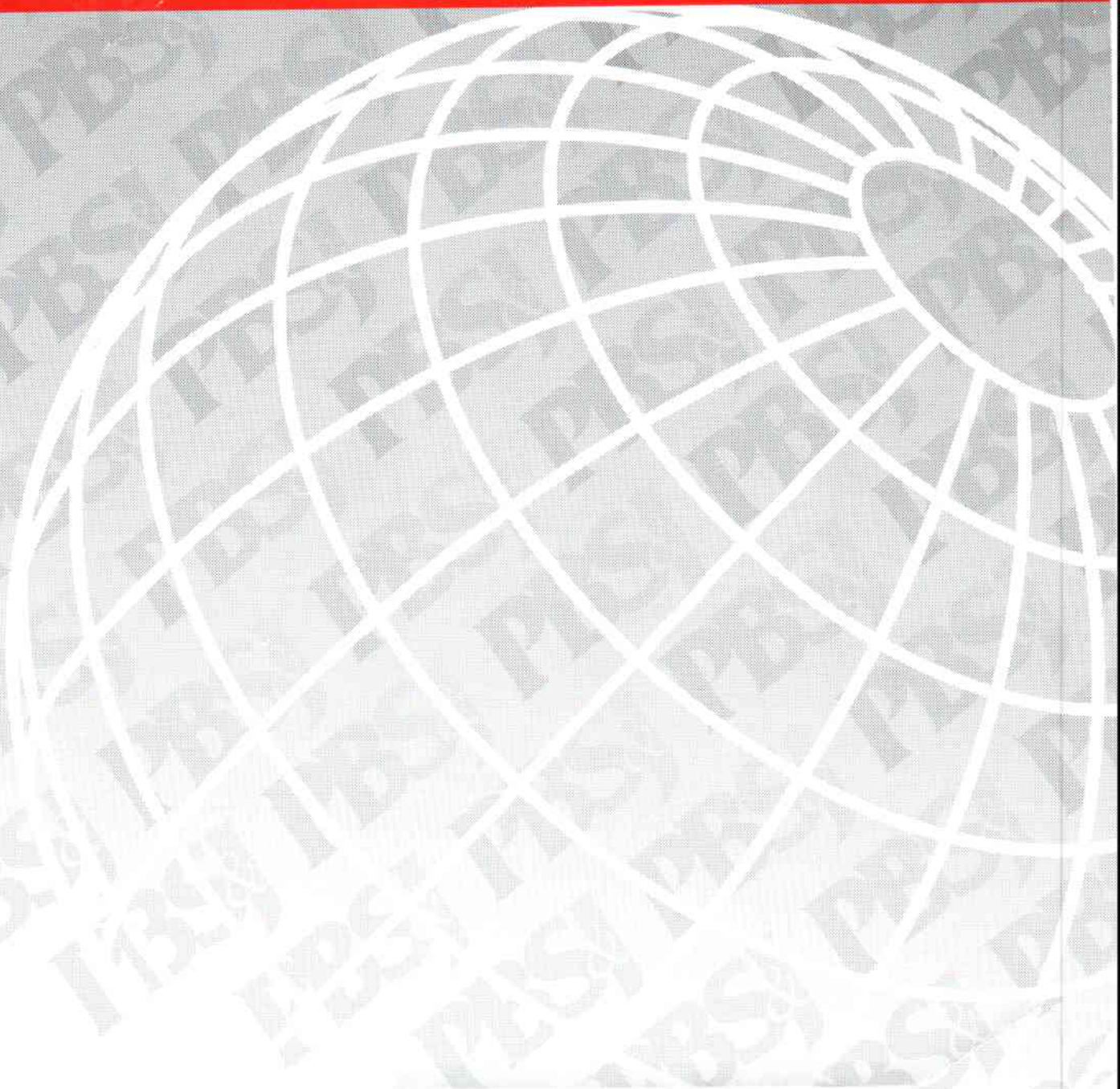




*BIG THICKET NATIONAL PRESERVE
BIG SANDY CREEK UNIT
VEGETATION ANALYSIS
POLK COUNTY, TEXAS*

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PBS&J Project No. 460771.00
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S. Ant SAL

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Vegetation Assessment of the BSC U

**VEGETATION ANALYSIS OF THE BIG SANDY CREEK UNIT
OF THE BIG THICKET NATIONAL PRESERVE**

SUBMITTED TO:

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Big Thicket National Preserve
Beaumont, Texas

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Vegetation Type

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L.H.L.
("SAI")

Seismic Assistants, Inc., proposes to conduct a three-dimensional geophysical exploration program within the Big Sandy Creek Unit of the Big Thicket National Preserve (BTNP) in Southeast Texas (Figure 1, Appendix A). ~~The National Park Service (NPS) has required that a Plan of Operations, including an Environmental Assessment, be prepared and a Finding of "No Significant Impacts" be issued prior to initiation of the geophysical operations.~~ The content of the Plan of Operations is based on information provided in the NPS document entitled *Plan of Operations Information Requirements for Proposed Geophysical Operations*. Based on this document and on guidance from the NPS, the Plan of Operations is separated into three documents:

- 1) The Operational Information Document, which addresses Sections I through VIII of the NPS *Plan of Operations* requirements - The operational information document is ~~completed~~ and entitled *Plan of Operations for Seismic Assistants, Inc.'s Proposed 3-D Seismic Survey within the Big Sandy Creek and Menard Creek Corridor Units of the Big Thicket National Preserve* (DESCO, 2003).
- 2) The Environmental Assessment document addresses Sections IX through XIII of the NPS *Plan of Operations* requirements. The Environmental Assessment is ~~completed~~ and entitled *Environmental Assessment of Seismic Assistants, Inc.'s Proposed 3-D Seismic Survey within the Big Sandy Creek and Menard Creek Corridor Units of the Big Thicket National Preserve* (DESCO, 2003).
- 3) Field Investigations Component - The information contained in this document constitutes the results of the vegetation mapping and sampling efforts conducted within the Big Sandy Creek Unit, BTNP.

✓ Prior to beginning geophysical operations, SAI must comply with National Park Service ("NPS") ~~regulations~~ and ~~the~~ ~~regulations~~ found at 36 C.F.R. 9B, ("9B regulations") and NPS National Environmental Policy Act ("NEPA") ~~procedures~~. The 9B regulations essentially require SAI to submit a plan of operations to the NPS for approval and to post a suitable performance bond.

2.0 METHODS

The following steps were utilized in conducting the vegetation sampling and mapping for the Big Sandy Creek Unit, BTNP:

- 1) A review of Harcombe and Marks 1979 map illustrating "Potential Alliances to Occur within the Big Sandy Creek Unit" was conducted and utilized, along with other existing information (soils, topography, etc.), to identify potential Alliance boundaries on aerial photography as described in Section 2.1.
- 2) The project area was stratified based on the potential Alliance classifications as described in Section 2.2.
- 3) The polygons within each of the potential vegetation classifications were assigned a numerical character and a random sample was allocated for each distinct polygon and then selected for quantitative sampling. All sample plots were designed to coincide with SAI's proposed locations of source and receiver lines.
- 4) The potential Alliance classifications identified in the project area were ~~ground-truthed~~ and modified as appropriate. *ground truth*
- 5) Field-verified Alliance classifications and boundaries were revised on aerial photography to reflect the results of the field investigations as described in Section 2.3.

2.1 VEGETATION MAPPING

Prior to the field assessment, potential Alliances occurring within the project boundaries of the Big Sandy Creek Unit were mapped onto a color infrared (IR) photograph aerial base map at a scale of 1 inch = 2,000 feet (1:24,000). This scale is based on NPS criteria as defined in the document entitled *Field Methods for Vegetation Mapping* (Nature Conservancy and ESRI, 1994). The initial potential Alliances were based on: (1) a review of existing studies conducted within the region; (2) analysis of recent black-and-white and color IR photography; (3) and the document entitled *International Classification of Ecological Communities: Terrestrial Vegetation of the Southeastern United States* (ICEC) (www.natureserve.org, 2003). The ICEC was used to identify potential Alliances within the Big Sandy Creek Unit.

The potential Alliances were delineated using a variety of resources, including National Aerial Photography Program (NAPP) color IR aerial photography, black-and-white aerial photography, Natural Resources Conservation Service (NRCS, formerly the Soil Conservation Service) soils maps based on aerial photography, and U.S. Geological Survey (USGS) 7.5-minute topographic maps and floodplain maps.

true

Initial aerial interpretations were mapped onto the color IR and ~~black-and-white~~ aerial photography, at which point random sample plots were selected and assigned (coinciding with proposed source and receiver lines) throughout the project area. All random plot locations were derived from a set of random numbers.

Once the complete set of random sample plots were assigned, distinctions were made between those sample plots, which were located within NPS burn compartments (Compartments 1101, 1201, 1301-1303, 1401, 1501, 1601-1603, 1605-1610, 1701, and 1801), and those that were not. All sample plots that did not fall within a ~~2003-2004~~ NPS burn compartment proposed to be burned ^{in 2003-2004} were sampled for all four strata (overstory, midstory, shrub, and herbaceous). Alternatively, the majority of the sample plots that fell within 2003-2004 NPS burn compartment were only sampled for overstory, and midstory. ^{shrub} ~~An exception to this rule required that~~ 10 percent of the sample plots within the 2003-2004 NPS burn compartments be sampled for all four strata in order to obtain an inventory of the vegetation present in the area and assign appropriate Alliance classifications. Lastly, soil samples were observed within each mapped soil unit located within the project area. All mapped soil units were identified based on the Polk County Soil Survey (USDA-SCS, 1983) and verified in the field by sampling 10 percent of the total plots. Please refer to Appendix E of the Environmental Assessment ~~document~~ ^{for the soil data information.}

2.2 QUANTITATIVE SAMPLING

2.2.1 Sample Design

1 specimen of soils.

The exact number of sample sites for each vegetation classification was based on the criteria provided in the document entitled *Accuracy Assessment Procedures - NBS/NPS Vegetation Mapping Program* (ESRI, NCGIA, Nature Conservancy, 1994) and the *BTNP, Big Sandy Creek Unit, Vegetation and Mapping Sampling Plan* (PBS&J/DESCO, 2003). Based on these documents, between three and 30 samples were collected for each ~~vegetation class~~. The exception to this was in the *Paspalum notatum* Herbaceous Alliance. This community is a routinely-maintained pipeline easement and is distinctly defined. As a result, only one sample plot was established within this Alliance. check

For the purposes of this effort, the project area was considered to have four strata. ^{vegetation} ~~These~~ strata included:

- | | |
|-----------------------|---|
| 1) Overstory (canopy) | >12.0 cm diameter at breast height (dbh) |
| 2) Midstory | 2.5-12.0 cm dbh |
| 3) Shrub | 0.5-2.5 cm dbh |
| 4) Herbaceous | all woody vegetation <0.5 m was measured as % cover |

7
1

In summarizing these data, density, dominance (~~basal area or percent ground cover~~), and frequency values were determined for each species (Blanton & Associates, Inc., 2001). Density refers to the number of individuals per unit area, dominance to the basal area or percent ground cover per unit area, and frequency to the fraction of sample plots containing the species. "Per unit area" refers to the sample plot size, i.e., 250 m². For the data collected, values are expressed in both the totals for all species and the Alliance totals, or relative value. Relative values for density, dominance, and frequency are combined into a single Relative Importance Value, which reflects these three different measures of the importance of the species in the sample. This prevents an imbalance of importance applied to any single parameter. For ease of reporting, all numbers presented in Appendix A are rounded to two decimal points. Importance Values may appear to be one-hundredth off in the tables due to rounding that occurred after the calculations were conducted for all values reported.

being

$$\text{Density} = \frac{\text{Number of Individuals}}{\text{Area Sampled (ha)}}$$

$$\text{Relative Density (\%)} = \frac{\text{Number of Individuals of a Species}}{\text{Number of Individuals for All Species}} \times 100$$

$$\text{Frequency (\%)} = \frac{\text{Number of Plots in which Species Occurs}}{\text{Total Number of Plots Sampled}} \times 100$$

$$\text{Relative Frequency (\%)} = \frac{\text{Frequency Value for a Species}}{\text{Total of Frequency Values for All Species}} \times 100$$

$$\text{Dominance (m}^2\text{/ha or \%)} = \frac{\text{Basal Area of a Species or canopy cover}}{\text{Area Sampled}} \times 100$$

$$\text{Relative Dominance (\%)} = \frac{\text{Number of Individuals of a Species}}{\text{Total of Dominance Values for All Species}} \times 100$$

$$\text{Importance Value (\%)} = \text{Relative Density} + \text{Relative Frequency} + \text{Relative Dominance}$$

$$\text{Relative Importance Value (\%)} = \frac{\text{Importance Value}}{3}$$

In addition to quantitative sampling, qualitative observations were made at each point to assist in describing and classifying ~~vegetative communities~~ of the project area. Information was collected on topographic position, landforms, hydrologic regime, and soils, and was supported by photographic

Vegetation

documentation (Appendix D). An inventory of sample plots and data collected at each sample plot can be found in Appendix B. ✓

2.2.2 Woodland Stands

2.2.2.1 Overstory-Midstory

Quantitative sampling data was collected for the overstory and midstory components using 250 m² plots (25 m × 10 m), and the following information was developed:

- Density
- Relative Density (%)
- Dominance (m²/ha)
- Relative Dominance (%)
- Frequency (%)
- Relative Frequency (%)
- Importance Value (%)

2.2.2.2 Shrub Layer

The shrub component was sampled using a 25 m² nested plot (5 m × 5 m) within the 250 m² plot used for the overstory-midstory species. The following information was developed for the shrub layer. ✓

- Density
- Relative Density (%)
- Dominance (m²/ha)
- Relative Dominance (%)
- Frequency (%)
- Relative Frequency (%)
- Importance Value (%)

2.2.3 Herbaceous Component

The herbaceous component was sampled using a 1 m² (1 m × 1 m) quadrat. Ten random 1 m² plots were sampled within the 250 m² overstory-midstory plot to estimate herbaceous plant species

coverage. Visual inspection was used to estimate the percentage of surface coverage by a vertical projection of the foliage of each species within the quadrat. Since the species occurrence and percent cover data was obtained but number of individuals was not collected, only the relative frequency and relative dominance were used to determine the relative importance value for the herbaceous component. The following information was developed for the herbaceous component.

- Dominance (%)
- Relative Dominance (%)
- Frequency (%)
- Relative Frequency (%)
- Importance Value (based on Dominance and Frequency) (%)
- Relative Importance Value (%)

2.2.4 Floristics

Field surveys to qualitatively assess the vegetation communities in the project area were conducted incidental to the quantitative sampling efforts. Qualitative assessments of vegetation communities were made continually during the field survey. This information was used for descriptions of the vegetation communities. Additionally, voucher species were collected during the field surveys (Appendix C). All voucher specimens were collected outside of the 25 m x 10 m sample plot locations. Upon completion of the voucher specimen identification and preparation, the collection will be submitted to the NPS.

2.3 VEGETATION MAPPING REVISIONS

Sample plots were ground-verified during the 2003 field surveys. When necessary, the map was modified based on the ground verification effort. Due to the sample design, it was expected that virtually the entire project site would be ground-verified. This extensive ground verification was intended to ensure the accuracy of the vegetation classifications being mapped. This level of ground verification and corresponding map modification eliminated the need for determining thematic accuracy as discussed in Section 5.7 of the NPS document entitled *Accuracy Assessment Procedures* (ESRI, NCGIA, and Nature Conservancy, 1994). Appendix E, Maps 1 through 5, provide a view of the vegetation Alliances with sample points.

To facilitate the final identification of the Alliance Classifications and their locations, Importance Values were assessed for each individual sample plot. The Importance Values were then utilized to group sample plots by Alliance. Once Alliance classifications were defined, Importance Values were then

recalculated based on Alliance area sampled. Margalef's Richness, Pielou's Evenness, and Shannon Weaver's Diversity were compared among the overstory strata within each Alliance (Ludwig, 1988). The measure of species diversity is calculated by Shannon Weaver's Diversity Index and is a measure of the number of different species in a community or an ecosystem; thus, the higher the diversity index, the more diverse the community, Alliance, or ecosystem. Diversity is made up of two components: richness and evenness. Shannon Weaver's Diversity Index is calculated as follows:

$$H' = - \sum_{i=1}^S \left[\left(\frac{n_i}{n} \right) \ln \left(\frac{n_i}{n} \right) \right] \quad \text{or}$$

$$H' = -(\text{sum of species in plot or alliance}) \left[\left(\frac{\# \text{ of species A}}{\text{total of all species}} \right) \ln \left(\frac{\# \text{ of species A}}{\text{total of all species}} \right) \right]$$

The number of species per sample is a measure of richness. Thus, the more species present in a sample or the higher the richness value, the "richer" the sample. However, species richness as a measure on its own takes no account of the number of individuals of each species present. It gives as much weight to those species that have very few individuals as to those that have many individuals. Thus, one daisy has as much influence on the richness of an area as 1,000 buttercups. Margalef's Index is used to calculate richness and is as follows:

$$R' = S - 1 / \ln(n) \quad \text{or}$$

$$R' = \frac{\# \text{ of species} - 1}{\ln(\text{total} \# \text{ of individuals in plot or alliance})}$$

Pielou's Evenness is a measure of the relative abundance of the different species making up the richness of an area. Evenness is ranged from zero to one. When evenness is close to zero, it indicates that most of the individuals belongs to one or a few species. When the evenness is close to one, it indicates that each species consists of the same number of individuals.

To give an example, we might have sampled two different fields for wildflowers. The sample from the first field consists of 300 daisies, 335 dandelions, and 365 buttercups. The sample from the second field comprises 20 daisies, 49 dandelions, and 931 buttercups. Both samples have the same richness (three species) and the same total number of individuals (1,000). However, the first sample has

more evenness than the second. This is because the total number of individuals in the sample is quite evenly distributed between the three species. In the second sample, most of the individuals are buttercups, with only a few daisies and dandelions present. Sample 2 is therefore considered to be less diverse and less even than Sample 1.

Pielou's Evenness Index is calculated as follows:

$$E' = \frac{H'}{\ln(S)}$$

$$H' = -(\text{sum of species in plot or alliance}) \left[\left(\frac{\# \text{ of species A}}{\text{total of all species}} \right) \ln \left(\frac{\# \text{ of species A}}{\text{total of all species}} \right) \right]$$

S = # of species in a plot or alliance.

Lastly, adjustments were incorporated on the map based on aerial photography and other information.

check

3.0 RESULTS

vegetation classification

This section provides a discussion of ~~plant community~~ *vegetation* classifications, as well as a summary of the results of the vegetation mapping and sampling efforts conducted within the Big Sandy Creek Unit of the BTNP. Section 3.1 provides an overview of the ~~plant community~~ *vegetation* classification system. Section 3.2 provides a discussion of the forest community dynamics for the entire Big Sandy Creek Unit. Sections 3.3 through 3.12 discuss the findings in each of the observed plant communities.

3.1 OVERVIEW OF PLANT COMMUNITY CLASSIFICATION SYSTEM

utilized?

For this study, vegetation mapping follows the ICEC: *Terrestrial Vegetation of the Southeastern United States* (www.natureserve.org, 2003). The upper five levels of the ICEC hierarchy are based on physiognomy, whereas the two lower levels (Alliance and Association) are based on floristics. Specifically, the Alliances are defined by the upper one to three canopy species or major stratum dominants that are derived from Importance Values. The hierarchy is:

System
Class
Subclass
Group
Subgroup
Formation
Alliance
Association

Terrestrial Vegetation of the Southeastern United States
Ecological Communities
See April mapping & sampling plan
vegetation all. areas

An example of the alphanumeric designations used in this hierarchy is 1A.8.N.b.16, used for *Pinus taeda* Forest Alliance.

1 indicates forest as the class

A indicates evergreen forest as the subclass

8 indicates temperate or subpolar needle-leaved evergreen forest as the group

N indicates natural or semi-natural as the subgroup

b indicates rounded-crowned temperate or sub-polar needle-leaved evergreen forest

16 indicates *Pinus taeda* Forest as the Alliance (see Section 3.2.2 for alphanumeric designations of other Alliances)

check categories?

A limitation to using ICEC may be that some of the ICEC ~~community names~~ could have been based on communities previously reported in the literature that were not defined by quantitative data but instead by qualitative investigations. Although quantitative data may not define the ICEC, the Alliance names presented in this inventory are consistent with the ICEC. Each Alliance name was selected by comparing the Alliance description to the actual quantitative results of the study. For Alliance descriptions that were not exact, the closest representative Alliance name was utilized. All Alliances identified were mapped based on the minimum mapping unit (0.5 ha) as described in *Accuracy Assessment Procedures – NBS/NPS Vegetation Mapping Program* (ESRI, NCGIA, Nature Conservancy, 1994).

