	1342	636

Table C3. Comparison of vegetation data by *covertyp*e for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest, 2014-2015.

<i>Diversity</i>	Early Seral	Oak Woodland	Pine Woodland	Oak-Pine Woodland	Oak Forest	Pine Forest	Oak-Pine Forest	Glade
Total number of ground layer spp.	114	228	36	93	198	88	132	87
Total number of midstory tree spp.	18	40	14	23	42	26	21	11
Total number of overstory tree spp.	4	17	4	8	26	8	11	4
Total number of shrub layer spp.	32	47	20	26	48	35	36	9
Total number of woody spp.	35	59	23	32	60	38	41	15
Avg. number of herbaceous spp./plot	12	13	6	11	10	7	12	19
Avg. number of ground layer spp./plot	23	23	15	21	23	17	23	25
Avg. number of midstory tree spp./plot	3	5	6	6	6	7	4	3
Avg. number of overstory tree spp./plot	1	2	2	3	3	2	3	2
Avg. number of shrub layer spp./plot	9	8	9	8	7	10	8	3
Total number of species (spp.)	124	246	49	106	214	105	148	95

<i>Cover</i>	Early Seral	Oak Woodland	Pine Woodland	Oak-Pine Woodland	Oak Forest	Pine Forest	Oak-Pine Forest	Glade
Total live basal area/acre (ft ² /acre)	9	55	60	54	123	139	113	24
Total midstory live basal area/acre	4	9	7	8	14	13	10	8
Total overstory live basal area/acre	4	46	52	46	110	126	103	16
Avg. cover class of shrub layer spp.	2.1	1.7	1.9	1.6	1.6	1.6	1.4	0.7
Avg. cover class of ground layer spp.	4.2	4.9	4.5	4.7	4.5	4.0	4.4	5.4

<i>Density</i>	Early Seral	Oak Woodland	Pine Woodland	Oak-Pine Woodland	Oak Forest	Pine Forest	Oak-Pine Forest	Glade
Total live tree stems/acre	220	215	334	223	315	343	255	161
Total live midstory tree stems/acre	211	160	290	167	217	233	148	143
Total live overstory tree stems/acre	9	55	43	55	99	110	106	18
Total midstory snag stems/acre	7	20	17	37	36	48	27	16
Total overstory snag stems/acre	8	4	4	3	5	4	3	0
Total shrub layer stems/acre	2465	1766	2303	2342	1635	2272	1445	358

Table C4. Comparison of vegetation data by *topographic position* for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest, 2011-2012.

<i>Diversity</i>	North	South	Ridgetop	Riparian	Toe Slope	Glade
Total number of species (spp.)	171	180	165	198	159	47
Total number of ground layer spp.	154	165	145	174	147	38
Total number of midstory tree spp.	35	25	31	37	34	11
Total number of overstory tree spp.	18	13	12	20	15	4
Total number of shrub layer spp.	49	42	42	41	40	12
Total number of woody spp.	55	46	48	57	49	15
Avg. number of herbaceous spp./plot	8	9	10	16	12	7
Avg. number of ground layer spp./plot	18	18	20	29	26	11
Avg. number of midstory tree spp./plot	5	4	4	10	8	4
Avg. number of overstory tree spp./plot	3	2	2	4	3	2
Avg. number of shrub layer spp./plot	7	8	9	8	8	4

<i>Cover</i>	North	South	Ridgetop	Riparian	Toe Slope	Glade
Total live basal area/acre (ft ² /acre)	101	77	83	122	110	26
Total midstory live basal area/acre	15	9	12	29	16	9
Total overstory live basal area/acre	86	68	71	94	94	17
Avg. cover class of shrub layer spp.	1.6	1.8	2.3	1.4	1.4	1.1
Avg. cover class of ground layer spp.	4.7	4.2	4.8	4.3	4.8	3.6

<i>Density</i>	North	South	Ridgetop	Riparian	Toe Slope	Glade
Total live tree stems/acre	299	182	248	566	432	138
Total live midstory tree stems/acre	215	108	172	460	336	117
Total live overstory tree stems/acre	84	74	76	106	96	21
Total midstory snag stems/acre	29	24	28	52	31	18
Total overstory snag stems/acre	4	5	4	3	1	0
Total shrub layer stems/acre	1657	1820	3389	1411	1438	636

Table C5. Comparison of vegetation data by *topographic position* for the Big Piney and Pleasant Hill Ranger Districts Restoration Area, Ozark-St. Francis National Forest, 2014-2015.

Diversity	North	South	Ridgetop	Riparian	Toe Slope	Glade
Total number of species (spp.)	198	173	175	196	165	95
Total number of ground layer spp.	181	156	163	177	150	87
Total number of midstory tree spp.	40	26	29	39	28	11
Total number of overstory tree spp.	17	12	12	18	19	4
Total number of shrub layer spp.	43	39	37	40	42	9
Total number of woody spp.	53	44	40	55	49	15
Avg. number of herbaceous spp./plot	8	10	11	16	13	19
Avg. number of ground layer spp./plot	20	19	22	30	26	25
Avg. number of midstory tree spp./plot	5	4	4	8	6	3
Avg. number of overstory tree spp./plot	3	2	2	4	4	2
Avg. number of shrub layer spp./plot	7	8	8	7	9	3

Cover	North	South	Ridgetop	Riparian	Toe Slope	Glade
Total live basal area/acre (ft ² /acre)	96	73	76	108	91	24
Total midstory live basal area/acre	12	7	8	20	10	8
Total overstory live basal area/acre	84	65	68	89	80	16
Avg. cover class of shrub layer spp.	1.5	1.9	2.0	1.2	1.6	0.7
Avg. cover class of ground layer spp.	4.6	4.6	4.6	4.4	4.4	5.4

Density	North	South	Ridgetop	Riparian	Toe Slope	Glade
Total live tree stems/acre	299	184	230	422	281	161
Total live midstory tree stems/acre	228	117	159	324	200	143
Total live overstory tree stems/acre	72	67	71	98	82	18
Total midstory snag stems/acre	24	16	36	48	33	16
Total overstory snag stems/acre	5	3	4	9	7	0
Total shrub layer stems/acre	1551	2135	2419	951	1832	358

Table C6. Counts of macroplots within each topographic position and covertype in 2014- 2015, excluding glades (2 plots missing data; 1 south slope and 1 riparian).

Covertime

Topographic position	ES	OF	OW	OPF	OPW	PF	PW	Total
North slope	3	13	12	2	2	1	0	33
Ridgetop	2	4	9	2	2	5	1	25
Riparian	0	6	4	3	1	1	0	15
South Slope	4	8	9	4	3	3	2	33
Toe Slope	1	7	4	1	0	1	0	14
Total	10	38	38	12	8	11	3	120

APPENDIX D. Species importance values by strata, all plots, 2011-2012.

Table D1: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *all plots*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	0.57	20.11	27.24	239.43	24.70	27.02	32.12	26.42
<i>Pinus echinata</i>	0.33	11.45	14.44	162.90	16.81	18.39	17.03	15.62
<i>Quercus rubra</i>	0.23	8.10	5.37	63.22	6.52	7.14	6.33	7.19
<i>Liquidambar styraciflua</i>	0.17	6.15	5.57	48.42	5.00	5.46	6.57	6.06
<i>Carya tomentosa</i>	0.23	8.10	4.95	36.45	3.76	4.11	5.84	6.02
snag	0.22	7.82	3.61	34.14	3.52	3.85	4.26	5.31
<i>Nyssa sylvatica</i>	0.21	7.26	3.40	34.95	3.61	3.95	4.01	5.07
<i>Quercus velutina</i>	0.15	5.31	3.51	36.61	3.78	4.13	4.14	4.52
<i>Quercus stellata</i>	0.12	4.19	3.30	25.55	2.64	2.88	3.89	3.66
<i>Juniperus virginiana</i>	0.10	3.63	2.79	16.27	1.68	1.84	3.28	2.92
<i>Carya texana</i>	0.06	2.23	1.34	8.37	0.86	0.94	1.58	1.59
<i>Fraxinus americana</i>	0.07	2.51	1.03	7.04	0.73	0.79	1.22	1.51
<i>Pinus taeda</i>	0.01	0.28	1.96	15.65	1.61	1.77	2.31	1.45
<i>Acer saccharum</i>	0.06	1.96	0.83	5.04	0.52	0.57	0.97	1.17
<i>Acer rubrum</i>	0.05	1.68	0.72	5.53	0.57	0.62	0.85	1.05
<i>Carya cordiformis</i>	0.03	1.12	0.93	6.96	0.72	0.79	1.09	1.00
<i>Quercus falcata</i>	0.03	1.12	0.62	9.98	1.03	1.13	0.73	0.99
<i>Prunus serotina</i>	0.04	1.40	0.62	3.17	0.33	0.36	0.73	0.83
<i>Fagus grandifolia</i>	0.02	0.84	0.62	2.77	0.29	0.31	0.73	0.63
<i>Platanus occidentalis</i>	0.02	0.84	0.41	4.43	0.46	0.50	0.49	0.61
<i>Carya ovata</i>	0.02	0.56	0.21	2.34	0.24	0.26	0.24	0.36
<i>Tilia americana</i>	0.02	0.56	0.21	1.50	0.15	0.17	0.24	0.32
<i>Juglans nigra</i>	0.02	0.56	0.21	0.89	0.09	0.10	0.24	0.30
<i>Carya glabra</i>	0.01	0.28	0.10	2.89	0.30	0.33	0.12	0.24
<i>Magnolia acuminata</i>	0.01	0.28	0.21	1.07	0.11	0.12	0.24	0.21
<i>Quercus shumardii</i>	0.01	0.28	0.10	1.07	0.11	0.12	0.12	0.17
<i>Robinia pseudoacacia</i>	0.01	0.28	0.10	0.66	0.07	0.07	0.12	0.16
<i>Quercus michauxii</i>	0.01	0.28	0.10	0.59	0.06	0.07	0.12	0.16
<i>Ulmus alata</i>	0.01	0.28	0.10	0.45	0.05	0.05	0.12	0.15
<i>Ulmus americana</i>	0.01	0.28	0.10	0.45	0.05	0.05	0.12	0.15
Totals	2.84	100.00	84.81	780.48	80.53	88.09	100.00	96.03

Table D2: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1"– 7.9" dbh), all plots, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snag	0.56	9.62	23.94	18.85	1.94	11.97	9.96	10.51
<i>Quercus alba</i>	0.43	7.42	14.24	22.17	2.29	14.08	5.92	9.14
<i>Nyssa sylvatica</i>	0.46	7.97	22.80	13.52	1.39	8.59	9.48	8.68
<i>Carya tomentosa</i>	0.42	7.28	12.79	13.91	1.43	8.83	5.32	7.14
<i>Cornus florida</i>	0.41	7.14	21.87	7.41	0.76	4.71	9.10	6.98
<i>Ostrya virginiana</i>	0.25	4.40	23.01	7.26	0.75	4.61	9.57	6.19
<i>Acer rubrum</i>	0.37	6.46	13.83	6.74	0.70	4.28	5.75	5.50
<i>Liquidambar styraciflua</i>	0.21	3.71	9.60	10.00	1.03	6.35	3.99	4.68
<i>Carpinus caroliniana</i>	0.18	3.16	16.30	3.05	0.31	1.93	6.78	3.96
<i>Ulmus alata</i>	0.22	3.85	9.08	5.53	0.57	3.51	3.78	3.71
<i>Prunus serotina</i>	0.23	3.98	10.32	3.98	0.41	2.53	4.29	3.60
<i>Juniperus virginiana</i>	0.19	3.30	6.19	7.36	0.76	4.68	2.58	3.52
<i>Acer saccharum</i>	0.16	2.75	7.53	5.48	0.57	3.48	3.13	3.12
<i>Quercus stellata</i>	0.12	2.06	3.51	4.72	0.49	3.00	1.46	2.17
<i>Pinus echinata</i>	0.10	1.79	2.99	4.00	0.41	2.54	1.24	1.86
<i>Fagus grandifolia</i>	0.07	1.24	5.67	1.95	0.20	1.24	2.36	1.61
<i>Carya texana</i>	0.08	1.37	2.48	3.10	0.32	1.97	1.03	1.46
<i>Quercus rubra</i>	0.13	2.34	3.10	1.13	0.12	0.72	1.29	1.45
<i>Fraxinus americana</i>	0.10	1.79	2.27	2.36	0.24	1.50	0.94	1.41
<i>Carya cordiformis</i>	0.06	1.10	2.48	2.75	0.28	1.75	1.03	1.29
<i>Tilia americana</i>	0.08	1.37	1.75	0.96	0.10	0.61	0.73	0.91
<i>Ulmus americana</i>	0.06	1.10	2.48	0.65	0.07	0.41	1.03	0.85
<i>Amelanchier arborea</i>	0.06	1.10	1.75	0.98	0.10	0.62	0.73	0.82
<i>Sassafras albidum</i>	0.06	1.10	2.68	0.23	0.02	0.15	1.12	0.79
<i>Magnolia acuminata</i>	0.03	0.55	1.03	1.37	0.14	0.87	0.43	0.62
<i>Cercis canadensis</i>	0.06	1.10	1.03	0.33	0.03	0.21	0.43	0.58
<i>Robinia pseudoacacia</i>	0.04	0.69	1.13	0.70	0.07	0.44	0.47	0.53
<i>Quercus velutina</i>	0.05	0.82	0.83	0.57	0.06	0.36	0.34	0.51
<i>Hamamelis virginiana</i>	0.04	0.69	1.55	0.10	0.01	0.06	0.64	0.46
<i>Morus rubra</i>	0.04	0.69	0.52	0.63	0.06	0.40	0.21	0.43
<i>Frangula caroliniana</i>	0.05	0.82	0.83	0.05	0.01	0.03	0.34	0.40

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus muehlenbergii</i>	0.04	0.69	0.62	0.12	0.01	0.07	0.26	0.34
<i>Diospyros virginiana</i>	0.02	0.27	0.62	0.73	0.08	0.46	0.26	0.33
<i>Quercus falcata</i>	0.02	0.41	0.72	0.39	0.04	0.25	0.30	0.32
<i>Carya ovata</i>	0.02	0.41	0.31	0.64	0.07	0.40	0.13	0.32
<i>Pinus taeda</i>	0.01	0.14	0.31	0.91	0.09	0.58	0.13	0.28
<i>Quercus phellos</i>	0.01	0.14	1.24	0.09	0.01	0.06	0.52	0.24
<i>Asimina triloba</i>	0.02	0.41	0.52	0.11	0.01	0.07	0.21	0.23
<i>Quercus michauxii</i>	0.02	0.27	0.52	0.20	0.02	0.13	0.21	0.21
<i>Platanus occidentalis</i>	0.02	0.27	0.21	0.30	0.03	0.19	0.09	0.18
<i>Celtis occidentalis</i>	0.02	0.27	0.21	0.27	0.03	0.17	0.09	0.18
<i>Aesculus glabra</i>	0.02	0.27	0.41	0.13	0.01	0.09	0.17	0.18
<i>Acer negundo</i>	0.01	0.14	0.31	0.41	0.04	0.26	0.13	0.17
<i>Vaccinium arboreum</i>	0.01	0.14	0.83	0.04	0.00	0.03	0.34	0.17
<i>Carya sp.</i>	0.01	0.14	0.31	0.36	0.04	0.23	0.13	0.17
<i>Fraxinus pennsylvanica</i>	0.02	0.27	0.31	0.15	0.02	0.09	0.13	0.17
<i>Viburnum prunifolium</i>	0.02	0.27	0.41	0.06	0.01	0.04	0.17	0.16
<i>Aralia spinosa</i>	0.02	0.27	0.41	0.01	0.00	0.01	0.17	0.15
<i>Carya glabra</i>	0.02	0.27	0.31	0.07	0.01	0.05	0.13	0.15
<i>Viburnum rufidulum</i>	0.02	0.27	0.21	0.07	0.01	0.04	0.09	0.13
<i>Prunus mexicana</i>	0.02	0.27	0.21	0.04	0.00	0.02	0.09	0.13
<i>Quercus marilandica</i>	0.01	0.14	0.10	0.28	0.03	0.18	0.04	0.12
<i>Magnolia tripetala</i>	0.01	0.14	0.41	0.03	0.00	0.02	0.17	0.11
<i>Ulmus rubra</i>	0.01	0.14	0.41	0.03	0.00	0.02	0.17	0.11
<i>Sideroxylon lanuginosum</i>	0.01	0.14	0.10	0.08	0.01	0.05	0.04	0.08
<i>Crataegous sp.</i>	0.01	0.14	0.10	0.04	0.00	0.03	0.04	0.07
<i>Quercus nigra</i>	0.01	0.14	0.10	0.03	0.00	0.02	0.04	0.07
<i>Juglans nigra</i>	0.01	0.14	0.10	0.02	0.00	0.01	0.04	0.06
<i>Celtis laevigata</i>	0.01	0.14	0.10	0.01	0.00	0.00	0.04	0.06
<i>unknown sp.</i>	0.01	0.14	0.10	0.00	0.00	0.00	0.04	0.06
<i>Rhus glabra</i>	0.01	0.14	0.10	0.00	0.00	0.00	0.04	0.06
<i>Staphylea trifolia</i>	0.01	0.14	0.10	0.00	0.00	0.00	0.04	0.06
<i>Vaccinium pallidum</i>	0.01	0.14	0.10	0.00	0.00	0.00	0.04	0.06
Totals	5.78	100.00	240.40	157.46	16.25	100.00	100.00	100.00

Table D3: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species*, all plots, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.56	8.43	404.73	20.59	14.51
<i>Nyssa sylvatica</i>	0.53	7.95	216.28	11.00	9.48
<i>Carya tomentosa</i>	0.50	7.59	102.97	5.24	6.41
<i>Sassafras albidum</i>	0.30	4.46	132.39	6.73	5.60
<i>Prunus serotina</i>	0.39	5.90	98.20	5.00	5.45
<i>Quercus rubra</i>	0.34	5.06	104.56	5.32	5.19
<i>Quercus alba</i>	0.31	4.70	55.66	2.83	3.77
<i>Frangula caroliniana</i>	0.25	3.73	57.65	2.93	3.33
<i>Ostrya virginiana</i>	0.22	3.37	56.85	2.89	3.13
<i>Fraxinus americana</i>	0.29	4.34	37.77	1.92	3.13
<i>Cornus florida</i>	0.30	4.46	30.61	1.56	3.01
<i>Rhus copallinum</i>	0.15	2.29	67.59	3.44	2.86
<i>Carpinus caroliniana</i>	0.12	1.81	62.02	3.15	2.48
<i>Quercus velutina</i>	0.17	2.53	43.34	2.20	2.37
<i>Vitis rotundifolia</i>	0.09	1.33	60.03	3.05	2.19
<i>Ulmus alata</i>	0.16	2.41	33.00	1.68	2.04
<i>Cercis canadensis</i>	0.14	2.05	26.24	1.33	1.69
<i>Rubus argutus</i>	0.05	0.72	46.12	2.35	1.53
<i>Lindera benzoin</i>	0.06	0.96	35.38	1.80	1.38
<i>Acer saccharum</i>	0.08	1.20	29.42	1.50	1.35
<i>Hamamelis virginiana</i>	0.07	1.08	31.41	1.60	1.34
<i>Liquidambar styraciflua</i>	0.10	1.45	14.71	0.75	1.10
<i>Rhus glabra</i>	0.07	1.08	19.48	0.99	1.04
<i>Carya cordiformis</i>	0.08	1.20	11.53	0.59	0.90
<i>Robinia pseudoacacia</i>	0.08	1.20	11.53	0.59	0.90
<i>Quercus stellata</i>	0.08	1.20	10.73	0.55	0.88
<i>Aesculus pavia</i>	0.06	0.96	10.73	0.55	0.75
<i>Fagus grandifolia</i>	0.06	0.96	10.73	0.55	0.75
<i>Aralia spinosa</i>	0.04	0.60	15.11	0.77	0.69
<i>Quercus falcata</i>	0.05	0.72	9.14	0.47	0.59
<i>Vaccinium arboreum</i>	0.06	0.84	6.36	0.32	0.58

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Celtis occidentalis</i>	0.06	0.96	3.98	0.20	0.58
<i>Asimina triloba</i>	0.06	0.84	5.57	0.28	0.56
<i>Juniperus virginiana</i>	0.06	0.84	4.77	0.24	0.54
<i>Carya texana</i>	0.04	0.60	8.35	0.42	0.51
<i>Quercus nigra</i>	0.04	0.60	6.76	0.34	0.47
<i>Vitis aestivalis</i>	0.02	0.36	8.35	0.42	0.39
<i>Magnolia acuminata</i>	0.03	0.48	5.96	0.30	0.39
<i>Callicarpa americana</i>	0.04	0.60	3.58	0.18	0.39
<i>Dirca palustris</i>	0.04	0.60	3.18	0.16	0.38
<i>Pinus echinata</i>	0.03	0.48	4.77	0.24	0.36
<i>Quercus muehlenbergii</i>	0.02	0.36	6.76	0.34	0.35
<i>Diospyros virginiana</i>	0.03	0.48	4.37	0.22	0.35
<i>Tilia americana</i>	0.03	0.48	2.78	0.14	0.31
<i>Aesculus glabra</i>	0.02	0.36	3.98	0.20	0.28
<i>Amelanchier arborea</i>	0.02	0.36	3.58	0.18	0.27
<i>Smilax rotundifolia</i>	0.02	0.36	2.78	0.14	0.25
<i>Rubus</i> sp.	0.02	0.36	2.39	0.12	0.24
<i>Ulmus americana</i>	0.02	0.36	1.59	0.08	0.22
<i>Quercus phellos</i>	0.01	0.12	4.37	0.22	0.17
<i>Carya glabra</i>	0.02	0.24	1.99	0.10	0.17
<i>Castanea pumila</i>	0.02	0.24	1.99	0.10	0.17
<i>Ulmus rubra</i>	0.02	0.24	1.99	0.10	0.17
<i>Fraxinus pennsylvanica</i>	0.02	0.24	1.59	0.08	0.16
<i>Hypericum prolificum</i>	0.02	0.24	1.59	0.08	0.16
<i>Styrax grandifolius</i>	0.02	0.24	1.19	0.06	0.15
<i>Viburnum dentatum</i>	0.02	0.24	1.19	0.06	0.15
<i>Cornus alternifolia</i>	0.01	0.12	2.78	0.14	0.13
<i>Ampelopsis cordata</i>	0.01	0.12	1.99	0.10	0.11
<i>Carya ovata</i>	0.01	0.12	1.19	0.06	0.09
<i>Quercus michauxii</i>	0.01	0.12	1.19	0.06	0.09
<i>Quercus</i> sp.	0.01	0.12	1.19	0.06	0.09
<i>Vaccinium stamineum</i>	0.01	0.12	1.19	0.06	0.09
<i>Magnolia tripetala</i>	0.01	0.12	0.80	0.04	0.08
<i>Acer negundo</i>	0.01	0.12	0.40	0.02	0.07
<i>Cephalanthus occidentalis</i>	0.01	0.12	0.40	0.02	0.07
<i>Crataegous</i> sp.	0.01	0.12	0.40	0.02	0.07

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Crataegus uniflora</i>	0.01	0.12	0.40	0.02	0.07
<i>Ilex decidua</i>	0.01	0.12	0.40	0.02	0.07
<i>Prunus americana</i>	0.01	0.12	0.40	0.02	0.07
<i>Prunus mexicana</i>	0.01	0.12	0.40	0.02	0.07
<i>Quercus marilandica</i>	0.01	0.12	0.40	0.02	0.07
<i>Rhus aromatica</i>	0.01	0.12	0.40	0.02	0.07
<i>Viburnum rufidulum</i>	0.01	0.12	0.40	0.02	0.07
Total	6.64	100.00	1965.99	100.00	100.00

Table D4: Frequency, total cover, relative cover, relative frequency, and importance value of *ground layer species*, all plots, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
Toxicodendron radicans	266.00	732.00	9.07	6.66	7.87
Parthenocissus quinquefolia	199.00	469.00	5.81	4.99	5.40
Dichanthelium boscii	136.00	304.00	3.77	3.41	3.59
Vitis rotundifolia	123.00	326.00	4.04	3.08	3.56
Acer rubrum	142.00	267.00	3.31	3.56	3.43
Carex sp.	109.00	192.00	2.38	2.73	2.55
Nyssa sylvatica	85.00	184.00	2.28	2.13	2.20
Smilax glauca	95.00	156.00	1.93	2.38	2.16
Quercus alba	90.00	164.00	2.03	2.26	2.14
Rubus flagellaris	77.00	158.00	1.96	1.93	1.94
Amphicarpaea bracteata	68.00	132.00	1.64	1.70	1.67
Desmodium nudiflorum	58.00	136.00	1.68	1.45	1.57
Vaccinium pallidum	57.00	121.00	1.50	1.43	1.46
Rubus argutus	51.00	115.00	1.42	1.28	1.35
Dichanthelium commutatum	56.00	99.00	1.23	1.40	1.31
Sassafras albidum	50.00	103.00	1.28	1.25	1.26
Fraxinus americana	48.00	104.00	1.29	1.20	1.25
Smilax bona-nox	54.00	91.00	1.13	1.35	1.24
Cornus florida	42.00	105.00	1.30	1.05	1.18
Quercus rubra	44.00	86.00	1.07	1.10	1.08
Quercus velutina	44.00	85.00	1.05	1.10	1.08
Viola sororia	47.00	77.00	0.95	1.18	1.07
Danthonia spicata	40.00	88.00	1.09	1.00	1.05
Helianthus hirsutus	40.00	88.00	1.09	1.00	1.05
Helianthus divaricatus	38.00	90.00	1.11	0.95	1.03
Schizachyrium scoparium	31.00	101.00	1.25	0.78	1.01
Vitis aestivalis	39.00	82.00	1.02	0.98	1.00
Smilax rotundifolia	40.00	76.00	0.94	1.00	0.97
Brachyelytrum erectum	38.00	80.00	0.99	0.95	0.97
Clitoria mariana	36.00	77.00	0.95	0.90	0.93
Prunus serotina	38.00	69.00	0.85	0.95	0.90
Sanicula canadensis	41.00	60.00	0.74	1.03	0.89
Carya tomentosa	35.00	70.00	0.87	0.88	0.87

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
Ulmus alata	30.00	56.00	0.69	0.75	0.72
Euonymus americanus	31.00	49.00	0.61	0.78	0.69
Dichanthelium dichotomum	32.00	46.00	0.57	0.80	0.69
Ostrya virginiana	25.00	59.00	0.73	0.63	0.68
Solidago ulmifolia	28.00	52.00	0.64	0.70	0.67
Agrimonia rostellata	28.00	51.00	0.63	0.70	0.67
Carex blanda	30.00	46.00	0.57	0.75	0.66
Dioscorea villosa	25.00	46.00	0.57	0.63	0.60
Carya texana	23.00	44.00	0.55	0.58	0.56
Desmodium laevigatum	22.00	46.00	0.57	0.55	0.56
Symphyotrichum anomalum	24.00	40.00	0.50	0.60	0.55
Dichanthelium linearifolium	20.00	43.00	0.53	0.50	0.52
Diarrhena americana	18.00	44.00	0.55	0.45	0.50
Galium circaezans	25.00	28.00	0.35	0.63	0.49
Rhus copallinum	17.00	44.00	0.55	0.43	0.49
Euphorbia corollata	23.00	31.00	0.38	0.58	0.48
Pinus echinata	20.00	32.00	0.40	0.50	0.45
Quercus stellata	19.00	34.00	0.42	0.48	0.45
Carya cordiformis	16.00	37.00	0.46	0.40	0.43
Carex glaucodea	16.00	36.00	0.45	0.40	0.42
Potentilla simplex	19.00	29.00	0.36	0.48	0.42
Galium concinnum	17.00	29.00	0.36	0.43	0.39
Iris cristata	15.00	33.00	0.41	0.38	0.39
Dichanthelium acuminatum	15.00	30.00	0.37	0.38	0.37
Lespedeza repens	17.00	25.00	0.31	0.43	0.37
Cercis canadensis	14.00	31.00	0.38	0.35	0.37
Stipa sp.	14.00	30.00	0.37	0.35	0.36
Carya sp.	12.00	33.00	0.41	0.30	0.35
Phegopteris hexagonoptera	10.00	37.00	0.46	0.25	0.35
Scleria oligantha	15.00	26.00	0.32	0.38	0.35
Polystichum acrostichoides	12.00	32.00	0.40	0.30	0.35
Frangula caroliniana	14.00	26.00	0.32	0.35	0.34
Symphyotrichum patens	13.00	28.00	0.35	0.33	0.34
Lonicera japonica	10.00	34.00	0.42	0.25	0.34
Scutellaria elliptica	16.00	18.00	0.22	0.40	0.31
Solidago petiolaris	14.00	22.00	0.27	0.35	0.31

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
Galium pilosum	13.00	24.00	0.30	0.33	0.31
Amelanchier arborea	13.00	23.00	0.28	0.33	0.31
Carex communis	13.00	21.00	0.26	0.33	0.29
Viola palmata	14.00	18.00	0.22	0.35	0.29
Lespedeza virginica	13.00	20.00	0.25	0.33	0.29
Lespedeza procumbens	12.00	22.00	0.27	0.30	0.29
Berchemia scandens	11.00	23.00	0.28	0.28	0.28
Solidago caesia	11.00	23.00	0.28	0.28	0.28
Packera obovata	13.00	18.00	0.22	0.33	0.27
Houstonia purpurea	12.00	19.00	0.24	0.30	0.27
Carex oligocarpa	10.00	21.00	0.26	0.25	0.26
Oxalis dillenii	12.00	16.00	0.20	0.30	0.25
Trachelospermum difforme	8.00	23.00	0.28	0.20	0.24
Fragaria virginiana	11.00	16.00	0.20	0.28	0.24
Diarrhena americana	18.00	44.00	0.55	0.45	0.50
Galium circaezans	25.00	28.00	0.35	0.63	0.49
Desmodium perplexum	11.00	15.00	0.19	0.28	0.23
Boehmeria cylindrica	10.00	17.00	0.21	0.25	0.23
Desmodium sp. 1	9.00	19.00	0.24	0.23	0.23
Chasmanthium latifolium	8.00	21.00	0.26	0.20	0.23
Erechtites hieraciifolius	11.00	14.00	0.17	0.28	0.22
Liquidambar styraciflua	9.00	18.00	0.22	0.23	0.22
Sanguinaria canadensis	11.00	13.00	0.16	0.28	0.22
Carex rosea	9.00	17.00	0.21	0.23	0.22
Bromus pubescens	8.00	19.00	0.24	0.20	0.22
Salvia lyrata	10.00	14.00	0.17	0.25	0.21
Rubus sp.	6.00	22.00	0.27	0.15	0.21
Dichanthelium laxiflorum	8.00	16.00	0.20	0.20	0.20
Rhus glabra	8.00	16.00	0.20	0.20	0.20
Cunila organoides	7.00	18.00	0.22	0.18	0.20
Smilax hispida	7.00	16.00	0.20	0.18	0.19
Diospyros virginiana	6.00	18.00	0.22	0.15	0.19
Vaccinium arboreum	6.00	17.00	0.21	0.15	0.18
Ageratina altissima	6.00	16.00	0.20	0.15	0.17
Geum canadense	9.00	9.00	0.11	0.23	0.17
Lespedeza frutescens	8.00	11.00	0.14	0.20	0.17

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
Aristolochia serpentaria	8.00	10.00	0.12	0.20	0.16
Celtis occidentalis	7.00	12.00	0.15	0.18	0.16
Carex caroliniana	7.00	11.00	0.14	0.18	0.16
Pycnanthemum tenuifolium	6.00	12.00	0.15	0.15	0.15
Quercus sp.	6.00	12.00	0.15	0.15	0.15
Phryma leptostachya	7.00	9.00	0.11	0.18	0.14
Galium triflorum	6.00	11.00	0.14	0.15	0.14
Hamamelis virginiana	6.00	11.00	0.14	0.15	0.14
Chamaecrista fasciculata	6.00	10.00	0.12	0.15	0.14
Juniperus virginiana	6.00	10.00	0.12	0.15	0.14
Lactuca floridana	6.00	10.00	0.12	0.15	0.14
Phlox pilosa	6.00	10.00	0.12	0.15	0.14
Thalictrum thalictroides	7.00	7.00	0.09	0.18	0.13
Passiflora lutea	6.00	9.00	0.11	0.15	0.13
Rosa carolina	6.00	9.00	0.11	0.15	0.13
Elymus hystrix	5.00	11.00	0.14	0.13	0.13
Ambrosia artemisiifolia	5.00	10.00	0.12	0.13	0.12
Uvularia sessilifolia	5.00	10.00	0.12	0.13	0.12
Bignonia capreolata	4.00	12.00	0.15	0.10	0.12
Maianthemum racemosum	6.00	7.00	0.09	0.15	0.12
Ruellia pedunculata	6.00	7.00	0.09	0.15	0.12
Croton willdenowii	5.00	9.00	0.11	0.13	0.12
Dichantherium malacophyllum	5.00	9.00	0.11	0.13	0.12
Echinacea pallida	5.00	9.00	0.11	0.13	0.12
Krigia virginica	5.00	9.00	0.11	0.13	0.12
Viburnum rufidulum	5.00	9.00	0.11	0.13	0.12
Aralia spinosa	4.00	11.00	0.14	0.10	0.12
Lactuca canadensis	6.00	6.00	0.07	0.15	0.11
Carex cephalophora	5.00	8.00	0.10	0.13	0.11
Rudbeckia hirta	5.00	8.00	0.10	0.13	0.11
Carex muhlenbergii	4.00	10.00	0.12	0.10	0.11
Scutellaria ovata	5.00	7.00	0.09	0.13	0.11
Asimina triloba	4.00	9.00	0.11	0.10	0.11
Desmodium rotundifolium	4.00	9.00	0.11	0.10	0.11
Viola tricolor	5.00	6.00	0.07	0.13	0.10

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
Asplenium platyneuron	4.00	8.00	0.10	0.10	0.10
Crotalaria sagittalis	4.00	8.00	0.10	0.10	0.10
Cynoglossum virginianum	4.00	8.00	0.10	0.10	0.10
Diodia teres	4.00	8.00	0.10	0.10	0.10
Monarda bradburiana	4.00	8.00	0.10	0.10	0.10
unknown forb 2	4.00	8.00	0.10	0.10	0.10
unknown graminoid 1	4.00	8.00	0.10	0.10	0.10
Enemion biternatum	5.00	5.00	0.06	0.13	0.09
Carex jamesii	4.00	7.00	0.09	0.10	0.09
Physalis virginiana	4.00	7.00	0.09	0.10	0.09
Solidago hispida	4.00	7.00	0.09	0.10	0.09
Dirca palustris	3.00	9.00	0.11	0.08	0.09
Elymus virginicus	3.00	9.00	0.11	0.08	0.09
Vitis cinerea	3.00	9.00	0.11	0.08	0.09
Morus rubra	4.00	6.00	0.07	0.10	0.09
Pedicularis canadensis	4.00	6.00	0.07	0.10	0.09
Solidago nemoralis	4.00	6.00	0.07	0.10	0.09
Dichanthelium scoparium	3.00	8.00	0.10	0.08	0.09
Vaccinium stamineum	3.00	8.00	0.10	0.08	0.09
Asarum canadense	4.00	5.00	0.06	0.10	0.08
Botrychium virginianum	4.00	5.00	0.06	0.10	0.08
Chaerophyllum procumbens	4.00	5.00	0.06	0.10	0.08
Panicum verrucosum	4.00	5.00	0.06	0.10	0.08
Prenanthes altissima	4.00	5.00	0.06	0.10	0.08
Aureolaria flava	3.00	7.00	0.09	0.08	0.08
unknown herb 3	3.00	7.00	0.09	0.08	0.08
Hamamelis vernalis	2.00	9.00	0.11	0.05	0.08
Microstegium vimineum	4.00	4.00	0.05	0.10	0.07
Lespedeza violacea	3.00	6.00	0.07	0.08	0.07
Lindera benzoin	3.00	6.00	0.07	0.08	0.07
Quercus muehlenbergii	3.00	6.00	0.07	0.08	0.07
Scleria sp.	3.00	6.00	0.07	0.08	0.07
Vernonia baldwinii	3.00	6.00	0.07	0.08	0.07
Viburnum prunifolium	3.00	6.00	0.07	0.08	0.07
Viola pedata	3.00	6.00	0.07	0.08	0.07
Chasmanthium laxum	2.00	8.00	0.10	0.05	0.07

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
Angelica venenosa	3.00	5.00	0.06	0.08	0.07
Lespedeza sp.	3.00	5.00	0.06	0.08	0.07
Phemeranthus parviflorus	3.00	5.00	0.06	0.08	0.07
Polygala verticillata	3.00	5.00	0.06	0.08	0.07
Rubus trivialis	3.00	5.00	0.06	0.08	0.07
Sideroxylon lanuginosum	3.00	5.00	0.06	0.08	0.07
Smilax herbacea	3.00	5.00	0.06	0.08	0.07
Acer saccharum	3.00	4.00	0.05	0.08	0.06
Callicarpa americana	3.00	4.00	0.05	0.08	0.06
Festuca subverticillata	3.00	4.00	0.05	0.08	0.06
Geranium maculatum	3.00	4.00	0.05	0.08	0.06
Hieracium longipilum	3.00	4.00	0.05	0.08	0.06
Muhlenbergia sp.	3.00	4.00	0.05	0.08	0.06
Muhlenbergia sp.	3.00	4.00	0.05	0.08	0.06
Robinia pseudoacacia	3.00	4.00	0.05	0.08	0.06
Solidago sp.	3.00	4.00	0.05	0.08	0.06
Symphoricarpos orbiculatus	3.00	4.00	0.05	0.08	0.06
Tridens flavus	3.00	4.00	0.05	0.08	0.06
Ulmus americana	3.00	4.00	0.05	0.08	0.06
Adiantum pedatum	2.00	6.00	0.07	0.05	0.06
Dichanthelium aciculare	2.00	6.00	0.07	0.05	0.06
unknown herb 4	2.00	6.00	0.07	0.05	0.06
Carex laxiflora	3.00	3.00	0.04	0.08	0.06
Crataegous sp.	3.00	3.00	0.04	0.08	0.06
Hypericum hypericoides	3.00	3.00	0.04	0.08	0.06
Lespedeza cuneata	3.00	3.00	0.04	0.08	0.06
Lonicera dioica	3.00	3.00	0.04	0.08	0.06
Phlox divaricata	3.00	3.00	0.04	0.08	0.06
Rhus aromatica	3.00	3.00	0.04	0.08	0.06
Styrax grandifolius	3.00	3.00	0.04	0.08	0.06
Carex sp. 6	2.00	5.00	0.06	0.05	0.06
Coreopsis tripteris	2.00	5.00	0.06	0.05	0.06
Desmodium sp. 2	2.00	5.00	0.06	0.05	0.06
Geum sp.	2.00	5.00	0.06	0.05	0.06
Magnolia tripetala	2.00	5.00	0.06	0.05	0.06
Menispermum canadense	2.00	5.00	0.06	0.05	0.06

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
Prunus mexicana	2.00	5.00	0.06	0.05	0.06
Ruellia humilis	2.00	5.00	0.06	0.05	0.06
Solidago rigida	2.00	5.00	0.06	0.05	0.06
Andropogon virginicus	2.00	4.00	0.05	0.05	0.05
Antennaria plantaginifolia	2.00	4.00	0.05	0.05	0.05
Fraxinus pennsylvanica	2.00	4.00	0.05	0.05	0.05
Lobelia spicata	2.00	4.00	0.05	0.05	0.05
Lonicera sp.	2.00	4.00	0.05	0.05	0.05
Silphium asteriscus	2.00	4.00	0.05	0.05	0.05
unknown forb 6	2.00	4.00	0.05	0.05	0.05
unknown herb 1	2.00	4.00	0.05	0.05	0.05
unknown herb 2	2.00	4.00	0.05	0.05	0.05
Aesculus glabra	2.00	3.00	0.04	0.05	0.04
Carex planispicata	2.00	3.00	0.04	0.05	0.04
Carex sp. 2	2.00	3.00	0.04	0.05	0.04
Euphorbia nutans	2.00	3.00	0.04	0.05	0.04
Eupatorium serotinum	2.00	3.00	0.04	0.05	0.04
Gillenia stipulata	2.00	3.00	0.04	0.05	0.04
Heliopsis helianthoides	2.00	3.00	0.04	0.05	0.04
Leersia virginica	2.00	3.00	0.04	0.05	0.04
Lonicera sempervirens	2.00	3.00	0.04	0.05	0.04
Mitchella repens	2.00	3.00	0.04	0.05	0.04
Rosa setigera	2.00	3.00	0.04	0.05	0.04
Symphyotrichum sp.	2.00	3.00	0.04	0.05	0.04
unknown forb 3	2.00	3.00	0.04	0.05	0.04
Carex sp. 3	2.00	2.00	0.02	0.05	0.04
Chasmanthium sessiliflorum	2.00	2.00	0.02	0.05	0.04
Cyperus sp.	2.00	2.00	0.02	0.05	0.04
Desmodium paniculatum	2.00	2.00	0.02	0.05	0.04
Elymus glabriflorus	2.00	2.00	0.02	0.05	0.04
Liatris squarrulosa	2.00	2.00	0.02	0.05	0.04
Polygonatum biflorum	2.00	2.00	0.02	0.05	0.04
Pseudognaphalium obtusifolium	2.00	2.00	0.02	0.05	0.04
Symphyotrichum ericoides	2.00	2.00	0.02	0.05	0.04
unknown forb 4	2.00	2.00	0.02	0.05	0.04

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
unknown graminoid 2	2.00	2.00	0.02	0.05	0.04
Viola sagittata	2.00	2.00	0.02	0.05	0.04
Desmodium viridiflorum	1.00	4.00	0.05	0.03	0.04
Laportea canadensis	1.00	4.00	0.05	0.03	0.04
unknown woody	1.00	4.00	0.05	0.03	0.04
Aesculus pavia	1.00	3.00	0.04	0.03	0.03
Bromus sp.	1.00	3.00	0.04	0.03	0.03
Carex digitalis	1.00	3.00	0.04	0.03	0.03
Carex frankii	1.00	3.00	0.04	0.03	0.03
Carex hirsutella	1.00	3.00	0.04	0.03	0.03
Carpinus caroliniana	1.00	3.00	0.04	0.03	0.03
Carex sp. 7	1.00	3.00	0.04	0.03	0.03
Carex sp. 8	1.00	3.00	0.04	0.03	0.03
Carya texana	1.00	3.00	0.04	0.03	0.03
Diodia sp.	1.00	3.00	0.04	0.03	0.03
Fagus grandifolia	1.00	3.00	0.04	0.03	0.03
Gleditsia triacanthos	1.00	3.00	0.04	0.03	0.03
Morus sp.	1.00	3.00	0.04	0.03	0.03
Pteridium aquilinum	1.00	3.00	0.04	0.03	0.03
Quercus phellos	1.00	3.00	0.04	0.03	0.03
Tephrosia virginiana	1.00	3.00	0.04	0.03	0.03
Alnus serrulata	1.00	2.00	0.02	0.03	0.02
Carex intumescens	1.00	2.00	0.02	0.03	0.02
Carex sp. 5	1.00	2.00	0.02	0.03	0.02
Carya cordiformis	1.00	2.00	0.02	0.03	0.02
Ceanothus americanus	1.00	2.00	0.02	0.03	0.02
Commelina sp.	1.00	2.00	0.02	0.03	0.02
Crataegus viridis	1.00	2.00	0.02	0.03	0.02
Dichanthelium sp.	1.00	2.00	0.02	0.03	0.02
Dichanthelium sp. 1	1.00	2.00	0.02	0.03	0.02
Dichanthelium	1.00	2.00	0.02	0.03	0.02
sphaerocarpon					
Elephantopus tomentosus	1.00	2.00	0.02	0.03	0.02
Eriocaulon koernickianum	1.00	2.00	0.02	0.03	0.02
Eryngium yuccifolium	1.00	2.00	0.02	0.03	0.02
Eutrochium purpureum	1.00	2.00	0.02	0.03	0.02

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
Galium virgatum	1.00	2.00	0.02	0.03	0.02
Galactia volubilis	1.00	2.00	0.02	0.03	0.02
Hybanthus concolor	1.00	2.00	0.02	0.03	0.02
Hydrangea arborescens	1.00	2.00	0.02	0.03	0.02
Hypericum punctatum	1.00	2.00	0.02	0.03	0.02
Krigia biflora	1.00	2.00	0.02	0.03	0.02
Leersia sp.	1.00	2.00	0.02	0.03	0.02
Lespedeza hirta	1.00	2.00	0.02	0.03	0.02
Liparis liliifolia	1.00	2.00	0.02	0.03	0.02
Lithospermum sp.	1.00	2.00	0.02	0.03	0.02
Magnolia acuminata	1.00	2.00	0.02	0.03	0.02
Mimosa quadrivalvis	1.00	2.00	0.02	0.03	0.02
Parthenium integrifolium	1.00	2.00	0.02	0.03	0.02
Physalis sp.	1.00	2.00	0.02	0.03	0.02
Podophyllum peltatum	1.00	2.00	0.02	0.03	0.02
Polygonum sp.	1.00	2.00	0.02	0.03	0.02
Silene stellate	1.00	2.00	0.02	0.03	0.02
Solidago argute	1.00	2.00	0.02	0.03	0.02
Solidago odora	1.00	2.00	0.02	0.03	0.02
Solidago radula	1.00	2.00	0.02	0.03	0.02
Solidago sp.	1.00	2.00	0.02	0.03	0.02
Thalictrum dasycarpum	1.00	2.00	0.02	0.03	0.02
Tilia americana	1.00	2.00	0.02	0.03	0.02
unknown forb 5	1.00	2.00	0.02	0.03	0.02
Uvularia sp.	1.00	2.00	0.02	0.03	0.02
Uvularia perfoliata	1.00	2.00	0.02	0.03	0.02
Ampelopsis arborea	1.00	1.00	0.01	0.03	0.02
Amphiachyris dracunculoides	1.00	1.00	0.01	0.03	0.02
Antennaria sp.	1.00	1.00	0.01	0.03	0.02
Apios americana	1.00	1.00	0.01	0.03	0.02
Arisaema triphyllum	1.00	1.00	0.01	0.03	0.02
Asclepias sp.	1.00	1.00	0.01	0.03	0.02
Carex sp. 1	1.00	1.00	0.01	0.03	0.02
Carex sp. 4	1.00	1.00	0.01	0.03	0.02
Commelina erecta	1.00	1.00	0.01	0.03	0.02

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
Conyza canadensis	1.00	1.00	0.01	0.03	0.02
Dactylis glomerata	1.00	1.00	0.01	0.03	0.02
Desmodium glutinosum	1.00	1.00	0.01	0.03	0.02
Echinacea purpurea	1.00	1.00	0.01	0.03	0.02
Erigeron strigosus	1.00	1.00	0.01	0.03	0.02
Eupatorium rotundifolium	1.00	1.00	0.01	0.03	0.02
unknown fern	1.00	1.00	0.01	0.03	0.02
Galium obtusum	1.00	1.00	0.01	0.03	0.02
Goodyera pubescens	1.00	1.00	0.01	0.03	0.02
Helianthus angustifolius	1.00	1.00	0.01	0.03	0.02
Hieracium gronovii	1.00	1.00	0.01	0.03	0.02
Hydrophyllum appendiculatum	1.00	1.00	0.01	0.03	0.02
Hypericum gentianoides	1.00	1.00	0.01	0.03	0.02
Liatris aspera	1.00	1.00	0.01	0.03	0.02
Ludwigia sp.	1.00	1.00	0.01	0.03	0.02
Lysimachia sp.	1.00	1.00	0.01	0.03	0.02
Phytolacca americana	1.00	1.00	0.01	0.03	0.02
Pinus sp.	1.00	1.00	0.01	0.03	0.02
Prunella vulgaris	1.00	1.00	0.01	0.03	0.02
Ptilimnium nuttallii	1.00	1.00	0.01	0.03	0.02
Symphyotrichum cordifolium	1.00	1.00	0.01	0.03	0.02
Symphyotrichum lateriflorum	1.00	1.00	0.01	0.03	0.02
Thaspium barbinode	1.00	1.00	0.01	0.03	0.02
Toxicodendron pubescens	1.00	1.00	0.01	0.03	0.02
Tradescantia ohiensis	1.00	1.00	0.01	0.03	0.02
Trillium viridescens	1.00	1.00	0.01	0.03	0.02
unknown forb 7	1.00	1.00	0.01	0.03	0.02
unknown herb 5	1.00	1.00	0.01	0.03	0.02
unknown herb 6	1.00	1.00	0.01	0.03	0.02
Verbesina alternifolia	1.00	1.00	0.01	0.03	0.02
Verbesina helianthoides	1.00	1.00	0.01	0.03	0.02
Viola sp.	1.00	1.00	0.01	0.03	0.02
Vitis sp.	1.00	1.00	0.01	0.03	0.02
Totals	3991.00	8073.00	100.00	100.00	100.00

APPENDIX E. Species importance values by strata, all plots, 2014-2015.

Table E1: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of overstory species (8"+ dbh), all plots, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	0.57	20.76	22.78	203.73	21.19	28.09	29.59	26.15
<i>Pinus echinata</i>	0.33	11.99	13.83	161.70	16.82	22.29	17.97	17.42
<i>Quercus rubra</i>	0.22	8.19	5.51	68.45	7.12	9.44	7.16	8.26
snag	0.28	10.23	4.47	44.66	4.64	6.16	5.81	7.40
<i>Carya tomentosa</i>	0.24	8.77	4.68	31.20	3.25	4.30	6.08	6.39
<i>Liquidambar styraciflua</i>	0.14	5.26	3.95	32.80	3.41	4.52	5.14	4.97
<i>Nyssa sylvatica</i>	0.15	5.56	3.12	32.05	3.33	4.42	4.05	4.68
<i>Quercus velutina</i>	0.12	4.39	2.60	29.15	3.03	4.02	3.38	3.93
<i>Quercus stellata</i>	0.10	3.80	3.22	26.51	2.76	3.65	4.19	3.88
<i>Juniperus virginiana</i>	0.10	3.51	2.91	17.71	1.84	2.44	3.78	3.24
<i>Pinus taeda</i>	0.03	1.17	2.18	19.66	2.04	2.71	2.84	2.24
<i>Acer saccharum</i>	0.06	2.34	1.04	6.55	0.68	0.90	1.35	1.53
<i>Carya texana</i>	0.05	1.75	1.35	7.83	0.81	1.08	1.76	1.53
<i>Carya glabra</i>	0.04	1.46	0.73	8.71	0.91	1.20	0.95	1.20
<i>Fagus grandifolia</i>	0.03	1.17	0.73	3.43	0.36	0.47	0.95	0.86
<i>Fraxinus americana</i>	0.03	1.17	0.52	4.75	0.49	0.66	0.68	0.83
<i>Carya cordiformis</i>	0.03	1.17	0.52	3.71	0.39	0.51	0.68	0.79
<i>Prunus serotina</i>	0.03	1.17	0.42	2.10	0.22	0.29	0.54	0.67
<i>Acer rubrum</i>	0.03	1.17	0.42	1.79	0.19	0.25	0.54	0.65
<i>Platanus occidentalis</i>	0.02	0.58	0.31	4.15	0.43	0.57	0.41	0.52
<i>Fraxinus pennsylvanica</i>	0.02	0.88	0.31	1.89	0.20	0.26	0.41	0.51
<i>Quercus falcata</i>	0.02	0.58	0.21	3.81	0.40	0.53	0.27	0.46
<i>Juglans nigra</i>	0.02	0.58	0.21	1.86	0.19	0.26	0.27	0.37
<i>Tilia americana</i>	0.02	0.58	0.21	1.54	0.16	0.21	0.27	0.36
<i>Robinia pseudoacacia</i>	0.02	0.58	0.21	1.42	0.15	0.20	0.27	0.35
<i>Ulmus alata</i>	0.02	0.58	0.21	0.87	0.09	0.12	0.27	0.33
<i>Carya ovata</i>	0.01	0.29	0.10	2.20	0.23	0.30	0.14	0.24
<i>Celtis laevigata</i>	0.01	0.29	0.21	1.08	0.11	0.15	0.27	0.24
Totals	2.74	100.00	76.96	725.33	75.43	100.00	100.00	100.00

Table E2: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1"– 7.9" dbh), *all plots*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-15.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snag	0.66	12.43	27.56	21.50	2.24	17.54	12.72	14.23
<i>Quercus alba</i>	0.37	6.89	14.98	14.89	1.55	12.15	6.91	8.65
<i>Carya tomentosa</i>	0.41	7.63	14.46	11.06	1.15	9.02	6.67	7.78
<i>Nyssa sylvatica</i>	0.37	6.89	18.20	8.83	0.92	7.21	8.40	7.50
<i>Acer rubrum</i>	0.34	6.44	18.62	7.46	0.78	6.08	8.59	7.04
<i>Cornus florida</i>	0.33	6.14	14.46	4.95	0.51	4.04	6.67	5.62
<i>Ostrya virginiana</i>	0.21	3.89	14.46	4.65	0.48	3.79	6.67	4.79
<i>Liquidambar styraciflua</i>	0.18	3.29	8.22	8.69	0.90	7.09	3.79	4.72
<i>Ulmus alata</i>	0.19	3.59	8.42	4.41	0.46	3.59	3.89	3.69
<i>Prunus serotina</i>	0.21	3.89	7.80	3.05	0.32	2.49	3.60	3.33
<i>Carpinus caroliniana</i>	0.15	2.84	10.30	1.66	0.17	1.36	4.75	2.98
<i>Juniperus virginiana</i>	0.14	2.54	3.74	3.93	0.41	3.21	1.73	2.49
<i>Quercus rubra</i>	0.16	2.99	5.82	1.39	0.14	1.13	2.69	2.27
<i>Quercus stellata</i>	0.06	1.05	3.12	4.37	0.45	3.56	1.44	2.02
<i>Acer saccharum</i>	0.09	1.65	3.85	2.84	0.30	2.31	1.78	1.91
<i>Fagus grandifolia</i>	0.08	1.50	4.89	1.77	0.18	1.44	2.26	1.73
<i>Ulmus americana</i>	0.09	1.65	4.37	1.68	0.17	1.37	2.02	1.68
<i>Pinus echinata</i>	0.07	1.35	1.87	3.04	0.32	2.48	0.86	1.56
<i>Amelanchier arborea</i>	0.09	1.65	2.08	1.11	0.12	0.91	0.96	1.17
<i>Fraxinus americana</i>	0.09	1.65	1.77	1.13	0.12	0.92	0.82	1.13
<i>Cercis canadensis</i>	0.09	1.65	2.08	0.59	0.06	0.48	0.96	1.03
<i>Sassafras albidum</i>	0.09	1.65	2.50	0.19	0.02	0.16	1.15	0.98
<i>Tilia americana</i>	0.06	1.05	1.56	0.96	0.10	0.78	0.72	0.85
<i>Frangula caroliniana</i>	0.07	1.35	2.29	0.13	0.01	0.11	1.06	0.84
<i>Fraxinus pennsylvanica</i>	0.06	1.20	1.87	0.50	0.05	0.41	0.86	0.82
<i>Robinia pseudoacacia</i>	0.05	0.90	1.66	0.94	0.10	0.77	0.77	0.81
<i>Quercus velutina</i>	0.06	1.20	1.14	0.72	0.07	0.58	0.53	0.77

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Carya glabra</i>	0.04	0.75	1.56	0.87	0.09	0.71	0.72	0.73
<i>Carya cordiformis</i>	0.04	0.75	0.73	0.62	0.06	0.50	0.34	0.53
<i>Carya texana</i>	0.02	0.45	0.73	0.84	0.09	0.68	0.34	0.49
<i>Magnolia acuminata</i>	0.03	0.60	0.62	0.49	0.05	0.40	0.29	0.43
<i>Pinus taeda</i>	0.02	0.45	0.52	0.39	0.04	0.32	0.24	0.34
<i>Aralia spinosa</i>	0.03	0.60	0.73	0.04	0.00	0.03	0.34	0.32
<i>Ulmus rubra</i>	0.02	0.45	0.62	0.24	0.03	0.20	0.29	0.31
<i>Celtis laevigata</i>	0.03	0.60	0.52	0.06	0.01	0.05	0.24	0.29
<i>Hamamelis virginiana</i>	0.03	0.60	0.52	0.03	0.00	0.03	0.24	0.29
<i>Prunus mexicana</i>	0.02	0.45	0.52	0.21	0.02	0.17	0.24	0.29
<i>Diospyros virginiana</i>	0.02	0.30	0.52	0.39	0.04	0.32	0.24	0.29
<i>Quercus falcata</i>	0.02	0.30	1.04	0.08	0.01	0.07	0.48	0.28
<i>Rhus copallinum</i>	0.03	0.60	0.42	0.02	0.00	0.01	0.19	0.27
<i>Asimina triloba</i>	0.02	0.45	0.42	0.06	0.01	0.05	0.19	0.23
<i>Morus rubra</i>	0.02	0.30	0.21	0.35	0.04	0.29	0.10	0.23
<i>Juglans nigra</i>	0.02	0.30	0.21	0.33	0.03	0.27	0.10	0.22
<i>Quercus muehlenbergii</i>	0.02	0.30	0.52	0.14	0.01	0.11	0.24	0.22
<i>Quercus phellos</i>	0.01	0.15	0.94	0.08	0.01	0.07	0.43	0.22
<i>Quercus michauxii</i>	0.02	0.30	0.31	0.08	0.01	0.06	0.14	0.17
<i>Viburnum prunifolium</i>	0.02	0.30	0.31	0.05	0.01	0.04	0.14	0.16
<i>Carya ovata</i>	0.01	0.15	0.21	0.24	0.02	0.19	0.10	0.15
<i>Platanus occidentalis</i>	0.01	0.15	0.10	0.27	0.03	0.22	0.05	0.14
<i>Viburnum rufidulum</i>	0.02	0.30	0.21	0.02	0.00	0.01	0.10	0.14
<i>Crataegus spathulata</i>	0.01	0.15	0.31	0.11	0.01	0.09	0.14	0.13
<i>Magnolia tripetala</i>	0.01	0.15	0.42	0.04	0.00	0.04	0.19	0.13
<i>Alnus serrulata</i>	0.01	0.15	0.42	0.03	0.00	0.03	0.19	0.12
<i>Quercus marilandica</i>	0.01	0.15	0.21	0.03	0.00	0.02	0.10	0.09
<i>Castanea pumila</i>	0.01	0.15	0.21	0.01	0.00	0.01	0.10	0.08
<i>Vaccinium pallidum</i>	0.01	0.15	0.10	0.02	0.00	0.02	0.05	0.07

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
Paulownia tomentosa	0.01	0.15	0.10	0.01	0.00	0.01	0.05	0.07
Ulmus sp.	0.01	0.15	0.10	0.01	0.00	0.01	0.05	0.07
Rhus glabra	0.01	0.15	0.10	0.01	0.00	0.01	0.05	0.07
Prunus americana	0.01	0.15	0.10	0.01	0.00	0.00	0.05	0.07
Totals	5.34	100.00	216.63	122.59	12.75	100.00	100.00	100.00

Table E3: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species*, all plots, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-15.

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.60	9.10	382.98	21.55	15.33
<i>Carya tomentosa</i>	0.56	8.38	111.23	6.26	7.32
<i>Nyssa sylvatica</i>	0.44	6.59	142.78	8.04	7.31
<i>Quercus rubra</i>	0.44	6.71	121.87	6.86	6.78
<i>Prunus serotina</i>	0.39	5.87	86.38	4.86	5.36
<i>Sassafras albidum</i>	0.22	3.35	96.63	5.44	4.40
<i>Cornus florida</i>	0.33	5.03	49.30	2.77	3.90
<i>Frangula caroliniana</i>	0.25	3.83	58.77	3.31	3.57
<i>Rhus copallinum</i>	0.26	3.95	53.25	3.00	3.47
<i>Ostrya virginiana</i>	0.22	3.35	61.92	3.49	3.42
<i>Quercus alba</i>	0.26	3.95	46.54	2.62	3.29
<i>Fraxinus americana</i>	0.24	3.59	49.30	2.77	3.18
<i>Quercus velutina</i>	0.23	3.47	50.09	2.82	3.15
<i>Ulmus alata</i>	0.18	2.75	32.34	1.82	2.29
<i>Cercis canadensis</i>	0.15	2.28	32.34	1.82	2.05
<i>Rhus glabra</i>	0.07	1.08	41.41	2.33	1.70
<i>Carya texana</i>	0.10	1.56	30.76	1.73	1.64
<i>Robinia pseudoacacia</i>	0.09	1.32	31.55	1.78	1.55
<i>Carpinus caroliniana</i>	0.10	1.44	25.64	1.44	1.44
<i>Pinus echinata</i>	0.09	1.32	26.82	1.51	1.41
<i>Hamamelis virginiana</i>	0.10	1.44	20.51	1.15	1.30
<i>Lindera benzoin</i>	0.04	0.60	34.31	1.93	1.26
<i>Liquidambar styraciflua</i>	0.08	1.20	14.20	0.80	1.00
<i>Fagus grandifolia</i>	0.07	1.08	15.38	0.87	0.97
<i>Quercus stellata</i>	0.08	1.20	12.23	0.69	0.94
<i>Juniperus virginiana</i>	0.07	1.08	7.10	0.40	0.74
<i>Aralia spinosa</i>	0.03	0.48	16.96	0.95	0.72
<i>Acer saccharum</i>	0.06	0.84	10.25	0.58	0.71
<i>Carya cordiformis</i>	0.06	0.96	7.10	0.40	0.68
<i>Celtis occidentalis</i>	0.06	0.84	6.31	0.36	0.60
<i>Carya glabra</i>	0.04	0.60	9.86	0.55	0.58

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Ulmus americana</i>	0.05	0.72	6.71	0.38	0.55
<i>Diospyros virginiana</i>	0.06	0.84	4.34	0.24	0.54
<i>Fraxinus pennsylvanica</i>	0.06	0.84	4.34	0.24	0.54
<i>Vaccinium arboreum</i>	0.05	0.72	5.52	0.31	0.51
<i>Ulmus rubra</i>	0.05	0.72	4.73	0.27	0.49
<i>Aesculus pavia</i>	0.03	0.48	7.89	0.44	0.46
<i>Quercus falcata</i>	0.03	0.48	7.49	0.42	0.45
<i>Quercus muehlenbergii</i>	0.03	0.48	7.49	0.42	0.45
<i>Vaccinium stamineum</i>	0.02	0.36	8.28	0.47	0.41
<i>Callicarpa americana</i>	0.03	0.48	4.34	0.24	0.36
<i>Aesculus glabra</i>	0.03	0.48	2.37	0.13	0.31
<i>Viburnum rufidulum</i>	0.02	0.36	3.16	0.18	0.27
<i>Asimina triloba</i>	0.02	0.36	1.58	0.09	0.22
<i>Morus rubra</i>	0.02	0.36	1.58	0.09	0.22
<i>Tilia americana</i>	0.02	0.36	1.18	0.07	0.21
<i>Quercus marilandica</i>	0.02	0.24	2.37	0.13	0.19
<i>Quercus michauxii</i>	0.02	0.24	1.97	0.11	0.18
<i>Dirca palustris</i>	0.02	0.24	1.58	0.09	0.16
<i>Magnolia acuminata</i>	0.02	0.24	1.18	0.07	0.15
<i>Quercus phellos</i>	0.01	0.12	2.37	0.13	0.13
<i>Viburnum dentatum</i>	0.01	0.12	1.97	0.11	0.12
<i>Chionanthus virginicus</i>	0.01	0.12	1.18	0.07	0.09
<i>Rhus aromatica</i>	0.01	0.12	1.18	0.07	0.09
<i>Carya ovata</i>	0.01	0.12	0.79	0.04	0.08
<i>Rubus</i> sp.	0.01	0.12	0.79	0.04	0.08
<i>Symphoricarpos orbiculatus</i>	0.01	0.12	0.79	0.04	0.08
<i>Alnus serrulata</i>	0.01	0.12	0.39	0.02	0.07
<i>Amelanchier arborea</i>	0.01	0.12	0.39	0.02	0.07
<i>Magnolia tripetala</i>	0.01	0.12	0.39	0.02	0.07
<i>Quercus</i> sp.	0.01	0.12	0.39	0.02	0.07
<i>Quercus palustris</i>	0.01	0.12	0.39	0.02	0.07
<i>Rubus flagellaris</i>	0.01	0.12	0.39	0.02	0.07
<i>Styrax americanus</i>	0.01	0.12	0.39	0.02	0.07
<i>Styrax grandifolius</i>	0.01	0.12	0.39	0.02	0.07
<i>Ulmus</i> sp.	0.01	0.12	0.39	0.02	0.07
Totals	6.63	100.12	1776.84	100.00	100.06

Table E4: Frequency, total cover, relative cover, relative frequency, and importance value of *ground layer species*, all plots, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	293.00	870.00	9.39	6.96	8.18
<i>Parthenocissus quinquefolia</i>	229.00	558.00	6.02	5.44	5.73
<i>Dichanthelium boscii</i>	139.00	294.00	3.17	3.30	3.24
<i>Vitis rotundifolia</i>	123.00	315.00	3.40	2.92	3.16
<i>Acer rubrum</i>	116.00	240.00	2.59	2.76	2.67
<i>Amphicarpaea bracteata</i>	98.00	186.00	2.01	2.33	2.17
<i>Quercus alba</i>	82.00	175.00	1.89	1.95	1.92
<i>Rubus flagellaris</i>	70.00	179.00	1.93	1.66	1.80
<i>Smilax glauca</i>	83.00	136.00	1.47	1.97	1.72
<i>Nyssa sylvatica</i>	65.00	149.00	1.61	1.54	1.58
<i>Carex</i> sp.	69.00	133.00	1.44	1.64	1.54
<i>Vaccinium pallidum</i>	58.00	153.00	1.65	1.38	1.51
<i>Sanicula canadensis</i>	68.00	119.00	1.28	1.62	1.45
<i>Helianthus divaricatus</i>	51.00	148.00	1.60	1.21	1.40
<i>Brachyelytrum erectum</i>	57.00	120.00	1.30	1.35	1.32
<i>Desmodium nudiflorum</i>	52.00	129.00	1.39	1.24	1.31
<i>Rubus argutus</i>	49.00	127.00	1.37	1.16	1.27
<i>Danthonia spicata</i>	44.00	123.00	1.33	1.05	1.19
<i>Dichanthelium commutatum</i>	56.00	95.00	1.03	1.33	1.18
<i>Cornus florida</i>	47.00	113.00	1.22	1.12	1.17
<i>Viola sororia</i>	53.00	99.00	1.07	1.26	1.16
<i>Pinus echinata</i>	54.00	95.00	1.03	1.28	1.15
<i>Sassafras albidum</i>	48.00	89.00	0.96	1.14	1.05
<i>Smilax rotundifolia</i>	45.00	94.00	1.01	1.07	1.04
<i>Fraxinus americana</i>	42.00	95.00	1.03	1.00	1.01
<i>Quercus rubra</i>	40.00	89.00	0.96	0.95	0.96
<i>Carya tomentosa</i>	37.00	88.00	0.95	0.88	0.91
<i>Smilax bona-nox</i>	42.00	75.00	0.81	1.00	0.90
<i>Ostrya virginiana</i>	37.00	83.00	0.90	0.88	0.89
<i>Schizachyrium scoparium</i>	29.00	100.00	1.08	0.69	0.88
<i>Quercus velutina</i>	34.00	88.00	0.95	0.81	0.88
<i>Vitis aestivalis</i>	35.00	80.00	0.86	0.83	0.85
<i>Helianthus hirsutus</i>	33.00	80.00	0.86	0.78	0.82
<i>Dichanthelium dichotomum</i>	36.00	68.00	0.73	0.86	0.79
<i>Galium circaeazans</i>	38.00	63.00	0.68	0.90	0.79
<i>Prunus serotina</i>	31.00	66.00	0.71	0.74	0.72
<i>Ulmus alata</i>	31.00	64.00	0.69	0.74	0.71
<i>Solidago ulmifolia</i>	30.00	66.00	0.71	0.71	0.71
<i>Scleria oligantha</i>	29.00	65.00	0.70	0.69	0.70
<i>Agrimonia rostellata</i>	27.00	56.00	0.60	0.64	0.62
<i>Clitoria mariana</i>	27.00	56.00	0.60	0.64	0.62

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Euonymus americanus</i>	28.00	43.00	0.46	0.67	0.56
<i>Rhus copallinum</i>	20.00	58.00	0.63	0.48	0.55
<i>Dioscorea villosa</i>	24.00	44.00	0.48	0.57	0.52
<i>Quercus stellata</i>	20.00	49.00	0.53	0.48	0.50
<i>Carex blanda</i>	23.00	42.00	0.45	0.55	0.50
<i>Symphytotrichum anomalum</i>	21.00	45.00	0.49	0.50	0.49
<i>Euphorbia corollata</i>	23.00	38.00	0.41	0.55	0.48
<i>Dichanthelium acuminatum</i>	18.00	49.00	0.53	0.43	0.48
<i>Carex rosea</i>	22.00	39.00	0.42	0.52	0.47
<i>Viola palmata</i>	21.00	37.00	0.40	0.50	0.45
<i>Carya texana</i>	16.00	44.00	0.48	0.38	0.43
<i>Rubus trivialis</i>	18.00	39.00	0.42	0.43	0.42
<i>Acer saccharum</i>	21.00	31.00	0.33	0.50	0.42
<i>Ageratina altissima</i>	17.00	38.00	0.41	0.40	0.41
<i>Scutellaria ovata</i>	18.00	30.00	0.32	0.43	0.38
<i>Lespedeza virginica</i>	17.00	31.00	0.33	0.40	0.37
<i>Thalictrum thalictroides</i>	18.00	28.00	0.30	0.43	0.36
<i>Lespedeza repens</i>	14.00	36.00	0.39	0.33	0.36
<i>Polystichum acrostichoides</i>	13.00	36.00	0.39	0.31	0.35
<i>Oxalis dillenii</i>	16.00	26.00	0.28	0.38	0.33
<i>Lespedeza procumbens</i>	14.00	30.00	0.32	0.33	0.33
<i>Chasmanthium latifolium</i>	13.00	32.00	0.35	0.31	0.33
<i>Ambrosia artemisiifolia</i>	15.00	26.00	0.28	0.36	0.32
<i>Frangula caroliniana</i>	13.00	30.00	0.32	0.31	0.32
<i>Symphoricarpos orbiculatus</i>	12.00	31.00	0.33	0.29	0.31
<i>Croton willdenowii</i>	11.00	33.00	0.36	0.26	0.31
<i>Berchemia scandens</i>	14.00	26.00	0.28	0.33	0.31
<i>Bromus pubescens</i>	14.00	26.00	0.28	0.33	0.31
<i>Desmodium viridiflorum</i>	14.00	26.00	0.28	0.33	0.31
<i>Potentilla simplex</i>	14.00	26.00	0.28	0.33	0.31
<i>Desmodium rotundifolium</i>	12.00	30.00	0.32	0.29	0.30
<i>Chamaecrista fasciculata</i>	15.00	23.00	0.25	0.36	0.30
<i>Carex glaucoidea</i>	13.00	27.00	0.29	0.31	0.30
<i>Carex hirsutella</i>	12.00	29.00	0.31	0.29	0.30
<i>Desmodium paniculatum</i>	12.00	27.00	0.29	0.29	0.29
<i>Cunila organoides</i>	10.00	31.00	0.33	0.24	0.29
<i>Desmodium laevigatum</i>	14.00	22.00	0.24	0.33	0.29
<i>Lactuca canadensis</i>	14.00	21.00	0.23	0.33	0.28
<i>Dichanthelium linearifolium</i>	11.00	27.00	0.29	0.26	0.28
<i>Solidago nemoralis</i>	11.00	24.00	0.26	0.26	0.26
<i>Pycnanthemum tenuifolium</i>	10.00	25.00	0.27	0.24	0.25
<i>Rubus sp.</i>	10.00	25.00	0.27	0.24	0.25
<i>Phegopteris hexagonoptera</i>	9.00	27.00	0.29	0.21	0.25
<i>Lonicera japonica</i>	9.00	25.00	0.27	0.21	0.24
<i>Carya cordiformis</i>	9.00	24.00	0.26	0.21	0.24
<i>Galactia volubilis</i>	9.00	24.00	0.26	0.21	0.24
<i>Solidago caesia</i>	11.00	18.00	0.19	0.26	0.23