3.2 FOREST COMMUNITY DYNAMICS

3.2.1 Vegetation Samples

Two hundred and one (201) 10 m × 25 m (250 m²) rectangular plots were sampled for woody vegetation, covering an area of 5.025 hectares (ha). One hundred and sixteen (116) species of woody plants (trees and shrubs) were recorded from these plots. Ten (10) 1 m × 1 m (1 m²) square sub-plots within many of the 250 m² woody plots were sampled for herbaceous vegetation (Appendix B). A total of 1,060 1 m² plots were sampled equaling 0.106 ha. Four hundred and nineteen (419) species of herbaceous plants were recorded in these 1,060 1 m² plots. On average, data showed that there were 377.53 woody plants per ha, yielding 25.68 m² per ha of basal area within the overstory. The midstory, on average, yielded 1,542.10 woody plants per ha, yielding 4.41 m² per ha of basal area. The shrub layer, on average, yielded 1,368.73 woody plants per ha, yielding 0.99 m² per ha of basal area. Overstory community analysis indices include an average Margalef's Richness Index at 6.18, Pielou's Evenness Index (J') 0.51, and Shannon Weaver's Diversity Index (H') 1.77. Table 1 summarizes the results of the vegetation sampling in the Big Sandy Creek Unit.

R'

Pielou's Evenness Index is E'.

Table 1
Summary of Vegetation Sampling Total for All Alliances
Big Sandy Creek Unit – Big Thicket National Preserve

Woody Vegetation¹	Pre-Operational
Number of Sample Plots	201
Area Sampled	5.025 ha
Number of Species Recorded Within Plots	116
Average Species Richness (overstory)	6.18
Average Species Evenness (overstory)	0.51
Average Species Diversity (overstory)	1.77
Herbaceous Vegetation²	
Number of Sample Plots	1,060
Area Sampled	0.106 ha
Number of Species Recorded Within Plots	419

¹ Woody vegetation was sampled within a 10 m × 25 m (250 m²) rectangular plot.

² Herbaceous vegetation was sampled within 10 1 m × 1 m (1 m²) square sub-plots of the 250 m² rectangular plots.

3.2.2 Plant Community Classification

The Big Sandy Creek Unit is comprised of three vegetation classes as defined by ICEC, 2003. Class Forest is represented by two subclasses: subclass deciduous forest represented by five Alliances, and subclass mixed forest represented by two Alliances. Class Herbaceous is represented by one subclass: Perennial graminoid represented by two Alliances. Class Shrubland is represented by one Alliance. The Alliances identified are:

- *Nyssa aquatica* – (*Taxodium distichum*) Semi-permanently Flooded Forest Alliance
[Alphanumeric designation 1.B.2.N.f.2]
- *Fraxinus pennsylvanica* – *Ulmus americana* – *Celtis (occidentalis, laevigata)*
Temporarily Flooded Forest Alliance (Alliance C-mound) [Alphanumeric designation [1.B.2.N.d.11]

- *Quercus alba* – (*Quercus nigra*) Forest Alliance [Alphanumeric designation 1.B.2.N.a.26]
- *Quercus (laurifolia, phellos)* Seasonally Flooded Forest Alliance [Alphanumeric designation 1.B.2.N.e.12]
- *Magnolia virginiana* – *Nyssa biflora* – (*Quercus laurifolia*) Saturated Forest Alliance [Alphanumeric designation 1.C.2.N.d.1]
- *Sparganium americanum* Seasonally Flooded Herbaceous Alliance [Alphanumeric designation V.A.5.N.k.27]
- *Cyrilla racemiflora* – *Ilex coriacea* – (*Cliftonia monophylla*) Saturated Shrubland Alliance [Alphanumeric designation 111.A.2.N.i.3]
- *Pinus taeda* – *Quercus (alba, falcata, stellata)* Forest Alliance [Alphanumeric designation 1.C.3.N.a.24]
- *Nyssa (aquatica, biflora, ogeche)* Floodplain Seasonally Flooded Forest [Alphanumeric designation 1.B.2.N.e.8]
- *Paspalum notatum* Herbaceous Alliance [Alphanumeric designation V.A.5.N.C.014]

Complete descriptions of Alliances can be found in the ICEC Terrestrial Vegetation of the Southern United States (www.natureserve.org, 2003) listed by these alphanumeric designations. The estimated area for each of the vegetation Alliances within the study area is provided in Table 2.

Table 2
Estimated Area for Vegetation Alliances
Big Sandy Creek Unit – Big Thicket National Preserve

Alliances	Area (hectares)
<i>Nyssa aquatica</i> – (<i>Taxodium distichum</i>) Semi-permanently Flooded Forest Alliance [I.B.2.N.f.2]	43.6270
<i>Fraxinus pennsylvanica</i> – <i>Ulmus americana</i> – <i>Celtis (occidentalis, laevigata)</i> Temporarily Flooded Forest	5.8870
<i>Quercus (laurifolia, phellos)</i> Seasonally Flooded Forest Alliance [I.B.2.N.e.12]	2590.6580
<i>Quercus alba</i> – (<i>Quercus nigra</i>) Forest Alliance [I.B.2.N.a.26]	422.8910
<i>Magnolia virginiana</i> – <i>Nyssa biflora</i> – (<i>Quercus laurifolia</i>) Saturated Forest Alliance [I.C.2.N.d.1]	24.2630
<i>Sparganium americanum</i> Seasonally Flooded Herbaceous Alliance [V.A.5.N.k.27]	4.8370
<i>Cyrilla racemiflora</i> – <i>Ilex coriacea</i> – (<i>Cliftonia monophylla</i>) Saturated Shrubland Alliance	23.1470
<i>Pinus taeda</i> – <i>Quercus (alba, falcata, stellata)</i> Forest Alliance [I.C.3.N.a.24]	2340.4870
<i>Nyssa (aquatica, biflora, ogeche)</i> Floodplain Seasonally Flooded Forest [I.B.2.N.e.8]	44.0480
<i>Paspalum notatum</i> Herbaceous Alliance [V.A.5.N.c.014]	13.2380

3.3 *NYSSA AQUATICA* – (*TAXODIUM DISTICHUM*) SEMI-PERMANENTLY FLOODED FOREST ALLIANCE

The *Nyssa aquatica* – (*Taxodium distichum*) Semi-permanently Flooded Forest Alliance encompasses approximately 43.63 ha (0.8 percent) of the study area. This Alliance occurs as scattered, isolated units of limited extent within the floodplain of Big Sandy Creek. Although many bottomland creeks and sloughs are lined with similar species, these areas are not large enough to be mappable. Twelve 25 m × 10 m rectangular plots were sampled for woody vegetation, equaling an area of 0.3 ha. Thirty-four species of woody plants (trees and shrubs) were recorded from these plots. One hundred and twenty 1 m × 1 m square sub-plots within the 12 250 m² woody plots were sampled for herbaceous vegetation, equaling an area of 0.012 ha. One hundred and fifty-five species of herbaceous plants were recorded in these 120 1 m² plots. Data shows that there are 1,743.34 woody plants per ha, yielding 55.17m² per ha of basal area for all three woody classes. The overstory Margalef's Richness Index is 6.73, Pielou's Evenness Index is 0.55, and Shannon Weaver's Diversity Index is 1.95. Table 3 summarizes the results of the vegetation sampling in this Alliance.

Table 3
Summary of Vegetation Sampling Total for
Nyssa aquatica – (*Taxodium distichum*) Semi-permanently Flooded Forest Alliance
 Big Sandy Creek Unit – Big Thicket National Preserve

Woody Vegetation ¹	Pre-Operational
Number of Sample Plots	12
Area Sampled	0.3 ha
Number of Species Recorded Within Plots	34
Overstory Species Richness	6.73
Overstory Species Evenness	0.55
Overstory Species Diversity	1.95
Herbaceous Vegetation ²	
Number of Sample Plots	120
Area Sampled	0.012 ha
Number of Species Recorded Within Plots	155

¹ Woody vegetation was sampled within a 10 m × 25 m (250 m²) rectangular plot.

² Herbaceous vegetation was sampled within ten 1 m × 1 m (1 m²) square sub-plots of the 250 m² rectangular plots.

The canopy in this Alliance is dominated by water tupelo (*Nyssa aquatica*), which is composed of 190.00 trees per ha and yields 33.41m² per ha of basal area. Other overstory species includes swamp black gum (*Nyssa biflora*), sweetgum (*Liquidambar styraciflua*), and bald cypress (*Taxodium distichum*) (Appendix A, Table 1A). Based on Relative Importance Value, water tupelo comprises 41.63 percent of the overstory canopy. The midstory consists of 120 trees per ha, yielding 0.56 m² per ha of basal area dominated by American hornbeam (*Carpinus caroliniana*). Other midstory species include sweetgum, swamp black gum, Carolina ash (*Fraxinus caroliniana*), and slippery elm (*Ulmus rubra*) (Appendix A, Table 1B). The shrub class is dominated by hazel alder (*Alnus serrulata*). Other shrub class species include Sebastian bush (*Sebastiania fruticosa*), American holly (*Ilex opaca*), and southern wax myrtle (*Myrica cerifera*) (Appendix A, Table 1C). Based on Relative Importance Values, dominant herbaceous species include needle-rush (*Juncus effusus*), climbing hemp-weed (*Mikania scandens*), lizard tail (*Saururus cernuus*), and dotted smartweed (*Polygonum punctatum*).

Additionally, the red maple (*Acer rubrum*) – green ash (*Fraxinus pennsylvanica*) Seasonally Flooded Forest Association was observed within the tupelo-cypress swamp located on the northern reach of the Big Sandy Creek Unit. Species composition was distinctly different than the surrounding area; however, the area did not meet the criteria to be considered mappable. Thus, it was concluded that this area would be considered an Association of the surrounding vegetation community (*Nyssa aquatica* – [*Taxodium distichum*] Semi-permanently Flooded Forest Alliance). The canopy was dominated by red maple, and no other canopy species were observed. The midstory consisted of American hornbeam. Other midstory species included green ash and common buttonbush (*Cephalanthus occidentalis*).

3.4 *FRAXINUS PENNSYLVANICA* – *ULMUS AMERICANA* – *CELTIS* (*OCCIDENTALIS*, *LAEVIGATA*) TEMPORARILY FLOODED FOREST ALLIANCE

The *Fraxinus pennsylvanica* – *Ulmus americana* – *Celtis* (*occidentalis*, *laevigata*) Temporarily Flooded Forest Alliance encompasses approximately 5.89 ha (0.1 percent) of the study area. This Alliance is located on the northern reach of the Big Sandy Creek Unit and within the floodplain of Big Sandy Creek. Three 25 m × 10 m rectangular plots were sampled for woody vegetation, equaling an area of 0.075 ha. Twelve species of woody plants (trees and shrubs) were recorded from these plots. Ten 1 m × 1 m square sub-plots within one of the three 250 m² woody plots were sampled for herbaceous vegetation. The sampled herbaceous plots total an area of 0.001 ha. Forty species of herbaceous plants were recorded in these ten 1 m² plots. Data shows that there are 3,986.7 woody plants per ha, yielding 20.73m² per ha of basal area for all three woody classes. The overstory Margalef's Richness Index is 3.00, Pielou's Evenness Index is 0.49, and Shannon Weaver's Diversity Index is 1.22. Table 4 summarizes the results of the vegetation sampling in this Alliance.

Table 4
Summary of Vegetation Sampling Total for
Fraxinus pennsylvanica – *Ulmus americana* – *Celtis (occidentalis, laevigata)*
Temporarily Flooded Forest Alliance
Big Sandy Creek Unit – Big Thicket National Preserve

Woody Vegetation¹	Pre-Operational
Number of Sample Plots	3
Area Sampled	0.075 ha
Number of Species Recorded Within Plots	12
Overstory Species Richness	3.00
Overstory Species Evenness	0.49
Overstory Species Diversity	1.22
Herbaceous Vegetation²	
Number of Sample Plots	10
Area Sampled	0.001 ha
Number of Species Recorded Within Plots	40

¹ Woody vegetation was sampled within a 10 m × 25 m (250 m²) rectangular plot.

² Herbaceous vegetation was sampled within ten 1 m × 1 m (1 m²) square sub-plots of the 250 m² rectangular plots.

The canopy is dominated by green ash, which is composed of 333.33 trees per ha and yields 7.23m² per ha of basal area. Other overstory species include sweetgum, slippery elm, and chinaberry (*Melia azedarach*) (Appendix A, Table 2A). Based on Relative Importance Values, green ash comprises 47.78 percent of the overstory canopy. The midstory consists of 2,960.00 trees per ha, yielding 6.34m² per ha of basal area dominated by green ash. Other midstory species include sweetgum, slippery elm, southern hackberry (*Celtis laevigata*), and trifoliolate orange (*Poncirus trifoliolate*) (Appendix A, Table 2B). The shrub class is dominated by green ash. No other shrub class species were observed (Appendix A, Table 1C). Based on Relative Importance Values, dominant herbaceous species include inland sea oats (*Chasmanthium latifolium*), autumn bluegrass (*Poa autumnalis*), and a sedge (*Carex nigromarginata*).

The *Quercus alba* – (*Quercus nigra*) Forest Alliance encompasses approximately 422.89 ha (7.7 percent) of the study area. This Alliance is located in the lower mid slopes, but higher than *Quercus (laurifolia, phellos)* Seasonally Flooded Forest Alliance. Twenty-two 25 m × 10 m rectangular plots were sampled for woody vegetation, equaling an area of 0.55 ha. Forty-three species of woody plants (trees and shrubs) were recorded from these plots. Seventy 1 m × 1 m square sub-plots within seven of the 250 m² woody plots were sampled for herbaceous vegetation, equaling an area of 0.007 ha. Seventy-seven species of herbaceous plants were recorded in these seventy 1 m² plots. Data indicated that there are 2,476.36 woody plants per ha, yielding 27.04m² per ha of basal area for all three woody classes. The overstory Margalef's Richness Index is 7.90, Pielou's Evenness Index is 0.64, and Shannon Weaver's Diversity Index is 2.41. Table 5 summarizes the results of the vegetation sampling in this Alliance.

Table 5
Summary of Vegetation Sampling Total for
***Quercus alba* – (*Quercus nigra*) Forest Alliance**
Big Sandy Creek Unit – Big Thicket National Preserve

Woody Vegetation¹	Pre-Operational
Number of Sample Plots	22
Area Sampled	0.55 ha
Number of Species Recorded Within Plots	43
Overstory Species Richness	7.90
Overstory Species Evenness	0.64
Overstory Species Diversity	2.41
Herbaceous Vegetation²	
Number of Sample Plots	70
Area Sampled	0.007 ha
Number of Species Recorded Within Plots	77

¹ Woody vegetation was sampled within a 10 m × 25 m (250 m²) rectangular plot.

² Herbaceous vegetation was sampled within ten 1 m × 1 m (1 m²) square sub-plots of the 250 m² rectangular plots.

The canopy is dominated by white oak (*Q. alba*), which is composed of 107.27 trees per ha and yields 6.82m² per ha of basal area. Other overstory species include post oak (*Q. stellata*), black gum (*Nyssa sylvatica*), and American hornbeam (Appendix A, Table 4A). Based on relative importance value, white oak comprises 25.20 percent of the overstory canopy. The midstory consists of 647.27 trees per ha, yielding 1.31 m² per ha of basal area dominated by yaupon holly (*Ilex vomitoria*). Other midstory species include sweetgum, eastern hornbeam (*Ostrya virginiana*), black gum, white oak, and dogwood (*Cornus florida*) (Appendix A, Table 4B). The shrub class is dominated by Florida maple (*Acer barbatum*). Other shrub class species observed include yaupon holly, and red bay (*Persea palustris*) (Appendix A, Table 4C). Based on Relative Importance Values, dominant herbaceous species include yaupon holly, American beauty berry (*Callicarpa americana*), and laurel oak.

3.6 *QUERCUS (LAURIFOLIA, PHELLOS)* SEASONALLY FLOODED FOREST ALLIANCE

The *Quercus (laurifolia, phellos)* Seasonally Flooded Forest Alliance encompasses approximately 2,590.65 ha (47.0 percent) of the study area. This Alliance is located within the floodplain of Big Sandy Creek. Sixty-six 25 m × 10 m rectangular plots were sampled for woody vegetation equaling an area of 1.65 ha. Seventy-two species of woody plants (trees and shrubs) were recorded from these plots. Four hundred and seventy 1 m × 1 m square sub-plots within 47 of the 250 m² woody plots were sampled for herbaceous vegetation, equaling an area of 0.047 ha. Two hundred and fifty-nine species of herbaceous plants were recorded in these 47 1 m² plots. Data indicates that there are 2,852.73 woody plants per ha, yielding 32.13m² per ha of basal area for all three woody classes. The overstory Margalef's Richness Index is 11.00, Pielou's Evenness Index is 0.68, and Shannon Weaver's Diversity Index is 2.90. Table 6 summarizes the results of the vegetation sampling in this Alliance.

Table 6
Summary of Vegetation Sampling Total for
***Quercus (laurifolia, phellos)* Seasonally Flooded Forest Alliance**
Big Sandy Creek Unit – Big Thicket National Preserve

Woody Vegetation¹	Pre-Operational
Number of Sample Plots	66
Area Sampled	1.65 ha
Number of Species Recorded Within Plots	72
Overstory Species Richness	11.00
Overstory Species Evenness	0.68
Overstory Species Diversity	2.90
Herbaceous Vegetation²	
Number of Sample Plots	470
Area Sampled	0.047 ha
Number of Species Recorded Within Plots	259

¹ Woody vegetation was sampled within a 10 m × 25 m (250 m²) rectangular plot.

² Herbaceous vegetation was sampled within ten 1 m × 1 m (1 m²) square sub-plots of the 250 m² rectangular plots.

The canopy is dominated by sweetgum, which is composed of 80.00 trees per ha and yields 5.02 m² per ha of basal area. Other overstory species include white oak, loblolly pine (*Pinus taeda*), and eastern hornbeam (Appendix A, Table 3A). Based on Relative Importance Values, sweetgum comprises 17.48 percent of the overstory canopy. The midstory consists of 253.33 trees per ha, yielding 0.55 m² per ha of basal area dominated by yaupon holly. Other midstory species include American hornbeam, eastern hornbeam, and red bay (Appendix A, Table 3B). The shrub class was dominated by laurel oak, red bay, and yaupon holly (Appendix A, Table 3C). Based on Relative Importance Values, dominant herbaceous species include yaupon holly, Virginia creeper (*Parthenocissus quinquefolia*), and poison ivy (*Toxicodendron radicans*).

Within the *Quercus (laurifolia, phellos)* Seasonally Flooded Forest Alliance, a variety of sample plots illustrate distinct species compositions that typically correspond with microtopographic differences within the Alliance. During the field survey and data analysis, these distinct vegetation plots were grouped for analysis, but each individual plot or area was not large enough to be mapped.

Following the data analysis, these areas were determined to be vegetation Associations and not distinct Alliances. For each Association, topographic positions on the landscape typically defined the Association. For example, in lower topographic positions within the Alliance, species such as water oak (*Q. Nigra*) and American beech (*Fagus grandifolia*) appeared as the co-dominant species rather than willow oak. Willow oak still appeared, but was not as dominant or its Importance Value had decreased. Overall, these plots or areas appeared to be different at the Association level due to their location in the lower slope and bottomland positions, or were in different successional stages within the floodplain but were not distinct enough to be considered separate Alliances. Two Associations that were identified are described below.

A *Fagus grandifolia* – *Magnolia grandiflora* Forest Association was observed within the *Quercus (laurifolia, phellos)* Seasonally Flooded Forest Alliance. Dominant species are distinct enough to be categorized as an Association and include American Beech, southern magnolia (*Magnolia grandiflora*), and loblolly pine. In general, these plots appear to occur in transitional areas between the *Quercus alba* – (*Quercus nigra*) Forest Alliance and Big Sandy Creek in a variety of successional stages. Furthermore, this Association was observed at various locations within the Big Sandy Creek floodplain at slightly lower topographic positions. Ultimately, these areas may mature to be considered a *Fagus grandifolia* – *Magnolia grandiflora* Forest Alliance. However, no areas were observed to be large enough to be mapped as an Alliance.

Quercus (phellos, nigra, laurifolia) Temporarily Flooded Association dominant species are distinct enough to be categorized as an Association and include laurel oak, water oak, and loblolly pine. Similar to the *Fagus grandifolia* – *Magnolia grandiflora* Forest Association described above, this Association appears to occur in transitional areas between the *Quercus alba* – (*Quercus nigra*) Forest Alliance and Big Sandy Creek in a variety of successional stages. Furthermore, this Association was observed at various locations within the Big Sandy Creek floodplain at slightly lower topographic elevations. Ultimately, these areas may mature to be considered a *Quercus (phellos, nigra, laurifolia)* Temporarily Flooded Alliance. However, no areas were observed to be large enough to be mapped as an Alliance.