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Diarrhena americana</i>	10.00	20.00	0.22	0.24	0.23
<i>Desmodium glutinosum</i>	9.00	21.00	0.23	0.21	0.22
<i>Iris cristata</i>	10.00	18.00	0.19	0.24	0.22
<i>Viola sp.</i>	12.00	13.00	0.14	0.29	0.21
<i>Salvia lyrata</i>	9.00	19.00	0.21	0.21	0.21
<i>Symphotrichum patens</i>	8.00	21.00	0.23	0.19	0.21
<i>Erechtites hieraciifolius</i>	10.00	16.00	0.17	0.24	0.21
<i>Galium concinnum</i>	10.00	16.00	0.17	0.24	0.21
<i>Amelanchier arborea</i>	9.00	18.00	0.19	0.21	0.20
<i>Cercis canadensis</i>	9.00	18.00	0.19	0.21	0.20
<i>Leersia virginica</i>	8.00	20.00	0.22	0.19	0.20
<i>Scutellaria elliptica</i>	11.00	13.00	0.14	0.26	0.20
<i>Polygonatum biflorum</i>	9.00	17.00	0.18	0.21	0.20
<i>Elymus hystrix</i>	8.00	19.00	0.21	0.19	0.20
<i>Viola sagittata</i>	10.00	13.00	0.14	0.24	0.19
<i>Lespedeza hirta</i>	7.00	19.00	0.21	0.17	0.19
<i>Microstegium vimineum</i>	9.00	14.00	0.15	0.21	0.18
<i>Packera obovata</i>	9.00	13.00	0.14	0.21	0.18
<i>Carex communis</i>	8.00	15.00	0.16	0.19	0.18
<i>Podophyllum peltatum</i>	8.00	15.00	0.16	0.19	0.18
<i>Vitis cinerea</i>	8.00	15.00	0.16	0.19	0.18
<i>Carex caroliniana</i>	7.00	17.00	0.18	0.17	0.17
<i>Asarum canadense</i>	8.00	14.00	0.15	0.19	0.17
<i>Hamamelis virginiana</i>	8.00	14.00	0.15	0.19	0.17
<i>Liquidambar styraciflua</i>	8.00	14.00	0.15	0.19	0.17
<i>Phryma leptostachya</i>	9.00	11.00	0.12	0.21	0.17
<i>Asplenium platyneuron</i>	7.00	15.00	0.16	0.17	0.16
<i>Dichanthelium laxiflorum</i>	7.00	14.00	0.15	0.17	0.16
<i>Diospyros virginiana</i>	7.00	14.00	0.15	0.17	0.16
<i>Trachelospermum difforme</i>	6.00	16.00	0.17	0.14	0.16
<i>Quercus falcata</i>	6.00	15.00	0.16	0.14	0.15
<i>Carex oligocarpa</i>	7.00	12.00	0.13	0.17	0.15
<i>Aesculus pavia</i>	5.00	16.00	0.17	0.12	0.15
<i>Bignonia capreolata</i>	5.00	16.00	0.17	0.12	0.15
<i>Aristolochia serpentaria</i>	8.00	9.00	0.10	0.19	0.14
<i>Solidago hispida</i>	8.00	9.00	0.10	0.19	0.14
<i>Viburnum rufidulum</i>	5.00	15.00	0.16	0.12	0.14
<i>Prenanthes altissima</i>	7.00	10.00	0.11	0.17	0.14
<i>Sanguinaria canadensis</i>	7.00	10.00	0.11	0.17	0.14
<i>Uvularia sessilifolia</i>	7.00	10.00	0.11	0.17	0.14
<i>Cynoglossum virginianum</i>	6.00	12.00	0.13	0.14	0.14
<i>Celtis occidentalis</i>	6.00	11.00	0.12	0.14	0.13
<i>Conyza canadensis</i>	6.00	11.00	0.12	0.14	0.13
<i>Elymus glabriflorus</i>	6.00	11.00	0.12	0.14	0.13
<i>Antennaria plantaginifolia</i>	5.00	13.00	0.14	0.12	0.13
<i>Dirca palustris</i>	5.00	13.00	0.14	0.12	0.13
<i>Phemeranthus calycinus</i>	5.00	13.00	0.14	0.12	0.13
<i>Rosa carolina</i>	5.00	13.00	0.14	0.12	0.13
<i>Ulmus rubra</i>	5.00	13.00	0.14	0.12	0.13

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Acalypha virginica</i>	6.00	10.00	0.11	0.14	0.13
<i>Rhus glabra</i>	6.00	10.00	0.11	0.14	0.13
<i>Daucus carota</i>	5.00	12.00	0.13	0.12	0.12
<i>Morus rubra</i>	5.00	12.00	0.13	0.12	0.12
<i>Dichanthelium oligosanthes</i>	4.00	14.00	0.15	0.10	0.12
<i>Diodia teres</i>	4.00	14.00	0.15	0.10	0.12
<i>Vaccinium arboreum</i>	4.00	14.00	0.15	0.10	0.12
<i>Galium arkansanum</i>	5.00	11.00	0.12	0.12	0.12
<i>Lobelia spicata</i>	5.00	11.00	0.12	0.12	0.12
<i>Carya cordiformis</i>	6.00	8.00	0.09	0.14	0.11
<i>Solidago petiolaris</i>	5.00	10.00	0.11	0.12	0.11
<i>Quercus muehlenbergii</i>	4.00	12.00	0.13	0.10	0.11
<i>Carex crinita</i>	5.00	9.00	0.10	0.12	0.11
<i>Carex laxiflora</i>	5.00	9.00	0.10	0.12	0.11
<i>Carex sp. 2</i>	5.00	9.00	0.10	0.12	0.11
<i>Geum canadense</i>	5.00	9.00	0.10	0.12	0.11
<i>Pseudognaphalium obtusifolium</i>	6.00	6.00	0.06	0.14	0.10
<i>Juniperus virginiana</i>	5.00	8.00	0.09	0.12	0.10
<i>Monarda bradburiana</i>	5.00	8.00	0.09	0.12	0.10
<i>Phlox pilosa</i>	5.00	8.00	0.09	0.12	0.10
<i>Ruellia pedunculata</i>	5.00	8.00	0.09	0.12	0.10
<i>Allium canadense</i>	4.00	10.00	0.11	0.10	0.10
<i>Carex digitalis</i>	4.00	10.00	0.11	0.10	0.10
<i>Callicarpa americana</i>	3.00	12.00	0.13	0.07	0.10
<i>Piptochaetium avenaceum</i>	3.00	12.00	0.13	0.07	0.10
<i>Menispermum canadense</i>	5.00	7.00	0.08	0.12	0.10
<i>Chasmanthium sessiliflorum</i>	4.00	9.00	0.10	0.10	0.10
<i>Pinus taeda</i>	4.00	9.00	0.10	0.10	0.10
<i>Robinia pseudoacacia</i>	4.00	9.00	0.10	0.10	0.10
<i>Solidago radula</i>	4.00	9.00	0.10	0.10	0.10
<i>Tradescantia ohiensis</i>	4.00	9.00	0.10	0.10	0.10
<i>Pedicularis canadensis</i>	3.00	11.00	0.12	0.07	0.10
<i>Rhus aromatica</i>	3.00	11.00	0.12	0.07	0.10
<i>Galium pilosum</i>	5.00	6.00	0.06	0.12	0.09
<i>Asimina triloba</i>	4.00	8.00	0.09	0.10	0.09
<i>Erigeron annuus</i>	4.00	8.00	0.09	0.10	0.09
<i>Vernonia baldwinii</i>	3.00	10.00	0.11	0.07	0.09
<i>Ampelopsis arborea</i>	4.00	7.00	0.08	0.10	0.09
<i>Aralia spinosa</i>	4.00	7.00	0.08	0.10	0.09
<i>Arisaema dracontium</i>	4.00	7.00	0.08	0.10	0.09
<i>Circaea canadensis</i>	4.00	7.00	0.08	0.10	0.09
<i>Prunella vulgaris</i>	4.00	7.00	0.08	0.10	0.09
<i>Dichanthelium malacophyllum</i>	3.00	9.00	0.10	0.07	0.08
<i>Hypericum prolificum</i>	3.00	9.00	0.10	0.07	0.08
<i>Boechera canadensis</i>	4.00	6.00	0.06	0.10	0.08
<i>Hieracium longipilum</i>	4.00	6.00	0.06	0.10	0.08

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Krigia biflora</i>	4.00	6.00	0.06	0.10	0.08
<i>Passiflora lutea</i>	4.00	6.00	0.06	0.10	0.08
<i>Bromus sp.</i>	3.00	8.00	0.09	0.07	0.08
<i>Carex glaucoidea</i>	3.00	8.00	0.09	0.07	0.08
<i>Carya tomentosa</i>	3.00	8.00	0.09	0.07	0.08
<i>Carex cephalophora</i>	3.00	8.00	0.09	0.07	0.08
<i>Echinacea pallida</i>	3.00	8.00	0.09	0.07	0.08
<i>Hypericum pseudomaculatum</i>	3.00	8.00	0.09	0.07	0.08
<i>Arisaema triphyllum</i>	4.00	5.00	0.05	0.10	0.07
<i>Smilax hispida</i>	4.00	5.00	0.05	0.10	0.07
<i>Carya texana</i>	3.00	7.00	0.08	0.07	0.07
<i>Erigeron strigosus</i>	3.00	7.00	0.08	0.07	0.07
<i>Eupatorium serotinum</i>	3.00	7.00	0.08	0.07	0.07
<i>Festuca subverticillata</i>	3.00	7.00	0.08	0.07	0.07
<i>Lindera benzoin</i>	3.00	7.00	0.08	0.07	0.07
<i>Lysimachia quadriflora</i>	3.00	7.00	0.08	0.07	0.07
<i>Physalis heterophylla</i>	3.00	7.00	0.08	0.07	0.07
<i>Symphotrichum pilosum</i>	3.00	7.00	0.08	0.07	0.07
<i>Trillium sessile</i>	3.00	7.00	0.08	0.07	0.07
<i>Acalypha monococca</i>	4.00	4.00	0.04	0.10	0.07
<i>Botrychium virginianum</i>	3.00	6.00	0.06	0.07	0.07
<i>Carex muehlenbergii</i>	3.00	6.00	0.06	0.07	0.07
<i>Carex retroflexa</i>	3.00	6.00	0.06	0.07	0.07
<i>Carya glabra</i>	2.00	8.00	0.09	0.05	0.07
<i>Eleocharis tenuis</i>	2.00	8.00	0.09	0.05	0.07
<i>Carya sp.</i>	3.00	5.00	0.05	0.07	0.06
<i>Fraxinus sp.</i>	3.00	5.00	0.05	0.07	0.06
<i>Gillenia stipulata</i>	3.00	5.00	0.05	0.07	0.06
<i>Hypericum hypericoides</i>	3.00	5.00	0.05	0.07	0.06
<i>Ruellia strepens</i>	3.00	5.00	0.05	0.07	0.06
<i>Viburnum prunifolium</i>	3.00	5.00	0.05	0.07	0.06
<i>Coreopsis grandiflora</i>	2.00	7.00	0.08	0.05	0.06
<i>Helianthus angustifolius</i>	3.00	4.00	0.04	0.07	0.06
<i>Perilla frutescens</i>	3.00	4.00	0.04	0.07	0.06
<i>Sideroxylon lanuginosum</i>	3.00	4.00	0.04	0.07	0.06
<i>Aesculus glabra</i>	2.00	6.00	0.06	0.05	0.06
<i>Carex albicans</i>	2.00	6.00	0.06	0.05	0.06
<i>Desmodium sp. 2</i>	2.00	6.00	0.06	0.05	0.06
<i>Fraxinus pennsylvanica</i>	2.00	6.00	0.06	0.05	0.06
<i>Spigelia marilandica</i>	2.00	6.00	0.06	0.05	0.06
<i>unknown graminoid 2</i>	2.00	6.00	0.06	0.05	0.06
<i>Valerianella palmeri</i>	2.00	6.00	0.06	0.05	0.06
<i>Symphotrichum sp.</i>	3.00	3.00	0.03	0.07	0.05
<i>Alnus serrulata</i>	2.00	5.00	0.05	0.05	0.05
<i>Crataegous sp.</i>	2.00	5.00	0.05	0.05	0.05
<i>Carex sp. 1</i>	2.00	5.00	0.05	0.05	0.05
<i>Carex sp. 3</i>	2.00	5.00	0.05	0.05	0.05
<i>Eutrochium purpureum</i>	2.00	5.00	0.05	0.05	0.05

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Galium aparine</i>	2.00	5.00	0.05	0.05	0.05
<i>Monarda fistulosa</i>	2.00	5.00	0.05	0.05	0.05
<i>Stylosanthes biflora</i>	2.00	5.00	0.05	0.05	0.05
<i>unknown graminoid 1</i>	2.00	5.00	0.05	0.05	0.05
<i>Viburnum dentatum</i>	2.00	5.00	0.05	0.05	0.05
<i>Viola striata</i>	2.00	5.00	0.05	0.05	0.05
<i>Carpinus caroliniana</i>	2.00	4.00	0.04	0.05	0.05
<i>Ceanothus americanus</i>	2.00	4.00	0.04	0.05	0.05
<i>Carex cherokeensis</i>	2.00	4.00	0.04	0.05	0.05
<i>Carex complanata</i>	2.00	4.00	0.04	0.05	0.05
<i>Carex lurida</i>	2.00	4.00	0.04	0.05	0.05
<i>Carex nigromarginata</i>	2.00	4.00	0.04	0.05	0.05
<i>Desmodium perplexum</i>	2.00	4.00	0.04	0.05	0.05
<i>Echinacea purpurea</i>	2.00	4.00	0.04	0.05	0.05
<i>Eriocaulon koernickianum</i>	2.00	4.00	0.04	0.05	0.05
<i>Quercus michauxii</i>	2.00	4.00	0.04	0.05	0.05
<i>Smilax herbacea</i>	2.00	4.00	0.04	0.05	0.05
<i>Tridens flavus</i>	2.00	4.00	0.04	0.05	0.05
<i>unknown forb 4</i>	2.00	4.00	0.04	0.05	0.05
<i>Boehmeria cylindrica</i>	2.00	3.00	0.03	0.05	0.04
<i>Carex blanda</i>	2.00	3.00	0.03	0.05	0.04
<i>Desmodium sp.</i>	2.00	3.00	0.03	0.05	0.04
<i>Desmodium sp. 1</i>	2.00	3.00	0.03	0.05	0.04
<i>Hypericum punctatum</i>	2.00	3.00	0.03	0.05	0.04
<i>Ilex decidua</i>	2.00	3.00	0.03	0.05	0.04
<i>Lespedeza cuneata</i>	2.00	3.00	0.03	0.05	0.04
<i>Physalis virginiana</i>	2.00	3.00	0.03	0.05	0.04
<i>Silphium asteriscus</i>	2.00	3.00	0.03	0.05	0.04
<i>Solidago flexicaulis</i>	2.00	3.00	0.03	0.05	0.04
<i>Solidago sp.</i>	2.00	3.00	0.03	0.05	0.04
<i>Solidago odora</i>	2.00	3.00	0.03	0.05	0.04
<i>Chasmanthium laxum</i>	1.00	5.00	0.05	0.02	0.04
<i>Helianthus sp.</i>	1.00	5.00	0.05	0.02	0.04
<i>Houstonia purpurea</i>	2.00	2.00	0.02	0.05	0.03
<i>Mitchella repens</i>	2.00	2.00	0.02	0.05	0.03
<i>Phlox sp.</i>	2.00	2.00	0.02	0.05	0.03
<i>Senna sp.</i>	2.00	2.00	0.02	0.05	0.03
<i>Smilax sp.</i>	2.00	2.00	0.02	0.05	0.03
<i>Carex digitalis</i>	1.00	4.00	0.04	0.02	0.03
<i>Coreopsis lanceolata</i>	1.00	4.00	0.04	0.02	0.03
<i>Staphylea trifolia</i>	1.00	4.00	0.04	0.02	0.03
<i>Celtis tenuifolia</i>	1.00	3.00	0.03	0.02	0.03
<i>Carex frankii</i>	1.00	3.00	0.03	0.02	0.03
<i>Desmodium cuspidatum</i>	1.00	3.00	0.03	0.02	0.03
<i>Hieracium gronovii</i>	1.00	3.00	0.03	0.02	0.03
<i>Hydrastis canadensis</i>	1.00	3.00	0.03	0.02	0.03
<i>Laportea canadensis</i>	1.00	3.00	0.03	0.02	0.03
<i>Lespedeza frutescens</i>	1.00	3.00	0.03	0.02	0.03
<i>Ludwigia alternifolia</i>	1.00	3.00	0.03	0.02	0.03

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Polymnia canadensis</i>	1.00	3.00	0.03	0.02	0.03
<i>Polygala sanguinea</i>	1.00	3.00	0.03	0.02	0.03
<i>Polypodium virginianum</i>	1.00	3.00	0.03	0.02	0.03
<i>Prunus mexicana</i>	1.00	3.00	0.03	0.02	0.03
<i>Rudbeckia hirta</i>	1.00	3.00	0.03	0.02	0.03
<i>Ruellia humilis</i>	1.00	3.00	0.03	0.02	0.03
<i>Symphyotrichum lateriflorum</i>	1.00	3.00	0.03	0.02	0.03
unknown forb 6	1.00	3.00	0.03	0.02	0.03
unknown forb 7	1.00	3.00	0.03	0.02	0.03
unknown sp. 10	1.00	3.00	0.03	0.02	0.03
<i>Viburnum sp.</i>	1.00	3.00	0.03	0.02	0.03
<i>Viola pedata</i>	1.00	3.00	0.03	0.02	0.03
<i>Adiantum pedatum</i>	1.00	2.00	0.02	0.02	0.02
<i>Apocynum cannabinum</i>	1.00	2.00	0.02	0.02	0.02
<i>Carex planispicata</i>	1.00	2.00	0.02	0.02	0.02
<i>Desmodium sp. 4</i>	1.00	2.00	0.02	0.02	0.02
<i>Fallopia scandens</i>	1.00	2.00	0.02	0.02	0.02
<i>Galium virgatum</i>	1.00	2.00	0.02	0.02	0.02
<i>Geranium carolinianum</i>	1.00	2.00	0.02	0.02	0.02
<i>Houstonia sp.</i>	1.00	2.00	0.02	0.02	0.02
<i>Liatris aspera</i>	1.00	2.00	0.02	0.02	0.02
<i>Lonicera dioica</i>	1.00	2.00	0.02	0.02	0.02
<i>Lonicera sempervirens</i>	1.00	2.00	0.02	0.02	0.02
<i>Magnolia acuminata</i>	1.00	2.00	0.02	0.02	0.02
<i>Matelea decipiens</i>	1.00	2.00	0.02	0.02	0.02
<i>Mikania scandens</i>	1.00	2.00	0.02	0.02	0.02
<i>Panicum anceps</i>	1.00	2.00	0.02	0.02	0.02
<i>Penstemon digitalis</i>	1.00	2.00	0.02	0.02	0.02
<i>Physalis sp.</i>	1.00	2.00	0.02	0.02	0.02
<i>Plantago virginica</i>	1.00	2.00	0.02	0.02	0.02
<i>Prenanthes sp.</i>	1.00	2.00	0.02	0.02	0.02
<i>Primula meadia</i>	1.00	2.00	0.02	0.02	0.02
<i>Rosa setigera</i>	1.00	2.00	0.02	0.02	0.02
<i>Solidago altissima</i>	1.00	2.00	0.02	0.02	0.02
<i>Sorghastrum nutans</i>	1.00	2.00	0.02	0.02	0.02
<i>Styrax grandifolius</i>	1.00	2.00	0.02	0.02	0.02
<i>Symphyotrichum dumosum</i>	1.00	2.00	0.02	0.02	0.02
<i>Symplocos tinctoria</i>	1.00	2.00	0.02	0.02	0.02
<i>Tephrosia virginiana</i>	1.00	2.00	0.02	0.02	0.02
unknown sp. 11	1.00	2.00	0.02	0.02	0.02
unknown sp. 15	1.00	2.00	0.02	0.02	0.02
unknown sp. 17	1.00	2.00	0.02	0.02	0.02
unknown sp. 18	1.00	2.00	0.02	0.02	0.02
unknown sp. 20	1.00	2.00	0.02	0.02	0.02
<i>Verbesina alternifolia</i>	1.00	2.00	0.02	0.02	0.02
<i>Vitis vulpina</i>	1.00	2.00	0.02	0.02	0.02
<i>Amianthium muscitoxicum</i>	1.00	1.00	0.01	0.02	0.02
<i>Andropogon gerardii</i>	1.00	1.00	0.01	0.02	0.02

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Angelica venenosa</i>	1.00	1.00	0.01	0.02	0.02
<i>Carya ovata</i>	1.00	1.00	0.01	0.02	0.02
<i>Croton monanthogynus</i>	1.00	1.00	0.01	0.02	0.02
<i>Carex meadii</i>	1.00	1.00	0.01	0.02	0.02
<i>Carex sp. 4</i>	1.00	1.00	0.01	0.02	0.02
<i>Desmodium sp. 3</i>	1.00	1.00	0.01	0.02	0.02
<i>Elymus virginicus</i>	1.00	1.00	0.01	0.02	0.02
<i>Eutrochium sp.</i>	1.00	1.00	0.01	0.02	0.02
<i>Fragaria virginiana</i>	1.00	1.00	0.01	0.02	0.02
<i>Galium sp.</i>	1.00	1.00	0.01	0.02	0.02
<i>Galium triflorum</i>	1.00	1.00	0.01	0.02	0.02
<i>Geranium maculatum</i>	1.00	1.00	0.01	0.02	0.02
<i>Helianthus grosseserratus</i>	1.00	1.00	0.01	0.02	0.02
<i>Krigia dandelion</i>	1.00	1.00	0.01	0.02	0.02
<i>Lespedeza violacea</i>	1.00	1.00	0.01	0.02	0.02
<i>Lonicera sp.</i>	1.00	1.00	0.01	0.02	0.02
<i>Maianthemum racemosum</i>	1.00	1.00	0.01	0.02	0.02
<i>Muhlenbergia sp. 1</i>	1.00	1.00	0.01	0.02	0.02
<i>Muhlenbergia sp. 2</i>	1.00	1.00	0.01	0.02	0.02
<i>Polemonium reptans</i>	1.00	1.00	0.01	0.02	0.02
<i>Ptelea trifoliata</i>	1.00	1.00	0.01	0.02	0.02
<i>Ranunculus hispidus</i>	1.00	1.00	0.01	0.02	0.02
<i>Scutellaria sp.</i>	1.00	1.00	0.01	0.02	0.02
<i>Solanum sp.</i>	1.00	1.00	0.01	0.02	0.02
<i>Thalictrum dasycarpum</i>	1.00	1.00	0.01	0.02	0.02
<i>Tilia americana</i>	1.00	1.00	0.01	0.02	0.02
<i>Triodanis perfoliata</i>	1.00	1.00	0.01	0.02	0.02
<i>unknown sp. 16</i>	1.00	1.00	0.01	0.02	0.02
<i>unknown sp. 19</i>	1.00	1.00	0.01	0.02	0.02
<i>Vaccinium stamineum</i>	1.00	1.00	0.01	0.02	0.02
Totals	4210.00	9263.00	100.00	100.00	100.00

APPENDIX F. Species importance values by strata and topographic positions, 2011-2012.

Table F1: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *ridgetops*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	1.88	25.86	24.44	41.51	21.58	28.79	30.52	28.39
<i>Pinus echinata</i>	1.52	18.97	19.76	42.29	21.99	29.33	24.68	24.32
<i>Quercus stellata</i>	0.68	10.34	8.84	11.16	5.80	7.74	11.04	9.71
<i>Pinus taeda</i>	0.76	1.72	9.88	15.65	8.14	10.85	12.34	8.30
snag	0.28	8.62	3.64	8.18	4.25	5.67	4.55	6.28
<i>Nyssa sylvatica</i>	0.20	8.62	2.60	4.87	2.53	3.37	3.25	5.08
<i>Carya texana</i>	0.28	6.90	3.64	4.32	2.24	2.99	4.55	4.81
<i>Carya tomentosa</i>	0.20	6.90	2.60	5.99	3.12	4.16	3.25	4.77
<i>Quercus rubra</i>	0.20	5.17	2.60	7.79	4.05	5.40	3.25	4.61
<i>Quercus velutina</i>	0.04	1.72	0.52	0.85	0.44	0.59	0.65	0.99
<i>Acer rubrum</i>	0.04	1.72	0.52	0.64	0.33	0.44	0.65	0.94
<i>Prunus serotina</i>	0.04	1.72	0.52	0.49	0.25	0.34	0.65	0.90
<i>Ulmus alata</i>	0.04	1.72	0.52	0.45	0.23	0.31	0.65	0.89
Totals	6.16	100.00	80.08	144.17	74.97	100.00	100.00	100.00

Table F2: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1"– 7.9" dbh), *ridgetops*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snag	2.00	12.73	26.00	4.26	2.21	15.74	13.16	13.88
<i>Quercus alba</i>	0.96	8.18	12.48	5.51	2.87	20.38	6.32	11.63
<i>Nyssa sylvatica</i>	1.84	7.27	23.92	2.87	1.49	10.63	12.11	10.00
<i>Prunus serotina</i>	1.48	7.27	19.24	1.07	0.56	3.97	9.74	6.99
<i>Carya tomentosa</i>	0.64	7.27	8.32	2.21	1.15	8.19	4.21	6.56
<i>Acer rubrum</i>	1.28	8.18	16.64	0.61	0.32	2.26	8.42	6.29
<i>Liquidambar styraciflua</i>	1.32	2.73	17.16	1.48	0.77	5.49	8.68	5.63
<i>Quercus stellata</i>	0.56	4.55	7.28	2.18	1.13	8.05	3.68	5.43
<i>Cornus florida</i>	0.68	4.55	8.84	0.68	0.35	2.52	4.47	3.85
<i>Ulmus alata</i>	0.52	3.64	6.76	1.13	0.59	4.19	3.42	3.75
<i>Carya texana</i>	0.36	3.64	4.68	1.29	0.67	4.78	2.37	3.60
<i>Sassafras albidum</i>	0.64	3.64	8.32	0.17	0.09	0.64	4.21	2.83
<i>Quercus rubra</i>	0.32	3.64	4.16	0.06	0.03	0.22	2.11	1.99
<i>Fagus grandifolia</i>	0.40	1.82	5.20	0.26	0.13	0.95	2.63	1.80
<i>Pinus taeda</i>	0.12	0.91	1.56	0.91	0.47	3.38	0.79	1.69
<i>Pinus echinata</i>	0.16	1.82	2.08	0.53	0.27	1.95	1.05	1.61
<i>Quercus phellos</i>	0.48	0.91	6.24	0.09	0.05	0.33	3.16	1.46
<i>Diospyros virginiana</i>	0.20	0.91	2.60	0.47	0.24	1.73	1.32	1.32
<i>Amelanchier arborea</i>	0.16	1.82	2.08	0.26	0.14	0.96	1.05	1.28
<i>Juniperus virginiana</i>	0.08	1.82	1.04	0.28	0.15	1.04	0.53	1.13
<i>Aralia spinosa</i>	0.16	1.82	2.08	0.01	0.01	0.05	1.05	0.97
<i>Carya cordiformis</i>	0.08	0.91	1.04	0.37	0.19	1.38	0.53	0.94
<i>Frangula caroliniana</i>	0.08	1.82	1.04	0.01	0.01	0.04	0.53	0.80
<i>Quercus falcata</i>	0.16	0.91	2.08	0.03	0.02	0.13	1.05	0.70
<i>Ulmus rubra</i>	0.16	0.91	2.08	0.03	0.01	0.10	1.05	0.69
<i>Fraxinus pennsylvanica</i>	0.04	0.91	0.52	0.11	0.06	0.40	0.26	0.52
<i>Carpinus caroliniana</i>	0.08	0.91	1.04	0.02	0.01	0.08	0.53	0.50
<i>Acer saccharum</i>	0.08	0.91	1.04	0.01	0.00	0.03	0.53	0.49
<i>Quercus velutina</i>	0.04	0.91	0.52	0.05	0.03	0.20	0.26	0.46
<i>Crataegous sp.</i>	0.04	0.91	0.52	0.04	0.02	0.15	0.26	0.44
<i>Robinia pseudoacacia</i>	0.04	0.91	0.52	0.01	0.00	0.03	0.26	0.40

Species	Frequency	Relative Frequency	Stems/ Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Cercis canadensis</i>	0.04	0.91	0.52	0.00	0.00	0.01	0.26	0.40
<i>Totals</i>	15.20	100.00	197.60	27.04	14.06	100.00	100.00	100.00

Table F3: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, ridgetops*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.68	8.99	673.88	19.88	14.44
<i>Nyssa sylvatica</i>	0.64	8.47	459.20	13.55	11.01
<i>Carya tomentosa</i>	0.68	8.99	176.92	5.22	7.11
<i>Sassafras albidum</i>	0.48	6.35	244.51	7.21	6.78
<i>Prunus serotina</i>	0.48	6.35	208.73	6.16	6.25
<i>Quercus rubra</i>	0.40	5.29	186.86	5.51	5.40
<i>Vitis rotundifolia</i>	0.20	2.65	198.79	5.87	4.26
<i>Rubus argutus</i>	0.16	2.12	204.75	6.04	4.08
<i>Rhus copallinum</i>	0.28	3.70	147.10	4.34	4.02
<i>Quercus velutina</i>	0.32	4.23	85.48	2.52	3.38
<i>Quercus alba</i>	0.36	4.76	61.62	1.82	3.29
<i>Frangula caroliniana</i>	0.20	2.65	89.45	2.64	2.64
<i>Fraxinus americana</i>	0.28	3.70	33.79	1.00	2.35
<i>Cornus florida</i>	0.28	3.70	31.81	0.94	2.32
<i>Ulmus alata</i>	0.20	2.65	51.68	1.52	2.09
<i>Quercus stellata</i>	0.20	2.65	33.79	1.00	1.82
<i>Cercis canadensis</i>	0.12	1.59	69.58	2.05	1.82
<i>Rhus glabra</i>	0.08	1.06	75.54	2.23	1.64
<i>Carya texana</i>	0.12	1.59	35.78	1.06	1.32
<i>Liquidambar styraciflua</i>	0.12	1.59	35.78	1.06	1.32
<i>Aralia spinosa</i>	0.08	1.06	41.75	1.23	1.14
<i>Acer saccharum</i>	0.08	1.06	35.78	1.06	1.06
<i>Quercus falcata</i>	0.08	1.06	33.79	1.00	1.03
<i>Magnolia acuminata</i>	0.08	1.06	21.87	0.65	0.85
<i>Pinus echinata</i>	0.08	1.06	19.88	0.59	0.82
<i>Diospyros virginiana</i>	0.08	1.06	17.89	0.53	0.79
<i>Quercus nigra</i>	0.08	1.06	17.89	0.53	0.79
<i>Carya cordiformis</i>	0.08	1.06	13.92	0.41	0.73
<i>Robinia pseudoacacia</i>	0.08	1.06	9.94	0.29	0.68
<i>Fagus grandifolia</i>	0.08	1.06	7.95	0.23	0.65
<i>Vaccinium arboreum</i>	0.08	1.06	3.98	0.12	0.59
<i>Quercus phellos</i>	0.04	0.53	21.87	0.65	0.59
<i>Smilax rotundifolia</i>	0.04	0.53	9.94	0.29	0.41
<i>Quercus sp.</i>	0.04	0.53	5.96	0.18	0.35
<i>Rubus sp.</i>	0.04	0.53	5.96	0.18	0.35
<i>Callicarpa americana</i>	0.04	0.53	3.98	0.12	0.32
<i>Hypericum prolificum</i>	0.04	0.53	3.98	0.12	0.32
<i>Celtis occidentalis</i>	0.04	0.53	1.99	0.06	0.29
<i>Juniperus virginiana</i>	0.04	0.53	1.99	0.06	0.29
<i>Lindera benzoin</i>	0.04	0.53	1.99	0.06	0.29
<i>Prunus mexicana</i>	0.04	0.53	1.99	0.06	0.29

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
Total	7.56	100.00	3389.30	100.00	100.00

Table F4: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, ridgetop, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	54.00	147.00	8.89	6.59	7.74
<i>Parthenocissus quinquefolia</i>	45.00	114.00	6.89	5.49	6.19
<i>Dichantheium boscii</i>	38.00	73.00	4.41	4.64	4.53
<i>Acer rubrum</i>	29.00	69.00	4.17	3.54	3.86
<i>Vitis rotundifolia</i>	24.00	77.00	4.66	2.93	3.79
<i>Rubus flagellaris</i>	28.00	56.00	3.39	3.42	3.40
<i>Rubus argutus</i>	23.00	56.00	3.39	2.81	3.10
<i>Carex</i> sp.	25.00	43.00	2.60	3.05	2.83
<i>Nyssa sylvatica</i>	21.00	47.00	2.84	2.56	2.70
<i>Smilax glauca</i>	22.00	40.00	2.42	2.69	2.55
<i>Helianthus hirsutus</i>	19.00	44.00	2.66	2.32	2.49
<i>Sassafras albidum</i>	18.00	38.00	2.30	2.20	2.25
<i>Quercus alba</i>	16.00	25.00	1.51	1.95	1.73
<i>Danthonia spicata</i>	15.00	26.00	1.57	1.83	1.70
<i>Ulmus alata</i>	13.00	29.00	1.75	1.59	1.67
<i>Vitis aestivalis</i>	12.00	29.00	1.75	1.47	1.61
<i>Desmodium nudiflorum</i>	13.00	23.00	1.39	1.59	1.49
<i>Vaccinium pallidum</i>	10.00	27.00	1.63	1.22	1.43
<i>Carya tomentosa</i>	10.00	25.00	1.51	1.22	1.37
<i>Smilax bona-nox</i>	12.00	20.00	1.21	1.47	1.34
<i>Helianthus divaricatus</i>	9.00	24.00	1.45	1.10	1.27
<i>Amphicarpaea bracteata</i>	12.00	17.00	1.03	1.47	1.25
<i>Quercus velutina</i>	10.00	21.00	1.27	1.22	1.25
<i>Clitoria mariana</i>	11.00	18.00	1.09	1.34	1.22
<i>Cornus florida</i>	8.00	22.00	1.33	0.98	1.15
<i>Carya texana</i>	10.00	17.00	1.03	1.22	1.12
<i>Desmodium laevigatum</i>	9.00	15.00	0.91	1.10	1.00
<i>Quercus stellata</i>	9.00	15.00	0.91	1.10	1.00
<i>Lespedeza repens</i>	9.00	13.00	0.79	1.10	0.94
<i>Carex communis</i>	8.00	15.00	0.91	0.98	0.94
<i>Schizachyrium scoparium</i>	7.00	16.00	0.97	0.85	0.91
<i>Viola palmata</i>	9.00	11.00	0.67	1.10	0.88
<i>Carex blanda</i>	8.00	13.00	0.79	0.98	0.88
<i>Solidago ulmifolia</i>	7.00	15.00	0.91	0.85	0.88
<i>Pinus echinata</i>	8.00	11.00	0.67	0.98	0.82
<i>Quercus rubra</i>	8.00	11.00	0.67	0.98	0.82
<i>Dichantheium linearifolium</i>	7.00	13.00	0.79	0.85	0.82
<i>Dichantheium commutatum</i>	7.00	12.00	0.73	0.85	0.79
<i>Lonicera japonica</i>	4.00	17.00	1.03	0.49	0.76
<i>Dichantheium dichotomum</i>	7.00	9.00	0.54	0.85	0.70
<i>Potentilla simplex</i>	6.00	11.00	0.67	0.73	0.70
<i>Solidago petiolaris</i>	6.00	10.00	0.60	0.73	0.67

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Trachelospermum difforme</i>	4.00	14.00	0.85	0.49	0.67
<i>Euphorbia corollata</i>	7.00	7.00	0.42	0.85	0.64
<i>Dichanthelium laxiflorum</i>	5.00	10.00	0.60	0.61	0.61
<i>Pycnanthemum tenuifolium</i>	5.00	10.00	0.60	0.61	0.61
<i>Galium circaezans</i>	6.00	6.00	0.36	0.73	0.55
<i>Fraxinus americana</i>	5.00	8.00	0.48	0.61	0.55
<i>Rhus copallinum</i>	4.00	10.00	0.60	0.49	0.55
<i>Dichanthelium acuminatum</i>	5.00	7.00	0.42	0.61	0.52
<i>Crotalaria sagittalis</i>	4.00	8.00	0.48	0.49	0.49
<i>Viola sororia</i>	5.00	5.00	0.30	0.61	0.46
<i>Desmodium perplexum</i>	4.00	7.00	0.42	0.49	0.46
<i>Symphyotrichum anomalum</i>	4.00	7.00	0.42	0.49	0.46
<i>Rhus glabra</i>	4.00	6.00	0.36	0.49	0.43
<i>Rudbeckia hirta</i>	4.00	6.00	0.36	0.49	0.43
<i>Dichanthelium scoparium</i>	3.00	8.00	0.48	0.37	0.42
unknown forb 2	3.00	7.00	0.42	0.37	0.39
<i>Amelanchier arborea</i>	3.00	5.00	0.30	0.37	0.33
<i>Dioscorea villosa</i>	3.00	5.00	0.30	0.37	0.33
<i>Carex cephalophora</i>	3.00	4.00	0.24	0.37	0.30
<i>Prunus serotina</i>	3.00	4.00	0.24	0.37	0.30
<i>Viola tricolor</i>	3.00	4.00	0.24	0.37	0.30
<i>Desmodium sp. 1</i>	2.00	6.00	0.36	0.24	0.30
<i>Hypericum hypericoides</i>	3.00	3.00	0.18	0.37	0.27
<i>Ambrosia artemisiifolia</i>	2.00	5.00	0.30	0.24	0.27
<i>Galium arkansanum</i>	2.00	5.00	0.30	0.24	0.27
<i>Scleria oligantha</i>	2.00	5.00	0.30	0.24	0.27
<i>Smilax rotundifolia</i>	2.00	5.00	0.30	0.24	0.27
<i>Frangula caroliniana</i>	2.00	4.00	0.24	0.24	0.24
<i>Galium pilosum</i>	2.00	4.00	0.24	0.24	0.24
<i>Quercus sp.</i>	2.00	4.00	0.24	0.24	0.24
<i>Scleria sp.</i>	2.00	4.00	0.24	0.24	0.24
<i>Scutellaria ovata</i>	2.00	4.00	0.24	0.24	0.24
<i>Symphyotrichum patens</i>	2.00	4.00	0.24	0.24	0.24
<i>Viburnum rufidulum</i>	2.00	4.00	0.24	0.24	0.24
<i>Carex sp. 2</i>	2.00	3.00	0.18	0.24	0.21
<i>Gillenia stipulata</i>	2.00	3.00	0.18	0.24	0.21
<i>Lespedeza procumbens</i>	2.00	3.00	0.18	0.24	0.21
<i>Phlox pilosa</i>	2.00	3.00	0.18	0.24	0.21
<i>Sanicula canadensis</i>	2.00	3.00	0.18	0.24	0.21
<i>Vaccinium stamineum</i>	1.00	5.00	0.30	0.12	0.21
<i>Desmodium paniculatum</i>	2.00	2.00	0.12	0.24	0.18
<i>Geum canadense</i>	2.00	2.00	0.12	0.24	0.18
<i>Lonicera dioica</i>	2.00	2.00	0.12	0.24	0.18
<i>Physalis virginiana</i>	2.00	2.00	0.12	0.24	0.18
<i>Ruellia pedunculata</i>	2.00	2.00	0.12	0.24	0.18
<i>Tridens flavus</i>	2.00	2.00	0.12	0.24	0.18
<i>Aralia spinosa</i>	1.00	3.00	0.18	0.12	0.15

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Bromus sp.</i>	1.00	3.00	0.18	0.12	0.15
<i>Carex digitalis</i>	1.00	3.00	0.18	0.12	0.15
<i>Desmodium rotundifolium</i>	1.00	3.00	0.18	0.12	0.15
<i>Liquidambar styraciflua</i>	1.00	3.00	0.18	0.12	0.15
<i>Quercus phellos</i>	1.00	3.00	0.18	0.12	0.15
<i>Carex sp. 6</i>	1.00	2.00	0.12	0.12	0.12
<i>Carya cordiformis</i>	1.00	2.00	0.12	0.12	0.12
<i>Ceanothus americanus</i>	1.00	2.00	0.12	0.12	0.12
<i>Chasmanthium latifolium</i>	1.00	2.00	0.12	0.12	0.12
<i>Cynoglossum virginianum</i>	1.00	2.00	0.12	0.12	0.12
<i>Dichantheium malacophyllum</i>	1.00	2.00	0.12	0.12	0.12
<i>Dichantheium sphaerocarpon</i>	1.00	2.00	0.12	0.12	0.12
<i>Elymus virginicus</i>	1.00	2.00	0.12	0.12	0.12
<i>Euphorbia nutans</i>	1.00	2.00	0.12	0.12	0.12
<i>Galactia volubilis</i>	1.00	2.00	0.12	0.12	0.12
<i>Hieracium longipilum</i>	1.00	2.00	0.12	0.12	0.12
<i>Lobelia spicata</i>	1.00	2.00	0.12	0.12	0.12
<i>Polygala verticillata</i>	1.00	2.00	0.12	0.12	0.12
<i>unknown forb 3</i>	1.00	2.00	0.12	0.12	0.12
<i>Viola pedata</i>	1.00	2.00	0.12	0.12	0.12
<i>Andropogon virginicus</i>	1.00	1.00	0.06	0.12	0.09
<i>Bromus pubescens</i>	1.00	1.00	0.06	0.12	0.09
<i>Carex laxiflora</i>	1.00	1.00	0.06	0.12	0.09
<i>Carex sp. 1</i>	1.00	1.00	0.06	0.12	0.09
<i>Celtis occidentalis</i>	1.00	1.00	0.06	0.12	0.09
<i>Commelina erecta</i>	1.00	1.00	0.06	0.12	0.09
<i>Conyza canadensis</i>	1.00	1.00	0.06	0.12	0.09
<i>Elymus glabriflorus</i>	1.00	1.00	0.06	0.12	0.09
<i>Erigeron strigosus</i>	1.00	1.00	0.06	0.12	0.09
<i>Eupatorium serotinum</i>	1.00	1.00	0.06	0.12	0.09
<i>Helianthus angustifolius</i>	1.00	1.00	0.06	0.12	0.09
<i>Heliopsis helianthoides</i>	1.00	1.00	0.06	0.12	0.09
<i>Hieracium gronovii</i>	1.00	1.00	0.06	0.12	0.09
<i>Houstonia purpurea</i>	1.00	1.00	0.06	0.12	0.09
<i>Krigia virginica</i>	1.00	1.00	0.06	0.12	0.09
<i>Lactuca floridana</i>	1.00	1.00	0.06	0.12	0.09
<i>Lespedeza frutescens</i>	1.00	1.00	0.06	0.12	0.09
<i>Lespedeza violacea</i>	1.00	1.00	0.06	0.12	0.09
<i>Liatris aspera</i>	1.00	1.00	0.06	0.12	0.09
<i>Lonicera sempervirens</i>	1.00	1.00	0.06	0.12	0.09
<i>Monarda bradburiana</i>	1.00	1.00	0.06	0.12	0.09
<i>Prenanthes altissima</i>	1.00	1.00	0.06	0.12	0.09
<i>Pseudognaphalium obtusifolium</i>	1.00	1.00	0.06	0.12	0.09
<i>Rhus aromatica</i>	1.00	1.00	0.06	0.12	0.09
<i>Robinia pseudoacacia</i>	1.00	1.00	0.06	0.12	0.09
<i>Rosa carolina</i>	1.00	1.00	0.06	0.12	0.09

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Rubus trivialis</i>	1.00	1.00	0.06	0.12	0.09
<i>Scutellaria elliptica</i>	1.00	1.00	0.06	0.12	0.09
<i>Solidago nemoralis</i>	1.00	1.00	0.06	0.12	0.09
<i>Symphotrichum ericoides</i>	1.00	1.00	0.06	0.12	0.09
<i>Symphoricarpos orbiculatus</i>	1.00	1.00	0.06	0.12	0.09
<i>Tradescantia ohiensis</i>	1.00	1.00	0.06	0.12	0.09
<i>unknown forb 7</i>	1.00	1.00	0.06	0.12	0.09
<i>unknown herb 6</i>	1.00	1.00	0.06	0.12	0.09
<i>Viola sagittata</i>	1.00	1.00	0.06	0.12	0.09
Totals	819.00	1654.00	100.00	100.00	100.00

Table F5: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *north slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	2.91	24.47	37.82	88.45	34.84	38.49	42.86	35.27
<i>Quercus rubra</i>	0.73	12.77	9.45	28.08	11.06	12.22	10.71	11.90
<i>Quercus velutina</i>	0.73	10.64	9.45	27.70	10.91	12.06	10.71	11.14
<i>Nyssa sylvatica</i>	0.48	11.70	6.30	18.36	7.23	7.99	7.14	8.95
<i>Pinus echinata</i>	0.58	4.26	7.48	25.00	9.85	10.88	8.48	7.87
<i>Carya tomentosa</i>	0.45	9.57	5.91	12.19	4.80	5.30	6.70	7.19
snag	0.33	9.57	4.33	12.32	4.85	5.36	4.91	6.62
<i>Acer rubrum</i>	0.12	4.26	1.58	3.18	1.25	1.38	1.79	2.47
<i>Liquidambar styraciflua</i>	0.06	2.13	0.79	1.73	0.68	0.75	0.89	1.26
<i>Quercus falcata</i>	0.06	1.06	0.79	2.03	0.80	0.88	0.89	0.95
<i>Carya glabra</i>	0.03	1.06	0.39	2.89	1.14	1.26	0.45	0.92
<i>Magnolia acuminata</i>	0.06	1.06	0.79	1.07	0.42	0.46	0.89	0.81
<i>Carya texana</i>	0.06	1.06	0.79	0.99	0.39	0.43	0.89	0.80
<i>Quercus stellata</i>	0.03	1.06	0.39	1.83	0.72	0.80	0.45	0.77
<i>Tilia americana</i>	0.03	1.06	0.39	1.13	0.44	0.49	0.45	0.67
<i>Acer saccharum</i>	0.03	1.06	0.39	1.01	0.40	0.44	0.45	0.65
<i>Prunus serotina</i>	0.03	1.06	0.39	0.71	0.28	0.31	0.45	0.61
<i>Robinia pseudoacacia</i>	0.03	1.06	0.39	0.66	0.26	0.29	0.45	0.60
<i>Juniperus virginiana</i>	0.03	1.06	0.39	0.47	0.18	0.20	0.45	0.57
Totals	6.79	100.00	88.24	229.80	90.53	100.00	100.00	100.00

Table F6: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1"– 7.9" dbh), *north slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Carya tomentosa</i>	2.09	12.69	27.18	7.34	2.89	17.24	11.27	13.74
<i>Quercus alba</i>	1.39	9.64	18.12	6.99	2.75	16.42	7.52	11.19
<i>snag</i>	1.97	11.17	25.61	4.63	1.82	10.88	10.62	10.89
<i>Nyssa sylvatica</i>	2.24	9.64	29.15	3.83	1.51	8.99	12.09	10.24
<i>Cornus florida</i>	2.55	9.14	33.09	2.69	1.06	6.32	13.73	9.73
<i>Acer rubrum</i>	1.79	8.12	23.24	4.03	1.59	9.47	9.64	9.08
<i>Ostrya virginiana</i>	1.27	4.57	16.55	1.90	0.75	4.47	6.86	5.30
<i>Prunus serotina</i>	0.88	5.08	11.42	1.45	0.57	3.41	4.74	4.41
<i>Ulmus alata</i>	0.64	2.54	8.27	1.00	0.40	2.36	3.43	2.77
<i>Fagus grandifolia</i>	0.55	1.02	7.09	0.95	0.37	2.23	2.94	2.06
<i>Acer saccharum</i>	0.18	1.52	2.36	1.07	0.42	2.52	0.98	1.67
<i>Carpinus caroliniana</i>	0.39	1.52	5.12	0.50	0.20	1.18	2.12	1.61
<i>Fraxinus americana</i>	0.24	2.03	3.15	0.43	0.17	1.00	1.31	1.45
<i>Liquidambar styraciflua</i>	0.09	1.52	1.18	0.78	0.31	1.83	0.49	1.28
<i>Quercus stellata</i>	0.09	1.52	1.18	0.72	0.28	1.68	0.49	1.23
<i>Ulmus americana</i>	0.36	1.02	4.73	0.10	0.04	0.23	1.96	1.07
<i>Tilia americana</i>	0.21	1.02	2.76	0.44	0.17	1.03	1.14	1.06
<i>Sassafras albidum</i>	0.27	1.52	3.55	0.04	0.02	0.10	1.47	1.03
<i>Morus rubra</i>	0.06	1.02	0.79	0.56	0.22	1.32	0.33	0.89
<i>Carya cordiformis</i>	0.09	1.52	1.18	0.27	0.11	0.63	0.49	0.88
<i>Magnolia acuminata</i>	0.09	0.51	1.18	0.66	0.26	1.56	0.49	0.85
<i>Quercus rubra</i>	0.12	1.52	1.58	0.10	0.04	0.24	0.65	0.81
<i>Quercus velutina</i>	0.06	1.02	0.79	0.45	0.18	1.05	0.33	0.80
<i>Asimina triloba</i>	0.12	1.02	1.58	0.11	0.04	0.25	0.65	0.64
<i>Carya sp.</i>	0.09	0.51	1.18	0.36	0.14	0.85	0.49	0.62
<i>Frangula caroliniana</i>	0.12	1.02	1.58	0.02	0.01	0.04	0.65	0.57
<i>Carya glabra</i>	0.09	1.02	1.18	0.07	0.03	0.17	0.49	0.56
<i>Carya texana</i>	0.06	0.51	0.79	0.36	0.14	0.84	0.33	0.56
<i>Prunus mexicana</i>	0.06	1.02	0.79	0.04	0.02	0.09	0.33	0.48
<i>Amelanchier arborea</i>	0.06	1.02	0.79	0.02	0.01	0.04	0.33	0.46
<i>Carya ovata</i>	0.03	0.51	0.39	0.24	0.10	0.57	0.16	0.41
<i>Magnolia tripetala</i>	0.12	0.51	1.58	0.03	0.01	0.08	0.65	0.41

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus falcata</i>	0.06	0.51	0.79	0.15	0.06	0.36	0.33	0.40
<i>Pinus echinata</i>	0.03	0.51	0.39	0.22	0.09	0.51	0.16	0.39
<i>Cercis canadensis</i>	0.03	0.51	0.39	0.00	0.00	0.01	0.16	0.23
<i>Rhus glabra</i>	0.03	0.51	0.39	0.00	0.00	0.01	0.16	0.23
Totals	18.55	100.00	241.09	42.58	16.78	100.00	100.00	100.00

Table F7: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species*, north slope, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.55	9.14	364.44	22.00	15.57
<i>Nyssa sylvatica</i>	0.55	9.14	191.26	11.55	10.34
<i>Sassafras albidum</i>	0.39	6.60	195.77	11.82	9.21
<i>Prunus serotina</i>	0.48	8.12	93.37	5.64	6.88
<i>Carya tomentosa</i>	0.42	7.11	97.89	5.91	6.51
<i>Ostrya virginiana</i>	0.33	5.58	54.21	3.27	4.43
<i>Quercus rubra</i>	0.27	4.57	46.68	2.82	3.69
<i>Fraxinus americana</i>	0.30	5.08	36.14	2.18	3.63
<i>Frangula caroliniana</i>	0.24	4.06	52.71	3.18	3.62
<i>Cornus florida</i>	0.30	5.08	30.12	1.82	3.45
<i>Acer saccharum</i>	0.15	2.54	69.27	4.18	3.36
<i>Quercus alba</i>	0.24	4.06	42.17	2.55	3.30
<i>Lindera benzoin</i>	0.03	0.51	79.82	4.82	2.66
<i>Hamamelis virginiana</i>	0.09	1.52	51.20	3.09	2.31
<i>Carpinus caroliniana</i>	0.06	1.02	49.70	3.00	2.01
<i>Vitis rotundifolia</i>	0.06	1.02	34.64	2.09	1.55
<i>Quercus velutina</i>	0.12	2.03	12.05	0.73	1.38
<i>Aesculus pavia</i>	0.09	1.52	10.54	0.64	1.08
<i>Carya cordiformis</i>	0.06	1.02	18.07	1.09	1.05
<i>Asimina triloba</i>	0.09	1.52	6.02	0.36	0.94
<i>Cercis canadensis</i>	0.06	1.02	10.54	0.64	0.83
<i>Rubus argutus</i>	0.03	0.51	18.07	1.09	0.80
<i>Carya glabra</i>	0.06	1.02	7.53	0.45	0.73
<i>Amelanchier arborea</i>	0.06	1.02	6.02	0.36	0.69
<i>Ulmus alata</i>	0.06	1.02	6.02	0.36	0.69
<i>Fagus grandifolia</i>	0.06	1.02	4.52	0.27	0.64
<i>Liquidambar styraciflua</i>	0.06	1.02	4.52	0.27	0.64
<i>Aesculus glabra</i>	0.03	0.51	12.05	0.73	0.62
<i>Diospyros virginiana</i>	0.06	1.02	3.01	0.18	0.60
<i>Rhus glabra</i>	0.06	1.02	3.01	0.18	0.60
<i>Robinia pseudoacacia</i>	0.06	1.02	1.51	0.09	0.55
<i>Rhus copallinum</i>	0.03	0.51	6.02	0.36	0.44
<i>Ulmus rubra</i>	0.03	0.51	6.02	0.36	0.44
<i>Vaccinium arboreum</i>	0.03	0.51	6.02	0.36	0.44

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Castanea pumila</i>	0.03	0.51	3.01	0.18	0.34
<i>Magnolia tripetala</i>	0.03	0.51	3.01	0.18	0.34
<i>Vitis aestivalis</i>	0.03	0.51	3.01	0.18	0.34
<i>Callicarpa americana</i>	0.03	0.51	1.51	0.09	0.30
<i>Carya texana</i>	0.03	0.51	1.51	0.09	0.30
<i>Crataegous sp.</i>	0.03	0.51	1.51	0.09	0.30
<i>Juniperus virginiana</i>	0.03	0.51	1.51	0.09	0.30
<i>Magnolia acuminata</i>	0.03	0.51	1.51	0.09	0.30
<i>Quercus falcata</i>	0.03	0.51	1.51	0.09	0.30
<i>Quercus nigra</i>	0.03	0.51	1.51	0.09	0.30
<i>Quercus stellata</i>	0.03	0.51	1.51	0.09	0.30
<i>Rubus sp.</i>	0.03	0.51	1.51	0.09	0.30
<i>Tilia americana</i>	0.03	0.51	1.51	0.09	0.30
<i>Viburnum rufidulum</i>	0.03	0.51	1.51	0.09	0.30
Totals	5.97	100.00	1656.55	100.00	100.00

Table F8: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, north slopes, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Total Cover	Relativ Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	85.00	251.00	13.71	9.53	11.62
<i>Parthenocissus quinquefolia</i>	61.00	160.00	8.74	6.84	7.79
<i>Acer rubrum</i>	48.00	86.00	4.70	5.38	5.04
<i>Amphicarpaea bracteata</i>	32.00	73.00	3.99	3.59	3.79
<i>Vitis rotundifolia</i>	28.00	78.00	4.26	3.14	3.70
<i>Nyssa sylvatica</i>	28.00	51.00	2.79	3.14	2.96
<i>Desmodium nudiflorum</i>	17.00	51.00	2.79	1.91	2.35
<i>Smilax glauca</i>	23.00	35.00	1.91	2.58	2.24
<i>Dichanthelium boscii</i>	18.00	39.00	2.13	2.02	2.07
<i>Quercus alba</i>	20.00	31.00	1.69	2.24	1.97
<i>Sassafras albidum</i>	16.00	38.00	2.08	1.79	1.93
<i>Carex sp.</i>	21.00	25.00	1.37	2.35	1.86
<i>Vaccinium pallidum</i>	17.00	28.00	1.53	1.91	1.72
<i>Cornus florida</i>	14.00	33.00	1.80	1.57	1.69
<i>Fraxinus americana</i>	13.00	33.00	1.80	1.46	1.63
<i>Quercus velutina</i>	15.00	25.00	1.37	1.68	1.52
<i>Vitis aestivalis</i>	13.00	27.00	1.47	1.46	1.47
<i>Quercus rubra</i>	13.00	25.00	1.37	1.46	1.41
<i>Rubus argutus</i>	13.00	24.00	1.31	1.46	1.38
<i>Phegopteris hexagonoptera</i>	9.00	32.00	1.75	1.01	1.38
<i>Clitoria mariana</i>	9.00	24.00	1.31	1.01	1.16
<i>Carya tomentosa</i>	11.00	19.00	1.04	1.23	1.14
<i>Prunus serotina</i>	11.00	19.00	1.04	1.23	1.14
<i>Stipa sp.</i>	10.00	21.00	1.15	1.12	1.13
<i>Brachyelytrum erectum</i>	10.00	19.00	1.04	1.12	1.08
<i>Dioscorea villosa</i>	10.00	16.00	0.87	1.12	1.00
<i>Smilax bona-nox</i>	10.00	16.00	0.87	1.12	1.00
<i>Rubus flagellaris</i>	9.00	17.00	0.93	1.01	0.97
<i>Dichanthelium commutatum</i>	9.00	12.00	0.66	1.01	0.83
<i>Rubus sp.</i>	5.00	20.00	1.09	0.56	0.83
<i>Viola sororia</i>	9.00	11.00	0.60	1.01	0.80
<i>Polystichum acrostichoides</i>	6.00	16.00	0.87	0.67	0.77
<i>Frangula caroliniana</i>	7.00	13.00	0.71	0.78	0.75
<i>Helianthus divaricatus</i>	6.00	14.00	0.76	0.67	0.72
<i>Smilax rotundifolia</i>	7.00	11.00	0.60	0.78	0.69
<i>Galium concinnum</i>	6.00	11.00	0.60	0.67	0.64
<i>Carex glaucoidea</i>	5.00	13.00	0.71	0.56	0.64
<i>Dichanthelium dichotomum</i>	7.00	8.00	0.44	0.78	0.61
<i>Sanicula canadensis</i>	6.00	8.00	0.44	0.67	0.55
<i>Galium pilosum</i>	5.00	10.00	0.55	0.56	0.55
<i>Erechtites hieraciifolius</i>	6.00	7.00	0.38	0.67	0.53
<i>Scutellaria elliptica</i>	6.00	7.00	0.38	0.67	0.53
<i>Amelanchier arborea</i>	5.00	9.00	0.49	0.56	0.53
<i>Helianthus hirsutus</i>	5.00	9.00	0.49	0.56	0.53

Species	Frequency	Total Cover	Relativ Cover	Relative Frequency	Importance Value
<i>Iris cristata</i>	4.00	11.00	0.60	0.45	0.52
<i>Ostrya virginiana</i>	5.00	7.00	0.38	0.56	0.47
<i>Dichanthelium linearifolium</i>	4.00	9.00	0.49	0.45	0.47
<i>Hamamelis virginiana</i>	4.00	8.00	0.44	0.45	0.44
<i>Rhus copallinum</i>	4.00	8.00	0.44	0.45	0.44
<i>Boehmeria cylindrica</i>	4.00	7.00	0.38	0.45	0.42
<i>Carex blanda</i>	4.00	7.00	0.38	0.45	0.42
<i>Danthonia spicata</i>	4.00	6.00	0.33	0.45	0.39
<i>Euonymus americanus</i>	4.00	6.00	0.33	0.45	0.39
<i>Solidago caesia</i>	4.00	6.00	0.33	0.45	0.39
<i>Viola palmata</i>	4.00	6.00	0.33	0.45	0.39
<i>Lespedeza procumbens</i>	3.00	8.00	0.44	0.34	0.39
<i>Pinus echinata</i>	4.00	5.00	0.27	0.45	0.36
<i>Carex rosea</i>	3.00	7.00	0.38	0.34	0.36
<i>Desmodium perplexum</i>	4.00	4.00	0.22	0.45	0.33
<i>Lespedeza frutescens</i>	4.00	4.00	0.22	0.45	0.33
<i>Phryma leptostachya</i>	4.00	4.00	0.22	0.45	0.33
<i>Asimina triloba</i>	3.00	6.00	0.33	0.34	0.33
<i>Carya texana</i>	3.00	6.00	0.33	0.34	0.33
<i>Desmodium sp. 1</i>	3.00	6.00	0.33	0.34	0.33
<i>Solidago ulmifolia</i>	3.00	6.00	0.33	0.34	0.33
<i>Carya cordiformis</i>	3.00	5.00	0.27	0.34	0.30
<i>Ulmus alata</i>	3.00	5.00	0.27	0.34	0.30
<i>Agrimonia rostellata</i>	3.00	4.00	0.22	0.34	0.28
<i>Lespedeza virginica</i>	3.00	4.00	0.22	0.34	0.28
<i>Potentilla simplex</i>	3.00	4.00	0.22	0.34	0.28
<i>Rosa carolina</i>	3.00	4.00	0.22	0.34	0.28
<i>Ruellia pedunculata</i>	3.00	4.00	0.22	0.34	0.28
<i>Adiantum pedatum</i>	2.00	6.00	0.33	0.22	0.28
<i>Ageratina altissima</i>	2.00	6.00	0.33	0.22	0.28
<i>Vitis cinerea</i>	2.00	6.00	0.33	0.22	0.28
<i>Lactuca canadensis</i>	3.00	3.00	0.16	0.34	0.25
<i>Lespedeza cuneata</i>	3.00	3.00	0.16	0.34	0.25
<i>Morus rubra</i>	3.00	3.00	0.16	0.34	0.25
<i>Carex muhlenbergii</i>	2.00	5.00	0.27	0.22	0.25
<i>Galium arkansanum</i>	2.00	5.00	0.27	0.22	0.25
<i>Magnolia tripetala</i>	2.00	5.00	0.27	0.22	0.25
<i>Vaccinium arboreum</i>	2.00	5.00	0.27	0.22	0.25
<i>Carya sp.</i>	2.00	4.00	0.22	0.22	0.22
<i>Cercis canadensis</i>	2.00	4.00	0.22	0.22	0.22
<i>Scleria oligantha</i>	2.00	4.00	0.22	0.22	0.22
<i>Carex oligocarpa</i>	2.00	3.00	0.16	0.22	0.19
<i>Cynoglossum virginianum</i>	2.00	3.00	0.16	0.22	0.19
<i>Houstonia purpurea</i>	2.00	3.00	0.16	0.22	0.19
<i>Lactuca floridana</i>	2.00	3.00	0.16	0.22	0.19
<i>Maianthemum racemosum</i>	2.00	3.00	0.16	0.22	0.19
<i>Smilax hispida</i>	2.00	3.00	0.16	0.22	0.19
<i>Dirca palustris</i>	1.00	5.00	0.27	0.11	0.19
<i>Aristolochia serpentaria</i>	2.00	2.00	0.11	0.22	0.17

Species	Frequency	Total Cover	Relativ Cover	Relative Frequency	Importance Value
<i>Microstegium vimineum</i>	2.00	2.00	0.11	0.22	0.17
<i>Solidago sp.</i>	2.00	2.00	0.11	0.22	0.17
<i>Thalictrum thalictroides</i>	2.00	2.00	0.11	0.22	0.17
<i>unknown graminoid 2</i>	2.00	2.00	0.11	0.22	0.17
<i>Laportea canadensis</i>	1.00	4.00	0.22	0.11	0.17
<i>Monarda bradburiana</i>	1.00	4.00	0.22	0.11	0.17
<i>Andropogon virginicus</i>	1.00	3.00	0.16	0.11	0.14
<i>Dichanthelium aciculare</i>	1.00	3.00	0.16	0.11	0.14
<i>Liquidambar styraciflua</i>	1.00	3.00	0.16	0.11	0.14
<i>Lonicera sp.</i>	1.00	3.00	0.16	0.11	0.14
<i>Prunus mexicana</i>	1.00	3.00	0.16	0.11	0.14
<i>Schizachyrium scoparium</i>	1.00	3.00	0.16	0.11	0.14
<i>Botrychium virginianum</i>	1.00	2.00	0.11	0.11	0.11
<i>Carex intumescens</i>	1.00	2.00	0.11	0.11	0.11
<i>Carex jamesii</i>	1.00	2.00	0.11	0.11	0.11
<i>Crataegus viridis</i>	1.00	2.00	0.11	0.11	0.11
<i>Eupatorium serotinum</i>	1.00	2.00	0.11	0.11	0.11
<i>Eutrochium purpureum</i>	1.00	2.00	0.11	0.11	0.11
<i>Fragaria virginiana</i>	1.00	2.00	0.11	0.11	0.11
<i>Heliopsis helianthoides</i>	1.00	2.00	0.11	0.11	0.11
<i>Mimosa quadrivalvis</i>	1.00	2.00	0.11	0.11	0.11
<i>Panicum verrucosum</i>	1.00	2.00	0.11	0.11	0.11
<i>Physalis sp.</i>	1.00	2.00	0.11	0.11	0.11
<i>Physalis virginiana</i>	1.00	2.00	0.11	0.11	0.11
<i>Quercus sp.</i>	1.00	2.00	0.11	0.11	0.11
<i>Robinia pseudoacacia</i>	1.00	2.00	0.11	0.11	0.11
<i>Rudbeckia hirta</i>	1.00	2.00	0.11	0.11	0.11
<i>Scleria sp.</i>	1.00	2.00	0.11	0.11	0.11
<i>Solidago sp.</i>	1.00	2.00	0.11	0.11	0.11
<i>Tilia americana</i>	1.00	2.00	0.11	0.11	0.11
<i>unknown graminoid 1</i>	1.00	2.00	0.11	0.11	0.11
<i>Uvularia perfoliata</i>	1.00	2.00	0.11	0.11	0.11
<i>Vernonia baldwinii</i>	1.00	2.00	0.11	0.11	0.11
<i>Viburnum prunifolium</i>	1.00	2.00	0.11	0.11	0.11
<i>Viola pedata</i>	1.00	2.00	0.11	0.11	0.11
<i>Ambrosia artemisiifolia</i>	1.00	1.00	0.05	0.11	0.08
<i>Antennaria sp.</i>	1.00	1.00	0.05	0.11	0.08
<i>Asclepias sp.</i>	1.00	1.00	0.05	0.11	0.08
<i>Callicarpa americana</i>	1.00	1.00	0.05	0.11	0.08
<i>Crataegous sp.</i>	1.00	1.00	0.05	0.11	0.08
<i>Dactylis glomerata</i>	1.00	1.00	0.05	0.11	0.08
<i>Desmodium sp. 2</i>	1.00	1.00	0.05	0.11	0.08
<i>Elymus glabriflorus</i>	1.00	1.00	0.05	0.11	0.08
<i>unknown fern</i>	1.00	1.00	0.05	0.11	0.08
<i>Galium circaezans</i>	1.00	1.00	0.05	0.11	0.08
<i>Geranium maculatum</i>	1.00	1.00	0.05	0.11	0.08
<i>Geum canadense</i>	1.00	1.00	0.05	0.11	0.08
<i>Lonicera dioica</i>	1.00	1.00	0.05	0.11	0.08
<i>Oxalis dillenii</i>	1.00	1.00	0.05	0.11	0.08

Species	Frequency	Total Cover	Relativ Cover	Relative Frequency	Importance Value
<i>Pinus sp.</i>	1.00	1.00	0.05	0.11	0.08
<i>Prunella vulgaris</i>	1.00	1.00	0.05	0.11	0.08
<i>Pseudognaphalium obtusifolium</i>	1.00	1.00	0.05	0.11	0.08
<i>Rhus glabra</i>	1.00	1.00	0.05	0.11	0.08
<i>Sanguinaria canadensis</i>	1.00	1.00	0.05	0.11	0.08
<i>Styrax grandifolius</i>	1.00	1.00	0.05	0.11	0.08
<i>Toxicodendron pubescens</i>	1.00	1.00	0.05	0.11	0.08
<i>Trachelospermum difforme</i>	1.00	1.00	0.05	0.11	0.08
<i>unknown forb 2</i>	1.00	1.00	0.05	0.11	0.08
<i>unknown forb 3</i>	1.00	1.00	0.05	0.11	0.08
<i>Vaccinium stamineum</i>	1.00	1.00	0.05	0.11	0.08
Totals	892.00	1831.00	100.00	100.00	100.00

Table F9: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *south slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	2.53	26.44	32.88	72.39	27.68	39.00	41.75	35.73
<i>Pinus echinata</i>	1.53	17.24	19.88	56.44	21.58	30.41	25.24	24.30
<i>Quercus rubra</i>	0.38	9.20	4.97	15.19	5.81	8.18	6.31	7.90
snag	0.35	10.34	4.59	8.40	3.21	4.52	5.83	6.90
<i>Carya tomentosa</i>	0.32	9.20	4.21	7.13	2.73	3.84	5.34	6.13
<i>Quercus stellata</i>	0.32	6.90	4.21	9.08	3.47	4.89	5.34	5.71
<i>Quercus velutina</i>	0.24	8.05	3.06	6.93	2.65	3.73	3.88	5.22
<i>Fraxinus americana</i>	0.12	3.45	1.53	3.44	1.32	1.85	1.94	2.41
<i>Carya texana</i>	0.06	2.30	0.76	1.05	0.40	0.56	0.97	1.28
<i>Nyssa sylvatica</i>	0.06	2.30	0.76	0.76	0.29	0.41	0.97	1.23
<i>Prunus serotina</i>	0.06	1.15	0.76	0.98	0.37	0.53	0.97	0.88
<i>Liquidambar styraciflua</i>	0.03	1.15	0.38	1.75	0.67	0.94	0.49	0.86
<i>Celtis occidentalis</i>	0.03	1.15	0.38	1.67	0.64	0.90	0.49	0.85
<i>Carya ovata</i>	0.03	1.15	0.38	0.39	0.15	0.21	0.49	0.62
Totals	6.06	100.00	78.76	185.59	70.96	100.00	100.00	100.00

Table F10: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1"– 7.9" dbh), *south slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	1.48	13.01	19.30	7.05	2.78	23.95	14.33	17.10
snag	1.79	13.01	23.24	5.46	2.15	18.56	17.25	16.27
<i>Nyssa sylvatica</i>	1.61	9.76	20.88	3.85	1.52	13.10	15.50	12.78
<i>Carya tomentosa</i>	0.73	8.94	9.45	2.45	0.97	8.34	7.02	8.10
<i>Prunus serotina</i>	0.94	6.50	12.21	1.35	0.53	4.59	9.06	6.72
<i>Quercus rubra</i>	0.45	6.50	5.91	0.93	0.37	3.17	4.39	4.69
<i>Acer rubrum</i>	0.48	6.50	6.30	0.79	0.31	2.68	4.68	4.62
<i>Pinus echinata</i>	0.33	4.88	4.33	1.66	0.66	5.65	3.22	4.58
<i>Cornus florida</i>	0.48	6.50	6.30	0.68	0.27	2.32	4.68	4.50
<i>Fraxinus americana</i>	0.24	3.25	3.15	1.02	0.40	3.45	2.34	3.01
<i>Ostrya virginiana</i>	0.39	2.44	5.12	0.54	0.21	1.82	3.80	2.69
<i>Quercus stellata</i>	0.12	2.44	1.58	1.05	0.41	3.56	1.17	2.39
<i>Amelanchier arborea</i>	0.21	1.63	2.76	0.58	0.23	1.97	2.05	1.88
<i>Carya texana</i>	0.12	1.63	1.58	0.48	0.19	1.64	1.17	1.48
<i>Robinia pseudoacacia</i>	0.12	1.63	1.58	0.43	0.17	1.45	1.17	1.42
<i>Carya ovata</i>	0.06	1.63	0.79	0.39	0.15	1.34	0.58	1.18
<i>Vaccinium arboreum</i>	0.24	0.81	3.15	0.04	0.02	0.15	2.34	1.10
<i>Celtis occidentalis</i>	0.06	1.63	0.79	0.27	0.11	0.93	0.58	1.05
<i>Quercus velutina</i>	0.06	1.63	0.79	0.05	0.02	0.16	0.58	0.79
<i>Ulmus alata</i>	0.12	0.81	1.58	0.05	0.02	0.19	1.17	0.72
<i>Juniperus virginiana</i>	0.06	0.81	0.79	0.19	0.07	0.63	0.58	0.68
<i>Fagus grandifolia</i>	0.09	0.81	1.18	0.04	0.01	0.13	0.88	0.61
<i>Cercis canadensis</i>	0.06	0.81	0.79	0.01	0.01	0.05	0.58	0.48
<i>Quercus nigra</i>	0.03	0.81	0.39	0.03	0.01	0.09	0.29	0.40
<i>Frangula caroliniana</i>	0.03	0.81	0.39	0.02	0.01	0.06	0.29	0.39
<i>Celtis laevigata</i>	0.03	0.81	0.39	0.01	0.00	0.03	0.29	0.38
Totals	10.36	100.00	134.73	29.43	11.59	100.00	100.00	100.00

Table F11: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species*, south slope, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.68	10.22	552.51	30.36	20.29
<i>Nyssa sylvatica</i>	0.65	9.78	172.48	9.48	9.63
<i>Quercus rubra</i>	0.50	7.56	178.32	9.80	8.68
<i>Carya tomentosa</i>	0.65	9.78	131.55	7.23	8.50
<i>Prunus serotina</i>	0.53	8.00	108.16	5.94	6.97
<i>Quercus alba</i>	0.41	6.22	73.08	4.02	5.12
<i>Sassafras albidum</i>	0.26	4.00	111.09	6.10	5.05
<i>Rhus copallinum</i>	0.21	3.11	67.24	3.69	3.40
<i>Frangula caroliniana</i>	0.26	4.00	39.46	2.17	3.08
<i>Quercus velutina</i>	0.21	3.11	39.46	2.17	2.64
<i>Fraxinus americana</i>	0.21	3.11	30.69	1.69	2.40
<i>Cornus florida</i>	0.24	3.56	21.92	1.20	2.38
<i>Vitis rotundifolia</i>	0.12	1.78	40.93	2.25	2.01
<i>Robinia pseudoacacia</i>	0.15	2.22	32.16	1.77	1.99
<i>Ostrya virginiana</i>	0.09	1.33	30.69	1.69	1.51
<i>Aralia spinosa</i>	0.09	1.33	24.85	1.37	1.35
<i>Cercis canadensis</i>	0.12	1.78	14.62	0.80	1.29
<i>Vitis aestivalis</i>	0.06	0.89	27.77	1.53	1.21
<i>Ulmus alata</i>	0.12	1.78	10.23	0.56	1.17
<i>Rhus glabra</i>	0.12	1.78	8.77	0.48	1.13
<i>Asimina triloba</i>	0.09	1.33	13.15	0.72	1.03
<i>Quercus stellata</i>	0.09	1.33	10.23	0.56	0.95
<i>Callicarpa americana</i>	0.09	1.33	8.77	0.48	0.91
<i>Vaccinium arboreum</i>	0.09	1.33	7.31	0.40	0.87
<i>Celtis occidentalis</i>	0.09	1.33	4.38	0.24	0.79
<i>Quercus nigra</i>	0.06	0.89	10.23	0.56	0.73
<i>Ulmus americana</i>	0.06	0.89	4.38	0.24	0.56
<i>Amelanchier arborea</i>	0.03	0.44	7.31	0.40	0.42
<i>Ampelopsis cordata</i>	0.03	0.44	7.31	0.40	0.42
<i>Carya ovata</i>	0.03	0.44	4.38	0.24	0.34
<i>Castanea pumila</i>	0.03	0.44	4.38	0.24	0.34

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Fraxinus pennsylvanica</i>	0.03	0.44	2.92	0.16	0.30
<i>Hypericum prolificum</i>	0.03	0.44	2.92	0.16	0.30
<i>Juniperus virginiana</i>	0.03	0.44	2.92	0.16	0.30
<i>Liquidambar styraciflua</i>	0.03	0.44	2.92	0.16	0.30
<i>Rubus sp.</i>	0.03	0.44	2.92	0.16	0.30
<i>Carpinus caroliniana</i>	0.03	0.44	1.46	0.08	0.26
<i>Crataegus uniflora</i>	0.03	0.44	1.46	0.08	0.26
<i>Quercus falcata</i>	0.03	0.44	1.46	0.08	0.26
<i>Rubus argutus</i>	0.03	0.44	1.46	0.08	0.26
<i>Smilax rotundifolia</i>	0.03	0.44	1.46	0.08	0.26
Totals	6.62	100.00	1819.77	100.00	100.00