3.7 *MAGNOLIA VIRGINIANA* – *NYSSA BIFLORA* – (*QUERCUS LAURIFOLIA*) SATURATED FOREST ALLIANCE

The *Magnolia virginiana* – *Nyssa biflora* – (*Quercus laurifolia*) Saturated Forest Alliance encompasses approximately 24.26 ha (0.4 percent) of the study area. This Alliance is located within the floodplain of Big Sandy Creek. Three 25 m × 10 m rectangular plots were sampled for woody vegetation, equaling an area of 0.075 ha. Twenty species of woody plants (trees and shrubs) were recorded from these plots. Thirty 1 m × 1 m square sub-plots within the three of 250 m² woody plots were sampled for herbaceous vegetation, equaling an area of 0.003 ha. Fifty-three species of herbaceous plants were

recorded in these 30 1 m² plots. Data indicates that there are 3,706.66 woody plants per ha, yielding 41.09m² per ha of basal area for all three woody classes. The overstory Margalef's Richness Index is 5.59, Pielou's Evenness Index is 0.32, and Shannon Weaver's Diversity Index is 0.96. Table 7 summarizes the results of the vegetation sampling in this Alliance.

Table 7
Summary of Vegetation Sampling Total for
***Magnolia virginiana* – *Nyssa biflora* – (*Quercus laurifolia*)**
Saturated Forest Alliance
Big Sandy Creek Unit – Big Thicket National Preserve

Woody Vegetation¹	Pre-Operational
Number of Sample Plots	3
Area Sampled	0.075 ha
Number of Species Recorded Within Plots	20
Overstory Species Richness	5.59
Overstory Species Evenness	0.32
Overstory Species Diversity	0.96
Herbaceous Vegetation²	
Number of Sample Plots	30
Area Sampled	0.003 ha
Number of Species Recorded Within Plots	53

¹ Woody vegetation was sampled within a 10 m × 25 m (250 m²) rectangular plot.

² Herbaceous vegetation was sampled within ten 1 m × 1 m (1 m²) square sub-plots of the 250 m² rectangular plots.

The canopy in this Alliance is dominated by swamp black gum, which is composed of 240.00 trees per ha and yields 16.42m² per ha of basal area. Other overstory species include sweet bay (*Magnolia virginiana*), bald cypress, and loblolly pine (Appendix A, Table 5A). Based on Relative Importance Values, swamp black gum comprises 38.53 percent of the overstory canopy. The midstory consists of 160.00 trees per ha, yielding 0.61m² per ha of basal area dominated by sweetbay. Other midstory species include southern wax myrtle, American holly, and sweetgum (Appendix A, Table 5B). The shrub class is dominated by evergreen bayberry (*Myrica heterophylla*). Other shrub class species include southern wax myrtle, red bay, and Chinese tallow (*Sapium sebiferum*) (Appendix A, Table 5C).

Based on Relative Importance Values, dominant herbaceous species include eastern sedge (*Carex atlantica*), bristle-stalked sedge (*Carex leptalea*), and narrowleaf woodoats (*Chasmanthium laxum*).

3.8 SPARGANIUM AMERICANUM SEASONALLY FLOODED HERBACEOUS ALLIANCE

The *Sparganium americanum* Seasonally Flooded Herbaceous Alliance encompasses approximately 4.84 ha (0.08 percent) of the study area. This Alliance was identified at one location within the project area, adjacent to a pond on the western side of the Big Sandy Creek floodplain. Two 25 m × 10 m rectangular plots were sampled for woody vegetation, equaling an area of 0.05 ha. Ten species of woody plants (trees and shrubs) were recorded from these plots. Thirty 1 m × 1 m square sub-plots within three 250 m² woody plots were sampled for herbaceous vegetation, equaling an area of 0.003 ha. Thirty-two species of herbaceous plants were recorded in these 30 1 m² plots. Data indicates that there are 2,800 woody plants per ha, yielding 6.52 m² per ha of basal area for all three woody classes. Because the overstory contains only one species—water tupelo—the overstory Margalef's Richness Index is 0, Pielou's Evenness Index is 0, and Shannon Weaver's Diversity Index is 0. Table 8 summarizes the results of the vegetation sampling in this Alliance.

Table 8
Summary of Vegetation Sampling Total for
***Sparganium americanum* Seasonally Flooded Herbaceous Alliance**
Big Sandy Creek Unit – Big Thicket National Preserve

Woody Vegetation ¹	Pre-Operational
Number of Sample Plots	2
Area Sampled	0.05 ha
Number of Species Recorded Within Plots	10
Overstory Species Richness	0
Overstory Species Evenness	0
Overstory Species Diversity	0
Herbaceous Vegetation ²	
Number of Sample Plots	30
Area Sampled	0.003 ha
Number of Species Recorded Within Plots	32

¹ Woody vegetation was sampled within a 10 m × 25 m (250 m²) rectangular plot.

² Herbaceous vegetation was sampled within ten 1 m × 1 m (1 m²) square sub-plots of the 250 m² rectangular plots.

In the herbaceous layer, groundcover is dominated by creeping spotflower (*Spilanthes americana*). Other dominant species observed include parrot's feather (*Myriophyllum aquaticum*), water shield (*Brasenia schreberi*), seedbox (*Ludwigia* sp.), and marsh St. John's wort (*Triadenum walteri*). Based on Relative Importance Values, creeping spotflower dominates the herbaceous stratum (Appendix A, Table 6D).

In addition to the herbaceous species, a water tupelo fringe occurs around the boundary of the marsh, which is composed of 20.00 water tupelo trees per ha and yields 1.71 m² per ha of basal area. No other overstory species were observed (Appendix A, Table 6A). Based on Relative Importance Values, water tupelo comprises 100 percent of the overstory canopy. The midstory consists of 580.00 trees per ha, yielding 2.40 m² per ha of basal area dominated by smooth alder. Other midstory species include swamp black gum and Carolina ash (Appendix A, Table 6B). The shrub class is dominated by smooth alder (Appendix A, Table 6B).

3.9 *CYRILLA RACEMIFLORA* – *ILEX CORIACEA* – (*CLIFTONIA MONOPHYLLA*) SATURATED SHRUBLAND ALLIANCE

The *Cyrilla racemiflora* – *Ilex coriacea* – (*Cliftonia monophylla*) Saturated Shrubland Alliance encompasses approximately 23.16 ha (0.4 percent) of the study area. This Alliance occurs as scattered, isolated units of limited extent within the Big Sandy Creek floodplain, lower slopes, and hillsides. During the field analysis, three 25 m × 10 m rectangular plots were sampled for woody vegetation, equaling an area of 0.075 ha. Seventeen species of woody plants (trees and shrubs) were recorded from these plots. Ten 1 m × 1 m square sub-plots within one of the 250 m² woody plots were sampled for herbaceous vegetation, equaling an area of 0.001 ha. Eleven species of herbaceous plants were recorded in these ten 1 m² plots. Data showed that there are 7,866.67 woody plants per ha, yielding 28.67 m² per ha of basal area for all three woody classes. The overstory Margalef's Richness Index is 4.70, Pielou's Evenness Index is 0.62, and Shannon Weaver's Diversity Index is 1.75. Table 9 summarizes the results of the vegetation sampling in this Alliance.

In addition to the mappable portions of this Alliance, many small non-mappable titi (*Cyrilla racemiflora*) areas were observed scattered throughout the project area along hillside seeps. Although, these units did not meet the minimal requirements to be considered mappable, coordinates were recorded at their locations and recorded in field notes (see Appendix E, Figure 4, for the locations of the observed non-mappable units).

Table 9
Summary of Vegetation Sampling Total for
***Cyrilla racemiflora* – *Ilex coriacea* – (*Cliftonia monophylla*) Saturated Shrubland Alliance**
Big Sandy Creek Unit – Big Thicket National Preserve

Woody Vegetation¹	Pre-Operational
Number of Sample Plots	3
Area Sampled	0.075 ha
Number of Species Recorded Within Plots	17
Overstory Species Richness	4.70
Overstory Species Evenness	0.62
Overstory Species Diversity	1.75
Herbaceous Vegetation²	
Number of Sample Plots	10
Area Sampled	0.001 ha
Number of Species Recorded Within Plots	11

¹ Woody vegetation was sampled within a 10 m × 25 m (250 m²) rectangular plot.

² Herbaceous vegetation was sampled within ten 1 m × 1 m (1 m²) square sub-plots of the 250 m² rectangular plots.

The canopy in this Alliance is dominated by sweet bay, which is composed of 173.33 trees per ha and yields 6.70m² per ha of basal area. Other overstory species include loblolly pine and southern magnolia (Appendix A, Table 7A). Based on Relative Importance Values, sweet bay comprised 32.02 percent of the overstory canopy. The midstory consists of 1,893.33 trees per ha yielding 1.87 m² per ha of basal area dominated by bayberry holly (*Ilex coriacea*). Other midstory species include red bay and swamp black gum (Appendix A, Table 7B). The shrub class is dominated by wax myrtle. Other shrub class species include bayberry holly and Texas azalea (*Rhododendron oblongifolium*) (Appendix A, Table 7C). Based on Relative Importance Values, dominant species within the herbaceous layer include evergreen bayberry and *Sphagnum* sp.

3.10 *PINUS TAEDA* – *QUERCUS* (*ALBA*, *FALCATA*, *STELLATA*) FOREST ALLIANCE

The *Pinus taeda* – *Quercus* (*alba*, *falcata*, *stellata*) Forest Alliance encompasses approximately 2,340.49 ha (42.4 percent) of the study area. This Alliance is located along the higher

topographic elevations within the Big Sandy Creek Unit. Eighty-one 25 m × 10 m rectangular plots were sampled for woody vegetation, equaling an area of 2.025 ha. Sixty-five species of woody plants (trees and shrubs) were recorded from these plots. Two hundred and forty 1 m × 1 m square sub-plots within 24 of the 250 m² woody plots were sampled for herbaceous vegetation, equaling an area of 0.024 ha. One hundred and thirty-five species of herbaceous plants were recorded in these 240 1 m² plots. Data indicates that there are 2,287.91 woody plants per ha, yielding 30.04 m² per ha of basal area for all three woody classes. The overstory Margalef's Richness Index is 9.43, Pielou's Evenness Index is 0.55, and Shannon Weaver's Diversity Index is 2.31. Table 10 summarizes the results of the vegetation sampling in this Alliance.

Table 10
Summary of Vegetation Sampling Total for
***Pinus taeda* – *Quercus* (*alba*, *falcata*, *stellata*) Forest Alliance**
Big Sandy Creek Unit – Big Thicket National Preserve

Woody Vegetation¹	Pre-Operational
Number of Sample Plots	81
Area Sampled	2.025 ha
Number of Species Recorded Within Plots	65
Overstory Species Richness	9.43
Overstory Species Evenness	0.55
Overstory Species Diversity	2.31
Herbaceous Vegetation²	
Number of Sample Plots	240
Area Sampled	0.024 ha
Number of Species Recorded Within Plots	135

¹ Woody vegetation was sampled within a 10 m × 25 m (250 m²) rectangular plot.

² Herbaceous vegetation was sampled within ten 1 m × 1 m (1 m²) square sub-plots of the 250 m² rectangular plots.

In this Alliance, the canopy is dominated by loblolly pine, which is composed of 171.85 trees per ha and yields 12.35 m² per ha of basal area. Other overstory species include sweetgum, short leaf pine (*Pinus echinata*), and post oak (Appendix A, Table 8A). Based on Relative Importance Values, loblolly comprises 35.41 percent of the overstory canopy. The midstory consists of 640.49 trees per ha,

yielding 1.54 m² per ha of basal area dominated by yaupon holly. Other midstory species include sweetgum, post oak, and loblolly pine (Appendix A, Table 8B). The shrub class is dominated by yaupon holly. Other shrub class species include beauty berry, sweetgum, and red bay (Appendix A, Table 8C). Based on Relative Importance Values, dominant herbaceous species include yaupon holly, Virginia creeper, and Small's greenbrier (*Smilax smallii*).

As with all the Alliances, each Alliance is comprised of many Associations. In this Alliance, the *Pinus palustris*/*Quercus* sp. Woodland Association was observed as a dominant Association that appears frequently across the Alliance. This Association is located in upper slopes on the eastern portion of the Big Sandy Creek Unit. Although the sample plots associated with this Association illustrate a somewhat distinct species composition, these areas occur as a mosaic throughout the *Pinus taeda* – *Quercus* (*alba*, *falcata*, *stellata*) Forest Alliance and do not meet the criteria to be considered mappable. Dominant species observed include short leaf pine, loblolly pine, and post oak.

3.11 *NYSSA (AQUATICA, BIFLORA, OGECHE)* FLOODPLAIN SEASONALLY FLOODED FOREST ALLIANCE

The *Nyssa* (*aquatica*, *biflora*, *ogeche*) Floodplain Seasonally Flooded Forest Alliance encompasses approximately 44.05 ha (0.8 percent) of the study area. This Alliance is located within the floodplain of Big Sandy Creek. Eight 25 m × 10 m rectangular plots were sampled for woody vegetation, equaling an area of 0.2 ha. Thirty-three species of woody plants (trees and shrubs) were recorded from these plots. Seventy 1 m × 1 m square sub-plots within seven of the 250 m² woody plots were sampled for herbaceous vegetation, equaling an area of 0.007 ha. One hundred and ten species of herbaceous plants were recorded in these seventy 1 m² plots. Data indicates that there are 1,875 woody plants per ha, yielding 38.35 m² per ha of basal area for all three woody classes. The overstory Margalef's Richness Index is 7.24, Pielou's Evenness Index is 0.70, and Shannon Weaver's Diversity Index is 2.46. Table 11 summarizes the results of the vegetation sampling in this Alliance.

Table 11
Summary of Vegetation Sampling Total for
***Nyssa (aquatica, biflora, ogeche)* Floodplain Seasonally Flooded Forest Alliance**
Big Sandy Creek Unit – Big Thicket National Preserve

Woody Vegetation ¹	Pre-Operational
Number of Sample Plots	8
Area Sampled	0.2 ha
Number of Species Recorded Within Plots	33
Species Richness	7.24
Species Evenness	0.70
Species Diversity	2.46
Herbaceous Vegetation ²	
Number of Sample Plots	70
Area Sampled	0.007 ha
Number of Species Recorded Within Plots	110

¹ Woody vegetation was sampled within a 10 m × 25 m (250 m²) rectangular plot.

² Herbaceous vegetation was sampled within ten 1 m × 1 m (1 m²) square sub-plots of the 250 m² rectangular plots.

The canopy in this Alliance is dominated by swamp black gum, which is composed of 115.00 trees per ha and yields 5.62 m² per ha of basal area. Other overstory species include sweetgum, American hornbeam, and willow oak (Appendix A, Table 9A). Based on Relative Importance Values, swamp black gum comprises 21.78 percent of the overstory canopy. The midstory consists of 260.00 trees per ha, yielding 0.90 m² per ha of basal area dominated by American hornbeam. Other midstory species include sweetgum, swamp black gum, and laurel oak (Appendix A, Table 9B). The shrub class is dominated by *Rhododendron* sp. and *Myrica* sp. Other shrub class species include swamp chestnut oak (*Quercus michauxii*) and red maple (Appendix A, Table 9C). Based on Relative Importance Values, dominant herbaceous species include narrow leaf wood oats, poison ivy, and Virginia creeper.

3.12 *PASPALUM NOTATUM* HERBACEOUS ALLIANCE

The *Paspalum notatum* Herbaceous Alliance encompasses approximately 13.24 ha (0.24 percent) of the study area. This Alliance is a man-made pipeline easement and is easily discernable

from the surrounding communities within the Big Sandy Creek Unit. Due to Federal Energy Regulatory Commission requirements that manage natural gas pipeline easements and pipelines, no woody vegetation occurs within this Alliance; therefore, no 25 m × 10 m rectangular plots were sampled for woody vegetation. However, ten 1 m × 1 m square sub-plots within a 25 m × 10 m rectangular area were sampled for herbaceous vegetation, equaling an area of 0.001 ha. Thirty-one species of herbaceous plants were recorded in these ten 1 m² plots. Table 12 summarizes the results of the vegetation sampling in this Alliance.

Table 12
Summary of Vegetation Sampling Total for
Paspalum notatum Herbaceous Alliance
 Big Sandy Creek Unit – Big Thicket National Preserve

Woody Vegetation¹	Pre-Operational
Number of Sample Plots	0
Area Sampled	0
Number of Species Recorded Within Plots	0
Herbaceous Vegetation²	
Number of Sample Plots	10
Area Sampled	0.001 ha
Number of Species Recorded Within Plots	31

¹ Woody vegetation was sampled within a 10 m × 25 m (250 m²) rectangular plot.

² Herbaceous vegetation was sampled within ten 1 m × 1 m (1 m²) square sub-plots of the 250 m² rectangular plots.

The herbaceous layer in this Alliance is dominated by *Paspalum notatum*. Other dominant species observed include *Panicum* sp., *Andropogon virginicus*, and annual wild buckwheat (*Eriogonum annuum*) (please refer to Appendix A, Table 10A).

4.0

PREVIOUS STUDIES

According to *Forest Vegetation of the Big Thicket National Preserve* (Harcombe and Marks, 1979), approximately eight vegetation ~~community~~ ^{types} potentially occur within the Big Sandy Creek Unit. These ~~community~~ ^{types} include Sandhill Pine, Upland Pine, Upper Slope Pine Oak, Mid Slope Oak Pine, Lower Slope Hardwood Pine, Floodplain Hardwood Pine, Floodplain Hardwood, and Wetland Baygalls. The majority of the Upper Slope Pine Oak ~~community~~ ^{type} in the Big Sandy Creek Unit occurs east of the Big Sandy Creek and north of Dallardsville. This ~~community~~ ^{type} is generally a flat, stony upland, and supports partially closed stands of shortleaf, loblolly, and longleaf pines. Blackjack oaks (*Q. marilandica*) and post oaks are said to be common on dry ridges and southern red oak (*Q. falcata*) becomes important on the more mesic slopes and drains. Harcombe and Marks state that west and south of Big Sandy Creek the forest is more mesic than on the eastern uplands, and the slopes are mostly Mid Slope Oak Pine and Lower Slope Hardwood Pine. The floodplain of the Big Sandy Creek is said to vary considerably in width and character. To the north, the floodplain is wide and flat and supports Floodplain Hardwood Forest. Extending south and past the bend to the east, the floodplain is observed to support Lower Slope Hardwood Pine. From the bend to the eastern boundary of the property, the vegetation is mostly Lower Slope Hardwood Pine, and mottled with many channels and oxbows. Additionally, Harcombe and Marks state that this area supports many ~~Wetland Baygall communities~~ ^{Wetland Baygall types}. Below is a table comparing the Harcombe and Marks Vegetation ~~Communities~~ ^{Types} to the ICEC Alliances identified by this vegetation analysis. See Appendix E, Figure 5, illustrating a graphical depiction of the table below.

Table 13
Comparison of ICEC Alliance Categories and Harcombe and Marks
Fig **Communities for the 2003 Vegetation Survey**

ICEC Alliance Based on 2003 Survey	Harcombe and Marks Vegetation ~~Communities~~ <i>Type</i>
<i>Nyssa aquatica</i> – (<i>Taxodium distichum</i>) Semi-permanently Flooded Forest Alliance [I.B.2.N.f.2]	Cypress/Tupelo Swamp
<i>Fraxinus pennsylvanica</i> – <i>Ulmus americana</i> – <i>Celtis (occidentalis, laevigata)</i> Temporarily Flooded Forest Alliance [I.B.2.N.d.11]	Cypress/Tupelo Swamp
<i>Quercus alba</i> – (<i>Quercus nigra</i>) Forest Alliance [I.B.2.N.a.26]	Floodplain Hardwood Forest
<i>Quercus (laurifolia, phellos)</i> Seasonally Flooded Forest Alliance [I.B.2.N.e.12]	Floodplain Hardwood Forest
<i>Magnolia virginiana</i> – <i>Nyssa biflora</i> – (<i>Quercus laurifolia</i>) Saturated Forest Alliance [I.C.2.N.d.1]	Wetland Baygall Shrub Thickets
<i>Sparganium americanum</i> Seasonally Flooded Herbaceous Alliance [V.A.5.N.k.27]	N/A
<i>Cyrilla racemiflora</i> – <i>Ilex coriacea</i> – (<i>Cliftonia monophylla</i>) Saturated Shrubland Alliance [111.A.2.N.i.3]	Wetland Baygall Shrub Thickets
<i>Pinus taeda</i> – <i>Quercus (alba, falcata, stellata)</i> Forest Alliance [I.C.3.N.a.24]	Upper Slope Pine Oak Forest, Mid Slope Oak Pine Forest, or Lower Slope Hardwood Pine Forest
<i>Nyssa (aquatic, biflora, ogeche)</i> Floodplain Seasonally Flooded Forest [I.B.2.N.e.8]	Cypress/Tupelo Swamp
<i>Paspalum notatum</i> Herbaceous Alliance [V.A.5.N.c.014]	N/A

5.0 CONCLUSION

In cooperation with the NPS, a vegetation analysis of BTNP, Big Sandy Creek Unit was completed in April and May of 2003. Based on the results of the sampling and mapping protocol, 201 woody samples and 1,060 herbaceous samples were completed, resulting in 10 vegetation Alliances within the Big Sandy Creek Unit. Additionally, three Alliances were observed to contain a mosaic of very distinct Associations that potentially could become Alliances as they progress through natural succession. However, at this time they are not large enough or distinctive enough to meet the criteria to be Alliances. These Associations appear to be early successional stages of peak Alliances; however, these areas are not large enough to be mapped. Therefore, these Associations are absorbed within the surrounding Alliance, but remain distinctive enough to note. Appendix A provides tables that summarize each Alliance by stratum and by species Frequency, Density, Dominance, and Importance with the relative values of each included.

6.0 REFERENCES

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APPENDIX A

SUMMARY ALLIANCE TABLES

Table 1A

Summary of Overstory Layer
Nyssa aquatica – (*Taxodium distichum*) Semi-permanently Flooded Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i>	16.67	4.88	6.67	1.48	0.17	0.32	6.67	2.22
<i>Acer rubrum</i> var. <i>drummondii</i>	8.33	2.44	3.33	0.74	0.13	0.24	3.42	1.14
<i>Carpinus caroliniana</i>	33.33	9.76	30.00	6.67	0.82	1.55	17.97	5.99
<i>Crataegus</i> sp.	8.33	2.44	3.33	0.74	0.13	0.24	3.42	1.14
<i>Fraxinus caroliniana</i>	8.33	2.44	33.33	7.41	1.76	3.33	13.18	4.39
<i>Ilex opaca</i>	16.67	4.88	6.67	1.48	0.08	0.15	6.51	2.17
<i>Liquidambar styraciflua</i>	41.67	12.20	43.33	9.63	1.60	3.03	24.86	8.29
<i>Nyssa aquatica</i>	66.67	19.51	190.00	42.22	33.41	63.17	124.90	41.63
<i>Nyssa biflora</i>	50.00	14.63	40.00	8.89	2.19	4.14	27.66	9.22
<i>Pinus taeda</i>	8.33	2.44	6.67	1.48	1.33	2.52	6.44	2.15
<i>Quercus laurifolia</i>	16.67	4.88	6.67	1.48	1.39	2.63	8.99	3.00
<i>Quercus michauxii</i>	8.33	2.44	3.33	0.74	0.26	0.49	3.67	1.22
<i>Quercus phellos</i>	8.33	2.44	3.33	0.74	0.40	0.75	3.93	1.31
<i>Taxodium distichum</i>	33.33	9.76	63.33	14.07	8.90	16.82	40.65	13.55
<i>Ulmus alata</i>	8.33	2.44	6.67	1.48	0.22	0.42	4.34	1.45
<i>Ulmus crassifolia</i>	8.33	2.44	3.33	0.74	0.10	0.20	3.38	1.13

Table 1B

Summary of Midstory Layer
Nyssa aquatica – (*Taxodium distichum*) Semi-permanently Flooded Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i>	8.33	1.92	3.33	0.63	0.01	0.43	2.99	1.00
<i>Acer rubrum</i> var. <i>drummondii</i>	16.67	3.85	6.67	1.27	0.01	0.27	5.38	1.79
<i>Acer rubrum</i> var. <i>trilobum</i>	8.33	1.92	3.33	0.63	0.02	0.76	3.32	1.11
<i>Alnus Serrulata</i>	8.33	1.92	26.67	5.06	0.03	1.31	8.29	2.76
<i>Baccharis halimifolia</i>	8.33	1.92	6.67	1.27	0.00	0.15	3.34	1.11
<i>Carpinus caroliniana</i>	58.33	13.46	120.00	22.78	0.56	25.35	61.60	20.53
<i>Celtis occidentalis</i>	8.33	1.92	10.00	1.90	0.06	2.52	6.34	2.11
<i>Cephalanthus occidentalis</i>	8.33	1.92	3.33	0.63	0.00	0.07	2.63	0.88
<i>Fraxinus caroliniana</i>	16.67	3.85	70.00	13.29	0.28	12.77	29.91	9.97
<i>Fraxinus pennsylvanica</i>	8.33	1.92	3.33	0.63	0.01	0.58	3.14	1.05
<i>Ilex opaca</i>	33.33	7.69	36.67	6.96	0.11	4.80	19.46	6.49
<i>Ilex vomitoria</i>	16.67	3.85	13.33	2.53	0.03	1.26	7.64	2.55
<i>Liquidambar styraciflua</i>	41.67	9.62	66.67	12.66	0.42	19.22	41.50	13.83
<i>Myrica cerifera</i>	16.67	3.85	10.00	1.90	0.03	1.32	7.06	2.35
<i>Nyssa aquatica</i>	25.00	5.77	53.33	10.13	0.31	14.29	30.18	10.06
<i>Nyssa biflora</i>	50.00	11.54	43.33	8.23	0.16	7.40	27.17	9.06
<i>Planera aquatica</i>	8.33	1.92	3.33	0.63	0.03	1.44	4.00	1.33
<i>Platanus occidentalis</i>	8.33	1.92	3.33	0.63	0.00	0.15	2.70	0.90
<i>Sapium sebiferum</i>	16.67	3.85	6.67	1.27	0.01	0.47	5.58	1.86
<i>Styrax americana</i>	8.33	1.92	3.33	0.63	0.01	0.43	2.99	1.00
<i>Taxodium distichum</i>	8.33	1.92	3.33	0.63	0.01	0.58	3.14	1.05
<i>Ulmus alata</i>	8.33	1.92	3.33	0.63	0.00	0.11	2.66	0.89
<i>Ulmus rubra</i>	25.00	5.77	16.67	3.16	0.09	3.90	12.83	4.28
Unknown vine#2	8.33	1.92	3.33	0.63	0.00	0.11	2.66	0.89
<i>Vitis rotundifolia</i>	8.33	1.92	6.67	1.27	0.01	0.30	3.49	1.16

Table 1C

Summary of Shrub Layer
Nyssa aquatica – (*Taxodium distichum*) Semi-permanently Flooded Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Alnus serrulata</i>	8.33	7.14	166.67	20.83	0.01	5.76	33.73	11.24
<i>Berchemia scandens</i>	8.33	7.14	33.33	4.17	0.00	2.88	14.19	4.73
<i>Carpinus caroliniana</i>	8.33	7.14	33.33	4.17	0.01	6.47	17.78	5.93
<i>Cephalanthus occidentalis</i>	8.33	7.14	133.33	16.67	0.02	19.42	43.23	14.41
<i>Fraxinus pennsylvanica</i>	8.33	7.14	33.33	4.17	0.00	2.88	14.19	4.73
<i>Ilex opaca</i>	8.33	7.14	66.67	8.33	0.01	12.95	28.43	9.48
<i>Liquidambar styraciflua</i>	8.33	7.14	33.33	4.17	0.01	6.47	17.78	5.93
<i>Myrica cerifera</i>	8.33	7.14	66.67	8.33	0.01	7.19	22.67	7.56
<i>Nyssa biflora</i>	8.33	7.14	33.33	4.17	0.01	11.51	22.82	7.61
<i>Quercus nigra</i>	8.33	7.14	33.33	4.17	0.00	2.88	14.19	4.73
<i>Sapium sebiferum</i>	8.33	7.14	33.33	4.17	0.01	11.51	22.82	7.61
<i>Sebatiana fruticosa</i>	16.67	14.29	66.67	8.33	0.01	7.19	29.81	9.94
<i>Vitis rotundifolia</i>	8.33	7.14	33.33	4.17	0.00	2.88	14.19	4.73

Table 1D

Summary of Herbaceous Layer
Nyssa aquatica – (*Taxodium distichum*) Semi-permanently Flooded Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency[%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acmella oppositifolia</i>	10.83	1.60	0.29	0.61	2.22	110.77
<i>Acer rubrum</i>	4.17	0.62	0.00	0.00	0.62	31.04
<i>Acer rubrum</i> var. <i>drummondii</i>	6.67	0.99	0.00	0.01	0.99	49.67
<i>Acer rubrum</i> var. <i>trilobum</i>	5.83	0.86	0.00	0.01	0.87	43.46
<i>Ammannia coccinea</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Ammannia coccinea</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Andropogon glomeratus</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Arundinaria gigantea</i>	0.83	0.12	0.17	0.35	0.47	23.46
<i>Ascyrum hypericoides</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Athyrium filix-femina</i>	1.67	0.25	0.04	0.09	0.33	16.70
<i>Berchemia scandens</i>	4.17	0.62	0.00	0.00	0.62	31.04
<i>Bignonia capreolata</i>	5.83	0.86	0.00	0.01	0.87	43.46
<i>Bidens</i> sp.	5.83	0.86	0.00	0.01	0.87	43.46
<i>Boehmeria cylindrica</i>	21.67	3.21	0.47	0.97	4.17	208.64
<i>Brasenia schreberi</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Carex abscondita</i>	8.33	1.23	0.46	0.95	2.19	109.40
<i>Carex atlantica</i>	4.17	0.62	0.29	0.61	1.22	61.14
<i>Carpinus caroliniana</i>	4.17	0.62	0.00	0.00	0.62	31.04
<i>Carex crebriflora</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Carex debilis</i>	11.67	1.73	0.54	1.13	2.86	142.79
<i>Carex flaccosperma</i>	4.17	0.62	0.04	0.09	0.71	35.32
<i>Carex frankii</i>	9.17	1.36	0.55	1.15	2.50	125.12
<i>Carya leioderms</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Carex longii</i>	4.17	0.62	0.17	0.35	0.97	48.25
<i>Carex louisianica</i>	0.83	0.12	0.04	0.09	0.21	10.49
<i>Carex lupulina</i>	10.00	1.48	0.25	0.52	2.00	100.19
<i>Carex lurida</i>	5.83	0.86	0.67	1.38	2.25	112.39

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Cassia nictitans</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Carex sp.</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Carex tribuloides</i>	3.33	0.49	0.08	0.18	0.67	33.44
<i>Cephalanthus occidentalis</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Chasmanthium laxum</i>	13.33	1.97	1.00	2.08	4.05	202.61
<i>Chasmanthium sessiliflorum</i>	1.67	0.25	0.08	0.17	0.42	21.02
<i>Crataegus sp.</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Crataegus spatulata</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Cyperus sp.</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Cyperus virens</i>	11.67	1.73	0.50	1.05	2.77	138.60
<i>Desmodium sp.</i>	0.83	0.12	0.04	0.09	0.21	10.49
<i>Dioscorea villosa</i>	4.17	0.62	0.04	0.09	0.71	35.32
<i>Echinacea sp.</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Festuca species</i>	3.33	0.49	0.04	0.09	0.58	29.12
<i>Elephantopus carolinianus</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Eleocharis montevidensis</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Eleocharis obtusa</i>	0.83	0.12	0.13	0.26	0.38	19.14
<i>Eleocharis parvula</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Elephantopus tomentosus</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Eupatorium compositifolium</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Eupatorium serotinum</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Fraxinus caroliniana</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Fraxinus pennsylvanica</i>	2.50	0.37	0.04	0.09	0.46	22.91
<i>Galium tinctorium</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Galium trifolium</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Gelsemium sempervirens</i>	2.50	0.37	0.04	0.09	0.46	22.91
<i>Gnaphalium persilvanicum</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Iris brevicaulis</i>	7.50	1.11	0.17	0.35	1.46	73.09
<i>Hypericum crux-andreae</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Hypoxis curtisii</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Hygrophila lacustris</i>	20.83	3.08	0.80	1.65	4.74	236.82
<i>Hypericum mutilum</i>	4.17	0.62	0.00	0.00	0.62	31.04
<i>Hydrocotyle umbellata</i>	6.67	0.99	0.04	0.09	1.08	53.95
<i>Hydrocotyle verticillata</i>	3.33	0.49	0.00	0.00	0.50	24.83

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Ilex coriacea</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Ilex opaca</i>	3.33	0.49	0.04	0.09	0.58	29.12
<i>Ilex vomitoria</i>	0.83	0.12	0.04	0.09	0.21	10.49
<i>Itea virginica</i>	1.67	0.25	0.63	1.30	1.54	77.20
<i>Juncus acuminatis</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Justicia americana</i>	0.83	0.12	0.04	0.09	0.21	10.49
<i>Juncus coriaceus</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Juncus dichotomus</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Juncus diffusissimus</i>	13.33	1.97	0.88	1.82	3.80	189.81
<i>Juncus effusus</i>	29.17	4.32	5.21	10.82	15.13	756.57
<i>Zizania species</i>	0.83	0.12	0.17	0.35	0.47	23.46
<i>Juglans major</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Justicia ovata</i> var. <i>lanceolata</i>	4.17	0.62	0.04	0.09	0.71	35.32
<i>Juncus repens</i>	3.33	0.49	0.71	1.47	1.96	98.22
<i>Juncus sp.</i>	3.33	0.49	0.21	0.43	0.93	46.37
<i>Lemna species</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Juncus tenuis</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Leersia lenticularis</i>	4.17	0.62	0.04	0.09	0.71	35.32
<i>Linum striatum</i>	0.83	0.12	0.04	0.09	0.21	10.49
<i>Liquidambar styraciflua</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Lobelia cardinalis</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Ludwigia sp.</i>	12.50	1.85	0.55	1.13	2.98	149.04
<i>Lycopus sp.</i>	8.33	1.23	0.13	0.27	1.50	74.97
<i>Parietaria species</i>	0.83	0.12	0.04	0.09	0.21	10.49
<i>Macarthurium umbellatum</i>	1.67	0.25	0.13	0.26	0.51	25.35
<i>Mitchella repens</i>	10.83	1.60	0.09	0.18	1.79	89.27
<i>Mikania scandens</i>	33.33	4.93	0.39	0.81	5.74	286.96
<i>Myriophyllum aquaticum</i>	6.67	0.99	0.38	0.78	1.77	88.50
<i>Myrica cerifera</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Myosotis macrosperma</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Nuphar luteum</i>	2.50	0.37	0.33	0.69	1.06	53.09
<i>Nyssa aquatica</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Nyssa biflora</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Onoclea sensibilis</i>	1.67	0.25	0.00	0.00	0.25	12.42

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Oxalis dillenii</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Oxalis stricta</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Panicum commutatum</i>	8.33	1.23	0.05	0.09	1.33	66.37
<i>Panicum dichotomiflorum</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Panicum gymnocarpon</i>	12.50	1.85	0.50	1.05	2.90	144.85
<i>Panicum laxiflorum</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Parthenocissus quinquefolia</i>	9.17	1.36	0.05	0.10	1.45	72.57
<i>Panicum rigidulum</i>	0.83	0.12	0.04	0.09	0.21	10.49
<i>Plantago sp.</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Polygonum hydropiperoides</i>	15.00	2.22	2.42	5.02	7.24	361.93
<i>Pontamogeton nodosus</i>	3.33	0.49	0.21	0.43	0.93	46.33
<i>Polygonum punctatum</i>	33.33	4.93	10.05	20.85	25.79	1289.26
<i>Proserpinaca palustris</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Prosopis palustris</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Prunus serotina</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Ptilimnium costatum</i>	3.33	0.49	0.00	0.00	0.50	24.83
<i>Ptilimnium sp.</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Quercus laurifolia</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Quercus lyrata</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Quercus nigra</i>	3.33	0.49	0.00	0.00	0.50	24.83
<i>Ranunculus sp.</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Rhexia sp.</i>	1.67	0.25	0.13	0.26	0.51	25.35
<i>Rubus argutus</i>	0.83	0.12	0.04	0.09	0.21	10.49
<i>Rubus sp.</i>	3.33	0.49	0.54	1.13	1.62	80.92
<i>Rubus trivialis</i>	5.00	0.74	1.54	3.20	3.94	197.09
<i>Saururus cernuus</i>	31.67	4.69	11.04	22.92	27.61	1380.46
<i>Sagittaria graminea</i>	1.67	0.25	0.04	0.09	0.33	16.70
<i>Sagittaria latifolia</i>	4.17	0.62	0.00	0.00	0.62	31.04
<i>Sapium sebiferum</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Scirpus cyperinus</i>	7.50	1.11	1.50	3.12	4.23	211.26
<i>Scleria oligantha</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Sebatiana fruticosa</i>	8.33	1.23	0.38	0.78	2.01	100.70
<i>Senecio glabellus</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Smilax glauca</i>	1.67	0.25	0.00	0.00	0.25	12.42

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Smilax hispida</i>	4.17	0.62	0.00	0.00	0.62	31.04
<i>Smilax smallii</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Vitis species</i>	0.83	0.12	0.08	0.17	0.30	14.81
<i>Solidago sp.</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Sparganium americanum</i>	5.00	0.74	1.13	2.34	3.08	153.80
<i>Pteridium aquilinum</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Syrax americana</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Taxodium distichum</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Toxicodendron radicans</i>	14.17	2.10	0.13	0.27	2.37	118.39
<i>Triadenum walteri</i>	18.33	2.71	0.34	0.71	3.42	170.97
<i>Typha sp.</i>	3.33	0.49	0.50	1.04	1.53	76.64
<i>Ulmus alata</i>	1.67	0.25	0.00	0.00	0.25	12.42
<i>Unknown species 1</i>	8.33	1.23	0.17	0.35	1.59	79.30
<i>Unknown species 2</i>	2.50	0.37	0.00	0.00	0.37	18.63
<i>Unknown species 3</i>	2.50	0.37	0.04	0.09	0.46	22.91
<i>Vaccinium sp.</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Vitis cinerea</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Viola cornuta</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Vigna luteola</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Vitis rotundifolia</i>	0.83	0.12	0.00	0.00	0.12	6.21
<i>Viola sororia v. missouriensis</i>	4.17	0.62	0.00	0.00	0.62	31.04
<i>Woodwardia areolata</i>	0.83	0.12	0.04	0.09	0.21	10.49
<i>Xyris iridifolia</i>	2.50	0.37	0.04	0.09	0.46	22.91

Table 2A

Summary of Overstory Layer

Fraxinus pennsylvanica – *Ulmus americana* – *Celtis (occidentalis, laevigata)* Temporarily Flooded Forest Alliance
Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Carya aquatica</i>	33.33	7.14	13.33	2.56	0.18	1.42	11.12	3.71
<i>Fraxinus pennsylvanica</i>	100.00	21.43	333.33	64.10	7.23	57.79	143.33	47.78
<i>Gleditsia triacanthos</i>	33.33	7.14	13.33	2.56	0.42	3.35	13.06	4.35
<i>Liquidambar styraciflua</i>	100.00	21.43	66.67	12.82	1.78	14.26	48.51	16.17
<i>Melia azedarach</i>	66.67	14.29	26.67	5.13	0.86	6.88	26.29	8.76
<i>Quercus nigra</i>	33.33	7.14	13.33	2.56	0.46	3.69	13.40	4.47
<i>Ulmus rubra</i>	100.00	21.43	53.33	10.26	1.58	12.61	44.29	14.76

Table 2B

Summary of Midstory Layer
Fraxinus pennsylvanica* – *Ulmus americana* – *Celtis (occidentalis, laevigata)
Temporarily Flooded Forest Alliance
Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i> var. <i>drummondii</i>	33.33	5.26	13.33	0.40	0.07	0.82	6.48	2.16
<i>Carya aquatica</i>	33.33	5.26	66.67	2.00	0.51	6.22	13.48	4.49
<i>Celtis laevigata</i>	100.00	15.79	53.33	1.60	0.07	0.90	18.29	6.10
<i>Crataegus</i> sp.	33.33	5.26	13.33	0.40	0.01	0.08	5.74	1.91
<i>Diodia virginiana</i>	33.33	5.26	13.33	0.40	0.01	0.11	5.78	1.93
<i>Fraxinus pennsylvanica</i>	100.00	15.79	2960.00	88.80	6.34	77.20	181.79	60.60
<i>Gleditsia triacanthos</i>	66.67	10.53	26.67	0.80	0.01	0.16	11.49	3.83
<i>Liquidambar styraciflua</i>	66.67	10.53	53.33	1.60	0.21	2.58	14.71	4.90
<i>Poncirus trifoliata</i>	66.67	10.53	26.67	0.80	0.72	8.82	20.15	6.72
<i>Ulmus rubra</i>	100.00	15.79	106.67	3.20	0.26	3.11	22.10	7.37