Table F12: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, south slopes, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequen cy	Total Cover	Relativ e Cover	Relative Frequen cy	Importan ce Value
<i>Toxicodendron radicans</i>	60.00	149.00	7.23	6.07	6.65
<i>Vitis rotundifolia</i>	48.00	133.00	6.45	4.86	5.65
<i>Parthenocissus quinquefolia</i>	51.00	105.00	5.09	5.16	5.13
<i>Quercus alba</i>	41.00	83.00	4.03	4.15	4.09
<i>Dichanthelium boscii</i>	35.00	95.00	4.61	3.54	4.07
<i>Acer rubrum</i>	34.00	62.00	3.01	3.44	3.22
<i>Rubus flagellaris</i>	28.00	57.00	2.76	2.83	2.80
<i>Nyssa sylvatica</i>	24.00	64.00	3.10	2.43	2.77
<i>Carex sp.</i>	28.00	54.00	2.62	2.83	2.73
<i>Smilax glauca</i>	27.00	46.00	2.23	2.73	2.48
<i>Dichanthelium commutatum</i>	25.00	50.00	2.42	2.53	2.48
<i>Vaccinium pallidum</i>	19.00	46.00	2.23	1.92	2.08
<i>Helianthus divaricatus</i>	18.00	39.00	1.89	1.82	1.86
<i>Rubus argutus</i>	14.00	34.00	1.65	1.42	1.53
<i>Smilax bona-nox</i>	17.00	27.00	1.31	1.72	1.52
<i>Helianthus hirsutus</i>	14.00	32.00	1.55	1.42	1.48
<i>Symphotrichum anomalum</i>	16.00	27.00	1.31	1.62	1.46
<i>Quercus rubra</i>	14.00	31.00	1.50	1.42	1.46
<i>Smilax rotundifolia</i>	15.00	28.00	1.36	1.52	1.44
<i>Quercus velutina</i>	14.00	30.00	1.45	1.42	1.44
<i>Desmodium nudiflorum</i>	14.00	29.00	1.41	1.42	1.41
<i>Dichanthelium dichotomum</i>	15.00	26.00	1.26	1.52	1.39
<i>Sassafras albidum</i>	14.00	25.00	1.21	1.42	1.31
<i>Danthonia spicata</i>	11.00	30.00	1.45	1.11	1.28
<i>Desmodium laevigatum</i>	11.00	25.00	1.21	1.11	1.16
<i>Euphorbia corollata</i>	13.00	20.00	0.97	1.32	1.14
<i>Carya texana</i>	10.00	21.00	1.02	1.01	1.02
<i>Clitoria mariana</i>	10.00	19.00	0.92	1.01	0.97
<i>Rhus copallinum</i>	8.00	23.00	1.12	0.81	0.96
<i>Symphotrichum patens</i>	9.00	20.00	0.97	0.91	0.94
<i>Solidago ulmifolia</i>	10.00	17.00	0.82	1.01	0.92
<i>Vitis aestivalis</i>	9.00	15.00	0.73	0.91	0.82
<i>Carya tomentosa</i>	8.00	15.00	0.73	0.81	0.77
<i>Schizachyrium scoparium</i>	6.00	18.00	0.87	0.61	0.74
<i>Lespedeza virginica</i>	8.00	13.00	0.63	0.81	0.72
<i>Cunila organoides</i>	6.00	16.00	0.78	0.61	0.69
<i>Brachyelytrum erectum</i>	7.00	12.00	0.58	0.71	0.65
<i>Dichanthelium linearifolium</i>	6.00	14.00	0.68	0.61	0.64
<i>Prunus serotina</i>	6.00	14.00	0.68	0.61	0.64
<i>Carex blanda</i>	7.00	9.00	0.44	0.71	0.57

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Lespedeza repens</i>	6.00	10.00	0.48	0.61	0.55
<i>Diarrhena americana</i>	5.00	12.00	0.58	0.51	0.54
<i>Lespedeza procumbens</i>	6.00	9.00	0.44	0.61	0.52
<i>Cornus florida</i>	5.00	11.00	0.53	0.51	0.52
<i>Galium arkansanum</i>	4.00	12.00	0.58	0.40	0.49
<i>Vaccinium arboreum</i>	4.00	12.00	0.58	0.40	0.49
<i>Chamaecrista fasciculata</i>	5.00	9.00	0.44	0.51	0.47
<i>Scleria oligantha</i>	5.00	8.00	0.39	0.51	0.45
<i>Ageratina altissima</i>	4.00	10.00	0.48	0.40	0.44
<i>Erechtites hieraciifolius</i>	5.00	7.00	0.34	0.51	0.42
<i>Carex communis</i>	5.00	6.00	0.29	0.51	0.40
<i>Solidago petiolaris</i>	5.00	6.00	0.29	0.51	0.40
<i>Berchemia scandens</i>	4.00	8.00	0.39	0.40	0.40
<i>Boehmeria cylindrica</i>	4.00	8.00	0.39	0.40	0.40
<i>Carex rosea</i>	4.00	8.00	0.39	0.40	0.40
<i>Pinus echinata</i>	4.00	8.00	0.39	0.40	0.40
<i>Amphicarpaea bracteata</i>	4.00	7.00	0.34	0.40	0.37
<i>Desmodium sp. 1</i>	4.00	7.00	0.34	0.40	0.37
<i>Dichanthelium acuminatum</i>	4.00	7.00	0.34	0.40	0.37
<i>Ostrya virginiana</i>	4.00	7.00	0.34	0.40	0.37
<i>Phlox pilosa</i>	4.00	7.00	0.34	0.40	0.37
<i>Viola sororia</i>	4.00	7.00	0.34	0.40	0.37
<i>Rhus glabra</i>	3.00	9.00	0.44	0.30	0.37
<i>Aralia spinosa</i>	3.00	8.00	0.39	0.30	0.35
<i>Fraxinus americana</i>	4.00	5.00	0.24	0.40	0.32
<i>Scutellaria elliptica</i>	4.00	5.00	0.24	0.40	0.32
<i>Aureolaria flava</i>	3.00	7.00	0.34	0.30	0.32
<i>Amelanchier arborea</i>	3.00	6.00	0.29	0.30	0.30
<i>Desmodium rotundifolium</i>	3.00	6.00	0.29	0.30	0.30
<i>Lactuca floridana</i>	3.00	6.00	0.29	0.30	0.30
<i>Lespedeza frutescens</i>	3.00	6.00	0.29	0.30	0.30
<i>Lonicera japonica</i>	3.00	6.00	0.29	0.30	0.30
<i>Quercus stellata</i>	3.00	6.00	0.29	0.30	0.30
<i>Potentilla simplex</i>	3.00	5.00	0.24	0.30	0.27
<i>Muhlenbergia sp.</i>	3.00	4.00	0.19	0.30	0.25
<i>Muhlenbergia sp.</i>	3.00	4.00	0.19	0.30	0.25
<i>Oxalis dillenii</i>	3.00	4.00	0.19	0.30	0.25
<i>Carex glaucoidea</i>	2.00	6.00	0.29	0.20	0.25
<i>Dioscorea villosa</i>	2.00	6.00	0.29	0.20	0.25
<i>Galium circaezans</i>	3.00	3.00	0.15	0.30	0.22
<i>Lactuca canadensis</i>	3.00	3.00	0.15	0.30	0.22
<i>Carex muhlenbergii</i>	2.00	5.00	0.24	0.20	0.22
<i>Coreopsis tripteris</i>	2.00	5.00	0.24	0.20	0.22
<i>Diospyros virginiana</i>	2.00	5.00	0.24	0.20	0.22
<i>Lespedeza violacea</i>	2.00	5.00	0.24	0.20	0.22
<i>Solidago rigida</i>	2.00	5.00	0.24	0.20	0.22
<i>Ambrosia artemisiifolia</i>	2.00	4.00	0.19	0.20	0.20
<i>Dichanthelium laxiflorum</i>	2.00	4.00	0.19	0.20	0.20

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Rosa carolina</i>	2.00	4.00	0.19	0.20	0.20
<i>Solidago hispida</i>	2.00	4.00	0.19	0.20	0.20
<i>Solidago nemoralis</i>	2.00	4.00	0.19	0.20	0.20
<i>Aristolochia serpentaria</i>	2.00	3.00	0.15	0.20	0.17
<i>Unknown</i>	2.00	3.00	0.15	0.20	0.17
<i>Leersia virginica</i>	2.00	3.00	0.15	0.20	0.17
<i>Lespedeza sp.</i>	2.00	3.00	0.15	0.20	0.17
<i>Bromus pubescens</i>	2.00	2.00	0.10	0.20	0.15
<i>Chasmanthium sessiliflorum</i>	2.00	2.00	0.10	0.20	0.15
<i>Fragaria virginiana</i>	2.00	2.00	0.10	0.20	0.15
<i>Sanicula canadensis</i>	2.00	2.00	0.10	0.20	0.15
<i>Scutellaria ovata</i>	2.00	2.00	0.10	0.20	0.15
<i>Ulmus alata</i>	2.00	2.00	0.10	0.20	0.15
<i>Viola tricolor</i>	2.00	2.00	0.10	0.20	0.15
<i>Carya sp.</i>	1.00	4.00	0.19	0.10	0.15
<i>Desmodium sp. 2</i>	1.00	4.00	0.19	0.10	0.15
<i>Desmodium viridiflorum</i>	1.00	4.00	0.19	0.10	0.15
<i>Antennaria plantaginifolia</i>	1.00	3.00	0.15	0.10	0.12
<i>Carex sp. 6</i>	1.00	3.00	0.15	0.10	0.12
<i>Carex sp. 7</i>	1.00	3.00	0.15	0.10	0.12
<i>Carex sp. 8</i>	1.00	3.00	0.15	0.10	0.12
<i>Carya texana</i>	1.00	3.00	0.15	0.10	0.12
<i>Cercis canadensis</i>	1.00	3.00	0.15	0.10	0.12
<i>Elymus hystrix</i>	1.00	3.00	0.15	0.10	0.12
<i>Frangula caroliniana</i>	1.00	3.00	0.15	0.10	0.12
<i>Galium pilosum</i>	1.00	3.00	0.15	0.10	0.12
<i>Morus sp.</i>	1.00	3.00	0.15	0.10	0.12
<i>Phemeranthus parviflorus</i>	1.00	3.00	0.15	0.10	0.12
<i>Physalis virginiana</i>	1.00	3.00	0.15	0.10	0.12
<i>Pteridium aquilinum</i>	1.00	3.00	0.15	0.10	0.12
<i>Rubus trivialis</i>	1.00	3.00	0.15	0.10	0.12
<i>Tephrosia virginiana</i>	1.00	3.00	0.15	0.10	0.12
<i>Trachelospermum difforme</i>	1.00	3.00	0.15	0.10	0.12
<i>unknown herb 4</i>	1.00	3.00	0.15	0.10	0.12
<i>Viburnum rufidulum</i>	1.00	3.00	0.15	0.10	0.12
<i>Vitis cinerea</i>	1.00	3.00	0.15	0.10	0.12
<i>Agrimonia rostellata</i>	1.00	2.00	0.10	0.10	0.10
<i>Carex cephalophora</i>	1.00	2.00	0.10	0.10	0.10
<i>Carex sp. 5</i>	1.00	2.00	0.10	0.10	0.10
<i>Dichanthelium malacophyllum</i>	1.00	2.00	0.10	0.10	0.10
<i>Dichanthelium sp. 1</i>	1.00	2.00	0.10	0.10	0.10
<i>Eriocaulon koernickianum</i>	1.00	2.00	0.10	0.10	0.10
<i>Galium virgatum</i>	1.00	2.00	0.10	0.10	0.10
<i>Houstonia purpurea</i>	1.00	2.00	0.10	0.10	0.10
<i>Lespedeza hirta</i>	1.00	2.00	0.10	0.10	0.10
<i>Lonicera sempervirens</i>	1.00	2.00	0.10	0.10	0.10

Species	Frequen cy	Total Cover	Relativ e Cover	Relative Frequen cy	Importan ce Value
<i>Rubus sp.</i>	1.00	2.00	0.10	0.10	0.10
<i>Salvia lyrata</i>	1.00	2.00	0.10	0.10	0.10
<i>Silphium asteriscus</i>	1.00	2.00	0.10	0.10	0.10
<i>Solidago sp.</i>	1.00	2.00	0.10	0.10	0.10
<i>Solidago odora</i>	1.00	2.00	0.10	0.10	0.10
<i>Solidago radula</i>	1.00	2.00	0.10	0.10	0.10
<i>Tridens flavus</i>	1.00	2.00	0.10	0.10	0.10
<i>Ulmus americana</i>	1.00	2.00	0.10	0.10	0.10
<i>unknown herb 1</i>	1.00	2.00	0.10	0.10	0.10
<i>Vernonia baldwinii</i>	1.00	2.00	0.10	0.10	0.10
<i>Viola pedata</i>	1.00	2.00	0.10	0.10	0.10
<i>Amphiachyris dracunculoides</i>	1.00	1.00	0.05	0.10	0.07
<i>Crataegous sp.</i>	1.00	1.00	0.05	0.10	0.07
<i>Desmodium perplexum</i>	1.00	1.00	0.05	0.10	0.07
<i>Euphorbia nutans</i>	1.00	1.00	0.05	0.10	0.07
<i>Galium obtusum</i>	1.00	1.00	0.05	0.10	0.07
<i>Hieracium longipilum</i>	1.00	1.00	0.05	0.10	0.07
<i>Liatris squarrulosa</i>	1.00	1.00	0.05	0.10	0.07
<i>Liquidambar styraciflua</i>	1.00	1.00	0.05	0.10	0.07
<i>Ludwigia sp.</i>	1.00	1.00	0.05	0.10	0.07
<i>Panicum verrucosum</i>	1.00	1.00	0.05	0.10	0.07
<i>Phytolacca americana</i>	1.00	1.00	0.05	0.10	0.07
<i>Quercus sp.</i>	1.00	1.00	0.05	0.10	0.07
<i>Robinia pseudoacacia</i>	1.00	1.00	0.05	0.10	0.07
<i>Smilax herbacea</i>	1.00	1.00	0.05	0.10	0.07
<i>Smilax hispida</i>	1.00	1.00	0.05	0.10	0.07
<i>Symphotrichum cordifolium</i>	1.00	1.00	0.05	0.10	0.07
<i>Verbesina alternifolia</i>	1.00	1.00	0.05	0.10	0.07
<i>Viburnum prunifolium</i>	1.00	1.00	0.05	0.10	0.07
<i>Viola palmata</i>	1.00	1.00	0.05	0.10	0.07
<i>Vitis sp.</i>	1.00	1.00	0.05	0.10	0.07
Totals	988.00	2062.00	100.00	100.00	100.00

Table F13: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *toe slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	2.91	24.47	37.82	88.45	34.84	38.49	42.86	35.27
<i>Quercus rubra</i>	0.73	12.77	9.45	28.08	11.06	12.22	10.71	11.90
<i>Quercus velutina</i>	0.73	10.64	9.45	27.70	10.91	12.06	10.71	11.14
<i>Nyssa sylvatica</i>	0.48	11.70	6.30	18.36	7.23	7.99	7.14	8.95
<i>Pinus echinata</i>	0.58	4.26	7.48	25.00	9.85	10.88	8.48	7.87
<i>Carya tomentosa</i>	0.45	9.57	5.91	12.19	4.80	5.30	6.70	7.19
snag	0.33	9.57	4.33	12.32	4.85	5.36	4.91	6.62
<i>Acer rubrum</i>	0.12	4.26	1.58	3.18	1.25	1.38	1.79	2.47
<i>Liquidambar styraciflua</i>	0.06	2.13	0.79	1.73	0.68	0.75	0.89	1.26
<i>Quercus falcata</i>	0.06	1.06	0.79	2.03	0.80	0.88	0.89	0.95
<i>Carya glabra</i>	0.03	1.06	0.39	2.89	1.14	1.26	0.45	0.92
<i>Magnolia acuminata</i>	0.06	1.06	0.79	1.07	0.42	0.46	0.89	0.81
<i>Carya texana</i>	0.06	1.06	0.79	0.99	0.39	0.43	0.89	0.80
<i>Quercus stellata</i>	0.03	1.06	0.39	1.83	0.72	0.80	0.45	0.77
<i>Tilia americana</i>	0.03	1.06	0.39	1.13	0.44	0.49	0.45	0.67
<i>Acer saccharum</i>	0.03	1.06	0.39	1.01	0.40	0.44	0.45	0.65
<i>Prunus serotina</i>	0.03	1.06	0.39	0.71	0.28	0.31	0.45	0.61
<i>Robinia pseudoacacia</i>	0.03	1.06	0.39	0.66	0.26	0.29	0.45	0.60
<i>Juniperus virginiana</i>	0.03	1.06	0.39	0.47	0.18	0.20	0.45	0.57
Totals	6.79	100.00	88.24	229.80	90.53	100.00	100.00	100.00

Table F14: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *toe slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Carya tomentosa</i>	2.09	12.69	27.18	7.34	2.89	17.24	11.27	13.74
<i>Quercus alba</i>	1.39	9.64	18.12	6.99	2.75	16.42	7.52	11.19
snag	1.97	11.17	25.61	4.63	1.82	10.88	10.62	10.89
<i>Nyssa sylvatica</i>	2.24	9.64	29.15	3.83	1.51	8.99	12.09	10.24
<i>Cornus florida</i>	2.55	9.14	33.09	2.69	1.06	6.32	13.73	9.73
<i>Acer rubrum</i>	1.79	8.12	23.24	4.03	1.59	9.47	9.64	9.08
<i>Ostrya virginiana</i>	1.27	4.57	16.55	1.90	0.75	4.47	6.86	5.30
<i>Prunus serotina</i>	0.88	5.08	11.42	1.45	0.57	3.41	4.74	4.41
<i>Ulmus alata</i>	0.64	2.54	8.27	1.00	0.40	2.36	3.43	2.77
<i>Fagus grandifolia</i>	0.55	1.02	7.09	0.95	0.37	2.23	2.94	2.06
<i>Acer saccharum</i>	0.18	1.52	2.36	1.07	0.42	2.52	0.98	1.67
<i>Carpinus caroliniana</i>	0.39	1.52	5.12	0.50	0.20	1.18	2.12	1.61
<i>Fraxinus americana</i>	0.24	2.03	3.15	0.43	0.17	1.00	1.31	1.45
<i>Liquidambar styraciflua</i>	0.09	1.52	1.18	0.78	0.31	1.83	0.49	1.28
<i>Quercus stellata</i>	0.09	1.52	1.18	0.72	0.28	1.68	0.49	1.23
<i>Ulmus americana</i>	0.36	1.02	4.73	0.10	0.04	0.23	1.96	1.07
<i>Tilia americana</i>	0.21	1.02	2.76	0.44	0.17	1.03	1.14	1.06
<i>Sassafras albidum</i>	0.27	1.52	3.55	0.04	0.02	0.10	1.47	1.03
<i>Morus rubra</i>	0.06	1.02	0.79	0.56	0.22	1.32	0.33	0.89
<i>Carya cordiformis</i>	0.09	1.52	1.18	0.27	0.11	0.63	0.49	0.88
<i>Magnolia acuminata</i>	0.09	0.51	1.18	0.66	0.26	1.56	0.49	0.85
<i>Quercus rubra</i>	0.12	1.52	1.58	0.10	0.04	0.24	0.65	0.81
<i>Quercus velutina</i>	0.06	1.02	0.79	0.45	0.18	1.05	0.33	0.80
<i>Asimina triloba</i>	0.12	1.02	1.58	0.11	0.04	0.25	0.65	0.64
<i>Carya sp.</i>	0.09	0.51	1.18	0.36	0.14	0.85	0.49	0.62
<i>Frangula caroliniana</i>	0.12	1.02	1.58	0.02	0.01	0.04	0.65	0.57
<i>Carya glabra</i>	0.09	1.02	1.18	0.07	0.03	0.17	0.49	0.56
<i>Carya texana</i>	0.06	0.51	0.79	0.36	0.14	0.84	0.33	0.56
<i>Prunus mexicana</i>	0.06	1.02	0.79	0.04	0.02	0.09	0.33	0.48
<i>Amelanchier arborea</i>	0.06	1.02	0.79	0.02	0.01	0.04	0.33	0.46
<i>Carya ovata</i>	0.03	0.51	0.39	0.24	0.10	0.57	0.16	0.41
<i>Magnolia tripetala</i>	0.12	0.51	1.58	0.03	0.01	0.08	0.65	0.41

Species	Frequency	Relative Frequency	Stems/ Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
Quercus falcata	0.06	0.51	0.79	0.15	0.06	0.36	0.33	0.40
Pinus echinata	0.03	0.51	0.39	0.22	0.09	0.51	0.16	0.39
Cercis canadensis	0.03	0.51	0.39	0.00	0.00	0.01	0.16	0.23
Rhus glabra	0.03	0.51	0.39	0.00	0.00	0.01	0.16	0.23
Totals	18.55	100.00	241.09	42.58	16.78	100.00	100.00	100.00

Table F15: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, toe slope*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
Acer rubrum	0.50	7.29	166.84	11.60	9.45
Ostrya virginiana	0.36	5.21	131.34	9.14	7.17
Frangula caroliniana	0.50	7.29	99.39	6.91	7.10
Nyssa sylvatica	0.43	6.25	102.94	7.16	6.71
Carpinus caroliniana	0.29	4.17	117.14	8.15	6.16
Hamamelis virginiana	0.21	3.13	95.84	6.67	4.90
Carya tomentosa	0.43	6.25	39.05	2.72	4.48
Cornus florida	0.36	5.21	49.70	3.46	4.33
Quercus velutina	0.07	1.04	106.49	7.41	4.22
Ulmus alata	0.14	2.08	81.64	5.68	3.88
Cercis canadensis	0.36	5.21	35.50	2.47	3.84
Fraxinus americana	0.29	4.17	42.60	2.96	3.56
Quercus alba	0.21	3.13	49.70	3.46	3.29
Liquidambar styraciflua	0.21	3.13	35.50	2.47	2.80
Quercus rubra	0.21	3.13	35.50	2.47	2.80
Quercus muehlenbergii	0.14	2.08	35.50	2.47	2.28
Carya cordiformis	0.21	3.13	17.75	1.23	2.18
Lindera benzoin	0.14	2.08	21.30	1.48	1.78
Rhus copallinum	0.14	2.08	21.30	1.48	1.78
Dirca palustris	0.14	2.08	14.20	0.99	1.54
Prunus serotina	0.14	2.08	14.20	0.99	1.54
Tilia americana	0.14	2.08	14.20	0.99	1.54
Aesculus pavia	0.07	1.04	14.20	0.99	1.01
Magnolia acuminata	0.07	1.04	10.65	0.74	0.89
Quercus michauxii	0.07	1.04	10.65	0.74	0.89
Rhus glabra	0.07	1.04	10.65	0.74	0.89
Vaccinium stamineum	0.07	1.04	10.65	0.74	0.89
Fagus grandifolia	0.07	1.04	7.10	0.49	0.77
Juniperus virginiana	0.07	1.04	7.10	0.49	0.77
Quercus stellata	0.07	1.04	7.10	0.49	0.77
Aesculus glabra	0.07	1.04	3.55	0.25	
Asimina triloba	0.07	1.04	3.55	0.25	0.64
Celtis occidentalis	0.07	1.04	3.55	0.25	0.64
Quercus marilandica	0.07	1.04	3.55	0.25	0.64

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
Rhus aromatica	0.07	1.04	3.55	0.25	0.64
Sassafras albidum	0.07	1.04	3.55	0.25	0.64
Styrax grandifolius	0.07	1.04	3.55	0.25	0.64
Ulmus americana	0.07	1.04	3.55	0.25	0.64
Viburnum dentatum	0.07	1.04	3.55	0.25	0.64
Total	6.86	100.00	1437.65	100.00	100.00

Table F16: Frequency, total cover, relative cover, relative frequency, and importance value of *ground layer species*, toe slopes, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Table F16: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, toe slopes, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	32.00	89.00	8.13	5.83	6.98
<i>Carex sp.</i>	21.00	41.00	3.74	3.83	3.78
<i>Parthenocissus quinquefolia</i>	19.00	42.00	3.84	3.46	3.65
<i>Dichanthelium boscii</i>	17.00	44.00	4.02	3.10	3.56
<i>Acer rubrum</i>	18.00	33.00	3.01	3.28	3.15
<i>Fraxinus americana</i>	13.00	34.00	3.11	2.37	2.74
<i>Agrimonia rostellata</i>	13.00	28.00	2.56	2.37	2.46
<i>Euonymus americanus</i>	13.00	24.00	2.19	2.37	2.28
<i>Viola sororia</i>	12.00	23.00	2.10	2.19	2.14
<i>Ostrya virginiana</i>	9.00	27.00	2.47	1.64	2.05
<i>Sanicula canadensis</i>	13.00	19.00	1.74	2.37	2.05
<i>Prunus serotina</i>	11.00	21.00	1.92	2.00	1.96
<i>Smilax glauca</i>	12.00	19.00	1.74	2.19	1.96
<i>Amphicarpaea bracteata</i>	12.00	18.00	1.64	2.19	1.91
<i>Vitis rotundifolia</i>	12.00	18.00	1.64	2.19	1.91
<i>Cornus florida</i>	8.00	23.00	2.10	1.46	1.78
<i>Desmodium nudiflorum</i>	8.00	19.00	1.74	1.46	1.60
<i>Vaccinium pallidum</i>	9.00	16.00	1.46	1.64	1.55
<i>Smilax bona-nox</i>	9.00	15.00	1.37	1.64	1.50
<i>Smilax rotundifolia</i>	8.00	15.00	1.37	1.46	1.41
<i>Brachyelytrum erectum</i>	7.00	14.00	1.28	1.28	1.28
<i>Cercis canadensis</i>	6.00	15.00	1.37	1.09	1.23
<i>Quercus alba</i>	7.00	13.00	1.19	1.28	1.23
<i>Carya cordiformis</i>	6.00	14.00	1.28	1.09	1.19
<i>Berchemia scandens</i>	6.00	13.00	1.19	1.09	1.14
<i>Rubus flagellaris</i>	6.00	12.00	1.10	1.09	1.09
<i>Carex oligocarpa</i>	5.00	13.00	1.19	0.91	1.05
<i>Galium circaezans</i>	7.00	9.00	0.82	1.28	1.05
<i>Nyssa sylvatica</i>	5.00	12.00	1.10	0.91	1.00
<i>Ulmus alata</i>	5.00	12.00	1.10	0.91	1.00
<i>Quercus stellata</i>	6.00	10.00	0.91	1.09	1.00
<i>Dichanthelium commutatum</i>	6.00	9.00	0.82	1.09	0.96
<i>Dioscorea villosa</i>	4.00	11.00	1.00	0.73	0.87
<i>Quercus velutina</i>	5.00	9.00	0.82	0.91	0.87
<i>Carex glaucoidea</i>	4.00	10.00	0.91	0.73	0.82
<i>Carya sp.</i>	4.00	10.00	0.91	0.73	0.82
<i>Polystichum acrostichoides</i>	4.00	10.00	0.91	0.73	0.82
<i>Quercus rubra</i>	4.00	10.00	0.91	0.73	0.82
<i>Diospyros virginiana</i>	3.00	11.00	1.00	0.55	0.78
<i>Scleria oligantha</i>	5.00	7.00	0.64	0.91	0.78
<i>Smilax hispida</i>	3.00	9.00	0.82	0.55	0.68
<i>Solidago caesia</i>	3.00	8.00	0.73	0.55	0.64
<i>Danthonia spicata</i>	4.00	6.00	0.55	0.73	0.64

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Liquidambar styraciflua</i>	4.00	6.00	0.55	0.73	0.64
<i>Hamamelis vernalis</i>	2.00	9.00	0.82	0.36	0.59
<i>Asplenium platyneuron</i>	3.00	7.00	0.64	0.55	0.59
<i>Clitoria mariana</i>	3.00	7.00	0.64	0.55	0.59
<i>Pinus echinata</i>	3.00	7.00	0.64	0.55	0.59
<i>Vitis aestivalis</i>	3.00	7.00	0.64	0.55	0.59
<i>Fragaria virginiana</i>	4.00	5.00	0.46	0.73	0.59
<i>Potentilla simplex</i>	4.00	5.00	0.46	0.73	0.59
<i>Carya tomentosa</i>	3.00	6.00	0.55	0.55	0.55
<i>Celtis occidentalis</i>	3.00	6.00	0.55	0.55	0.55
<i>Packera obovata</i>	4.00	4.00	0.37	0.73	0.55
<i>Lonicera japonica</i>	2.00	7.00	0.64	0.36	0.50
<i>Galium pilosum</i>	3.00	5.00	0.46	0.55	0.50
<i>Desmodium laevigatum</i>	2.00	6.00	0.55	0.36	0.46
<i>Carex blanda</i>	3.00	4.00	0.37	0.55	0.46
<i>Juniperus virginiana</i>	3.00	4.00	0.37	0.55	0.46
<i>Lindera benzoin</i>	2.00	5.00	0.46	0.36	0.41
<i>Uvularia sessilifolia</i>	2.00	5.00	0.46	0.36	0.41
<i>Enemion biternatum</i>	3.00	3.00	0.27	0.55	0.41
<i>Galium concinnum</i>	3.00	3.00	0.27	0.55	0.41
<i>Galium triflorum</i>	3.00	3.00	0.27	0.55	0.41
<i>Houstonia purpurea</i>	2.00	4.00	0.37	0.36	0.36
<i>Phryma leptostachya</i>	2.00	4.00	0.37	0.36	0.36
<i>Sideroxylon lanuginosum</i>	2.00	4.00	0.37	0.36	0.36
<i>Solidago ulmifolia</i>	2.00	4.00	0.37	0.36	0.36
<i>Symphotrichum anomalum</i>	2.00	4.00	0.37	0.36	0.36
<i>Amelanchier arborea</i>	2.00	3.00	0.27	0.36	0.32
<i>Aristolochia serpentaria</i>	2.00	3.00	0.27	0.36	0.32
<i>Desmodium perplexum</i>	2.00	3.00	0.27	0.36	0.32
<i>Helianthus hirsutus</i>	2.00	3.00	0.27	0.36	0.32
<i>Mitchella repens</i>	2.00	3.00	0.27	0.36	0.32
<i>Passiflora lutea</i>	2.00	3.00	0.27	0.36	0.32
<i>Rosa setigera</i>	2.00	3.00	0.27	0.36	0.32
unknown woody	1.00	4.00	0.37	0.18	0.27
<i>Chaerophyllum procumbens</i>	2.00	2.00	0.18	0.36	0.27
<i>Geum canadense</i>	2.00	2.00	0.18	0.36	0.27
<i>Polygonatum biflorum</i>	2.00	2.00	0.18	0.36	0.27
<i>Prenanthes altissima</i>	2.00	2.00	0.18	0.36	0.27
<i>Rhus aromatica</i>	2.00	2.00	0.18	0.36	0.27
<i>Salvia lyrata</i>	2.00	2.00	0.18	0.36	0.27
<i>Sanguinaria canadensis</i>	2.00	2.00	0.18	0.36	0.27
<i>Schizachyrium scoparium</i>	2.00	2.00	0.18	0.36	0.27
<i>Scutellaria elliptica</i>	2.00	2.00	0.18	0.36	0.27
<i>Ulmus americana</i>	2.00	2.00	0.18	0.36	0.27
<i>Aesculus pavia</i>	1.00	3.00	0.27	0.18	0.23
<i>Bromus pubescens</i>	1.00	3.00	0.27	0.18	0.23
<i>Carpinus caroliniana</i>	1.00	3.00	0.27	0.18	0.23

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Cynoglossum virginianum</i>	1.00	3.00	0.27	0.18	0.23
<i>Diarrhena americana</i>	1.00	3.00	0.27	0.18	0.23
<i>Diodia sp.</i>	1.00	3.00	0.27	0.18	0.23
<i>Elymus hystrix</i>	1.00	3.00	0.27	0.18	0.23
<i>Menispermum canadense</i>	1.00	3.00	0.27	0.18	0.23
<i>Morus rubra</i>	1.00	3.00	0.27	0.18	0.23
<i>Rhus copallinum</i>	1.00	3.00	0.27	0.18	0.23
<i>Carex caroliniana</i>	1.00	2.00	0.18	0.18	0.18
<i>Cunila origanoides</i>	1.00	2.00	0.18	0.18	0.18
<i>Dichanthelium sp.</i>	1.00	2.00	0.18	0.18	0.18
<i>Dirca palustris</i>	1.00	2.00	0.18	0.18	0.18
<i>Elephantopus tomentosus</i>	1.00	2.00	0.18	0.18	0.18
<i>Frangula caroliniana</i>	1.00	2.00	0.18	0.18	0.18
<i>Hamamelis virginiana</i>	1.00	2.00	0.18	0.18	0.18
<i>Hydrangea arborescens</i>	1.00	2.00	0.18	0.18	0.18
<i>Krigia biflora</i>	1.00	2.00	0.18	0.18	0.18
<i>Lespedeza procumbens</i>	1.00	2.00	0.18	0.18	0.18
<i>Lithospermum sp.</i>	1.00	2.00	0.18	0.18	0.18
<i>Lobelia spicata</i>	1.00	2.00	0.18	0.18	0.18
<i>Magnolia acuminata</i>	1.00	2.00	0.18	0.18	0.18
<i>Parthenium integrifolium</i>	1.00	2.00	0.18	0.18	0.18
<i>Podophyllum peltatum</i>	1.00	2.00	0.18	0.18	0.18
<i>Quercus muehlenbergii</i>	1.00	2.00	0.18	0.18	0.18
<i>Quercus sp.</i>	1.00	2.00	0.18	0.18	0.18
<i>Silphium asteriscus</i>	1.00	2.00	0.18	0.18	0.18
<i>Smilax herbacea</i>	1.00	2.00	0.18	0.18	0.18
<i>Symphyotrichum sp.</i>	1.00	2.00	0.18	0.18	0.18
<i>Thalictrum dasycarpum</i>	1.00	2.00	0.18	0.18	0.18
unknown forb 5	1.00	2.00	0.18	0.18	0.18
<i>Vaccinium stamineum</i>	1.00	2.00	0.18	0.18	0.18
<i>Ampelopsis arborea</i>	1.00	1.00	0.09	0.18	0.14
<i>Boehmeria cylindrica</i>	1.00	1.00	0.09	0.18	0.14
<i>Callicarpa americana</i>	1.00	1.00	0.09	0.18	0.14
<i>Carex sp. 3</i>	1.00	1.00	0.09	0.18	0.14
<i>Chamaecrista fasciculata</i>	1.00	1.00	0.09	0.18	0.14
<i>Desmodium glutinosum</i>	1.00	1.00	0.09	0.18	0.14
<i>Dichanthelium linearifolium</i>	1.00	1.00	0.09	0.18	0.14
<i>Festuca subverticillata</i>	1.00	1.00	0.09	0.18	0.14
<i>Hypericum gentianoides</i>	1.00	1.00	0.09	0.18	0.14
<i>Iris cristata</i>	1.00	1.00	0.09	0.18	0.14
<i>Liatris squarrulosa</i>	1.00	1.00	0.09	0.18	0.14
<i>Maianthemum racemosum</i>	1.00	1.00	0.09	0.18	0.14
<i>Oxalis dillenii</i>	1.00	1.00	0.09	0.18	0.14
<i>Phlox divaricata</i>	1.00	1.00	0.09	0.18	0.14
<i>Rubus argutus</i>	1.00	1.00	0.09	0.18	0.14
<i>Rubus trivialis</i>	1.00	1.00	0.09	0.18	0.14
<i>Ruellia pedunculata</i>	1.00	1.00	0.09	0.18	0.14
<i>Sassafras albidum</i>	1.00	1.00	0.09	0.18	0.14
<i>Scutellaria ovata</i>	1.00	1.00	0.09	0.18	0.14

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Styrax grandifolius</i>	1.00	1.00	0.09	0.18	0.14
<i>Symphotrichum ericoides</i>	1.00	1.00	0.09	0.18	0.14
<i>Thalictrum thalictroides</i>	1.00	1.00	0.09	0.18	0.14
<i>unknown forb 4</i>	1.00	1.00	0.09	0.18	0.14
<i>unknown graminoid 1</i>	1.00	1.00	0.09	0.18	0.14
<i>Viburnum rufidulum</i>	1.00	1.00	0.09	0.18	0.14
Total	549.00	1095.00	100.00	100.00	100.00

Table F17: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *riparian areas*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Liquidambar styraciflua</i>	2.20	16.92	28.60	28.34	24.56	25.15	26.19	22.76
<i>Pinus echinata</i>	1.00	7.69	13.00	20.32	17.61	18.04	11.90	12.55
<i>Juniperus virginiana</i>	1.00	9.23	13.00	9.58	8.30	8.50	11.90	9.88
<i>Quercus alba</i>	0.80	7.69	10.40	12.89	11.17	11.44	9.52	9.55
<i>Carya tomentosa</i>	0.53	7.69	6.93	5.58	4.83	4.95	6.35	6.33
<i>Acer saccharum</i>	0.40	7.69	5.20	3.46	3.00	3.07	4.76	5.18
snag	0.27	6.15	3.47	4.48	3.88	3.98	3.17	4.44
<i>Platanus occidentalis</i>	0.27	4.62	3.47	4.43	3.84	3.93	3.17	3.91
<i>Carya cordiformis</i>	0.33	3.08	4.33	4.54	3.94	4.03	3.97	3.69
<i>Nyssa sylvatica</i>	0.20	4.62	2.60	3.57	3.09	3.17	2.38	3.39
<i>Quercus rubra</i>	0.20	4.62	2.60	2.78	2.41	2.47	2.38	3.16
<i>Fagus grandifolia</i>	0.33	3.08	4.33	2.34	2.03	2.08	3.97	3.04
<i>Fraxinus americana</i>	0.13	3.08	1.73	1.30	1.13	1.15	1.59	1.94
<i>Juglans nigra</i>	0.13	3.08	1.73	0.89	0.77	0.79	1.59	1.82
<i>Carya texana</i>	0.13	1.54	1.73	2.01	1.75	1.79	1.59	1.64
<i>Acer rubrum</i>	0.13	1.54	1.73	1.72	1.49	1.53	1.59	1.55
<i>Carya ovata</i>	0.07	1.54	0.87	1.95	1.69	1.73	0.79	1.35
<i>Quercus shumardii</i>	0.07	1.54	0.87	1.07	0.92	0.95	0.79	1.09
<i>Quercus michauxii</i>	0.07	1.54	0.87	0.59	0.51	0.53	0.79	0.95
<i>Ulmus americana</i>	0.07	1.54	0.87	0.45	0.39	0.40	0.79	0.91
<i>Tilia americana</i>	0.07	1.54	0.87	0.37	0.32	0.33	0.79	0.89
Totals	8.40	100.00	109.20	112.67	97.64	100.00	100.00	100.00

Table F18: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *riparian areas*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Liquidambar styraciflua</i>	3.13	9.32	40.73	6.31	5.47	17.92	8.38	11.87
<i>Ostrya virginiana</i>	6.13	6.83	79.73	2.59	2.24	7.34	16.40	10.19
<i>Carpinus caroliniana</i>	6.20	6.83	80.60	1.83	1.58	5.19	16.58	9.53
<i>Juniperus virginiana</i>	2.47	6.21	32.07	4.78	4.14	13.56	6.60	8.79
<i>Acer saccharum</i>	3.27	6.83	42.47	3.21	2.79	9.12	8.73	8.23
<i>snag</i>	2.00	5.59	26.00	2.17	1.88	6.17	5.35	5.70
<i>Cornus florida</i>	2.40	6.21	31.20	1.15	1.00	3.27	6.42	5.30
<i>Ulmus alata</i>	2.07	4.97	26.87	1.38	1.19	3.91	5.53	4.80
<i>Nyssa sylvatica</i>	1.33	5.59	17.33	1.34	1.16	3.79	3.57	4.32
<i>Quercus alba</i>	0.93	3.73	12.13	1.82	1.58	5.17	2.50	3.80
<i>Acer rubrum</i>	0.60	4.97	7.80	0.83	0.72	2.36	1.60	2.98
<i>Carya tomentosa</i>	0.53	2.48	6.93	0.94	0.81	2.66	1.43	2.19
<i>Pinus echinata</i>	0.67	1.24	8.67	1.19	1.04	3.39	1.78	2.14
<i>Ulmus americana</i>	0.53	3.11	6.93	0.52	0.45	1.48	1.43	2.01
<i>Carya cordiformis</i>	0.47	0.62	6.07	1.30	1.13	3.69	1.25	1.85
<i>Tilia americana</i>	0.33	3.11	4.33	0.36	0.31	1.01	0.89	1.67
<i>Cercis canadensis</i>	0.33	2.48	4.33	0.31	0.27	0.88	0.89	1.42
<i>Carya texana</i>	0.40	1.24	5.20	0.68	0.59	1.93	1.07	1.41
<i>Fagus grandifolia</i>	0.60	1.24	7.80	0.41	0.35	1.16	1.60	1.33
<i>Hamamelis virginiana</i>	0.67	1.86	8.67	0.08	0.07	0.22	1.78	1.29
<i>Fraxinus americana</i>	0.20	1.86	2.60	0.14	0.12	0.39	0.53	0.93
<i>Quercus muehlenbergii</i>	0.27	1.86	3.47	0.04	0.03	0.10	0.71	0.89
<i>Platanus occidentalis</i>	0.13	1.24	1.73	0.30	0.26	0.86	0.36	0.82
<i>Aesculus glabra</i>	0.27	1.24	3.47	0.13	0.12	0.38	0.71	0.78
<i>Acer negundo</i>	0.20	0.62	2.60	0.41	0.35	1.15	0.53	0.77
<i>Viburnum prunifolium</i>	0.27	1.24	3.47	0.06	0.05	0.16	0.71	0.71
<i>Magnolia acuminata</i>	0.13	0.62	1.73	0.28	0.25	0.80	0.36	0.59
<i>Quercus marilandica</i>	0.07	0.62	0.87	0.28	0.25	0.80	0.18	0.53
<i>Quercus michauxii</i>	0.20	0.62	2.60	0.14	0.12	0.39	0.53	0.51
<i>Robinia pseudoacacia</i>	0.07	0.62	0.87	0.09	0.08	0.26	0.18	0.35
<i>Sideroxylon lanuginosum</i>	0.07	0.62	0.87	0.08	0.07	0.24	0.18	0.35
<i>Viburnum rufidulum</i>	0.07	0.62	0.87	0.04	0.04	0.12	0.18	0.31

Species	Frequency	Relative Frequency	Stems/ Acre	Sum BA	Sum BA/ Acre	Relative BA	Relative Density	Importance value
<i>Juglans nigra</i>	0.07	0.62	0.87	0.02	0.02	0.05	0.18	0.28
<i>Morus rubra</i>	0.07	0.62	0.87	0.01	0.01	0.03	0.18	0.28
<i>Asimina triloba</i>	0.07	0.62	0.87	0.01	0.01	0.02	0.18	0.27
<i>Frangula caroliniana</i>	0.07	0.62	0.87	0.00	0.00	0.01	0.18	0.27
<i>Staphylea trifolia</i>	0.07	0.62	0.87	0.00	0.00	0.01	0.18	0.27
<i>Vaccinium pallidum</i>	0.07	0.62	0.87	0.00	0.00	0.01	0.18	0.27
Totals	37.40	100.00	486.20	35.22	30.53	100.00	100.00	100.00

Table F19: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, riparian areas*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
Carpinus caroliniana	0.53	7.27	294.87	20.89	14.08
Ostrya virginiana	0.60	8.18	162.34	11.50	9.84
Nyssa sylvatica	0.27	3.64	129.21	9.15	6.40
Fraxinus americana	0.53	7.27	69.58	4.93	6.10
Lindera benzoin	0.27	3.64	96.08	6.81	5.22
Cornus florida	0.47	6.36	39.76	2.82	4.59
Ulmus alata	0.33	4.55	46.38	3.29	3.92
Aesculus pavia	0.27	3.64	53.01	3.76	3.70
Quercus alba	0.27	3.64	53.01	3.76	3.70
Acer rubrum	0.33	4.55	39.76	2.82	3.68
Fagus grandifolia	0.20	2.73	59.64	4.23	3.48
Hamamelis virginiana	0.20	2.73	59.64	4.23	3.48
Acer saccharum	0.20	2.73	33.13	2.35	2.54
Frangula caroliniana	0.13	1.82	33.13	2.35	2.08
Celtis occidentalis	0.20	2.73	16.57	1.17	1.95
Cercis canadensis	0.20	2.73	13.25	0.94	1.83
Dirca palustris	0.20	2.73	13.25	0.94	1.83
Liquidambar styraciflua	0.20	2.73	13.25	0.94	1.83
Carya tomentosa	0.20	2.73	9.94	0.70	1.72
Juniperus virginiana	0.13	1.82	16.57	1.17	1.50
Carya cordiformis	0.13	1.82	13.25	0.94	1.38
Quercus falcata	0.13	1.82	13.25	0.94	1.38
Quercus rubra	0.13	1.82	13.25	0.94	1.38
Cornus alternifolia	0.07	0.91	23.19	1.64	1.28
Quercus muehlenbergii	0.07	0.91	23.19	1.64	1.28
Sassafras albidum	0.13	1.82	9.94	0.70	1.26
Carya texana	0.07	0.91	6.63	0.47	0.69
Prunus serotina	0.07	0.91	6.63	0.47	0.69
Styrax grandifolius	0.07	0.91	6.63	0.47	0.69
Tilia americana	0.07	0.91	6.63	0.47	0.69
Viburnum dentatum	0.07	0.91	6.63	0.47	0.69

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
Acer negundo	0.07	0.91	3.31	0.23	0.57
Aesculus glabra	0.07	0.91	3.31	0.23	0.57
Cephalanthus occidentalis	0.07	0.91	3.31	0.23	0.57
Ilex decidua	0.07	0.91	3.31	0.23	0.57
Pinus echinata	0.07	0.91	3.31	0.23	0.57
Prunus americana	0.07	0.91	3.31	0.23	0.57
Quercus velutina	0.07	0.91	3.31	0.23	0.57
Smilax rotundifolia	0.07	0.91	3.31	0.23	0.57
Ulmus rubra	0.07	0.91	3.31	0.23	0.57
Totals	7.33	100.00	1411.38	100.00	100.00

Table F20: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, riparian areas, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	34.00	94.00	7.80	5.24	6.52
<i>Dichantherium boscii</i>	26.00	49.00	4.07	4.01	4.04
<i>Parthenocissus quinquefolia</i>	23.00	48.00	3.98	3.54	3.76
<i>Viola sororia</i>	17.00	31.00	2.57	2.62	2.60
<i>Sanicula canadensis</i>	18.00	28.00	2.32	2.77	2.55
<i>Brachyelytrum erectum</i>	14.00	35.00	2.90	2.16	2.53
<i>Carex sp.</i>	14.00	29.00	2.41	2.16	2.28
<i>Diarrhena americana</i>	12.00	29.00	2.41	1.85	2.13
<i>Fraxinus americana</i>	13.00	24.00	1.99	2.00	2.00
<i>Euonymus americanus</i>	14.00	19.00	1.58	2.16	1.87
<i>Acer rubrum</i>	13.00	17.00	1.41	2.00	1.71
<i>Vitis rotundifolia</i>	11.00	20.00	1.66	1.69	1.68
<i>Iris cristata</i>	10.00	21.00	1.74	1.54	1.64
<i>Agrimonia rostellata</i>	11.00	17.00	1.41	1.69	1.55
<i>Smilax glauca</i>	10.00	15.00	1.24	1.54	1.39
<i>Dichantherium commutatum</i>	9.00	16.00	1.33	1.39	1.36
<i>Amphicarpaea bracteata</i>	8.00	17.00	1.41	1.23	1.32
<i>Smilax rotundifolia</i>	8.00	17.00	1.41	1.23	1.32
<i>Carya cordiformis</i>	7.00	18.00	1.49	1.08	1.29
<i>Ostrya virginiana</i>	7.00	18.00	1.49	1.08	1.29
<i>Packera obovata</i>	9.00	14.00	1.16	1.39	1.27
<i>Galium concinnum</i>	8.00	15.00	1.24	1.23	1.24
<i>Cornus florida</i>	7.00	16.00	1.33	1.08	1.20
<i>Chasmanthium latifolium</i>	6.00	17.00	1.41	0.92	1.17
<i>Carex blanda</i>	8.00	13.00	1.08	1.23	1.16
<i>Sanguinaria canadensis</i>	8.00	10.00	0.83	1.23	1.03
<i>Carya sp.</i>	5.00	15.00	1.24	0.77	1.01
<i>Prunus serotina</i>	7.00	11.00	0.91	1.08	1.00
<i>Galium circaeazans</i>	8.00	9.00	0.75	1.23	0.99
<i>Nyssa sylvatica</i>	7.00	10.00	0.83	1.08	0.95
<i>Oxalis dillenii</i>	7.00	10.00	0.83	1.08	0.95
<i>Salvia lyrata</i>	7.00	10.00	0.83	1.08	0.95
<i>Bromus pubescens</i>	4.00	13.00	1.08	0.62	0.85
<i>Smilax bona-nox</i>	5.00	11.00	0.91	0.77	0.84
<i>Carex caroliniana</i>	6.00	9.00	0.75	0.92	0.84
<i>Houstonia purpurea</i>	6.00	9.00	0.75	0.92	0.84
<i>Bignonia capreolata</i>	4.00	12.00	1.00	0.62	0.81
<i>Desmodium nudiflorum</i>	4.00	12.00	1.00	0.62	0.81
<i>Quercus alba</i>	5.00	10.00	0.83	0.77	0.80
<i>Dioscorea villosa</i>	6.00	8.00	0.66	0.92	0.79
<i>Cercis canadensis</i>	5.00	9.00	0.75	0.77	0.76
<i>Solidago caesia</i>	4.00	9.00	0.75	0.62	0.68
<i>Stipa sp.</i>	4.00	9.00	0.75	0.62	0.68

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Carex glaucoidea</i>	5.00	7.00	0.58	0.77	0.68
<i>Krigia virginica</i>	4.00	8.00	0.66	0.62	0.64
<i>Clitoria mariana</i>	3.00	9.00	0.75	0.46	0.60
<i>Fragaria virginiana</i>	4.00	7.00	0.58	0.62	0.60
<i>Galium triflorum</i>	3.00	8.00	0.66	0.46	0.56
<i>Passiflora lutea</i>	4.00	6.00	0.50	0.62	0.56
<i>Pedicularis canadensis</i>	4.00	6.00	0.50	0.62	0.56
<i>Quercus rubra</i>	4.00	6.00	0.50	0.62	0.56
<i>Rubus flagellaris</i>	3.00	7.00	0.58	0.46	0.52
unknown herb 3	3.00	7.00	0.58	0.46	0.52
<i>Asarum canadense</i>	4.00	5.00	0.41	0.62	0.52
<i>Chasmanthium laxum</i>	2.00	8.00	0.66	0.31	0.49
<i>Geum canadense</i>	4.00	4.00	0.33	0.62	0.47
<i>Thalictrum thalictroides</i>	4.00	4.00	0.33	0.62	0.47
<i>Elymus virginicus</i>	2.00	7.00	0.58	0.31	0.44
<i>Angelica venenosa</i>	3.00	5.00	0.41	0.46	0.44
<i>Carex jamesii</i>	3.00	5.00	0.41	0.46	0.44
<i>Carex oligocarpa</i>	3.00	5.00	0.41	0.46	0.44
<i>Carya tomentosa</i>	3.00	5.00	0.41	0.46	0.44
<i>Celtis occidentalis</i>	3.00	5.00	0.41	0.46	0.44
<i>Elymus hystrix</i>	3.00	5.00	0.41	0.46	0.44
<i>Uvularia sessilifolia</i>	3.00	5.00	0.41	0.46	0.44
<i>Polystichum acrostichoides</i>	2.00	6.00	0.50	0.31	0.40
<i>Acer saccharum</i>	3.00	4.00	0.33	0.46	0.40
<i>Frangula caroliniana</i>	3.00	4.00	0.33	0.46	0.40
<i>Potentilla simplex</i>	3.00	4.00	0.33	0.46	0.40
<i>Solidago ulmifolia</i>	3.00	4.00	0.33	0.46	0.40
<i>Geum sp.</i>	2.00	5.00	0.41	0.31	0.36
<i>Liquidambar styraciflua</i>	2.00	5.00	0.41	0.31	0.36
<i>Trachelospermum difforme</i>	2.00	5.00	0.41	0.31	0.36
unknown graminoid 1	2.00	5.00	0.41	0.31	0.36
<i>Botrychium virginianum</i>	3.00	3.00	0.25	0.46	0.36
<i>Dichantherium dichotomum</i>	3.00	3.00	0.25	0.46	0.36
<i>Maianthemum racemosum</i>	3.00	3.00	0.25	0.46	0.36
<i>Scutellaria elliptica</i>	3.00	3.00	0.25	0.46	0.36
<i>Danthonia spicata</i>	2.00	4.00	0.33	0.31	0.32
<i>Fraxinus pennsylvanica</i>	2.00	4.00	0.33	0.31	0.32
<i>Quercus muehlenbergii</i>	2.00	4.00	0.33	0.31	0.32
unknown forb 6	2.00	4.00	0.33	0.31	0.32
unknown herb 2	2.00	4.00	0.33	0.31	0.32
<i>Vaccinium pallidum</i>	2.00	4.00	0.33	0.31	0.32
<i>Vitis aestivalis</i>	2.00	4.00	0.33	0.31	0.32
<i>Phegopteris hexagonoptera</i>	1.00	5.00	0.41	0.15	0.28
<i>Aesculus glabra</i>	2.00	3.00	0.25	0.31	0.28

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Carex planispicata</i>	2.00	3.00	0.25	0.31	0.28
<i>Chaerophyllum procumbens</i>	2.00	3.00	0.25	0.31	0.28
<i>Euphorbia corollata</i>	2.00	3.00	0.25	0.31	0.28
<i>Festuca subverticillata</i>	2.00	3.00	0.25	0.31	0.28
<i>Geranium maculatum</i>	2.00	3.00	0.25	0.31	0.28
<i>Monarda bradburiana</i>	2.00	3.00	0.25	0.31	0.28
<i>Polygala verticillata</i>	2.00	3.00	0.25	0.31	0.28
<i>Solidago hispida</i>	2.00	3.00	0.25	0.31	0.28
<i>Symphoricarpos orbiculatus</i>	2.00	3.00	0.25	0.31	0.28
<i>Lonicera japonica</i>	1.00	4.00	0.33	0.15	0.24
<i>Aristolochia serpentaria</i>	2.00	2.00	0.17	0.31	0.24
<i>Carex laxiflora</i>	2.00	2.00	0.17	0.31	0.24
<i>Cyperus sp.</i>	2.00	2.00	0.17	0.31	0.24
<i>Enemion biternatum</i>	2.00	2.00	0.17	0.31	0.24
<i>Galium pilosum</i>	2.00	2.00	0.17	0.31	0.24
<i>Microstegium vimineum</i>	2.00	2.00	0.17	0.31	0.24
<i>Panicum verrucosum</i>	2.00	2.00	0.17	0.31	0.24
<i>Phlox divaricata</i>	2.00	2.00	0.17	0.31	0.24
<i>Symphyotrichum anomalum</i>	2.00	2.00	0.17	0.31	0.24
<i>Ulmus alata</i>	2.00	2.00	0.17	0.31	0.24
<i>Asimina triloba</i>	1.00	3.00	0.25	0.15	0.20
<i>Carex frankii</i>	1.00	3.00	0.25	0.15	0.20
<i>Carex hirsutella</i>	1.00	3.00	0.25	0.15	0.20
<i>Fagus grandifolia</i>	1.00	3.00	0.25	0.15	0.20
<i>Gleditsia triacanthos</i>	1.00	3.00	0.25	0.15	0.20
<i>Quercus sp.</i>	1.00	3.00	0.25	0.15	0.20
<i>Schizachyrium scoparium</i>	1.00	3.00	0.25	0.15	0.20
<i>Smilax hispida</i>	1.00	3.00	0.25	0.15	0.20
<i>unknown herb 4</i>	1.00	3.00	0.25	0.15	0.20
<i>Viburnum prunifolium</i>	1.00	3.00	0.25	0.15	0.20
<i>Alnus serrulata</i>	1.00	2.00	0.17	0.15	0.16
<i>Berchemia scandens</i>	1.00	2.00	0.17	0.15	0.16
<i>Callicarpa americana</i>	1.00	2.00	0.17	0.15	0.16
<i>Carex cephalophora</i>	1.00	2.00	0.17	0.15	0.16
<i>Commelina sp.</i>	1.00	2.00	0.17	0.15	0.16
<i>Dichanthelium laxiflorum</i>	1.00	2.00	0.17	0.15	0.16
<i>Diospyros virginiana</i>	1.00	2.00	0.17	0.15	0.16
<i>Dirca palustris</i>	1.00	2.00	0.17	0.15	0.16
<i>Hybanthus concolor</i>	1.00	2.00	0.17	0.15	0.16
<i>Leersia sp.</i>	1.00	2.00	0.17	0.15	0.16
<i>Liparis liliifolia</i>	1.00	2.00	0.17	0.15	0.16
<i>Menispermum canadense</i>	1.00	2.00	0.17	0.15	0.16
<i>Polygonum sp.</i>	1.00	2.00	0.17	0.15	0.16
<i>Prenanthes altissima</i>	1.00	2.00	0.17	0.15	0.16
<i>Scleria oligantha</i>	1.00	2.00	0.17	0.15	0.16
<i>Silene stellata</i>	1.00	2.00	0.17	0.15	0.16

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Smilax herbacea</i>	1.00	2.00	0.17	0.15	0.16
<i>Solidago arguta</i>	1.00	2.00	0.17	0.15	0.16
<i>unknown herb 1</i>	1.00	2.00	0.17	0.15	0.16
<i>Uvularia sp.</i>	1.00	2.00	0.17	0.15	0.16
<i>Vernonia baldwinii</i>	1.00	2.00	0.17	0.15	0.16
<i>Apios americana</i>	1.00	1.00	0.08	0.15	0.12
<i>Arisaema triphyllum</i>	1.00	1.00	0.08	0.15	0.12
<i>Asplenium platyneuron</i>	1.00	1.00	0.08	0.15	0.12
<i>Boehmeria cylindrica</i>	1.00	1.00	0.08	0.15	0.12
<i>Carex sp. 3</i>	1.00	1.00	0.08	0.15	0.12
<i>Carex sp. 4</i>	1.00	1.00	0.08	0.15	0.12
<i>Crataegous sp.</i>	1.00	1.00	0.08	0.15	0.12
<i>Dichantheium malacophyllum</i>	1.00	1.00	0.08	0.15	0.12
<i>Echinacea purpurea</i>	1.00	1.00	0.08	0.15	0.12
<i>Eupatorium rotundifolium</i>	1.00	1.00	0.08	0.15	0.12
<i>Goodyera pubescens</i>	1.00	1.00	0.08	0.15	0.12
<i>Hamamelis virginiana</i>	1.00	1.00	0.08	0.15	0.12
<i>Hieracium longipilum</i>	1.00	1.00	0.08	0.15	0.12
<i>Hydrophyllum appendiculatum</i>	1.00	1.00	0.08	0.15	0.12
<i>Lespedeza repens</i>	1.00	1.00	0.08	0.15	0.12
<i>Lindera benzoin</i>	1.00	1.00	0.08	0.15	0.12
<i>Lonicera sp.</i>	1.00	1.00	0.08	0.15	0.12
<i>Lysimachia sp.</i>	1.00	1.00	0.08	0.15	0.12
<i>Phryma leptostachya</i>	1.00	1.00	0.08	0.15	0.12
<i>Pinus echinata</i>	1.00	1.00	0.08	0.15	0.12
<i>Ptilimnium nuttallii</i>	1.00	1.00	0.08	0.15	0.12
<i>Sassafras albidum</i>	1.00	1.00	0.08	0.15	0.12
<i>Sideroxylon lanuginosum</i>	1.00	1.00	0.08	0.15	0.12
<i>Solidago nemoralis</i>	1.00	1.00	0.08	0.15	0.12
<i>Styrax grandifolius</i>	1.00	1.00	0.08	0.15	0.12
<i>Symphyotrichum lateriflorum</i>	1.00	1.00	0.08	0.15	0.12
<i>Symphyotrichum sp.</i>	1.00	1.00	0.08	0.15	0.12
<i>Thaspium barbinode</i>	1.00	1.00	0.08	0.15	0.12
<i>Trillium viridescens</i>	1.00	1.00	0.08	0.15	0.12
<i>unknown forb 4</i>	1.00	1.00	0.08	0.15	0.12
<i>unknown herb 5</i>	1.00	1.00	0.08	0.15	0.12
<i>Verbesina helianthoides</i>	1.00	1.00	0.08	0.15	0.12
<i>Viburnum rufidulum</i>	1.00	1.00	0.08	0.15	0.12
<i>Viola sp.</i>	1.00	1.00	0.08	0.15	0.12
<i>Viola sagittata</i>	1.00	1.00	0.08	0.15	0.12
Totals	649.00	1205.00	100.00	100.00	100.00

Table F21: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *glades*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Juniperus virginiana</i>	0.60	40.00	7.80	2.13	5.53	33.16	37.50	36.89
<i>Pinus echinata</i>	0.40	20.00	5.20	2.35	6.11	36.63	25.00	27.21
<i>Carya cordiformis</i>	0.40	20.00	5.20	1.20	3.13	18.75	25.00	21.25
<i>Fraxinus americana</i>	0.20	20.00	2.60	0.74	1.91	11.46	12.50	14.65
Totals	1.60	100.00	20.80	6.42	16.69	100.00	100.00	100.00

Table F22: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *glades*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus stellata</i>	2.20	15.00	28.60	0.77	2.00	22.27	22.92	20.06
<i>Ulmus alata</i>	1.80	25.00	23.40	0.54	1.40	15.56	18.75	19.77
<i>Carya cordiformis</i>	1.20	5.00	15.60	0.59	1.54	17.13	12.50	11.54
<i>Juniperus virginiana</i>	0.80	10.00	10.40	0.51	1.33	14.81	8.33	11.05
<i>Fraxinus americana</i>	0.40	5.00	5.20	0.55	1.44	16.02	4.17	8.40
<i>Carya tomentosa</i>	0.60	10.00	7.80	0.22	0.57	6.36	6.25	7.54
<i>Robinia pseudoacacia</i>	1.00	5.00	13.00	0.17	0.44	4.87	10.42	6.76
snag	0.60	5.00	7.80	0.02	0.06	0.62	6.25	3.96
<i>Fraxinus pennsylvanica</i>	0.40	5.00	5.20	0.04	0.10	1.11	4.17	3.42
<i>Quercus rubra</i>	0.20	5.00	2.60	0.03	0.08	0.88	2.08	2.65
<i>Prunus serotina</i>	0.20	5.00	2.60	0.01	0.02	0.22	2.08	2.43
<i>Pinus echinata</i>	0.20	5.00	2.60	0.01	0.01	0.15	2.08	2.41
Totals	9.60	100.00	124.80	3.46	9.00	100.00	100.00	100.00

Table F23: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, glades*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Rhus copallinum</i>	0.40	15.38	397.57	62.50	38.94
<i>Ulmus alata</i>	0.40	15.38	89.45	14.06	14.72
<i>Vaccinium arboreum</i>	0.20	7.69	49.70	7.81	7.75
<i>Fraxinus pennsylvanica</i>	0.20	7.69	19.88	3.13	5.41
<i>Quercus rubra</i>	0.20	7.69	19.88	3.13	5.41
<i>Carya cordiformis</i>	0.20	7.69	9.94	1.56	4.63
<i>Carya tomentosa</i>	0.20	7.69	9.94	1.56	4.63
<i>Juniperus virginiana</i>	0.20	7.69	9.94	1.56	4.63
<i>Pinus echinata</i>	0.20	7.69	9.94	1.56	4.63
<i>Quercus alba</i>	0.20	7.69	9.94	1.56	4.63
<i>Robinia pseudoacacia</i>	0.20	7.69	9.94	1.56	4.63
Total	2.60	100.00	636.11	100.00	100.00

Table F24: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, glades, on the Big Piney and Pleasant Hill Ranger districts, Ozark- St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Schizachyrium scoparium</i>	14.00	59.00	26.11	14.89	20.50
<i>Dichantherium acuminatum</i>	6.00	16.00	7.08	6.38	6.73
<i>Danthonia spicata</i>	4.00	16.00	7.08	4.26	5.67
<i>Helianthus divaricatus</i>	5.00	13.00	5.75	5.32	5.54
<i>Croton willdenowii</i>	5.00	9.00	3.98	5.32	4.65
<i>Echinacea pallida</i>	5.00	9.00	3.98	5.32	4.65
<i>Ulmus alata</i>	5.00	6.00	2.65	5.32	3.99
<i>Diodia teres</i>	4.00	8.00	3.54	4.26	3.90
<i>Rubus flagellaris</i>	3.00	9.00	3.98	3.19	3.59
<i>Juniperus virginiana</i>	3.00	6.00	2.65	3.19	2.92
<i>Solidago petiolaris</i>	3.00	6.00	2.65	3.19	2.92
<i>Solidago ulmifolia</i>	3.00	6.00	2.65	3.19	2.92
<i>Dichantherium linearifolium</i>	2.00	6.00	2.65	2.13	2.39
<i>Ruellia humilis</i>	2.00	5.00	2.21	2.13	2.17
<i>Dichantherium boscii</i>	2.00	4.00	1.77	2.13	1.95
<i>Dichantherium malacophyllum</i>	2.00	4.00	1.77	2.13	1.95
<i>Symphotrichum patens</i>	2.00	4.00	1.77	2.13	1.95
<i>Lespedeza virginica</i>	2.00	3.00	1.33	2.13	1.73
<i>Carex rosea</i>	2.00	2.00	0.88	2.13	1.51
<i>Desmodium nudiflorum</i>	2.00	2.00	0.88	2.13	1.51
<i>Phemeranthus parviflorus</i>	2.00	2.00	0.88	2.13	1.51
<i>Dichantherium aciculare</i>	1.00	3.00	1.33	1.06	1.20
<i>Quercus rubra</i>	1.00	3.00	1.33	1.06	1.20
<i>Quercus stellata</i>	1.00	3.00	1.33	1.06	1.20
<i>Chasmanthium latifolium</i>	1.00	2.00	0.88	1.06	0.97
<i>Eryngium yuccifolium</i>	1.00	2.00	0.88	1.06	0.97
<i>Hypericum punctatum</i>	1.00	2.00	0.88	1.06	0.97
<i>Lespedeza sp.</i>	1.00	2.00	0.88	1.06	0.97
<i>Prunus mexicana</i>	1.00	2.00	0.88	1.06	0.97
<i>Pycnanthemum tenuifolium</i>	1.00	2.00	0.88	1.06	0.97
<i>Quercus alba</i>	1.00	2.00	0.88	1.06	0.97
<i>Smilax bona-nox</i>	1.00	2.00	0.88	1.06	0.97
<i>Toxicodendron radicans</i>	1.00	2.00	0.88	1.06	0.97
<i>Antennaria plantaginifolia</i>	1.00	1.00	0.44	1.06	0.75
<i>Euphorbia corollata</i>	1.00	1.00	0.44	1.06	0.75
<i>Lespedeza repens</i>	1.00	1.00	0.44	1.06	0.75
<i>Smilax glauca</i>	1.00	1.00	0.44	1.06	0.75
Total	94.00	226.00	100.00	100.00	100.00

APPENDIX G. Species importance values by strata and topographic position, 2014-2015.