Table 2C

Summary of Shrub Layer
Fraxinus pennsylvanica – *Ulmus americana* – *Celtis (occidentalis, laevigata)* Temporarily Flooded Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Fraxinus pennsylvanica</i>	33.33	100.00	133.33	100.00	0.02	100.00	300.00	100.00

Table 2D

Summary of Herbaceous Layer

Fraxinus pennsylvanica – *Ulmus americana* – *Celtis (occidentalis, laevigata)* Temporarily Flooded Forest Alliance
Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency[%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Allium canadense</i>	60.00	4.88	0.03	0.05	4.93	246.32
<i>Ambrosia artemisiifolia</i>	10.00	0.81	0.00	0.01	0.82	41.05
<i>Aster lateriflorus</i>	50.00	4.07	0.03	0.04	4.11	205.26
<i>Berchemia scandens</i>	10.00	0.81	0.00	0.01	0.82	41.05
<i>Boehmeria cylindrica</i>	30.00	2.44	0.01	0.02	2.46	123.16
<i>Brunnichia ovata</i>	10.00	0.81	0.00	0.01	0.82	41.05
<i>Carex caroliniana</i>	40.00	3.25	0.02	0.03	3.28	164.21
<i>Carex cherokeensis</i>	30.00	2.44	6.00	9.65	12.09	604.58
<i>Carex complanata</i>	70.00	5.69	0.04	0.06	5.75	287.37
<i>Carex flaccosperma</i>	10.00	0.81	0.00	0.01	0.82	41.05
<i>Carex frankii</i>	30.00	2.44	1.50	2.41	4.85	242.61
<i>Cacalia lanceolata</i>	10.00	0.81	0.00	0.01	0.82	41.05
<i>Carya leioderms</i>	30.00	2.44	0.01	0.02	2.46	123.16
<i>Carex longii</i>	30.00	2.44	0.01	0.02	2.46	123.16
<i>Carex nigromarginata</i>	100.00	8.13	20.00	32.18	40.31	2015.66
<i>Carya texana</i>	10.00	0.81	0.00	0.01	0.82	41.05
<i>Chasmanthium latifolium</i>	100.00	8.13	13.25	21.32	29.45	1472.30
<i>Crataegus sp.</i>	10.00	0.81	0.00	0.01	0.82	41.05
<i>Fraxinus pennsylvanica</i>	20.00	1.63	0.50	0.81	2.44	121.92
<i>Galium trifolium</i>	50.00	4.07	0.03	0.04	4.11	205.26
<i>Gleditsia triacanthos</i>	10.00	0.81	0.00	0.01	0.82	41.05
<i>Juncus acuminatis</i>	40.00	3.25	2.01	3.23	6.49	324.28
<i>Juncus coriaceus</i>	20.00	1.63	0.01	0.02	1.64	82.11
<i>Juncus effusus</i>	10.00	0.81	1.00	1.61	2.42	121.09
<i>Justicia ovata var. lanceolata</i>	50.00	4.07	1.51	2.44	6.50	325.11
<i>Myosotis macrosperma</i>	10.00	0.81	0.00	0.01	0.82	41.05
<i>Oxalis stricta</i>	10.00	0.81	0.00	0.01	0.82	41.05

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Panicum gymnocarpon</i>	10.00	0.81	1.00	1.61	2.42	121.09
<i>Poa autumnalis</i>	90.00	7.32	11.51	18.52	25.83	1291.69
<i>Quercus laurifolia</i>	10.00	0.81	0.00	0.01	0.82	41.05
<i>Ranunculus pusillus</i>	20.00	1.63	0.01	0.02	1.64	82.11
<i>Rubus argutus</i>	20.00	1.63	0.01	0.02	1.64	82.11
<i>Rubus trivialis</i>	30.00	2.44	2.01	3.23	5.67	283.63
<i>Senecio glabellus</i>	40.00	3.25	0.02	0.03	3.28	164.21
<i>Selaginella</i> sp.	10.00	0.81	0.00	0.01	0.82	41.05
<i>Solanum carolinense</i>	10.00	0.81	0.00	0.01	0.82	41.05
<i>Triodanis perfoliata</i>	30.00	2.44	0.01	0.02	2.46	123.16
<i>Ulmus rubra</i>	10.00	0.81	0.00	0.01	0.82	41.05
<i>Vaccinium</i> sp.	40.00	3.25	1.51	2.44	5.69	284.46
<i>Viola sororia</i> v. <i>missouriensis</i>	50.00	4.07	0.03	0.04	4.11	205.26

Table 3A

Summary of Overstory Layer
Quercus (laurifolia, phellos) Seasonally Flooded Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer negundo</i>	1.52	0.33	0.61	0.16	0.01	0.04	0.52	0.17
<i>Acer rubrum</i>	18.18	3.92	11.52	2.98	0.47	1.64	8.54	2.85
<i>Acer rubrum</i> var. <i>drummondii</i>	1.52	0.33	1.21	0.31	0.05	0.17	0.81	0.27
<i>Betula nigra</i>	1.52	0.33	1.82	0.47	0.35	1.24	2.03	0.68
<i>Carya aquatica</i>	6.06	1.31	3.64	0.94	0.14	0.49	2.73	0.91
<i>Carpinus caroliniana</i>	33.33	7.19	24.24	6.27	0.77	2.70	16.16	5.39
<i>Carya cordiformis</i>	1.52	0.33	2.42	0.63	0.17	0.58	1.54	0.51
<i>Carya</i> sp.	4.55	0.98	2.42	0.63	0.51	1.78	3.39	1.13
<i>Carya tomentosa</i>	6.06	1.31	2.42	0.63	0.12	0.44	2.37	0.79
<i>Celtis laevigata</i>	1.52	0.33	0.61	0.16	0.01	0.03	0.52	0.17
<i>Cornus florida</i>	6.06	1.31	2.42	0.63	0.08	0.27	2.21	0.74
<i>Crataegus opaca</i>	3.03	0.65	1.21	0.31	0.04	0.14	1.11	0.37
<i>Fagus grandifolia</i>	24.24	5.23	13.33	3.45	2.32	8.18	16.86	5.62
<i>Fraxinus americana</i>	1.52	0.33	0.61	0.16	0.02	0.07	0.55	0.18
<i>Ilex opaca</i>	28.79	6.21	27.27	7.05	0.96	3.39	16.65	5.55
<i>Ilex vomitoria</i>	1.52	0.33	0.61	0.16	0.02	0.07	0.55	0.18
<i>Liquidambar styraciflua</i>	65.15	14.05	80.00	20.69	5.02	17.69	52.43	17.48
<i>Magnolia grandiflora</i>	15.15	3.27	8.48	2.19	1.26	4.42	9.89	3.30
<i>Magnolia virginiana</i>	3.03	0.65	2.42	0.63	0.06	0.21	1.49	0.50
<i>Morus rubra</i>	1.52	0.33	1.82	0.47	0.13	0.45	1.25	0.42
<i>Nyssa aquatica</i>	1.52	0.33	3.03	0.78	0.15	0.54	1.65	0.55
<i>Nyssa biflora</i>	6.06	1.31	2.42	0.63	0.16	0.57	2.50	0.83
<i>Nyssa sylvatica</i>	24.24	5.23	13.33	3.45	0.59	2.07	10.75	3.58
<i>Ostrya virginiana</i>	22.73	4.90	27.88	7.21	0.90	3.17	15.28	5.09
<i>Persea palustris</i>	4.55	0.98	2.42	0.63	0.03	0.12	1.73	0.58

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Pinus taeda</i>	36.36	7.84	31.52	8.15	4.88	17.18	33.17	11.06
<i>Platanus occidentalis</i>	3.03	0.65	1.21	0.31	0.07	0.26	1.23	0.41
<i>Prunus caroliniana</i>	1.52	0.33	0.61	0.16	0.07	0.26	0.74	0.25
<i>Quercus alba</i>	19.70	4.25	15.76	4.08	0.77	2.71	11.04	3.68
<i>Quercus falcata</i>	7.58	1.63	4.85	1.25	0.44	1.56	4.45	1.48
<i>Quercus falcata</i> var. <i>pogodaefolia</i>	1.52	0.33	1.21	0.31	0.09	0.30	0.94	0.31
<i>Quercus laurifolia</i>	43.94	9.48	44.24	11.44	4.09	14.42	35.34	11.78
<i>Quercus lyrata</i>	7.58	1.63	3.64	0.94	0.33	1.18	3.75	1.25
<i>Quercus michauxii</i>	9.09	1.96	4.24	1.10	0.56	1.97	5.03	1.68
<i>Quercus nigra</i>	21.21	4.58	20.61	5.33	1.72	6.05	15.95	5.32
<i>Quercus palustris</i>	1.52	0.33	0.61	0.16	0.02	0.06	0.54	0.18
<i>Quercus phellos</i>	9.09	1.96	10.91	2.82	0.59	2.09	6.87	2.29
<i>Sassafras albidum</i>	3.03	0.65	1.21	0.31	0.04	0.15	1.12	0.37
<i>Sapium sebiferum</i>	1.52	0.33	1.82	0.47	0.05	0.18	0.97	0.32
<i>Taxodium distichum</i>	4.55	0.98	1.82	0.47	0.15	0.52	1.97	0.66
<i>Ulmus alata</i>	1.52	0.33	1.21	0.31	0.04	0.14	0.78	0.26
<i>Ulmus rubra</i>	6.06	1.31	3.03	0.78	0.15	0.52	2.61	0.87

Table 3B

Summary of Midstory Layer
Quercus (laurifolia, phellos) Seasonally Flooded Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer barbatum</i>	10.61	1.44	10.91	0.87	0.02	0.54	2.85	0.95
<i>Acer negundo</i>	1.52	0.21	0.61	0.05	0.00	0.11	0.36	0.12
<i>Acer rubrum</i>	34.85	4.73	27.88	2.23	0.10	2.85	9.81	3.27
<i>Acer rubrum</i> var. <i>drummondii</i>	6.06	0.82						
<i>Acer rubrum</i> var. <i>trilobum</i>	1.52	0.21	0.61	0.05	0.00	1.10	2.36	0.79
<i>Aralia spinosa</i>	3.03	0.41	2.42	0.19	0.00	0.01	0.26	0.09
<i>Berchemia scandens</i>	7.58	1.03	5.45	0.44	0.01	0.28	1.75	0.58
<i>Bumelia lanuginosa</i>	3.03	0.41	7.88	0.63	0.05	1.49	2.53	0.84
<i>Carya aquatica</i>	1.52	0.21	0.61	0.05	0.00	0.08	0.34	0.11
<i>Carpinus caroliniana</i>	51.52	7.00	165.45	13.26	0.44	12.17	32.43	10.81
<i>Carya tomentosa</i>	3.03	0.41	1.82	0.15	0.00	0.13	0.69	0.23
<i>Celtis laevigata</i>	7.58	1.03	3.64	0.29	0.00	0.12	1.44	0.48
<i>Cephalanthus occidentalis</i>	1.52	0.21	0.61	0.05	0.00	0.09	0.35	0.12
<i>Cornus florida</i>	22.73	3.09	28.48	2.28	0.09	2.44	7.81	2.60
<i>Cornus foemina</i>	1.52	0.21	0.61	0.05	0.00	0.02	0.27	0.09
<i>Crataegus marshallii</i>	4.55	0.62	1.82	0.15	0.00	0.07	0.83	0.28
<i>Crataegus opaca</i>	1.52	0.21	0.61	0.05	0.00	0.11	0.36	0.12
<i>Fagus grandifolia</i>	13.64	1.85	9.09	0.73	0.03	0.90	3.48	1.16
<i>Fraxinus americana</i>	3.03	0.41	1.82	0.15	0.01	0.19	0.74	0.25
<i>Fraxinus pennsylvanica</i>	1.52	0.21	1.82	0.15	0.01	0.20	0.55	0.18
<i>Halesia diptera</i>	4.55	0.62	3.03	0.24	0.00	0.09	0.95	0.32
<i>Hamamelis virginiana</i>	3.03	0.41	1.21	0.10	0.00	0.02	0.53	0.18
<i>Ilex coriacea</i>	7.58	1.03	40.00	3.21	0.06	1.52	5.76	1.92

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Ilex decidua</i>	1.52	0.21	0.61	0.05	0.00	0.03	0.29	0.10
<i>Ilex opaca</i>	56.06	7.61	83.03	6.65	0.33	9.01	23.28	7.76
<i>Ilex vomitoria</i>	69.70	9.47	253.33	20.30	0.55	15.04	44.81	14.94
<i>Juniperus virginiana</i>	3.03	0.41	1.21	0.10	0.00	0.03	0.54	0.18
<i>Liquidambar styraciflua</i>	62.12	8.44	84.85	6.80	0.30	8.14	23.38	7.79
<i>Magnolia grandiflora</i>	24.24	3.29	27.88	2.23	0.07	2.01	7.54	2.51
<i>Magnolia virginiana</i>	6.06	0.82	7.27	0.58	0.02	0.56	1.96	0.65
<i>Morus rubra</i>	1.52	0.21	0.61	0.05	0.00	0.09	0.35	0.12
<i>Nyssa aquatica</i>	1.52	0.21	1.21	0.10	0.00	0.05	0.35	0.12
<i>Nyssa biflora</i>	3.03	0.41	2.42	0.19	0.01	0.18	0.78	0.26
<i>Nyssa sylvatica</i>	40.91	5.56	43.64	3.50	0.17	4.63	13.69	4.56
<i>Ostrya virginiana</i>	45.45	6.17	96.36	7.72	0.37	10.15	24.04	8.01
<i>Persea palustris</i>	34.85	4.73	81.21	6.51	0.15	4.23	15.47	5.16
<i>Pinus taeda</i>	15.15	2.06	41.82	3.35	0.14	3.74	9.14	3.05
<i>Platanus occidentalis</i>	1.52	0.21	0.61	0.05	0.00	0.13	0.39	0.13
<i>Prunus caroliniana</i>	3.03	0.41	1.21	0.10	0.00	0.04	0.55	0.18
<i>Prunus serotina</i>	6.06	0.82	3.03	0.24	0.01	0.27	1.34	0.45
<i>Quercus alba</i>	15.15	2.06	12.12	0.97	0.08	2.07	5.10	1.70
<i>Quercus falcata</i>	4.55	0.62	2.42	0.19	0.01	0.35	1.16	0.39
<i>Quercus falcata</i> var. <i>pogodaefolia</i>	1.52	0.21	0.61	0.05	0.00	0.11	0.36	0.12
<i>Quercus laurifolia</i>	22.73	3.09	51.52	4.13	0.13	3.58	10.79	3.60
<i>Quercus lyrata</i>	4.55	0.62	1.82	0.15	0.01	0.26	1.02	0.34
<i>Quercus michauxii</i>	6.06	0.82	7.88	0.63	0.03	0.95	2.40	0.80
<i>Quercus nigra</i>	24.24	3.29	44.24	3.55	0.14	3.89	10.72	3.57
<i>Quercus phellos</i>	3.03	0.41	3.03	0.24	0.01	0.33	0.98	0.33
<i>Rhamnus caroliniana</i>	1.52	0.21	0.61	0.05	0.00	0.01	0.26	0.09
<i>Sassafras albidum</i>	3.03	0.41	1.82	0.15	0.00	0.10	0.66	0.22
<i>Sapium sebiferum</i>	3.03	0.41	3.64	0.29	0.02	0.51	1.21	0.40
<i>Symplocos tinctoria</i>	4.55	0.62	3.64	0.29	0.01	0.25	1.16	0.39
<i>Tilia caroliniana</i>	1.52	0.21	0.61	0.05	0.00	0.03	0.28	0.09
<i>Ulmus alata</i>	7.58	1.03	6.67	0.53	0.03	0.71	2.27	0.76
<i>Ulmus americana</i>	1.52	0.21	3.64	0.29	0.02	0.52	1.02	0.34

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Ulmus rubra</i>	13.64	1.85	8.48	0.68	0.02	0.65	3.18	1.06
<i>Ulmus</i> sp.	1.52	0.21	0.61	0.05	0.00	0.02	0.28	0.09
<i>Vaccinium amoenum</i>	1.52	0.21	4.24	0.34	0.00	0.10	0.64	0.21
<i>Vaccinium arboreum</i>	18.18	2.47	13.94	1.12	0.05	1.46	5.05	1.68
<i>Vitis cinerea</i>	3.03	0.41	1.21	0.10	0.00	0.05	0.56	0.19
<i>Vitis rotundifolia</i>	19.70	2.67	21.21	1.70	0.03	0.85	5.22	1.74
<i>Viburnum rufidulum</i>	1.52	0.21	1.82	0.15	0.01	0.30	0.65	0.22

Table 3C

Summary of Shrub Layer
Quercus (laurifolia, phellos) Seasonally Flooded Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i>	1.52	1.25	6.06	0.50	0.00	0.91	2.65	0.88
<i>Arundinaria gigantea</i>	3.03	2.50	78.79	6.47	0.01	5.24	14.20	4.73
<i>Berchemia scandens</i>	1.52	1.25	6.06	0.50	0.00	0.10	1.85	0.62
<i>Fagus grandifolia</i>	1.52	1.25	6.06	0.50	0.00	0.40	2.15	0.72
<i>Halesia diptera</i>	1.52	1.25	6.06	0.50	0.00	0.10	1.85	0.62
<i>Hamamelis virginiana</i>	3.03	2.50	30.30	2.49	0.00	2.52	7.51	2.50
<i>Ilex coriacea</i>	4.55	3.75	36.36	2.99	0.00	0.91	7.64	2.55
<i>Ilex opaca</i>	6.06	5.00	30.30	2.49	0.00	1.71	9.20	3.07
<i>Ilex vomitoria</i>	27.27	22.50	442.42	36.32	0.05	38.17	96.98	32.33
<i>Liquidambar styraciflua</i>	4.55	3.75	30.30	2.49	0.01	5.14	11.37	3.79
<i>Magnolia grandiflora</i>	6.06	5.00	30.30	2.49	0.00	3.52	11.01	3.67
<i>Myrica heterophylla</i>	1.52	1.25	18.18	1.49	0.00	0.30	3.04	1.01
<i>Nyssa sylvatica</i>	1.52	1.25	6.06	0.50	0.00	0.40	2.15	0.72
<i>Ostrya virginiana</i>	3.03	2.50	12.12	1.00	0.00	1.71	5.21	1.74
<i>Parthenocissus quinquefolia</i>	1.52	1.25	6.06	0.50	0.00	0.40	2.15	0.72
<i>Persea palustris</i>	12.12	10.00	139.39	11.44	0.01	10.27	31.71	10.57
<i>Pinus taeda</i>	1.52	1.25	6.06	0.50	0.00	0.10	1.85	0.62
<i>Prunus serotina</i>	1.52	1.25	6.06	0.50	0.00	0.40	2.15	0.72
<i>Quercus alba</i>	3.03	2.50	12.12	1.00	0.00	1.01	4.50	1.50
<i>Quercus laurifolia</i>	7.58	6.25	103.03	8.46	0.01	9.77	24.48	8.16
<i>Quercus nigra</i>	3.03	2.50	12.12	1.00	0.00	1.71	5.21	1.74
<i>Rhododendron oblongifolium</i>	1.52	1.25	18.18	1.49	0.00	0.30	3.04	1.01
<i>Sebatiana fruticosa</i>	7.58	6.25	72.73	5.97	0.00	3.02	15.24	5.08
<i>Vaccinium arboreum</i>	10.61	8.75	84.85	6.97	0.01	8.56	24.27	8.09

Table 3D

**Summary of Herbaceous Layer
Quercus (laurifolia, phellos) Seasonally Flooded Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve**