Table G1: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *ridgetops*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Pinus echinata</i>	1.48	23.53	19.24	44.13	22.95	31.81	25.69	27.01
<i>Quercus alba</i>	1.60	25.49	20.80	35.55	18.49	25.62	27.78	26.30
<i>Quercus stellata</i>	0.72	9.80	9.36	13.77	7.16	9.92	12.50	10.74
<i>Pinus taeda</i>	0.76	3.92	9.88	17.48	9.09	12.60	13.19	9.91
snag	0.28	9.80	3.64	7.65	3.98	5.52	4.86	6.73
<i>Quercus rubra</i>	0.20	5.88	2.60	9.03	4.70	6.51	3.47	5.29
<i>Carya tomentosa</i>	0.24	7.84	3.12	3.24	1.69	2.34	4.17	4.78
<i>Carya texana</i>	0.24	1.96	3.12	3.23	1.68	2.33	4.17	2.82
<i>Nyssa sylvatica</i>	0.08	3.92	1.04	2.71	1.41	1.95	1.39	2.42
<i>Acer rubrum</i>	0.04	1.96	0.52	0.69	0.36	0.49	0.69	1.05
<i>Ulmus alata</i>	0.04	1.96	0.52	0.45	0.23	0.32	0.69	0.99
<i>Prunus serotina</i>	0.04	1.96	0.52	0.41	0.21	0.29	0.69	0.98
<i>Liquidambar styraciflua</i>	0.04	1.96	0.52	0.40	0.21	0.29	0.69	0.98
Totals	5.76	100.00	74.88	138.75	72.15	100.00	100.00	100.00

Table G2: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *ridgetops*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snag	2.76	15.89	35.88	5.83	3.03	27.46	18.50	20.61
<i>Acer rubrum</i>	2.20	7.48	28.60	0.85	0.44	4.02	14.75	8.75
<i>Quercus alba</i>	1.04	6.54	13.52	2.15	1.12	10.13	6.97	7.88
<i>Nyssa sylvatica</i>	1.12	6.54	14.56	1.98	1.03	9.32	7.51	7.79
<i>Quercus stellata</i>	0.64	2.80	8.32	2.79	1.45	13.12	4.29	6.74
<i>Prunus serotina</i>	0.88	8.41	11.44	0.73	0.38	3.46	5.90	5.92
<i>Carya tomentosa</i>	0.48	5.61	6.24	1.51	0.78	7.11	3.22	5.31
<i>Cornus florida</i>	0.68	3.74	8.84	0.79	0.41	3.71	4.56	4.00
<i>Ulmus alata</i>	0.48	2.80	6.24	1.24	0.64	5.83	3.22	3.95
<i>Quercus rubra</i>	0.84	4.67	10.92	0.19	0.10	0.87	5.63	3.73
<i>Sassafras albidum</i>	0.40	6.54	5.20	0.10	0.05	0.47	2.68	3.23
<i>Liquidambar styraciflua</i>	0.76	1.87	9.88	0.46	0.24	2.17	5.09	3.04
<i>Frangula caroliniana</i>	0.40	3.74	5.20	0.06	0.03	0.28	2.68	2.23
<i>Amelanchier arborea</i>	0.12	2.80	1.56	0.26	0.13	1.21	0.80	1.61
<i>Carya texana</i>	0.08	1.87	1.04	0.44	0.23	2.07	0.54	1.49
<i>Pinus echinata</i>	0.12	1.87	1.56	0.38	0.20	1.78	0.80	1.48
<i>Juniperus virginiana</i>	0.08	1.87	1.04	0.31	0.16	1.46	0.54	1.29
<i>Quercus phellos</i>	0.36	0.93	4.68	0.08	0.04	0.39	2.41	1.24
<i>Diospyros virginiana</i>	0.16	0.93	2.08	0.33	0.17	1.57	1.07	1.19
<i>Fagus grandifolia</i>	0.20	1.87	2.60	0.05	0.02	0.21	1.34	1.14
<i>Quercus falcata</i>	0.32	0.93	4.16	0.07	0.04	0.33	2.14	1.14
<i>Quercus velutina</i>	0.08	1.87	1.04	0.12	0.06	0.55	0.54	0.99
<i>Pinus taeda</i>	0.04	0.93	0.52	0.34	0.18	1.59	0.27	0.93
<i>Rhus copallinum</i>	0.08	1.87	1.04	0.01	0.00	0.04	0.54	0.82
<i>Ostrya virginiana</i>	0.20	0.93	2.60	0.02	0.01	0.11	1.34	0.79
<i>Crataegus spathulata</i>	0.12	0.93	1.56	0.11	0.06	0.51	0.80	0.75
<i>Aralia spinosa</i>	0.12	0.93	1.56	0.02	0.01	0.09	0.80	0.61
<i>Fraxinus americana</i>	0.08	0.93	1.04	0.01	0.01	0.06	0.54	0.51
<i>Robinia pseudoacacia</i>	0.04	0.93	0.52	0.01	0.01	0.05	0.27	0.42
<i>Rhus glabra</i>	0.04	0.93	0.52	0.01	0.00	0.03	0.27	0.41
Totals	14.92	100.00	193.96	21.24	11.05	100.00	100.00	100.00

Table G3: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species*, *ridgetops*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.68	9.24	544.67	22.51	15.88
<i>Carya tomentosa</i>	0.76	10.33	145.11	6.00	8.16
<i>Nyssa sylvatica</i>	0.44	5.98	242.52	10.02	8.00
<i>Quercus rubra</i>	0.60	8.15	151.08	6.24	7.20
<i>Sassafras albidum</i>	0.32	4.35	164.99	6.82	5.58
<i>Quercus velutina</i>	0.48	6.52	109.33	4.52	5.52
<i>Prunus serotina</i>	0.44	5.98	109.33	4.52	5.25
<i>Rhus copallinum</i>	0.36	4.89	103.37	4.27	4.58
<i>Rhus glabra</i>	0.12	1.63	131.20	5.42	3.53
<i>Cornus florida</i>	0.36	4.89	51.68	2.14	3.51
<i>Frangula caroliniana</i>	0.24	3.26	87.47	3.62	3.44
<i>Quercus alba</i>	0.40	5.43	33.79	1.40	3.42
<i>Pinus echinata</i>	0.16	2.17	99.39	4.11	3.14
<i>Fraxinus americana</i>	0.28	3.80	59.64	2.47	3.13
<i>Ulmus alata</i>	0.24	3.26	45.72	1.89	2.58
<i>Carya texana</i>	0.12	1.63	47.71	1.97	1.80
<i>Quercus stellata</i>	0.16	2.17	23.85	0.99	1.58
<i>Cercis canadensis</i>	0.12	1.63	33.79	1.40	1.51
<i>Liquidambar styraciflua</i>	0.12	1.63	31.81	1.31	1.47
<i>Aralia spinosa</i>	0.08	1.09	41.75	1.73	1.41
<i>Diospyros virginiana</i>	0.12	1.63	13.92	0.58	1.10
<i>Vaccinium stamineum</i>	0.04	0.54	37.77	1.56	1.05
<i>Fagus grandifolia</i>	0.08	1.09	15.90	0.66	0.87
<i>Viburnum rufidulum</i>	0.08	1.09	13.92	0.58	0.83
<i>Ostrya virginiana</i>	0.08	1.09	11.93	0.49	0.79
<i>Carya glabra</i>	0.04	0.54	21.87	0.90	0.72
<i>Juniperus virginiana</i>	0.08	1.09	7.95	0.33	0.71
<i>Quercus phellos</i>	0.04	0.54	11.93	0.49	0.52
<i>Vaccinium arboreum</i>	0.04	0.54	7.95	0.33	0.44
<i>Rhus aromatica</i>	0.04	0.54	5.96	0.25	0.39
<i>Callicarpa americana</i>	0.04	0.54	1.99	0.08	0.31
<i>Celtis occidentalis</i>	0.04	0.54	1.99	0.08	0.31
<i>Magnolia acuminata</i>	0.04	0.54	1.99	0.08	0.31

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Quercus falcata</i>	0.04	0.54	1.99	0.08	0.31
<i>Quercus cf.</i>	0.04	0.54	1.99	0.08	0.31
<i>Quercus palustris</i>	0.04	0.54	1.99	0.08	0.31
<i>Robinia pseudoacacia</i>	0.04	0.54	1.99	0.08	0.31
Total	7.40	100.54	2421.21	100.08	100.31

Table G4: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, ridgetops, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relativ Cover	Relative Frequency	Importance Value
<i>Parthenocissus quinquefolia</i>	55.00	141.00	7.55	6.56	7.05
<i>Toxicodendron radicans</i>	54.00	136.00	7.28	6.44	6.86
<i>Dichantherium boscii</i>	37.00	74.00	3.96	4.41	4.19
<i>Rubus flagellaris</i>	28.00	75.00	4.02	3.34	3.68
<i>Acer rubrum</i>	32.00	61.00	3.27	3.81	3.54
<i>Vitis rotundifolia</i>	24.00	70.00	3.75	2.86	3.30
<i>Carex</i> sp.	26.00	53.00	2.84	3.10	2.97
<i>Smilax glauca</i>	24.00	36.00	1.93	2.86	2.39
<i>Nyssa sylvatica</i>	19.00	46.00	2.46	2.26	2.36
<i>Quercus alba</i>	18.00	43.00	2.30	2.15	2.22
<i>Rubus argutus</i>	16.00	46.00	2.46	1.91	2.19
<i>Amphicarpaea bracteata</i>	21.00	34.00	1.82	2.50	2.16
<i>Sassafras albidum</i>	17.00	34.00	1.82	2.03	1.92
<i>Helianthus hirsutus</i>	15.00	37.00	1.98	1.79	1.88
<i>Helianthus divaricatus</i>	14.00	39.00	2.09	1.67	1.88
<i>Vaccinium pallidum</i>	11.00	33.00	1.77	1.31	1.54
<i>Danthonia spicata</i>	11.00	31.00	1.66	1.31	1.49
<i>Quercus velutina</i>	11.00	24.00	1.29	1.31	1.30
<i>Dichantherium commutatum</i>	11.00	21.00	1.12	1.31	1.22
<i>Pinus echinata</i>	11.00	19.00	1.02	1.31	1.16
<i>Carya tomentosa</i>	9.00	21.00	1.12	1.07	1.10
<i>Quercus stellata</i>	9.00	21.00	1.12	1.07	1.10
<i>Desmodium nudiflorum</i>	9.00	20.00	1.07	1.07	1.07
<i>Vitis aestivalis</i>	9.00	19.00	1.02	1.07	1.05
<i>Ulmus alata</i>	8.00	21.00	1.12	0.95	1.04
<i>Schizachyrium scoparium</i>	7.00	21.00	1.12	0.83	0.98
<i>Viola palmata</i>	9.00	15.00	0.80	1.07	0.94
<i>Carya texana</i>	7.00	18.00	0.96	0.83	0.90
<i>Sanicula canadensis</i>	8.00	14.00	0.75	0.95	0.85
<i>Pycnanthemum tenuifolium</i>	7.00	16.00	0.86	0.83	0.85
<i>Rhus copallinum</i>	6.00	16.00	0.86	0.72	0.79
<i>Dichantherium dichotomum</i>	7.00	13.00	0.70	0.83	0.77
<i>Euphorbia corollata</i>	7.00	12.00	0.64	0.83	0.74
<i>Smilax bona-nox</i>	7.00	12.00	0.64	0.83	0.74
<i>Symphotrichum anomalum</i>	6.00	14.00	0.75	0.72	0.73
<i>Carex blanda</i>	6.00	13.00	0.70	0.72	0.71
<i>Carex hirsutella</i>	6.00	13.00	0.70	0.72	0.71
<i>Scleria oligantha</i>	6.00	13.00	0.70	0.72	0.71
<i>Clitoria mariana</i>	6.00	12.00	0.64	0.72	0.68
<i>Chasmanthium latifolium</i>	4.00	14.00	0.75	0.48	0.61
<i>Cornus florida</i>	5.00	11.00	0.59	0.60	0.59

Species	Frequency	Total Cover	Relativ Cover	Relative Frequency	Importance Value
<i>Solidago ulmifolia</i>	5.00	11.00	0.59	0.60	0.59
<i>Rubus trivialis</i>	5.00	10.00	0.54	0.60	0.57
<i>Lespedeza repens</i>	4.00	12.00	0.64	0.48	0.56
<i>Lactuca canadensis</i>	5.00	9.00	0.48	0.60	0.54
<i>Desmodium rotundifolium</i>	4.00	11.00	0.59	0.48	0.53
<i>Lobelia spicata</i>	4.00	10.00	0.54	0.48	0.51
<i>Solidago nemoralis</i>	4.00	10.00	0.54	0.48	0.51
<i>Lonicera japonica</i>	3.00	12.00	0.64	0.36	0.50
<i>Chamaecrista fasciculata</i>	5.00	7.00	0.37	0.60	0.49
<i>Ambrosia artemisiifolia</i>	4.00	9.00	0.48	0.48	0.48
<i>Bromus pubescens</i>	4.00	9.00	0.48	0.48	0.48
<i>Galactia volubilis</i>	4.00	9.00	0.48	0.48	0.48
<i>Rubus sp.</i>	4.00	9.00	0.48	0.48	0.48
<i>Galium circaezans</i>	5.00	6.00	0.32	0.60	0.46
<i>Potentilla simplex</i>	4.00	8.00	0.43	0.48	0.45
<i>Scutellaria ovata</i>	4.00	8.00	0.43	0.48	0.45
<i>Dichanthelium oligosanthes</i>	3.00	10.00	0.54	0.36	0.45
<i>Rhus glabra</i>	4.00	7.00	0.37	0.48	0.43
<i>Dichanthelium acuminatum</i>	3.00	9.00	0.48	0.36	0.42
<i>Trachelospermum difforme</i>	3.00	9.00	0.48	0.36	0.42
<i>Desmodium viridiflorum</i>	4.00	6.00	0.32	0.48	0.40
<i>Quercus rubra</i>	3.00	7.00	0.37	0.36	0.37
<i>Tradescantia ohiensis</i>	3.00	7.00	0.37	0.36	0.37
<i>Carex retroflexa</i>	3.00	6.00	0.32	0.36	0.34
<i>Frangula caroliniana</i>	3.00	6.00	0.32	0.36	0.34
<i>Dioscorea villosa</i>	3.00	5.00	0.27	0.36	0.31
<i>Robinia pseudoacacia</i>	3.00	5.00	0.27	0.36	0.31
<i>Elymus glabriflorus</i>	3.00	4.00	0.21	0.36	0.29
<i>Smilax rotundifolia</i>	3.00	4.00	0.21	0.36	0.29
<i>Ageratina altissima</i>	2.00	6.00	0.32	0.24	0.28
<i>Prunus serotina</i>	2.00	6.00	0.32	0.24	0.28
<i>Solidago petiolaris</i>	2.00	6.00	0.32	0.24	0.28
<i>Symphotrichum patens</i>	2.00	6.00	0.32	0.24	0.28
unknown graminoid 2	2.00	6.00	0.32	0.24	0.28
<i>Desmodium laevigatum</i>	3.00	3.00	0.16	0.36	0.26
<i>Viola sp.</i>	3.00	3.00	0.16	0.36	0.26
<i>Amelanchier arborea</i>	2.00	5.00	0.27	0.24	0.25
<i>Antennaria plantaginifolia</i>	2.00	5.00	0.27	0.24	0.25
<i>Fraxinus americana</i>	2.00	5.00	0.27	0.24	0.25
<i>Leersia virginica</i>	2.00	5.00	0.27	0.24	0.25
<i>Monarda fistulosa</i>	2.00	5.00	0.27	0.24	0.25
<i>Symphoricarpos orbiculatus</i>	2.00	5.00	0.27	0.24	0.25
<i>Carex laxiflora</i>	2.00	4.00	0.21	0.24	0.23
<i>Dichanthelium sp.</i>	2.00	4.00	0.21	0.24	0.23
<i>Dichanthelium laxiflorum</i>	2.00	4.00	0.21	0.24	0.23
<i>Galium arkansanum</i>	2.00	4.00	0.21	0.24	0.23
<i>Gillenia stipulata</i>	2.00	4.00	0.21	0.24	0.23
<i>Hieracium longipilum</i>	2.00	4.00	0.21	0.24	0.23

Species	Frequency	Total Cover	Relativ Cover	Relative Frequency	Importance Value
<i>Hypericum hypericoides</i>	2.00	4.00	0.21	0.24	0.23
<i>Oxalis dillenii</i>	2.00	4.00	0.21	0.24	0.23
<i>Thalictrum thalictroides</i>	2.00	4.00	0.21	0.24	0.23
<i>Cercis canadensis</i>	2.00	3.00	0.16	0.24	0.20
<i>Desmodium sp.</i>	2.00	3.00	0.16	0.24	0.20
<i>Desmodium paniculatum</i>	2.00	3.00	0.16	0.24	0.20
<i>Phlox pilosa</i>	2.00	3.00	0.16	0.24	0.20
<i>Ruellia pedunculata</i>	2.00	3.00	0.16	0.24	0.20
<i>Ruellia strepens</i>	2.00	3.00	0.16	0.24	0.20
<i>Solidago hispida</i>	2.00	3.00	0.16	0.24	0.20
<i>Aristolochia serpentaria</i>	2.00	2.00	0.11	0.24	0.17
<i>Carex rosea</i>	2.00	2.00	0.11	0.24	0.17
<i>Lespedeza procumbens</i>	2.00	2.00	0.11	0.24	0.17
<i>Scutellaria elliptica</i>	2.00	2.00	0.11	0.24	0.17
<i>Carex cephalophora</i>	1.00	4.00	0.21	0.12	0.17
<i>Brachyelytrum erectum</i>	1.00	3.00	0.16	0.12	0.14
<i>Bromus sp.</i>	1.00	3.00	0.16	0.12	0.14
<i>Carex albicans</i>	1.00	3.00	0.16	0.12	0.14
<i>Cunila organoides</i>	1.00	3.00	0.16	0.12	0.14
<i>Desmodium cuspidatum</i>	1.00	3.00	0.16	0.12	0.14
<i>Echinacea purpurea</i>	1.00	3.00	0.16	0.12	0.14
<i>Erigeron strigosus</i>	1.00	3.00	0.16	0.12	0.14
<i>Fraxinus pennsylvanica</i>	1.00	3.00	0.16	0.12	0.14
<i>Lespedeza hirta</i>	1.00	3.00	0.16	0.12	0.14
<i>Ostrya virginiana</i>	1.00	3.00	0.16	0.12	0.14
<i>Pinus taeda</i>	1.00	3.00	0.16	0.12	0.14
<i>Rudbeckia hirta</i>	1.00	3.00	0.16	0.12	0.14
<i>unknown forb 6</i>	1.00	3.00	0.16	0.12	0.14
<i>Viburnum rufidulum</i>	1.00	3.00	0.16	0.12	0.14
<i>Viola pedata</i>	1.00	3.00	0.16	0.12	0.14
<i>Viola sororia</i>	1.00	3.00	0.16	0.12	0.14
<i>Ampelopsis arborea</i>	1.00	2.00	0.11	0.12	0.11
<i>Apocynum cannabinum</i>	1.00	2.00	0.11	0.12	0.11
<i>Carex blanda</i>	1.00	2.00	0.11	0.12	0.11
<i>Carya sp.</i>	1.00	2.00	0.11	0.12	0.11
<i>Carya texana</i>	1.00	2.00	0.11	0.12	0.11
<i>Croton willdenowii</i>	1.00	2.00	0.11	0.12	0.11
<i>Carex complanata</i>	1.00	2.00	0.11	0.12	0.11
<i>Carex crinita</i>	1.00	2.00	0.11	0.12	0.11
<i>Carex muehlenbergii</i>	1.00	2.00	0.11	0.12	0.11
<i>Desmodium sp. 4</i>	1.00	2.00	0.11	0.12	0.11
<i>Dichantherium linearifolium</i>	1.00	2.00	0.11	0.12	0.11
<i>Erigeron annuus</i>	1.00	2.00	0.11	0.12	0.11
<i>Eupatorium serotinum</i>	1.00	2.00	0.11	0.12	0.11
<i>Festuca subverticillata</i>	1.00	2.00	0.11	0.12	0.11
<i>Geranium carolinianum</i>	1.00	2.00	0.11	0.12	0.11
<i>Ilex decidua</i>	1.00	2.00	0.11	0.12	0.11
<i>Monarda bradburiana</i>	1.00	2.00	0.11	0.12	0.11
<i>Penstemon digitalis</i>	1.00	2.00	0.11	0.12	0.11

Species	Frequency	Total Cover	Relativ Cover	Relative Frequency	Importance Value
<i>Quercus falcata</i>	1.00	2.00	0.11	0.12	0.11
<i>Solidago altissima</i>	1.00	2.00	0.11	0.12	0.11
<i>Solidago sp.</i>	1.00	2.00	0.11	0.12	0.11
<i>Symphotrichum dumosum</i>	1.00	2.00	0.11	0.12	0.11
<i>Viola sagittata</i>	1.00	2.00	0.11	0.12	0.11
<i>Vitis cinerea</i>	1.00	2.00	0.11	0.12	0.11
<i>Vitis vulpina</i>	1.00	2.00	0.11	0.12	0.11
<i>Aralia spinosa</i>	1.00	1.00	0.05	0.12	0.09
<i>Berchemia scandens</i>	1.00	1.00	0.05	0.12	0.09
<i>Carex digitalis</i>	1.00	1.00	0.05	0.12	0.09
<i>Carex glaucoidea</i>	1.00	1.00	0.05	0.12	0.09
<i>Desmodium sp. 1</i>	1.00	1.00	0.05	0.12	0.09
<i>Elymus virginicus</i>	1.00	1.00	0.05	0.12	0.09
<i>Helianthus angustifolius</i>	1.00	1.00	0.05	0.12	0.09
<i>Lespedeza virginica</i>	1.00	1.00	0.05	0.12	0.09
<i>Liquidambar styraciflua</i>	1.00	1.00	0.05	0.12	0.09
<i>Lonicera sp.</i>	1.00	1.00	0.05	0.12	0.09
<i>Microstegium vimineum</i>	1.00	1.00	0.05	0.12	0.09
<i>Phlox sp.</i>	1.00	1.00	0.05	0.12	0.09
<i>Prunella vulgaris</i>	1.00	1.00	0.05	0.12	0.09
<i>Pseudognaphalium obtusifolium</i>	1.00	1.00	0.05	0.12	0.09
<i>Scutellaria sp.</i>	1.00	1.00	0.05	0.12	0.09
<i>Sideroxylon lanuginosum</i>	1.00	1.00	0.05	0.12	0.09
<i>Vaccinium stamineum</i>	1.00	1.00	0.05	0.12	0.09
Total	839.00	1867.00	100.00	100.00	100.00

Table G5: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *north slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	2.24	26.37	29.15	68.15	26.85	29.89	38.34	31.54
<i>Quercus rubra</i>	0.79	13.19	10.24	33.20	13.08	14.56	13.47	13.74
<i>Nyssa sylvatica</i>	0.45	9.89	5.91	16.69	6.58	7.32	7.77	8.33
<i>Pinus echinata</i>	0.52	5.49	6.70	24.17	9.52	10.60	8.81	8.30
<i>Quercus velutina</i>	0.45	7.69	5.91	18.10	7.13	7.94	7.77	7.80
snag	0.36	9.89	4.73	14.09	5.55	6.18	6.22	7.43
<i>Carya tomentosa</i>	0.39	8.79	5.12	9.47	3.73	4.15	6.74	6.56
<i>Carya glabra</i>	0.12	3.30	1.58	6.93	2.73	3.04	2.07	2.80
<i>Carya texana</i>	0.12	2.20	1.58	1.91	0.75	0.84	2.07	1.70
<i>Liquidambar styraciflua</i>	0.09	2.20	1.18	2.55	1.00	1.12	1.55	1.62
<i>Prunus serotina</i>	0.06	2.20	0.79	1.17	0.46	0.51	1.04	1.25
<i>Acer rubrum</i>	0.06	2.20	0.79	0.75	0.29	0.33	1.04	1.19
<i>Fraxinus americana</i>	0.03	1.10	0.39	1.51	0.60	0.66	0.52	0.76
<i>Tilia americana</i>	0.03	1.10	0.39	1.13	0.45	0.50	0.52	0.70
<i>Acer saccharum</i>	0.03	1.10	0.39	1.10	0.43	0.48	0.52	0.70
<i>Quercus falcata</i>	0.03	1.10	0.39	0.87	0.34	0.38	0.52	0.67
<i>Robinia pseudoacacia</i>	0.03	1.10	0.39	0.69	0.27	0.30	0.52	0.64
<i>Quercus stellata</i>	0.03	1.10	0.39	0.51	0.20	0.22	0.52	0.61
Totals	5.85	100.00	76.03	202.98	79.96	89.03	100.00	96.34

Table G6: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *north slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Carya tomentosa</i>	2.39	11.92	31.12	5.82	2.29	17.09	12.38	13.80
<i>Quercus alba</i>	1.64	9.33	21.27	5.82	2.29	17.07	8.46	11.62
snag	1.85	11.40	24.03	4.07	1.60	11.95	9.56	10.97
<i>Acer rubrum</i>	1.67	7.77	21.67	4.31	1.70	12.65	8.62	9.68
<i>Nyssa sylvatica</i>	2.58	7.77	33.48	2.66	1.05	7.80	13.32	9.63
<i>Cornus florida</i>	1.79	6.74	23.24	1.85	0.73	5.44	9.25	7.14
<i>Prunus serotina</i>	1.00	4.66	13.00	1.51	0.60	4.45	5.17	4.76
<i>Ostrya virginiana</i>	0.67	3.63	8.67	0.82	0.32	2.39	3.45	3.16
<i>Ulmus alata</i>	0.64	3.11	8.27	0.87	0.34	2.54	3.29	2.98
<i>Ulmus americana</i>	0.79	2.07	10.24	0.66	0.26	1.93	4.08	2.69
<i>Liquidambar styraciflua</i>	0.33	2.59	4.33	1.19	0.47	3.48	1.72	2.60
<i>Fagus grandifolia</i>	0.45	1.55	5.91	0.92	0.36	2.69	2.35	2.20
<i>Carya glabra</i>	0.39	1.55	5.12	0.59	0.23	1.74	2.04	1.78
<i>Sassafras albidum</i>	0.42	2.07	5.52	0.09	0.04	0.26	2.19	1.51
<i>Quercus rubra</i>	0.42	1.55	5.52	0.25	0.10	0.74	2.19	1.50
<i>Carpinus caroliniana</i>	0.36	1.55	4.73	0.27	0.11	0.79	1.88	1.41
<i>Fraxinus pennsylvanica</i>	0.27	1.55	3.55	0.09	0.03	0.25	1.41	1.07
<i>Cercis canadensis</i>	0.12	2.07	1.58	0.09	0.04	0.26	0.63	0.99
<i>Fraxinus americana</i>	0.12	1.04	1.58	0.37	0.14	1.08	0.63	0.91
<i>Pinus echinata</i>	0.06	1.04	0.79	0.42	0.17	1.24	0.31	0.86
<i>Morus rubra</i>	0.06	1.04	0.79	0.35	0.14	1.03	0.31	0.79
<i>Quercus velutina</i>	0.12	1.55	1.58	0.07	0.03	0.19	0.63	0.79
<i>Ulmus rubra</i>	0.12	1.04	1.58	0.17	0.07	0.51	0.63	0.73
<i>Acer saccharum</i>	0.09	1.04	1.18	0.19	0.08	0.57	0.47	0.69
<i>Carya cordiformis</i>	0.06	1.04	0.79	0.24	0.09	0.69	0.31	0.68
<i>Asimina triloba</i>	0.09	1.04	1.18	0.06	0.02	0.17	0.47	0.56
<i>Amelanchier arborea</i>	0.06	1.04	0.79	0.02	0.01	0.07	0.31	0.47
<i>Juniperus virginiana</i>	0.03	0.52	0.39	0.25	0.10	0.74	0.16	0.47
<i>Magnolia tripetala</i>	0.12	0.52	1.58	0.04	0.02	0.13	0.63	0.43
<i>Frangula caroliniana</i>	0.12	0.52	1.58	0.03	0.01	0.08	0.63	0.41
<i>Pinus taeda</i>	0.09	0.52	1.18	0.01	0.00	0.04	0.47	0.34

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Juglans nigra</i>	0.03	0.52	0.39	0.09	0.04	0.27	0.16	0.32
<i>Tilia americana</i>	0.06	0.52	0.79	0.02	0.01	0.05	0.31	0.29
<i>Viburnum prunifolium</i>	0.06	0.52	0.79	0.01	0.01	0.04	0.31	0.29
<i>Hamamelis virginiana</i>	0.06	0.52	0.79	0.01	0.00	0.02	0.31	0.28
<i>Diospyros virginiana</i>	0.03	0.52	0.39	0.05	0.02	0.16	0.16	0.28
<i>Viburnum rufidulum</i>	0.03	0.52	0.39	0.01	0.01	0.04	0.16	0.24
<i>Ulmus sp.</i>	0.03	0.52	0.39	0.01	0.00	0.03	0.16	0.23
<i>Quercus michauxii</i>	0.03	0.52	0.39	0.01	0.00	0.02	0.16	0.23
<i>Magnolia acuminata</i>	0.03	0.52	0.39	0.01	0.00	0.02	0.16	0.23
<i>Rhus copallinum</i>	0.03	0.52	0.39	0.00	0.00	0.01	0.16	0.23
Totals	19.33	100.00	251.33	34.32	13.52	100.00	100.00	100.00

Table G7: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species*, north slopes, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.67	11.28	426.18	27.48	19.38
<i>Nyssa sylvatica</i>	0.45	7.69	111.44	7.18	7.44
<i>Prunus serotina</i>	0.48	8.21	87.35	5.63	6.92
<i>Carya tomentosa</i>	0.42	7.18	85.84	5.53	6.36
<i>Quercus rubra</i>	0.42	7.18	82.83	5.34	6.26
<i>Sassafras albidum</i>	0.30	5.13	103.91	6.70	5.91
<i>Ostrya virginiana</i>	0.30	5.13	85.84	5.53	5.33
<i>Cornus florida</i>	0.39	6.67	52.71	3.40	5.03
<i>Fraxinus americana</i>	0.21	3.59	49.70	3.20	3.40
<i>Lindera benzoin</i>	0.03	0.51	87.35	5.63	3.07
<i>Frangula caroliniana</i>	0.21	3.59	36.14	2.33	2.96
<i>Carya texana</i>	0.15	2.56	33.13	2.14	2.35
<i>Robinia pseudoacacia</i>	0.09	1.54	36.14	2.33	1.93
<i>Cercis canadensis</i>	0.09	1.54	34.64	2.23	1.89
<i>Quercus velutina</i>	0.15	2.56	16.57	1.07	1.82
<i>Acer saccharum</i>	0.09	1.54	30.12	1.94	1.74
<i>Rhus copallinum</i>	0.15	2.56	13.55	0.87	1.72
<i>Carya glabra</i>	0.12	2.05	21.08	1.36	1.71
<i>Fagus grandifolia</i>	0.09	1.54	28.61	1.84	1.69
<i>Carya cordiformis</i>	0.09	1.54	15.06	0.97	1.25
<i>Quercus alba</i>	0.09	1.54	15.06	0.97	1.25
<i>Fraxinus pennsylvanica</i>	0.09	1.54	9.04	0.58	1.06
<i>Ulmus americana</i>	0.09	1.54	7.53	0.49	1.01
<i>Aesculus pavia</i>	0.06	1.03	13.55	0.87	0.95
<i>Aesculus glabra</i>	0.06	1.03	6.02	0.39	0.71
<i>Morus rubra</i>	0.06	1.03	4.52	0.29	0.66
<i>Carpinus caroliniana</i>	0.03	0.51	12.05	0.78	0.64
<i>Asimina triloba</i>	0.06	1.03	3.01	0.19	0.61
<i>Diospyros virginiana</i>	0.06	1.03	3.01	0.19	0.61
<i>Ulmus rubra</i>	0.03	0.51	9.04	0.58	0.55
<i>Chionanthus virginicus</i>	0.03	0.51	4.52	0.29	0.40
<i>Hamamelis virginiana</i>	0.03	0.51	4.52	0.29	0.40

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Ulmus alata</i>	0.03	0.51	4.52	0.29	0.40
<i>Magnolia acuminata</i>	0.03	0.51	3.01	0.19	0.35
<i>Quercus stellata</i>	0.03	0.51	3.01	0.19	0.35
<i>Vaccinium arboreum</i>	0.03	0.51	3.01	0.19	0.35
<i>Juniperus virginiana</i>	0.03	0.51	1.51	0.10	0.30
<i>Liquidambar styraciflua</i>	0.03	0.51	1.51	0.10	0.30
<i>Magnolia tripetala</i>	0.03	0.51	1.51	0.10	0.30
<i>Rhus glabra</i>	0.03	0.51	1.51	0.10	0.30
<i>Vaccinium stamineum</i>	0.03	0.51	1.51	0.10	0.30
Totals	5.91	100.00	1551.13	100.00	100.00

Table G8: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, north slopes, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	92.00	322.00	14.23	9.15	11.69
<i>Parthenocissus quinquefolia</i>	76.00	199.00	8.79	7.55	8.17
<i>Acer rubrum</i>	43.00	100.00	4.42	4.27	4.35
<i>Vitis rotundifolia</i>	33.00	75.00	3.31	3.28	3.30
<i>Amphicarpaea bracteata</i>	34.00	58.00	2.56	3.38	2.97
<i>Quercus alba</i>	32.00	61.00	2.70	3.18	2.94
<i>Nyssa sylvatica</i>	23.00	50.00	2.21	2.29	2.25
<i>Quercus rubra</i>	22.00	50.00	2.21	2.19	2.20
<i>Dichantherium boscii</i>	23.00	46.00	2.03	2.29	2.16
<i>Vaccinium pallidum</i>	20.00	46.00	2.03	1.99	2.01
<i>Brachyelytrum erectum</i>	21.00	38.00	1.68	2.09	1.88
<i>Cornus florida</i>	18.00	44.00	1.94	1.79	1.87
<i>Smilax glauca</i>	22.00	35.00	1.55	2.19	1.87
<i>Desmodium nudiflorum</i>	17.00	45.00	1.99	1.69	1.84
<i>Rubus argutus</i>	15.00	42.00	1.86	1.49	1.67
<i>Vitis aestivalis</i>	15.00	36.00	1.59	1.49	1.54
<i>Fraxinus americana</i>	14.00	33.00	1.46	1.39	1.42
<i>Sassafras albidum</i>	16.00	27.00	1.19	1.59	1.39
<i>Prunus serotina</i>	14.00	27.00	1.19	1.39	1.29
<i>Ostrya virginiana</i>	12.00	27.00	1.19	1.19	1.19
<i>Dioscorea villosa</i>	12.00	26.00	1.15	1.19	1.17
<i>Smilax rotundifolia</i>	12.00	25.00	1.10	1.19	1.15
<i>Rubus flagellaris</i>	10.00	26.00	1.15	0.99	1.07
<i>Carex</i> sp.	11.00	22.00	0.97	1.09	1.03
<i>Viola sororia</i>	10.00	22.00	0.97	0.99	0.98
<i>Smilax bona-nox</i>	11.00	17.00	0.75	1.09	0.92
<i>Dichantherium dichotomum</i>	10.00	19.00	0.84	0.99	0.92
<i>Polystichum acrostichoides</i>	8.00	22.00	0.97	0.80	0.88
<i>Sanicula canadensis</i>	10.00	17.00	0.75	0.99	0.87
<i>Phegopteris hexagonoptera</i>	7.00	21.00	0.93	0.70	0.81
<i>Helianthus divaricatus</i>	7.00	19.00	0.84	0.70	0.77
<i>Quercus velutina</i>	8.00	16.00	0.71	0.80	0.75
<i>Ageratina altissima</i>	7.00	18.00	0.80	0.70	0.75
<i>Pinus echinata</i>	9.00	13.00	0.57	0.89	0.73
<i>Rubus trivialis</i>	7.00	15.00	0.66	0.70	0.68
<i>Carya tomentosa</i>	7.00	14.00	0.62	0.70	0.66
<i>Solidago ulmifolia</i>	7.00	14.00	0.62	0.70	0.66
<i>Phryma leptostachya</i>	8.00	10.00	0.44	0.80	0.62
<i>Dichantherium commutatum</i>	7.00	12.00	0.53	0.70	0.61
<i>Carex rosea</i>	6.00	11.00	0.49	0.60	0.54
<i>Scutellaria ovata</i>	6.00	11.00	0.49	0.60	0.54

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Danthonia spicata</i>	5.00	11.00	0.49	0.50	0.49
<i>Frangula caroliniana</i>	5.00	11.00	0.49	0.50	0.49
<i>Helianthus hirsutus</i>	4.00	13.00	0.57	0.40	0.49
<i>Lespedeza procumbens</i>	4.00	13.00	0.57	0.40	0.49
<i>Viola palmata</i>	5.00	10.00	0.44	0.50	0.47
<i>Galium circaezans</i>	5.00	9.00	0.40	0.50	0.45
<i>Schizachyrium scoparium</i>	4.00	11.00	0.49	0.40	0.44
<i>Piptochaetium avenaceum</i>	3.00	12.00	0.53	0.30	0.41
<i>Vitis cinerea</i>	4.00	9.00	0.40	0.40	0.40
<i>Thalictrum thalictroides</i>	5.00	6.00	0.27	0.50	0.38
<i>Lespedeza virginica</i>	4.00	8.00	0.35	0.40	0.38
<i>Amelanchier arborea</i>	4.00	7.00	0.31	0.40	0.35
<i>Carex communis</i>	4.00	7.00	0.31	0.40	0.35
<i>Podophyllum peltatum</i>	4.00	7.00	0.31	0.40	0.35
<i>Carex glaucoidea</i>	3.00	8.00	0.35	0.30	0.33
<i>Morus rubra</i>	3.00	8.00	0.35	0.30	0.33
<i>Desmodium laevigatum</i>	4.00	5.00	0.22	0.40	0.31
<i>Scutellaria elliptica</i>	4.00	5.00	0.22	0.40	0.31
<i>Solidago caesia</i>	4.00	5.00	0.22	0.40	0.31
<i>Asimina triloba</i>	3.00	7.00	0.31	0.30	0.30
<i>Bromus pubescens</i>	3.00	7.00	0.31	0.30	0.30
<i>Desmodium glutinosum</i>	3.00	7.00	0.31	0.30	0.30
<i>Dichanthelium linearifolium</i>	3.00	7.00	0.31	0.30	0.30
<i>Callicarpa americana</i>	2.00	9.00	0.40	0.20	0.30
<i>Ulmus alata</i>	3.00	6.00	0.27	0.30	0.28
<i>Aesculus pavia</i>	2.00	8.00	0.35	0.20	0.28
<i>Carya glabra</i>	2.00	8.00	0.35	0.20	0.28
<i>Hamamelis virginiana</i>	3.00	5.00	0.22	0.30	0.26
<i>Oxalis dillenii</i>	3.00	5.00	0.22	0.30	0.26
<i>Prenanthes altissima</i>	3.00	5.00	0.22	0.30	0.26
<i>Carya tomentosa</i>	2.00	7.00	0.31	0.20	0.25
<i>Viburnum rufidulum</i>	2.00	7.00	0.31	0.20	0.25
<i>Aristolochia serpentaria</i>	3.00	4.00	0.18	0.30	0.24
<i>Galium concinnum</i>	3.00	4.00	0.18	0.30	0.24
<i>Galium pilosum</i>	3.00	4.00	0.18	0.30	0.24
<i>Iris cristata</i>	3.00	4.00	0.18	0.30	0.24
<i>Sanguinaria canadensis</i>	3.00	4.00	0.18	0.30	0.24
<i>Aesculus glabra</i>	2.00	6.00	0.27	0.20	0.23
<i>Carex digitalis</i>	2.00	6.00	0.27	0.20	0.23
<i>Dichanthelium acuminatum</i>	2.00	6.00	0.27	0.20	0.23
<i>Dirca palustris</i>	2.00	6.00	0.27	0.20	0.23
<i>Hypericum prolificum</i>	2.00	6.00	0.27	0.20	0.23
<i>Rhus copallinum</i>	2.00	6.00	0.27	0.20	0.23
<i>Scleria oligantha</i>	2.00	6.00	0.27	0.20	0.23
<i>Spigelia marilandica</i>	2.00	6.00	0.27	0.20	0.23
<i>Vaccinium arboreum</i>	2.00	6.00	0.27	0.20	0.23
<i>Erechtites hieraciifolius</i>	3.00	3.00	0.13	0.30	0.22
<i>Euonymus americanus</i>	3.00	3.00	0.13	0.30	0.22
<i>Solidago hispida</i>	3.00	3.00	0.13	0.30	0.22

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Viola sp.</i>	3.00	3.00	0.13	0.30	0.22
<i>Carya cordiformis</i>	2.00	5.00	0.22	0.20	0.21
<i>Clitoria mariana</i>	2.00	5.00	0.22	0.20	0.21
<i>Carex hirsutella</i>	2.00	5.00	0.22	0.20	0.21
<i>Desmodium paniculatum</i>	2.00	5.00	0.22	0.20	0.21
<i>Desmodium rotundifolium</i>	2.00	5.00	0.22	0.20	0.21
<i>Symphyotrichum anomalum</i>	2.00	5.00	0.22	0.20	0.21
<i>Asarum canadense</i>	2.00	4.00	0.18	0.20	0.19
<i>Carex muehlenbergii</i>	2.00	4.00	0.18	0.20	0.19
unknown forb 4	2.00	4.00	0.18	0.20	0.19
<i>Agrimonia rostellata</i>	2.00	3.00	0.13	0.20	0.17
<i>Carex blanda</i>	2.00	3.00	0.13	0.20	0.17
<i>Lactuca canadensis</i>	2.00	3.00	0.13	0.20	0.17
<i>Polygonatum biflorum</i>	2.00	3.00	0.13	0.20	0.17
<i>Viola sagittata</i>	2.00	3.00	0.13	0.20	0.17
<i>Ambrosia artemisiifolia</i>	2.00	2.00	0.09	0.20	0.14
<i>Monarda bradburiana</i>	2.00	2.00	0.09	0.20	0.14
<i>Solidago radula</i>	2.00	2.00	0.09	0.20	0.14
<i>Uvularia sessilifolia</i>	2.00	2.00	0.09	0.20	0.14
<i>Carex caroliniana</i>	1.00	4.00	0.18	0.10	0.14
<i>Coreopsis lanceolata</i>	1.00	4.00	0.18	0.10	0.14
<i>Pycnanthemum tenuifolium</i>	1.00	4.00	0.18	0.10	0.14
<i>Robinia pseudoacacia</i>	1.00	4.00	0.18	0.10	0.14
<i>Carpinus caroliniana</i>	1.00	3.00	0.13	0.10	0.12
<i>Carya texana</i>	1.00	3.00	0.13	0.10	0.12
<i>Cunila origanoides</i>	1.00	3.00	0.13	0.10	0.12
<i>Elymus glabriflorus</i>	1.00	3.00	0.13	0.10	0.12
<i>Eutrochium purpureum</i>	1.00	3.00	0.13	0.10	0.12
<i>Laportea canadensis</i>	1.00	3.00	0.13	0.10	0.12
<i>Ludwigia alternifolia</i>	1.00	3.00	0.13	0.10	0.12
<i>Lysimachia quadriflora</i>	1.00	3.00	0.13	0.10	0.12
<i>Rosa carolina</i>	1.00	3.00	0.13	0.10	0.12
<i>Vernonia baldwinii</i>	1.00	3.00	0.13	0.10	0.12
<i>Viburnum sp.</i>	1.00	3.00	0.13	0.10	0.12
<i>Adiantum pedatum</i>	1.00	2.00	0.09	0.10	0.09
<i>Ampelopsis arborea</i>	1.00	2.00	0.09	0.10	0.09
<i>Carex laxiflora</i>	1.00	2.00	0.09	0.10	0.09
<i>Carex nigromarginata</i>	1.00	2.00	0.09	0.10	0.09
<i>Cynoglossum virginianum</i>	1.00	2.00	0.09	0.10	0.09
<i>Desmodium sp. 1</i>	1.00	2.00	0.09	0.10	0.09
<i>Euphorbia corollata</i>	1.00	2.00	0.09	0.10	0.09
<i>Krigia biflora</i>	1.00	2.00	0.09	0.10	0.09
<i>Leersia virginica</i>	1.00	2.00	0.09	0.10	0.09
<i>Lespedeza cuneata</i>	1.00	2.00	0.09	0.10	0.09
<i>Lespedeza hirta</i>	1.00	2.00	0.09	0.10	0.09
<i>Lindera benzoin</i>	1.00	2.00	0.09	0.10	0.09
<i>Liquidambar styraciflua</i>	1.00	2.00	0.09	0.10	0.09
<i>Lonicera dioica</i>	1.00	2.00	0.09	0.10	0.09

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Lonicera japonica</i>	1.00	2.00	0.09	0.10	0.09
<i>Lonicera sempervirens</i>	1.00	2.00	0.09	0.10	0.09
<i>Mikania scandens</i>	1.00	2.00	0.09	0.10	0.09
<i>Physalis sp.</i>	1.00	2.00	0.09	0.10	0.09
<i>Potentilla simplex</i>	1.00	2.00	0.09	0.10	0.09
<i>Rubus sp.</i>	1.00	2.00	0.09	0.10	0.09
<i>Ruellia pedunculata</i>	1.00	2.00	0.09	0.10	0.09
<i>Desmodium rotundifolium</i>	2.00	5.00	0.22	0.20	0.21
<i>Salvia lyrata</i>	1.00	2.00	0.09	0.10	0.09
<i>unknown sp. 20</i>	1.00	2.00	0.09	0.10	0.09
<i>Acalypha monococca</i>	1.00	1.00	0.04	0.10	0.07
<i>Acalypha virginica</i>	1.00	1.00	0.04	0.10	0.07
<i>Acer saccharum</i>	1.00	1.00	0.04	0.10	0.07
<i>Berchemia scandens</i>	1.00	1.00	0.04	0.10	0.07
<i>Boehmeria cylindrica</i>	1.00	1.00	0.04	0.10	0.07
<i>Carya cordiformis</i>	1.00	1.00	0.04	0.10	0.07
<i>Carya sp.</i>	1.00	1.00	0.04	0.10	0.07
<i>Chamaecrista fasciculata</i>	1.00	1.00	0.04	0.10	0.07
<i>Conyza canadensis</i>	1.00	1.00	0.04	0.10	0.07
<i>Croton monanthogynus</i>	1.00	1.00	0.04	0.10	0.07
<i>Carex crinita</i>	1.00	1.00	0.04	0.10	0.07
<i>Carex oligocarpa</i>	1.00	1.00	0.04	0.10	0.07
<i>Desmodium sp. 3</i>	1.00	1.00	0.04	0.10	0.07
<i>Diarrhena americana</i>	1.00	1.00	0.04	0.10	0.07
<i>Dichanthelium laxiflorum</i>	1.00	1.00	0.04	0.10	0.07
<i>Diospyros virginiana</i>	1.00	1.00	0.04	0.10	0.07
<i>Geranium maculatum</i>	1.00	1.00	0.04	0.10	0.07
<i>Helianthus angustifolius</i>	1.00	1.00	0.04	0.10	0.07
<i>Microstegium vimineum</i>	1.00	1.00	0.04	0.10	0.07
<i>Muhlenbergia sp.</i>	1.00	1.00	0.04	0.10	0.07
<i>Muhlenbergia sp.</i>	1.00	1.00	0.04	0.10	0.07
<i>Passiflora lutea</i>	1.00	1.00	0.04	0.10	0.07
<i>Physalis virginiana</i>	1.00	1.00	0.04	0.10	0.07
<i>Quercus stellata</i>	1.00	1.00	0.04	0.10	0.07
<i>Ranunculus hispidus</i>	1.00	1.00	0.04	0.10	0.07
<i>Rhus glabra</i>	1.00	1.00	0.04	0.10	0.07
<i>Sideroxylon lanuginosum</i>	1.00	1.00	0.04	0.10	0.07
<i>Silphium asteriscus</i>	1.00	1.00	0.04	0.10	0.07
<i>Smilax herbacea</i>	1.00	1.00	0.04	0.10	0.07
<i>Smilax sp.</i>	1.00	1.00	0.04	0.10	0.07
<i>Solidago flexicaulis</i>	1.00	1.00	0.04	0.10	0.07
<i>Solidago petiolaris</i>	1.00	1.00	0.04	0.10	0.07
<i>Symphyotrichum sp.</i>	1.00	1.00	0.04	0.10	0.07
<i>Tilia americana</i>	1.00	1.00	0.04	0.10	0.07
Total	1006.00	2263.00	100.00	100.00	100.00

Table G9: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *south slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	2.24	29.11	29.15	64.57	25.44	37.87	41.57	36.19
<i>Pinus echinata</i>	1.39	17.72	18.12	51.78	20.40	30.37	25.84	24.64
<i>Quercus rubra</i>	0.39	10.13	5.12	17.86	7.04	10.48	7.30	9.30
<i>Carya tomentosa</i>	0.36	11.39	4.73	7.50	2.95	4.40	6.74	7.51
<i>Quercus stellata</i>	0.30	7.59	3.94	9.13	3.60	5.36	5.62	6.19
snag	0.21	8.86	2.76	4.46	1.76	2.62	3.93	5.14
<i>Quercus velutina</i>	0.18	5.06	2.36	6.96	2.74	4.08	3.37	4.17
<i>Carya texana</i>	0.06	2.53	0.79	2.28	0.90	1.33	1.12	1.66
<i>Nyssa sylvatica</i>	0.06	2.53	0.79	1.26	0.50	0.74	1.12	1.46
<i>Fraxinus americana</i>	0.06	1.27	0.79	1.64	0.65	0.96	1.12	1.12
<i>Celtis laevigata</i>	0.06	1.27	0.79	1.08	0.42	0.63	1.12	1.01
<i>Pinus taeda</i>	0.03	1.27	0.39	1.25	0.49	0.73	0.56	0.85
<i>Robinia pseudoacacia</i>	0.03	1.27	0.39	0.74	0.29	0.43	0.56	0.75
Totals	5.39	100.00	70.12	170.52	67.17	100.00	100.00	100.00

Table G10: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *south slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	1.61	11.90	20.88	5.19	2.04	23.09	15.82	16.94
snag	1.21	14.29	15.76	4.00	1.58	17.80	11.94	14.67
<i>Nyssa sylvatica</i>	1.18	9.52	15.36	2.69	1.06	11.96	11.64	11.04
<i>Carya tomentosa</i>	0.91	9.52	11.82	1.72	0.68	7.66	8.96	8.71
<i>Acer rubrum</i>	1.12	7.14	14.58	0.71	0.28	3.15	11.04	7.11
<i>Prunus serotina</i>	0.61	6.35	7.88	0.80	0.32	3.57	5.97	5.30
<i>Quercus rubra</i>	0.45	5.56	5.91	0.64	0.25	2.85	4.48	4.29
<i>Cornus florida</i>	0.48	4.76	6.30	0.71	0.28	3.18	4.78	4.24
<i>Amelanchier arborea</i>	0.36	2.38	4.73	0.79	0.31	3.50	3.58	3.16
<i>Pinus echinata</i>	0.18	2.38	2.36	1.17	0.46	5.22	1.79	3.13
<i>Fraxinus americana</i>	0.18	3.97	2.36	0.64	0.25	2.83	1.79	2.86
<i>Ulmus alata</i>	0.39	1.59	5.12	0.35	0.14	1.54	3.88	2.33
<i>Robinia pseudoacacia</i>	0.18	2.38	2.36	0.56	0.22	2.48	1.79	2.22
<i>Cercis canadensis</i>	0.30	2.38	3.94	0.10	0.04	0.43	2.99	1.93
<i>Quercus velutina</i>	0.09	1.59	1.18	0.52	0.21	2.32	0.90	1.60
<i>Quercus stellata</i>	0.06	0.79	0.79	0.61	0.24	2.72	0.60	1.37
<i>Carya texana</i>	0.15	0.79	1.97	0.40	0.16	1.77	1.49	1.35
<i>Ulmus americana</i>	0.09	1.59	1.18	0.32	0.13	1.41	0.90	1.30
<i>Celtis laevigata</i>	0.12	2.38	1.58	0.05	0.02	0.24	1.19	1.27
<i>Aralia spinosa</i>	0.12	2.38	1.58	0.02	0.01	0.08	1.19	1.22
<i>Ostrya virginiana</i>	0.09	1.59	1.18	0.21	0.08	0.96	0.90	1.15
<i>Carya ovata</i>	0.06	0.79	0.79	0.24	0.09	1.06	0.60	0.82
<i>Frangula caroliniana</i>	0.06	0.79	0.79	0.02	0.01	0.07	0.60	0.49
<i>Paulownia tomentosa</i>	0.03	0.79	0.39	0.01	0.00	0.05	0.30	0.38
<i>Juniperus virginiana</i>	0.03	0.79	0.39	0.01	0.00	0.02	0.30	0.37
<i>Prunus americana</i>	0.03	0.79	0.39	0.01	0.00	0.02	0.30	0.37
<i>Viburnum rufidulum</i>	0.03	0.79	0.39	0.00	0.00	0.02	0.30	0.37
Totals	10.15	100.00	131.97	22.47	8.85	100.00	100.00	100.00

Table G11: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species*, south slopes, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.70	9.58	533.11	24.96	17.27
<i>Carya tomentosa</i>	0.76	10.42	191.26	8.96	9.69
<i>Nyssa sylvatica</i>	0.67	9.17	191.26	8.96	9.06
<i>Quercus rubra</i>	0.55	7.50	215.35	10.08	8.79
<i>Prunus serotina</i>	0.55	7.50	124.99	5.85	6.68
<i>Quercus alba</i>	0.48	6.67	115.96	5.43	6.05
<i>Sassafras albidum</i>	0.24	3.33	132.52	6.21	4.77
<i>Rhus copallinum</i>	0.42	5.83	69.27	3.24	4.54
<i>Quercus velutina</i>	0.30	4.17	88.85	4.16	4.16
<i>Cornus florida</i>	0.33	4.58	42.17	1.97	3.28
<i>Robinia pseudoacacia</i>	0.18	2.50	75.30	3.53	3.01
<i>Fraxinus americana</i>	0.30	4.17	36.14	1.69	2.93
<i>Carya texana</i>	0.15	2.08	48.19	2.26	2.17
<i>Rhus glabra</i>	0.12	1.67	51.20	2.40	2.03
<i>Frangula caroliniana</i>	0.18	2.50	28.61	1.34	1.92
<i>Pinus echinata</i>	0.18	2.50	25.60	1.20	1.85
<i>Cercis canadensis</i>	0.15	2.08	33.13	1.55	1.82
<i>Ulmus alata</i>	0.18	2.50	18.07	0.85	1.67
<i>Aralia spinosa</i>	0.06	0.83	33.13	1.55	1.19
<i>Quercus stellata</i>	0.09	1.25	15.06	0.71	0.98
<i>Ostrya virginiana</i>	0.06	0.83	12.05	0.56	0.70
<i>Callicarpa americana</i>	0.06	0.83	10.54	0.49	0.66
<i>Ulmus americana</i>	0.06	0.83	10.54	0.49	0.66
<i>Celtis occidentalis</i>	0.06	0.83	3.01	0.14	0.49
<i>Diospyros virginiana</i>	0.06	0.83	3.01	0.14	0.49
<i>Quercus marilandica</i>	0.03	0.42	4.52	0.21	0.31
<i>Asimina triloba</i>	0.03	0.42	3.01	0.14	0.28
<i>Carya ovata</i>	0.03	0.42	3.01	0.14	0.28
<i>Lindera benzoin</i>	0.03	0.42	3.01	0.14	0.28
<i>Rubus</i> sp.	0.03	0.42	3.01	0.14	0.28
<i>Amelanchier arborea</i>	0.03	0.42	1.51	0.07	0.24
<i>Fraxinus pennsylvanica</i>	0.03	0.42	1.51	0.07	0.24
<i>Juniperus virginiana</i>	0.03	0.42	1.51	0.07	0.24

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Liquidambar styraciflua</i>	0.03	0.42	1.51	0.07	0.24
<i>Rubus flagellaris</i>	0.03	0.42	1.51	0.07	0.24
<i>Ulmus rubra</i>	0.03	0.42	1.51	0.07	0.24
<i>Vaccinium arboreum</i>	0.03	0.42	1.51	0.07	0.24
Totals	7.27	100.00	2135.44	100.00	100.00

Table G12: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, south slopes, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	63.00	167.00	8.05	6.75	7.40
<i>Parthenocissus quinquefolia</i>	50.00	119.00	5.73	5.35	5.54
<i>Vitis rotundifolia</i>	42.00	121.00	5.83	4.50	5.16
<i>Dichantherium boscii</i>	31.00	67.00	3.23	3.32	3.27
<i>Helianthus divaricatus</i>	22.00	67.00	3.23	2.36	2.79
<i>Quercus alba</i>	24.00	56.00	2.70	2.57	2.63
<i>Rubus flagellaris</i>	21.00	50.00	2.41	2.25	2.33
<i>Vaccinium pallidum</i>	19.00	53.00	2.55	2.03	2.29
<i>Danthonia spicata</i>	18.00	46.00	2.22	1.93	2.07
<i>Clitoria mariana</i>	18.00	38.00	1.83	1.93	1.88
<i>Acer rubrum</i>	16.00	41.00	1.98	1.71	1.84
<i>Dichantherium commutatum</i>	19.00	33.00	1.59	2.03	1.81
<i>Quercus velutina</i>	13.00	44.00	2.12	1.39	1.76
<i>Nyssa sylvatica</i>	15.00	38.00	1.83	1.61	1.72
<i>Pinus echinata</i>	17.00	30.00	1.45	1.82	1.63
<i>Desmodium nudiflorum</i>	15.00	33.00	1.59	1.61	1.60
<i>Dichantherium dichotomum</i>	15.00	31.00	1.49	1.61	1.55
<i>Amphicarpaea bracteata</i>	16.00	28.00	1.35	1.71	1.53
<i>Carex</i> sp.	15.00	30.00	1.45	1.61	1.53
<i>Carya tomentosa</i>	13.00	33.00	1.59	1.39	1.49
<i>Smilax glauca</i>	15.00	28.00	1.35	1.61	1.48
<i>Rubus argutus</i>	14.00	29.00	1.40	1.50	1.45
<i>Smilax rotundifolia</i>	14.00	28.00	1.35	1.50	1.42
<i>Rhus copallinum</i>	11.00	34.00	1.64	1.18	1.41
<i>Smilax bona-nox</i>	12.00	24.00	1.16	1.28	1.22
<i>Quercus rubra</i>	11.00	25.00	1.20	1.18	1.19
<i>Symphotrichum anomalum</i>	11.00	22.00	1.06	1.18	1.12
<i>Vitis aestivalis</i>	10.00	22.00	1.06	1.07	1.07
<i>Euphorbia corollata</i>	11.00	19.00	0.92	1.18	1.05
<i>Cunila organoides</i>	8.00	25.00	1.20	0.86	1.03
<i>Desmodium viridiflorum</i>	10.00	20.00	0.96	1.07	1.02
<i>Sassafras albidum</i>	9.00	20.00	0.96	0.96	0.96
<i>Cornus florida</i>	9.00	19.00	0.92	0.96	0.94
<i>Helianthus hirsutus</i>	10.00	16.00	0.77	1.07	0.92
<i>Solidago ulmifolia</i>	9.00	18.00	0.87	0.96	0.92
<i>Sanicula canadensis</i>	9.00	13.00	0.63	0.96	0.80
<i>Galium circaeazans</i>	8.00	15.00	0.72	0.86	0.79
<i>Lespedeza virginica</i>	8.00	14.00	0.67	0.86	0.77
<i>Chamaecrista fasciculata</i>	8.00	13.00	0.63	0.86	0.74
<i>Desmodium laevigatum</i>	7.00	14.00	0.67	0.75	0.71
<i>Ageratina altissima</i>	7.00	12.00	0.58	0.75	0.66
<i>Viola palmata</i>	7.00	12.00	0.58	0.75	0.66
<i>Desmodium paniculatum</i>	6.00	14.00	0.67	0.64	0.66
<i>Rubus trivialis</i>	6.00	14.00	0.67	0.64	0.66

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Carya texana</i>	5.00	14.00	0.67	0.54	0.61
<i>Rubus sp.</i>	5.00	14.00	0.67	0.54	0.61
<i>Carex blanda</i>	7.00	9.00	0.43	0.75	0.59
<i>Ambrosia artemisiifolia</i>	6.00	10.00	0.48	0.64	0.56
<i>Lespedeza repens</i>	5.00	12.00	0.58	0.54	0.56
<i>Symphotrichum patens</i>	5.00	12.00	0.58	0.54	0.56
<i>Desmodium rotundifolium</i>	5.00	11.00	0.53	0.54	0.53
<i>Diarrhena americana</i>	5.00	11.00	0.53	0.54	0.53
<i>Lactuca canadensis</i>	6.00	8.00	0.39	0.64	0.51
<i>Conyza canadensis</i>	5.00	10.00	0.48	0.54	0.51
<i>Erechtites hieraciifolius</i>	5.00	10.00	0.48	0.54	0.51
<i>Solidago nemoralis</i>	5.00	9.00	0.43	0.54	0.48
<i>Lespedeza hirta</i>	4.00	11.00	0.53	0.43	0.48
<i>Quercus stellata</i>	4.00	11.00	0.53	0.43	0.48
<i>Carex rosea</i>	5.00	8.00	0.39	0.54	0.46
<i>Scleria oligantha</i>	5.00	8.00	0.39	0.54	0.46
<i>Bromus pubescens</i>	5.00	7.00	0.34	0.54	0.44
<i>Brachyelytrum erectum</i>	4.00	9.00	0.43	0.43	0.43
<i>Lespedeza procumbens</i>	4.00	9.00	0.43	0.43	0.43
<i>Prunus serotina</i>	4.00	9.00	0.43	0.43	0.43
<i>Dichanthelium linearifolium</i>	4.00	8.00	0.39	0.43	0.41
<i>Ulmus alata</i>	4.00	8.00	0.39	0.43	0.41
<i>Berchemia scandens</i>	4.00	6.00	0.29	0.43	0.36
<i>Carex hirsutella</i>	3.00	8.00	0.39	0.32	0.35
<i>Galactia volubilis</i>	2.00	10.00	0.48	0.21	0.35
<i>Rosa carolina</i>	3.00	7.00	0.34	0.32	0.33
<i>Aralia spinosa</i>	3.00	6.00	0.29	0.32	0.31
<i>Pinus taeda</i>	3.00	6.00	0.29	0.32	0.31
<i>Schizachyrium scoparium</i>	3.00	6.00	0.29	0.32	0.31
<i>Dichanthelium acuminatum</i>	3.00	5.00	0.24	0.32	0.28
<i>Dioscorea villosa</i>	3.00	5.00	0.24	0.32	0.28
<i>Coreopsis grandiflora</i>	2.00	7.00	0.34	0.21	0.28
<i>Solidago radula</i>	2.00	7.00	0.34	0.21	0.28
<i>Viola sororia</i>	3.00	4.00	0.19	0.32	0.26
<i>Desmodium sp. 2</i>	2.00	6.00	0.29	0.21	0.25
<i>Viola sagittata</i>	3.00	3.00	0.14	0.32	0.23
<i>Antennaria plantaginifolia</i>	2.00	5.00	0.24	0.21	0.23
<i>Carya texana</i>	2.00	5.00	0.24	0.21	0.23
<i>Diospyros virginiana</i>	2.00	5.00	0.24	0.21	0.23
<i>Eupatorium serotinum</i>	2.00	5.00	0.24	0.21	0.23
<i>Salvia lyrata</i>	2.00	5.00	0.24	0.21	0.23
<i>Stylosanthes biflora</i>	2.00	5.00	0.24	0.21	0.23
<i>Agrimonia rostellata</i>	2.00	4.00	0.19	0.21	0.20
<i>Ceanothus americanus</i>	2.00	4.00	0.19	0.21	0.20
<i>Morus rubra</i>	2.00	4.00	0.19	0.21	0.20
<i>Phlox pilosa</i>	2.00	4.00	0.19	0.21	0.20
<i>Symphotrichum pilosum</i>	2.00	4.00	0.19	0.21	0.20
<i>Viburnum prunifolium</i>	2.00	4.00	0.19	0.21	0.20
<i>Carex communis</i>	2.00	3.00	0.14	0.21	0.18

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Perilla frutescens</i>	2.00	3.00	0.14	0.21	0.18
<i>Potentilla simplex</i>	2.00	3.00	0.14	0.21	0.18
<i>Ruellia pedunculata</i>	2.00	3.00	0.14	0.21	0.18
<i>Solidago odora</i>	2.00	3.00	0.14	0.21	0.18
<i>Solidago petiolaris</i>	2.00	3.00	0.14	0.21	0.18
<i>Vitis cinerea</i>	2.00	3.00	0.14	0.21	0.18
<i>Vaccinium arboreum</i>	1.00	5.00	0.24	0.11	0.17
<i>Aristolochia serpentaria</i>	2.00	2.00	0.10	0.21	0.16
<i>Cercis canadensis</i>	2.00	2.00	0.10	0.21	0.16
<i>Senna sp.</i>	2.00	2.00	0.10	0.21	0.16
<i>Carex glaucoidea</i>	1.00	3.00	0.14	0.11	0.13
<i>Frangula caroliniana</i>	1.00	3.00	0.14	0.11	0.13
<i>Leersia virginica</i>	1.00	3.00	0.14	0.11	0.13
<i>Lespedeza frutescens</i>	1.00	3.00	0.14	0.11	0.13
<i>Monarda bradburiana</i>	1.00	3.00	0.14	0.11	0.13
<i>Passiflora lutea</i>	1.00	3.00	0.14	0.11	0.13
<i>Smilax herbacea</i>	1.00	3.00	0.14	0.11	0.13
<i>Trachelospermum difforme</i>	1.00	3.00	0.14	0.11	0.13
<i>Aesculus pavia</i>	1.00	2.00	0.10	0.11	0.10
<i>Crataegous sp.</i>	1.00	2.00	0.10	0.11	0.10
<i>Carex nigromarginata</i>	1.00	2.00	0.10	0.11	0.10
<i>Carex sp. 1</i>	1.00	2.00	0.10	0.11	0.10
<i>Carex sp. 3</i>	1.00	2.00	0.10	0.11	0.10
<i>Desmodium perplexum</i>	1.00	2.00	0.10	0.11	0.10
<i>Elymus glabriflorus</i>	1.00	2.00	0.10	0.11	0.10
<i>Elymus hystrix</i>	1.00	2.00	0.10	0.11	0.10
<i>Fallopia scandens</i>	1.00	2.00	0.10	0.11	0.10
<i>Fraxinus americana</i>	1.00	2.00	0.10	0.11	0.10
<i>Galium aparine</i>	1.00	2.00	0.10	0.11	0.10
<i>Galium arkansanum</i>	1.00	2.00	0.10	0.11	0.10
<i>Galium virgatum</i>	1.00	2.00	0.10	0.11	0.10
<i>Helianthus angustifolius</i>	1.00	2.00	0.10	0.11	0.10
<i>Lindera benzoin</i>	1.00	2.00	0.10	0.11	0.10
<i>Panicum anceps</i>	1.00	2.00	0.10	0.11	0.10
<i>Prunella vulgaris</i>	1.00	2.00	0.10	0.11	0.10
<i>Rhus glabra</i>	1.00	2.00	0.10	0.11	0.10
<i>Solidago flexicaulis</i>	1.00	2.00	0.10	0.11	0.10
<i>Tephrosia virginiana</i>	1.00	2.00	0.10	0.11	0.10
<i>Trillium sessile</i>	1.00	2.00	0.10	0.11	0.10
<i>unknown sp. 15</i>	1.00	2.00	0.10	0.11	0.10
<i>unknown sp. 17</i>	1.00	2.00	0.10	0.11	0.10
<i>Acalypha monococca</i>	1.00	1.00	0.05	0.11	0.08
<i>Amelanchier arborea</i>	1.00	1.00	0.05	0.11	0.08
<i>Andropogon gerardii</i>	1.00	1.00	0.05	0.11	0.08
<i>Echinacea purpurea</i>	1.00	1.00	0.05	0.11	0.08
<i>Eutrochium sp.</i>	1.00	1.00	0.05	0.11	0.08
<i>Gillenia stipulata</i>	1.00	1.00	0.05	0.11	0.08
<i>Helianthus grosseserratus</i>	1.00	1.00	0.05	0.11	0.08
<i>Hieracium longipilum</i>	1.00	1.00	0.05	0.11	0.08

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Houstonia purpurea</i>	1.00	1.00	0.05	0.11	0.08
<i>Hypericum hypericoides</i>	1.00	1.00	0.05	0.11	0.08
<i>Lespedeza cuneata</i>	1.00	1.00	0.05	0.11	0.08
<i>Lespedeza violacea</i>	1.00	1.00	0.05	0.11	0.08
<i>Lysimachia quadriflora</i>	1.00	1.00	0.05	0.11	0.08
<i>Menispermum canadense</i>	1.00	1.00	0.05	0.11	0.08
<i>Microstegium vimineum</i>	1.00	1.00	0.05	0.11	0.08
<i>Pseudognaphalium obtusifolium</i>	1.00	1.00	0.05	0.11	0.08
<i>Scutellaria elliptica</i>	1.00	1.00	0.05	0.11	0.08
<i>Scutellaria ovata</i>	1.00	1.00	0.05	0.11	0.08
<i>Solidago hispida</i>	1.00	1.00	0.05	0.11	0.08
<i>Viola sp.</i>	1.00	1.00	0.05	0.11	0.08
Total	934.00	2075.00	100.00	100.00	100.00

Table G13: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *toe slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	2.24	26.37	29.15	68.15	26.85	29.89	38.34	31.54
<i>Quercus rubra</i>	0.79	13.19	10.24	33.20	13.08	14.56	13.47	13.74
<i>Nyssa sylvatica</i>	0.45	9.89	5.91	16.69	6.58	7.32	7.77	8.33
<i>Pinus echinata</i>	0.52	5.49	6.70	24.17	9.52	10.60	8.81	8.30
<i>Quercus velutina</i>	0.45	7.69	5.91	18.10	7.13	7.94	7.77	7.80
snag	0.36	9.89	4.73	14.09	5.55	6.18	6.22	7.43
<i>Carya tomentosa</i>	0.39	8.79	5.12	9.47	3.73	4.15	6.74	6.56
<i>Carya glabra</i>	0.12	3.30	1.58	6.93	2.73	3.04	2.07	2.80
<i>Carya texana</i>	0.12	2.20	1.58	1.91	0.75	0.84	2.07	1.70
<i>Liquidambar styraciflua</i>	0.09	2.20	1.18	2.55	1.00	1.12	1.55	1.62
<i>Prunus serotina</i>	0.06	2.20	0.79	1.17	0.46	0.51	1.04	1.25
<i>Acer rubrum</i>	0.06	2.20	0.79	0.75	0.29	0.33	1.04	1.19
<i>Fraxinus americana</i>	0.03	1.10	0.39	1.51	0.60	0.66	0.52	0.76
<i>Tilia americana</i>	0.03	1.10	0.39	1.13	0.45	0.50	0.52	0.70
<i>Acer saccharum</i>	0.03	1.10	0.39	1.10	0.43	0.48	0.52	0.70
<i>Quercus falcata</i>	0.03	1.10	0.39	0.87	0.34	0.38	0.52	0.67
<i>Robinia pseudoacacia</i>	0.03	1.10	0.39	0.69	0.27	0.30	0.52	0.64
<i>Quercus stellata</i>	0.03	1.10	0.39	0.51	0.20	0.22	0.52	0.61
Totals	5.85	100.00	76.03	202.98	79.96	89.03	100.00	96.34

Table G14: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *toe slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Carya tomentosa</i>	2.39	11.92	31.12	5.82	2.29	17.09	12.38	13.80
<i>Quercus alba</i>	1.64	9.33	21.27	5.82	2.29	17.07	8.46	11.62
snag	1.85	11.40	24.03	4.07	1.60	11.95	9.56	10.97
<i>Acer rubrum</i>	1.67	7.77	21.67	4.31	1.70	12.65	8.62	9.68
<i>Nyssa sylvatica</i>	2.58	7.77	33.48	2.66	1.05	7.80	13.32	9.63
<i>Cornus florida</i>	1.79	6.74	23.24	1.85	0.73	5.44	9.25	7.14
<i>Prunus serotina</i>	1.00	4.66	13.00	1.51	0.60	4.45	5.17	4.76
<i>Ostrya virginiana</i>	0.67	3.63	8.67	0.82	0.32	2.39	3.45	3.16
<i>Ulmus alata</i>	0.64	3.11	8.27	0.87	0.34	2.54	3.29	2.98
<i>Ulmus americana</i>	0.79	2.07	10.24	0.66	0.26	1.93	4.08	2.69
<i>Liquidambar styraciflua</i>	0.33	2.59	4.33	1.19	0.47	3.48	1.72	2.60
<i>Fagus grandifolia</i>	0.45	1.55	5.91	0.92	0.36	2.69	2.35	2.20
<i>Carya glabra</i>	0.39	1.55	5.12	0.59	0.23	1.74	2.04	1.78
<i>Sassafras albidum</i>	0.42	2.07	5.52	0.09	0.04	0.26	2.19	1.51
<i>Quercus rubra</i>	0.42	1.55	5.52	0.25	0.10	0.74	2.19	1.50
<i>Carpinus caroliniana</i>	0.36	1.55	4.73	0.27	0.11	0.79	1.88	1.41
<i>Fraxinus pennsylvanica</i>	0.27	1.55	3.55	0.09	0.03	0.25	1.41	1.07
<i>Cercis canadensis</i>	0.12	2.07	1.58	0.09	0.04	0.26	0.63	0.99
<i>Fraxinus americana</i>	0.12	1.04	1.58	0.37	0.14	1.08	0.63	0.91
<i>Pinus echinata</i>	0.06	1.04	0.79	0.42	0.17	1.24	0.31	0.86
<i>Morus rubra</i>	0.06	1.04	0.79	0.35	0.14	1.03	0.31	0.79
<i>Quercus velutina</i>	0.12	1.55	1.58	0.07	0.03	0.19	0.63	0.79
<i>Ulmus rubra</i>	0.12	1.04	1.58	0.17	0.07	0.51	0.63	0.73
<i>Acer saccharum</i>	0.09	1.04	1.18	0.19	0.08	0.57	0.47	0.69
<i>Carya cordiformis</i>	0.06	1.04	0.79	0.24	0.09	0.69	0.31	0.68
<i>Asimina triloba</i>	0.09	1.04	1.18	0.06	0.02	0.17	0.47	0.56
<i>Amelanchier arborea</i>	0.06	1.04	0.79	0.02	0.01	0.07	0.31	0.47
<i>Juniperus virginiana</i>	0.03	0.52	0.39	0.25	0.10	0.74	0.16	0.47
<i>Magnolia tripetala</i>	0.12	0.52	1.58	0.04	0.02	0.13	0.63	0.43
<i>Frangula caroliniana</i>	0.12	0.52	1.58	0.03	0.01	0.08	0.63	0.41
<i>Pinus taeda</i>	0.09	0.52	1.18	0.01	0.00	0.04	0.47	0.34

Species	Frequency	Relative Frequency	Stems/ Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Juglans nigra</i>	0.03	0.52	0.39	0.09	0.04	0.27	0.16	0.32
<i>Tilia americana</i>	0.06	0.52	0.79	0.02	0.01	0.05	0.31	0.29
<i>Viburnum prunifolium</i>	0.06	0.52	0.79	0.01	0.01	0.04	0.31	0.29
<i>Hamamelis virginiana</i>	0.06	0.52	0.79	0.01	0.00	0.02	0.31	0.28
<i>Diospyros virginiana</i>	0.03	0.52	0.39	0.05	0.02	0.16	0.16	0.28
<i>Viburnum rufidulum</i>	0.03	0.52	0.39	0.01	0.01	0.04	0.16	0.24
<i>Ulmus sp.</i>	0.03	0.52	0.39	0.01	0.00	0.03	0.16	0.23
<i>Quercus michauxii</i>	0.03	0.52	0.39	0.01	0.00	0.02	0.16	0.23
<i>Magnolia acuminata</i>	0.03	0.52	0.39	0.01	0.00	0.02	0.16	0.23
<i>Rhus copallinum</i>	0.03	0.52	0.39	0.00	0.00	0.01	0.16	0.23
Totals	19.33	100.00	251.33	34.32	13.52	100.73	100.00	100.24

Table G15: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, toe slopes*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Ostrya virginiana</i>	0.43	5.66	227.18	12.40	9.03
<i>Acer rubrum</i>	0.57	7.55	145.54	7.95	7.75
<i>Frangula caroliniana</i>	0.57	7.55	113.59	6.20	6.87
<i>Nyssa sylvatica</i>	0.43	5.66	124.24	6.78	6.22
<i>Fraxinus americana</i>	0.29	3.77	110.04	6.01	4.89
<i>Hamamelis virginiana</i>	0.36	4.72	92.29	5.04	4.88
<i>Cornus florida</i>	0.29	3.77	102.94	5.62	4.70
<i>Quercus rubra</i>	0.36	4.72	70.99	3.88	4.30
<i>Carya tomentosa</i>	0.36	4.72	56.80	3.10	3.91
<i>Rhus copallinum</i>	0.21	2.83	85.19	4.65	3.74
<i>Ulmus alata</i>	0.21	2.83	85.19	4.65	3.74
<i>Cercis canadensis</i>	0.29	3.77	53.25	2.91	3.34
<i>Prunus serotina</i>	0.21	2.83	60.35	3.29	3.06
<i>Quercus muehlenbergii</i>	0.21	2.83	60.35	3.29	3.06
<i>Liquidambar styraciflua</i>	0.21	2.83	53.25	2.91	2.87
<i>Carpinus caroliniana</i>	0.21	2.83	46.15	2.52	2.67
<i>Quercus falcata</i>	0.14	1.89	49.70	2.71	2.30
<i>Quercus alba</i>	0.14	1.89	39.05	2.13	2.01
<i>Ulmus rubra</i>	0.21	2.83	10.65	0.58	1.71
<i>Aesculus pavia</i>	0.07	0.94	31.95	1.74	1.34
<i>Carya cordiformis</i>	0.14	1.89	10.65	0.58	1.23
<i>Celtis occidentalis</i>	0.14	1.89	10.65	0.58	1.23
<i>Vaccinium arboreum</i>	0.14	1.89	10.65	0.58	1.23
<i>Juniperus virginiana</i>	0.07	0.94	24.85	1.36	1.15
<i>Tilia americana</i>	0.14	1.89	7.10	0.39	1.14
<i>Fagus grandifolia</i>	0.07	0.94	21.30	1.16	1.05
<i>Quercus stellata</i>	0.07	0.94	21.30	1.16	1.05
<i>Viburnum dentatum</i>	0.07	0.94	17.75	0.97	0.96
<i>Quercus michauxii</i>	0.07	0.94	14.20	0.78	0.86
<i>Rhus glabra</i>	0.07	0.94	14.20	0.78	0.86
<i>Callicarpa americana</i>	0.07	0.94	10.65	0.58	0.76
<i>Quercus marilandica</i>	0.07	0.94	10.65	0.58	0.76

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
Sassafras albidum	0.07	0.94	10.65	0.58	0.76
Acer saccharum	0.07	0.94	3.55	0.19	0.57
Dirca palustris	0.07	0.94	3.55	0.19	0.57
Fraxinus	0.07	0.94	3.55	0.19	0.57
pennsylvanica					
Pinus echinata	0.07	0.94	3.55	0.19	0.57
Quercus velutina	0.07	0.94	3.55	0.19	0.57
Styrax grandifolius	0.07	0.94	3.55	0.19	0.57
Vaccinium stamineum	0.07	0.94	3.55	0.19	0.57
Viburnum rufidulum	0.07	0.94	3.55	0.19	0.57
Total	7.57	100.00	1831.67	100.00	100.00