<i>Genus species Infra sp.</i>	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer barbatum</i>	1.91	0.31	0.05	0.32	0.62	31.17
<i>Acer negundo</i>	1.49	0.24	0.00	0.00	0.24	12.18
<i>Acer rubrum</i>	8.72	1.40	0.00	0.03	1.43	71.31
<i>Allium canadense</i>	1.70	0.27	0.03	0.19	0.46	23.17
<i>Ambrosia artemisiifolia</i>	0.64	0.10	0.01	0.06	0.17	8.30
<i>Ampelopsis arborea</i>	0.21	0.03	0.02	0.12	0.16	7.94
<i>Amorpha fruticosa</i>	0.21	0.03	0.01	0.06	0.10	4.82
<i>Arenaria drummondii</i>	1.06	0.17	0.02	0.13	0.30	14.90
<i>Arundinaria gigantea</i>	9.79	1.57	0.97	5.68	7.25	362.65
<i>Aristolochia serpentaria</i>	0.64	0.10	0.00	0.00	0.10	5.22
<i>Aralia spinosa</i>	0.64	0.10	0.05	0.31	0.41	20.70
<i>Arisaema triphyllum</i>	0.43	0.07	0.02	0.13	0.19	9.68
<i>Ascyrum hypericoides</i>	0.43	0.07	0.01	0.06	0.13	6.56
<i>Aster lateriflorus</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Asimina parviflora</i>	1.28	0.20	0.09	0.50	0.71	35.27
<i>Asplenium platyneuron</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Berchemia scandens</i>	6.38	1.02	0.02	0.14	1.17	58.35
<i>Bignonia capreolata</i>	11.70	1.88	0.05	0.28	2.16	108.03
<i>Botrychium biternatum</i>	0.85	0.14	0.00	0.00	0.14	6.96
<i>Boehmeria cylindrica</i>	2.55	0.41	0.03	0.19	0.60	30.16
<i>Botrychium dissectum</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Carex leavenworthii</i>	0.85	0.14	0.04	0.25	0.39	19.39
<i>Brunnichia ovata</i>	2.13	0.34	0.02	0.13	0.47	23.59
<i>Carex abscondita</i>	7.66	1.23	0.60	3.50	4.73	236.46
<i>Callicarpa americana</i>	14.89	2.39	0.25	1.45	3.84	192.23
<i>Capsicum annuum</i>	0.85	0.14	0.03	0.19	0.32	16.24

Genus species <i>Infra sp.</i>	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Carex atlantica</i>	0.64	0.10	0.01	0.06	0.17	8.30
<i>Carex basiantha</i>	2.13	0.34	0.05	0.31	0.66	32.82
<i>Carex blanda</i>	0.64	0.10	0.00	0.00	0.10	5.22
<i>Carex caroliniana</i>	1.49	0.24	0.02	0.13	0.37	18.38
<i>Carpinus caroliniana</i>	10.43	1.67	0.06	0.34	2.01	100.68
<i>Carex complanata</i>	3.19	0.51	0.01	0.07	0.58	29.24
<i>Carya cordiformis</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Carex corrugata</i>	2.13	0.34	0.03	0.19	0.53	26.65
<i>Carex crebriflora</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Carex debilis</i>	4.47	0.72	0.18	1.07	1.78	89.18
<i>Carex digitalis</i>	2.13	0.34	0.01	0.07	0.41	20.48
<i>Carex flaccosperma</i>	2.34	0.38	0.02	0.13	0.51	25.30
<i>Carex frankii</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Callirhoe involucrata</i>	0.21	0.03	0.01	0.06	0.10	4.82
<i>Carex intumescens</i>	0.85	0.14	0.15	0.87	1.01	50.48
<i>Carex joorii</i>	1.28	0.20	0.09	0.50	0.70	35.17
<i>Cacalia lanceolata</i>	0.21	0.03	0.01	0.06	0.10	4.82
<i>Carya leiodermis</i>	4.68	0.75	0.10	0.57	1.32	66.21
<i>Carex planostachys</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Carex longii</i>	1.49	0.24	0.04	0.25	0.49	24.54
<i>Carex louisianica</i>	0.64	0.10	0.03	0.19	0.29	14.50
<i>Cassia nictitans</i>	1.49	0.24	0.02	0.13	0.37	18.38
<i>Carex nigromarginata</i>	1.91	0.31	0.01	0.07	0.37	18.74
<i>Carex oxylepis</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Cacalia plantaginea</i>	0.21	0.03	0.01	0.06	0.10	4.82
<i>Carex planispicata</i>	0.21	0.03	0.01	0.06	0.10	4.82
<i>Clematis species</i>	0.43	0.07	0.06	0.37	0.44	22.11
<i>Campsis radicans</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Carex reniformis</i>	0.64	0.10	0.02	0.13	0.23	11.39
<i>Carex retroflexa</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Callitriche sp.</i>	0.85	0.14	0.00	0.00	0.14	6.96
<i>Carex sp.</i>	4.26	0.68	0.07	0.38	1.07	53.39
<i>Carya sp.</i>	1.06	0.17	0.00	0.00	0.17	8.70
<i>Carex striatula</i>	0.43	0.07	0.01	0.06	0.13	6.56

Genus species <i>Infra sp.</i>	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Ilex species</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Fraxinus pennsylvanica</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Galium sp.</i>	1.49	0.24	0.00	0.00	0.24	12.18
<i>Galium trifolium</i>	2.34	0.38	0.00	0.01	0.38	19.13
<i>Geranium carolinianum</i>	0.43	0.07	0.01	0.06	0.13	6.56
<i>Gelsemium sempervirens</i>	4.04	0.65	0.01	0.07	0.72	36.13
<i>Halesia diptera</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Hamamelis virginiana</i>	2.13	0.34	0.05	0.32	0.66	32.91
<i>Helianthemum carolinianum</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Hypericum crux-andreae</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Hypoxis curtissii</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Hydrocotyle umbellata</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Hydrocotyle verticillata</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Ilex coriacea</i>	5.32	0.85	0.80	4.68	5.53	276.56
<i>Ilex decidua</i>	1.06	0.17	0.01	0.06	0.24	11.78
<i>Ilex opaca</i>	12.55	2.02	0.32	1.90	3.92	195.84
<i>Vrunicula ovata</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Ilex vomitoria</i>	30.43	4.89	1.44	8.41	13.30	664.93
<i>Woodwardia species</i>	0.21	0.03	0.01	0.06	0.10	4.82
<i>Justicia species</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Justicia ovata var. lanceolata</i>	3.40	0.55	0.01	0.07	0.62	31.04
<i>Juncus tenuis</i>	0.21	0.03	0.01	0.06	0.10	4.82
<i>Juniperus virginiana</i>	0.21	0.03	0.02	0.12	0.16	7.94
<i>Leersia lenticularis</i>	4.26	0.68	0.08	0.45	1.13	56.44
<i>Lespedeza sp.</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Linum striatum</i>	1.49	0.24	0.03	0.19	0.43	21.46
<i>Liquidambar styraciflua</i>	0.85	0.14	0.01	0.06	0.20	10.04
<i>Lobelia cardinalis</i>	0.43	0.07	0.01	0.06	0.13	6.56
<i>Lonicera japonica</i>	1.91	0.31	0.05	0.32	0.62	31.14
<i>Lygodium japonicum</i>	0.43	0.07	0.01	0.06	0.13	6.56
<i>Matelea gonocarpus</i>	1.06	0.17	0.00	0.00	0.17	8.70
<i>Magnolia grandiflora</i>	2.98	0.48	0.09	0.50	0.98	49.09
<i>Matelea sp.</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Magnolia virginiana</i>	0.43	0.07	0.01	0.06	0.13	6.56

Genus species <i>Infra</i> sp.	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Matelea decipiens</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Melica mutica</i>	0.64	0.10	0.00	0.00	0.10	5.22
<i>Mitchella repens</i>	25.53	4.10	0.38	2.24	6.34	317.18
<i>Mikania scandens</i>	0.43	0.07	0.01	0.06	0.13	6.56
<i>Morus rubra</i>	0.85	0.14	0.00	0.00	0.14	6.96
<i>Myrica cerifera</i>	1.06	0.17	0.01	0.06	0.24	11.78
<i>Myrica heterophylla</i>	1.70	0.27	0.14	0.81	1.09	54.29
<i>Myosotis macrosperma</i>	0.85	0.14	0.00	0.00	0.14	6.96
<i>Nyssa biflora</i>	2.13	0.34	0.00	0.01	0.35	17.39
<i>Nyssa sylvatica</i>	1.49	0.24	0.03	0.19	0.43	21.46
<i>Onoclea sensibilis</i>	0.43	0.07	0.01	0.06	0.13	6.56
<i>Oplismenus hirtellus</i>	2.34	0.38	0.00	0.01	0.38	19.13
<i>Opuntia</i> sp.	0.21	0.03	0.00	0.00	0.03	1.74
<i>Osmunda cinnamomea</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Osmunda regalis</i>	0.43	0.07	0.04	0.25	0.32	15.88
<i>Ostrya virginiana</i>	6.17	0.99	0.01	0.08	1.07	53.53
<i>Sagittaria species</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Oxalis dillenii</i>	1.28	0.20	0.00	0.00	0.21	10.44
<i>Oxalis</i> sp.	1.28	0.20	0.21	1.25	1.45	72.68
<i>Oxalis stricta</i>	2.98	0.48	0.00	0.01	0.49	24.35
<i>Panicum aciculare</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Panicum boscii</i>	0.64	0.10	0.00	0.00	0.10	5.22
<i>Panicum commutatum</i>	7.23	1.16	0.13	0.77	1.93	96.40
<i>Panicum dichotomiflorum</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Panicum dichotomum</i>	1.28	0.20	0.02	0.13	0.33	16.61
<i>Panicum gymnocarpon</i>	1.06	0.17	0.01	0.06	0.24	11.78
<i>Panicum laxiflorum</i>	0.64	0.10	0.00	0.00	0.10	5.22
<i>Passiflora lutea</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Parthenocissus quinquefolia</i>	27.66	4.44	0.45	2.62	7.07	353.26
<i>Panicum</i> sp.	3.62	0.58	0.02	0.13	0.71	35.74
<i>Persia borbonia</i>	1.28	0.20	0.00	0.01	0.21	10.59
<i>Persea palustris</i>	21.49	3.45	0.57	3.35	6.80	339.90
<i>Phytolacca americana</i>	0.43	0.07	0.02	0.12	0.19	9.65
<i>Pinus taeda</i>	1.49	0.24	0.00	0.00	0.24	12.18

Genus species <i>Infra</i> sp.	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Poa annua</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Poa autumnalis</i>	2.77	0.44	0.05	0.32	0.76	38.13
<i>Polygonum hydropiperoides</i>	0.85	0.14	0.17	1.00	1.14	56.77
<i>Polygonum lapathifolium</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Polygonum punctatum</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Polygonum</i> sp.	1.28	0.20	0.02	0.13	0.33	16.61
<i>Poncirus trifoliata</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Polygonum virginianum</i>	1.91	0.31	0.19	1.12	1.43	71.52
<i>Prunus caroliniana</i>	1.28	0.20	0.02	0.13	0.33	16.61
<i>Prunus serotina</i>	3.19	0.51	0.00	0.01	0.52	26.09
<i>Prunus</i> sp.	0.64	0.10	0.00	0.00	0.10	5.22
<i>Spirodela polyrhiza</i>	0.64	0.10	0.02	0.13	0.23	11.39
<i>Pteridium aquilinum</i> var <i>pseudocaudatum</i>	0.21	0.03	0.01	0.06	0.10	4.82
<i>Quercus alba</i>	3.19	0.51	0.02	0.13	0.65	32.29
<i>Quercus falcata</i>	1.28	0.20	0.00	0.00	0.21	10.44
<i>Quercus laurifolia</i>	33.40	5.36	0.95	5.58	10.94	546.97
<i>Quercus lyrata</i>	1.06	0.17	0.00	0.00	0.17	8.70
<i>Quercus michauxii</i>	1.28	0.20	0.01	0.07	0.27	13.52
<i>Quercus nigra</i>	10.00	1.61	0.05	0.28	1.88	94.24
<i>Quercus phellos</i>	1.49	0.24	0.00	0.00	0.24	12.18
<i>Quercus</i> sp.	0.43	0.07	0.00	0.00	0.07	3.48
<i>Rhamnus caroliniana</i>	0.64	0.10	0.01	0.06	0.17	8.30
<i>Rhododendron oblongifolium</i>	2.13	0.34	0.29	1.68	2.03	101.29
<i>Rhynchospora</i> sp.	0.21	0.03	0.00	0.00	0.03	1.74
<i>Rubus argutus</i>	1.28	0.20	0.02	0.13	0.33	16.61
<i>Rubus</i> sp.	2.34	0.38	0.02	0.13	0.51	25.30
<i>Rubus trivialis</i>	1.91	0.31	0.14	0.81	1.12	55.97
<i>Sassafras albidum</i>	3.83	0.61	0.01	0.07	0.69	34.39
<i>Sabatia angularis</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Sabatia campestris</i>	2.55	0.41	0.00	0.01	0.42	20.87
<i>Sambucus canadensis</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Sanicula canadensis</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Saururus cernuus</i>	2.13	0.34	0.08	0.44	0.78	39.08

Genus species <i>Infra sp.</i>	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Salvia lyrata</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Sanicula odorata</i>	2.98	0.48	0.01	0.07	0.55	27.44
<i>Sapium sebiferum</i>	0.43	0.07	0.02	0.12	0.19	9.65
<i>Sabatia sp.</i>	1.06	0.17	0.00	0.00	0.17	8.70
<i>Sanicula species</i>	1.70	0.27	0.00	0.00	0.28	13.92
<i>Scleria oligantha</i>	4.04	0.65	0.07	0.38	1.03	51.55
<i>Scleria sp.</i>	3.19	0.51	0.00	0.01	0.52	26.09
<i>Scleria triglomerata</i>	1.70	0.27	0.05	0.31	0.59	29.40
<i>Sebastiania fruticosa</i>	14.26	2.29	0.96	5.62	7.91	395.66
<i>Senecio glabellus</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Smilax bona-nox</i>	0.85	0.14	0.00	0.00	0.14	6.96
<i>Smilax glauca</i>	16.81	2.70	0.02	0.11	2.81	140.50
<i>Smilax hispida</i>	4.26	0.68	0.01	0.07	0.76	37.87
<i>Smilax laurifolia</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Smilax pumila</i>	11.91	1.91	0.23	1.33	3.25	162.33
<i>Smilax rotundifolia</i>	1.06	0.17	0.00	0.00	0.17	8.70
<i>Smilax smallii</i>	11.49	1.84	0.01	0.03	1.88	93.93
<i>Smilax species</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Smilax walteri</i>	0.64	0.10	0.00	0.00	0.10	5.22
<i>Solanum carolinense</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Solanum sp.</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Sphagnum sp.</i>	1.28	0.20	0.02	0.13	0.33	16.61
<i>Styrax americana</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Symplocos tinctoria</i>	1.06	0.17	0.11	0.62	0.79	39.70
<i>Taxodium distichum</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Thelypteris kunthii</i>	0.21	0.03	0.01	0.06	0.10	4.82
<i>Toxicodendron radicans</i>	22.13	3.55	0.31	1.80	5.35	267.54
<i>Trachelospermum difforme</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Triadenum walteri</i>	0.21	0.03	0.02	0.12	0.16	7.94
<i>Unknown species 1</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Ulmus alata</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Ulmus rubra</i>	0.85	0.14	0.00	0.00	0.14	6.96
<i>Ulmus sp.</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Unknown species 2</i>	0.21	0.03	0.00	0.00	0.03	1.74

Genus species <i>Infra</i> sp.	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
Unknown species 3	0.85	0.14	0.00	0.00	0.14	6.96
Unknown moss	0.21	0.03	0.00	0.00	0.03	1.74
<i>Vaccinium arboreum</i>	5.53	0.89	0.36	2.13	3.01	150.71
<i>Vaccinium corymbosum</i>	2.55	0.41	0.17	1.00	1.41	70.53
<i>Vaccinium elliotii</i>	0.43	0.07	0.03	0.19	0.26	12.79
<i>Vaccinium</i> sp.	2.55	0.41	0.11	0.63	1.04	52.03
<i>Vaccinium stamineum</i>	0.64	0.10	0.05	0.31	0.42	20.76
<i>Viburnum acerifolium</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Vitis aestivalis</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Viburnum dentatum</i>	1.91	0.31	0.00	0.01	0.31	15.65
<i>Viola lanceolata</i> subsp. <i>vittata</i>	3.83	0.61	0.02	0.14	0.75	37.51
<i>Viola missouriensis</i>	2.98	0.48	0.01	0.07	0.55	27.50
<i>Justicia ovata</i>	0.85	0.14	0.00	0.00	0.14	6.96
<i>Viburnum rafinesquianum</i>	0.43	0.07	0.00	0.00	0.07	3.51
<i>Vitis rotundifolia</i>	11.70	1.88	0.13	0.78	2.66	132.83
<i>Viola sororia</i> v. <i>missouriensis</i>	2.77	0.44	0.00	0.01	0.45	22.61
<i>Viola</i> sp.	0.64	0.10	0.00	0.00	0.10	5.22
<i>Viola triloba</i>	1.28	0.20	0.00	0.00	0.21	10.44
<i>Viola walteri</i>	0.43	0.07	0.00	0.00	0.07	3.48
<i>Woodwardia areolata</i>	0.21	0.03	0.00	0.00	0.03	1.74
<i>Zizi aurea</i>	0.43	0.07	0.00	0.00	0.07	3.48
Unknown species 4	0.21	0.03	0.00	0.00	0.03	1.74

Table 4A

Summary of Overstory Layer
Quercus alba – (*Quercus nigra*) Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i>	22.73	4.95	23.64	6.40	0.83	3.63	14.98	4.99
<i>Carpinus caroliniana</i>	22.73	4.95	16.36	4.43	0.46	2.01	11.39	3.80
<i>Carya tomentosa</i>	13.64	2.97	9.09	2.46	0.61	2.66	8.09	2.70
<i>Fraxinus pennsylvanica</i>	9.09	1.98	3.64	0.99	0.06	0.28	3.25	1.08
<i>Ilex opaca</i>	40.91	8.91	21.82	5.91	1.02	4.44	19.27	6.42
<i>Ilex vomitoria</i>	4.55	0.99	1.82	0.49	0.38	1.65	3.13	1.04
<i>Liquidambar styraciflua</i>	50.00	10.89	54.55	14.78	2.93	12.77	38.43	12.81
<i>Nyssa sylvatica</i>	50.00	10.89	41.82	11.33	2.60	11.32	33.54	11.18
<i>Ostrya virginiana</i>	27.27	5.94	21.82	5.91	0.57	2.47	14.32	4.77
<i>Pinus echinata</i>	18.18	3.96	7.27	1.97	0.53	2.29	8.22	2.74
<i>Pinus taeda</i>	22.73	4.95	14.55	3.94	2.11	9.17	18.06	6.02
<i>Quercus alba</i>	77.27	16.83	107.27	29.06	6.82	29.69	75.59	25.20
<i>Quercus falcata</i>	18.18	3.96	7.27	1.97	0.64	2.77	8.70	2.90
<i>Quercus falcata</i> var. <i>pogodaefolia</i>	4.55	0.99	1.82	0.49	0.30	1.31	2.80	0.93
<i>Quercus laurifolia</i>	13.64	2.97	5.45	1.48	1.26	5.49	9.94	3.31
<i>Quercus michauxii</i>	9.09	1.98	5.45	1.48	0.60	2.60	6.05	2.02
<i>Quercus nigra</i>	4.55	0.99	3.64	0.99	0.12	0.50	2.48	0.83
<i>Quercus phellos</i>	9.09	1.98	3.64	0.99	0.62	2.70	5.67	1.89
<i>Quercus stellata</i>	22.73	4.95	9.09	2.46	0.28	1.24	8.65	2.88
<i>Sassafras albidum</i>	18.18	3.96	9.09	2.46	0.23	1.00	7.43	2.48

Table 4B

Summary of Midstory Layer
Quercus alba – (*Quercus nigra*) Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer barbatum</i>	9.09	1.23	49.09	3.60	0.04	0.98	5.81	1.94
<i>Acer rubrum</i>	22.73	3.09	14.55	1.07	0.21	5.30	9.45	3.15
<i>Acer rubrum</i> var. <i>drummondii</i>	4.55	0.62	1.82	0.13	0.01	0.23	0.98	0.33
<i>Carpinus caroliniana</i>	13.64	1.85	70.91	5.21	0.21	5.38	12.43	4.14
<i>Carya ovalis</i>	4.55	0.62	1.82	0.13	0.00	0.06	0.81	0.27
<i>Carya tomentosa</i>	4.55	0.62	1.82	0.13	0.01	0.23	0.98	0.33
<i>Cephalanthus occidentalis</i>	4.55	0.62	3.64	0.27	0.01	0.15	1.03	0.34
<i>Chionanthus virginica</i>	22.73	3.09	18.18	1.34	0.05	1.20	5.62	1.87
<i>Cornus florida</i>	50.00	6.79	49.09	3.60	0.21	5.34	15.74	5.25
<i>Fagus grandifolia</i>	4.55	0.62	1.82	0.13	0.00	0.04	0.80	0.27
<i>Fraxinus americana</i>	9.09	1.23	7.27	0.53	0.01	0.17	1.94	0.65
<i>Ilex longipes</i>	4.55	0.62	1.82	0.13	0.00	0.07	0.82	0.27
<i>Ilex opaca</i>	45.45	6.17	45.45	3.34	0.23	5.85	15.36	5.12
<i>Ilex vomitoria</i>	90.91	12.35	647.27	47.53	1.31	33.44	93.32	31.11
<i>Juniperus virginiana</i>	4.55	0.62	1.82	0.13	0.00	0.11	0.86	0.29
<i>Liquidambar styraciflua</i>	68.18	9.26	85.45	6.28	0.28	7.15	22.69	7.56
<i>Magnolia grandiflora</i>	13.64	1.85	7.27	0.53	0.02	0.54	2.93	0.98
<i>Myrica heterophylla</i>	4.55	0.62	1.82	0.13	0.01	0.13	0.88	0.29
<i>Nyssa aquatica</i>	4.55	0.62	1.82	0.13	0.00	0.06	0.81	0.27
<i>Nyssa sylvatica</i>	68.18	9.26	96.36	7.08	0.30	7.65	23.98	7.99
<i>Ostrya virginiana</i>	50.00	6.79	69.09	5.07	0.34	8.72	20.58	6.86
<i>Persea palustris</i>	27.27	3.70	20.00	1.47	0.03	0.72	5.89	1.96
<i>Pinus taeda</i>	9.09	1.23	38.18	2.80	0.13	3.34	7.38	2.46
<i>Prunus serotina</i>	13.64	1.85	9.09	0.67	0.02	0.40	2.92	0.97

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Quercus alba</i>	31.82	4.32	30.91	2.27	0.18	4.63	11.22	3.74
<i>Quercus falcata</i>	9.09	1.23	7.27	0.53	0.02	0.52	2.29	0.76
<i>Quercus falcata</i> var. <i>pogodaefolia</i>	9.09	1.23	3.64	0.27	0.02	0.42	1.92	0.64
<i>Quercus hemisphaerica</i>	13.64	1.85	9.09	0.67	0.02	0.60	3.12	1.04
<i>Quercus laurifolia</i>	27.27	3.70	12.73	0.93	0.03	0.71	5.35	1.78
<i>Quercus michauxii</i>	4.55	0.62	1.82	0.13	0.00	0.11	0.86	0.29
<i>Quercus nigra</i>	9.09	1.23	7.27	0.53	0.01	0.27	2.04	0.68
<i>Quercus stellata</i>	4.55	0.62	1.82	0.13	0.00	0.07	0.82	0.27
<i>Sassafras albidum</i>	4.55	0.62	1.82	0.13	0.01	0.23	0.98	0.33
<i>Symplocos tinctoria</i>	4.55	0.62	1.82	0.13	0.00	0.00	0.75	0.25
<i>Ulmus alata</i>	9.09	1.23	3.64	0.27	0.02	0.52	2.02	0.67
<i>Ulmus americana</i>	4.55	0.62	1.82	0.13	0.00	0.09	0.84	0.28
<i>Ulmus rubra</i>	4.55	0.62	1.82	0.13	0.02	0.44	1.19	0.40
<i>Vaccinium arboreum</i>	36.36	4.94	27.27	2.00	0.14	3.56	10.50	3.50
<i>Viburnum rufidulum</i>	9.09	1.23	3.64	0.27	0.02	0.56	2.06	0.69

Table 4C

**Summary of Shrub Layer
Quercus alba – (*Quercus nigra*) Forest Alliance
Big Sandy Creek Unit, Big Thicket National Preserve**

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer barbatum</i>	9.09	14.29	127.27	17.07	0.05	32.13	63.49	21.16
<i>Callicarpa americana</i>	4.55	7.14	36.36	4.88	0.00	1.92	13.94	4.65
<i>Carpinus caroliniana</i>	4.55	7.14	18.18	2.44	0.01	3.84	13.42	4.47
<i>Ilex opaca</i>	4.55	7.14	18.18	2.44	0.01	3.84	13.42	4.47
<i>Ilex vomitoria</i>	18.18	28.57	309.09	41.46	0.04	28.78	98.81	32.94
<i>Liquidambar styraciflua</i>	4.55	7.14	54.55	7.32	0.01	5.28	19.74	6.58
<i>Magnolia grandiflora</i>	4.55	7.14	18.18	2.44	0.00	0.96	10.54	3.51
<i>Persea palustris</i>	4.55	7.14	127.27	17.07	0.03	19.18	43.40	14.47
<i>Quercus laurifolia</i>	4.55	7.14	18.18	2.44	0.00	0.24	9.82	3.27
<i>Quercus michauxii</i>	4.55	7.14	18.18	2.44	0.01	3.84	13.42	4.47

Table 4D

Summary of Herbaceous Layer
Quercus alba – (*Quercus nigra*) Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer barbatum</i>	2.86	0.47	0.00	0.01	0.48	23.90
<i>Acer rubrum</i>	10.00	1.64	0.00	0.03	1.67	83.63
<i>Acalypha</i> sp.	1.43	0.23	0.00	0.00	0.24	11.95
<i>Arisaema dracontium</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Arundinaria gigantea</i>	14.29	2.34	1.07	7.15	9.49	474.68
<i>Aristolochia serpentaria</i>	2.86	0.47	0.00	0.01	0.48	23.90
<i>Asimina parviflora</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Berchemia scandens</i>	4.29	0.70	0.00	0.01	0.72	35.84
<i>Bignonia capreolata</i>	12.86	2.11	0.22	1.47	3.57	178.66
<i>Carex abscondita</i>	2.86	0.47	0.14	0.96	1.42	71.24
<i>Callicarpa americana</i>	30.00	4.92	0.51	3.41	8.32	416.25
<i>Carex basiantha</i>	2.86	0.47	0.21	1.43	1.90	94.79
<i>Carpinus caroliniana</i>	1.43	0.23	0.07	0.48	0.71	35.50
<i>Carex digitalis</i>	7.14	1.17	0.14	0.97	2.14	106.84
<i>Carya leiodermis</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Carex nigromarginata</i>	2.86	0.47	0.00	0.01	0.48	23.90
<i>Carex</i> sp.	18.57	3.04	0.65	4.33	7.37	368.73
<i>Carya</i> sp.	1.43	0.23	0.00	0.00	0.24	11.95
<i>Chasmanthium latifolium</i>	7.14	1.17	0.00	0.02	1.19	59.74
<i>Chasmanthium laxum</i>	8.57	1.41	0.72	4.78	6.18	309.12
<i>Chasmanthium sessiliflorum</i>	4.29	0.70	0.07	0.49	1.19	59.40
<i>Clitoria mariana</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Crataegus marshallii</i>	2.86	0.47	0.00	0.01	0.48	23.90
<i>Dioscorea villosa</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Hymenocallis caroliniana</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Elephantopus tomentosus</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Fagus grandifolia</i>	1.43	0.23	0.00	0.00	0.24	11.95

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Galium aparine</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Galium trifolium</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Gelsemium sempervirens</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Hamamelis virginiana</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Hydrocotyle verticillata</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Ilex opaca</i>	10.00	1.64	0.36	2.39	4.03	201.64
<i>Ilex vomitoria</i>	50.00	8.20	2.01	13.42	21.62	1080.75
<i>Lygodium japonicum</i>	4.29	0.70	0.22	1.43	2.13	106.74
<i>Mitchella repens</i>	42.86	7.03	1.01	6.76	13.79	689.36
<i>Nyssa sylvatica</i>	10.00	1.64	0.08	0.50	2.14	107.19
<i>Ostrya virginiana</i>	18.57	3.04	0.15	1.00	4.05	202.42
<i>Panicum boscii</i>	4.29	0.70	0.07	0.49	1.19	59.40
<i>Panicum commutatum</i>	18.57	3.04	0.08	0.53	3.58	178.87
<i>Panicum dichotomiflorum</i>	2.86	0.47	0.00	0.01	0.48	23.90
<i>Panicum dichotomum</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Parthenocissus quinquefolia</i>	15.71	2.58	0.01	0.05	2.63	131.42
<i>Panicum sp.</i>	2.86	0.47	0.00	0.01	0.48	23.90
<i>Persea palustris</i>	25.71	4.22	1.36	9.08	13.30	664.95
<i>Pinus taeda</i>	4.29	0.70	0.00	0.01	0.72	35.84
<i>Prunus caroliniana</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Quercus alba</i>	11.43	1.87	0.01	0.04	1.91	95.58
<i>Quercus hemisphaerica</i>	4.29	0.70	0.07	0.49	1.19	59.40
<i>Quercus laurifolia</i>	34.29	5.62	2.15	14.34	19.96	997.87
<i>Quercus michauxii</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Quercus nigra</i>	5.71	0.94	0.00	0.02	0.96	47.79
<i>Quercus sp.</i>	4.29	0.70	0.00	0.01	0.72	35.84
<i>Rhamnus caroliniana</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Rubus sp.</i>	2.86	0.47	0.00	0.01	0.48	23.90
<i>Sassafras albidum</i>	2.86	0.47	0.00	0.01	0.48	23.90
<i>Sabatia sp.</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Sanicula species</i>	4.29	0.70	0.00	0.01	0.72	35.84
<i>Scleria oligantha</i>	15.71	2.58	0.15	0.99	3.57	178.53
<i>Sebastiania fruticosa</i>	8.57	1.41	0.71	4.76	6.17	308.41
<i>Smilax glauca</i>	34.29	5.62	0.09	0.59	6.21	310.29

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Smilax hispida</i>	4.29	0.70	0.00	0.01	0.72	35.84
<i>Smilax pumila</i>	28.57	4.68	1.65	10.96	15.65	782.35
<i>Smilax rotundifolia</i>	2.86	0.47	0.00	0.01	0.48	23.90
<i>Smilax smallii</i>	10.00	1.64	0.15	0.98	2.62	130.98
<i>Sphagnum sp.</i>	2.86	0.47	0.00	0.01	0.48	23.90
<i>Toxicodendron radicans</i>	21.43	3.51	0.01	0.07	3.58	179.21
<i>Ulmus americana</i>	7.14	1.17	0.00	0.02	1.19	59.74
<i>Unknown species 1</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Unknown species 2</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Vaccinium arboreum</i>	5.71	0.94	0.36	2.39	3.33	166.27
<i>Vaccinium corymbosum</i>	2.86	0.47	0.00	0.01	0.48	23.90
<i>Vaccinium sp.</i>	2.86	0.47	0.00	0.01	0.48	23.90
<i>Viburnum acerifolium</i>	1.43	0.23	0.00	0.00	0.24	11.95
<i>Vitis rotundifolia</i>	11.43	1.87	0.43	2.88	4.75	237.61
<i>Viola sp.</i>	1.43	0.23	0.00	0.00	0.24	11.95

Table 5A

Summary of Overstory Layer
***Magnolia virginiana* – *Nyssa biflora* – (*Quercus laurifolia*) Saturated Forest Alliance**
Big Sandy Creek Unit, Big Thicket National Preserve

<i>Genus species</i>	<i>Frequency [%]</i>	<i>Relative Frequency [%]</i>	<i>Density (# individuals/ha)</i>	<i>Relative Density [%]</i>	<i>Dominance (sq m/ha)</i>	<i>Relative Dominance [%]</i>	<i>Importance Value [%]</i>	<i>Relative Importance Value [%]</i>
<i>Magnolia virginiana</i>	66.67	33.33	120.00	30.00	13.67	36.70	100.04	33.35
<i>Nyssa biflora</i>	66.67	33.33	240.00	60.00	16.42	44.09	137.42	45.81
<i>Pinus taeda</i>	33.33	16.67	26.67	6.67	5.87	15.77	39.10	13.03
<i>Taxodium distichum</i>	33.33	16.67	13.33	3.33	1.28	3.44	23.44	7.81

Table 5B

**Summary of Midstory Layer
Magnolia virginiana – Nyssa biflora – (Quercus laurifolia) Saturated Forest Alliance
Big Sandy Creek Unit, Big Thicket National Preserve**

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i> var. <i>trilobum</i>	100.00	12.00	53.33	6.90	0.14	3.99	22.89	7.63
<i>Carpinus caroliniana</i>	33.33	4.00	13.33	1.72	0.09	2.68	8.40	2.80
<i>Fraxinus pennsylvanica</i>	66.67	8.00	66.67	8.62	0.06	1.81	18.43	6.14
<i>Ilex opaca</i>	33.33	4.00	80.00	10.34	0.26	7.41	21.75	7.25
<i>Ilex vomitoria</i>	33.33	4.00	53.33	6.90	0.06	1.64	12.54	4.18
<i>Liquidambar styraciflua</i>	66.67	8.00	40.00	5.17	0.96	27.34	40.51	13.50
<i>Magnolia virginiana</i>	100.00	12.00	160.00	20.69	0.61	17.36	50.05	16.68
<i>Myrica cerifera</i>	100.00	12.00	93.33	12.07	0.32	9.13	33.20	11.07
<i>Myrica heterophylla</i>	33.33	4.00	26.67	3.45	0.03	0.74	8.19	2.73
<i>Nyssa biflora</i>	33.33	4.00	80.00	10.34	0.44	12.50	26.85	8.95
<i>Persea palustris</i>	66.67	8.00	26.67	3.45	0.43	12.06	23.51	7.84
<i>Pinus taeda</i>	66.67	8.00	26.67	3.45	0.09	2.59	14.04	4.68
<i>Rhododendron oblongifolium</i>	33.33	4.00	13.33	1.72	0.01	0.19	5.91	1.97
<i>Rhododendron</i> sp.	33.33	4.00	26.67	3.45	0.01	0.37	7.82	2.61
<i>Viburnum nudum</i>	33.33	4.00	13.33	1.72	0.01	0.19	5.91	1.97

Table 5C

Summary of Shrub Layer
***Magnolia virginiana* – *Nyssa biflora* – (*Quercus laurifolia*) Saturated Forest Alliance**
Big Sandy Creek Unit, Big Thicket National Preserve

<i>Genus species</i>	<i>Frequency</i> [%]	<i>Relative</i> <i>Frequency</i> [%]	<i>Density</i> (# individuals/ha)	<i>Relative</i> <i>Density</i> [%]	<i>Dominance</i> (sq m/ha)	<i>Relative</i> <i>Dominance</i> [%]	<i>Importance</i> <i>Value</i> [%]	<i>Relative</i> <i>Importance</i> <i>Value</i> [%]
<i>Alnus serrulata</i>	33.33	10.00	133.33	5.26	0.09	30.77	46.03	15.34
<i>Fraxinus pennsylvanica</i>	33.33	10.00	133.33	5.26	0.00	0.85	16.12	5.37
<i>Ilex opaca</i>	33.33	10.00	133.33	5.26	0.00	0.85	16.12	5.37
<i>Itea virginica</i>	33.33	10.00	133.33	5.26	0.00	0.85	16.12	5.37
<i>Myrica cerifera</i>	33.33	10.00	400.00	15.79	0.09	30.77	56.56	18.85
<i>Myrica heterophylla</i>	33.33	10.00	533.33	21.05	0.01	3.42	34.47	11.49
<i>Persea palustris</i>	33.33	10.00	133.33	5.26	0.00	0.85	16.12	5.37
<i>Sapium sebiferum</i>	33.33	10.00	133.33	5.26	0.04	13.68	28.94	9.65

Table 5D

**Summary of Herbaceous Layer
Magnolia virginiana – Nyssa biflora – (Quercus laurifolia) Saturated Forest Alliance
Big Sandy Creek Unit, Big Thicket National Preserve**

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i>	6.67	1.00	0.00	0.02	1.02	51.02
<i>Acer rubrum</i> var. <i>trilobum</i>	6.67	1.00	0.00	0.02	1.02	51.02
<i>Baccharis halimifolia</i>	6.67	1.00	0.00	0.02	1.02	51.02
<i>Bacopa</i> species	3.33	0.50	0.00	0.01	0.51	25.51
<i>Berchemia scandens</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Bignonia capreolata</i>	6.67	1.00	0.00	0.02	1.02	51.02
<i>Boehmeria cylindrica</i>	16.67	2.50	0.01	0.05	2.55	127.54
<i>Carex atlantica</i>	60.00	9.00	5.86	35.77	44.77	2238.30
<i>Carex debilis</i>	16.67	2.50	0.34	2.09	4.59	229.33
<i>Callirhoe involucrata</i>	13.33	2.00	0.34	2.06	4.06	202.80
<i>Cacalia lanceolata</i>	16.67	2.50	1.00	6.13	8.63	431.36
<i>Carex leptalea</i>	36.67	5.50	1.67	10.23	15.73	786.45
<i>Carex lurida</i>	3.33	0.50	0.00	0.03	0.53	26.53
<i>Chasmanthium laxum</i>	20.00	3.00	1.01	6.15	9.15	457.38
<i>Eleocharis</i> sp.	3.33	0.50	0.00	0.01	0.51	25.51
<i>Fraxinus pennsylvanica</i>	13.33	2.00	1.00	6.13	8.13	406.36
<i>Hypoxis curtisii</i>	6.67	1.00	0.00	0.02	1.02	51.02
<i>Hydrocotyle verticillata</i>	13.33	2.00	0.01	0.04	2.04	102.04
<i>Ilex opaca</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Ilex vomitoria</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Itea virginica</i>	63.33	9.50	0.36	2.22	11.72	585.94
<i>Juncus effusus</i>	13.33	2.00	0.07	0.43	2.43	121.37
<i>Justicia ovata</i> var. <i>lanceolata</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Juncus</i> sp.	3.33	0.50	0.00	0.01	0.51	25.51
<i>Ludwigia</i> sp.	10.00	1.50	0.00	0.03	1.53	76.53
<i>Lycopus</i> sp.	30.00	4.50	0.01	0.09	4.59	229.58
<i>Mitchella repens</i>	6.67	1.00	0.00	0.02	1.02	51.02

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Myrica heterophylla</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Nyssa biflora</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Panicum dichotomiflorum</i>	10.00	1.50	0.00	0.03	1.53	76.53
<i>Panicum dichotomum</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Rhamnus caroliniana</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Rhus microphylla</i>	6.67	1.00	0.00	0.02	1.02	51.02
<i>Rhododendron oblongifolium</i>	3.33	0.50	0.00	0.03	0.53	26.53
<i>Rhynchospora</i> sp.	3.33	0.50	0.00	0.01	0.51	25.51
<i>Rubus argutus</i>	23.33	3.50	0.02	0.13	3.63	181.62
<i>Saururus cernuus</i>	30.00	4.50	0.01	0.09	4.59	229.58
<i>Smilax hispida</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Smilax laurifolia</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Smilax smallii</i>	6.67	1.00	0.00	0.02	1.02	51.02
<i>Smilax tamnoides</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Smilax walteri</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Sphagnum</i> sp.	46.67	7.00	1.01	6.20	13.20	659.92
<i>Stachys tenuifolia</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Oxalis corniculata</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Toxicodendron radicans</i>	13.33	2.00	0.17	1.05	3.05	152.42
<i>Triadenum walteri</i>	36.67	5.50	0.68	4.15	9.65	482.63
<i>Viburnum dentatum</i>	3.33	0.50	0.00	0.01	0.51	25.51
<i>Viburnum nudum</i>	16.67	2.50	2.17	13.24	15.74	787.09
<i>Viburnum prunifolium</i>	6.67	1.00	0.34	2.05	3.05	152.29
<i>Viola primulifolia</i>	10.00	1.50	0.01	0.08	1.58	79.07
<i>Vitis rotundifolia</i>	3.33	0.50	0.00	0.02	0.52	26.02
<i>Woodwardia areolata</i>	23.33	3.50	0.19	1.14	4.64	232.00

Table 6A

Summary of Overstory Layer
***Sparganium americanum* Seasonally Flooded Herbaceous Alliance**
Big Sandy Creek Unit, Big Thicket National Preserve

<i>Genus species</i>	<i>Frequency</i> [%]	<i>Relative Frequency</i> [%]	<i>Density</i> (# individuals/ha)	<i>Relative Density</i> [%]	<i>Dominance</i> (sq m/ha)	<i>Relative Dominance</i> [%]	<i>Importance Value</i> [%]	<i>Relative Importance Value</i> [%]
<i>Nyssa aquatica</i>	50.00	100.00	20.00	100.00	1.71	100.00	300.00	100.00

Table 6B

**Summary of Midstory Layer
Sparganium americanum Seasonally Flooded Herbaceous Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve**

<i>Genus species</i>	<i>Frequency [%]</i>	<i>Relative Frequency [%]</i>	<i>Density (# individuals/ha)</i>	<i>Relative Density [%]</i>	<i>Dominance (sq m/ha)</i>	<i>Relative Dominance [%]</i>	<i>Importance Value [%]</i>	<i>Relative Importance Value [%]</i>
<i>Acer rubrum</i> var. <i>drummondii</i>	100.00	20.00	80.00	8.16	0.53	11.50	39.67	13.22
<i>Alnus serrulata</i>	100.00	20.00	580.00	59.18	2.40	51.87	131.06	43.69
<i>Fraxinus caroliniana</i>	50.00	10.00	120.00	12.24	0.64	13.89	36.14	12.05
<i>Ilex vomitoria</i>	50.00	10.00	20.00	2.04	0.06	1.22	13.26	4.42
<i>Itea virginica</i>	50.00	10.00	20.00	2.04	0.01	0.21	12.25	4.08
<i>Myrica heterophylla</i>	50.00	10.00	60.00	6.12	0.28	6.15	22.27	7.42
<i>Nyssa biflora</i>	100.00	20.00	100.00	10.20	0.70	15.16	45.36	15.12