Table G16: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, toe slopes, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	38.00	122.00	11.05	7.28	9.17
<i>Dichanthelium boscii</i>	22.00	48.00	4.35	4.21	4.28
<i>Parthenocissus quinquefolia</i>	23.00	43.00	3.89	4.41	4.15
<i>Acer rubrum</i>	18.00	30.00	2.72	3.45	3.08
<i>Viola sororia</i>	18.00	30.00	2.72	3.45	3.08
<i>Amphicarpaea bracteata</i>	14.00	38.00	3.44	2.68	3.06
<i>Agrimonia rostellata</i>	15.00	33.00	2.99	2.87	2.93
<i>Sanicula canadensis</i>	15.00	30.00	2.72	2.87	2.80
<i>Ostrya virginiana</i>	13.00	29.00	2.63	2.49	2.56
<i>Scleria oligantha</i>	10.00	25.00	2.26	1.92	2.09
<i>Vitis rotundifolia</i>	11.00	17.00	1.54	2.11	1.82
<i>Prunus serotina</i>	9.00	20.00	1.81	1.72	1.77
<i>Euonymus americanus</i>	10.00	17.00	1.54	1.92	1.73
<i>Fraxinus americana</i>	9.00	19.00	1.72	1.72	1.72
<i>Cornus florida</i>	7.00	21.00	1.90	1.34	1.62
<i>Pinus echinata</i>	9.00	16.00	1.45	1.72	1.59
<i>Dichanthelium commutatum</i>	9.00	15.00	1.36	1.72	1.54
<i>Smilax glauca</i>	9.00	15.00	1.36	1.72	1.54
<i>Smilax rotundifolia</i>	7.00	19.00	1.72	1.34	1.53
<i>Galium circaezans</i>	9.00	13.00	1.18	1.72	1.45
<i>Rubus flagellaris</i>	6.00	17.00	1.54	1.15	1.34
<i>Ulmus alata</i>	7.00	12.00	1.09	1.34	1.21
<i>Brachyelytrum erectum</i>	6.00	14.00	1.27	1.15	1.21
<i>Desmodium glutinosum</i>	6.00	14.00	1.27	1.15	1.21
<i>Carex sp.</i>	7.00	10.00	0.91	1.34	1.12
<i>Vaccinium pallidum</i>	5.00	14.00	1.27	0.96	1.11
<i>Solidago ulmifolia</i>	4.00	13.00	1.18	0.77	0.97
<i>Carex rosea</i>	5.00	10.00	0.91	0.96	0.93
<i>Quercus alba</i>	5.00	10.00	0.91	0.96	0.93
<i>Quercus falcata</i>	4.00	12.00	1.09	0.77	0.93
<i>Carya tomentosa</i>	4.00	10.00	0.91	0.77	0.84
<i>Helianthus hirsutus</i>	3.00	12.00	1.09	0.57	0.83
<i>Smilax bona-nox</i>	5.00	7.00	0.63	0.96	0.80
<i>Berchemia scandens</i>	4.00	9.00	0.82	0.77	0.79
<i>Rhus aromatica</i>	3.00	11.00	1.00	0.57	0.79
<i>Cynoglossum virginianum</i>	4.00	8.00	0.72	0.77	0.75
<i>Nyssa sylvatica</i>	4.00	8.00	0.72	0.77	0.75
<i>Potentilla simplex</i>	4.00	8.00	0.72	0.77	0.75
<i>Carex oligocarpa</i>	4.00	7.00	0.63	0.77	0.70
<i>Ulmus rubra</i>	3.00	8.00	0.72	0.57	0.65
<i>Desmodium nudiflorum</i>	3.00	7.00	0.63	0.57	0.60
<i>Lespedeza repens</i>	3.00	7.00	0.63	0.57	0.60

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Carex glaucoidea</i>	3.00	6.00	0.54	0.57	0.56
<i>Carex blanda</i>	3.00	5.00	0.45	0.57	0.51
<i>Oxalis dillenii</i>	3.00	5.00	0.45	0.57	0.51
<i>Symphoricarpos orbiculatus</i>	2.00	7.00	0.63	0.38	0.51
<i>Chasmanthium latifolium</i>	3.00	4.00	0.36	0.57	0.47
<i>Aesculus pavia</i>	2.00	6.00	0.54	0.38	0.46
<i>Carya texana</i>	2.00	6.00	0.54	0.38	0.46
<i>Cercis canadensis</i>	2.00	6.00	0.54	0.38	0.46
<i>Dichantherium linearifolium</i>	2.00	6.00	0.54	0.38	0.46
<i>Valerianella palmeri</i>	2.00	6.00	0.54	0.38	0.46
<i>Packera obovata</i>	3.00	3.00	0.27	0.57	0.42
<i>Scutellaria elliptica</i>	3.00	3.00	0.27	0.57	0.42
<i>Amelanchier arborea</i>	2.00	5.00	0.45	0.38	0.42
<i>Lonicera japonica</i>	2.00	5.00	0.45	0.38	0.42
<i>Polystichum acrostichoides</i>	2.00	5.00	0.45	0.38	0.42
<i>Viburnum dentatum</i>	2.00	5.00	0.45	0.38	0.42
<i>Carex cephalophora</i>	2.00	4.00	0.36	0.38	0.37
<i>Diospyros virginiana</i>	2.00	4.00	0.36	0.38	0.37
<i>Frangula caroliniana</i>	2.00	4.00	0.36	0.38	0.37
<i>Galactia volubilis</i>	2.00	4.00	0.36	0.38	0.37
<i>Liquidambar styraciflua</i>	2.00	4.00	0.36	0.38	0.37
<i>Solidago caesia</i>	2.00	4.00	0.36	0.38	0.37
<i>Ampelopsis arborea</i>	2.00	3.00	0.27	0.38	0.33
<i>Arisaema triphyllum</i>	2.00	3.00	0.27	0.38	0.33
<i>Asplenium platyneuron</i>	2.00	3.00	0.27	0.38	0.33
<i>Carex crinita</i>	2.00	3.00	0.27	0.38	0.33
<i>Carex laxiflora</i>	2.00	3.00	0.27	0.38	0.33
<i>Danthonia spicata</i>	2.00	3.00	0.27	0.38	0.33
<i>Dichantherium dichotomum</i>	2.00	3.00	0.27	0.38	0.33
<i>Juniperus virginiana</i>	2.00	3.00	0.27	0.38	0.33
<i>Rubus argutus</i>	2.00	3.00	0.27	0.38	0.33
<i>Uvularia sessilifolia</i>	2.00	3.00	0.27	0.38	0.33
<i>Galium pilosum</i>	2.00	2.00	0.18	0.38	0.28
<i>Menispermum canadense</i>	2.00	2.00	0.18	0.38	0.28
<i>Mitchella repens</i>	2.00	2.00	0.18	0.38	0.28
<i>Sassafras albidum</i>	2.00	2.00	0.18	0.38	0.28
<i>Carex digitalis</i>	1.00	4.00	0.36	0.19	0.28
<i>Dichantherium oligosanthes</i>	1.00	4.00	0.36	0.19	0.28
<i>Asarum canadense</i>	1.00	3.00	0.27	0.19	0.23
<i>Carya cordiformis</i>	1.00	3.00	0.27	0.19	0.23
<i>Crataegous sp.</i>	1.00	3.00	0.27	0.19	0.23
<i>Carex digitalis</i>	1.00	3.00	0.27	0.19	0.23
<i>Desmodium rotundifolium</i>	1.00	3.00	0.27	0.19	0.23
<i>Lindera benzoin</i>	1.00	3.00	0.27	0.19	0.23

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Lysimachia quadriflora</i>	1.00	3.00	0.27	0.19	0.23
<i>Quercus muehlenbergii</i>	1.00	3.00	0.27	0.19	0.23
<i>Quercus stellata</i>	1.00	3.00	0.27	0.19	0.23
<i>Quercus velutina</i>	1.00	3.00	0.27	0.19	0.23
<i>Schizachyrium scoparium</i>	1.00	3.00	0.27	0.19	0.23
<i>Symphyotrichum patens</i>	1.00	3.00	0.27	0.19	0.23
<i>Symphyotrichum pilosum</i>	1.00	3.00	0.27	0.19	0.23
<i>Ambrosia artemisiifolia</i>	1.00	2.00	0.18	0.19	0.19
<i>Arisaema dracontium</i>	1.00	2.00	0.18	0.19	0.19
<i>Chamaecrista fasciculata</i>	1.00	2.00	0.18	0.19	0.19
<i>Chasmanthium sessiliflorum</i>	1.00	2.00	0.18	0.19	0.19
<i>Circaea canadensis</i>	1.00	2.00	0.18	0.19	0.19
<i>Carex complanata</i>	1.00	2.00	0.18	0.19	0.19
<i>Carex lurida</i>	1.00	2.00	0.18	0.19	0.19
<i>Festuca subverticillata</i>	1.00	2.00	0.18	0.19	0.19
<i>Galium arkansanum</i>	1.00	2.00	0.18	0.19	0.19
<i>Galium concinnum</i>	1.00	2.00	0.18	0.19	0.19
<i>Geum canadense</i>	1.00	2.00	0.18	0.19	0.19
<i>Iris cristata</i>	1.00	2.00	0.18	0.19	0.19
<i>Krigia biflora</i>	1.00	2.00	0.18	0.19	0.19
<i>Liatris aspera</i>	1.00	2.00	0.18	0.19	0.19
<i>Magnolia acuminata</i>	1.00	2.00	0.18	0.19	0.19
<i>Matelea decipiens</i>	1.00	2.00	0.18	0.19	0.19
<i>Podophyllum peltatum</i>	1.00	2.00	0.18	0.19	0.19
<i>Prenanthes sp.</i>	1.00	2.00	0.18	0.19	0.19
<i>Primula meadia</i>	1.00	2.00	0.18	0.19	0.19
<i>Rosa setigera</i>	1.00	2.00	0.18	0.19	0.19
<i>Salvia lyrata</i>	1.00	2.00	0.18	0.19	0.19
<i>Sanguinaria canadensis</i>	1.00	2.00	0.18	0.19	0.19
<i>Scutellaria ovata</i>	1.00	2.00	0.18	0.19	0.19
<i>Sideroxylon lanuginosum</i>	1.00	2.00	0.18	0.19	0.19
<i>Silphium asteriscus</i>	1.00	2.00	0.18	0.19	0.19
<i>Styrax grandifolius</i>	1.00	2.00	0.18	0.19	0.19
<i>Trillium sessile</i>	1.00	2.00	0.18	0.19	0.19
<i>unknown sp. 18</i>	1.00	2.00	0.18	0.19	0.19
<i>Viola striata</i>	1.00	2.00	0.18	0.19	0.19
<i>Acalypha monococca</i>	1.00	1.00	0.09	0.19	0.14
<i>Acer saccharum</i>	1.00	1.00	0.09	0.19	0.14
<i>Aristolochia serpentaria</i>	1.00	1.00	0.09	0.19	0.14
<i>Carex blanda</i>	1.00	1.00	0.09	0.19	0.14
<i>Carex caroliniana</i>	1.00	1.00	0.09	0.19	0.14
<i>Carpinus caroliniana</i>	1.00	1.00	0.09	0.19	0.14
<i>Carya cordiformis</i>	1.00	1.00	0.09	0.19	0.14
<i>Carya tomentosa</i>	1.00	1.00	0.09	0.19	0.14
<i>Celtis occidentalis</i>	1.00	1.00	0.09	0.19	0.14
<i>Clitoria mariana</i>	1.00	1.00	0.09	0.19	0.14
<i>Carex meadii</i>	1.00	1.00	0.09	0.19	0.14
<i>Dioscorea villosa</i>	1.00	1.00	0.09	0.19	0.14

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Elymus hystrix</i>	1.00	1.00	0.09	0.19	0.14
<i>Erechtites hieraciifolius</i>	1.00	1.00	0.09	0.19	0.14
<i>Fragaria virginiana</i>	1.00	1.00	0.09	0.19	0.14
<i>Galium sp.</i>	1.00	1.00	0.09	0.19	0.14
<i>Hamamelis virginiana</i>	1.00	1.00	0.09	0.19	0.14
<i>Maianthemum racemosum</i>	1.00	1.00	0.09	0.19	0.14
<i>Phlox pilosa</i>	1.00	1.00	0.09	0.19	0.14
<i>Polygonatum biflorum</i>	1.00	1.00	0.09	0.19	0.14
<i>Prenanthes altissima</i>	1.00	1.00	0.09	0.19	0.14
<i>Smilax hispida</i>	1.00	1.00	0.09	0.19	0.14
<i>Solanum sp.</i>	1.00	1.00	0.09	0.19	0.14
<i>Symphotrichum anomalum</i>	1.00	1.00	0.09	0.19	0.14
<i>Thalictrum dasycarpum</i>	1.00	1.00	0.09	0.19	0.14
<i>Thalictrum thalictroides</i>	1.00	1.00	0.09	0.19	0.14
Totals	522.00	1,104.00	100.00	100.00	100.00

Table G17: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *riparian areas*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Liquidambar styraciflua</i>	1.53	12.90	19.93	19.70	17.07	17.55	18.70	16.38
<i>Pinus echinata</i>	1.27	8.06	16.47	23.49	20.36	20.93	15.45	14.81
snag	0.67	14.52	8.67	10.08	8.74	8.98	8.13	10.54
<i>Quercus alba</i>	0.80	8.06	10.40	13.21	11.45	11.77	9.76	9.86
<i>Juniperus virginiana</i>	1.00	8.06	13.00	10.19	8.83	9.07	12.20	9.78
<i>Carya tomentosa</i>	0.67	9.68	8.67	8.13	7.04	7.24	8.13	8.35
<i>Acer saccharum</i>	0.53	9.68	6.93	4.79	4.16	4.27	6.50	6.82
<i>Fagus grandifolia</i>	0.40	4.84	5.20	3.00	2.60	2.67	4.88	4.13
<i>Platanus occidentalis</i>	0.20	3.23	2.60	4.15	3.59	3.69	2.44	3.12
<i>Quercus rubra</i>	0.27	3.23	3.47	2.98	2.59	2.66	3.25	3.05
<i>Quercus velutina</i>	0.13	3.23	1.73	2.52	2.18	2.24	1.63	2.36
<i>Nyssa sylvatica</i>	0.20	1.61	2.60	3.22	2.79	2.87	2.44	2.31
<i>Carya cordiformis</i>	0.13	3.23	1.73	1.90	1.65	1.70	1.63	2.18
<i>Carya ovata</i>	0.07	1.61	0.87	2.20	1.91	1.96	0.81	1.46
<i>Fraxinus pennsylvanica</i>	0.07	1.61	0.87	0.95	0.82	0.85	0.81	1.09
<i>Carya glabra</i>	0.07	1.61	0.87	0.51	0.44	0.45	0.81	0.96
<i>Ulmus alata</i>	0.07	1.61	0.87	0.42	0.37	0.38	0.81	0.93
<i>Tilia americana</i>	0.07	1.61	0.87	0.41	0.35	0.36	0.81	0.93
<i>Juglans nigra</i>	0.07	1.61	0.87	0.41	0.35	0.36	0.81	0.93
Totals	8.20	100.00	106.60	112.26	97.29	100.00	100.00	100.00

Table G18: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *riparian areas*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Liquidambar styraciflua</i>	2.67	7.63	34.67	5.74	4.97	21.59	9.39	12.87
snag	3.60	9.92	46.80	4.05	3.51	15.24	12.68	12.61
<i>Ostrya virginiana</i>	4.13	6.11	53.73	1.62	1.40	6.09	14.55	8.92
<i>Carpinus caroliniana</i>	4.40	6.87	57.20	1.15	1.00	4.33	15.49	8.90
<i>Acer saccharum</i>	2.00	5.34	26.00	2.02	1.75	7.59	7.04	6.66
<i>Juniperus virginiana</i>	1.07	4.58	13.87	1.68	1.45	6.31	3.76	4.88
<i>Cornus florida</i>	1.27	6.87	16.47	0.60	0.52	2.25	4.46	4.53
<i>Acer rubrum</i>	1.07	4.58	13.87	1.13	0.98	4.25	3.76	4.20
<i>Carya tomentosa</i>	0.67	3.82	8.67	1.50	1.30	5.64	2.35	3.94
<i>Quercus alba</i>	0.60	3.05	7.80	1.45	1.26	5.46	2.11	3.54
<i>Ulmus alata</i>	0.80	4.58	10.40	0.46	0.39	1.71	2.82	3.04
<i>Nyssa sylvatica</i>	0.60	3.82	7.80	0.52	0.45	1.94	2.11	2.62
<i>Ulmus americana</i>	0.67	2.29	8.67	0.65	0.57	2.46	2.35	2.36
<i>Fagus grandifolia</i>	0.60	2.29	7.80	0.44	0.39	1.67	2.11	2.02
<i>Pinus echinata</i>	0.40	0.76	5.20	0.97	0.84	3.66	1.41	1.94
<i>Tilia americana</i>	0.60	2.29	7.80	0.27	0.24	1.03	2.11	1.81
<i>Cercis canadensis</i>	0.27	2.29	3.47	0.35	0.30	1.30	0.94	1.51
<i>Carya cordiformis</i>	0.20	1.53	2.60	0.31	0.27	1.17	0.70	1.13
<i>Quercus muehlenbergii</i>	0.33	1.53	4.33	0.14	0.12	0.53	1.17	1.08
<i>Hamamelis virginiana</i>	0.20	2.29	2.60	0.02	0.02	0.09	0.70	1.03
<i>Fraxinus pennsylvanica</i>	0.27	1.53	3.47	0.05	0.05	0.21	0.94	0.89
<i>Fraxinus americana</i>	0.27	1.53	3.47	0.02	0.02	0.08	0.94	0.85
<i>Prunus mexicana</i>	0.20	1.53	2.60	0.04	0.03	0.13	0.70	0.79
<i>Frangula caroliniana</i>	0.20	1.53	2.60	0.02	0.02	0.07	0.70	0.77
<i>Amelanchier arborea</i>	0.13	1.53	1.73	0.01	0.01	0.04	0.47	0.68
<i>Platanus occidentalis</i>	0.07	0.76	0.87	0.27	0.23	1.01	0.23	0.67
<i>Carya glabra</i>	0.07	0.76	0.87	0.24	0.21	0.92	0.23	0.64
<i>Quercus rubra</i>	0.07	0.76	0.87	0.24	0.21	0.92	0.23	0.64
<i>Juglans nigra</i>	0.07	0.76	0.87	0.23	0.20	0.88	0.23	0.62
<i>Alnus serrulata</i>	0.27	0.76	3.47	0.03	0.03	0.12	0.94	0.61

Species	Frequency	Relative Frequency	Stems/ Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Robinia pseudoacacia</i>	0.07	0.76	0.87	0.14	0.12	0.54	0.23	0.51
<i>Ulmus rubra</i>	0.13	0.76	1.73	0.07	0.06	0.25	0.47	0.49
<i>Magnolia acuminata</i>	0.07	0.76	0.87	0.08	0.07	0.32	0.23	0.44
<i>Castanea pumila</i>	0.13	0.76	1.73	0.01	0.01	0.03	0.47	0.42
<i>Viburnum prunifolium</i>	0.07	0.76	0.87	0.04	0.03	0.14	0.23	0.38
<i>Asimina triloba</i>	0.07	0.76	0.87	0.00	0.00	0.02	0.23	0.34
<i>Celtis laevigata</i>	0.07	0.76	0.87	0.00	0.00	0.01	0.23	0.34
<i>Rhus copallinum</i>	0.07	0.76	0.87	0.00	0.00	0.01	0.23	0.34
Totals	28.40	100.00	369.20	26.58	23.04	100.00	100.00	100.00

Table G19: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species*, riparian areas, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Carpinus caroliniana</i>	0.53	8.00	145.78	15.33	11.67
<i>Ostrya virginiana</i>	0.53	8.00	72.89	7.67	7.83
<i>Frangula caroliniana</i>	0.33	5.00	99.39	10.45	7.73
<i>Hamamelis virginiana</i>	0.40	6.00	76.20	8.01	7.01
<i>Acer rubrum</i>	0.40	6.00	62.95	6.62	6.31
<i>Lindera benzoin</i>	0.20	3.00	89.45	9.41	6.20
<i>Carya tomentosa</i>	0.40	6.00	26.50	2.79	4.39
<i>Cornus florida</i>	0.33	5.00	23.19	2.44	3.72
<i>Ulmus alata</i>	0.27	4.00	19.88	2.09	3.05
<i>Quercus rubra</i>	0.20	3.00	26.50	2.79	2.89
<i>Cercis canadensis</i>	0.27	4.00	16.57	1.74	2.87
<i>Celtis occidentalis</i>	0.13	2.00	33.13	3.48	2.74
<i>Fagus grandifolia</i>	0.20	3.00	19.88	2.09	2.55
<i>Acer saccharum</i>	0.20	3.00	16.57	1.74	2.37
<i>Carya cordiformis</i>	0.20	3.00	16.57	1.74	2.37
<i>Fraxinus americana</i>	0.13	2.00	23.19	2.44	2.22
<i>Juniperus virginiana</i>	0.20	3.00	13.25	1.39	2.20
<i>Prunus serotina</i>	0.07	1.00	19.88	2.09	1.55
<i>Fraxinus pennsylvanica</i>	0.13	2.00	9.94	1.05	1.52
<i>Liquidambar styraciflua</i>	0.13	2.00	9.94	1.05	1.52
<i>Quercus alba</i>	0.13	2.00	9.94	1.05	1.52
<i>Ulmus americana</i>	0.07	1.00	16.57	1.74	1.37
<i>Aesculus glabra</i>	0.13	2.00	6.63	0.70	1.35
<i>Nyssa sylvatica</i>	0.07	1.00	13.25	1.39	1.20
<i>Quercus falcata</i>	0.07	1.00	13.25	1.39	1.20
<i>Dirca palustris</i>	0.07	1.00	9.94	1.05	1.02
<i>Aesculus pavia</i>	0.07	1.00	6.63	0.70	0.85
<i>Quercus muehlenbergii</i>	0.07	1.00	6.63	0.70	0.85
<i>Sassafras albidum</i>	0.07	1.00	6.63	0.70	0.85
<i>Symphoricarpos orbiculatus</i>	0.07	1.00	6.63	0.70	0.85
<i>Ulmus rubra</i>	0.07	1.00	6.63	0.70	0.85
<i>Alnus serrulata</i>	0.07	1.00	3.31	0.35	0.67

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Morus rubra</i>	0.07	1.00	3.31	0.35	0.67
<i>Quercus michauxii</i>	0.07	1.00	3.31	0.35	0.67
<i>Quercus velutina</i>	0.07	1.00	3.31	0.35	0.67
<i>Rhus copallinum</i>	0.07	1.00	3.31	0.35	0.67
<i>Styrax americanus</i>	0.07	1.00	3.31	0.35	0.67
<i>Tilia americana</i>	0.07	1.00	3.31	0.35	0.67
<i>Ulmus sp.</i>	0.07	1.00	3.31	0.35	0.67
Total	6.67	100.00	950.86	100.00	100.00

Table G20: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, riparian areas, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	44.00	118.00	8.19	6.15	7.17
<i>Brachyelytrum erectum</i>	25.00	56.00	3.89	3.49	3.69
<i>Dichantherium boscii</i>	25.00	54.00	3.75	3.49	3.62
<i>Parthenocissus quinquefolia</i>	24.00	53.00	3.68	3.35	3.51
<i>Sanicula canadensis</i>	26.00	45.00	3.12	3.63	3.38
<i>Viola sororia</i>	21.00	40.00	2.78	2.93	2.85
<i>Fraxinus americana</i>	16.00	36.00	2.50	2.23	2.37
<i>Acer saccharum</i>	19.00	29.00	2.01	2.65	2.33
<i>Vitis rotundifolia</i>	12.00	30.00	2.08	1.68	1.88
<i>Euonymus americanus</i>	15.00	23.00	1.60	2.09	1.85
<i>Amphicarpaea bracteata</i>	12.00	27.00	1.87	1.68	1.77
<i>Smilax glauca</i>	13.00	22.00	1.53	1.82	1.67
<i>Ostrya virginiana</i>	11.00	24.00	1.67	1.54	1.60
<i>Desmodium nudiflorum</i>	8.00	24.00	1.67	1.12	1.39
<i>Galium circaeans</i>	10.00	18.00	1.25	1.40	1.32
<i>Thalictrum thalictroides</i>	10.00	17.00	1.18	1.40	1.29
<i>Smilax rotundifolia</i>	9.00	18.00	1.25	1.26	1.25
<i>Symphoricarpos orbiculatus</i>	8.00	19.00	1.32	1.12	1.22
<i>Dichantherium commutatum</i>	10.00	14.00	0.97	1.40	1.18
<i>Carex</i> sp.	9.00	16.00	1.11	1.26	1.18
<i>Cornus florida</i>	8.00	18.00	1.25	1.12	1.18
<i>Carex glaucoidea</i>	8.00	17.00	1.18	1.12	1.15
<i>Agrimonia rostellata</i>	8.00	16.00	1.11	1.12	1.11
<i>Carya cordiformis</i>	6.00	16.00	1.11	0.84	0.97
<i>Elymus hystrix</i>	6.00	16.00	1.11	0.84	0.97
<i>Chasmanthium latifolium</i>	6.00	14.00	0.97	0.84	0.90
<i>Bignonia capreolata</i>	5.00	16.00	1.11	0.70	0.90
<i>Polygonatum biflorum</i>	6.00	13.00	0.90	0.84	0.87
<i>Iris cristata</i>	6.00	12.00	0.83	0.84	0.84
<i>Microstegium vimineum</i>	6.00	11.00	0.76	0.84	0.80
<i>Acer rubrum</i>	7.00	8.00	0.56	0.98	0.77
<i>Galium concinnum</i>	6.00	10.00	0.69	0.84	0.77
<i>Packera obovata</i>	6.00	10.00	0.69	0.84	0.77
<i>Carex caroliniana</i>	5.00	12.00	0.83	0.70	0.77
<i>Carex blanda</i>	5.00	12.00	0.83	0.70	0.77
<i>Smilax bona-nox</i>	5.00	12.00	0.83	0.70	0.77
<i>Oxalis dillenii</i>	6.00	8.00	0.56	0.84	0.70
<i>Celtis occidentalis</i>	5.00	10.00	0.69	0.70	0.70
<i>Salvia lyrata</i>	5.00	10.00	0.69	0.70	0.70
<i>Solidago caesia</i>	5.00	9.00	0.62	0.70	0.66
<i>Ulmus alata</i>	5.00	8.00	0.56	0.70	0.63
<i>Leersia virginica</i>	4.00	10.00	0.69	0.56	0.63

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Asarum canadense</i>	5.00	7.00	0.49	0.70	0.59
<i>Dioscorea villosa</i>	5.00	7.00	0.49	0.70	0.59
<i>Berchemia scandens</i>	4.00	9.00	0.62	0.56	0.59
<i>Dichanthelium laxiflorum</i>	4.00	9.00	0.62	0.56	0.59
<i>Scleria oligantha</i>	4.00	9.00	0.62	0.56	0.59
<i>Pedicularis canadensis</i>	3.00	11.00	0.76	0.42	0.59
<i>Viola sp.</i>	5.00	6.00	0.42	0.70	0.56
<i>Diarrhena americana</i>	4.00	8.00	0.56	0.56	0.56
<i>Rubus flagellaris</i>	4.00	8.00	0.56	0.56	0.56
<i>Geum canadense</i>	4.00	7.00	0.49	0.56	0.52
<i>Liquidambar styraciflua</i>	4.00	7.00	0.49	0.56	0.52
<i>Nyssa sylvatica</i>	4.00	7.00	0.49	0.56	0.52
<i>Quercus rubra</i>	4.00	7.00	0.49	0.56	0.52
<i>Polystichum acrostichoides</i>	3.00	9.00	0.62	0.42	0.52
<i>Quercus muehlenbergii</i>	3.00	9.00	0.62	0.42	0.52
<i>Boechera canadensis</i>	4.00	6.00	0.42	0.56	0.49
<i>Carya cordiformis</i>	4.00	6.00	0.42	0.56	0.49
<i>Sassafras albidum</i>	4.00	6.00	0.42	0.56	0.49
<i>Viola sagittata</i>	4.00	5.00	0.35	0.56	0.45
<i>Cercis canadensis</i>	3.00	7.00	0.49	0.42	0.45
<i>Chasmanthium sessiliflorum</i>	3.00	7.00	0.49	0.42	0.45
<i>Carex rosea</i>	3.00	7.00	0.49	0.42	0.45
<i>Dirca palustris</i>	3.00	7.00	0.49	0.42	0.45
<i>Physalis heterophylla</i>	3.00	7.00	0.49	0.42	0.45
<i>Scutellaria ovata</i>	4.00	4.00	0.28	0.56	0.42
<i>Botrychium virginianum</i>	3.00	6.00	0.42	0.42	0.42
<i>Carya tomentosa</i>	3.00	6.00	0.42	0.42	0.42
<i>Carex sp. 2</i>	3.00	6.00	0.42	0.42	0.42
<i>Hamamelis virginiana</i>	3.00	6.00	0.42	0.42	0.42
<i>Lonicera japonica</i>	3.00	6.00	0.42	0.42	0.42
<i>Podophyllum peltatum</i>	3.00	6.00	0.42	0.42	0.42
<i>Arisaema dracontium</i>	3.00	5.00	0.35	0.42	0.38
<i>Circaea canadensis</i>	3.00	5.00	0.35	0.42	0.38
<i>Fraxinus sp.</i>	3.00	5.00	0.35	0.42	0.38
<i>Potentilla simplex</i>	3.00	5.00	0.35	0.42	0.38
<i>Quercus alba</i>	3.00	5.00	0.35	0.42	0.38
<i>Uvularia sessilifolia</i>	3.00	5.00	0.35	0.42	0.38
<i>Pinus echinata</i>	3.00	4.00	0.28	0.42	0.35
<i>Prenanthes altissima</i>	3.00	4.00	0.28	0.42	0.35
<i>Sanguinaria canadensis</i>	3.00	4.00	0.28	0.42	0.35
<i>Smilax hispida</i>	3.00	4.00	0.28	0.42	0.35
<i>Frangula caroliniana</i>	2.00	6.00	0.42	0.28	0.35
<i>Phegopteris hexagonoptera</i>	2.00	6.00	0.42	0.28	0.35
<i>Acalypha virginica</i>	2.00	5.00	0.35	0.28	0.31
<i>Alnus serrulata</i>	2.00	5.00	0.35	0.28	0.31
<i>Asplenium platyneuron</i>	2.00	5.00	0.35	0.28	0.31

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Bromus sp.</i>	2.00	5.00	0.35	0.28	0.31
<i>Lespedeza repens</i>	2.00	5.00	0.35	0.28	0.31
<i>Ulmus rubra</i>	2.00	5.00	0.35	0.28	0.31
<i>Viburnum rufidulum</i>	2.00	5.00	0.35	0.28	0.31
<i>Carex cherokeensis</i>	2.00	4.00	0.28	0.28	0.28
<i>Carex oligocarpa</i>	2.00	4.00	0.28	0.28	0.28
<i>Menispermum canadense</i>	2.00	4.00	0.28	0.28	0.28
<i>Prunus serotina</i>	2.00	4.00	0.28	0.28	0.28
<i>Quercus michauxii</i>	2.00	4.00	0.28	0.28	0.28
<i>Trachelospermum difforme</i>	2.00	4.00	0.28	0.28	0.28
<i>Bromus pubescens</i>	2.00	3.00	0.21	0.28	0.24
<i>Euphorbia corollata</i>	2.00	3.00	0.21	0.28	0.24
<i>Solidago ulmifolia</i>	2.00	3.00	0.21	0.28	0.24
<i>Chasmanthium laxum</i>	1.00	5.00	0.35	0.14	0.24
<i>Arisaema triphyllum</i>	2.00	2.00	0.14	0.28	0.21
<i>Dichantheium dichotomum</i>	2.00	2.00	0.14	0.28	0.21
<i>Juniperus virginiana</i>	2.00	2.00	0.14	0.28	0.21
<i>Krigia biflora</i>	2.00	2.00	0.14	0.28	0.21
<i>Passiflora lutea</i>	2.00	2.00	0.14	0.28	0.21
<i>Solidago hispida</i>	2.00	2.00	0.14	0.28	0.21
<i>Dichantheium acuminatum</i>	1.00	4.00	0.28	0.14	0.21
<i>Staphylea trifolia</i>	1.00	4.00	0.28	0.14	0.21
<i>Callicarpa americana</i>	1.00	3.00	0.21	0.14	0.17
<i>Carex albicans</i>	1.00	3.00	0.21	0.14	0.17
<i>Carex crinita</i>	1.00	3.00	0.21	0.14	0.17
<i>Carex frankii</i>	1.00	3.00	0.21	0.14	0.17
<i>Carex hirsutella</i>	1.00	3.00	0.21	0.14	0.17
<i>Desmodium paniculatum</i>	1.00	3.00	0.21	0.14	0.17
<i>Fraxinus pennsylvanica</i>	1.00	3.00	0.21	0.14	0.17
<i>Galium aparine</i>	1.00	3.00	0.21	0.14	0.17
<i>Hieracium gronovii</i>	1.00	3.00	0.21	0.14	0.17
<i>Hydrastis canadensis</i>	1.00	3.00	0.21	0.14	0.17
<i>Hypericum prolificum</i>	1.00	3.00	0.21	0.14	0.17
<i>Polymnia canadensis</i>	1.00	3.00	0.21	0.14	0.17
<i>Polypodium virginianum</i>	1.00	3.00	0.21	0.14	0.17
<i>Symphyotrichum lateriflorum</i>	1.00	3.00	0.21	0.14	0.17
<i>Trillium sessile</i>	1.00	3.00	0.21	0.14	0.17
<i>Vaccinium arboreum</i>	1.00	3.00	0.21	0.14	0.17
<i>Viola striata</i>	1.00	3.00	0.21	0.14	0.17
<i>Vitis aestivalis</i>	1.00	3.00	0.21	0.14	0.17
<i>Boehmeria cylindrica</i>	1.00	2.00	0.14	0.14	0.14
<i>Carya sp.</i>	1.00	2.00	0.14	0.14	0.14
<i>Carex lurida</i>	1.00	2.00	0.14	0.14	0.14
<i>Carex planispicata</i>	1.00	2.00	0.14	0.14	0.14
<i>Cynoglossum virginianum</i>	1.00	2.00	0.14	0.14	0.14

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Diospyros virginiana</i>	1.00	2.00	0.14	0.14	0.14
<i>Eleocharis tenuis</i>	1.00	2.00	0.14	0.14	0.14
<i>Eutrochium purpureum</i>	1.00	2.00	0.14	0.14	0.14
<i>Helianthus hirsutus</i>	1.00	2.00	0.14	0.14	0.14
<i>Houstonia sp.</i>	1.00	2.00	0.14	0.14	0.14
<i>Physalis virginiana</i>	1.00	2.00	0.14	0.14	0.14
<i>Prunella vulgaris</i>	1.00	2.00	0.14	0.14	0.14
<i>Rhus copallinum</i>	1.00	2.00	0.14	0.14	0.14
<i>Ruellia strepens</i>	1.00	2.00	0.14	0.14	0.14
<i>Solidago nemoralis</i>	1.00	2.00	0.14	0.14	0.14
<i>Symplocos tinctoria</i>	1.00	2.00	0.14	0.14	0.14
<i>unknown graminoid 1</i>	1.00	2.00	0.14	0.14	0.14
<i>unknown sp. 11</i>	1.00	2.00	0.14	0.14	0.14
<i>Verbesina alternifolia</i>	1.00	2.00	0.14	0.14	0.14
<i>Amianthium muscitoxicum</i>	1.00	1.00	0.07	0.14	0.10
<i>Angelica venenosa</i>	1.00	1.00	0.07	0.14	0.10
<i>Asimina triloba</i>	1.00	1.00	0.07	0.14	0.10
<i>Carya ovata</i>	1.00	1.00	0.07	0.14	0.10
<i>Carex sp. 4</i>	1.00	1.00	0.07	0.14	0.10
<i>Danthonia spicata</i>	1.00	1.00	0.07	0.14	0.10
<i>Galium triflorum</i>	1.00	1.00	0.07	0.14	0.10
<i>Galactia volubilis</i>	1.00	1.00	0.07	0.14	0.10
<i>Hieracium longipilum</i>	1.00	1.00	0.07	0.14	0.10
<i>Houstonia purpurea</i>	1.00	1.00	0.07	0.14	0.10
<i>Ilex decidua</i>	1.00	1.00	0.07	0.14	0.10
<i>Krigia dandelion</i>	1.00	1.00	0.07	0.14	0.10
<i>Lactuca canadensis</i>	1.00	1.00	0.07	0.14	0.10
<i>Lespedeza procumbens</i>	1.00	1.00	0.07	0.14	0.10
<i>Monarda bradburiana</i>	1.00	1.00	0.07	0.14	0.10
<i>Perilla frutescens</i>	1.00	1.00	0.07	0.14	0.10
<i>Phlox sp.</i>	1.00	1.00	0.07	0.14	0.10
<i>Phryma leptostachya</i>	1.00	1.00	0.07	0.14	0.10
<i>Polemonium reptans</i>	1.00	1.00	0.07	0.14	0.10
<i>Ptelea trifoliata</i>	1.00	1.00	0.07	0.14	0.10
<i>Quercus falcata</i>	1.00	1.00	0.07	0.14	0.10
<i>Quercus velutina</i>	1.00	1.00	0.07	0.14	0.10
<i>Smilax sp.</i>	1.00	1.00	0.07	0.14	0.10
<i>Symphotrichum sp.</i>	1.00	1.00	0.07	0.14	0.10
<i>unknown sp. 16</i>	1.00	1.00	0.07	0.14	0.10
<i>unknown sp. 19</i>	1.00	1.00	0.07	0.14	0.10
<i>Vaccinium pallidum</i>	1.00	1.00	0.07	0.14	0.10
<i>Viburnum prunifolium</i>	1.00	1.00	0.07	0.14	0.10
<i>Vitis cinerea</i>	1.00	1.00	0.07	0.14	0.10
Total	716.00	1441.00	100.00	100.00	100.00

Table G21: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *glades*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Fraxinus americana</i>	0.40	40.00	5.20	1.60	4.15	25.99	28.57	31.52
<i>Pinus echinata</i>	0.40	20.00	5.20	2.41	6.26	39.19	28.57	29.25
<i>Carya glabra</i>	0.40	20.00	5.20	1.27	3.31	20.74	28.57	23.10
<i>Juniperus virginiana</i>	0.20	20.00	2.60	0.87	2.25	14.08	14.29	16.12
Totals	1.40	100.00	18.20	6.15	15.98	100.00	100.00	100.00

Table G22: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *glades*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Ulmus alata</i>	3.60	20.00	46.80	0.57	1.48	15.73	29.51	21.75
<i>Quercus stellata</i>	1.80	10.00	23.40	0.96	2.50	26.51	14.75	17.09
<i>Juniperus virginiana</i>	1.20	10.00	15.60	0.60	1.56	16.59	9.84	12.14
snag	1.20	15.00	15.60	0.39	1.01	10.71	9.84	11.85
<i>Carya tomentosa</i>	1.00	10.00	13.00	0.40	1.05	11.12	8.20	9.77
<i>Robinia pseudoacacia</i>	1.60	5.00	20.80	0.23	0.60	6.33	13.11	8.15
<i>Prunus mexicana</i>	0.40	5.00	5.20	0.18	0.46	4.86	3.28	4.38
<i>Fraxinus pennsylvanica</i>	0.60	5.00	7.80	0.07	0.18	1.94	4.92	3.95
<i>Fraxinus americana</i>	0.20	5.00	2.60	0.09	0.24	2.57	1.64	3.07
<i>Quercus rubra</i>	0.20	5.00	2.60	0.05	0.14	1.49	1.64	2.71
<i>Pinus taeda</i>	0.20	5.00	2.60	0.04	0.11	1.14	1.64	2.59
<i>Carya glabra</i>	0.20	5.00	2.60	0.04	0.09	0.99	1.64	2.54
Totals	12.20	100.00	158.60	3.62	9.41	100.00	100.00	100.00

Table G23: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, glades*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Ulmus alata</i>	0.60	30.00	139.15	38.89	34.44
<i>Quercus rubra</i>	0.20	10.00	69.58	19.44	14.72
<i>Robinia pseudoacacia</i>	0.20	10.00	49.70	13.89	11.94
<i>Vaccinium arboreum</i>	0.20	10.00	39.76	11.11	10.56
<i>Rhus copallinum</i>	0.20	10.00	29.82	8.33	9.17
<i>Carya tomentosa</i>	0.20	10.00	9.94	2.78	6.39
<i>Juniperus virginiana</i>	0.20	10.00	9.94	2.78	6.39
<i>Quercus stellata</i>	0.20	10.00	9.94	2.78	6.39
Total	2.00	100.00	357.81	100.00	100.00

Table G24: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, glades, on the Big Piney and Pleasant Hill Ranger districts, Ozark- St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Schizachyrium scoparium</i>	14.00	59.00	11.50	7.25	9.38
<i>Croton willdenowii</i>	10.00	31.00	6.04	5.18	5.61
<i>Danthonia spicata</i>	7.00	31.00	6.04	3.63	4.83
<i>Dichantherium acuminatum</i>	9.00	25.00	4.87	4.66	4.77
<i>Helianthus divaricatus</i>	8.00	23.00	4.48	4.15	4.31
<i>Phemeranthus calycinus</i>	5.00	13.00	2.53	2.59	2.56
<i>Pinus echinata</i>	5.00	13.00	2.53	2.59	2.56
<i>Quercus stellata</i>	5.00	13.00	2.53	2.59	2.56
<i>Daucus carota</i>	5.00	12.00	2.34	2.59	2.46
<i>Diodia teres</i>	4.00	14.00	2.73	2.07	2.40
<i>Allium canadense</i>	4.00	10.00	1.95	2.07	2.01
<i>Ulmus alata</i>	4.00	9.00	1.75	2.07	1.91
<i>Lespedeza virginica</i>	4.00	8.00	1.56	2.07	1.82
<i>Dichantherium malacophyllum</i>	3.00	9.00	1.75	1.55	1.65
<i>Echinacea pallida</i>	3.00	8.00	1.56	1.55	1.56
<i>Hypericum pseudomaculatum</i>	3.00	8.00	1.56	1.55	1.56
<i>Asplenium platyneuron</i>	3.00	7.00	1.36	1.55	1.46
<i>Solidago ulmifolia</i>	3.00	7.00	1.36	1.55	1.46
<i>Pseudognaphalium obtusifolium</i>	4.00	4.00	0.78	2.07	1.43
<i>Erigeron annuus</i>	3.00	6.00	1.17	1.55	1.36
<i>Lespedeza procumbens</i>	3.00	5.00	0.97	1.55	1.26
<i>Rubus argutus</i>	2.00	7.00	1.36	1.04	1.20
<i>Vernonia baldwinii</i>	2.00	7.00	1.36	1.04	1.20
<i>Acalypha virginica</i>	3.00	4.00	0.78	1.55	1.17
<i>Vaccinium pallidum</i>	2.00	6.00	1.17	1.04	1.10
<i>Carex communis</i>	2.00	5.00	0.97	1.04	1.01
<i>Pycnanthemum tenuifolium</i>	2.00	5.00	0.97	1.04	1.01
<i>Toxicodendron radicans</i>	2.00	5.00	0.97	1.04	1.01
<i>Eriocaulon koernickianum</i>	2.00	4.00	0.78	1.04	0.91
<i>Erigeron strigosus</i>	2.00	4.00	0.78	1.04	0.91
<i>Oxalis dillenii</i>	2.00	4.00	0.78	1.04	0.91
<i>Scleria oligantha</i>	2.00	4.00	0.78	1.04	0.91
<i>Scutellaria ovata</i>	2.00	4.00	0.78	1.04	0.91
<i>Tridens flavus</i>	2.00	4.00	0.78	1.04	0.91
<i>Eleocharis tenuis</i>	1.00	6.00	1.17	0.52	0.84
<i>Ambrosia artemisiifolia</i>	2.00	3.00	0.58	1.04	0.81
<i>Carex sp. 2</i>	2.00	3.00	0.58	1.04	0.81
<i>Hypericum punctatum</i>	2.00	3.00	0.58	1.04	0.81
<i>Smilax bona-nox</i>	2.00	3.00	0.58	1.04	0.81
<i>Dichantherium boscii</i>	1.00	5.00	0.97	0.52	0.75
<i>Helianthus sp.</i>	1.00	5.00	0.97	0.52	0.75
<i>Euphorbia corollata</i>	2.00	2.00	0.39	1.04	0.71

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Carya tomentosa</i>	1.00	4.00	0.78	0.52	0.65
<i>Dichanthelium linearifolium</i>	1.00	4.00	0.78	0.52	0.65
<i>Antennaria plantaginifolia</i>	1.00	3.00	0.58	0.52	0.55
<i>Carya texana</i>	1.00	3.00	0.58	0.52	0.55
<i>Celtis tenuifolia</i>	1.00	3.00	0.58	0.52	0.55
<i>Carex sp. 1</i>	1.00	3.00	0.58	0.52	0.55
<i>Carex sp. 3</i>	1.00	3.00	0.58	0.52	0.55
<i>Festuca subverticillata</i>	1.00	3.00	0.58	0.52	0.55
<i>Galium arkansanum</i>	1.00	3.00	0.58	0.52	0.55
<i>Juniperus virginiana</i>	1.00	3.00	0.58	0.52	0.55
<i>Lespedeza hirta</i>	1.00	3.00	0.58	0.52	0.55
<i>Parthenocissus quinquefolia</i>	1.00	3.00	0.58	0.52	0.55
<i>Polygala sanguinea</i>	1.00	3.00	0.58	0.52	0.55
<i>Prunus mexicana</i>	1.00	3.00	0.58	0.52	0.55
<i>Rosa carolina</i>	1.00	3.00	0.58	0.52	0.55
<i>Rubus flagellaris</i>	1.00	3.00	0.58	0.52	0.55
<i>Ruellia humilis</i>	1.00	3.00	0.58	0.52	0.55
<i>Solidago nemoralis</i>	1.00	3.00	0.58	0.52	0.55
<i>Symphyotrichum anomalum</i>	1.00	3.00	0.58	0.52	0.55
<i>unknown forb 7</i>	1.00	3.00	0.58	0.52	0.55
<i>unknown graminoid 1</i>	1.00	3.00	0.58	0.52	0.55
<i>unknown sp. 10</i>	1.00	3.00	0.58	0.52	0.55
<i>Ageratina altissima</i>	1.00	2.00	0.39	0.52	0.45
<i>Carex sp.</i>	1.00	2.00	0.39	0.52	0.45
<i>Desmodium paniculatum</i>	1.00	2.00	0.39	0.52	0.45
<i>Desmodium perplexum</i>	1.00	2.00	0.39	0.52	0.45
<i>Diospyros virginiana</i>	1.00	2.00	0.39	0.52	0.45
<i>Elymus glaberrimus</i>	1.00	2.00	0.39	0.52	0.45
<i>Erechtites hieraciifolius</i>	1.00	2.00	0.39	0.52	0.45
<i>Galium circaezans</i>	1.00	2.00	0.39	0.52	0.45
<i>Hamamelis virginiana</i>	1.00	2.00	0.39	0.52	0.45
<i>Plantago virginica</i>	1.00	2.00	0.39	0.52	0.45
<i>Prunella vulgaris</i>	1.00	2.00	0.39	0.52	0.45
<i>Scutellaria elliptica</i>	1.00	2.00	0.39	0.52	0.45
<i>Sorghastrum nutans</i>	1.00	2.00	0.39	0.52	0.45
<i>Tradescantia ohioensis</i>	1.00	2.00	0.39	0.52	0.45
<i>Vitis rotundifolia</i>	1.00	2.00	0.39	0.52	0.45
<i>Acalypha monococca</i>	1.00	1.00	0.19	0.52	0.36
<i>Amphicarpaea bracteata</i>	1.00	1.00	0.19	0.52	0.36
<i>Carex rosea</i>	1.00	1.00	0.19	0.52	0.36
<i>Lobelia spicata</i>	1.00	1.00	0.19	0.52	0.36
<i>Solidago sp.</i>	1.00	1.00	0.19	0.52	0.36
<i>Symphyotrichum sp.</i>	1.00	1.00	0.19	0.52	0.36
<i>Triodanis perfoliata</i>	1.00	1.00	0.19	0.52	0.36
Total	193.00	513.00	100.00	100.00	100.00

APPENDIX H. Species importance values by strata and coertype, 2011-2012.

Table H1: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *early seral*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snag	0.50	66.67	6.50	1.71	5.56	77.11	66.67	70.15
<i>Quercus rubra</i>	0.25	33.33	3.25	0.51	1.65	22.89	33.33	29.85
Totals	0.75	100.00	9.75	2.22	7.21	100.00	100.00	100.00

Table H2: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1"– 7.9" dbh), *early seral*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus rubra</i>	1.00	18.18	13.00	0.33	1.07	38.62	13.33	23.38
snag	3.00	9.09	39.00	0.08	0.27	9.77	40.00	19.62
<i>Quercus stellata</i>	0.25	9.09	3.25	0.24	0.79	28.73	3.33	13.72
<i>Ulmus alata</i>	1.25	9.09	16.25	0.10	0.31	11.21	16.67	12.32
<i>Carya tomentosa</i>	0.75	18.18	9.75	0.05	0.16	5.86	10.00	11.35
<i>Prunus serotina</i>	0.50	9.09	6.50	0.03	0.11	3.90	6.67	6.55
<i>Fraxinus americana</i>	0.25	9.09	3.25	0.01	0.02	0.89	3.33	4.44
<i>Quercus alba</i>	0.25	9.09	3.25	0.01	0.02	0.62	3.33	4.35
<i>Frangula caroliniana</i>	0.25	9.09	3.25	0.00	0.01	0.40	3.33	4.27
Totals	7.50	100.00	97.50	0.85	2.76	100.00	100.00	100.00

Table H3: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, early seral*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.50	7.69	906.96	39.46	23.58
<i>Nyssa sylvatica</i>	0.75	11.54	410.00	17.84	14.69
<i>Carya tomentosa</i>	0.75	11.54	223.63	9.73	10.63
<i>Quercus alba</i>	0.75	11.54	186.36	8.11	9.82
<i>Quercus rubra</i>	0.75	11.54	149.09	6.49	9.01
<i>Prunus serotina</i>	0.75	11.54	99.39	4.32	7.93
<i>Rubus argutus</i>	0.25	3.85	149.09	6.49	5.17
<i>Castanea pumila</i>	0.25	3.85	37.27	1.62	2.73
<i>Liquidambar styraciflua</i>	0.25	3.85	24.85	1.08	2.46
<i>Rhus copallinum</i>	0.25	3.85	24.85	1.08	2.46
<i>Sassafras albidum</i>	0.25	3.85	24.85	1.08	2.46
<i>Vaccinium arboreum</i>	0.25	3.85	24.85	1.08	2.46
<i>Fraxinus americana</i>	0.25	3.85	12.42	0.54	2.19
<i>Frangula caroliniana</i>	0.25	3.85	12.42	0.54	2.19
<i>Quercus stellata</i>	0.25	3.85	12.42	0.54	2.19
Totals	6.50	100.00	2298.46	100.00	100.00

Table H4: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, early seral, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Acer rubrum</i>	6.00	11.00	5.09	5.50	5.30
<i>Rubus flagellaris</i>	5.00	11.00	5.09	4.59	4.84
<i>Dichanthelium commutatum</i>	5.00	9.00	4.17	4.59	4.38
<i>Rubus</i> sp.	3.00	11.00	5.09	2.75	3.92
<i>Quercus velutina</i>	5.00	7.00	3.24	4.59	3.91
<i>Quercus alba</i>	5.00	6.00	2.78	4.59	3.68
<i>Dichanthelium boscii</i>	4.00	7.00	3.24	3.67	3.46
<i>Lespedeza procumbens</i>	3.00	8.00	3.70	2.75	3.23
<i>Prunus serotina</i>	3.00	8.00	3.70	2.75	3.23
<i>Vitis rotundifolia</i>	3.00	8.00	3.70	2.75	3.23
<i>Carex blanda</i>	3.00	6.00	2.78	2.75	2.77
<i>Solidago ulmifolia</i>	3.00	6.00	2.78	2.75	2.77
<i>Carya texana</i>	2.00	7.00	3.24	1.83	2.54
<i>Toxicodendron radicans</i>	3.00	5.00	2.31	2.75	2.53
<i>Rhus copallinum</i>	2.00	6.00	2.78	1.83	2.31
<i>Dichanthelium dichotomum</i>	3.00	4.00	1.85	2.75	2.30
<i>Lespedeza virginica</i>	3.00	4.00	1.85	2.75	2.30
<i>Vaccinium pallidum</i>	3.00	4.00	1.85	2.75	2.30
<i>Carex muhlenbergii</i>	2.00	5.00	2.31	1.83	2.07
<i>Helianthus divaricatus</i>	2.00	5.00	2.31	1.83	2.07
<i>Schizachyrium scoparium</i>	2.00	5.00	2.31	1.83	2.07
<i>Erechtites hieraciifolius</i>	2.00	4.00	1.85	1.83	1.84
<i>Sassafras albidum</i>	2.00	4.00	1.85	1.83	1.84
<i>Vitis aestivalis</i>	2.00	4.00	1.85	1.83	1.84
<i>Carya tomentosa</i>	2.00	3.00	1.39	1.83	1.61
<i>Euphorbia corollata</i>	2.00	3.00	1.39	1.83	1.61
<i>Rubus argutus</i>	2.00	3.00	1.39	1.83	1.61
<i>Dichanthelium linearifolium</i>	1.00	4.00	1.85	0.92	1.38
<i>Rhus glabra</i>	1.00	4.00	1.85	0.92	1.38
<i>Lactuca canadensis</i>	2.00	2.00	0.93	1.83	1.38
<i>Lespedeza repens</i>	2.00	2.00	0.93	1.83	1.38
<i>Sanicula canadensis</i>	2.00	2.00	0.93	1.83	1.38
<i>Smilax glauca</i>	2.00	2.00	0.93	1.83	1.38
<i>Andropogon virginicus</i>	1.00	3.00	1.39	0.92	1.15
<i>Cercis canadensis</i>	1.00	3.00	1.39	0.92	1.15
<i>Cornus florida</i>	1.00	3.00	1.39	0.92	1.15
<i>Lespedeza frutescens</i>	1.00	3.00	1.39	0.92	1.15
<i>Nyssa sylvatica</i>	1.00	3.00	1.39	0.92	1.15
<i>Physalis virginiana</i>	1.00	3.00	1.39	0.92	1.15
<i>Vaccinium arboreum</i>	1.00	3.00	1.39	0.92	1.15
<i>Desmodium laevigatum</i>	1.00	2.00	0.93	0.92	0.92
<i>Dioscorea villosa</i>	1.00	2.00	0.93	0.92	0.92

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Eupatorium serotinum</i>	1.00	2.00	0.93	0.92	0.92
<i>Rosa carolina</i>	1.00	2.00	0.93	0.92	0.92
<i>Scleria oligantha</i>	1.00	2.00	0.93	0.92	0.92
<i>Clitoria mariana</i>	1.00	1.00	0.46	0.92	0.69
<i>Desmodium</i> sp. 1	1.00	1.00	0.46	0.92	0.69
<i>Parthenocissus</i> <i>quinquefolia</i>	1.00	1.00	0.46	0.92	0.69
<i>Pseudognaphalium</i> <i>obtusifolium</i>	1.00	1.00	0.46	0.92	0.69
<i>Smilax bona-nox</i>	1.00	1.00	0.46	0.92	0.69
Totals	109.00	216.00	100.00	100.00	100.00

Table H5: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *pine woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Relative Frequency	Stems / Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Pinus echinata</i>	3.75	50.00	48.75	17.52	56.95	89.82	78.95	72.92
<i>Nyssa sylvatica</i>	0.50	25.00	6.50	1.10	3.58	5.65	10.53	13.72
<i>Carya texana</i>	0.25	12.50	3.25	0.47	1.54	2.43	5.26	6.73
snag	0.25	12.50	3.25	0.41	1.33	2.10	5.26	6.62
Totals	4.75	100.00	61.75	19.51	63.40	100.00	100.00	100.00

Table H5: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory* (1" – 7.9" dbh), *pine woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Relative Frequency	Stems/ Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Pinus echinata</i>	5.64	50.00	73.27	79.86	94.38	74.55	65.96	63.50
<i>Pinus taeda</i>	1.73	5.00	22.45	15.65	18.49	14.61	20.21	13.27
<i>Quercus alba</i>	0.36	10.00	4.73	3.47	4.10	3.24	4.26	5.83
<i>Nyssa sylvatica</i>	0.18	10.00	2.36	1.74	2.06	1.62	2.13	4.58
snag	0.09	5.00	1.18	3.68	4.35	3.44	1.06	3.17
<i>Juniperus virginiana</i>	0.27	5.00	3.55	1.34	1.59	1.25	3.19	3.15
<i>Carya tomentosa</i>	0.09	5.00	1.18	0.51	0.60	0.47	1.06	2.18
<i>Ulmus alata</i>	0.09	5.00	1.18	0.45	0.53	0.42	1.06	2.16
<i>Liquidambar styraciflua</i>	0.09	5.00	1.18	0.43	0.51	0.40	1.06	2.15
Totals	8.55	100.00	111.09	107.13	126.60	100.00	100.00	100.00

Table H7: Frequency, relative frequency, stems/acre, relative density, and importance value of shrub layer species, pine woodland/savanna, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Nyssa sylvatica</i>	1.00	10.26	323.03	11.87	11.06
<i>Acer rubrum</i>	0.50	5.13	335.45	12.33	8.73
<i>Quercus alba</i>	0.75	7.69	173.94	6.39	7.04
<i>Carya tomentosa</i>	0.75	7.69	136.67	5.02	6.36
<i>Frangula caroliniana</i>	0.50	5.13	136.67	5.02	5.08
<i>Ulmus alata</i>	0.25	2.56	198.79	7.31	4.94
<i>Acer saccharum</i>	0.25	2.56	186.36	6.85	4.71
<i>Quercus falcata</i>	0.25	2.56	161.51	5.94	4.25
<i>Quercus rubra</i>	0.50	5.13	86.97	3.20	4.16
<i>Quercus phellos</i>	0.25	2.56	136.67	5.02	3.79
<i>Liquidambar styraciflua</i>	0.50	5.13	62.12	2.28	3.71
<i>Vitis rotundifolia</i>	0.25	2.56	124.24	4.57	3.57
<i>Rhus copallinum</i>	0.25	2.56	111.82	4.11	3.34
<i>Juniperus virginiana</i>	0.50	5.13	37.27	1.37	3.25
<i>Diospyros virginiana</i>	0.25	2.56	99.39	3.65	3.11
<i>Cornus florida</i>	0.50	5.13	24.85	0.91	3.02
<i>Pinus echinata</i>	0.25	2.56	74.54	2.74	2.65
<i>Quercus nigra</i>	0.25	2.56	74.54	2.74	2.65
<i>Sassafras albidum</i>	0.25	2.56	62.12	2.28	2.42
<i>Callicarpa americana</i>	0.25	2.56	37.27	1.37	1.97
<i>Quercus sp.</i>	0.25	2.56	37.27	1.37	1.97
<i>Quercus stellata</i>	0.25	2.56	37.27	1.37	1.97
<i>Hypericum prolificum</i>	0.25	2.56	24.85	0.91	1.74
<i>Fraxinus americana</i>	0.25	2.56	12.42	0.46	1.51
<i>Prunus serotina</i>	0.25	2.56	12.42	0.46	1.51
<i>Smilax rotundifolia</i>	0.25	2.56	12.42	0.46	1.51
Totals	9.75	100.00	2720.88	100.00	100.00

Table H8: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, pine woodland/savanna, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	12.00	32.00	11.55	10.08	10.82
<i>Smilax glauca</i>	8.00	16.00	5.78	6.72	6.25
<i>Vitis rotundifolia</i>	6.00	18.00	6.50	5.04	5.77
<i>Nyssa sylvatica</i>	6.00	15.00	5.42	5.04	5.23
<i>Lonicera japonica</i>	4.00	17.00	6.14	3.36	4.75
<i>Trachelospermum difforme</i>	4.00	14.00	5.05	3.36	4.21
<i>Carex</i> sp.	5.00	8.00	2.89	4.20	3.54
<i>Cornus florida</i>	4.00	9.00	3.25	3.36	3.31
<i>Rubus argutus</i>	4.00	9.00	3.25	3.36	3.31
<i>Sassafras albidum</i>	4.00	8.00	2.89	3.36	3.12
<i>Acer rubrum</i>	4.00	7.00	2.53	3.36	2.94
<i>Dichanthelium boscii</i>	4.00	7.00	2.53	3.36	2.94
<i>Ulmus alata</i>	3.00	8.00	2.89	2.52	2.70
<i>Parthenocissus quinquefolia</i>	4.00	5.00	1.81	3.36	2.58
<i>Dichanthelium commutatum</i>	2.00	8.00	2.89	1.68	2.28
<i>Quercus alba</i>	2.00	8.00	2.89	1.68	2.28
<i>Carex communis</i>	3.00	5.00	1.81	2.52	2.16
<i>Smilax bona-nox</i>	3.00	4.00	1.44	2.52	1.98
<i>Dichanthelium scoparium</i>	2.00	6.00	2.17	1.68	1.92
<i>Amphicarpaea bracteata</i>	3.00	3.00	1.08	2.52	1.80
<i>Solidago ulmifolia</i>	2.00	5.00	1.81	1.68	1.74
<i>Danthonia spicata</i>	2.00	4.00	1.44	1.68	1.56
<i>Potentilla simplex</i>	2.00	4.00	1.44	1.68	1.56
<i>Pinus echinata</i>	2.00	3.00	1.08	1.68	1.38
<i>Pycnanthemum tenuifolium</i>	2.00	3.00	1.08	1.68	1.38
<i>Quercus rubra</i>	1.00	5.00	1.81	0.84	1.32
<i>Lespedeza procumbens</i>	2.00	2.00	0.72	1.68	1.20
<i>Quercus stellata</i>	1.00	4.00	1.44	0.84	1.14
<i>Carex digitalis</i>	1.00	3.00	1.08	0.84	0.96
<i>Frangula caroliniana</i>	1.00	3.00	1.08	0.84	0.96
<i>Helianthus hirsutus</i>	1.00	3.00	1.08	0.84	0.96
<i>Liquidambar styraciflua</i>	1.00	3.00	1.08	0.84	0.96
<i>Quercus phellos</i>	1.00	3.00	1.08	0.84	0.96
<i>Quercus velutina</i>	1.00	3.00	1.08	0.84	0.96
<i>Rubus flagellaris</i>	1.00	3.00	1.08	0.84	0.96
<i>Dichanthelium laxiflorum</i>	1.00	2.00	0.72	0.84	0.78
<i>Lobelia spicata</i>	1.00	2.00	0.72	0.84	0.78
<i>Rhus copallinum</i>	1.00	2.00	0.72	0.84	0.78
<i>Rubus</i> sp.	1.00	2.00	0.72	0.84	0.78
<i>Smilax rotundifolia</i>	1.00	2.00	0.72	0.84	0.78
<i>Vaccinium arboreum</i>	1.00	2.00	0.72	0.84	0.78
<i>Vaccinium pallidum</i>	1.00	2.00	0.72	0.84	0.78
<i>Vitis aestivalis</i>	1.00	2.00	0.72	0.84	0.78
<i>Andropogon virginicus</i>	1.00	1.00	0.36	0.84	0.60
<i>Hypericum hypericoides</i>	1.00	1.00	0.36	0.84	0.60

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importanc Value
unknown forb 7	1.00	1.00	0.36	0.84	0.60
Total	119.00	277.00	100.00	100.00	100.00

Table H9: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *pine forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Pinus echinata</i>	5.64	50.00	73.27	79.86	94.38	74.55	65.96	63.50
<i>Pinus taeda</i>	1.73	5.00	22.45	15.65	18.49	14.61	20.21	13.27
<i>Quercus alba</i>	0.36	10.00	4.73	3.47	4.10	3.24	4.26	5.83
<i>Nyssa sylvatica</i>	0.18	10.00	2.36	1.74	2.06	1.62	2.13	4.58
snag	0.09	5.00	1.18	3.68	4.35	3.44	1.06	3.17
<i>Juniperus virginiana</i>	0.27	5.00	3.55	1.34	1.59	1.25	3.19	3.15
<i>Carya tomentosa</i>	0.09	5.00	1.18	0.51	0.60	0.47	1.06	2.18
<i>Ulmus alata</i>	0.09	5.00	1.18	0.45	0.53	0.42	1.06	2.16
<i>Liquidambar styraciflua</i>	0.09	5.00	1.18	0.43	0.51	0.40	1.06	2.15
Totals	8.55	100.00	111.09	107.13	126.60	100.00	100.00	100.00

Table H10: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory* (1" – 7.9" dbh), *pine forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snag	2.82	10.94	36.64	2.75	3.25	17.83	14.83	14.53
<i>Quercus alba</i>	1.73	4.69	22.45	2.17	2.56	14.04	9.09	9.27
<i>Liquidambar styraciflua</i>	2.18	4.69	28.36	1.12	1.32	7.23	11.48	7.80
<i>Fagus grandifolia</i>	2.27	4.69	29.55	0.52	0.61	3.34	11.96	6.66
<i>Pinus echinata</i>	0.73	6.25	9.45	1.21	1.43	7.84	3.83	5.97
<i>Nyssa sylvatica</i>	1.18	4.69	15.36	0.90	1.07	5.84	6.22	5.58
<i>Ulmus alata</i>	1.00	4.69	13.00	1.05	1.24	6.78	5.26	5.58
<i>Carya tomentosa</i>	0.91	6.25	11.82	0.79	0.93	5.10	4.78	5.38
<i>Juniperus virginiana</i>	0.55	6.25	7.09	0.81	0.96	5.24	2.87	4.79
<i>Acer rubrum</i>	0.45	7.81	5.91	0.26	0.31	1.68	2.39	3.96
<i>Cornus florida</i>	0.82	3.13	10.64	0.30	0.36	1.97	4.31	3.13
<i>Pinus taeda</i>	0.27	1.56	3.55	0.91	1.08	5.91	1.44	2.97
<i>Acer saccharum</i>	0.36	4.69	4.73	0.18	0.21	1.17	1.91	2.59
<i>Quercus rubra</i>	0.64	3.13	8.27	0.09	0.10	0.55	3.35	2.34
<i>Diospyros virginiana</i>	0.45	1.56	5.91	0.47	0.55	3.03	2.39	2.33
<i>Sassafras albidum</i>	0.36	4.69	4.73	0.02	0.03	0.16	1.91	2.25
<i>Quercus stellata</i>	0.18	1.56	2.36	0.59	0.70	3.81	0.96	2.11
<i>Vaccinium arboreum</i>	0.73	1.56	9.45	0.04	0.05	0.29	3.83	1.89
<i>Quercus velutina</i>	0.36	3.13	4.73	0.04	0.05	0.29	1.91	1.78
<i>Ostrya virginiana</i>	0.18	1.56	2.36	0.37	0.44	2.42	0.96	1.65
<i>Ulmus americana</i>	0.09	1.56	1.18	0.27	0.32	1.77	0.48	1.27
<i>Carya cordiformis</i>	0.09	1.56	1.18	0.26	0.31	1.68	0.48	1.24
<i>Quercus falcata</i>	0.18	1.56	2.36	0.15	0.18	0.99	0.96	1.17
<i>Cercis canadensis</i>	0.09	1.56	1.18	0.05	0.06	0.35	0.48	0.80
<i>Crataegous</i> sp.	0.09	1.56	1.18	0.04	0.05	0.27	0.48	0.77
<i>Tilia americana</i>	0.09	1.56	1.18	0.04	0.05	0.27	0.48	0.77
<i>Amelanchier arborea</i>	0.09	1.56	1.18	0.01	0.02	0.09	0.48	0.71
<i>Frangula caroliniana</i>	0.09	1.56	1.18	0.01	0.01	0.06	0.48	0.70
Totals	19.00	100.00	247.00	15.44	18.24	100.00	100.00	100.00

Table H11: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, pine forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.73	10.26	343.36	22.82	16.54
<i>Carya tomentosa</i>	0.64	8.97	135.54	9.01	8.99
<i>Nyssa sylvatica</i>	0.64	8.97	103.91	6.91	7.94
<i>Quercus velutina</i>	0.18	2.56	140.05	9.31	5.94
<i>Quercus alba</i>	0.55	7.69	58.73	3.90	5.80
<i>Quercus rubra</i>	0.36	5.13	81.32	5.41	5.27
<i>Fraxinus americana</i>	0.45	6.41	49.70	3.30	4.86
<i>Liquidambar styraciflua</i>	0.27	3.85	67.77	4.50	4.18
<i>Frangula caroliniana</i>	0.27	3.85	45.18	3.00	3.42
<i>Vitis rotundifolia</i>	0.09	1.28	81.32	5.41	3.34
<i>Quercus stellata</i>	0.18	2.56	49.70	3.30	2.93
<i>Cornus florida</i>	0.27	3.85	27.11	1.80	2.82
<i>Vitis aestivalis</i>	0.09	1.28	58.73	3.90	2.59
<i>Ostrya virginiana</i>	0.18	2.56	31.63	2.10	2.33
<i>Carya texana</i>	0.18	2.56	18.07	1.20	1.88
<i>Fagus grandifolia</i>	0.18	2.56	18.07	1.20	1.88
<i>Quercus falcata</i>	0.18	2.56	18.07	1.20	1.88
<i>Sassafras albidum</i>	0.18	2.56	18.07	1.20	1.88
<i>Callicarpa americana</i>	0.18	2.56	13.55	0.90	1.73
<i>Rubus argutus</i>	0.09	1.28	31.63	2.10	1.69
<i>Prunus serotina</i>	0.18	2.56	9.04	0.60	1.58
<i>Pinus echinata</i>	0.09	1.28	18.07	1.20	1.24
<i>Acer saccharum</i>	0.09	1.28	13.55	0.90	1.09
<i>Quercus muehlenbergii</i>	0.09	1.28	13.55	0.90	1.09
<i>Rubus</i> sp.	0.09	1.28	13.55	0.90	1.09
<i>Rhus glabra</i>	0.09	1.28	9.04	0.60	0.94
<i>Ulmus alata</i>	0.09	1.28	9.04	0.60	0.94
<i>Vaccinium arboreum</i>	0.09	1.28	9.04	0.60	0.94
<i>Cephalanthus occidentalis</i>	0.09	1.28	4.52	0.30	0.79
<i>Juniperus virginiana</i>	0.09	1.28	4.52	0.30	0.79
<i>Quercus nigra</i>	0.09	1.28	4.52	0.30	0.79
<i>Rhus copallinum</i>	0.09	1.28	4.52	0.30	0.79
Total	7.09	100.00	1,504.45	100.00	100.00

Table H12: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, pine forest, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Total Cover	Relativ Cover	Relative Frequency	Importance Value
<i>Vitis rotundifolia</i>	20.00	63.00	12.48	8.93	10.70
<i>Toxicodendron radicans</i>	20.00	49.00	9.70	8.93	9.32
<i>Acer rubrum</i>	14.00	35.00	6.93	6.25	6.59
<i>Smilax glauca</i>	12.00	21.00	4.16	5.36	4.76
<i>Nyssa sylvatica</i>	8.00	21.00	4.16	3.57	3.86
<i>Parthenocissus quinquefolia</i>	8.00	21.00	4.16	3.57	3.86
<i>Carex</i> sp.	9.00	17.00	3.37	4.02	3.69
<i>Smilax bona-nox</i>	6.00	17.00	3.37	2.68	3.02
<i>Dichantheium commutatum</i>	6.00	12.00	2.38	2.68	2.53
<i>Quercus alba</i>	4.00	12.00	2.38	1.79	2.08
<i>Carya tomentosa</i>	4.00	11.00	2.18	1.79	1.98
<i>Dichantheium dichotomum</i>	5.00	8.00	1.58	2.23	1.91
<i>Rubus argutus</i>	4.00	9.00	1.78	1.79	1.78
<i>Vaccinium pallidum</i>	3.00	10.00	1.98	1.34	1.66
<i>Quercus stellata</i>	4.00	7.00	1.39	1.79	1.59
<i>Cornus florida</i>	3.00	9.00	1.78	1.34	1.56
<i>Schizachyrium scoparium</i>	3.00	9.00	1.78	1.34	1.56
<i>Smilax rotundifolia</i>	3.00	9.00	1.78	1.34	1.56
<i>Lespedeza repens</i>	4.00	6.00	1.19	1.79	1.49
<i>Desmodium laevigatum</i>	3.00	8.00	1.58	1.34	1.46
<i>Rhus copallinum</i>	3.00	8.00	1.58	1.34	1.46
<i>Sassafras albidum</i>	3.00	8.00	1.58	1.34	1.46
<i>Ulmus alata</i>	3.00	7.00	1.39	1.34	1.36
<i>Scleria oligantha</i>	3.00	6.00	1.19	1.34	1.26
<i>Danthonia spicata</i>	3.00	5.00	0.99	1.34	1.16
<i>Rubus flagellaris</i>	3.00	5.00	0.99	1.34	1.16
<i>Prunus serotina</i>	3.00	4.00	0.79	1.34	1.07
<i>Desmodium nudiflorum</i>	2.00	5.00	0.99	0.89	0.94
<i>Helianthus divaricatus</i>	2.00	5.00	0.99	0.89	0.94
<i>Trachelospermum difforme</i>	2.00	5.00	0.99	0.89	0.94
<i>Fraxinus americana</i>	2.00	4.00	0.79	0.89	0.84
<i>Lespedeza procumbens</i>	2.00	4.00	0.79	0.89	0.84
<i>Solidago petiolaris</i>	2.00	3.00	0.59	0.89	0.74
<i>Vaccinium stamineum</i>	1.00	5.00	0.99	0.45	0.72
<i>Dichantheium acuminatum</i>	2.00	2.00	0.40	0.89	0.64
<i>Euphorbia corollata</i>	2.00	2.00	0.40	0.89	0.64
<i>Pinus echinata</i>	2.00	2.00	0.40	0.89	0.64
<i>Carya</i> sp.	1.00	4.00	0.79	0.45	0.62
<i>Liquidambar styraciflua</i>	1.00	4.00	0.79	0.45	0.62
<i>Bromus</i> sp.	1.00	3.00	0.59	0.45	0.52
<i>Carex frankii</i>	1.00	3.00	0.59	0.45	0.52

Species	Frequency	Total Cover	Relativ Cover	Relative Frequency	Importance Value
<i>Carya texana</i>	1.00	3.00	0.59	0.45	0.52
<i>Diospyros virginiana</i>	1.00	3.00	0.59	0.45	0.52
<i>Pteridium aquilinum</i>	1.00	3.00	0.59	0.45	0.52
<i>Pycnanthemum tenuifolium</i>	1.00	3.00	0.59	0.45	0.52
<i>Vaccinium arboreum</i>	1.00	3.00	0.59	0.45	0.52
<i>Callicarpa americana</i>	1.00	2.00	0.40	0.45	0.42
<i>Chasmanthium latifolium</i>	1.00	2.00	0.40	0.45	0.42
<i>Crotalaria sagittalis</i>	1.00	2.00	0.40	0.45	0.42
<i>Dichantherium malacophyllum</i>	1.00	2.00	0.40	0.45	0.42
<i>Dichantherium sphaerocarpon</i>	1.00	2.00	0.40	0.45	0.42
<i>Hieracium longipilum</i>	1.00	2.00	0.40	0.45	0.42
<i>Quercus velutina</i>	1.00	2.00	0.40	0.45	0.42
unknown graminoid 1	1.00	2.00	0.40	0.45	0.42
<i>Carex blanda</i>	1.00	1.00	0.20	0.45	0.32
<i>Carex cephalophora</i>	1.00	1.00	0.20	0.45	0.32
<i>Carex communis</i>	1.00	1.00	0.20	0.45	0.32
<i>Carex laxiflora</i>	1.00	1.00	0.20	0.45	0.32
<i>Clitoria mariana</i>	1.00	1.00	0.20	0.45	0.32
<i>Commelina erecta</i>	1.00	1.00	0.20	0.45	0.32
<i>Desmodium paniculatum</i>	1.00	1.00	0.20	0.45	0.32
<i>Dichantherium boscii</i>	1.00	1.00	0.20	0.45	0.32
<i>Dichantherium laxiflorum</i>	1.00	1.00	0.20	0.45	0.32
<i>Eupatorium serotinum</i>	1.00	1.00	0.20	0.45	0.32
<i>Hieracium gronovii</i>	1.00	1.00	0.20	0.45	0.32
<i>Lespedeza violacea</i>	1.00	1.00	0.20	0.45	0.32
<i>Liatris aspera</i>	1.00	1.00	0.20	0.45	0.32
<i>Pseudognaphalium obtusifolium</i>	1.00	1.00	0.20	0.45	0.32
<i>Ptilimnium nuttallii</i>	1.00	1.00	0.20	0.45	0.32
<i>Quercus</i> sp.	1.00	1.00	0.20	0.45	0.32
<i>Quercus rubra</i>	1.00	1.00	0.20	0.45	0.32
<i>Rosa carolina</i>	1.00	1.00	0.20	0.45	0.32
<i>Solidago nemoralis</i>	1.00	1.00	0.20	0.45	0.32
<i>Symphoricarpos orbiculatus</i>	1.00	1.00	0.20	0.45	0.32
<i>Symphyotrichum patens</i>	1.00	1.00	0.20	0.45	0.32
<i>Viola palmata</i>	1.00	1.00	0.20	0.45	0.32
<i>Viola sororia</i>	1.00	1.00	0.20	0.45	0.32
Total	224.00	505.00	100.00	100.00	100.00

Table H13: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *oak-pine woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Pinus echinata</i>	2.38	36.36	30.88	20.02	32.53	52.43	45.24	44.68
<i>Quercus alba</i>	1.13	22.73	14.63	7.20	11.70	18.87	21.43	21.01
<i>Quercus stellata</i>	0.38	9.09	4.88	3.13	5.09	8.20	7.14	8.14
<i>Carya texana</i>	0.38	9.09	4.88	1.68	2.73	4.40	7.14	6.88
<i>Fagus grandifolia</i>	0.38	4.55	4.88	1.52	2.47	3.99	7.14	5.23
snag	0.25	4.55	3.25	1.26	2.04	3.30	4.76	4.20
<i>Carya tomentosa</i>	0.13	4.55	1.63	1.23	2.00	3.23	2.38	3.39
<i>Quercus velutina</i>	0.13	4.55	1.63	1.21	1.97	3.18	2.38	3.37
<i>Acer rubrum</i>	0.13	4.55	1.63	0.92	1.50	2.41	2.38	3.11
Totals	5.25	100.00	68.25	38.18	62.04	100.00	100.00	100.00

Table H14: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *oak-pine woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011- 2012.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	1.88	9.68	24.38	2.32	3.77	38.01	16.13	21.27
<i>Carpinus caroliniana</i>	2.38	6.45	30.88	0.31	0.51	5.14	20.43	10.67
<i>Carya tomentosa</i>	0.75	12.90	9.75	0.34	0.56	5.61	6.45	8.32
snag	0.63	6.45	8.13	0.67	1.09	10.94	5.38	7.59
<i>Acer rubrum</i>	0.63	6.45	8.13	0.46	0.75	7.53	5.38	6.45
<i>Fagus grandifolia</i>	1.00	3.23	13.00	0.39	0.63	6.33	8.60	6.05
<i>Nyssa sylvatica</i>	0.50	9.68	6.50	0.20	0.32	3.24	4.30	5.74
<i>Acer saccharum</i>	0.88	3.23	11.38	0.22	0.36	3.60	7.53	4.78
<i>Carya cordiformis</i>	0.25	3.23	3.25	0.37	0.61	6.12	2.15	3.83
<i>Liquidambar styraciflua</i>	0.38	3.23	4.88	0.22	0.36	3.66	3.23	3.37
<i>Juniperus virginiana</i>	0.50	3.23	6.50	0.03	0.05	0.50	4.30	2.68
<i>Ulmus rubra</i>	0.50	3.23	6.50	0.03	0.04	0.43	4.30	2.65
<i>Quercus velutina</i>	0.13	3.23	1.63	0.20	0.33	3.33	1.08	2.54
<i>Aralia spinosa</i>	0.38	3.23	4.88	0.01	0.02	0.17	3.23	2.21
<i>Pinus echinata</i>	0.13	3.23	1.63	0.13	0.20	2.06	1.08	2.12
<i>Carya texana</i>	0.13	3.23	1.63	0.07	0.11	1.12	1.08	1.81
<i>Quercus rubra</i>	0.13	3.23	1.63	0.05	0.09	0.89	1.08	1.73
<i>Cornus florida</i>	0.13	3.23	1.63	0.03	0.05	0.50	1.08	1.60
<i>Prunus mexicana</i>	0.13	3.23	1.63	0.03	0.04	0.42	1.08	1.57
<i>Prunus serotina</i>	0.13	3.23	1.63	0.02	0.03	0.35	1.08	1.55
<i>Ulmus alata</i>	0.13	3.23	1.63	0.00	0.01	0.06	1.08	1.45
Totals	11.63	100.00	151.13	6.10	9.92	100.00	100.00	100.00

Table H15: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species*, *Oak-pine woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.75	10.17	919.38	32.31	21.24
<i>Prunus serotina</i>	0.75	10.17	223.63	7.86	9.01
<i>Nyssa sylvatica</i>	0.63	8.47	254.69	8.95	8.71
<i>Carya tomentosa</i>	0.75	10.17	180.15	6.33	8.25
<i>Quercus alba</i>	0.75	10.17	111.82	3.93	7.05
<i>Rubus argutus</i>	0.13	1.69	335.45	11.79	6.74
<i>Quercus rubra</i>	0.38	5.08	124.24	4.37	4.73
<i>Carpinus caroliniana</i>	0.13	1.69	161.51	5.68	3.69
<i>Fraxinus americana</i>	0.38	5.08	37.27	1.31	3.20
<i>Cornus florida</i>	0.38	5.08	24.85	0.87	2.98
<i>Aralia spinosa</i>	0.13	1.69	111.82	3.93	2.81
<i>Quercus stellata</i>	0.25	3.39	12.42	0.44	1.91
<i>Vaccinium arboreum</i>	0.25	3.39	12.42	0.44	1.91
<i>Vitis rotundifolia</i>	0.13	1.69	49.70	1.75	1.72
<i>Rhus copallinum</i>	0.13	1.69	43.48	1.53	1.61
<i>Sassafras albidum</i>	0.13	1.69	37.27	1.31	1.50
<i>Acer saccharum</i>	0.13	1.69	31.06	1.09	1.39
<i>Fagus grandifolia</i>	0.13	1.69	31.06	1.09	1.39
<i>Carya cordiformis</i>	0.13	1.69	24.85	0.87	1.28
<i>Juniperus virginiana</i>	0.13	1.69	24.85	0.87	1.28
<i>Quercus falcata</i>	0.13	1.69	24.85	0.87	1.28
<i>Ostrya virginiana</i>	0.13	1.69	18.64	0.66	1.17
<i>Liquidambar styraciflua</i>	0.13	1.69	12.42	0.44	1.07
<i>Quercus velutina</i>	0.13	1.69	12.42	0.44	1.07
<i>Ulmus alata</i>	0.13	1.69	12.42	0.44	1.07
<i>Asimina triloba</i>	0.13	1.69	6.21	0.22	0.96
<i>Quercus nigra</i>	0.13	1.69	6.21	0.22	0.96
Total	7.38	100.00	2845.12	100.00	100.00

Table H16: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, oak-pine woodland/savanna, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	14.00	32.00	8.84	7.61	8.22
<i>Vitis rotundifolia</i>	9.00	29.00	8.01	4.89	6.45
<i>Dichanthelium boscii</i>	8.00	16.00	4.42	4.35	4.38
<i>Acer rubrum</i>	8.00	15.00	4.14	4.35	4.25
<i>Quercus alba</i>	6.00	11.00	3.04	3.26	3.15
<i>Vaccinium pallidum</i>	4.00	14.00	3.87	2.17	3.02
<i>Nyssa sylvatica</i>	4.00	12.00	3.31	2.17	2.74
<i>Rubus argutus</i>	4.00	12.00	3.31	2.17	2.74
<i>Carex</i> sp.	6.00	8.00	2.21	3.26	2.74
<i>Smilax glauca</i>	6.00	6.00	1.66	3.26	2.46
<i>Parthenocissus quinquefolia</i>	4.00	9.00	2.49	2.17	2.33
<i>Pinus echinata</i>	4.00	8.00	2.21	2.17	2.19
<i>Smilax bona-nox</i>	4.00	8.00	2.21	2.17	2.19
<i>Danthonia spicata</i>	5.00	6.00	1.66	2.72	2.19
<i>Quercus rubra</i>	3.00	9.00	2.49	1.63	2.06
<i>Rubus</i> sp.	2.00	9.00	2.49	1.09	1.79
<i>Euphorbia corollata</i>	4.00	5.00	1.38	2.17	1.78
<i>Quercus velutina</i>	2.00	7.00	1.93	1.09	1.51
<i>Desmodium nudiflorum</i>	3.00	5.00	1.38	1.63	1.51
<i>Fraxinus americana</i>	3.00	5.00	1.38	1.63	1.51
<i>Solidago ulmifolia</i>	3.00	5.00	1.38	1.63	1.51
<i>Clitoria mariana</i>	3.00	4.00	1.10	1.63	1.37
<i>Helianthus hirsutus</i>	3.00	4.00	1.10	1.63	1.37
<i>Symphyotrichum anomalum</i>	3.00	4.00	1.10	1.63	1.37
<i>Dichanthelium laxiflorum</i>	2.00	5.00	1.38	1.09	1.23
<i>Carya texana</i>	3.00	3.00	0.83	1.63	1.23
<i>Carex caroliniana</i>	2.00	4.00	1.10	1.09	1.10
<i>Desmodium perplexum</i>	2.00	4.00	1.10	1.09	1.10
<i>Dichanthelium dichotomum</i>	2.00	4.00	1.10	1.09	1.10
<i>Dichanthelium linearifolium</i>	2.00	4.00	1.10	1.09	1.10
<i>Lespedeza repens</i>	2.00	4.00	1.10	1.09	1.10
<i>Viola sororia</i>	2.00	4.00	1.10	1.09	1.10
<i>Vitis aestivalis</i>	2.00	4.00	1.10	1.09	1.10
<i>Vaccinium arboreum</i>	1.00	5.00	1.38	0.54	0.96
<i>Desmodium laevigatum</i>	2.00	3.00	0.83	1.09	0.96
<i>Pedicularis canadensis</i>	2.00	3.00	0.83	1.09	0.96
<i>Potentilla simplex</i>	2.00	3.00	0.83	1.09	0.96
<i>Smilax rotundifolia</i>	2.00	3.00	0.83	1.09	0.96
<i>Prunus serotina</i>	1.00	4.00	1.10	0.54	0.82
<i>Euonymus americanus</i>	2.00	2.00	0.55	1.09	0.82
<i>Panicum verrucosum</i>	2.00	2.00	0.55	1.09	0.82
<i>Cornus florida</i>	1.00	3.00	0.83	0.54	0.69

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Crotalaria sagittalis</i>	1.00	3.00	0.83	0.54	0.69
<i>Desmodium rotundifolium</i>	1.00	3.00	0.83	0.54	0.69
<i>Prunus mexicana</i>	1.00	3.00	0.83	0.54	0.69
<i>Scutellaria ovata</i>	1.00	3.00	0.83	0.54	0.69
<i>Alnus serrulata</i>	1.00	2.00	0.55	0.54	0.55
<i>Amphicarpaea bracteata</i>	1.00	2.00	0.55	0.54	0.55
<i>Carex blanda</i>	1.00	2.00	0.55	0.54	0.55
<i>Chasmanthium latifolium</i>	1.00	2.00	0.55	0.54	0.55
<i>Iris cristata</i>	1.00	2.00	0.55	0.54	0.55
<i>Krigia virginica</i>	1.00	2.00	0.55	0.54	0.55
<i>Lespedeza procumbens</i>	1.00	2.00	0.55	0.54	0.55
<i>Polygonum</i> sp.	1.00	2.00	0.55	0.54	0.55
<i>Rubus flagellaris</i>	1.00	2.00	0.55	0.54	0.55
<i>Ruellia pedunculata</i>	1.00	2.00	0.55	0.54	0.55
<i>Scleria oligantha</i>	1.00	2.00	0.55	0.54	0.55
unknown herb 3	1.00	2.00	0.55	0.54	0.55
<i>Carex communis</i>	1.00	1.00	0.28	0.54	0.41
<i>Carya tomentosa</i>	1.00	1.00	0.28	0.54	0.41
<i>Dichanthelium commutatum</i>	1.00	1.00	0.28	0.54	0.41
<i>Dichanthelium malacophyllum</i>	1.00	1.00	0.28	0.54	0.41
<i>Echinacea purpurea</i>	1.00	1.00	0.28	0.54	0.41
<i>Elymus glabriflorus</i>	1.00	1.00	0.28	0.54	0.41
<i>Fragaria virginiana</i>	1.00	1.00	0.28	0.54	0.41
<i>Helianthus divaricatus</i>	1.00	1.00	0.28	0.54	0.41
<i>Hieracium longipilum</i>	1.00	1.00	0.28	0.54	0.41
<i>Houstonia purpurea</i>	1.00	1.00	0.28	0.54	0.41
<i>Quercus stellata</i>	1.00	1.00	0.28	0.54	0.41
<i>Rubus trivialis</i>	1.00	1.00	0.28	0.54	0.41
<i>Schizachyrium scoparium</i>	1.00	1.00	0.28	0.54	0.41
<i>Solidago nemoralis</i>	1.00	1.00	0.28	0.54	0.41
<i>Solidago petiolaris</i>	1.00	1.00	0.28	0.54	0.41
<i>Symphyotrichum lateriflorum</i>	1.00	1.00	0.28	0.54	0.41
<i>Trachelospermum difforme</i>	1.00	1.00	0.28	0.54	0.41
<i>Viola</i> sp.	1.00	1.00	0.28	0.54	0.41
<i>Viola sagittata</i>	1.00	1.00	0.28	0.54	0.41
Totals	184.00	362.00	100.00	100.00	100.00

Table H17: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *oak-pine forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Pinus echinata</i>	3.75	36.36	48.75	31.76	51.61	51.13	44.12	43.87
<i>Quercus alba</i>	2.25	22.73	29.25	16.98	27.59	27.34	26.47	25.51
<i>Quercus stellata</i>	0.88	13.64	11.38	3.99	6.48	6.42	10.29	10.12
<i>Juniperus virginiana</i>	1.00	9.09	13.00	5.55	9.02	8.94	11.76	9.93
<i>Liquidambar styraciflua</i>	0.25	4.55	3.25	0.94	1.53	1.52	2.94	3.00
<i>Quercus velutina</i>	0.13	4.55	1.63	1.46	2.37	2.34	1.47	2.79
<i>Nyssa sylvatica</i>	0.13	4.55	1.63	0.95	1.54	1.53	1.47	2.51
snag	0.13	4.55	1.63	0.49	0.79	0.78	1.47	2.27
Totals	8.50	100.00	110.50	62.11	100.93	100.00	100.00	100.00

Table H18: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *oak-pine forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snag	2.50	12.20	32.50	1.32	2.15	13.49	13.16	12.95
<i>Quercus alba</i>	1.38	12.20	17.88	1.81	2.95	18.51	7.24	12.65
<i>Pinus echinata</i>	1.50	7.32	19.50	1.44	2.33	14.64	7.89	9.95
<i>Nyssa sylvatica</i>	2.13	9.76	27.63	0.87	1.41	8.84	11.18	9.93
<i>Juniperus virginiana</i>	1.75	7.32	22.75	1.11	1.80	11.31	9.21	9.28
<i>Ostrya virginiana</i>	3.13	4.88	40.63	0.53	0.86	5.41	16.45	8.91
<i>Liquidambar styraciflua</i>	1.75	4.88	22.75	1.10	1.78	11.20	9.21	8.43
<i>Cornus florida</i>	1.50	9.76	19.50	0.49	0.80	5.05	7.89	7.57
<i>Acer rubrum</i>	0.63	4.88	8.13	0.13	0.21	1.34	3.29	3.17
<i>Prunus serotina</i>	0.25	4.88	3.25	0.17	0.28	1.77	1.32	2.65
<i>Carpinus caroliniana</i>	0.88	2.44	11.38	0.07	0.11	0.72	4.61	2.59
<i>Carya tomentosa</i>	0.13	2.44	1.63	0.34	0.55	3.45	0.66	2.18
<i>Quercus stellata</i>	0.13	2.44	1.63	0.23	0.37	2.35	0.66	1.82
<i>Amelanchier arborea</i>	0.38	2.44	4.88	0.09	0.14	0.89	1.97	1.77
<i>Acer saccharum</i>	0.38	2.44	4.88	0.02	0.03	0.19	1.97	1.53
<i>Ulmus alata</i>	0.25	2.44	3.25	0.04	0.06	0.39	1.32	1.38
<i>Fagus grandifolia</i>	0.13	2.44	1.63	0.02	0.03	0.22	0.66	1.10
<i>Quercus velutina</i>	0.13	2.44	1.63	0.02	0.03	0.22	0.66	1.10
<i>Vaccinium pallidum</i>	0.13	2.44	1.63	0.00	0.01	0.03	0.66	1.04
Totals	19.00	100.00	247.00	9.80	15.93	100.00	100.00	100.00

Table H19: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species*, oak-pine forest, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Nyssa sylvatica</i>	0.38	6.98	298.18	22.22	14.60
<i>Acer rubrum</i>	0.63	11.63	130.45	9.72	10.68
<i>Ostrya virginiana</i>	0.38	6.98	105.60	7.87	7.42
<i>Quercus alba</i>	0.25	4.65	136.67	10.19	7.42
<i>Carpinus caroliniana</i>	0.13	2.33	167.73	12.50	7.41
<i>Fagus grandifolia</i>	0.25	4.65	80.76	6.02	5.33
<i>Cornus florida</i>	0.38	6.98	37.27	2.78	4.88
<i>Carya tomentosa</i>	0.25	4.65	68.33	5.09	4.87
<i>Prunus serotina</i>	0.38	6.98	31.06	2.31	4.65
<i>Vitis rotundifolia</i>	0.13	2.33	68.33	5.09	3.71
<i>Quercus falcata</i>	0.25	4.65	12.42	0.93	2.79
<i>Sassafras albidum</i>	0.25	4.65	12.42	0.93	2.79
<i>Quercus rubra</i>	0.13	2.33	37.27	2.78	2.55
<i>Acer saccharum</i>	0.13	2.33	24.85	1.85	2.09
<i>Fraxinus americana</i>	0.13	2.33	18.64	1.39	1.86
<i>Vaccinium stamineum</i>	0.13	2.33	18.64	1.39	1.86
<i>Asimina triloba</i>	0.13	2.33	12.42	0.93	1.63
<i>Carya cordiformis</i>	0.13	2.33	12.42	0.93	1.63
<i>Fraxinus pennsylvanica</i>	0.13	2.33	12.42	0.93	1.63
<i>Quercus velutina</i>	0.13	2.33	12.42	0.93	1.63
<i>Rhus copallinum</i>	0.13	2.33	12.42	0.93	1.63
<i>Crataegous sp.</i>	0.13	2.33	6.21	0.46	1.39
<i>Liquidambar styraciflua</i>	0.13	2.33	6.21	0.46	1.39
<i>Pinus echinata</i>	0.13	2.33	6.21	0.46	1.39
<i>Quercus nigra</i>	0.13	2.33	6.21	0.46	1.39
<i>Ulmus rubra</i>	0.13	2.33	6.21	0.46	1.39
Totals	5.38	100.00	1,341.80	100.00	100.00

Table H20: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, oak-pine forest, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Quercus alba</i>	9.00	20.00	5.76	5.63	5.69
<i>Vitis rotundifolia</i>	7.00	23.00	6.63	4.38	5.50
<i>Danthonia spicata</i>	6.00	24.00	6.92	3.75	5.33
<i>Nyssa sylvatica</i>	7.00	20.00	5.76	4.38	5.07
<i>Vaccinium pallidum</i>	8.00	15.00	4.32	5.00	4.66
<i>Carex</i> sp.	7.00	11.00	3.17	4.38	3.77
<i>Smilax glauca</i>	7.00	11.00	3.17	4.38	3.77
<i>Helianthus divaricatus</i>	5.00	13.00	3.75	3.13	3.44
<i>Parthenocissus quinquefolia</i>	6.00	10.00	2.88	3.75	3.32
<i>Clitoria mariana</i>	5.00	11.00	3.17	3.13	3.15
<i>Rubus argutus</i>	5.00	10.00	2.88	3.13	3.00
<i>Symphyotrichum patens</i>	4.00	8.00	2.31	2.50	2.40
<i>Carya texana</i>	3.00	9.00	2.59	1.88	2.23
<i>Rhus copallinum</i>	3.00	9.00	2.59	1.88	2.23
<i>Toxicodendron radicans</i>	3.00	8.00	2.31	1.88	2.09
<i>Schizachyrium scoparium</i>	3.00	7.00	2.02	1.88	1.95
<i>Acer rubrum</i>	3.00	6.00	1.73	1.88	1.80
<i>Dichanthelium acuminatum</i>	3.00	6.00	1.73	1.88	1.80
<i>Dichanthelium commutatum</i>	3.00	5.00	1.44	1.88	1.66
<i>Potentilla simplex</i>	3.00	5.00	1.44	1.88	1.66
<i>Quercus velutina</i>	3.00	4.00	1.15	1.88	1.51
<i>Desmodium perplexum</i>	3.00	3.00	0.86	1.88	1.37
<i>Amelanchier arborea</i>	2.00	5.00	1.44	1.25	1.35
<i>Carex muhlenbergii</i>	2.00	5.00	1.44	1.25	1.35
<i>Desmodium rotundifolium</i>	2.00	4.00	1.15	1.25	1.20
<i>Dichanthelium boscii</i>	2.00	4.00	1.15	1.25	1.20
<i>Dichanthelium laxiflorum</i>	2.00	4.00	1.15	1.25	1.20
<i>Phlox pilosa</i>	2.00	4.00	1.15	1.25	1.20
<i>Ulmus alata</i>	2.00	4.00	1.15	1.25	1.20
<i>Erechtites hieraciifolius</i>	2.00	3.00	0.86	1.25	1.06
<i>Lespedeza virginica</i>	2.00	3.00	0.86	1.25	1.06
<i>Prunus serotina</i>	2.00	3.00	0.86	1.25	1.06
<i>Solidago</i> sp.	2.00	3.00	0.86	1.25	1.06
<i>Vaccinium stamineum</i>	2.00	3.00	0.86	1.25	1.06
<i>Dichanthelium dichotomum</i>	2.00	2.00	0.58	1.25	0.91

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Antennaria plantaginifolia</i>	1.00	3.00	0.86	0.63	0.74
<i>Carya tomentosa</i>	1.00	3.00	0.86	0.63	0.74
<i>Cornus florida</i>	1.00	3.00	0.86	0.63	0.74
<i>Dichantheium aciculare</i>	1.00	3.00	0.86	0.63	0.74
<i>Galium pilosum</i>	1.00	3.00	0.86	0.63	0.74
<i>Lespedeza repens</i>	1.00	3.00	0.86	0.63	0.74
<i>Lonicera japonica</i>	1.00	3.00	0.86	0.63	0.74
<i>Quercus rubra</i>	1.00	3.00	0.86	0.63	0.74
<i>Rosa carolina</i>	1.00	3.00	0.86	0.63	0.74
<i>Trachelospermum difforme</i>	1.00	3.00	0.86	0.63	0.74
<i>Viburnum rufidulum</i>	1.00	3.00	0.86	0.63	0.74
<i>Vitis cinerea</i>	1.00	3.00	0.86	0.63	0.74
<i>Asimina triloba</i>	1.00	2.00	0.58	0.63	0.60
<i>Brachyelytrum erectum</i>	1.00	2.00	0.58	0.63	0.60
<i>Dichantheium linearifolium</i>	1.00	2.00	0.58	0.63	0.60
<i>Dichantheium scoparium</i>	1.00	2.00	0.58	0.63	0.60
<i>Helianthus hirsutus</i>	1.00	2.00	0.58	0.63	0.60
<i>Ostrya virginiana</i>	1.00	2.00	0.58	0.63	0.60
<i>Rubus flagellaris</i>	1.00	2.00	0.58	0.63	0.60
<i>Sanicula canadensis</i>	1.00	2.00	0.58	0.63	0.60
<i>Symphyotrichum anomalum</i>	1.00	2.00	0.58	0.63	0.60
<i>Viburnum prunifolium</i>	1.00	2.00	0.58	0.63	0.60
<i>Callicarpa americana</i>	1.00	1.00	0.29	0.63	0.46
<i>Crataegous</i> sp.	1.00	1.00	0.29	0.63	0.46
<i>Galium circaezans</i>	1.00	1.00	0.29	0.63	0.46
<i>Liatris squarrulosa</i>	1.00	1.00	0.29	0.63	0.46
<i>Rhus glabra</i>	1.00	1.00	0.29	0.63	0.46
<i>Smilax bona-nox</i>	1.00	1.00	0.29	0.63	0.46
Totals	160.00	347.00	100.00	100.00	100.00

Table H21: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *oak woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	1.38	18.75	18.00	41.10	13.70	26.60	28.72	24.69
<i>Carya tomentosa</i>	0.67	13.39	8.67	18.85	6.28	12.20	13.83	13.14
snag	0.41	9.82	5.33	14.98	4.99	9.70	8.51	9.34
<i>Quercus rubra</i>	0.33	8.04	4.33	15.23	5.08	9.86	6.91	8.27
<i>Quercus velutina</i>	0.31	8.04	4.00	12.78	4.26	8.27	6.38	7.56
<i>Quercus stellata</i>	0.33	6.25	4.33	12.35	4.12	7.99	6.91	7.05
<i>Nyssa sylvatica</i>	0.18	5.36	2.33	8.40	2.80	5.44	3.72	4.84
<i>Juniperus virginiana</i>	0.21	5.36	2.67	4.16	1.39	2.70	4.26	4.10
<i>Liquidambar styraciflua</i>	0.15	3.57	2.00	4.80	1.60	3.10	3.19	3.29
<i>Fraxinus americana</i>	0.13	3.57	1.67	3.29	1.10	2.13	2.66	2.79
<i>Carya cordiformis</i>	0.13	1.79	1.67	4.54	1.51	2.94	2.66	2.46
<i>Carya texana</i>	0.10	2.68	1.33	2.51	0.84	1.63	2.13	2.14
<i>Prunus serotina</i>	0.10	2.68	1.33	1.98	0.66	1.28	2.13	2.03
<i>Pinus echinata</i>	0.10	2.68	1.33	1.90	0.63	1.23	2.13	2.01
<i>Acer saccharum</i>	0.08	1.79	1.00	1.96	0.65	1.27	1.60	1.55
<i>Acer rubrum</i>	0.05	1.79	0.67	1.88	0.63	1.22	1.06	1.36
<i>Fagus grandifolia</i>	0.05	0.89	0.67	0.82	0.27	0.53	1.06	0.83
<i>Quercus shumardii</i>	0.03	0.89	0.33	1.07	0.36	0.69	0.53	0.70
<i>Platanus occidentalis</i>	0.03	0.89	0.33	0.74	0.25	0.48	0.53	0.63
<i>Robinia pseudoacacia</i>	0.03	0.89	0.33	0.66	0.22	0.43	0.53	0.62
<i>Quercus falcata</i>	0.03	0.89	0.33	0.51	0.17	0.33	0.53	0.58
Totals	4.82	100.00	62.67	154.50	51.50	100.00	100.00	100.00

Table H22: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *oak woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	1.28	9.76	16.67	7.53	2.51	16.62	8.35	11.58
snag	1.51	10.24	19.67	5.42	1.81	11.95	9.85	10.68
<i>Carya tomentosa</i>	1.28	9.27	16.67	5.70	1.90	12.57	8.35	10.06
<i>Nyssa sylvatica</i>	1.21	7.80	15.67	2.99	1.00	6.61	7.85	7.42
<i>Prunus serotina</i>	1.56	6.83	20.33	2.13	0.71	4.69	10.18	7.23
<i>Cornus florida</i>	1.18	5.37	15.33	1.71	0.57	3.77	7.68	5.61
<i>Ostrya virginiana</i>	1.28	3.90	16.67	2.04	0.68	4.51	8.35	5.59
<i>Acer rubrum</i>	0.92	5.37	12.00	1.87	0.62	4.13	6.01	5.17
<i>Ulmus alata</i>	0.51	2.93	6.67	1.89	0.63	4.17	3.34	3.48
<i>Quercus stellata</i>	0.38	2.44	5.00	2.30	0.77	5.07	2.50	3.34
<i>Liquidambar styraciflua</i>	0.31	2.93	4.00	2.28	0.76	5.04	2.00	3.32
<i>Fraxinus americana</i>	0.26	2.44	3.33	1.11	0.37	2.44	1.67	2.18
<i>Acer saccharum</i>	0.38	1.46	5.00	1.15	0.38	2.55	2.50	2.17
<i>Quercus rubra</i>	0.26	3.90	3.33	0.17	0.06	0.38	1.67	1.99
<i>Carya cordiformis</i>	0.21	0.98	2.67	1.31	0.44	2.88	1.34	1.73
<i>Juniperus virginiana</i>	0.18	2.44	2.33	0.62	0.21	1.36	1.17	1.66
<i>Sassafras albidum</i>	0.49	1.46	6.33	0.11	0.04	0.24	3.17	1.63
<i>Carpinus caroliniana</i>	0.31	2.44	4.00	0.14	0.05	0.30	2.00	1.58
<i>Cercis canadensis</i>	0.18	2.44	2.33	0.27	0.09	0.60	1.17	1.40
<i>Carya texana</i>	0.15	1.46	2.00	0.78	0.26	1.72	1.00	1.40
<i>Robinia pseudoacacia</i>	0.15	1.95	2.00	0.53	0.18	1.17	1.00	1.37
<i>Fagus grandifolia</i>	0.31	0.49	4.00	0.51	0.17	1.13	2.00	1.21
<i>Morus rubra</i>	0.08	1.46	1.00	0.61	0.20	1.34	0.50	1.10
<i>Magnolia acuminata</i>	0.13	0.98	1.67	0.30	0.10	0.67	0.83	0.83
<i>Tilia americana</i>	0.05	0.98	0.67	0.30	0.10	0.66	0.33	0.66
<i>Pinus echinata</i>	0.05	0.49	0.67	0.50	0.17	1.11	0.33	0.64
<i>Acer negundo</i>	0.08	0.49	1.00	0.41	0.14	0.89	0.50	0.63
<i>Asimina triloba</i>	0.10	0.98	1.33	0.11	0.04	0.24	0.67	0.63
<i>Frangula caroliniana</i>	0.10	0.98	1.33	0.02	0.01	0.04	0.67	0.56
<i>Ulmus americana</i>	0.10	0.49	1.33	0.02	0.01	0.05	0.67	0.40
<i>Quercus velutina</i>	0.03	0.49	0.33	0.24	0.08	0.54	0.17	0.40
<i>Viburnum prunifolium</i>	0.08	0.49	1.00	0.05	0.02	0.11	0.50	0.37

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus michauxii</i>	0.05	0.49	0.67	0.07	0.02	0.15	0.33	0.32
<i>Hamamelis virginiana</i>	0.05	0.49	0.67	0.02	0.01	0.03	0.33	0.29
<i>Sideroxylon lanuginosum</i>	0.03	0.49	0.33	0.08	0.03	0.19	0.17	0.28
<i>Celtis occidentalis</i>	0.03	0.49	0.33	0.01	0.00	0.03	0.17	0.23
<i>Celtis laevigata</i>	0.03	0.49	0.33	0.01	0.00	0.02	0.17	0.22
<i>unknown sp.</i>	0.03	0.49	0.33	0.00	0.00	0.01	0.17	0.22
<i>Aralia spinosa</i>	0.03	0.49	0.33	0.00	0.00	0.01	0.17	0.22
<i>Rhus glabra</i>	0.03	0.49	0.33	0.00	0.00	0.01	0.17	0.22
Totals	15.36	100.00	199.67	45.32	15.11	100.00	100.00	100.00

Table H23: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, oak woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.54	7.45	323.66	13.53	10.49
<i>Nyssa sylvatica</i>	0.49	6.74	279.06	11.67	9.20
<i>Sassafras albidum</i>	0.38	5.32	220.45	9.22	7.27
<i>Carya tomentosa</i>	0.54	7.45	124.88	5.22	6.33
<i>Prunus serotina</i>	0.41	5.67	140.17	5.86	5.77
<i>Quercus rubra</i>	0.38	5.32	142.72	5.97	5.64
<i>Frangula caroliniana</i>	0.31	4.26	96.84	4.05	4.15
<i>Quercus alba</i>	0.33	4.61	63.71	2.66	3.64
<i>Rhus copallinum</i>	0.15	2.13	104.49	4.37	3.25
<i>Quercus velutina</i>	0.26	3.55	66.26	2.77	3.16
<i>Cercis canadensis</i>	0.26	3.55	64.99	2.72	3.13
<i>Vitis rotundifolia</i>	0.10	1.42	105.76	4.42	2.92
<i>Lindera benzoin</i>	0.13	1.77	93.02	3.89	2.83
<i>Ostrya virginiana</i>	0.23	3.19	47.15	1.97	2.58
<i>Fraxinus americana</i>	0.26	3.55	38.23	1.60	2.57
<i>Cornus florida</i>	0.26	3.55	35.68	1.49	2.52
<i>Rhus glabra</i>	0.18	2.48	56.07	2.34	2.41
<i>Ulmus alata</i>	0.21	2.84	26.76	1.12	1.98
<i>Robinia pseudoacacia</i>	0.15	2.13	33.13	1.39	1.76
<i>Hamamelis virginiana</i>	0.08	1.06	54.79	2.29	1.68
<i>Rubus argutus</i>	0.08	1.06	54.79	2.29	1.68
<i>Aesculus pavia</i>	0.10	1.42	19.11	0.80	1.11
<i>Celtis occidentalis</i>	0.13	1.77	6.37	0.27	1.02
<i>Carpinus caroliniana</i>	0.10	1.42	12.74	0.53	0.98
<i>Quercus stellata</i>	0.10	1.42	12.74	0.53	0.98
<i>Aralia spinosa</i>	0.08	1.06	17.84	0.75	0.90
<i>Carya cordiformis</i>	0.08	1.06	15.29	0.64	0.85
<i>Carya texana</i>	0.05	0.71	19.11	0.80	0.75
<i>Magnolia acuminata</i>	0.05	0.71	16.57	0.69	0.70
<i>Liquidambar styraciflua</i>	0.08	1.06	5.10	0.21	0.64
<i>Asimina triloba</i>	0.08	1.06	3.82	0.16	0.61
<i>Aesculus glabra</i>	0.05	0.71	11.47	0.48	0.59
<i>Vitis aestivalis</i>	0.05	0.71	10.19	0.43	0.57

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Diospyros virginiana</i>	0.05	0.71	2.55	0.11	0.41
<i>Quercus nigra</i>	0.03	0.35	10.19	0.43	0.39
<i>Quercus muehlenbergii</i>	0.03	0.35	8.92	0.37	0.36
<i>Ampelopsis cordata</i>	0.03	0.35	6.37	0.27	0.31
<i>Smilax rotundifolia</i>	0.03	0.35	6.37	0.27	0.31
<i>Dirca palustris</i>	0.03	0.35	3.82	0.16	0.26
<i>Quercus michauxii</i>	0.03	0.35	3.82	0.16	0.26
<i>Acer saccharum</i>	0.03	0.35	2.55	0.11	0.23
<i>Callicarpa americana</i>	0.03	0.35	2.55	0.11	0.23
<i>Castanea pumila</i>	0.03	0.35	2.55	0.11	0.23
<i>Hypericum prolificum</i>	0.03	0.35	2.55	0.11	0.23
<i>Juniperus virginiana</i>	0.03	0.35	2.55	0.11	0.23
<i>Rubus</i> sp.	0.03	0.35	2.55	0.11	0.23
<i>Viburnum dentatum</i>	0.03	0.35	2.55	0.11	0.23
<i>Acer negundo</i>	0.03	0.35	1.27	0.05	0.20
<i>Crataegus uniflora</i>	0.03	0.35	1.27	0.05	0.20
<i>Prunus mexicana</i>	0.03	0.35	1.27	0.05	0.20
<i>Quercus marilandica</i>	0.03	0.35	1.27	0.05	0.20
<i>Tilia americana</i>	0.03	0.35	1.27	0.05	0.20
<i>Ulmus americana</i>	0.03	0.35	1.27	0.05	0.20
<i>Viburnum rufidulum</i>	0.03	0.35	1.27	0.05	0.20
Total	7.23	100.00	2391.80	100.00	100.00

Table H24: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, oak woodland/savanna, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	101.00	317.00	10.01	6.70	8.36
<i>Parthenocissus quinquefolia</i>	94.00	239.00	7.55	6.24	6.89
<i>Dichantherium boscii</i>	63.00	164.00	5.18	4.18	4.68
<i>Rubus flagellaris</i>	42.00	87.00	2.75	2.79	2.77
<i>Amphicarpaea bracteata</i>	39.00	80.00	2.53	2.59	2.56
<i>Vitis rotundifolia</i>	33.00	81.00	2.56	2.19	2.37
<i>Acer rubrum</i>	40.00	66.00	2.08	2.65	2.37
<i>Carex</i> sp.	36.00	70.00	2.21	2.39	2.30
<i>Helianthus hirsutus</i>	30.00	71.00	2.24	1.99	2.12
<i>Rubus argutus</i>	23.00	55.00	1.74	1.53	1.63
<i>Smilax glauca</i>	26.00	46.00	1.45	1.73	1.59
<i>Nyssa sylvatica</i>	24.00	47.00	1.48	1.59	1.54
<i>Dichantherium commutatum</i>	24.00	45.00	1.42	1.59	1.51
<i>Desmodium nudiflorum</i>	22.00	48.00	1.52	1.46	1.49
<i>Vitis aestivalis</i>	20.00	44.00	1.39	1.33	1.36
<i>Sassafras albidum</i>	19.00	45.00	1.42	1.26	1.34
<i>Helianthus divaricatus</i>	18.00	44.00	1.39	1.19	1.29
<i>Clitoria mariana</i>	17.00	40.00	1.26	1.13	1.20
<i>Vaccinium pallidum</i>	17.00	38.00	1.20	1.13	1.16
<i>Quercus alba</i>	20.00	29.00	0.92	1.33	1.12
<i>Symphytotrichum anomalum</i>	17.00	30.00	0.95	1.13	1.04
<i>Smilax bona-nox</i>	17.00	28.00	0.88	1.13	1.01
<i>Viola sororia</i>	16.00	28.00	0.88	1.06	0.97
<i>Smilax rotundifolia</i>	15.00	29.00	0.92	1.00	0.96
<i>Desmodium laevigatum</i>	13.00	29.00	0.92	0.86	0.89
<i>Carya tomentosa</i>	12.00	30.00	0.95	0.80	0.87
<i>Ostrya virginiana</i>	11.00	29.00	0.92	0.73	0.82
<i>Stipa</i> sp.	12.00	26.00	0.82	0.80	0.81
<i>Danthonia spicata</i>	13.00	21.00	0.66	0.86	0.76
<i>Prunus serotina</i>	13.00	20.00	0.63	0.86	0.75
<i>Cornus florida</i>	10.00	26.00	0.82	0.66	0.74
<i>Fraxinus americana</i>	11.00	23.00	0.73	0.73	0.73
<i>Dichantherium linearifolium</i>	11.00	22.00	0.69	0.73	0.71
<i>Quercus velutina</i>	11.00	21.00	0.66	0.73	0.70
<i>Solidago ulmifolia</i>	11.00	21.00	0.66	0.73	0.70

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Agrimonia rostellata</i>	10.00	22.00	0.69	0.66	0.68
<i>Quercus rubra</i>	11.00	19.00	0.60	0.73	0.66
<i>Euphorbia corollata</i>	11.00	16.00	0.51	0.73	0.62
<i>Dichanthelium dichotomum</i>	10.00	18.00	0.57	0.66	0.62
<i>Ulmus alata</i>	10.00	18.00	0.57	0.66	0.62
<i>Carya cordiformis</i>	7.00	22.00	0.69	0.46	0.58
<i>Carya texana</i>	9.00	15.00	0.47	0.60	0.54
<i>Quercus stellata</i>	9.00	15.00	0.47	0.60	0.54
<i>Dioscorea villosa</i>	8.00	17.00	0.54	0.53	0.53
<i>Galium arkansanum</i>	7.00	19.00	0.60	0.46	0.53
<i>Schizachyrium scoparium</i>	7.00	19.00	0.60	0.46	0.53
<i>Brachyelytrum erectum</i>	8.00	16.00	0.51	0.53	0.52
<i>Viola palmata</i>	9.00	13.00	0.41	0.60	0.50
<i>Boehmeria cylindrica</i>	8.00	14.00	0.44	0.53	0.49
<i>Berchemia scandens</i>	7.00	16.00	0.51	0.46	0.48
<i>Scutellaria elliptica</i>	9.00	11.00	0.35	0.60	0.47
<i>Sanicula canadensis</i>	7.00	15.00	0.47	0.46	0.47
<i>Solidago petiolaris</i>	8.00	12.00	0.38	0.53	0.45
<i>Galium pilosum</i>	7.00	14.00	0.44	0.46	0.45
<i>Cunila origanoides</i>	6.00	16.00	0.51	0.40	0.45
<i>Galium circaezans</i>	9.00	9.00	0.28	0.60	0.44
<i>Galium concinnum</i>	7.00	13.00	0.41	0.46	0.44
<i>Carex oligocarpa</i>	6.00	15.00	0.47	0.40	0.44
<i>Cercis canadensis</i>	6.00	15.00	0.47	0.40	0.44
<i>Symphyotrichum patens</i>	6.00	15.00	0.47	0.40	0.44
<i>Phegopteris hexagonoptera</i>	5.00	17.00	0.54	0.33	0.43
<i>Desmodium sp. 1</i>	6.00	14.00	0.44	0.40	0.42
<i>Carex communis</i>	7.00	11.00	0.35	0.46	0.41
<i>Bromus pubescens</i>	6.00	13.00	0.41	0.40	0.40
<i>Lespedeza repens</i>	7.00	9.00	0.28	0.46	0.37
<i>Polystichum acrostichoides</i>	5.00	13.00	0.41	0.33	0.37
<i>Scleria oligantha</i>	6.00	10.00	0.32	0.40	0.36
<i>Rhus copallinum</i>	5.00	12.00	0.38	0.33	0.36
<i>Frangula caroliniana</i>	6.00	9.00	0.28	0.40	0.34
<i>Oxalis dillenii</i>	6.00	9.00	0.28	0.40	0.34

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Carex glaucoidea</i>	5.00	11.00	0.35	0.33	0.34
<i>Phryma leptostachya</i>	6.00	8.00	0.25	0.40	0.33
<i>Diarrhena americana</i>	4.00	12.00	0.38	0.27	0.32
<i>Chamaecrista fasciculata</i>	5.00	9.00	0.28	0.33	0.31
<i>Iris cristata</i>	4.00	11.00	0.35	0.27	0.31
<i>Fragaria virginiana</i>	5.00	8.00	0.25	0.33	0.29
<i>Rudbeckia hirta</i>	5.00	8.00	0.25	0.33	0.29
<i>Ageratina altissima</i>	4.00	10.00	0.32	0.27	0.29
<i>Carex blanda</i>	5.00	7.00	0.22	0.33	0.28
<i>Ambrosia artemisiifolia</i>	4.00	9.00	0.28	0.27	0.27
<i>Quercus</i> sp.	4.00	9.00	0.28	0.27	0.27
<i>Potentilla simplex</i>	5.00	6.00	0.19	0.33	0.26
<i>Carex rosea</i>	4.00	8.00	0.25	0.27	0.26
<i>Hamamelis virginiana</i>	4.00	8.00	0.25	0.27	0.26
<i>Lespedeza virginica</i>	4.00	8.00	0.25	0.27	0.26
<i>Solidago caesia</i>	4.00	8.00	0.25	0.27	0.26
unknown forb 2	4.00	8.00	0.25	0.27	0.26
<i>Aralia spinosa</i>	3.00	10.00	0.32	0.20	0.26
<i>Amelanchier arborea</i>	4.00	7.00	0.22	0.27	0.24
<i>Carex cephalophora</i>	4.00	7.00	0.22	0.27	0.24
<i>Rhus glabra</i>	4.00	7.00	0.22	0.27	0.24
<i>Salvia lyrata</i>	4.00	7.00	0.22	0.27	0.24
<i>Chasmanthium latifolium</i>	3.00	9.00	0.28	0.20	0.24
<i>Dichanthelium acuminatum</i>	4.00	6.00	0.19	0.27	0.23
<i>Houstonia purpurea</i>	4.00	6.00	0.19	0.27	0.23
<i>Phlox pilosa</i>	4.00	6.00	0.19	0.27	0.23
<i>Diospyros virginiana</i>	3.00	8.00	0.25	0.20	0.23
<i>Maianthemum racemosum</i>	4.00	5.00	0.16	0.27	0.21
<i>Pinus echinata</i>	4.00	5.00	0.16	0.27	0.21
<i>Sanguinaria canadensis</i>	4.00	5.00	0.16	0.27	0.21
<i>Asimina triloba</i>	3.00	7.00	0.22	0.20	0.21
<i>Asplenium platyneuron</i>	3.00	7.00	0.22	0.20	0.21
<i>Aureolaria flava</i>	3.00	7.00	0.22	0.20	0.21
<i>Erechtites hieraciifolius</i>	4.00	4.00	0.13	0.27	0.20
<i>Euonymus americanus</i>	3.00	6.00	0.19	0.20	0.19
<i>Galium triflorum</i>	3.00	6.00	0.19	0.20	0.19

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Scleria</i> sp.	3.00	6.00	0.19	0.20	0.19
<i>Smilax hispida</i>	3.00	6.00	0.19	0.20	0.19
<i>Viola pedata</i>	3.00	6.00	0.19	0.20	0.19
<i>Angelica venenosa</i>	3.00	5.00	0.16	0.20	0.18
<i>Lonicera japonica</i>	2.00	7.00	0.22	0.13	0.18
<i>Aristolochia serpentaria</i>	3.00	4.00	0.13	0.20	0.16
<i>Lactuca floridana</i>	3.00	4.00	0.13	0.20	0.16
<i>Muhlenbergia</i> sp.	3.00	4.00	0.13	0.20	0.16
<i>Muhlenbergia</i> sp.	3.00	4.00	0.13	0.20	0.16
<i>Physalis virginiana</i>	3.00	4.00	0.13	0.20	0.16
<i>Tridens flavus</i>	3.00	4.00	0.13	0.20	0.16
<i>Viola tricolor</i>	3.00	4.00	0.13	0.20	0.16
<i>Carya</i> sp.	2.00	6.00	0.19	0.13	0.16
<i>Rhus aromatica</i>	3.00	3.00	0.09	0.20	0.15
<i>Coreopsis tripteris</i>	2.00	5.00	0.16	0.13	0.15
<i>Desmodium</i> sp. 2	2.00	5.00	0.16	0.13	0.15
<i>Geum</i> sp.	2.00	5.00	0.16	0.13	0.15
<i>Lespedeza violacea</i>	2.00	5.00	0.16	0.13	0.15
<i>Solidago rigida</i>	2.00	5.00	0.16	0.13	0.15
unknown graminoid 1	2.00	5.00	0.16	0.13	0.15
<i>Morus rubra</i>	2.00	4.00	0.13	0.13	0.13
<i>Packera obovata</i>	2.00	4.00	0.13	0.13	0.13
<i>Passiflora lutea</i>	2.00	4.00	0.13	0.13	0.13
<i>Pycnanthemum tenuifolium</i>	2.00	4.00	0.13	0.13	0.13
<i>Solidago hispida</i>	2.00	4.00	0.13	0.13	0.13
<i>Solidago nemoralis</i>	2.00	4.00	0.13	0.13	0.13
unknown forb 6	2.00	4.00	0.13	0.13	0.13
<i>Vaccinium arboreum</i>	2.00	4.00	0.13	0.13	0.13
<i>Vernonia baldwinii</i>	2.00	4.00	0.13	0.13	0.13
<i>Viburnum prunifolium</i>	2.00	4.00	0.13	0.13	0.13
<i>Viburnum rufidulum</i>	2.00	4.00	0.13	0.13	0.13
<i>Carex</i> sp. 2	2.00	3.00	0.09	0.13	0.11
<i>Chaerophyllum procumbens</i>	2.00	3.00	0.09	0.13	0.11
<i>Crotalaria sagittalis</i>	2.00	3.00	0.09	0.13	0.11
<i>Geranium maculatum</i>	2.00	3.00	0.09	0.13	0.11
<i>Gillenia stipulata</i>	2.00	3.00	0.09	0.13	0.11
<i>Leersia virginica</i>	2.00	3.00	0.09	0.13	0.11

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Lespedeza procumbens</i>	2.00	3.00	0.09	0.13	0.11
<i>Lespedeza</i> sp.	2.00	3.00	0.09	0.13	0.11
<i>Monarda bradburiana</i>	2.00	3.00	0.09	0.13	0.11
<i>Panicum verrucosum</i>	2.00	3.00	0.09	0.13	0.11
<i>Robinia pseudoacacia</i>	2.00	3.00	0.09	0.13	0.11
<i>Rosa setigera</i>	2.00	3.00	0.09	0.13	0.11
unknown forb 3	2.00	3.00	0.09	0.13	0.11
<i>Chasmanthium sessiliflorum</i>	2.00	2.00	0.06	0.13	0.10
<i>Desmodium perplexum</i>	2.00	2.00	0.06	0.13	0.10
<i>Geum canadense</i>	2.00	2.00	0.06	0.13	0.10
<i>Juniperus virginiana</i>	2.00	2.00	0.06	0.13	0.10
<i>Liquidambar styraciflua</i>	2.00	2.00	0.06	0.13	0.10
<i>Lonicera dioica</i>	2.00	2.00	0.06	0.13	0.10
<i>Microstegium vimineum</i>	2.00	2.00	0.06	0.13	0.10
<i>Prenanthes altissima</i>	2.00	2.00	0.06	0.13	0.10
<i>Rosa carolina</i>	2.00	2.00	0.06	0.13	0.10
<i>Scutellaria ovata</i>	2.00	2.00	0.06	0.13	0.10
<i>Symphotrichum ericoides</i>	2.00	2.00	0.06	0.13	0.10
unknown graminoid 2	2.00	2.00	0.06	0.13	0.10
<i>Desmodium viridiflorum</i>	1.00	4.00	0.13	0.07	0.10
<i>Laportea canadensis</i>	1.00	4.00	0.13	0.07	0.10
unknown woody	1.00	4.00	0.13	0.07	0.10
<i>Chasmanthium laxum</i>	1.00	3.00	0.09	0.07	0.08
<i>Fagus grandifolia</i>	1.00	3.00	0.09	0.07	0.08
<i>Lindera benzoin</i>	1.00	3.00	0.09	0.07	0.08
<i>Menispermum canadense</i>	1.00	3.00	0.09	0.07	0.08
<i>Morus</i> sp.	1.00	3.00	0.09	0.07	0.08
<i>Phemeranthus parviflorus</i>	1.00	3.00	0.09	0.07	0.08
<i>Rubus trivialis</i>	1.00	3.00	0.09	0.07	0.08
<i>Sideroxylon lanuginosum</i>	1.00	3.00	0.09	0.07	0.08
<i>Tephrosia virginiana</i>	1.00	3.00	0.09	0.07	0.08
unknown herb 3	1.00	3.00	0.09	0.07	0.08
unknown herb 4	1.00	3.00	0.09	0.07	0.08
<i>Carex planispicata</i>	1.00	2.00	0.06	0.07	0.06

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Ceanothus americanus</i>	1.00	2.00	0.06	0.07	0.06
<i>Commelina</i> sp.	1.00	2.00	0.06	0.07	0.06
<i>Cynoglossum virginianum</i>	1.00	2.00	0.06	0.07	0.06
<i>Desmodium rotundifolium</i>	1.00	2.00	0.06	0.07	0.06
<i>Dichantheium</i> sp.	1.00	2.00	0.06	0.07	0.06
<i>Dichantheium laxiflorum</i>	1.00	2.00	0.06	0.07	0.06
<i>Dichantheium malacophyllum</i>	1.00	2.00	0.06	0.07	0.06
<i>Dichantheium</i> sp. 1	1.00	2.00	0.06	0.07	0.06
<i>Elephantopus tomentosus</i>	1.00	2.00	0.06	0.07	0.06
<i>Elymus hystrix</i>	1.00	2.00	0.06	0.07	0.06
<i>Elymus virginicus</i>	1.00	2.00	0.06	0.07	0.06
<i>Eriocaulon koernickianum</i>	1.00	2.00	0.06	0.07	0.06
<i>Euphorbia nutans</i>	1.00	2.00	0.06	0.07	0.06
<i>Eutrochium purpureum</i>	1.00	2.00	0.06	0.07	0.06
<i>Festuca subverticillata</i>	1.00	2.00	0.06	0.07	0.06
<i>Galium virgatum</i>	1.00	2.00	0.06	0.07	0.06
<i>Galactia volubilis</i>	1.00	2.00	0.06	0.07	0.06
<i>Krigia biflora</i>	1.00	2.00	0.06	0.07	0.06
<i>Monarda bradburiana</i>	2.00	3.00	0.09	0.13	0.11
<i>Leersia</i> sp.	1.00	2.00	0.06	0.07	0.06
<i>Lespedeza frutescens</i>	1.00	2.00	0.06	0.07	0.06
<i>Lespedeza hirta</i>	1.00	2.00	0.06	0.07	0.06
<i>Parthenium integrifolium</i>	1.00	2.00	0.06	0.07	0.06
<i>Physalis</i> sp.	1.00	2.00	0.06	0.07	0.06
<i>Polygala verticillata</i>	1.00	2.00	0.06	0.07	0.06
<i>Quercus muehlenbergii</i>	1.00	2.00	0.06	0.07	0.06
<i>Silphium asteriscus</i>	1.00	2.00	0.06	0.07	0.06
<i>Silene stellata</i>	1.00	2.00	0.06	0.07	0.06
<i>Solidago odora</i>	1.00	2.00	0.06	0.07	0.06
<i>Solidago radula</i>	1.00	2.00	0.06	0.07	0.06
<i>Solidago</i> sp.	1.00	2.00	0.06	0.07	0.06
unknown herb 1	1.00	2.00	0.06	0.07	0.06
<i>Uvularia</i> sp.	1.00	2.00	0.06	0.07	0.06
<i>Ampelopsis arborea</i>	1.00	1.00	0.03	0.07	0.05
<i>Antennaria</i> sp.	1.00	1.00	0.03	0.07	0.05
<i>Asclepias</i> sp.	1.00	1.00	0.03	0.07	0.05

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
unknown herb 2	1.00	1.00	0.03	0.07	0.05
<i>Carex</i> sp. 1	1.00	1.00	0.03	0.07	0.05
<i>Celtis occidentalis</i>	1.00	1.00	0.03	0.07	0.05
<i>Conyza canadensis</i>	1.00	1.00	0.03	0.07	0.05
<i>Desmodium paniculatum</i>	1.00	1.00	0.03	0.07	0.05
<i>Elymus glabriflorus</i>	1.00	1.00	0.03	0.07	0.05
<i>Erigeron strigosus</i>	1.00	1.00	0.03	0.07	0.05
unknown fern	1.00	1.00	0.03	0.07	0.05
<i>Galium obtusum</i>	1.00	1.00	0.03	0.07	0.05
<i>Helianthus angustifolius</i>	1.00	1.00	0.03	0.07	0.05
<i>Hieracium longipilum</i>	1.00	1.00	0.03	0.07	0.05
<i>Hydrophyllum appendiculatum</i>	1.00	1.00	0.03	0.07	0.05
<i>Hypericum gentianoides</i>	1.00	1.00	0.03	0.07	0.05
<i>Hypericum hypericoides</i>	1.00	1.00	0.03	0.07	0.05
<i>Krigia virginica</i>	1.00	1.00	0.03	0.07	0.05
<i>Lactuca canadensis</i>	1.00	1.00	0.03	0.07	0.05
<i>Liatris squarrulosa</i>	1.00	1.00	0.03	0.07	0.05
<i>Ludwigia</i> sp.	1.00	1.00	0.03	0.07	0.05
<i>Phlox divaricata</i>	1.00	1.00	0.03	0.07	0.05
<i>Phytolacca americana</i>	1.00	1.00	0.03	0.07	0.05
<i>Ruellia pedunculata</i>	1.00	1.00	0.03	0.07	0.05
<i>Smilax herbacea</i>	1.00	1.00	0.03	0.07	0.05
<i>Symphotrichum cordifolium</i>	1.00	1.00	0.03	0.07	0.05
<i>Thalictrum thalictroides</i>	1.00	1.00	0.03	0.07	0.05
<i>Tradescantia ohiensis</i>	1.00	1.00	0.03	0.07	0.05
<i>Trillium viridescens</i>	1.00	1.00	0.03	0.07	0.05
unknown forb 4	1.00	1.00	0.03	0.07	0.05
unknown herb 6	1.00	1.00	0.03	0.07	0.05
<i>Verbesina helianthoides</i>	1.00	1.00	0.03	0.07	0.05
<i>Vitis</i> sp.	1.00	1.00	0.03	0.07	0.05
Totals	1507.00	3167.00	100.00	100.00	100.00

Table H25: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *oak forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	3.73	23.49	48.48	170.68	46.22	43.72	44.75	37.32
<i>Quercus rubra</i>	0.79	11.45	10.29	47.49	12.86	12.16	9.50	11.04
<i>Liquidambar styraciflua</i>	0.94	9.64	12.19	42.25	11.44	10.82	11.25	10.57
<i>Nyssa sylvatica</i>	0.44	9.04	5.69	22.77	6.17	5.83	5.25	6.71
<i>Carya tomentosa</i>	0.42	7.23	5.42	15.85	4.29	4.06	5.00	5.43
<i>Quercus velutina</i>	0.42	4.82	5.42	21.16	5.73	5.42	5.00	5.08
snag	0.25	6.63	3.25	11.62	3.15	2.98	3.00	4.20
<i>Pinus echinata</i>	0.17	4.22	2.17	9.49	2.57	2.43	2.00	2.88
<i>Quercus stellata</i>	0.19	1.81	2.44	6.09	1.65	1.56	2.25	1.87
<i>Quercus falcata</i>	0.10	1.81	1.35	9.47	2.57	2.43	1.25	1.83
<i>Acer saccharinum</i>	0.10	3.01	1.35	3.09	0.84	0.79	1.25	1.68
<i>Fraxinus americana</i>	0.08	2.41	1.08	3.01	0.82	0.77	1.00	1.39
<i>Acer rubrum</i>	0.08	1.81	1.08	2.73	0.74	0.70	1.00	1.17
<i>Carya texana</i>	0.10	1.20	1.35	3.70	1.00	0.95	1.25	1.13
<i>Juniperus virginiana</i>	0.10	1.20	1.35	3.09	0.84	0.79	1.25	1.08
<i>Platanus occidentalis</i>	0.06	1.20	0.81	3.69	1.00	0.95	0.75	0.97
<i>Carya ovata</i>	0.04	1.20	0.54	2.34	0.63	0.60	0.50	0.77
<i>Tilia americana</i>	0.04	1.20	0.54	1.50	0.41	0.38	0.50	0.70
<i>Prunus serotina</i>	0.04	1.20	0.54	1.20	0.32	0.31	0.50	0.67
<i>Juglans nigra</i>	0.04	1.20	0.54	0.89	0.24	0.23	0.50	0.64
<i>Carya glabra</i>	0.02	0.60	0.27	2.89	0.78	0.74	0.25	0.53
<i>Carya cordiformis</i>	0.04	0.60	0.54	1.22	0.33	0.31	0.50	0.47
<i>Magnolia acuminata</i>	0.04	0.60	0.54	1.07	0.29	0.27	0.50	0.46
<i>Celtis occidentalis</i>	0.02	0.60	0.27	1.67	0.45	0.43	0.25	0.43
<i>Quercus michauxii</i>	0.02	0.60	0.27	0.59	0.16	0.15	0.25	0.33
<i>Ulmus americana</i>	0.02	0.60	0.27	0.45	0.12	0.11	0.25	0.32
<i>Fagus grandifolia</i>	0.02	0.60	0.27	0.43	0.12	0.11	0.25	0.32
Totals	8.33	100.00	108.33	390.42	105.74	100.00	100.00	100.00

Table H26: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *oak forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Nyssa sylvatica</i>	2.56	8.79	33.31	7.85	2.13	11.07	11.19	10.35
snag	2.08	9.70	27.08	8.03	2.18	11.32	9.10	10.04
<i>Cornus florida</i>	2.77	9.70	36.02	4.45	1.21	6.28	12.10	9.36
<i>Ostrya virginiana</i>	3.04	6.36	39.54	4.32	1.17	6.08	13.28	8.58
<i>Quercus alba</i>	0.81	6.36	10.56	7.94	2.15	11.19	3.55	7.04
<i>Carya tomentosa</i>	1.00	6.06	13.00	6.35	1.72	8.95	4.37	6.46
<i>Acer rubrum</i>	1.48	7.27	19.23	3.86	1.05	5.44	6.46	6.39
<i>Carpinus caroliniana</i>	2.50	4.55	32.50	2.53	0.68	3.56	10.92	6.34
<i>Acer saccharum</i>	0.92	3.64	11.92	3.91	1.06	5.51	4.00	4.38
<i>Liquidambar styraciflua</i>	0.52	3.94	6.77	4.07	1.10	5.74	2.27	3.98
<i>Juniperus virginiana</i>	0.52	2.73	6.77	4.28	1.16	6.04	2.27	3.68
<i>Ulmus alata</i>	0.81	3.03	10.56	1.91	0.52	2.69	3.55	3.09
<i>Prunus serotina</i>	0.69	3.03	8.94	1.62	0.44	2.28	3.00	2.77
<i>Carya texana</i>	0.29	1.52	3.79	1.77	0.48	2.50	1.27	1.76
<i>Tilia americana</i>	0.29	2.12	3.79	0.62	0.17	0.88	1.27	1.42
<i>Ulmus americana</i>	0.40	1.82	5.15	0.35	0.09	0.49	1.73	1.35
<i>Fraxinus americana</i>	0.19	1.82	2.44	0.69	0.19	0.97	0.82	1.20
<i>Amelanchier arborea</i>	0.19	1.52	2.44	0.37	0.10	0.53	0.82	0.95
<i>Magnolia acuminata</i>	0.10	0.61	1.35	1.06	0.29	1.50	0.45	0.85
<i>Hamamelis virginiana</i>	0.27	1.21	3.52	0.08	0.02	0.12	1.18	0.84
<i>Quercus stellata</i>	0.08	1.21	1.08	0.59	0.16	0.83	0.36	0.80
<i>Quercus muehlenbergii</i>	0.13	1.52	1.63	0.12	0.03	0.16	0.55	0.74
<i>Carya ovata</i>	0.06	0.91	0.81	0.64	0.17	0.90	0.27	0.69
<i>Fagus grandifolia</i>	0.15	0.61	1.90	0.51	0.14	0.71	0.64	0.65
<i>Carya cordiformis</i>	0.15	0.91	1.90	0.22	0.06	0.31	0.64	0.62
<i>Quercus rubra</i>	0.10	0.61	1.35	0.44	0.12	0.62	0.45	0.56
<i>Platanus occidentalis</i>	0.04	0.61	0.54	0.30	0.08	0.43	0.18	0.40
<i>Aesculus glabra</i>	0.08	0.61	1.08	0.13	0.04	0.19	0.36	0.39
<i>Carya</i> sp.	0.06	0.30	0.81	0.36	0.10	0.51	0.27	0.36
<i>Carya glabra</i>	0.06	0.61	0.81	0.07	0.02	0.10	0.27	0.33
<i>Viburnum rufidulum</i>	0.04	0.61	0.54	0.07	0.02	0.09	0.18	0.29

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Morus rubra</i>	0.04	0.61	0.54	0.02	0.01	0.03	0.18	0.27
<i>Cercis canadensis</i>	0.04	0.61	0.54	0.01	0.00	0.01	0.18	0.27
<i>Quercus marilandica</i>	0.02	0.30	0.27	0.28	0.08	0.40	0.09	0.26
<i>Quercus michauxii</i>	0.06	0.30	0.81	0.14	0.04	0.19	0.27	0.26
<i>Celtis occidentalis</i>	0.02	0.30	0.27	0.26	0.07	0.36	0.09	0.25
<i>Diospyros virginiana</i>	0.02	0.30	0.27	0.26	0.07	0.36	0.09	0.25
<i>Magnolia tripetala</i>	0.08	0.30	1.08	0.03	0.01	0.05	0.36	0.24
<i>Quercus falcata</i>	0.02	0.30	0.27	0.20	0.06	0.29	0.09	0.23
<i>Fraxinus pennsylvanica</i>	0.02	0.30	0.27	0.11	0.03	0.15	0.09	0.18
<i>Quercus velutina</i>	0.02	0.30	0.27	0.05	0.01	0.08	0.09	0.16
<i>Juglans nigra</i>	0.02	0.30	0.27	0.02	0.00	0.03	0.09	0.14
<i>Prunus mexicana</i>	0.02	0.30	0.27	0.01	0.00	0.02	0.09	0.14
<i>Asimina triloba</i>	0.02	0.30	0.27	0.01	0.00	0.01	0.09	0.13
<i>Viburnum prunifolium</i>	0.02	0.30	0.27	0.01	0.00	0.01	0.09	0.13
<i>Frangula caroliniana</i>	0.02	0.30	0.27	0.00	0.00	0.00	0.09	0.13
<i>Sassafras albidum</i>	0.02	0.30	0.27	0.00	0.00	0.00	0.09	0.13
<i>Staphylea trifolia</i>	0.02	0.30	0.27	0.00	0.00	0.00	0.09	0.13
Totals	22.90	100.00	297.65	70.94	19.21	100.00	100.00	100.00

Table H27: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, oak forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-12.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.54	8.97	433.81	26.30	17.63
<i>Nyssa sylvatica</i>	0.52	8.62	159.44	9.67	9.14
<i>Sassafras albidum</i>	0.31	5.17	145.98	8.85	7.01
<i>Prunus serotina</i>	0.38	6.21	88.00	5.34	5.77
<i>Carya tomentosa</i>	0.42	6.90	63.16	3.83	5.36
<i>Quercus rubra</i>	0.27	4.48	89.04	5.40	4.94
<i>Ostrya virginiana</i>	0.27	4.48	81.79	4.96	4.72
<i>Carpinus caroliniana</i>	0.19	3.10	96.29	5.84	4.47
<i>Fraxinus americana</i>	0.31	5.17	44.52	2.70	3.94
<i>Cornus florida</i>	0.33	5.52	32.10	1.95	3.73
<i>Frangula caroliniana</i>	0.27	4.48	48.66	2.95	3.72
<i>Acer saccharum</i>	0.10	1.72	46.59	2.82	2.27
<i>Ulmus alata</i>	0.15	2.41	34.17	2.07	2.24
<i>Hamamelis virginiana</i>	0.13	2.07	37.27	2.26	2.16
<i>Quercus velutina</i>	0.15	2.41	22.78	1.38	1.90
<i>Rhus copallinum</i>	0.13	2.07	27.95	1.69	1.88
<i>Cercis canadensis</i>	0.15	2.41	15.53	0.94	1.68
<i>Vitis rotundifolia</i>	0.06	1.03	21.74	1.32	1.18
<i>Quercus alba</i>	0.10	1.72	7.25	0.44	1.08
<i>Aesculus pavia</i>	0.08	1.38	12.42	0.75	1.07
<i>Lindera benzoin</i>	0.06	1.03	16.57	1.00	1.02
<i>Carya cordiformis</i>	0.08	1.38	10.35	0.63	1.00
<i>Dirca palustris</i>	0.08	1.38	5.18	0.31	0.85
<i>Amelanchier arborea</i>	0.06	1.03	9.32	0.56	0.80
<i>Tilia americana</i>	0.06	1.03	6.21	0.38	0.71
<i>Celtis occidentalis</i>	0.06	1.03	5.18	0.31	0.67
<i>Fagus grandifolia</i>	0.06	1.03	5.18	0.31	0.67
<i>Asimina triloba</i>	0.04	0.69	8.28	0.50	0.60
<i>Robinia pseudoacacia</i>	0.06	1.03	2.07	0.13	0.58
<i>Carya glabra</i>	0.04	0.69	5.18	0.31	0.50
<i>Vaccinium arboreum</i>	0.04	0.69	5.18	0.31	0.50
<i>Styrax grandifolius</i>	0.04	0.69	3.11	0.19	0.44
<i>Ulmus americana</i>	0.04	0.69	3.11	0.19	0.44
<i>Liquidambar styraciflua</i>	0.02	0.34	8.28	0.50	0.42

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Magnolia acuminata</i>	0.04	0.69	2.07	0.13	0.41
<i>Cornus alternifolia</i>	0.02	0.34	7.25	0.44	0.39
<i>Quercus muehlenbergii</i>	0.02	0.34	7.25	0.44	0.39
<i>Aralia spinosa</i>	0.02	0.34	6.21	0.38	0.36
<i>Ulmus rubra</i>	0.02	0.34	4.14	0.25	0.30
<i>Carya ovata</i>	0.02	0.34	3.11	0.19	0.27
<i>Rhus glabra</i>	0.02	0.34	3.11	0.19	0.27
<i>Carya texana</i>	0.02	0.34	2.07	0.13	0.24
<i>Magnolia tripetala</i>	0.02	0.34	2.07	0.13	0.24
<i>Aesculus glabra</i>	0.02	0.34	1.04	0.06	0.20
<i>Callicarpa americana</i>	0.02	0.34	1.04	0.06	0.20
<i>Diospyros virginiana</i>	0.02	0.34	1.04	0.06	0.20
<i>Ilex decidua</i>	0.02	0.34	1.04	0.06	0.20
<i>Juniperus virginiana</i>	0.02	0.34	1.04	0.06	0.20
<i>Prunus americana</i>	0.02	0.34	1.04	0.06	0.20
<i>Rhus aromatica</i>	0.02	0.34	1.04	0.06	0.20
<i>Rubus</i> sp.	0.02	0.34	1.04	0.06	0.20
<i>Smilax rotundifolia</i>	0.02	0.34	1.04	0.06	0.20
<i>Viburnum dentatum</i>	0.02	0.34	1.04	0.06	0.20
Total	6.04	100.00	1649.30	100.00	100.00

Table H28: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, oak forest, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2011-2012.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	112.00	287.00	9.65	7.03	8.34
<i>Parthenocissus quinquefolia</i>	82.00	184.00	6.19	5.14	5.67
<i>Acer rubrum</i>	67.00	127.00	4.27	4.20	4.24
<i>Dichanthelium boscii</i>	52.00	101.00	3.40	3.26	3.33
<i>Vitis rotundifolia</i>	45.00	104.00	3.50	2.82	3.16
<i>Carex</i> sp.	46.00	78.00	2.62	2.89	2.75
<i>Quercus alba</i>	43.00	76.00	2.56	2.70	2.63
<i>Fraxinus americana</i>	32.00	72.00	2.42	2.01	2.21
<i>Nyssa sylvatica</i>	35.00	66.00	2.22	2.20	2.21
<i>Desmodium nudiflorum</i>	29.00	76.00	2.56	1.82	2.19
<i>Brachyelytrum erectum</i>	29.00	62.00	2.09	1.82	1.95
<i>Smilax glauca</i>	33.00	53.00	1.78	2.07	1.93
<i>Sanicula canadensis</i>	31.00	41.00	1.38	1.94	1.66
<i>Viola sororia</i>	28.00	44.00	1.48	1.76	1.62
<i>Quercus rubra</i>	26.00	46.00	1.55	1.63	1.59
<i>Amphicarpaea bracteata</i>	25.00	47.00	1.58	1.57	1.57
<i>Cornus florida</i>	22.00	52.00	1.75	1.38	1.56
<i>Euonymus americanus</i>	26.00	41.00	1.38	1.63	1.51
<i>Quercus velutina</i>	21.00	41.00	1.38	1.32	1.35
<i>Sassafras albidum</i>	22.00	38.00	1.28	1.38	1.33
<i>Rubus flagellaris</i>	21.00	39.00	1.31	1.32	1.31
<i>Vaccinium pallidum</i>	21.00	38.00	1.28	1.32	1.30
<i>Smilax bona-nox</i>	21.00	30.00	1.01	1.32	1.16
<i>Smilax rotundifolia</i>	19.00	33.00	1.11	1.19	1.15
<i>Carex blanda</i>	20.00	30.00	1.01	1.25	1.13
<i>Agrimonia rostellata</i>	18.00	29.00	0.98	1.13	1.05
<i>Prunus serotina</i>	16.00	30.00	1.01	1.00	1.01
<i>Diarrhena americana</i>	14.00	32.00	1.08	0.88	0.98
<i>Dioscorea villosa</i>	16.00	27.00	0.91	1.00	0.96
<i>Vitis aestivalis</i>	14.00	28.00	0.94	0.88	0.91
<i>Ostrya virginiana</i>	13.00	28.00	0.94	0.82	0.88
<i>Carya tomentosa</i>	15.00	22.00	0.74	0.94	0.84
<i>Dichanthelium commutatum</i>	15.00	19.00	0.64	0.94	0.79
<i>Galium circaeazans</i>	15.00	18.00	0.61	0.94	0.77
<i>Carex glaucoidea</i>	11.00	25.00	0.84	0.69	0.77
<i>Carya</i> sp.	9.00	23.00	0.77	0.56	0.67
<i>Iris cristata</i>	10.00	20.00	0.67	0.63	0.65
<i>Clitoria mariana</i>	9.00	20.00	0.67	0.56	0.62
<i>Galium concinnum</i>	10.00	16.00	0.54	0.63	0.58
<i>Packera obovata</i>	11.00	14.00	0.47	0.69	0.58

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Rubus argutus</i>	9.00	17.00	0.57	0.56	0.57
<i>Polystichum acrostichoides</i>	7.00	19.00	0.64	0.44	0.54
<i>Carya cordiformis</i>	9.00	15.00	0.50	0.56	0.53
<i>Phegopteris hexagonoptera</i>	5.00	20.00	0.67	0.31	0.49
<i>Pinus echinata</i>	8.00	14.00	0.47	0.50	0.49
<i>Dichanthelium dichotomum</i>	10.00	10.00	0.34	0.63	0.48
<i>Solidago caesia</i>	7.00	15.00	0.50	0.44	0.47
<i>Frangula caroliniana</i>	7.00	14.00	0.47	0.44	0.46
<i>Cercis canadensis</i>	7.00	13.00	0.44	0.44	0.44
<i>Ulmus alata</i>	7.00	13.00	0.44	0.44	0.44
<i>Danthonia spicata</i>	7.00	12.00	0.40	0.44	0.42
<i>Houstonia purpurea</i>	7.00	12.00	0.40	0.44	0.42
<i>Amelanchier arborea</i>	7.00	11.00	0.37	0.44	0.40
<i>Potentilla simplex</i>	7.00	11.00	0.37	0.44	0.40
<i>Celtis occidentalis</i>	6.00	11.00	0.37	0.38	0.37
<i>Carya texana</i>	6.00	10.00	0.34	0.38	0.36
<i>Sanguinaria canadensis</i>	7.00	8.00	0.27	0.44	0.35
<i>Solidago ulmifolia</i>	6.00	9.00	0.30	0.38	0.34
<i>Geum canadense</i>	7.00	7.00	0.24	0.44	0.34
<i>Scutellaria elliptica</i>	7.00	7.00	0.24	0.44	0.34
<i>Bignonia capreolata</i>	4.00	12.00	0.40	0.25	0.33
<i>Uvularia sessilifolia</i>	5.00	10.00	0.34	0.31	0.33
<i>Helianthus divaricatus</i>	5.00	9.00	0.30	0.31	0.31
<i>Liquidambar styraciflua</i>	5.00	9.00	0.30	0.31	0.31
<i>Oxalis dillenii</i>	6.00	7.00	0.24	0.38	0.31
<i>Salvia lyrata</i>	6.00	7.00	0.24	0.38	0.31
<i>Smilax hispida</i>	4.00	10.00	0.34	0.25	0.29
<i>Helianthus hirsutus</i>	5.00	8.00	0.27	0.31	0.29
<i>Lespedeza frutescens</i>	6.00	6.00	0.20	0.38	0.29
<i>Thalictrum thalictroides</i>	6.00	6.00	0.20	0.38	0.29
<i>Elymus hystrix</i>	4.00	9.00	0.30	0.25	0.28
<i>Carex caroliniana</i>	5.00	7.00	0.24	0.31	0.27
<i>Fragaria virginiana</i>	5.00	7.00	0.24	0.31	0.27
<i>Galium pilosum</i>	5.00	7.00	0.24	0.31	0.27
<i>Aristolochia serpentaria</i>	5.00	6.00	0.20	0.31	0.26
<i>Dirca palustris</i>	3.00	9.00	0.30	0.19	0.25
<i>Berchemia scandens</i>	4.00	7.00	0.24	0.25	0.24
<i>Carex jamesii</i>	4.00	7.00	0.24	0.25	0.24
<i>Enemion biternatum</i>	5.00	5.00	0.17	0.31	0.24
<i>Carex oligocarpa</i>	4.00	6.00	0.20	0.25	0.23
<i>Desmodium perplexum</i>	4.00	6.00	0.20	0.25	0.23

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Scleria oligantha</i>	4.00	6.00	0.20	0.25	0.23
<i>Hamamelis vernalis</i>	2.00	9.00	0.30	0.13	0.21
<i>Carex rosea</i>	3.00	7.00	0.24	0.19	0.21
<i>Lonicera japonica</i>	3.00	7.00	0.24	0.19	0.21
<i>Rhus copallinum</i>	3.00	7.00	0.24	0.19	0.21
<i>Asarum canadense</i>	4.00	5.00	0.17	0.25	0.21
<i>Botrychium virginianum</i>	4.00	5.00	0.17	0.25	0.21
<i>Passiflora lutea</i>	4.00	5.00	0.17	0.25	0.21
<i>Cynoglossum virginianum</i>	3.00	6.00	0.20	0.19	0.20
<i>Krigia virginica</i>	3.00	6.00	0.20	0.19	0.20
<i>Lactuca floridana</i>	3.00	6.00	0.20	0.19	0.20
<i>Ruellia pedunculata</i>	4.00	4.00	0.13	0.25	0.19
<i>Viola palmata</i>	4.00	4.00	0.13	0.25	0.19
<i>Diospyros virginiana</i>	2.00	7.00	0.24	0.13	0.18
<i>Elymus virginicus</i>	2.00	7.00	0.24	0.13	0.18
<i>Dichanthelium linearifolium</i>	3.00	5.00	0.17	0.19	0.18
<i>Galium triflorum</i>	3.00	5.00	0.17	0.19	0.18
<i>Adiantum pedatum</i>	2.00	6.00	0.20	0.13	0.16
<i>Ageratina altissima</i>	2.00	6.00	0.20	0.13	0.16
<i>Bromus pubescens</i>	2.00	6.00	0.20	0.13	0.16
<i>Chasmanthium latifolium</i>	2.00	6.00	0.20	0.13	0.16
<i>Vitis cinerea</i>	2.00	6.00	0.20	0.13	0.16
<i>Acer saccharum</i>	3.00	4.00	0.13	0.19	0.16
<i>Desmodium laevigatum</i>	3.00	4.00	0.13	0.19	0.16
<i>Euphorbia corollata</i>	3.00	4.00	0.13	0.19	0.16
<i>Quercus stellata</i>	3.00	4.00	0.13	0.19	0.16
<i>Symphotrichum anomalum</i>	3.00	4.00	0.13	0.19	0.16
<i>Ulmus americana</i>	3.00	4.00	0.13	0.19	0.16
<i>Carex</i> sp. 6	2.00	5.00	0.17	0.13	0.15
<i>Magnolia tripetala</i>	2.00	5.00	0.17	0.13	0.15
<i>Monarda bradburiana</i>	2.00	5.00	0.17	0.13	0.15
<i>Erechtites hieraciifolius</i>	3.00	3.00	0.10	0.19	0.14
<i>Lactuca canadensis</i>	3.00	3.00	0.10	0.19	0.14
<i>Lespedeza cuneata</i>	3.00	3.00	0.10	0.19	0.14
<i>Styrax grandifolius</i>	3.00	3.00	0.10	0.19	0.14
<i>Desmodium</i> sp. 1	2.00	4.00	0.13	0.13	0.13
<i>Fraxinus pennsylvanica</i>	2.00	4.00	0.13	0.13	0.13
<i>Lonicera</i> sp.	2.00	4.00	0.13	0.13	0.13
<i>Quercus muehlenbergii</i>	2.00	4.00	0.13	0.13	0.13
<i>Rhus glabra</i>	2.00	4.00	0.13	0.13	0.13
<i>Smilax herbacea</i>	2.00	4.00	0.13	0.13	0.13

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Stipa</i> sp.	2.00	4.00	0.13	0.13	0.13
unknown herb 2	2.00	4.00	0.13	0.13	0.13
<i>Chasmanthium laxum</i>	1.00	5.00	0.17	0.06	0.12
<i>Aesculus glabra</i>	2.00	3.00	0.10	0.13	0.11
<i>Boehmeria cylindrica</i>	2.00	3.00	0.10	0.13	0.11
<i>Hamamelis virginiana</i>	2.00	3.00	0.10	0.13	0.11
<i>Heliopsis helianthoides</i>	2.00	3.00	0.10	0.13	0.11
<i>Lespedeza procumbens</i>	2.00	3.00	0.10	0.13	0.11
<i>Lindera benzoin</i>	2.00	3.00	0.10	0.13	0.11
<i>Lonicera sempervirens</i>	2.00	3.00	0.10	0.13	0.11
<i>Mitchella repens</i>	2.00	3.00	0.10	0.13	0.11
<i>Pedicularis canadensis</i>	2.00	3.00	0.10	0.13	0.11
<i>Polygala verticillata</i>	2.00	3.00	0.10	0.13	0.11
<i>Prenanthes altissima</i>	2.00	3.00	0.10	0.13	0.11
<i>Solidago hispida</i>	2.00	3.00	0.10	0.13	0.11
<i>Symphoricarpos orbiculatus</i>	2.00	3.00	0.10	0.13	0.11
<i>Symphyotrichum</i> sp.	2.00	3.00	0.10	0.13	0.11
<i>Carex laxiflora</i>	2.00	2.00	0.07	0.13	0.10
<i>Carex</i> sp. 3	2.00	2.00	0.07	0.13	0.10
<i>Chaerophyllum procumbens</i>	2.00	2.00	0.07	0.13	0.10
<i>Crataegous</i> sp.	2.00	2.00	0.07	0.13	0.10
<i>Cyperus</i> sp.	2.00	2.00	0.07	0.13	0.10
<i>Festuca subverticillata</i>	2.00	2.00	0.07	0.13	0.10
<i>Lespedeza virginica</i>	2.00	2.00	0.07	0.13	0.10
<i>Maianthemum racemosum</i>	2.00	2.00	0.07	0.13	0.10
<i>Microstegium vimineum</i>	2.00	2.00	0.07	0.13	0.10
<i>Morus rubra</i>	2.00	2.00	0.07	0.13	0.10
<i>Phlox divaricata</i>	2.00	2.00	0.07	0.13	0.10
<i>Polygonatum biflorum</i>	2.00	2.00	0.07	0.13	0.10
<i>Scutellaria ovata</i>	2.00	2.00	0.07	0.13	0.10
<i>Sideroxylon lanuginosum</i>	2.00	2.00	0.07	0.13	0.10
<i>Viburnum rufidulum</i>	2.00	2.00	0.07	0.13	0.10
<i>Viola tricolor</i>	2.00	2.00	0.07	0.13	0.10
<i>Aesculus pavia</i>	1.00	3.00	0.10	0.06	0.08
<i>Carex communis</i>	1.00	3.00	0.10	0.06	0.08
<i>Carpinus caroliniana</i>	1.00	3.00	0.10	0.06	0.08
<i>Carex</i> sp. 7	1.00	3.00	0.10	0.06	0.08
<i>Carex</i> sp. 8	1.00	3.00	0.10	0.06	0.08
<i>Diodia</i> sp.	1.00	3.00	0.10	0.06	0.08

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Galium arkansanum</i>	1.00	3.00	0.10	0.06	0.08
<i>Gleditsia triacanthos</i>	1.00	3.00	0.10	0.06	0.08
unknown herb 4	1.00	3.00	0.10	0.06	0.08
	1.00	2.00	0.07	0.06	0.07
<i>Carex intumescens</i>	1.00	2.00	0.07	0.06	0.07
<i>Carex</i> sp. 5	1.00	2.00	0.07	0.06	0.07
<i>Carya cordiformis</i>	1.00	2.00	0.07	0.06	0.07
<i>Crataegus viridis</i>	1.00	2.00	0.07	0.06	0.07
<i>Cunila origanoides</i>	1.00	2.00	0.07	0.06	0.07
<i>Dichanthelium laxiflorum</i>	1.00	2.00	0.07	0.06	0.07
<i>Hybanthus concolor</i>	1.00	2.00	0.07	0.06	0.07
<i>Hydrangea arborescens</i>	1.00	2.00	0.07	0.06	0.07
<i>Juniperus virginiana</i>	1.00	2.00	0.07	0.06	0.07
<i>Liparis liliifolia</i>	1.00	2.00	0.07	0.06	0.07
<i>Lithospermum</i> sp.	1.00	2.00	0.07	0.06	0.07
<i>Lobelia spicata</i>	1.00	2.00	0.07	0.06	0.07
<i>Magnolia acuminata</i>	1.00	2.00	0.07	0.06	0.07
<i>Menispermum canadense</i>	1.00	2.00	0.07	0.06	0.07
<i>Mimosa quadrivalvis</i>	1.00	2.00	0.07	0.06	0.07
<i>Podophyllum peltatum</i>	1.00	2.00	0.07	0.06	0.07
<i>Quercus</i> sp.	1.00	2.00	0.07	0.06	0.07
<i>Silphium asteriscus</i>	1.00	2.00	0.07	0.06	0.07
<i>Solidago arguta</i>	1.00	2.00	0.07	0.06	0.07
<i>Thalictrum dasycarpum</i>	1.00	2.00	0.07	0.06	0.07
<i>Tilia americana</i>	1.00	2.00	0.07	0.06	0.07
unknown forb 5	1.00	2.00	0.07	0.06	0.07
unknown herb 1	1.00	2.00	0.07	0.06	0.07
unknown herb 3	1.00	2.00	0.07	0.06	0.07
<i>Uvularia perfoliata</i>	1.00	2.00	0.07	0.06	0.07
<i>Vernonia baldwinii</i>	1.00	2.00	0.07	0.06	0.07
<i>Ambrosia artemisiifolia</i>	1.00	1.00	0.03	0.06	0.05
<i>Amphiachyris dracunculoides</i>	1.00	1.00	0.03	0.06	0.05
<i>Apios americana</i>	1.00	1.00	0.03	0.06	0.05
<i>Aralia spinosa</i>	1.00	1.00	0.03	0.06	0.05
<i>Arisaema triphyllum</i>	1.00	1.00	0.03	0.06	0.05
<i>Asplenium platyneuron</i>	1.00	1.00	0.03	0.06	0.05
<i>Callicarpa americana</i>	1.00	1.00	0.03	0.06	0.05
<i>Carex planispicata</i>	1.00	1.00	0.03	0.06	0.05
<i>Carex</i> sp. 4	1.00	1.00	0.03	0.06	0.05
<i>Chamaecrista fasciculata</i>	1.00	1.00	0.03	0.06	0.05
<i>Dactylis glomerata</i>	1.00	1.00	0.03	0.06	0.05
<i>Desmodium glutinosum</i>	1.00	1.00	0.03	0.06	0.05

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Euphorbia nutans</i>	1.00	1.00	0.03	0.06	0.05
<i>Eupatorium rotundifolium</i>	1.00	1.00	0.03	0.06	0.05
<i>Geranium maculatum</i>	1.00	1.00	0.03	0.06	0.05
<i>Goodyera pubescens</i>	1.00	1.00	0.03	0.06	0.05
<i>Hypericum hypericoides</i>	1.00	1.00	0.03	0.06	0.05
<i>Lonicera dioica</i>	1.00	1.00	0.03	0.06	0.05
<i>Lysimachia</i> sp.	1.00	1.00	0.03	0.06	0.05
<i>Phryma leptostachya</i>	1.00	1.00	0.03	0.06	0.05
<i>Pinus</i> sp.	1.00	1.00	0.03	0.06	0.05
<i>Prunella vulgaris</i>	1.00	1.00	0.03	0.06	0.05
<i>Robinia pseudoacacia</i>	1.00	1.00	0.03	0.06	0.05
<i>Rosa carolina</i>	1.00	1.00	0.03	0.06	0.05
<i>Rubus trivialis</i>	1.00	1.00	0.03	0.06	0.05
<i>Schizachyrium scoparium</i>	1.00	1.00	0.03	0.06	0.05
<i>Solidago</i> sp.	1.00	1.00	0.03	0.06	0.05
<i>Thaspium barbinode</i>	1.00	1.00	0.03	0.06	0.05
<i>Toxicodendron pubescens</i>	1.00	1.00	0.03	0.06	0.05
unknown forb 4	1.00	1.00	0.03	0.06	0.05
unknown graminoid 1	1.00	1.00	0.03	0.06	0.05
unknown herb 5	1.00	1.00	0.03	0.06	0.05
<i>Verbesina alternifolia</i>	1.00	1.00	0.03	0.06	0.05
<i>Viola sagittata</i>	1.00	1.00	0.03	0.06	0.05
Total	1594.00	2973.00	100.00	100.00	100.00

APPENDIX I. Species importance values by strata and coertype, 2014-2015.

Table II: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *early seral*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snag	0.60	54.55	7.80	4.28	5.56	57.24	46.15	52.65
<i>Quercus alba</i>	0.40	18.18	5.20	1.86	2.42	24.92	30.77	24.62
<i>Quercus rubra</i>	0.10	9.09	1.30	0.53	0.69	7.07	7.69	7.95
<i>Prunus serotina</i>	0.10	9.09	1.30	0.43	0.56	5.78	7.69	7.52
<i>Carya tomentosa</i>	0.10	9.09	1.30	0.37	0.48	4.99	7.69	7.26
Totals	1.30	100.00	16.90	7.47	9.71	100.00	100.00	100.00

Table I2: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *early seral*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Nyssa sylvatica</i>	4.30	11.43	55.90	0.59	0.77	15.30	25.90	17.54
<i>Carya tomentosa</i>	3.30	11.43	42.90	0.52	0.68	13.45	19.88	14.92
<i>Acer rubrum</i>	1.10	8.57	14.30	0.71	0.92	18.38	6.63	11.19
<i>Prunus serotina</i>	1.20	11.43	15.60	0.38	0.49	9.84	7.23	9.50
<i>Quercus rubra</i>	1.00	5.71	13.00	0.41	0.53	10.50	6.02	7.41
snag	0.50	5.71	6.50	0.45	0.59	11.70	3.01	6.81
<i>Quercus alba</i>	1.80	2.86	23.40	0.22	0.28	5.62	10.84	6.44
<i>Sassafras albidum</i>	1.10	8.57	14.30	0.07	0.09	1.72	6.63	5.64
<i>Liquidambar styraciflua</i>	0.70	5.71	9.10	0.10	0.13	2.53	4.22	4.15
<i>Fraxinus americana</i>	0.10	2.86	1.30	0.33	0.44	8.67	0.60	4.04
<i>Pinus taeda</i>	0.30	2.86	3.90	0.01	0.02	0.31	1.81	1.66
<i>Magnolia acuminata</i>	0.20	2.86	2.60	0.01	0.02	0.38	1.20	1.48
<i>Fraxinus pennsylvanica</i>	0.20	2.86	2.60	0.01	0.02	0.36	1.20	1.47
<i>Viburnum prunifolium</i>	0.20	2.86	2.60	0.01	0.02	0.36	1.20	1.47
<i>Hamamelis virginiana</i>	0.20	2.86	2.60	0.01	0.01	0.19	1.20	1.42
<i>Robinia pseudoacacia</i>	0.10	2.86	1.30	0.01	0.02	0.30	0.60	1.25
<i>Carya cordiformis</i>	0.10	2.86	1.30	0.01	0.01	0.17	0.60	1.21
<i>Quercus velutina</i>	0.10	2.86	1.30	0.01	0.01	0.14	0.60	1.20
<i>Rhus copallinum</i>	0.10	2.86	1.30	0.00	0.00	0.09	0.60	1.18
Totals	16.60	100.00	215.80	3.86	5.02	100.00	100.00	100.00

Table I3: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, early seral*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Nyssa sylvatica</i>	4.30	11.43	55.90	0.59	0.77
<i>Carya tomentosa</i>	3.30	11.43	42.90	0.52	0.68
<i>Acer rubrum</i>	1.10	8.57	14.30	0.71	0.92
<i>Prunus serotina</i>	1.20	11.43	15.60	0.38	0.49
<i>Quercus rubra</i>	1.00	5.71	13.00	0.41	0.53
snag	0.50	5.71	6.50	0.45	0.59
<i>Quercus alba</i>	1.80	2.86	23.40	0.22	0.28
<i>Sassafras albidum</i>	1.10	8.57	14.30	0.07	0.09
<i>Liquidambar styraciflua</i>	0.70	5.71	9.10	0.10	0.13
<i>Fraxinus americana</i>	0.10	2.86	1.30	0.33	0.44
<i>Pinus taeda</i>	0.30	2.86	3.90	0.01	0.02
<i>Magnolia acuminata</i>	0.20	2.86	2.60	0.01	0.02
<i>Fraxinus pennsylvanica</i>	0.20	2.86	2.60	0.01	0.02
<i>Viburnum prunifolium</i>	0.20	2.86	2.60	0.01	0.02
<i>Hamamelis virginiana</i>	0.20	2.86	2.60	0.01	0.01
<i>Robinia pseudoacacia</i>	0.10	2.86	1.30	0.01	0.02
<i>Carya cordiformis</i>	0.10	2.86	1.30	0.01	0.01
<i>Quercus velutina</i>	0.10	2.86	1.30	0.01	0.01
<i>Rhus copallinum</i>	0.10	2.86	1.30	0.00	0.00
Totals	16.60	100.00	215.80	3.86	5.02

Table I4: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, early seral, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Parthenocissus quinquefolia</i>	21.00	43.00	6.79	6.09	6.44
<i>Toxicodendron radicans</i>	18.00	40.00	6.32	5.22	5.77
<i>Vitis rotundifolia</i>	14.00	35.00	5.53	4.06	4.79
<i>Carex</i> sp.	12.00	19.00	3.00	3.48	3.24
<i>Acer rubrum</i>	11.00	18.00	2.84	3.19	3.02
<i>Quercus alba</i>	11.00	18.00	2.84	3.19	3.02
<i>Dichanthelium commutatum</i>	11.00	16.00	2.53	3.19	2.86
<i>Smilax glauca</i>	11.00	12.00	1.90	3.19	2.54
<i>Rubus argutus</i>	6.00	17.00	2.69	1.74	2.21
<i>Nyssa sylvatica</i>	6.00	14.00	2.21	1.74	1.98
<i>Dichanthelium boscii</i>	7.00	12.00	1.90	2.03	1.96
<i>Rhus copallinum</i>	5.00	15.00	2.37	1.45	1.91
<i>Vitis aestivalis</i>	6.00	13.00	2.05	1.74	1.90
<i>Rubus</i> sp.	5.00	14.00	2.21	1.45	1.83
<i>Sassafras albidum</i>	6.00	12.00	1.90	1.74	1.82
<i>Smilax rotundifolia</i>	6.00	10.00	1.58	1.74	1.66
<i>Rubus flagellaris</i>	5.00	11.00	1.74	1.45	1.59
<i>Ambrosia artemisiifolia</i>	5.00	9.00	1.42	1.45	1.44
<i>Helianthus hirsutus</i>	5.00	9.00	1.42	1.45	1.44
<i>Lespedeza virginica</i>	5.00	8.00	1.26	1.45	1.36
<i>Prunus serotina</i>	4.00	9.00	1.42	1.16	1.29
<i>Ageratina altissima</i>	5.00	7.00	1.11	1.45	1.28
<i>Carya tomentosa</i>	4.00	8.00	1.26	1.16	1.21
<i>Lactuca canadensis</i>	5.00	6.00	0.95	1.45	1.20
<i>Quercus velutina</i>	3.00	9.00	1.42	0.87	1.15
<i>Dioscorea villosa</i>	4.00	7.00	1.11	1.16	1.13
<i>Quercus rubra</i>	4.00	7.00	1.11	1.16	1.13
<i>Smilax bona-nox</i>	4.00	7.00	1.11	1.16	1.13
<i>Cunila origanoides</i>	3.00	8.00	1.26	0.87	1.07
<i>Solidago ulmifolia</i>	4.00	6.00	0.95	1.16	1.05
<i>Vaccinium pallidum</i>	4.00	6.00	0.95	1.16	1.05
<i>Euphorbia corollata</i>	4.00	5.00	0.79	1.16	0.97
<i>Lespedeza procumbens</i>	2.00	7.00	1.11	0.58	0.84
<i>Rhus glabra</i>	3.00	5.00	0.79	0.87	0.83
<i>Carya texana</i>	2.00	6.00	0.95	0.58	0.76
<i>Leersia virginica</i>	2.00	6.00	0.95	0.58	0.76
<i>Lespedeza hirta</i>	2.00	6.00	0.95	0.58	0.76
<i>Dichanthelium dichotomum</i>	3.00	4.00	0.63	0.87	0.75
<i>Dichanthelium acuminatum</i>	2.00	5.00	0.79	0.58	0.68
<i>Eupatorium serotinum</i>	2.00	5.00	0.79	0.58	0.68

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Salvia lyrata</i>	2.00	5.00	0.79	0.58	0.68
<i>Amphicarpaea bracteata</i>	3.00	3.00	0.47	0.87	0.67
<i>Aristolochia serpentaria</i>	3.00	3.00	0.47	0.87	0.67
<i>Chamaecrista fasciculata</i>	3.00	3.00	0.47	0.87	0.67
<i>Sanicula canadensis</i>	3.00	3.00	0.47	0.87	0.67
<i>Callicarpa americana</i>	1.00	6.00	0.95	0.29	0.62
<i>Clitoria mariana</i>	2.00	4.00	0.63	0.58	0.61
<i>Carex muehlenbergii</i>	2.00	4.00	0.63	0.58	0.61
<i>Desmodium nudiflorum</i>	2.00	4.00	0.63	0.58	0.61
<i>Fraxinus americana</i>	2.00	4.00	0.63	0.58	0.61
<i>Hamamelis virginiana</i>	2.00	4.00	0.63	0.58	0.61
<i>Ulmus alata</i>	2.00	4.00	0.63	0.58	0.61
<i>Schizachyrium scoparium</i>	1.00	5.00	0.79	0.29	0.54
<i>Frangula caroliniana</i>	2.00	3.00	0.47	0.58	0.53
<i>Perilla frutescens</i>	2.00	3.00	0.47	0.58	0.53
<i>Potentilla simplex</i>	2.00	3.00	0.47	0.58	0.53
<i>Solidago caesia</i>	2.00	3.00	0.47	0.58	0.53
<i>Rubus trivialis</i>	1.00	4.00	0.63	0.29	0.46
<i>Berchemia scandens</i>	2.00	2.00	0.32	0.58	0.45
<i>Conyza canadensis</i>	2.00	2.00	0.32	0.58	0.45
<i>Desmodium viridiflorum</i>	2.00	2.00	0.32	0.58	0.45
<i>Erechtites hieraciifolius</i>	2.00	2.00	0.32	0.58	0.45
<i>Galium circaezans</i>	2.00	2.00	0.32	0.58	0.45
<i>Iris cristata</i>	2.00	2.00	0.32	0.58	0.45
<i>Microstegium vimineum</i>	2.00	2.00	0.32	0.58	0.45
<i>Phryma leptostachya</i>	2.00	2.00	0.32	0.58	0.45
<i>Prenanthes altissima</i>	2.00	2.00	0.32	0.58	0.45
<i>Scutellaria elliptica</i>	2.00	2.00	0.32	0.58	0.45
<i>Senna</i> sp.	2.00	2.00	0.32	0.58	0.45
<i>Asimina triloba</i>	1.00	3.00	0.47	0.29	0.38
<i>Cornus florida</i>	1.00	3.00	0.47	0.29	0.38
<i>Dichanthelium linearifolium</i>	1.00	3.00	0.47	0.29	0.38
<i>Fraxinus pennsylvanica</i>	1.00	3.00	0.47	0.29	0.38
<i>Ampelopsis arborea</i>	1.00	2.00	0.32	0.29	0.30
<i>Aralia spinosa</i>	1.00	2.00	0.32	0.29	0.30
<i>Cercis canadensis</i>	1.00	2.00	0.32	0.29	0.30
<i>Carex nigromarginata</i>	1.00	2.00	0.32	0.29	0.30
<i>Danthonia spicata</i>	1.00	2.00	0.32	0.29	0.30
<i>Desmodium</i> sp. 4	1.00	2.00	0.32	0.29	0.30
<i>Diarrhena americana</i>	1.00	2.00	0.32	0.29	0.30
<i>Geranium carolinianum</i>	1.00	2.00	0.32	0.29	0.30

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Krigia biflora</i>	1.00	2.00	0.32	0.29	0.30
<i>Liquidambar styraciflua</i>	1.00	2.00	0.32	0.29	0.30
<i>Magnolia acuminata</i>	1.00	2.00	0.32	0.29	0.30
<i>Panicum anceps</i>	1.00	2.00	0.32	0.29	0.30
<i>Polystichum acrostichoides</i>	1.00	2.00	0.32	0.29	0.30
<i>Prunella vulgaris</i>	1.00	2.00	0.32	0.29	0.30
<i>Scutellaria ovata</i>	1.00	2.00	0.32	0.29	0.30
<i>Solidago nemoralis</i>	1.00	2.00	0.32	0.29	0.30
<i>Solidago odora</i>	1.00	2.00	0.32	0.29	0.30
<i>Acalypha monococca</i>	1.00	1.00	0.16	0.29	0.22
<i>Brachyelytrum erectum</i>	1.00	1.00	0.16	0.29	0.22
<i>Desmodium sp. 1</i>	1.00	1.00	0.16	0.29	0.22
<i>Eutrochium sp.</i>	1.00	1.00	0.16	0.29	0.22
<i>Galium arkansanum</i>	1.00	1.00	0.16	0.29	0.22
<i>Callicarpa americana</i>	1.00	6.00	0.95	0.29	0.62
<i>Clitoria mariana</i>	2.00	4.00	0.63	0.58	0.61
<i>Helianthus divaricatus</i>	1.00	1.00	0.16	0.29	0.22
<i>Houstonia purpurea</i>	1.00	1.00	0.16	0.29	0.22
<i>Lespedeza cuneata</i>	1.00	1.00	0.16	0.29	0.22
<i>Lespedeza repens</i>	1.00	1.00	0.16	0.29	0.22
<i>Lespedeza violacea</i>	1.00	1.00	0.16	0.29	0.22
<i>Lysimachia quadriflora</i>	1.00	1.00	0.16	0.29	0.22
<i>Morus rubra</i>	1.00	1.00	0.16	0.29	0.22
<i>Phlox pilosa</i>	1.00	1.00	0.16	0.29	0.22
<i>Pinus echinata</i>	1.00	1.00	0.16	0.29	0.22
<i>Robinia pseudoacacia</i>	1.00	1.00	0.16	0.29	0.22
<i>Scleria oligantha</i>	1.00	1.00	0.16	0.29	0.22
<i>Silphium asteriscus</i>	1.00	1.00	0.16	0.29	0.22
<i>Solidago hispida</i>	1.00	1.00	0.16	0.29	0.22
<i>Symphyotrichum anomalum</i>	1.00	1.00	0.16	0.29	0.22
<i>Uvularia sessilifolia</i>	1.00	1.00	0.16	0.29	0.22
<i>Vaccinium stamineum</i>	1.00	1.00	0.16	0.29	0.22
<i>Viola sp.</i>	1.00	1.00	0.16	0.29	0.22
<i>Viola palmata</i>	1.00	1.00	0.16	0.29	0.22
Total	345.00	633.00	100.00	100.00	100.00

Table I5: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *pine woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Pinus echinata</i>	2.33	42.86	30.33	10.12	43.84	69.88	63.64	58.79
snag	0.33	14.29	4.33	2.42	10.49	16.71	9.09	13.36
<i>Pinus taeda</i>	0.33	14.29	4.33	1.01	4.36	6.95	9.09	10.11
<i>Carya texana</i>	0.33	14.29	4.33	0.49	2.11	3.36	9.09	8.91
<i>Nyssa sylvatica</i>	0.33	14.29	4.33	0.45	1.94	3.09	9.09	8.82
Totals	3.67	100.00	47.67	14.48	62.73	100.00	100.00	100.00

Table I6: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *pine woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Amelanchier arborea</i>	2.33	5.26	30.33	0.43	1.87	24.06	9.86	13.06
<i>Acer rubrum</i>	5	10.53	65	0.08	0.36	4.66	21.13	12.11
<i>Carya texana</i>	1.67	5.26	21.67	0.4	1.73	22.25	7.04	11.52
<i>Nyssa sylvatica</i>	3.33	10.53	43.33	0.18	0.76	9.8	14.08	11.47
<i>Quercus alba</i>	1	5.26	13	0.32	1.4	18.1	4.23	9.2
<i>Quercus phellos</i>	3	5.26	39	0.08	0.36	4.59	12.68	7.51
<i>Carya tomentosa</i>	1.33	10.53	17.33	0.09	0.41	5.25	5.63	7.14
snag	1.33	10.53	17.33	0.09	0.39	5.03	5.63	7.06
<i>Quercus falcata</i>	2.67	5.26	34.67	0.07	0.3	3.87	11.27	6.8
<i>Prunus serotina</i>	0.33	5.26	4.33	0.01	0.06	0.76	1.41	2.48
<i>Cornus florida</i>	0.33	5.26	4.33	0.01	0.03	0.42	1.41	2.37
<i>Ulmus alata</i>	0.33	5.26	4.33	0.01	0.03	0.42	1.41	2.37
<i>Juniperus virginiana</i>	0.33	5.26	4.33	0.01	0.02	0.3	1.41	2.32
<i>Quercus rubra</i>	0.33	5.26	4.33	0.01	0.02	0.3	1.41	2.32
<i>Rhus copallinum</i>	0.33	5.26	4.33	0	0.01	0.19	1.41	2.29
Totals	23.67	100	307.67	1.79	7.76	100	100	100

Table I7: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, pine woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Nyssa sylvatica</i>	1.00	12.00	298.18	12.95	12.47
<i>Acer rubrum</i>	0.67	8.00	331.31	14.39	11.19
<i>Quercus alba</i>	0.67	8.00	331.31	14.39	11.19
<i>Carya texana</i>	0.33	4.00	231.92	10.07	7.04
<i>Carya tomentosa</i>	0.33	4.00	231.92	10.07	7.04
<i>Prunus serotina</i>	0.67	8.00	132.52	5.76	6.88
<i>Ulmus alata</i>	0.67	8.00	99.39	4.32	6.16
<i>Callicarpa americana</i>	0.33	4.00	99.39	4.32	4.16
<i>Quercus phellos</i>	0.33	4.00	99.39	4.32	4.16
<i>Quercus rubra</i>	0.33	4.00	99.39	4.32	4.16
<i>Frangula caroliniana</i>	0.33	4.00	82.83	3.60	3.80
<i>Diospyros virginiana</i>	0.33	4.00	66.26	2.88	3.44
<i>Quercus stellata</i>	0.33	4.00	66.26	2.88	3.44
<i>Fraxinus americana</i>	0.33	4.00	33.13	1.44	2.72
<i>Rhus copallinum</i>	0.33	4.00	33.13	1.44	2.72
<i>Amelanchier arborea</i>	0.33	4.00	16.57	0.72	2.36
<i>Juniperus virginiana</i>	0.33	4.00	16.57	0.72	2.36
<i>Pinus echinata</i>	0.33	4.00	16.57	0.72	2.36
<i>Quercus velutina</i>	0.33	4.00	16.57	0.72	2.36
Total	8.33	100.00	2302.60	100.00	100.00

Table I8: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, pine woodland/savanna, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	9.00	26.00	13.76	13.04	13.40
<i>Smilax glauca</i>	6.00	14.00	7.41	8.70	8.05
<i>Vitis rotundifolia</i>	4.00	13.00	6.88	5.80	6.34
<i>Lonicera japonica</i>	3.00	12.00	6.35	4.35	5.35
<i>Trachelospermum difforme</i>	3.00	9.00	4.76	4.35	4.55
<i>Ulmus alata</i>	3.00	8.00	4.23	4.35	4.29
<i>Parthenocissus quinquefolia</i>	3.00	5.00	2.65	4.35	3.50
<i>Carex</i> sp.	2.00	7.00	3.70	2.90	3.30
<i>Dichanthelium acuminatum</i>	2.00	6.00	3.17	2.90	3.04
<i>Nyssa sylvatica</i>	2.00	6.00	3.17	2.90	3.04
<i>Quercus alba</i>	2.00	6.00	3.17	2.90	3.04
<i>Vaccinium pallidum</i>	2.00	6.00	3.17	2.90	3.04
<i>Helianthus divaricatus</i>	2.00	5.00	2.65	2.90	2.77
<i>Pycnanthemum tenuifolium</i>	2.00	5.00	2.65	2.90	2.77
<i>Dichanthelium boscii</i>	2.00	4.00	2.12	2.90	2.51
<i>Dichanthelium dichotomum</i>	2.00	4.00	2.12	2.90	2.51
<i>Dichanthelium</i> sp.	2.00	4.00	2.12	2.90	2.51
<i>Schizachyrium scoparium</i>	1.00	4.00	2.12	1.45	1.78
<i>Ambrosia artemisiifolia</i>	1.00	3.00	1.59	1.45	1.52
<i>Danthonia spicata</i>	1.00	3.00	1.59	1.45	1.52
<i>Desmodium viridiflorum</i>	1.00	3.00	1.59	1.45	1.52
<i>Frangula caroliniana</i>	1.00	3.00	1.59	1.45	1.52
<i>Passiflora lutea</i>	1.00	3.00	1.59	1.45	1.52
<i>Pinus echinata</i>	1.00	3.00	1.59	1.45	1.52
<i>Pinus taeda</i>	1.00	3.00	1.59	1.45	1.52
<i>Quercus velutina</i>	1.00	3.00	1.59	1.45	1.52
<i>Rubus argutus</i>	1.00	3.00	1.59	1.45	1.52
<i>Rubus flagellaris</i>	1.00	3.00	1.59	1.45	1.52
<i>Smilax bona-nox</i>	1.00	3.00	1.59	1.45	1.52
<i>Carex muehlenbergii</i>	1.00	2.00	1.06	1.45	1.25
<i>Desmodium nudiflorum</i>	1.00	2.00	1.06	1.45	1.25
<i>Lactuca canadensis</i>	1.00	2.00	1.06	1.45	1.25
<i>Quercus falcata</i>	1.00	2.00	1.06	1.45	1.25
<i>Rhus copallinum</i>	1.00	2.00	1.06	1.45	1.25
<i>Viola sagittata</i>	1.00	2.00	1.06	1.45	1.25
Total	69.00	189.00	100.00	100.00	100.00

Table I9: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *pine forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Pinus echinata</i>	5.55	47.83	72.09	80.24	94.83	73.34	63.54	61.57
<i>Pinus taeda</i>	1.64	4.35	21.27	16.48	19.47	15.06	18.75	12.72
<i>Nyssa sylvatica</i>	0.27	13.04	3.55	2.31	2.73	2.11	3.13	6.09
<i>Liquidambar styraciflua</i>	0.27	8.70	3.55	2.47	2.92	2.26	3.13	4.69
<i>Quercus alba</i>	0.18	8.70	2.36	1.79	2.12	1.64	2.08	4.14
<i>Juniperus virginiana</i>	0.36	4.35	4.73	2.12	2.50	1.94	4.17	3.48
snag	0.27	4.35	3.55	3.06	3.61	2.80	3.13	3.42
<i>Carya tomentosa</i>	0.09	4.35	1.18	0.49	0.58	0.45	1.04	1.94
<i>Ulmus alata</i>	0.09	4.35	1.18	0.45	0.53	0.41	1.04	1.93
Totals	8.73	100.00	113.45	109.40	129.30	100.00	100.00	100.00

Table I10: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *pine forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snag	3.73	14.49	48.45	3.25	3.84	22.44	17.23	18.05
<i>Acer rubrum</i>	2.45	10.14	31.91	0.74	0.88	5.13	11.34	8.87
<i>Liquidambar styraciflua</i>	2.18	5.80	28.36	1.39	1.64	9.59	10.08	8.49
<i>Quercus alba</i>	1.36	4.35	17.73	1.55	1.83	10.72	6.30	7.12
<i>Cornus florida</i>	1.82	2.90	23.64	0.99	1.17	6.83	8.40	6.04
<i>Ulmus alata</i>	1.00	4.35	13.00	1.09	1.29	7.53	4.62	5.50
<i>Fagus grandifolia</i>	2.00	4.35	26.00	0.39	0.46	2.67	9.24	5.42
<i>Quercus rubra</i>	1.45	7.25	18.91	0.28	0.33	1.92	6.72	5.30
<i>Pinus echinata</i>	0.64	5.80	8.27	1.00	1.19	6.94	2.94	5.23
<i>Nyssa sylvatica</i>	0.64	5.80	8.27	0.82	0.97	5.66	2.94	4.80
<i>Carya tomentosa</i>	0.55	2.90	7.09	0.61	0.72	4.22	2.52	3.21
<i>Juniperus virginiana</i>	0.36	2.90	4.73	0.69	0.82	4.79	1.68	3.12
<i>Frangula caroliniana</i>	0.73	4.35	9.45	0.03	0.04	0.24	3.36	2.65
<i>Sassafras albidum</i>	0.55	4.35	7.09	0.08	0.09	0.54	2.52	2.47
<i>Ulmus americana</i>	0.18	1.45	2.36	0.61	0.72	4.23	0.84	2.17
<i>Diospyros virginiana</i>	0.36	1.45	4.73	0.33	0.39	2.30	1.68	1.81
<i>Pinus taeda</i>	0.09	1.45	1.18	0.34	0.40	2.34	0.42	1.40
<i>Amelanchier arborea</i>	0.18	2.90	2.36	0.02	0.02	0.12	0.84	1.29
<i>Crataegus spathulata</i>	0.27	1.45	3.55	0.11	0.13	0.75	1.26	1.15
<i>Quercus stellata</i>	0.27	1.45	3.55	0.01	0.01	0.08	1.26	0.93
<i>Fraxinus americana</i>	0.18	1.45	2.36	0.01	0.01	0.08	0.84	0.79
<i>Quercus falcata</i>	0.18	1.45	2.36	0.01	0.01	0.08	0.84	0.79
<i>Cercis canadensis</i>	0.09	1.45	1.18	0.05	0.06	0.33	0.42	0.73
<i>Tilia americana</i>	0.09	1.45	1.18	0.05	0.06	0.33	0.42	0.73
<i>Fraxinus pennsylvanica</i>	0.09	1.45	1.18	0.01	0.02	0.09	0.42	0.65
<i>Quercus velutina</i>	0.09	1.45	1.18	0.01	0.01	0.04	0.42	0.64
<i>Carpinus caroliniana</i>	0.09	1.45	1.18	0.00	0.00	0.02	0.42	0.63
Totals	21.64	100.00	281.27	14.47	17.11	100.00	100.00	100.00

Table I11: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, pine forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.91	10.42	506.00	22.27	16.34
<i>Quercus rubra</i>	1.00	11.46	266.55	11.73	11.59
<i>Carya tomentosa</i>	0.91	10.42	162.64	7.16	8.79
<i>Nyssa sylvatica</i>	0.55	6.25	121.98	5.37	5.81
<i>Quercus alba</i>	0.55	6.25	72.29	3.18	4.72
<i>Frangula caroliniana</i>	0.45	5.21	90.36	3.98	4.59
<i>Pinus echinata</i>	0.27	3.13	126.50	5.57	4.35
<i>Robinia pseudoacacia</i>	0.09	1.04	153.61	6.76	3.90
<i>Cornus florida</i>	0.45	5.21	58.73	2.58	3.90
<i>Rhus copallinum</i>	0.36	4.17	81.32	3.58	3.87
<i>Quercus velutina</i>	0.36	4.17	76.80	3.38	3.77
<i>Liquidambar styraciflua</i>	0.18	2.08	63.25	2.78	2.43
<i>Prunus serotina</i>	0.18	2.08	49.70	2.19	2.14
<i>Quercus falcata</i>	0.18	2.08	49.70	2.19	2.14
<i>Juniperus virginiana</i>	0.27	3.13	22.59	0.99	2.06
<i>Fagus grandifolia</i>	0.18	2.08	45.18	1.99	2.04
<i>Sassafras albidum</i>	0.18	2.08	45.18	1.99	2.04
<i>Ulmus americana</i>	0.18	2.08	27.11	1.19	1.64
<i>Rhus glabra</i>	0.09	1.04	49.70	2.19	1.61
<i>Quercus muehlenbergii</i>	0.09	1.04	40.66	1.79	1.42
<i>Ulmus alata</i>	0.09	1.04	40.66	1.79	1.42
<i>Diospyros virginiana</i>	0.18	2.08	13.55	0.60	1.34
<i>Carya texana</i>	0.09	1.04	31.63	1.39	1.22
<i>Fraxinus americana</i>	0.09	1.04	18.07	0.80	0.92
<i>Quercus stellata</i>	0.09	1.04	18.07	0.80	0.92
<i>Vaccinium arboreum</i>	0.09	1.04	9.04	0.40	0.72
<i>Callicarpa americana</i>	0.09	1.04	4.52	0.20	0.62
<i>Carpinus caroliniana</i>	0.09	1.04	4.52	0.20	0.62
<i>Celtis occidentalis</i>	0.09	1.04	4.52	0.20	0.62
<i>Cercis canadensis</i>	0.09	1.04	4.52	0.20	0.62
<i>Fraxinus pennsylvanica</i>	0.09	1.04	4.52	0.20	0.62
<i>Ostrya virginiana</i>	0.09	1.04	4.52	0.20	0.62
<i>Tilia americana</i>	0.09	1.04	4.52	0.20	0.62
Total	8.73	100.00	2272.48	100.00	100.00

Table I12: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, pine forest, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	22.00	67.00	10.89	8.21	9.55
<i>Vitis rotundifolia</i>	15.00	40.00	6.50	5.60	6.05
<i>Smilax glauca</i>	16.00	24.00	3.90	5.97	4.94
<i>Parthenocissus quinquefolia</i>	13.00	28.00	4.55	4.85	4.70
<i>Acer rubrum</i>	11.00	20.00	3.25	4.10	3.68
<i>Carex</i> sp.	10.00	19.00	3.09	3.73	3.41
<i>Nyssa sylvatica</i>	7.00	17.00	2.76	2.61	2.69
<i>Vaccinium pallidum</i>	5.00	19.00	3.09	1.87	2.48
<i>Quercus velutina</i>	6.00	16.00	2.60	2.24	2.42
<i>Smilax rotundifolia</i>	7.00	13.00	2.11	2.61	2.36
<i>Pinus echinata</i>	6.00	13.00	2.11	2.24	2.18
<i>Quercus stellata</i>	6.00	13.00	2.11	2.24	2.18
<i>Smilax bona-nox</i>	5.00	14.00	2.28	1.87	2.07
<i>Chasmanthium latifolium</i>	4.00	14.00	2.28	1.49	1.88
<i>Cornus florida</i>	5.00	11.00	1.79	1.87	1.83
<i>Rubus flagellaris</i>	5.00	11.00	1.79	1.87	1.83
<i>Helianthus divaricatus</i>	4.00	11.00	1.79	1.49	1.64
<i>Sassafras albidum</i>	5.00	8.00	1.30	1.87	1.58
<i>Rubus argutus</i>	4.00	10.00	1.63	1.49	1.56
<i>Erechtites hieraciifolius</i>	4.00	9.00	1.46	1.49	1.48
<i>Sanicula canadensis</i>	4.00	8.00	1.30	1.49	1.40
<i>Carya tomentosa</i>	3.00	9.00	1.46	1.12	1.29
<i>Quercus falcata</i>	3.00	9.00	1.46	1.12	1.29
<i>Conyza canadensis</i>	3.00	8.00	1.30	1.12	1.21
<i>Desmodium laevigatum</i>	3.00	8.00	1.30	1.12	1.21
<i>Quercus alba</i>	3.00	8.00	1.30	1.12	1.21
<i>Carex hirsutella</i>	3.00	7.00	1.14	1.12	1.13
<i>Dichanthelium commutatum</i>	3.00	6.00	0.98	1.12	1.05
<i>Liquidambar styraciflua</i>	3.00	6.00	0.98	1.12	1.05
<i>Dichanthelium dichotomum</i>	3.00	5.00	0.81	1.12	0.97
<i>Dichanthelium laxiflorum</i>	3.00	5.00	0.81	1.12	0.97
<i>Carya texana</i>	2.00	6.00	0.98	0.75	0.86
<i>Lonicera japonica</i>	2.00	6.00	0.98	0.75	0.86
<i>Prunus serotina</i>	2.00	6.00	0.98	0.75	0.86
<i>Rhus copallinum</i>	2.00	6.00	0.98	0.75	0.86
<i>Solidago petiolaris</i>	2.00	6.00	0.98	0.75	0.86
<i>Antennaria plantaginifolia</i>	2.00	5.00	0.81	0.75	0.78

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Danthonia spicata</i>	2.00	5.00	0.81	0.75	0.78
<i>Symphoricarpos orbiculatus</i>	2.00	5.00	0.81	0.75	0.78
<i>Amphicarpaea bracteata</i>	2.00	4.00	0.65	0.75	0.70
<i>Carex glaucoidea</i>	2.00	4.00	0.65	0.75	0.70
<i>Dichanthelium acuminatum</i>	2.00	4.00	0.65	0.75	0.70
<i>Dichanthelium boscii</i>	2.00	4.00	0.65	0.75	0.70
<i>Quercus rubra</i>	2.00	4.00	0.65	0.75	0.70
<i>Trachelospermum difforme</i>	2.00	4.00	0.65	0.75	0.70
<i>Pycnanthemum tenuifolium</i>	2.00	3.00	0.49	0.75	0.62
<i>Scleria oligantha</i>	2.00	3.00	0.49	0.75	0.62
<i>Ulmus alata</i>	2.00	3.00	0.49	0.75	0.62
<i>Carex blanda</i>	1.00	5.00	0.81	0.37	0.59
<i>Vaccinium arboreum</i>	1.00	5.00	0.81	0.37	0.59
<i>Berchemia scandens</i>	2.00	2.00	0.33	0.75	0.54
<i>Galium circaezans</i>	2.00	2.00	0.33	0.75	0.54
<i>Brachyelytrum erectum</i>	1.00	3.00	0.49	0.37	0.43
<i>Callicarpa americana</i>	1.00	3.00	0.49	0.37	0.43
<i>Carex albicans</i>	1.00	3.00	0.49	0.37	0.43
<i>Carex frankii</i>	1.00	3.00	0.49	0.37	0.43
<i>Desmodium cuspidatum</i>	1.00	3.00	0.49	0.37	0.43
<i>Desmodium rotundifolium</i>	1.00	3.00	0.49	0.37	0.43
<i>Diospyros virginiana</i>	1.00	3.00	0.49	0.37	0.43
<i>Hypericum prolificum</i>	1.00	3.00	0.49	0.37	0.43
<i>Solidago nemoralis</i>	1.00	3.00	0.49	0.37	0.43
<i>Viola sororia</i>	1.00	3.00	0.49	0.37	0.43
<i>Ambrosia artemisiifolia</i>	1.00	2.00	0.33	0.37	0.35
<i>Boehmeria cylindrica</i>	1.00	2.00	0.33	0.37	0.35
<i>Carex laxiflora</i>	1.00	2.00	0.33	0.37	0.35
<i>Eleocharis tenuis</i>	1.00	2.00	0.33	0.37	0.35
<i>Eupatorium serotinum</i>	1.00	2.00	0.33	0.37	0.35
<i>Galactia volubilis</i>	1.00	2.00	0.33	0.37	0.35
<i>Hieracium longipilum</i>	1.00	2.00	0.33	0.37	0.35
<i>Leersia virginica</i>	1.00	2.00	0.33	0.37	0.35
<i>Lobelia spicata</i>	1.00	2.00	0.33	0.37	0.35
<i>Monarda fistulosa</i>	1.00	2.00	0.33	0.37	0.35
<i>Rhus glabra</i>	1.00	2.00	0.33	0.37	0.35
<i>Solidago altissima</i>	1.00	2.00	0.33	0.37	0.35
unknown graminoid	1.00	2.00	0.33	0.37	0.35
1					
<i>Bromus pubescens</i>	1.00	1.00	0.16	0.37	0.27

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Carex digitalis</i>	1.00	1.00	0.16	0.37	0.27
<i>Desmodium sp.</i>	1.00	1.00	0.16	0.37	0.27
<i>Euphorbia corollata</i>	1.00	1.00	0.16	0.37	0.27
<i>Hypericum hypericoides</i>	1.00	1.00	0.16	0.37	0.27
<i>Lactuca canadensis</i>	1.00	1.00	0.16	0.37	0.27
<i>Lespedeza procumbens</i>	1.00	1.00	0.16	0.37	0.27
<i>Lespedeza virginica</i>	1.00	1.00	0.16	0.37	0.27
<i>Microstegium vimineum</i>	1.00	1.00	0.16	0.37	0.27
<i>Prunella vulgaris</i>	1.00	1.00	0.16	0.37	0.27
<i>Smilax sp.</i>	1.00	1.00	0.16	0.37	0.27
Total	268.00	615.00	100.00	100.00	100.00

Table I13: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of overstory species (8"+ dbh), oak-pine woodland/savanna, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Pinus echinata</i>	1.63	33.33	21.13	15.13	24.59	50.57	36.11	40.01
<i>Quercus alba</i>	1.00	25.00	13.00	6.00	9.75	20.05	22.22	22.43
<i>Carya tomentosa</i>	0.38	8.33	4.88	1.36	2.22	4.56	8.33	7.08
snag	0.25	8.33	3.25	1.53	2.48	5.11	5.56	6.33
<i>Quercus stellata</i>	0.25	8.33	3.25	1.31	2.13	4.38	5.56	6.09
<i>Fagus grandifolia</i>	0.38	4.17	4.88	1.54	2.50	5.14	8.33	5.88
<i>Carya texana</i>	0.38	4.17	4.88	1.43	2.32	4.77	8.33	5.76
<i>Quercus velutina</i>	0.13	4.17	1.63	1.12	1.82	3.74	2.78	3.56
<i>Quercus rubra</i>	0.13	4.17	1.63	0.50	0.81	1.67	2.78	2.87
Totals	4.50	100.00	58.50	29.92	48.62	100.00	100.00	100.00

Table I14: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *oak-pine woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014- 2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snag	2.88	13.51	37.38	2.38	3.86	32.51	18.55	21.52
<i>Nyssa sylvatica</i>	1.25	8.11	16.25	0.99	1.61	13.53	8.06	9.90
<i>Acer rubrum</i>	1.75	8.11	22.75	0.49	0.80	6.71	11.29	8.70
<i>Quercus alba</i>	0.88	5.41	11.38	1.05	1.71	14.36	5.65	8.47
<i>Carpinus caroliniana</i>	1.63	2.70	21.13	0.19	0.32	2.66	10.48	5.28
<i>Fagus grandifolia</i>	0.88	2.70	11.38	0.40	0.65	5.48	5.65	4.61
<i>Ostrya virginiana</i>	0.75	5.41	9.75	0.19	0.30	2.55	4.84	4.26
<i>Robinia pseudoacacia</i>	0.38	2.70	4.88	0.46	0.75	6.30	2.42	3.81
<i>Pinus echinata</i>	0.25	2.70	3.25	0.52	0.84	7.09	1.61	3.80
<i>Acer saccharum</i>	1.00	2.70	13.00	0.10	0.16	1.37	6.45	3.51
<i>Liquidambar styraciflua</i>	0.50	2.70	6.50	0.27	0.44	3.68	3.23	3.20
<i>Aralia spinosa</i>	0.50	5.41	6.50	0.02	0.04	0.30	3.23	2.98
<i>Carya tomentosa</i>	0.25	5.41	3.25	0.06	0.10	0.87	1.61	2.63
<i>Juniperus virginiana</i>	0.63	2.70	8.13	0.04	0.06	0.51	4.03	2.42
<i>Cornus florida</i>	0.25	5.41	3.25	0.01	0.01	0.10	1.61	2.37
<i>Alnus serrulata</i>	0.50	2.70	6.50	0.03	0.05	0.43	3.23	2.12
<i>Frangula caroliniana</i>	0.25	2.70	3.25	0.02	0.02	0.21	1.61	1.51
<i>Prunus serotina</i>	0.25	2.70	3.25	0.01	0.01	0.12	1.61	1.48
<i>Quercus rubra</i>	0.13	2.70	1.63	0.05	0.09	0.74	0.81	1.42
<i>Paulownia tomentosa</i>	0.13	2.70	1.63	0.01	0.02	0.16	0.81	1.22
<i>Ulmus alata</i>	0.13	2.70	1.63	0.01	0.02	0.13	0.81	1.21
<i>Sassafras albidum</i>	0.13	2.70	1.63	0.01	0.01	0.07	0.81	1.19
<i>Asimina triloba</i>	0.13	2.70	1.63	0.00	0.01	0.06	0.81	1.19
<i>Hamamelis virginiana</i>	0.13	2.70	1.63	0.00	0.01	0.06	0.81	1.19
Totals	15.50	100.00	201.50	7.31	11.88	100.00	100.00	100.00

Table I15: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species*, oak-pine woodland/savanna, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.75	11.32	664.69	28.38	19.85
<i>Quercus rubra</i>	0.63	9.43	223.63	9.55	9.49
<i>Nyssa sylvatica</i>	0.38	5.66	279.54	11.94	8.80
<i>Aralia spinosa</i>	0.25	3.77	205.00	8.75	6.26
<i>Quercus alba</i>	0.50	7.55	93.18	3.98	5.76
<i>Rhus copallinum</i>	0.50	7.55	80.76	3.45	5.50
<i>Prunus serotina</i>	0.38	5.66	105.60	4.51	5.08
<i>Carya texana</i>	0.25	3.77	118.03	5.04	4.41
<i>Frangula caroliniana</i>	0.38	5.66	68.33	2.92	4.29
<i>Cornus florida</i>	0.38	5.66	55.91	2.39	4.02
<i>Carya tomentosa</i>	0.38	5.66	37.27	1.59	3.63
<i>Ostrya virginiana</i>	0.25	3.77	31.06	1.33	2.55
<i>Carpinus caroliniana</i>	0.13	1.89	74.54	3.18	2.53
<i>Fraxinus americana</i>	0.25	3.77	24.85	1.06	2.42
<i>Carya glabra</i>	0.13	1.89	68.33	2.92	2.40
<i>Pinus echinata</i>	0.13	1.89	68.33	2.92	2.40
<i>Quercus velutina</i>	0.13	1.89	49.70	2.12	2.00
<i>Fagus grandifolia</i>	0.13	1.89	18.64	0.80	1.34
<i>Ulmus alata</i>	0.13	1.89	18.64	0.80	1.34
<i>Acer saccharum</i>	0.13	1.89	12.42	0.53	1.21
<i>Juniperus virginiana</i>	0.13	1.89	12.42	0.53	1.21
<i>Liquidambar styraciflua</i>	0.13	1.89	12.42	0.53	1.21
<i>Robinia pseudoacacia</i>	0.13	1.89	12.42	0.53	1.21
<i>Cercis canadensis</i>	0.13	1.89	6.21	0.27	1.08
Total	6.63	100.00	2341.94	100.00	100.00

Table I16: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, oak-pine woodland/savanna, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	22.00	68.00	11.33	8.76	10.05
<i>Parthenocissus quinquefolia</i>	13.00	40.00	6.67	5.18	5.92
<i>Dichanthelium boscii</i>	15.00	33.00	5.50	5.98	5.74
<i>Vitis rotundifolia</i>	12.00	35.00	5.83	4.78	5.31
<i>Acer rubrum</i>	8.00	21.00	3.50	3.19	3.34
<i>Helianthus divaricatus</i>	6.00	20.00	3.33	2.39	2.86
<i>Rubus argutus</i>	6.00	20.00	3.33	2.39	2.86
<i>Quercus alba</i>	6.00	19.00	3.17	2.39	2.78
<i>Rubus flagellaris</i>	6.00	18.00	3.00	2.39	2.70
<i>Smilax glauca</i>	7.00	13.00	2.17	2.79	2.48
<i>Vaccinium pallidum</i>	5.00	16.00	2.67	1.99	2.33
<i>Carex</i> sp.	6.00	10.00	1.67	2.39	2.03
<i>Clitoria mariana</i>	5.00	11.00	1.83	1.99	1.91
<i>Nyssa sylvatica</i>	4.00	10.00	1.67	1.59	1.63
<i>Ageratina altissima</i>	4.00	9.00	1.50	1.59	1.55
<i>Fraxinus americana</i>	4.00	9.00	1.50	1.59	1.55
<i>Carya tomentosa</i>	3.00	11.00	1.83	1.20	1.51
<i>Danthonia spicata</i>	4.00	8.00	1.33	1.59	1.46
<i>Viola sororia</i>	4.00	7.00	1.17	1.59	1.38
<i>Quercus rubra</i>	3.00	9.00	1.50	1.20	1.35
<i>Dichanthelium commutatum</i>	4.00	6.00	1.00	1.59	1.30
<i>Pinus echinata</i>	4.00	6.00	1.00	1.59	1.30
<i>Carex caroliniana</i>	3.00	8.00	1.33	1.20	1.26
<i>Lespedeza procumbens</i>	3.00	7.00	1.17	1.20	1.18
<i>Solidago ulmifolia</i>	3.00	7.00	1.17	1.20	1.18
<i>Symphyotrichum anomalum</i>	3.00	6.00	1.00	1.20	1.10
<i>Amphicarpaea bracteata</i>	3.00	5.00	0.83	1.20	1.01
<i>Microstegium vimineum</i>	3.00	5.00	0.83	1.20	1.01
<i>Galium circaezans</i>	2.00	6.00	1.00	0.80	0.90
<i>Hypericum prolificum</i>	2.00	6.00	1.00	0.80	0.90
<i>Scleria oligantha</i>	2.00	6.00	1.00	0.80	0.90
<i>Spigelia marilandica</i>	2.00	6.00	1.00	0.80	0.90
<i>Viola palmata</i>	2.00	6.00	1.00	0.80	0.90
<i>Thalictrum thalictroides</i>	3.00	3.00	0.50	1.20	0.85
<i>Carex hirsutella</i>	2.00	5.00	0.83	0.80	0.82
<i>Dichanthelium dichotomum</i>	2.00	5.00	0.83	0.80	0.82
<i>Sassafras albidum</i>	2.00	5.00	0.83	0.80	0.82

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Aralia spinosa</i>	2.00	4.00	0.67	0.80	0.73
<i>Salvia lyrata</i>	2.00	4.00	0.67	0.80	0.73
<i>Bromus pubescens</i>	2.00	3.00	0.50	0.80	0.65
<i>Potentilla simplex</i>	2.00	3.00	0.50	0.80	0.65
<i>Brachyelytrum erectum</i>	2.00	2.00	0.33	0.80	0.57
<i>Krigia biflora</i>	2.00	2.00	0.33	0.80	0.57
<i>Solidago caesia</i>	2.00	2.00	0.33	0.80	0.57
<i>Solidago hispida</i>	2.00	2.00	0.33	0.80	0.57
<i>Coreopsis lanceolata</i>	1.00	4.00	0.67	0.40	0.53
<i>Pycnanthemum tenuifolium</i>	1.00	4.00	0.67	0.40	0.53
<i>Amelanchier arborea</i>	1.00	3.00	0.50	0.40	0.45
<i>Carya texana</i>	1.00	3.00	0.50	0.40	0.45
<i>Desmodium sp. 2</i>	1.00	3.00	0.50	0.40	0.45
<i>Dioscorea villosa</i>	1.00	3.00	0.50	0.40	0.45
<i>Elymus glabriflorus</i>	1.00	3.00	0.50	0.40	0.45
<i>Lespedeza hirta</i>	1.00	3.00	0.50	0.40	0.45
<i>Ludwigia alternifolia</i>	1.00	3.00	0.50	0.40	0.45
<i>Lysimachia quadriflora</i>	1.00	3.00	0.50	0.40	0.45
<i>Monarda fistulosa</i>	1.00	3.00	0.50	0.40	0.45
<i>Ostrya virginiana</i>	1.00	3.00	0.50	0.40	0.45
<i>Oxalis dillenii</i>	1.00	3.00	0.50	0.40	0.45
<i>Smilax bona-nox</i>	1.00	3.00	0.50	0.40	0.45
<i>Smilax rotundifolia</i>	1.00	3.00	0.50	0.40	0.45
<i>Vernonia baldwinii</i>	1.00	3.00	0.50	0.40	0.45
<i>Vitis aestivalis</i>	1.00	3.00	0.50	0.40	0.45
<i>Alnus serrulata</i>	1.00	2.00	0.33	0.40	0.37
<i>Berchemia scandens</i>	1.00	2.00	0.33	0.40	0.37
<i>Desmodium nudiflorum</i>	1.00	2.00	0.33	0.40	0.37
<i>Desmodium rotundifolium</i>	1.00	2.00	0.33	0.40	0.37
<i>Dichanthelium acuminatum</i>	1.00	2.00	0.33	0.40	0.37
<i>Iris cristata</i>	1.00	2.00	0.33	0.40	0.37
<i>Lactuca canadensis</i>	1.00	2.00	0.33	0.40	0.37
<i>Lespedeza repens</i>	1.00	2.00	0.33	0.40	0.37
<i>Rosa carolina</i>	1.00	2.00	0.33	0.40	0.37
<i>Vitis cinerea</i>	1.00	2.00	0.33	0.40	0.37
<i>Acer saccharum</i>	1.00	1.00	0.17	0.40	0.28
<i>Ambrosia artemisiifolia</i>	1.00	1.00	0.17	0.40	0.28
<i>Boehmeria cylindrica</i>	1.00	1.00	0.17	0.40	0.28
<i>Carya cordiformis</i>	1.00	1.00	0.17	0.40	0.28
<i>Ceanothus americanus</i>	1.00	1.00	0.17	0.40	0.28
<i>Cornus florida</i>	1.00	1.00	0.17	0.40	0.28
<i>Carex rosea</i>	1.00	1.00	0.17	0.40	0.28

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Carex</i> sp. 4	1.00	1.00	0.17	0.40	0.28
<i>Euonymus americanus</i>	1.00	1.00	0.17	0.40	0.28
<i>Euphorbia corollata</i>	1.00	1.00	0.17	0.40	0.28
<i>Hieracium longipilum</i>	1.00	1.00	0.17	0.40	0.28
<i>Houstonia purpurea</i>	1.00	1.00	0.17	0.40	0.28
<i>Liquidambar styraciflua</i>	1.00	1.00	0.17	0.40	0.28
<i>Perilla frutescens</i>	1.00	1.00	0.17	0.40	0.28
<i>Prenanthes altissima</i>	1.00	1.00	0.17	0.40	0.28
<i>Quercus velutina</i>	1.00	1.00	0.17	0.40	0.28
<i>Ruellia pedunculata</i>	1.00	1.00	0.17	0.40	0.28
<i>Scutellaria elliptica</i>	1.00	1.00	0.17	0.40	0.28
<i>Symphotrichum</i> sp.	1.00	1.00	0.17	0.40	0.28
<i>Ulmus alata</i>	1.00	1.00	0.17	0.40	0.28
Total	251.00	600.00	100.00	100.00	100.00

Table I17: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *oak-pine forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Pinus echinata</i>	3.50	33.33	45.50	46.59	50.47	47.15	41.58	40.69
<i>Quercus alba</i>	2.00	22.22	26.00	23.47	25.43	23.76	23.76	23.25
<i>Juniperus virginiana</i>	0.83	5.56	10.83	7.25	7.85	7.34	9.90	7.60
<i>Quercus stellata</i>	0.67	8.33	8.67	4.84	5.24	4.89	7.92	7.05
<i>Liquidambar styraciflua</i>	0.50	5.56	6.50	7.51	8.13	7.60	5.94	6.36
snag	0.25	5.56	3.25	3.37	3.65	3.41	2.97	3.98
<i>Carya tomentosa</i>	0.25	5.56	3.25	1.71	1.85	1.73	2.97	3.42
<i>Pinus taeda</i>	0.08	2.78	1.08	1.25	1.36	1.27	0.99	1.68
<i>Nyssa sylvatica</i>	0.08	2.78	1.08	1.02	1.10	1.03	0.99	1.60
<i>Fagus grandifolia</i>	0.08	2.78	1.08	0.66	0.72	0.67	0.99	1.48
<i>Acer saccharum</i>	0.08	2.78	1.08	0.64	0.69	0.65	0.99	1.47
<i>Carya glabra</i>	0.08	2.78	1.08	0.51	0.55	0.51	0.99	1.43
Totals	8.42	100.00	109.42	98.80	107.04	100.00	100.00	100.00

Table I18: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *oak-pine forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snag	2.08	9.26	27.08	1.99	2.16	17.94	15.43	14.21
<i>Quercus alba</i>	0.75	12.96	9.75	2.00	2.17	18.00	5.56	12.17
<i>Carpinus caroliniana</i>	2.83	5.56	36.83	0.65	0.70	5.82	20.99	10.79
<i>Liquidambar styraciflua</i>	1.33	5.56	17.33	1.50	1.62	13.46	9.88	9.63
<i>Pinus echinata</i>	0.75	7.41	9.75	1.52	1.64	13.65	5.56	8.87
<i>Nyssa sylvatica</i>	1.00	7.41	13.00	0.85	0.92	7.64	7.41	7.48
<i>Cornus florida</i>	0.83	9.26	10.83	0.32	0.34	2.85	6.17	6.09
<i>Juniperus virginiana</i>	0.67	5.56	8.67	0.80	0.87	7.21	4.94	5.90
<i>Ostrya virginiana</i>	0.75	5.56	9.75	0.23	0.25	2.08	5.56	4.40
<i>Acer rubrum</i>	0.50	5.56	6.50	0.11	0.12	1.00	3.70	3.42
<i>Ulmus alata</i>	0.42	3.70	5.42	0.12	0.13	1.06	3.09	2.62
<i>Acer saccharum</i>	0.25	1.85	3.25	0.29	0.31	2.57	1.85	2.09
<i>Quercus velutina</i>	0.17	1.85	2.17	0.31	0.33	2.75	1.23	1.94
<i>Carya texana</i>	0.08	1.85	1.08	0.34	0.37	3.04	0.62	1.84
<i>Fagus grandifolia</i>	0.17	3.70	2.17	0.04	0.05	0.40	1.23	1.78
<i>Frangula caroliniana</i>	0.17	1.85	2.17	0.02	0.02	0.14	1.23	1.08
<i>Tilia americana</i>	0.17	1.85	2.17	0.02	0.02	0.14	1.23	1.07
<i>Castanea pumila</i>	0.17	1.85	2.17	0.01	0.01	0.08	1.23	1.05
<i>Carya cordiformis</i>	0.17	1.85	2.17	0.01	0.01	0.06	1.23	1.05
<i>Ulmus americana</i>	0.08	1.85	1.08	0.01	0.01	0.05	0.62	0.84
<i>Carya tomentosa</i>	0.08	1.85	1.08	0.00	0.00	0.03	0.62	0.83
<i>Fraxinus pennsylvanica</i>	0.08	1.85	1.08	0.00	0.00	0.03	0.62	0.83
Totals	13.50	100.00	175.50	11.11	12.04	100.00	100.00	100.00

Table I19: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species*, oak-pine forest, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.58	8.54	240.20	16.57	12.55
<i>Carya tomentosa</i>	0.42	6.10	107.68	7.43	6.76
<i>Quercus rubra</i>	0.42	6.10	107.68	7.43	6.76
<i>Quercus alba</i>	0.42	6.10	70.40	4.86	5.48
<i>Frangula caroliniana</i>	0.25	3.66	99.39	6.86	5.26
<i>Pinus echinata</i>	0.25	3.66	82.83	5.71	4.69
<i>Nyssa sylvatica</i>	0.25	3.66	66.26	4.57	4.11
<i>Vaccinium stamineum</i>	0.17	2.44	82.83	5.71	4.08
<i>Ulmus alata</i>	0.42	6.10	28.99	2.00	4.05
<i>Rhus copallinum</i>	0.25	3.66	49.70	3.43	3.54
<i>Prunus serotina</i>	0.25	3.66	45.56	3.14	3.40
<i>Quercus velutina</i>	0.25	3.66	37.27	2.57	3.11
<i>Fraxinus americana</i>	0.17	2.44	49.70	3.43	2.93
<i>Ostrya virginiana</i>	0.17	2.44	49.70	3.43	2.93
<i>Carya texana</i>	0.08	1.22	66.26	4.57	2.90
<i>Cornus florida</i>	0.25	3.66	28.99	2.00	2.83
<i>Carpinus caroliniana</i>	0.17	2.44	41.41	2.86	2.65
<i>Quercus stellata</i>	0.25	3.66	20.71	1.43	2.54
<i>Hamamelis virginiana</i>	0.17	2.44	20.71	1.43	1.93
<i>Fagus grandifolia</i>	0.17	2.44	12.42	0.86	1.65
<i>Fraxinus pennsylvanica</i>	0.17	2.44	12.42	0.86	1.65
<i>Liquidambar styraciflua</i>	0.17	2.44	12.42	0.86	1.65
<i>Vaccinium arboreum</i>	0.17	2.44	12.42	0.86	1.65
<i>Lindera benzoin</i>	0.08	1.22	16.57	1.14	1.18
<i>Quercus falcata</i>	0.08	1.22	16.57	1.14	1.18
<i>Quercus marilandica</i>	0.08	1.22	12.42	0.86	1.04
<i>Acer saccharum</i>	0.08	1.22	8.28	0.57	0.90
<i>Carya cordiformis</i>	0.08	1.22	8.28	0.57	0.90
<i>Symphoricarpos orbiculatus</i>	0.08	1.22	8.28	0.57	0.90
<i>Ulmus americana</i>	0.08	1.22	8.28	0.57	0.90
<i>Cercis canadensis</i>	0.08	1.22	4.14	0.29	0.75
<i>Diospyros virginiana</i>	0.08	1.22	4.14	0.29	0.75
<i>Quercus cf.</i>	0.08	1.22	4.14	0.29	0.75

Species	Frequency	Relative Frequency	Stems/ Acre	Relative Density	Importance Value
<i>Quercus palustris</i>	0.08	1.22	4.14	0.29	0.75
<i>Rhus glabra</i>	0.08	1.22	4.14	0.29	0.75
<i>Sassafras albidum</i>	0.08	1.22	4.14	0.29	0.75
Total	6.92	101.22	1449.48	100.00	100.61

Table I20: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, oak-pine forest, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Parthenocissus quinquefolia</i>	18.00	51.00	5.45	4.81	5.13
<i>Pinus echinata</i>	16.00	26.00	2.78	4.28	3.53
<i>Toxicodendron radicans</i>	13.00	33.00	3.53	3.48	3.50
<i>Danthonia spicata</i>	11.00	35.00	3.74	2.94	3.34
<i>Vitis rotundifolia</i>	10.00	29.00	3.10	2.67	2.89
<i>Dichanthelium boscii</i>	10.00	24.00	2.57	2.67	2.62
<i>Nyssa sylvatica</i>	10.00	20.00	2.14	2.67	2.41
<i>Quercus alba</i>	8.00	18.00	1.93	2.14	2.03
<i>Rubus flagellaris</i>	7.00	20.00	2.14	1.87	2.01
<i>Sanicula canadensis</i>	7.00	18.00	1.93	1.87	1.90
<i>Dichanthelium dichotomum</i>	7.00	17.00	1.82	1.87	1.84
<i>Quercus velutina</i>	6.00	19.00	2.03	1.60	1.82
<i>Acer rubrum</i>	8.00	14.00	1.50	2.14	1.82
<i>Smilax glauca</i>	7.00	16.00	1.71	1.87	1.79
<i>Helianthus divaricatus</i>	6.00	17.00	1.82	1.60	1.71
<i>Thalictrum thalictroides</i>	6.00	15.00	1.60	1.60	1.60
<i>Vaccinium pallidum</i>	6.00	14.00	1.50	1.60	1.55
<i>Lespedeza repens</i>	5.00	15.00	1.60	1.34	1.47
<i>Clitoria mariana</i>	5.00	13.00	1.39	1.34	1.36
<i>Schizachyrium scoparium</i>	5.00	12.00	1.28	1.34	1.31
<i>Galactia volubilis</i>	4.00	14.00	1.50	1.07	1.28
<i>Galium circaezans</i>	5.00	11.00	1.18	1.34	1.26
<i>Brachyelytrum erectum</i>	4.00	12.00	1.28	1.07	1.18
<i>Amphicarpaea bracteata</i>	4.00	11.00	1.18	1.07	1.12
<i>Carya texana</i>	4.00	11.00	1.18	1.07	1.12
<i>Desmodium nudiflorum</i>	4.00	11.00	1.18	1.07	1.12
<i>Carex</i> sp.	4.00	10.00	1.07	1.07	1.07
<i>Desmodium paniculatum</i>	4.00	9.00	0.96	1.07	1.02
<i>Rubus argutus</i>	4.00	9.00	0.96	1.07	1.02
<i>Symphyotrichum anomalum</i>	4.00	9.00	0.96	1.07	1.02
<i>Bignonia capreolata</i>	3.00	11.00	1.18	0.80	0.99
<i>Solidago ulmifolia</i>	4.00	8.00	0.86	1.07	0.96
<i>Ulmus alata</i>	4.00	8.00	0.86	1.07	0.96
<i>Smilax bona-nox</i>	4.00	7.00	0.75	1.07	0.91
<i>Frangula caroliniana</i>	3.00	9.00	0.96	0.80	0.88
<i>Cornus florida</i>	3.00	8.00	0.86	0.80	0.83
<i>Carex rosea</i>	3.00	8.00	0.86	0.80	0.83

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Desmodium rotundifolium</i>	3.00	8.00	0.86	0.80	0.83
<i>Symphoricarpos orbiculatus</i>	3.00	8.00	0.86	0.80	0.83
<i>Symphyotrichum patens</i>	3.00	8.00	0.86	0.80	0.83
<i>Viola sororia</i>	3.00	8.00	0.86	0.80	0.83
<i>Fraxinus americana</i>	3.00	7.00	0.75	0.80	0.78
<i>Physalis heterophylla</i>	3.00	7.00	0.75	0.80	0.78
<i>Solidago nemoralis</i>	3.00	7.00	0.75	0.80	0.78
<i>Euphorbia corollata</i>	3.00	6.00	0.64	0.80	0.72
<i>Pinus taeda</i>	3.00	6.00	0.64	0.80	0.72
<i>Dichanthelium oligosanthes</i>	2.00	8.00	0.86	0.53	0.70
<i>Euonymus americanus</i>	2.00	8.00	0.86	0.53	0.70
<i>Pedicularis canadensis</i>	2.00	8.00	0.86	0.53	0.70
<i>Lespedeza virginica</i>	3.00	5.00	0.53	0.80	0.67
<i>Quercus muehlenbergii</i>	2.00	7.00	0.75	0.53	0.64
<i>Viburnum rufidulum</i>	2.00	7.00	0.75	0.53	0.64
<i>Carex blanda</i>	2.00	6.00	0.64	0.53	0.59
<i>Rhus copallinum</i>	2.00	6.00	0.64	0.53	0.59
<i>Vaccinium arboreum</i>	2.00	6.00	0.64	0.53	0.59
<i>Valerianella palmeri</i>	2.00	6.00	0.64	0.53	0.59
<i>Vitis aestivalis</i>	2.00	6.00	0.64	0.53	0.59
<i>Acalypha virginica</i>	2.00	5.00	0.53	0.53	0.53
<i>Carya tomentosa</i>	2.00	5.00	0.53	0.53	0.53
<i>Dichanthelium commutatum</i>	2.00	5.00	0.53	0.53	0.53
<i>Lobelia spicata</i>	2.00	5.00	0.53	0.53	0.53
<i>Microstegium vimineum</i>	2.00	5.00	0.53	0.53	0.53
<i>Prunus serotina</i>	2.00	5.00	0.53	0.53	0.53
<i>Solidago caesia</i>	2.00	5.00	0.53	0.53	0.53
<i>Stylosanthes biflora</i>	2.00	5.00	0.53	0.53	0.53
<i>Acer saccharum</i>	2.00	4.00	0.43	0.53	0.48
<i>Berchemia scandens</i>	2.00	4.00	0.43	0.53	0.48
<i>Botrychium virginianum</i>	2.00	4.00	0.43	0.53	0.48
<i>Symphyotrichum pilosum</i>	2.00	4.00	0.43	0.53	0.48
<i>Chasmanthium laxum</i>	1.00	5.00	0.53	0.27	0.40
<i>Juniperus virginiana</i>	2.00	2.00	0.21	0.53	0.37
<i>Solidago hispida</i>	2.00	2.00	0.21	0.53	0.37
<i>Dichanthelium acuminatum</i>	1.00	4.00	0.43	0.27	0.35
<i>Elymus hystrix</i>	1.00	4.00	0.43	0.27	0.35
<i>Lespedeza procumbens</i>	1.00	4.00	0.43	0.27	0.35

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Antennaria plantaginifolia</i>	1.00	3.00	0.32	0.27	0.29
<i>Asplenium platyneuron</i>	1.00	3.00	0.32	0.27	0.29
<i>Bromus</i> sp.	1.00	3.00	0.32	0.27	0.29
<i>Callicarpa americana</i>	1.00	3.00	0.32	0.27	0.29
<i>Carya cordiformis</i>	1.00	3.00	0.32	0.27	0.29
<i>Chasmanthium latifolium</i>	1.00	3.00	0.32	0.27	0.29
<i>Circaea canadensis</i>	1.00	3.00	0.32	0.27	0.29
<i>Carex crinita</i>	1.00	3.00	0.32	0.27	0.29
<i>Cunila origanoides</i>	1.00	3.00	0.32	0.27	0.29
<i>Desmodium</i> sp. 2	1.00	3.00	0.32	0.27	0.29
<i>Dichanthelium laxiflorum</i>	1.00	3.00	0.32	0.27	0.29
<i>Echinacea purpurea</i>	1.00	3.00	0.32	0.27	0.29
<i>Galium aparine</i>	1.00	3.00	0.32	0.27	0.29
<i>Hieracium gronovii</i>	1.00	3.00	0.32	0.27	0.29
<i>Hypericum hypericoides</i>	1.00	3.00	0.32	0.27	0.29
<i>Ostrya virginiana</i>	1.00	3.00	0.32	0.27	0.29
<i>Quercus stellata</i>	1.00	3.00	0.32	0.27	0.29
<i>Rosa carolina</i>	1.00	3.00	0.32	0.27	0.29
<i>Rubus trivialis</i>	1.00	3.00	0.32	0.27	0.29
<i>Symphotrichum lateriflorum</i>	1.00	3.00	0.32	0.27	0.29
<i>Trachelospermum difforme</i>	1.00	3.00	0.32	0.27	0.29
unknown graminoid 2	1.00	3.00	0.32	0.27	0.29
<i>Uvularia sessilifolia</i>	1.00	3.00	0.32	0.27	0.29
<i>Agrimonia rostellata</i>	1.00	2.00	0.21	0.27	0.24
<i>Asarum canadense</i>	1.00	2.00	0.21	0.27	0.24
<i>Carex blanda</i>	1.00	2.00	0.21	0.27	0.24
<i>Cercis canadensis</i>	1.00	2.00	0.21	0.27	0.24
<i>Chamaecrista fasciculata</i>	1.00	2.00	0.21	0.27	0.24
<i>Chasmanthium sessiliflorum</i>	1.00	2.00	0.21	0.27	0.24
<i>Desmodium</i> sp. 1	1.00	2.00	0.21	0.27	0.24
<i>Dioscorea villosa</i>	1.00	2.00	0.21	0.27	0.24
<i>Diospyros virginiana</i>	1.00	2.00	0.21	0.27	0.24
<i>Helianthus hirsutus</i>	1.00	2.00	0.21	0.27	0.24
<i>Hieracium longipilum</i>	1.00	2.00	0.21	0.27	0.24
<i>Lactuca canadensis</i>	1.00	2.00	0.21	0.27	0.24
<i>Oxalis dillenii</i>	1.00	2.00	0.21	0.27	0.24
<i>Penstemon digitalis</i>	1.00	2.00	0.21	0.27	0.24
<i>Phlox pilosa</i>	1.00	2.00	0.21	0.27	0.24
<i>Physalis virginiana</i>	1.00	2.00	0.21	0.27	0.24
<i>Prenanthes altissima</i>	1.00	2.00	0.21	0.27	0.24
<i>Prunella vulgaris</i>	1.00	2.00	0.21	0.27	0.24
<i>Sassafras albidum</i>	1.00	2.00	0.21	0.27	0.24

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Scleria oligantha</i>	1.00	2.00	0.21	0.27	0.24
<i>Scutellaria ovata</i>	1.00	2.00	0.21	0.27	0.24
<i>Smilax hispida</i>	1.00	2.00	0.21	0.27	0.24
<i>Smilax rotundifolia</i>	1.00	2.00	0.21	0.27	0.24
<i>Symplocos tinctoria</i>	1.00	2.00	0.21	0.27	0.24
<i>unknown sp. 15</i>	1.00	2.00	0.21	0.27	0.24
<i>Viola palmata</i>	1.00	2.00	0.21	0.27	0.24
<i>Conyza canadensis</i>	1.00	1.00	0.11	0.27	0.19
<i>Erechtites hieracifolius</i>	1.00	1.00	0.11	0.27	0.19
<i>Helianthus angustifolius</i>	1.00	1.00	0.11	0.27	0.19
<i>Ilex decidua</i>	1.00	1.00	0.11	0.27	0.19
<i>Quercus falcata</i>	1.00	1.00	0.11	0.27	0.19
<i>Scutellaria elliptica</i>	1.00	1.00	0.11	0.27	0.19
<i>Solidago radula</i>	1.00	1.00	0.11	0.27	0.19
Total	374.00	935.00	100.00	100.00	100.00

Table I21: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *oak woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	1.58	24.00	20.53	46.87	16.04	31.72	34.68	30.14
<i>Carya tomentosa</i>	0.66	16.00	8.55	17.82	6.10	12.06	14.45	14.17
snag	0.34	11.00	4.45	14.71	5.03	9.96	7.51	9.49
<i>Quercus rubra</i>	0.29	9.00	3.76	14.23	4.87	9.63	6.36	8.33
<i>Quercus stellata</i>	0.37	6.00	4.79	14.07	4.81	9.52	8.09	7.87
<i>Quercus velutina</i>	0.29	6.00	3.76	9.54	3.26	6.45	6.36	6.27
<i>Nyssa sylvatica</i>	0.24	6.00	3.08	11.17	3.82	7.56	5.20	6.25
<i>Liquidambar styraciflua</i>	0.13	4.00	1.71	4.82	1.65	3.26	2.89	3.38
<i>Acer saccharum</i>	0.16	4.00	2.05	3.76	1.29	2.55	3.47	3.34
<i>Juniperus virginiana</i>	0.16	4.00	2.05	3.31	1.13	2.24	3.47	3.24
<i>Fagus grandifolia</i>	0.08	2.00	1.03	1.23	0.42	0.83	1.73	1.52
<i>Fraxinus pennsylvanica</i>	0.05	2.00	0.68	1.32	0.45	0.89	1.16	1.35
<i>Fraxinus americana</i>	0.05	1.00	0.68	1.64	0.56	1.11	1.16	1.09
<i>Carya cordiformis</i>	0.05	1.00	0.68	1.19	0.41	0.80	1.16	0.99
<i>Robinia pseudoacacia</i>	0.03	1.00	0.34	0.69	0.23	0.46	0.58	0.68
<i>Carya texana</i>	0.03	1.00	0.34	0.49	0.17	0.33	0.58	0.64
<i>Pinus echinata</i>	0.03	1.00	0.34	0.49	0.17	0.33	0.58	0.64
<i>Prunus serotina</i>	0.03	1.00	0.34	0.41	0.14	0.28	0.58	0.62
Totals	4.55	100.00	59.18	147.75	50.55	100.00	100.00	100.00

Table I22: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *oak woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snag	1.50	14.14	19.50	5.02	1.72	15.36	10.86	13.45
<i>Carya tomentosa</i>	1.39	11.52	18.13	5.07	1.74	15.54	10.10	12.38
<i>Quercus alba</i>	1.68	7.33	21.89	4.28	1.47	13.12	12.19	10.88
<i>Nyssa sylvatica</i>	0.97	6.28	12.66	1.61	0.55	4.92	7.05	6.08
<i>Cornus florida</i>	0.82	6.28	10.61	1.46	0.50	4.46	5.90	5.55
<i>Quercus stellata</i>	0.47	2.09	6.16	3.40	1.16	10.40	3.43	5.31
<i>Acer rubrum</i>	0.87	3.66	11.29	1.81	0.62	5.55	6.29	5.17
<i>Prunus serotina</i>	0.84	5.76	10.95	0.97	0.33	2.96	6.10	4.94
<i>Ostrya virginiana</i>	0.97	2.62	12.66	0.81	0.28	2.47	7.05	4.04
<i>Acer saccharum</i>	0.39	2.62	5.13	1.47	0.50	4.50	2.86	3.33
<i>Ulmus alata</i>	0.21	2.09	2.74	1.45	0.50	4.43	1.52	2.68
<i>Liquidambar styraciflua</i>	0.18	2.09	2.39	1.33	0.46	4.08	1.33	2.50
<i>Carpinus caroliniana</i>	0.42	3.66	5.47	0.21	0.07	0.65	3.05	2.45
<i>Quercus rubra</i>	0.50	3.14	6.50	0.17	0.06	0.53	3.62	2.43
<i>Cercis canadensis</i>	0.37	3.14	4.79	0.21	0.07	0.64	2.67	2.15
<i>Fagus grandifolia</i>	0.29	1.05	3.76	0.52	0.18	1.61	2.10	1.58
<i>Ulmus americana</i>	0.26	1.57	3.42	0.34	0.12	1.05	1.90	1.51
<i>Fraxinus americana</i>	0.13	1.57	1.71	0.38	0.13	1.17	0.95	1.23
<i>Juniperus virginiana</i>	0.08	1.57	1.03	0.29	0.10	0.88	0.57	1.01
<i>Tilia americana</i>	0.18	1.05	2.39	0.19	0.07	0.58	1.33	0.99
<i>Morus rubra</i>	0.05	1.05	0.68	0.35	0.12	1.07	0.38	0.83
<i>Celtis laevigata</i>	0.11	1.57	1.37	0.03	0.01	0.09	0.76	0.81
<i>Ulmus rubra</i>	0.11	1.05	1.37	0.17	0.06	0.54	0.76	0.78
<i>Quercus velutina</i>	0.08	1.05	1.03	0.22	0.08	0.68	0.57	0.77
<i>Frangula caroliniana</i>	0.13	1.05	1.71	0.03	0.01	0.09	0.95	0.70
<i>Robinia pseudoacacia</i>	0.08	1.05	1.03	0.10	0.03	0.30	0.57	0.64
<i>Quercus michauxii</i>	0.08	1.05	1.03	0.08	0.03	0.23	0.57	0.62
<i>Amelanchier arborea</i>	0.05	1.05	0.68	0.13	0.04	0.38	0.38	0.60
<i>Aralia spinosa</i>	0.08	1.05	1.03	0.01	0.00	0.04	0.57	0.55
<i>Carya glabra</i>	0.03	0.52	0.34	0.24	0.08	0.75	0.19	0.49
<i>Rhus copallinum</i>	0.05	1.05	0.68	0.01	0.00	0.03	0.38	0.49

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Fraxinus pennsylvanica</i>	0.08	0.52	1.03	0.05	0.02	0.16	0.57	0.42
<i>Sassafras albidum</i>	0.08	0.52	1.03	0.03	0.01	0.08	0.57	0.39
<i>Asimina triloba</i>	0.05	0.52	0.68	0.05	0.02	0.16	0.38	0.35
<i>Quercus marilandica</i>	0.05	0.52	0.68	0.03	0.01	0.08	0.38	0.33
<i>Magnolia acuminata</i>	0.03	0.52	0.34	0.08	0.03	0.26	0.19	0.32
<i>Vaccinium pallidum</i>	0.03	0.52	0.34	0.02	0.01	0.06	0.19	0.26
<i>Hamamelis virginiana</i>	0.03	0.52	0.34	0.01	0.00	0.03	0.19	0.25
<i>Ulmus</i> sp.	0.03	0.52	0.34	0.01	0.00	0.03	0.19	0.25
<i>Rhus glabra</i>	0.03	0.52	0.34	0.01	0.00	0.02	0.19	0.24
<i>Prunus americana</i>	0.03	0.52	0.34	0.01	0.00	0.02	0.19	0.24
Totals	13.82	100.00	179.61	32.66	11.17	100.00	100.00	100.00

Table I23: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, oak woodland/savanna*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.55	8.43	375.34	21.26	14.85
<i>Nyssa sylvatica</i>	0.53	8.03	176.55	10.00	9.02
<i>Carya tomentosa</i>	0.66	10.04	122.93	6.96	8.50
<i>Quercus rubra</i>	0.47	7.23	112.47	6.37	6.80
<i>Prunus serotina</i>	0.37	5.62	85.01	4.81	5.22
<i>Quercus velutina</i>	0.32	4.82	74.54	4.22	4.52
<i>Ostrya virginiana</i>	0.26	4.02	85.01	4.81	4.42
<i>Rhus copallinum</i>	0.29	4.42	65.39	3.70	4.06
<i>Quercus alba</i>	0.32	4.82	53.62	3.04	3.93
<i>Rhus glabra</i>	0.13	2.01	81.08	4.59	3.30
<i>Cercis canadensis</i>	0.21	3.21	57.54	3.26	3.24
<i>Lindera benzoin</i>	0.05	0.80	98.09	5.56	3.18
<i>Fraxinus americana</i>	0.24	3.61	47.08	2.67	3.14
<i>Sassafras albidum</i>	0.24	3.61	39.23	2.22	2.92
<i>Cornus florida</i>	0.26	4.02	26.16	1.48	2.75
<i>Frangula caroliniana</i>	0.21	3.21	32.70	1.85	2.53
<i>Carpinus caroliniana</i>	0.13	2.01	30.08	1.70	1.86
<i>Carya texana</i>	0.13	2.01	15.69	0.89	1.45
<i>Robinia pseudoacacia</i>	0.11	1.61	19.62	1.11	1.36
<i>Hamamelis virginiana</i>	0.08	1.20	22.23	1.26	1.23
<i>Quercus stellata</i>	0.08	1.20	19.62	1.11	1.16
<i>Aesculus pavia</i>	0.05	0.80	22.23	1.26	1.03
<i>Ulmus alata</i>	0.08	1.20	11.77	0.67	0.94
<i>Acer saccharum</i>	0.05	0.80	13.08	0.74	0.77
<i>Pinus echinata</i>	0.05	0.80	9.15	0.52	0.66
<i>Aesculus glabra</i>	0.05	0.80	5.23	0.30	0.55
<i>Carya cordiformis</i>	0.05	0.80	5.23	0.30	0.55
<i>Magnolia acuminata</i>	0.05	0.80	3.92	0.22	0.51
<i>Asimina triloba</i>	0.05	0.80	2.62	0.15	0.48
<i>Viburnum rufidulum</i>	0.05	0.80	2.62	0.15	0.48
<i>Ulmus rubra</i>	0.03	0.40	7.85	0.44	0.42
<i>Viburnum dentatum</i>	0.03	0.40	6.54	0.37	0.39
<i>Quercus falcata</i>	0.03	0.40	5.23	0.30	0.35

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Quercus michauxii</i>	0.03	0.40	5.23	0.30	0.35
<i>Vaccinium arboreum</i>	0.03	0.40	5.23	0.30	0.35
<i>Quercus marilandica</i>	0.03	0.40	3.92	0.22	0.31
<i>Rhus aromatica</i>	0.03	0.40	3.92	0.22	0.31
<i>Callicarpa americana</i>	0.03	0.40	1.31	0.07	0.24
<i>Celtis occidentalis</i>	0.03	0.40	1.31	0.07	0.24
<i>Diospyros virginiana</i>	0.03	0.40	1.31	0.07	0.24
<i>Dirca palustris</i>	0.03	0.40	1.31	0.07	0.24
<i>Morus rubra</i>	0.03	0.40	1.31	0.07	0.24
<i>Styrax americanus</i>	0.03	0.40	1.31	0.07	0.24
<i>Styrax grandifolius</i>	0.03	0.40	1.31	0.07	0.24
<i>Tilia americana</i>	0.03	0.40	1.31	0.07	0.24
<i>Vaccinium stamineum</i>	0.03	0.40	1.31	0.07	0.24
Total	6.55	100.00	1765.53	100.00	100.00

Table I24: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, oak woodland/savanna, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	98.00	289.00	9.92	7.29	8.61
<i>Parthenocissus quinquefolia</i>	87.00	215.00	7.38	6.47	6.93
<i>Dichantheium boscii</i>	58.00	114.00	3.91	4.32	4.11
<i>Amphicarpaea bracteata</i>	41.00	75.00	2.57	3.05	2.81
<i>Desmodium nudiflorum</i>	27.00	74.00	2.54	2.01	2.27
<i>Acer rubrum</i>	29.00	63.00	2.16	2.16	2.16
<i>Rubus flagellaris</i>	26.00	67.00	2.30	1.93	2.12
<i>Helianthus divaricatus</i>	23.00	69.00	2.37	1.71	2.04
<i>Helianthus hirsutus</i>	23.00	58.00	1.99	1.71	1.85
<i>Vaccinium pallidum</i>	22.00	57.00	1.96	1.64	1.80
<i>Vitis rotundifolia</i>	22.00	51.00	1.75	1.64	1.69
<i>Quercus alba</i>	23.00	48.00	1.65	1.71	1.68
<i>Dichantheium commutatum</i>	19.00	37.00	1.27	1.41	1.34
<i>Carex</i> sp.	19.00	34.00	1.17	1.41	1.29
<i>Nyssa sylvatica</i>	14.00	42.00	1.44	1.04	1.24
<i>Sanicula canadensis</i>	19.00	31.00	1.06	1.41	1.24
<i>Vitis aestivalis</i>	16.00	35.00	1.20	1.19	1.20
<i>Brachyelytrum erectum</i>	17.00	32.00	1.10	1.26	1.18
<i>Galium circaezans</i>	17.00	26.00	0.89	1.26	1.08
<i>Viola sororia</i>	15.00	26.00	0.89	1.12	1.00
<i>Ostrya virginiana</i>	13.00	30.00	1.03	0.97	1.00
<i>Rubus argutus</i>	12.00	32.00	1.10	0.89	1.00
<i>Solidago ulmifolia</i>	12.00	31.00	1.06	0.89	0.98
<i>Smilax glauca</i>	15.00	23.00	0.79	1.12	0.95
<i>Cornus florida</i>	12.00	29.00	1.00	0.89	0.94
<i>Rubus trivialis</i>	13.00	25.00	0.86	0.97	0.91
<i>Danthonia spicata</i>	12.00	26.00	0.89	0.89	0.89
<i>Rhus copallinum</i>	10.00	29.00	1.00	0.74	0.87
<i>Scleria oligantha</i>	11.00	26.00	0.89	0.82	0.86
<i>Agrimonia rostellata</i>	12.00	23.00	0.79	0.89	0.84
<i>Dichantheium dichotomum</i>	12.00	22.00	0.76	0.89	0.82
<i>Clitoria mariana</i>	11.00	23.00	0.79	0.82	0.80
<i>Desmodium viridiflorum</i>	11.00	21.00	0.72	0.82	0.77
<i>Dioscorea villosa</i>	11.00	21.00	0.72	0.82	0.77
<i>Carya tomentosa</i>	10.00	23.00	0.79	0.74	0.77
<i>Carex rosea</i>	11.00	20.00	0.69	0.82	0.75
<i>Smilax bona-nox</i>	11.00	17.00	0.58	0.82	0.70
<i>Sassafras albidum</i>	10.00	18.00	0.62	0.74	0.68

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Quercus rubra</i>	9.00	20.00	0.69	0.67	0.68
<i>Symphyotrichum anomalum</i>	9.00	19.00	0.65	0.67	0.66
<i>Chamaecrista fasciculata</i>	10.00	16.00	0.55	0.74	0.65
<i>Viola palmata</i>	9.00	18.00	0.62	0.67	0.64
<i>Schizachyrium scoparium</i>	8.00	20.00	0.69	0.60	0.64
<i>Euphorbia corollata</i>	9.00	17.00	0.58	0.67	0.63
<i>Smilax rotundifolia</i>	9.00	17.00	0.58	0.67	0.63
<i>Fraxinus americana</i>	8.00	19.00	0.65	0.60	0.62
<i>Dichantherium linearifolium</i>	8.00	18.00	0.62	0.60	0.61
<i>Prunus serotina</i>	8.00	17.00	0.58	0.60	0.59
<i>Pinus echinata</i>	10.00	12.00	0.41	0.74	0.58
<i>Euonymus americanus</i>	9.00	14.00	0.48	0.67	0.58
<i>Lespedeza repens</i>	7.00	18.00	0.62	0.52	0.57
<i>Quercus stellata</i>	7.00	18.00	0.62	0.52	0.57
<i>Viola</i> sp.	10.00	11.00	0.38	0.74	0.56
<i>Oxalis dillenii</i>	9.00	12.00	0.41	0.67	0.54
<i>Bromus pubescens</i>	7.00	16.00	0.55	0.52	0.54
<i>Quercus velutina</i>	7.00	16.00	0.55	0.52	0.54
<i>Polystichum acrostichoides</i>	6.00	18.00	0.62	0.45	0.53
<i>Cunila origanoides</i>	5.00	17.00	0.58	0.37	0.48
<i>Desmodium laevigatum</i>	8.00	10.00	0.34	0.60	0.47
<i>Chasmanthium latifolium</i>	6.00	13.00	0.45	0.45	0.45
<i>Phegopteris hexagonoptera</i>	5.00	15.00	0.51	0.37	0.44
<i>Acer saccharum</i>	7.00	10.00	0.34	0.52	0.43
<i>Potentilla simplex</i>	6.00	12.00	0.41	0.45	0.43
<i>Phryma leptostachya</i>	7.00	9.00	0.31	0.52	0.41
<i>Symphyotrichum patens</i>	5.00	13.00	0.45	0.37	0.41
<i>Carex communis</i>	6.00	10.00	0.34	0.45	0.39
<i>Carex hirsutella</i>	5.00	12.00	0.41	0.37	0.39
<i>Desmodium paniculatum</i>	5.00	11.00	0.38	0.37	0.37
<i>Desmodium rotundifolium</i>	5.00	11.00	0.38	0.37	0.37
<i>Rubus</i> sp.	5.00	11.00	0.38	0.37	0.37
<i>Polygonatum biflorum</i>	5.00	10.00	0.34	0.37	0.36
<i>Amelanchier arborea</i>	5.00	9.00	0.31	0.37	0.34
<i>Ageratina altissima</i>	4.00	11.00	0.38	0.30	0.34
<i>Ambrosia artemisiifolia</i>	5.00	8.00	0.27	0.37	0.32
<i>Ulmus alata</i>	4.00	10.00	0.34	0.30	0.32

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Piptochaetium avenaceum</i>	3.00	12.00	0.41	0.22	0.32
<i>Lespedeza virginica</i>	4.00	9.00	0.31	0.30	0.30
<i>Asarum canadense</i>	4.00	8.00	0.27	0.30	0.29
<i>Galactia volubilis</i>	4.00	8.00	0.27	0.30	0.29
<i>Solidago nemoralis</i>	4.00	8.00	0.27	0.30	0.29
<i>Lactuca canadensis</i>	4.00	7.00	0.24	0.30	0.27
<i>Boechera canadensis</i>	4.00	6.00	0.21	0.30	0.25
<i>Elymus glabriflorus</i>	4.00	6.00	0.21	0.30	0.25
<i>Lespedeza procumbens</i>	4.00	6.00	0.21	0.30	0.25
<i>Aesculus pavia</i>	3.00	8.00	0.27	0.22	0.25
<i>Carya texana</i>	3.00	8.00	0.27	0.22	0.25
<i>Pycnanthemum tenuifolium</i>	3.00	8.00	0.27	0.22	0.25
<i>Solidago radula</i>	3.00	8.00	0.27	0.22	0.25
<i>Galium concinnum</i>	4.00	5.00	0.17	0.30	0.23
<i>Thalictrum thalictroides</i>	4.00	5.00	0.17	0.30	0.23
<i>Carya texana</i>	3.00	7.00	0.24	0.22	0.23
<i>Lespedeza hirta</i>	3.00	7.00	0.24	0.22	0.23
<i>Tradescantia ohimensis</i>	3.00	7.00	0.24	0.22	0.23
<i>Carex blanda</i>	3.00	6.00	0.21	0.22	0.21
<i>Carex glaucoidea</i>	3.00	6.00	0.21	0.22	0.21
<i>Carex oligocarpa</i>	3.00	6.00	0.21	0.22	0.21
<i>Carex retroflexa</i>	3.00	6.00	0.21	0.22	0.21
<i>Cynoglossum virginianum</i>	3.00	6.00	0.21	0.22	0.21
<i>Geum canadense</i>	3.00	6.00	0.21	0.22	0.21
<i>Scutellaria ovata</i>	3.00	6.00	0.21	0.22	0.21
<i>Rhus aromatica</i>	2.00	8.00	0.27	0.15	0.21
<i>Arisaema dracontium</i>	3.00	5.00	0.17	0.22	0.20
<i>Phlox pilosa</i>	3.00	5.00	0.17	0.22	0.20
<i>Podophyllum peltatum</i>	3.00	5.00	0.17	0.22	0.20
<i>Prenanthes altissima</i>	3.00	5.00	0.17	0.22	0.20
<i>Ruellia pedunculata</i>	3.00	5.00	0.17	0.22	0.20
<i>Coreopsis grandiflora</i>	2.00	7.00	0.24	0.15	0.19
<i>Solidago hispida</i>	3.00	4.00	0.14	0.22	0.18
<i>Solidago petiolaris</i>	3.00	4.00	0.14	0.22	0.18
<i>Dichanthelium oligosanthes</i>	2.00	6.00	0.21	0.15	0.18
<i>Dirca palustris</i>	2.00	6.00	0.21	0.15	0.18
<i>Carya cordiformis</i>	3.00	3.00	0.10	0.22	0.16
<i>Bignonia capreolata</i>	2.00	5.00	0.17	0.15	0.16
<i>Cercis canadensis</i>	2.00	5.00	0.17	0.15	0.16
<i>Crataegous sp.</i>	2.00	5.00	0.17	0.15	0.16

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Hamamelis virginiana</i>	2.00	5.00	0.17	0.15	0.16
<i>Monarda bradburiana</i>	2.00	5.00	0.17	0.15	0.16
<i>Morus rubra</i>	2.00	5.00	0.17	0.15	0.16
<i>Packera obovata</i>	2.00	5.00	0.17	0.15	0.16
<i>Viburnum dentatum</i>	2.00	5.00	0.17	0.15	0.16
<i>Viburnum rufidulum</i>	2.00	5.00	0.17	0.15	0.16
<i>Asimina triloba</i>	2.00	4.00	0.14	0.15	0.14
<i>Carex caroliniana</i>	2.00	4.00	0.14	0.15	0.14
<i>Elymus hystrix</i>	2.00	4.00	0.14	0.15	0.14
<i>Gillenia stipulata</i>	2.00	4.00	0.14	0.15	0.14
<i>Menispermum canadense</i>	2.00	4.00	0.14	0.15	0.14
<i>Quercus michauxii</i>	2.00	4.00	0.14	0.15	0.14
<i>Ampelopsis arborea</i>	2.00	3.00	0.10	0.15	0.13
<i>Aristolochia serpentaria</i>	2.00	3.00	0.10	0.15	0.13
<i>Celtis occidentalis</i>	2.00	3.00	0.10	0.15	0.13
<i>Carex crinita</i>	2.00	3.00	0.10	0.15	0.13
<i>Galium pilosum</i>	2.00	3.00	0.10	0.15	0.13
<i>Helianthus angustifolius</i>	2.00	3.00	0.10	0.15	0.13
<i>Rhus glabra</i>	2.00	3.00	0.10	0.15	0.13
<i>Sanguinaria canadensis</i>	2.00	3.00	0.10	0.15	0.13
<i>Scutellaria elliptica</i>	2.00	3.00	0.10	0.15	0.13
<i>Viola sagittata</i>	2.00	3.00	0.10	0.15	0.13
<i>Acalypha monococca</i>	2.00	2.00	0.07	0.15	0.11
<i>Circaea canadensis</i>	2.00	2.00	0.07	0.15	0.11
<i>Passiflora lutea</i>	2.00	2.00	0.07	0.15	0.11
<i>Phlox</i> sp.	2.00	2.00	0.07	0.15	0.11
<i>Pseudognaphalium obtusifolium</i>	2.00	2.00	0.07	0.15	0.11
<i>Smilax hispida</i>	2.00	2.00	0.07	0.15	0.11
<i>Carex cephalophora</i>	1.00	4.00	0.14	0.07	0.11
<i>Robinia pseudoacacia</i>	1.00	4.00	0.14	0.07	0.11
<i>Symphoricarpos orbiculatus</i>	1.00	4.00	0.14	0.07	0.11
<i>Aesculus glabra</i>	1.00	3.00	0.10	0.07	0.09
<i>Carex glaucoidea</i>	1.00	3.00	0.10	0.07	0.09
<i>Ceanothus americanus</i>	1.00	3.00	0.10	0.07	0.09
<i>Dichanthelium acuminatum</i>	1.00	3.00	0.10	0.07	0.09
<i>Erigeron strigosus</i>	1.00	3.00	0.10	0.07	0.09
<i>Hydrastis canadensis</i>	1.00	3.00	0.10	0.07	0.09
<i>Laportea canadensis</i>	1.00	3.00	0.10	0.07	0.09
<i>Lobelia spicata</i>	1.00	3.00	0.10	0.07	0.09

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Lysimachia quadriflora</i>	1.00	3.00	0.10	0.07	0.09
<i>Polymnia canadensis</i>	1.00	3.00	0.10	0.07	0.09
<i>Rudbeckia hirta</i>	1.00	3.00	0.10	0.07	0.09
<i>Symphyotrichum pilosum</i>	1.00	3.00	0.10	0.07	0.09
unknown forb 6	1.00	3.00	0.10	0.07	0.09
unknown graminoid 2	1.00	3.00	0.10	0.07	0.09
<i>Vaccinium arboreum</i>	1.00	3.00	0.10	0.07	0.09
<i>Vibernum</i> sp.	1.00	3.00	0.10	0.07	0.09
<i>Viola pedata</i>	1.00	3.00	0.10	0.07	0.09
<i>Antennaria plantaginifolia</i>	1.00	2.00	0.07	0.07	0.07
<i>Apocynum cannabinum</i>	1.00	2.00	0.07	0.07	0.07
<i>Carya</i> sp.	1.00	2.00	0.07	0.07	0.07
<i>Croton willdenowii</i>	1.00	2.00	0.07	0.07	0.07
<i>Carex complanata</i>	1.00	2.00	0.07	0.07	0.07
<i>Carex laxiflora</i>	1.00	2.00	0.07	0.07	0.07
<i>Carex nigromarginata</i>	1.00	2.00	0.07	0.07	0.07
<i>Carex planispicata</i>	1.00	2.00	0.07	0.07	0.07
<i>Desmodium</i> sp.	1.00	2.00	0.07	0.07	0.07
<i>Diarrhena americana</i>	1.00	2.00	0.07	0.07	0.07
<i>Erigeron annuus</i>	1.00	2.00	0.07	0.07	0.07
<i>Eutrochium purpureum</i>	1.00	2.00	0.07	0.07	0.07
<i>Fallopia scandens</i>	1.00	2.00	0.07	0.07	0.07
<i>Festuca subverticillata</i>	1.00	2.00	0.07	0.07	0.07
<i>Frangula caroliniana</i>	1.00	2.00	0.07	0.07	0.07
<i>Galium arkansanum</i>	1.00	2.00	0.07	0.07	0.07
<i>Ilex decidua</i>	1.00	2.00	0.07	0.07	0.07
<i>Iris cristata</i>	1.00	2.00	0.07	0.07	0.07
<i>Leersia virginica</i>	1.00	2.00	0.07	0.07	0.07
<i>Lespedeza cuneata</i>	1.00	2.00	0.07	0.07	0.07
<i>Liatris aspera</i>	1.00	2.00	0.07	0.07	0.07
<i>Lindera benzoin</i>	1.00	2.00	0.07	0.07	0.07
<i>Liquidambar styraciflua</i>	1.00	2.00	0.07	0.07	0.07
<i>Lonicera sempervirens</i>	1.00	2.00	0.07	0.07	0.07
<i>Primula meadia</i>	1.00	2.00	0.07	0.07	0.07
<i>Rosa carolina</i>	1.00	2.00	0.07	0.07	0.07
<i>Rosa setigera</i>	1.00	2.00	0.07	0.07	0.07
<i>Salvia lyrata</i>	1.00	2.00	0.07	0.07	0.07
<i>Sideroxylon lanuginosum</i>	1.00	2.00	0.07	0.07	0.07
<i>Silphium asteriscus</i>	1.00	2.00	0.07	0.07	0.07

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Solidago flexicaulis</i>	1.00	2.00	0.07	0.07	0.07
<i>Solidago</i> sp.	1.00	2.00	0.07	0.07	0.07
<i>Symphyotrichum dumosum</i>	1.00	2.00	0.07	0.07	0.07
<i>Tephrosia virginiana</i>	1.00	2.00	0.07	0.07	0.07
<i>unknown</i> sp. 17	1.00	2.00	0.07	0.07	0.07
<i>unknown</i> sp. 18	1.00	2.00	0.07	0.07	0.07
<i>unknown</i> sp. 20	1.00	2.00	0.07	0.07	0.07
<i>Andropogon gerardii</i>	1.00	1.00	0.03	0.07	0.05
<i>Angelica venenosa</i>	1.00	1.00	0.03	0.07	0.05
<i>Aralia spinosa</i>	1.00	1.00	0.03	0.07	0.05
<i>Arisaema triphyllum</i>	1.00	1.00	0.03	0.07	0.05
<i>Asplenium platyneuron</i>	1.00	1.00	0.03	0.07	0.05
<i>Croton monanthogynus</i>	1.00	1.00	0.03	0.07	0.05
<i>Desmodium</i> sp. 3	1.00	1.00	0.03	0.07	0.05
<i>Echinacea purpurea</i>	1.00	1.00	0.03	0.07	0.05
<i>Elymus virginicus</i>	1.00	1.00	0.03	0.07	0.05
<i>Erechtites hieraciifolius</i>	1.00	1.00	0.03	0.07	0.05
<i>Galium triflorum</i>	1.00	1.00	0.03	0.07	0.05
<i>Helianthus grosseserratus</i>	1.00	1.00	0.03	0.07	0.05
<i>Hieracium longipilum</i>	1.00	1.00	0.03	0.07	0.05
<i>Hypericum hypericoides</i>	1.00	1.00	0.03	0.07	0.05
<i>Lonicera</i> sp.	1.00	1.00	0.03	0.07	0.05
<i>Lonicera japonica</i>	1.00	1.00	0.03	0.07	0.05
<i>Muhlenbergia</i> sp.	1.00	1.00	0.03	0.07	0.05
<i>Muhlenbergia</i> sp.	1.00	1.00	0.03	0.07	0.05
<i>Physalis virginiana</i>	1.00	1.00	0.03	0.07	0.05
<i>Polemonium reptans</i>	1.00	1.00	0.03	0.07	0.05
<i>Ptelea trifoliata</i>	1.00	1.00	0.03	0.07	0.05
<i>Scutellaria</i> sp.	1.00	1.00	0.03	0.07	0.05
<i>Smilax</i> sp.	1.00	1.00	0.03	0.07	0.05
<i>Solanum</i> sp.	1.00	1.00	0.03	0.07	0.05
<i>Solidago odora</i>	1.00	1.00	0.03	0.07	0.05
<i>Symphyotrichum</i> sp.	1.00	1.00	0.03	0.07	0.05
<i>Uvularia sessilifolia</i>	1.00	1.00	0.03	0.07	0.05
<i>Vitis cinerea</i>	1.00	1.00	0.03	0.07	0.05
Total	1344.00	2913.00	100.00	100.00	100.00

Table I25: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *overstory species* (8"+ dbh), *oak forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Quercus alba</i>	3.18	21.32	41.39	123.73	42.33	39.74	39.93	33.67
<i>Quercus rubra</i>	1.05	12.50	13.68	53.19	18.20	17.08	13.20	14.26
<i>Liquidambar styraciflua</i>	0.63	7.35	8.21	18.00	6.16	5.78	7.92	7.02
snag	0.39	8.82	5.13	15.30	5.23	4.91	4.95	6.23
<i>Nyssa sylvatica</i>	0.42	5.88	5.47	17.11	5.85	5.50	5.28	5.55
<i>Quercus velutina</i>	0.34	5.88	4.45	18.49	6.33	5.94	4.29	5.37
<i>Carya tomentosa</i>	0.32	5.88	4.11	9.46	3.24	3.04	3.96	4.29
<i>Pinus echinata</i>	0.18	3.68	2.39	6.73	2.30	2.16	2.31	2.72
<i>Carya texana</i>	0.21	2.21	2.74	5.43	1.86	1.74	2.64	2.20
<i>Juniperus virginiana</i>	0.18	2.94	2.39	4.16	1.42	1.34	2.31	2.20
<i>Quercus stellata</i>	0.18	1.47	2.39	6.29	2.15	2.02	2.31	1.93
<i>Carya glabra</i>	0.11	2.21	1.37	6.93	2.37	2.23	1.32	1.92
<i>Acer rubrum</i>	0.11	2.94	1.37	1.79	0.61	0.58	1.32	1.61
<i>Carya cordiformis</i>	0.08	2.21	1.03	2.52	0.86	0.81	0.99	1.34
<i>Acer saccharum</i>	0.08	2.21	1.03	2.15	0.74	0.69	0.99	1.30
<i>Platanus occidentalis</i>	0.08	1.47	1.03	4.15	1.42	1.33	0.99	1.26
<i>Quercus falcata</i>	0.05	1.47	0.68	3.81	1.30	1.22	0.66	1.12
<i>Juglans nigra</i>	0.05	1.47	0.68	1.86	0.64	0.60	0.66	0.91
<i>Tilia americana</i>	0.05	1.47	0.68	1.54	0.53	0.50	0.66	0.88
<i>Prunus serotina</i>	0.05	1.47	0.68	1.26	0.43	0.41	0.66	0.85
<i>Carya ovata</i>	0.03	0.74	0.34	2.20	0.75	0.71	0.33	0.59
<i>Celtis laevigata</i>	0.05	0.74	0.68	1.08	0.37	0.35	0.66	0.58
<i>Fraxinus americana</i>	0.03	0.74	0.34	1.51	0.52	0.49	0.33	0.52
<i>Pinus taeda</i>	0.03	0.74	0.34	0.93	0.32	0.30	0.33	0.45
<i>Robinia pseudoacacia</i>	0.03	0.74	0.34	0.74	0.25	0.24	0.33	0.43
<i>Fraxinus pennsylvanica</i>	0.03	0.74	0.34	0.57	0.19	0.18	0.33	0.42
<i>Ulmus alata</i>	0.03	0.74	0.34	0.42	0.15	0.14	0.33	0.40
Totals	7.97	100.00	103.66	311.36	106.52	100.00	100.00	100.00

Table I26: Frequency, relative frequency, stems/acre, basal area, basal area/acre, relative basal area, relative density, and importance value of *midstory species* (1" – 7.9" dbh), *oak forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
snags	2.74	11.93	35.58	7.94	2.72	16.62	14.13	14.23
<i>Ostrya virginiana</i>	2.29	6.58	29.76	3.42	1.17	7.17	11.82	8.53
<i>Acer rubrum</i>	1.92	7.41	24.97	3.50	1.20	7.34	9.92	8.22
<i>Quercus alba</i>	0.74	7.41	9.58	5.47	1.87	11.45	3.80	7.55
<i>Nyssa sylvatica</i>	1.47	7.00	19.16	3.80	1.30	7.96	7.61	7.52
<i>Cornus florida</i>	1.97	7.82	25.66	2.17	0.74	4.55	10.19	7.52
<i>Carya tomentosa</i>	0.92	6.58	11.97	4.29	1.47	8.98	4.76	6.77
<i>Liquidambar styraciflua</i>	0.55	3.29	7.18	4.10	1.40	8.59	2.85	4.91
<i>Ulmus alata</i>	0.97	3.70	12.66	1.16	0.40	2.44	5.03	3.72
<i>Prunus serotina</i>	0.74	3.70	9.58	1.68	0.58	3.53	3.80	3.68
<i>Carpinus caroliniana</i>	0.92	2.88	11.97	0.61	0.21	1.27	4.76	2.97
<i>Ulmus americana</i>	0.76	2.47	9.92	0.71	0.24	1.50	3.94	2.64
<i>Juniperus virginiana</i>	0.24	2.06	3.08	1.51	0.52	3.16	1.22	2.15
<i>Acer saccharum</i>	0.29	1.65	3.76	0.98	0.34	2.05	1.49	1.73
<i>Amelanchier arborea</i>	0.24	2.47	3.08	0.54	0.18	1.12	1.22	1.61
<i>Carya glabra</i>	0.34	1.23	4.45	0.59	0.20	1.24	1.77	1.41
<i>Fraxinus americana</i>	0.21	2.06	2.74	0.31	0.10	0.64	1.09	1.26
<i>Quercus rubra</i>	0.21	1.65	2.74	0.42	0.14	0.88	1.09	1.20
<i>Tilia americana</i>	0.13	1.23	1.71	0.70	0.24	1.47	0.68	1.13
<i>Fraxinus pennsylvanica</i>	0.21	1.23	2.74	0.35	0.12	0.74	1.09	1.02
<i>Carya cordiformis</i>	0.11	1.23	1.37	0.60	0.21	1.26	0.54	1.01
<i>Cercis canadensis</i>	0.13	1.65	1.71	0.33	0.11	0.70	0.68	1.01
<i>Fagus grandifolia</i>	0.13	0.82	1.71	0.41	0.14	0.86	0.68	0.79
<i>Quercus velutina</i>	0.11	1.23	1.37	0.18	0.06	0.37	0.54	0.72
<i>Magnolia acuminata</i>	0.08	0.82	1.03	0.39	0.13	0.83	0.41	0.69
<i>Quercus muehlenbergii</i>	0.13	0.82	1.71	0.14	0.05	0.29	0.68	0.60
<i>Juglans nigra</i>	0.05	0.82	0.68	0.33	0.11	0.68	0.27	0.59
<i>Sassafras albidum</i>	0.08	1.23	1.03	0.01	0.00	0.03	0.41	0.56
<i>Frangula caroliniana</i>	0.13	0.82	1.71	0.04	0.01	0.08	0.68	0.53
<i>Prunus mexicana</i>	0.08	0.82	1.03	0.04	0.01	0.07	0.41	0.43
<i>Carya ovata</i>	0.05	0.41	0.68	0.24	0.08	0.50	0.27	0.39

Species	Frequency	Relative Frequency	Stems/Acre	Sum BA	Sum BA/Acre	Relative BA	Relative Density	Importance value
<i>Viburnum rufidulum</i>	0.05	0.82	0.68	0.02	0.01	0.04	0.27	0.38
<i>Platanus occidentalis</i>	0.03	0.41	0.34	0.27	0.09	0.56	0.14	0.37
<i>Magnolia tripetala</i>	0.11	0.41	1.37	0.04	0.02	0.09	0.54	0.35
<i>Robinia pseudoacacia</i>	0.03	0.41	0.34	0.14	0.05	0.30	0.14	0.28
<i>Ulmus rubra</i>	0.05	0.41	0.68	0.07	0.02	0.14	0.27	0.27
<i>Carya texana</i>	0.03	0.41	0.34	0.10	0.03	0.21	0.14	0.25
<i>Diospyros virginiana</i>	0.03	0.41	0.34	0.05	0.02	0.11	0.14	0.22
<i>Viburnum prunifolium</i>	0.03	0.41	0.34	0.04	0.01	0.08	0.14	0.21
<i>Celtis laevigata</i>	0.03	0.41	0.34	0.03	0.01	0.05	0.14	0.20
<i>Hamamelis virginiana</i>	0.03	0.41	0.34	0.01	0.00	0.02	0.14	0.19
<i>Asimina triloba</i>	0.03	0.41	0.34	0.01	0.00	0.01	0.14	0.19
Totals	19.37	100.00	251.79	47.76	16.34	100.00	100.00	100.00

Table I27: Frequency, relative frequency, stems/acre, relative density, and importance value of *shrub layer species, oak forest*, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Acer rubrum</i>	0.58	9.21	315.18	19.28	14.24
<i>Sassafras albidum</i>	0.34	5.44	197.48	12.08	8.76
<i>Carya tomentosa</i>	0.50	7.95	95.47	5.84	6.89
<i>Cornus florida</i>	0.47	7.53	91.55	5.60	6.57
<i>Prunus serotina</i>	0.45	7.11	98.09	6.00	6.56
<i>Nyssa sylvatica</i>	0.37	5.86	87.62	5.36	5.61
<i>Ostrya virginiana</i>	0.29	4.60	90.24	5.52	5.06
<i>Quercus rubra</i>	0.26	4.18	95.47	5.84	5.01
<i>Fraxinus americana</i>	0.29	4.60	81.08	4.96	4.78
<i>Frangula caroliniana</i>	0.26	4.18	74.54	4.56	4.37
<i>Cercis canadensis</i>	0.21	3.35	45.77	2.80	3.07
<i>Ulmus alata</i>	0.18	2.93	41.85	2.56	2.74
<i>Hamamelis virginiana</i>	0.16	2.51	35.31	2.16	2.34
<i>Rhus copallinum</i>	0.13	2.09	27.46	1.68	1.89
<i>Quercus velutina</i>	0.13	2.09	24.85	1.52	1.81
<i>Celtis occidentalis</i>	0.13	2.09	18.31	1.12	1.61
<i>Carpinus caroliniana</i>	0.08	1.26	24.85	1.52	1.39
<i>Fagus grandifolia</i>	0.08	1.26	23.54	1.44	1.35
<i>Liquidambar styraciflua</i>	0.08	1.26	19.62	1.20	1.23
<i>Carya glabra</i>	0.08	1.26	17.00	1.04	1.15
<i>Carya cordiformis</i>	0.11	1.67	9.15	0.56	1.12
<i>Acer saccharum</i>	0.08	1.26	15.69	0.96	1.11
<i>Ulmus rubra</i>	0.11	1.67	6.54	0.40	1.04
<i>Quercus muehlenbergii</i>	0.08	1.26	13.08	0.80	1.03
<i>Ulmus americana</i>	0.08	1.26	11.77	0.72	0.99
<i>Fraxinus pennsylvanica</i>	0.08	1.26	7.85	0.48	0.87
<i>Robinia pseudoacacia</i>	0.08	1.26	3.92	0.24	0.75
<i>Lindera benzoin</i>	0.05	0.84	10.46	0.64	0.74
<i>Aesculus pavia</i>	0.05	0.84	3.92	0.24	0.54
<i>Aesculus glabra</i>	0.05	0.84	2.62	0.16	0.50
<i>Juniperus virginiana</i>	0.05	0.84	2.62	0.16	0.50
<i>Viburnum rufidulum</i>	0.03	0.42	7.85	0.48	0.45
<i>Rhus glabra</i>	0.03	0.42	5.23	0.32	0.37

Species	Frequency	Relative Frequency	Stems/Acre	Relative Density	Importance Value
<i>Callicarpa americana</i>	0.03	0.42	3.92	0.24	0.33
<i>Chionanthus virginicus</i>	0.03	0.42	3.92	0.24	0.33
<i>Dirca palustris</i>	0.03	0.42	3.92	0.24	0.33
<i>Asimina triloba</i>	0.03	0.42	2.62	0.16	0.29
<i>Carya ovata</i>	0.03	0.42	2.62	0.16	0.29
<i>Morus rubra</i>	0.03	0.42	2.62	0.16	0.29
<i>Alnus serrulata</i>	0.03	0.42	1.31	0.08	0.25
<i>Diospyros virginiana</i>	0.03	0.42	1.31	0.08	0.25
<i>Magnolia tripetala</i>	0.03	0.42	1.31	0.08	0.25
<i>Pinus echinata</i>	0.03	0.42	1.31	0.08	0.25
<i>Quercus alba</i>	0.03	0.42	1.31	0.08	0.25
<i>Tilia americana</i>	0.03	0.42	1.31	0.08	0.25
<i>Vaccinium arboreum</i>	0.03	0.42	1.31	0.08	0.25
Total	6.29	100.00	1634.75	100.00	100.00

Table I28: Frequency, total cover, relative cover, relative frequency, and importance value of ground layer species, oak forest, on the Big Piney and Pleasant Hill Ranger districts, Ozark-St. Francis National Forest, Arkansas, June 2014-2015.

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Toxicodendron radicans</i>	108.00	341.00	12.24	8.22	10.23
<i>Parthenocissus quinquefolia</i>	72.00	172.00	6.17	5.48	5.83
<i>Acer rubrum</i>	49.00	104.00	3.73	3.73	3.73
<i>Vitis rotundifolia</i>	45.00	110.00	3.95	3.42	3.69
<i>Dichanthelium boscii</i>	41.00	94.00	3.37	3.12	3.25
<i>Amphicarpaea bracteata</i>	44.00	87.00	3.12	3.35	3.24
<i>Sanicula canadensis</i>	31.00	55.00	1.97	2.36	2.17
<i>Brachyelytrum erectum</i>	28.00	61.00	2.19	2.13	2.16
<i>Quercus alba</i>	29.00	58.00	2.08	2.21	2.14
<i>Viola sororia</i>	30.00	55.00	1.97	2.28	2.13
<i>Fraxinus americana</i>	25.00	56.00	2.01	1.90	1.96
<i>Cornus florida</i>	24.00	58.00	2.08	1.83	1.95
<i>Sassafras albidum</i>	24.00	44.00	1.58	1.83	1.70
<i>Smilax rotundifolia</i>	21.00	49.00	1.76	1.60	1.68
<i>Quercus rubra</i>	20.00	46.00	1.65	1.52	1.59
<i>Nyssa sylvatica</i>	22.00	40.00	1.44	1.67	1.56
<i>Rubus flagellaris</i>	19.00	46.00	1.65	1.45	1.55
<i>Ostrya virginiana</i>	19.00	42.00	1.51	1.45	1.48
<i>Smilax glauca</i>	21.00	34.00	1.22	1.60	1.41
<i>Desmodium nudiflorum</i>	17.00	36.00	1.29	1.29	1.29
<i>Carex blanda</i>	17.00	25.00	0.90	1.29	1.10
<i>Dichanthelium commutatum</i>	17.00	25.00	0.90	1.29	1.10
<i>Prunus serotina</i>	15.00	29.00	1.04	1.14	1.09
<i>Agrimonia rostellata</i>	14.00	31.00	1.11	1.07	1.09
<i>Rubus argutus</i>	14.00	29.00	1.04	1.07	1.05
<i>Carya tomentosa</i>	14.00	28.00	1.01	1.07	1.04
<i>Vaccinium pallidum</i>	12.00	29.00	1.04	0.91	0.98
<i>Smilax bona-nox</i>	14.00	21.00	0.75	1.07	0.91
<i>Euonymus americanus</i>	14.00	18.00	0.65	1.07	0.86
<i>Carex sp.</i>	11.00	24.00	0.86	0.84	0.85
<i>Quercus velutina</i>	10.00	24.00	0.86	0.76	0.81
<i>Pinus echinata</i>	11.00	21.00	0.75	0.84	0.80
<i>Scleria oligantha</i>	10.00	23.00	0.83	0.76	0.79
<i>Vitis aestivalis</i>	10.00	23.00	0.83	0.76	0.79
<i>Carya cordiformis</i>	9.00	24.00	0.86	0.68	0.77
<i>Ulmus alata</i>	10.00	19.00	0.68	0.76	0.72
<i>Desmodium glutinosum</i>	9.00	21.00	0.75	0.68	0.72
<i>Scutellaria ovata</i>	10.00	15.00	0.54	0.76	0.65

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Carex glaucodea</i>	8.00	17.00	0.61	0.61	0.61
<i>Galium circaezans</i>	9.00	14.00	0.50	0.68	0.59
<i>Diarrhena americana</i>	8.00	16.00	0.57	0.61	0.59
<i>Berchemia scandens</i>	7.00	16.00	0.57	0.53	0.55
<i>Polystichum acrostichoides</i>	6.00	16.00	0.57	0.46	0.52
<i>Acer saccharum</i>	8.00	10.00	0.36	0.61	0.48
<i>Viola palmata</i>	8.00	10.00	0.36	0.61	0.48
<i>Dichanthelium dichotomum</i>	7.00	11.00	0.39	0.53	0.46
<i>Danthonia spicata</i>	6.00	13.00	0.47	0.46	0.46
<i>Frangula caroliniana</i>	6.00	13.00	0.47	0.46	0.46
<i>Vitis cinerea</i>	6.00	12.00	0.43	0.46	0.44
<i>Galium concinnum</i>	6.00	11.00	0.39	0.46	0.43
<i>Symphoricarpos orbiculatus</i>	5.00	13.00	0.47	0.38	0.42
<i>Ulmus rubra</i>	5.00	13.00	0.47	0.38	0.42
<i>Viola sagittata</i>	7.00	8.00	0.29	0.53	0.41
<i>Dioscorea villosa</i>	6.00	10.00	0.36	0.46	0.41
<i>Carex rosea</i>	6.00	9.00	0.32	0.46	0.39
<i>Elymus hystrix</i>	5.00	11.00	0.39	0.38	0.39
<i>Iris cristata</i>	5.00	11.00	0.39	0.38	0.39
<i>Podophyllum peltatum</i>	5.00	10.00	0.36	0.38	0.37
<i>Phegopteris hexagonoptera</i>	4.00	12.00	0.43	0.30	0.37
<i>Cercis canadensis</i>	5.00	9.00	0.32	0.38	0.35
<i>Helianthus hirsutus</i>	4.00	11.00	0.39	0.30	0.35
<i>Solidago caesia</i>	5.00	8.00	0.29	0.38	0.33
<i>Leersia virginica</i>	4.00	10.00	0.36	0.30	0.33
<i>Sanguinaria canadensis</i>	5.00	7.00	0.25	0.38	0.32
<i>Potentilla simplex</i>	4.00	8.00	0.29	0.30	0.30
<i>Packera obovata</i>	5.00	5.00	0.18	0.38	0.28
<i>Thalictrum thalictroides</i>	5.00	5.00	0.18	0.38	0.28
<i>Diospyros virginiana</i>	4.00	7.00	0.25	0.30	0.28
<i>Solidago ulmifolia</i>	4.00	7.00	0.25	0.30	0.28
<i>Ageratina altissima</i>	3.00	9.00	0.32	0.23	0.28
<i>Carex digitalis</i>	3.00	9.00	0.32	0.23	0.28
<i>Bromus pubescens</i>	4.00	6.00	0.22	0.30	0.26
<i>Carex oligocarpa</i>	4.00	6.00	0.22	0.30	0.26
<i>Carya tomentosa</i>	3.00	8.00	0.29	0.23	0.26
<i>Clitoria mariana</i>	4.00	5.00	0.18	0.30	0.24
<i>Uvularia sessilifolia</i>	4.00	5.00	0.18	0.30	0.24
<i>Carya texana</i>	3.00	7.00	0.25	0.23	0.24
<i>Chasmanthium sessiliflorum</i>	3.00	7.00	0.25	0.23	0.24
<i>Rubus trivialis</i>	3.00	7.00	0.25	0.23	0.24

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Salvia lyrata</i>	3.00	7.00	0.25	0.23	0.24
<i>Symphyotrichum anomalum</i>	3.00	7.00	0.25	0.23	0.24
<i>Trillium sessile</i>	3.00	7.00	0.25	0.23	0.24
<i>Scutellaria elliptica</i>	4.00	4.00	0.14	0.30	0.22
<i>Amelanchier arborea</i>	3.00	6.00	0.22	0.23	0.22
<i>Carex sp. 2</i>	3.00	6.00	0.22	0.23	0.22
<i>Cynoglossum virginianum</i>	3.00	6.00	0.22	0.23	0.22
<i>Euphorbia corollata</i>	3.00	6.00	0.22	0.23	0.22
<i>Lonicera japonica</i>	3.00	6.00	0.22	0.23	0.22
<i>Aesculus pavia</i>	2.00	8.00	0.29	0.15	0.22
<i>Carya glabra</i>	2.00	8.00	0.29	0.15	0.22
<i>Carex laxiflora</i>	3.00	5.00	0.18	0.23	0.20
<i>Oxalis dillenii</i>	3.00	5.00	0.18	0.23	0.20
<i>Polygonatum biflorum</i>	3.00	5.00	0.18	0.23	0.20
<i>Ruellia strepens</i>	3.00	5.00	0.18	0.23	0.20
<i>Viburnum prunifolium</i>	3.00	5.00	0.18	0.23	0.20
<i>Arisaema triphyllum</i>	3.00	4.00	0.14	0.23	0.19
<i>Asarum canadense</i>	3.00	4.00	0.14	0.23	0.19
<i>Desmodium laevigatum</i>	3.00	4.00	0.14	0.23	0.19
<i>Desmodium rotundifolium</i>	2.00	6.00	0.22	0.15	0.18
<i>Dirca palustris</i>	2.00	6.00	0.22	0.15	0.18
<i>Morus rubra</i>	2.00	6.00	0.22	0.15	0.18
<i>Aristolochia serpentaria</i>	3.00	3.00	0.11	0.23	0.17
<i>Galium pilosum</i>	3.00	3.00	0.11	0.23	0.17
<i>Hamamelis virginiana</i>	3.00	3.00	0.11	0.23	0.17
<i>Menispermum canadense</i>	3.00	3.00	0.11	0.23	0.17
<i>Bromus sp.</i>	2.00	5.00	0.18	0.15	0.17
<i>Carex caroliniana</i>	2.00	5.00	0.18	0.15	0.17
<i>Carex glaucodea</i>	2.00	5.00	0.18	0.15	0.17
<i>Carex hirsutella</i>	2.00	5.00	0.18	0.15	0.17
<i>Desmodium paniculatum</i>	2.00	5.00	0.18	0.15	0.17
<i>Galium arkansanum</i>	2.00	5.00	0.18	0.15	0.17
<i>Lindera benzoin</i>	2.00	5.00	0.18	0.15	0.17
<i>Quercus muehlenbergii</i>	2.00	5.00	0.18	0.15	0.17
<i>Viola striata</i>	2.00	5.00	0.18	0.15	0.17
<i>Asplenium platyneuron</i>	2.00	4.00	0.14	0.15	0.15
<i>Carpinus caroliniana</i>	2.00	4.00	0.14	0.15	0.15

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Celtis occidentalis</i>	2.00	4.00	0.14	0.15	0.15
<i>Carex cephalophora</i>	2.00	4.00	0.14	0.15	0.15
<i>Carex cherokeensis</i>	2.00	4.00	0.14	0.15	0.15
<i>Carex lurida</i>	2.00	4.00	0.14	0.15	0.15
<i>Dichanthelium laxiflorum</i>	2.00	4.00	0.14	0.15	0.15
<i>Robinia pseudoacacia</i>	2.00	4.00	0.14	0.15	0.15
<i>Smilax herbacea</i>	2.00	4.00	0.14	0.15	0.15
unknown forb 4	2.00	4.00	0.14	0.15	0.15
<i>Carex crinita</i>	2.00	3.00	0.11	0.15	0.13
<i>Juniperus virginiana</i>	2.00	3.00	0.11	0.15	0.13
<i>Liquidambar styraciflua</i>	2.00	3.00	0.11	0.15	0.13
<i>Chasmanthium latifolium</i>	2.00	2.00	0.07	0.15	0.11
<i>Mitchella repens</i>	2.00	2.00	0.07	0.15	0.11
<i>Monarda bradburiana</i>	2.00	2.00	0.07	0.15	0.11
<i>Sideroxylon lanuginosum</i>	2.00	2.00	0.07	0.15	0.11
<i>Carex digitalis</i>	1.00	4.00	0.14	0.08	0.11
<i>Staphylea trifolia</i>	1.00	4.00	0.14	0.08	0.11
<i>Aesculus glabra</i>	1.00	3.00	0.11	0.08	0.09
<i>Alnus serrulata</i>	1.00	3.00	0.11	0.08	0.09
<i>Carex albicans</i>	1.00	3.00	0.11	0.08	0.09
<i>Cunila origanoides</i>	1.00	3.00	0.11	0.08	0.09
<i>Eutrochium purpureum</i>	1.00	3.00	0.11	0.08	0.09
<i>Fraxinus pennsylvanica</i>	1.00	3.00	0.11	0.08	0.09
<i>Lespedeza frutescens</i>	1.00	3.00	0.11	0.08	0.09
<i>Pedicularis canadensis</i>	1.00	3.00	0.11	0.08	0.09
<i>Polypodium virginianum</i>	1.00	3.00	0.11	0.08	0.09
<i>Quercus falcata</i>	1.00	3.00	0.11	0.08	0.09
<i>Rhus aromatica</i>	1.00	3.00	0.11	0.08	0.09
<i>Rosa carolina</i>	1.00	3.00	0.11	0.08	0.09
<i>Viburnum rufidulum</i>	1.00	3.00	0.11	0.08	0.09
<i>Adiantum pedatum</i>	1.00	2.00	0.07	0.08	0.07
<i>Ampelopsis arborea</i>	1.00	2.00	0.07	0.08	0.07
<i>Arisaema dracontium</i>	1.00	2.00	0.07	0.08	0.07
<i>Botrychium virginianum</i>	1.00	2.00	0.07	0.08	0.07
<i>Chamaecrista fasciculata</i>	1.00	2.00	0.07	0.08	0.07

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Circaea canadensis</i>	1.00	2.00	0.07	0.08	0.07
<i>Carex complanata</i>	1.00	2.00	0.07	0.08	0.07
<i>Carex</i> sp. 1	1.00	2.00	0.07	0.08	0.07
<i>Carex</i> sp. 3	1.00	2.00	0.07	0.08	0.07
<i>Desmodium perplexum</i>	1.00	2.00	0.07	0.08	0.07
<i>Dichanthelium linearifolium</i>	1.00	2.00	0.07	0.08	0.07
<i>Festuca subverticillata</i>	1.00	2.00	0.07	0.08	0.07
<i>Galium aparine</i>	1.00	2.00	0.07	0.08	0.07
<i>Galium virgatum</i>	1.00	2.00	0.07	0.08	0.07
<i>Geum canadense</i>	1.00	2.00	0.07	0.08	0.07
<i>Helianthus divaricatus</i>	1.00	2.00	0.07	0.08	0.07
<i>Houstonia</i> sp.	1.00	2.00	0.07	0.08	0.07
<i>Krigia biflora</i>	1.00	2.00	0.07	0.08	0.07
<i>Lonicera dioica</i>	1.00	2.00	0.07	0.08	0.07
<i>Matelea decipiens</i>	1.00	2.00	0.07	0.08	0.07
<i>Mikania scandens</i>	1.00	2.00	0.07	0.08	0.07
<i>Physalis</i> sp.	1.00	2.00	0.07	0.08	0.07
<i>Prenanthes</i> sp.	1.00	2.00	0.07	0.08	0.07
<i>Quercus stellata</i>	1.00	2.00	0.07	0.08	0.07
<i>Ruellia pedunculata</i>	1.00	2.00	0.07	0.08	0.07
<i>Styrax grandifolius</i>	1.00	2.00	0.07	0.08	0.07
unknown sp. 11	1.00	2.00	0.07	0.08	0.07
<i>Verbesina alternifolia</i>	1.00	2.00	0.07	0.08	0.07
<i>Vitis vulpina</i>	1.00	2.00	0.07	0.08	0.07
<i>Acalypha virginica</i>	1.00	1.00	0.04	0.08	0.06
<i>Amianthium muscitoxicum</i>	1.00	1.00	0.04	0.08	0.06
<i>Carex blanda</i>	1.00	1.00	0.04	0.08	0.06
<i>Carya ovata</i>	1.00	1.00	0.04	0.08	0.06
<i>Carya cordiformis</i>	1.00	1.00	0.04	0.08	0.06
<i>Carya</i> sp.	1.00	1.00	0.04	0.08	0.06
<i>Carex meadii</i>	1.00	1.00	0.04	0.08	0.06
<i>Erechtites hieraciifolius</i>	1.00	1.00	0.04	0.08	0.06
<i>Fragaria virginiana</i>	1.00	1.00	0.04	0.08	0.06
<i>Galium</i> sp.	1.00	1.00	0.04	0.08	0.06
<i>Geranium maculatum</i>	1.00	1.00	0.04	0.08	0.06
<i>Gillenia stipulata</i>	1.00	1.00	0.04	0.08	0.06
<i>Krigia dandelion</i>	1.00	1.00	0.04	0.08	0.06
<i>Lactuca canadensis</i>	1.00	1.00	0.04	0.08	0.06
<i>Maianthemum racemosum</i>	1.00	1.00	0.04	0.08	0.06
<i>Passiflora lutea</i>	1.00	1.00	0.04	0.08	0.06

Species	Frequency	Total Cover	Relative Cover	Relative Frequency	Importance Value
<i>Ranunculus hispidus</i>	1.00	1.00	0.04	0.08	0.06
<i>Solidago flexicaulis</i>	1.00	1.00	0.04	0.08	0.06
<i>Solidago nemoralis</i>	1.00	1.00	0.04	0.08	0.06
<i>Thalictrum dasycarpum</i>	1.00	1.00	0.04	0.08	0.06
<i>Tilia americana</i>	1.00	1.00	0.04	0.08	0.06
<i>unknown sp. 19</i>	1.00	1.00	0.04	0.08	0.06
Total	1314.00	2786.00	100.00	100.00	100.00

APPENDIX J. Photo comparisons.

Representative Photos, 2014-2015

Ridgetop

ID = 3115, coertype = oak-pine woodland



ID = 3119, coertype = pine woodland



Ridgetop continued

ID = 3131, coertype = oak-pine forest



ID = WM15, coertype = oak forest



North slope

ID = WM01, coertype = oak forest



ID = 3142, coertype = oak-pine woodland

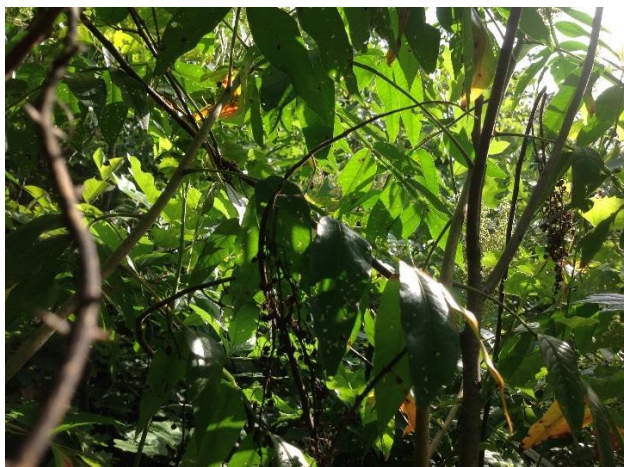


North slope continued

ID = 3132, coertype = oak woodland



ID = 3122, coertype = early seral



South slope

ID = 3120, coertype = oak-pine forest



ID = 3124, coertype = oak-pine forest



South slope continued

ID = 3141, coertype = oak woodland



ID = 3130, coertype = oak woodland



Riparian

ID = 3123, coertype = oak woodland



ID = 3114, coertype = oak-pine forest



Riparian continued

ID = 3110, coertype = oak forest



ID = 3108, coertype = oak forest



Toe slope

ID = WM11, coertype = oak forest



ID = 3143, coertype = oak-pine forest



Toe slope continued

ID = 3127, coertype = oak woodland



ID = 3126, coertype = oak forest



Glades

ID = 3117



ID = 3112



Glades continued

ID = 3118



Photopoint comparisons between sampling events

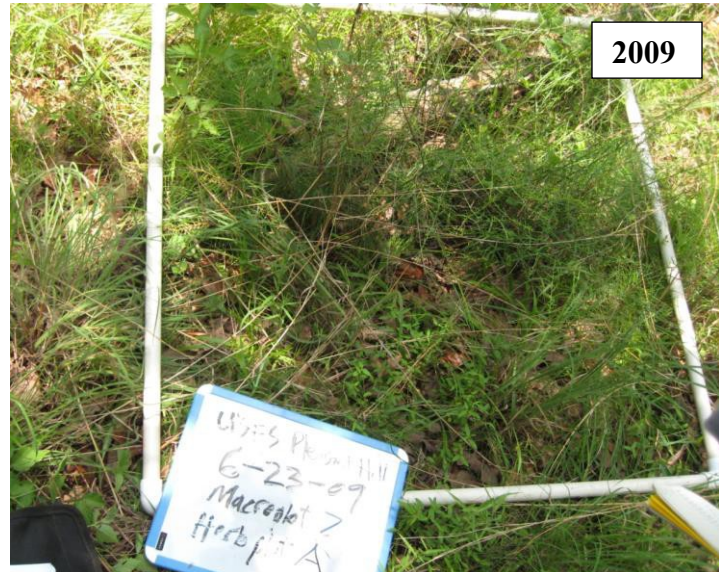
Plot WM07, ridgetop



Plot WM07, ridgetop, herbaceous plot A



2006



2009



2015

Plot 3113, glade



Plot 3098, south slope, herbaceous plot A



Plot 3115, ridgetop



2004



2005



2015