Table 6C

**Summary of Shrub Layer
Sparganium americanum Seasonally Flooded Herbaceous Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve**

Genus species <i>Infra</i> sp.	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Alnus serrulata</i>	100.00	28.57	800.00	44.44	0.15	82.22	155.24	51.75
<i>Berchemia scandens</i>	50.00	14.29	200.00	11.11	0.00	2.22	27.62	9.21
<i>Fraxinus caroliniana</i>	50.00	14.29	200.00	11.11	0.02	8.89	34.29	11.43
<i>Itea virginica</i>	50.00	14.29	200.00	11.11	0.00	2.22	27.62	9.21
<i>Myrica cerifera</i>	50.00	14.29	200.00	11.11	0.00	2.22	27.62	9.21
<i>Myrica heterophylla</i>	50.00	14.29	200.00	11.11	0.00	2.22	27.62	9.21

Table 6D

Summary of Herbaceous Layer
Sparganium americanum Seasonally Flooded Herbaceous Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i>	3.33	0.65	0.00	0.00	0.65	32.56
<i>Acer rubrum</i> var. <i>drummondii</i>	3.33	0.65	0.00	0.00	0.65	32.56
<i>Alnus serrulata</i>	3.33	0.65	1.00	1.08	1.73	86.37
<i>Bacopa monnieri</i>	33.33	6.49	5.01	5.40	11.89	594.66
<i>Bidens</i> sp.	3.33	0.65	0.00	0.00	0.65	32.56
<i>Boehmeria cylindrica</i>	3.33	0.65	0.00	0.00	0.65	32.56
<i>Brasenia schreberi</i>	10.00	1.95	2.17	2.34	4.29	214.29
<i>Carex atlantica</i>	10.00	1.95	3.50	3.77	5.72	286.08
<i>Celtis occidentalis</i>	10.00	1.95	1.00	1.08	3.03	151.40
<i>Cyperus virens</i>	6.67	1.30	0.17	0.18	1.48	74.01
<i>Hygrophila lacustris</i>	63.33	12.34	6.51	7.02	19.36	968.00
<i>Itea virginica</i>	6.67	1.30	0.50	0.54	1.84	91.89
<i>Juncus acuminatis</i>	6.67	1.30	0.00	0.00	1.30	65.11
<i>Juncus effusus</i>	16.67	3.25	2.34	2.52	5.77	288.30
<i>Lechea</i> sp.	3.33	0.65	0.00	0.00	0.65	32.56
<i>Ludwigia</i> sp.	73.33	14.29	7.34	7.92	22.20	1110.24
<i>Lycopus</i> sp.	6.67	1.30	0.00	0.00	1.30	65.11
<i>Mikania scandens</i>	16.67	3.25	0.34	0.36	3.61	180.58
<i>Myriophyllum aquaticum</i>	50.00	9.74	18.00	19.41	29.15	1457.53
<i>Nuphar luteum</i>	6.67	1.30	0.17	0.18	1.48	74.01
<i>Nyssa aquatica</i>	3.33	0.65	0.00	0.00	0.65	32.56
<i>Saururus cernuus</i>	23.33	4.55	2.00	2.16	6.70	335.18
<i>Sagittaria latifolia</i>	6.67	1.30	0.17	0.18	1.48	74.01
<i>Viola palmata</i>	3.33	0.65	3.00	3.23	3.88	194.19
<i>Scirpus cyperinus</i>	3.33	0.65	2.17	2.34	2.99	149.27
<i>Spilanthes americana</i>	93.33	18.18	34.00	36.66	54.84	2742.03
<i>Sparganium americanum</i>	3.33	0.65	2.33	2.52	3.17	158.25

<i>Genus species</i>	<i>Frequency [%]</i>	<i>Relative Frequency [%]</i>	<i>Dominance [groundcover %]</i>	<i>Relative Dominance [%]</i>	<i>Importance Value [%]</i>	<i>Relative Importance Value [%]</i>
<i>Pteridium aquilinum</i>	10.00	1.95	0.00	0.01	1.95	97.67
<i>Tridens sp.</i>	3.33	0.65	0.00	0.00	0.65	32.56
<i>Triadenum walteri</i>	20.00	3.90	0.84	0.90	4.80	239.91
<i>Utricularia subulata</i>	3.33	0.65	0.17	0.18	0.83	41.45
<i>Xyris iridifolia</i>	3.33	0.65	0.00	0.00	0.65	32.56

Table 7A

Summary of Overstory Layer
Cyrilla racemiflora – *Ilex coriacea* – (*Cliftonia monophylla*) Saturated Shrubland Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i> var. <i>trilobum</i>	66.67	15.38	26.67	6.67	0.38	1.69	23.74	7.91
<i>Ilex opaca</i>	33.33	7.69	13.33	3.33	0.27	1.19	12.21	4.07
<i>Magnolia grandiflora</i>	33.33	7.69	26.67	6.67	3.23	14.32	28.68	9.56
<i>Magnolia virginiana</i>	100.00	23.08	173.33	43.33	6.70	29.66	96.07	32.02
<i>Nyssa biflora</i>	66.67	15.38	80.00	20.00	8.06	35.69	71.08	23.69
<i>Persea palustris</i>	33.33	7.69	13.33	3.33	0.16	0.72	11.75	3.92
<i>Pinus taeda</i>	33.33	7.69	26.67	6.67	3.19	14.13	28.48	9.49
<i>Quercus laurifolia</i>	33.33	7.69	13.33	3.33	0.21	0.91	11.93	3.98
<i>Quercus lyrata</i>	33.33	7.69	26.67	6.67	0.38	1.69	16.05	5.35

Table 7B

Summary of Midstory Layer
***Cyrilla racemiflora* – *Ilex coriacea* – (*Cliftonia monophylla*) Saturated Shrubland Alliance**
Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i> var. <i>trilobum</i>	33.33	4.17	13.33	0.42	0.04	0.66	5.24	1.75
<i>Fagus grandifolia</i>	33.33	4.17	13.33	0.42	0.10	1.82	6.40	2.13
<i>Ilex coriacea</i>	100.00	12.50	1893.33	59.17	1.87	32.43	104.10	34.70
<i>Ilex opaca</i>	66.67	8.33	93.33	2.92	0.32	5.53	16.78	5.59
<i>Liquidambar styraciflua</i>	66.67	8.33	53.33	1.67	0.26	4.45	14.45	4.82
<i>Magnolia virginiana</i>	66.67	8.33	173.33	5.42	0.81	14.04	27.79	9.26
<i>Myrica heterophylla</i>	33.33	4.17	93.33	2.92	0.05	0.83	7.92	2.64
<i>Nyssa biflora</i>	100.00	12.50	293.33	9.17	0.93	16.16	37.83	12.61
<i>Persea palustris</i>	100.00	12.50	400.00	12.50	1.16	20.15	45.15	15.05
<i>Quercus laurifolia</i>	33.33	4.17	13.33	0.42	0.07	1.17	5.75	1.92
<i>Quercus nigra</i>	33.33	4.17	13.33	0.42	0.05	0.89	5.48	1.83
<i>Rhododendron oblongifolium</i>	33.33	4.17	53.33	1.67	0.03	0.51	6.34	2.11
<i>Vaccinium arkansanum</i>	66.67	8.33	40.00	1.25	0.04	0.68	10.26	3.42
<i>Viburnum nudum</i>	33.33	4.17	53.33	1.67	0.04	0.68	6.52	2.17

Table 7C

Summary of Shrub Layer
Cyrilla racemiflora – *Ilex coriacea* – (*Cliftonia monophylla*) Saturated Shrubland Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Ilex coriacea</i>	33.33	33.33	933.33	21.88	0.16	46.15	101.36	33.79
<i>Myrica heterophylla</i>	33.33	33.33	2133.33	50.00	0.04	12.31	95.64	31.88
<i>Rhododendron oblongifolium</i>	33.33	33.33	1200.00	28.13	0.14	41.54	103.00	34.33

Table 7D

Summary of Herbaceous Layer
Cyrilla racemiflora – *Ilex coriacea* – (*Cliftonia monophylla*) Saturated Shrubland Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i> var. <i>drummondii</i>	10.00	2.50	0.00	0.01	2.51	125.58
<i>Carex leptalea</i>	40.00	10.00	0.02	0.05	10.05	502.32
<i>Ilex coriacea</i>	60.00	15.00	1.02	2.37	17.37	868.37
<i>Itea virginica</i>	20.00	5.00	0.01	0.02	5.02	251.16
<i>Myrica heterophylla</i>	100.00	25.00	12.51	29.02	54.02	2701.20
<i>Rhododendron oblongifolium</i>	40.00	10.00	2.51	5.81	15.81	790.70
<i>Smilax laurifolia</i>	10.00	2.50	0.00	0.01	2.51	125.58
<i>Sphagnum</i> sp.	90.00	22.50	27.00	62.67	85.17	4258.34
<i>Toxicodendron radicans</i>	10.00	2.50	0.00	0.01	2.51	125.58
<i>Triadenum walteri</i>	10.00	2.50	0.00	0.01	2.51	125.58
<i>Viburnum nudum</i>	10.00	2.50	0.00	0.01	2.51	125.58

Table 8A

Summary of Overstory Layer
Pinus taeda – *Quercus (alba, falcata, stellata)* Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i>	17.28	4.03	12.35	2.82	0.45	1.75	8.61	2.87
<i>Carya aquatica</i>	3.70	0.86	1.98	0.45	0.11	0.45	1.76	0.59
<i>Carpinus caroliniana</i>	3.70	0.86	2.47	0.56	0.04	0.15	1.58	0.53
<i>Carya cordiformis</i>	1.23	0.29	0.49	0.11	0.06	0.23	0.63	0.21
<i>Carya texana</i>	1.23	0.29	0.49	0.11	0.04	0.15	0.55	0.18
<i>Carya tomentosa</i>	2.47	0.58	1.98	0.45	0.06	0.25	1.28	0.43
<i>Cornus florida</i>	16.05	3.75	6.91	1.58	0.13	0.50	5.83	1.94
<i>Ilex opaca</i>	13.58	3.17	5.93	1.36	0.14	0.57	5.09	1.70
<i>Ilex vomitoria</i>	7.41	1.73	2.96	0.68	0.10	0.39	2.79	0.93
<i>Juniperus virginiana</i>	3.70	0.86	1.98	0.45	0.03	0.13	1.44	0.48
<i>Liquidambar styraciflua</i>	50.62	11.82	38.52	8.81	1.63	6.38	27.01	9.00
<i>Magnolia grandiflora</i>	1.23	0.29	0.49	0.11	0.01	0.04	0.44	0.15
<i>Magnolia virginiana</i>	1.23	0.29	0.99	0.23	0.09	0.35	0.86	0.29
<i>Nyssa biflora</i>	1.23	0.29	0.99	0.23	0.08	0.32	0.83	0.28
<i>Nyssa sylvatica</i>	22.22	5.19	14.32	3.28	0.54	2.11	10.58	3.53
<i>Ostrya virginiana</i>	6.17	1.44	5.43	1.24	0.12	0.48	3.17	1.06
<i>Persea palustris</i>	1.23	0.29	0.49	0.11	0.01	0.03	0.43	0.14
<i>Pinus echinata</i>	46.91	10.95	55.31	12.66	4.11	16.11	39.72	13.24
<i>Pinus palustris</i>	22.22	5.19	28.15	6.44	1.68	6.61	18.24	6.08
<i>Pinus taeda</i>	79.01	18.44	171.85	39.32	12.35	48.46	106.23	35.41
<i>Prunus serotina</i>	2.47	0.58	1.98	0.45	0.03	0.11	1.14	0.38
<i>Quercus alba</i>	17.28	4.03	12.35	2.82	0.69	2.73	9.59	3.20
<i>Quercus falcata</i>	27.16	6.34	13.33	3.05	0.87	3.43	12.82	4.27
<i>Quercus falcata</i> var. <i>pogodaefolia</i>	3.70	0.86	2.47	0.56	0.17	0.68	2.11	0.70

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Quercus hemisphaerica</i>	7.41	1.73	3.46	0.79	0.11	0.44	2.96	0.99
<i>Quercus laurifolia</i>	7.41	1.73	3.95	0.90	0.26	1.03	3.66	1.22
<i>Quercus lyrata</i>	1.23	0.29	0.49	0.11	0.03	0.13	0.53	0.18
<i>Quercus macrocarpa</i>	2.47	0.58	0.99	0.23	0.03	0.10	0.90	0.30
<i>Quercus marilandica</i>	6.17	1.44	3.46	0.79	0.08	0.30	2.53	0.84
<i>Quercus nigra</i>	13.58	3.17	8.40	1.92	0.28	1.09	6.18	2.06
<i>Quercus stellata</i>	25.93	6.05	27.65	6.33	1.00	3.91	16.29	5.43
<i>Quercus velutina</i>	1.23	0.29	0.49	0.11	0.07	0.27	0.67	0.22
<i>Sassafras albidum</i>	7.41	1.73	2.96	0.68	0.06	0.24	2.65	0.88
<i>Ulmus alata</i>	1.23	0.29	0.49	0.11	0.01	0.02	0.42	0.14
<i>Viburnum rufidulum</i>	1.23	0.29	0.49	0.11	0.03	0.10	0.50	0.17

Table 8B

Summary of Midstory Layer
Pinus taeda – *Quercus (alba, falcata, stellata)* Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer barbatum</i>	2.47	0.38	0.99	0.07	0.00	0.03	0.48	0.16
<i>Acer rubrum</i>	14.81	2.26	12.84	0.89	0.05	1.21	4.36	1.45
<i>Acer rubrum</i> var. <i>drummondii</i>	2.47	0.38	2.47	0.17	0.00	0.11	0.65	0.22
<i>Berchemia scandens</i>	4.94	0.75	3.46	0.24	0.00	0.08	1.08	0.36
<i>Callicarpa americana</i>	1.23	0.19	0.49	0.03	0.00	0.01	0.23	0.08
<i>Carya aquatica</i>	2.47	0.38	0.99	0.07	0.00	0.09	0.54	0.18
<i>Carpinus caroliniana</i>	13.58	2.08	27.65	1.91	0.09	2.01	6.00	2.00
<i>Carya cordiformis</i>	1.23	0.19	0.49	0.03	0.01	0.12	0.35	0.12
<i>Castanea dentata</i>	1.23	0.19	0.49	0.03	0.00	0.04	0.27	0.09
<i>Carya</i> sp.	1.23	0.19	0.49	0.03	0.00	0.04	0.27	0.09
<i>Carya texana</i>	1.23	0.19	0.49	0.03	0.00	0.06	0.28	0.09
<i>Carya tomentosa</i>	4.94	0.75	3.46	0.24	0.02	0.43	1.43	0.48
<i>Celtis laevigata</i>	1.23	0.19	0.49	0.03	0.00	0.01	0.24	0.08
<i>Chionanthus virginica</i>	1.23	0.19	0.49	0.03	0.00	0.02	0.24	0.08
<i>Cornus florida</i>	39.51	6.04	46.42	3.21	0.21	4.78	14.03	4.68
<i>Crataegus marshallii</i>	1.23	0.19	0.49	0.03	0.00	0.08	0.30	0.10
<i>Crataegus</i> sp.	2.47	0.38	0.99	0.07	0.00	0.05	0.49	0.16
<i>Crataegus spathulata</i>	3.70	0.57	5.43	0.38	0.02	0.34	1.29	0.43
<i>Fagus grandifolia</i>	2.47	0.38	2.47	0.17	0.00	0.08	0.62	0.21
<i>Fraxinus americana</i>	1.23	0.19	0.49	0.03	0.00	0.01	0.23	0.08
<i>Ilex decidua</i>	1.23	0.19	10.86	0.75	0.01	0.26	1.20	0.40
<i>Ilex opaca</i>	28.40	4.34	36.05	2.49	0.14	3.12	9.96	3.32
<i>Ilex vomitoria</i>	75.31	11.51	640.49	44.30	1.54	34.32	90.12	30.04
<i>Juniperus virginiana</i>	2.47	0.38	1.98	0.14	0.01	0.13	0.64	0.21
<i>Liquidambar styraciflua</i>	58.02	8.87	125.93	8.71	0.42	9.27	26.85	8.95

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Magnolia grandiflora</i>	7.41	1.13	5.43	0.38	0.02	0.47	1.98	0.66
<i>Magnolia virginiana</i>	2.47	0.38	1.98	0.14	0.00	0.04	0.55	0.18
<i>Morus rubra</i>	3.70	0.57	1.48	0.10	0.00	0.02	0.69	0.23
<i>Myrica cerifera</i>	2.47	0.38	1.98	0.14	0.00	0.03	0.55	0.18
<i>Nyssa biflora</i>	1.23	0.19	1.48	0.10	0.01	0.13	0.42	0.14
<i>Nyssa sylvatica</i>	34.57	5.28	33.58	2.32	0.15	3.26	10.86	3.62
<i>Ostrya virginiana</i>	18.52	2.83	24.69	1.71	0.09	1.98	6.52	2.17
<i>Persea palustris</i>	17.28	2.64	45.43	3.14	0.08	1.77	7.55	2.52
<i>Pinus echinata</i>	22.22	3.40	24.69	1.71	0.12	2.58	7.68	2.56
<i>Pinus palustris</i>	14.81	2.26	9.88	0.68	0.08	1.71	4.65	1.55
<i>Pinus taeda</i>	43.21	6.60	138.77	9.60	0.62	13.82	30.02	10.01
<i>Prunus serotina</i>	2.47	0.38	0.99	0.07	0.00	0.07	0.52	0.17
<i>Prunus umbellata</i>	1.23	0.19	0.49	0.03	0.00	0.04	0.26	0.09
<i>Quercus alba</i>	16.05	2.45	13.83	0.96	0.05	1.04	4.44	1.48
<i>Quercus falcata</i>	28.40	4.34	19.75	1.37	0.07	1.62	7.32	2.44
<i>Quercus falcata</i> var. <i>pogodaefolia</i>	6.17	0.94	7.90	0.55	0.03	0.64	2.13	0.71
<i>Quercus hemisphaerica</i>	13.58	2.08	32.59	2.25	0.08	1.77	6.10	2.03
<i>Quercus incana</i>	1.23	0.19	6.91	0.48	0.02	0.54	1.20	0.40
<i>Quercus laurifolia</i>	17.28	2.64	28.64	1.98	0.08	1.88	6.50	2.17
<i>Quercus lyrata</i>	1.23	0.19	0.49	0.03	0.00	0.04	0.27	0.09
<i>Quercus macrocarpa</i>	3.70	0.57	2.96	0.20	0.02	0.34	1.11	0.37
<i>Quercus marilandica</i>	9.88	1.51	8.89	0.61	0.04	0.83	2.96	0.99
<i>Quercus michauxii</i>	1.23	0.19	0.49	0.03	0.00	0.01	0.23	0.08
<i>Quercus nigra</i>	25.93	3.96	40.00	2.77	0.14	3.07	9.80	3.27
<i>Quercus phellos</i>	1.23	0.19	0.49	0.03	0.00	0.04	0.27	0.09
<i>Quercus shumardii</i>	1.23	0.19	0.49	0.03	0.00	0.07	0.29	0.10
<i>Quercus sinuata</i>	1.23	0.19	0.49	0.03	0.00	0.01	0.23	0.08
<i>Quercus stellata</i>	25.93	3.96	24.69	1.71	0.11	2.56	8.23	2.74
<i>Quercus velutina</i>	2.47	0.38	1.98	0.14	0.00	0.07	0.59	0.20
<i>Rhamnus caroliniana</i>	2.47	0.38	2.47	0.17	0.01	0.15	0.70	0.23
<i>Rhus copallina</i>	1.23	0.19	0.49	0.03	0.00	0.02	0.24	0.08
<i>Sassafras albidum</i>	13.58	2.08	5.93	0.41	0.03	0.67	3.16	1.05
<i>Symplocos tinctoria</i>	3.70	0.57	2.96	0.20	0.01	0.15	0.92	0.31

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Ulmus alata</i>	3.70	0.57	1.48	0.10	0.01	0.21	0.88	0.29
<i>Vaccinium arboreum</i>	20.99	3.21	19.26	1.33	0.07	1.51	6.05	2.02
<i>Vitis rotundifolia</i>	6.17	0.94	3.46	0.24	0.00	0.07	1.25	0.42
<i>Viburnum rufidulum</i>	3.70	0.57	1.48	0.10	0.00	0.09	0.76	0.25

Table 8C

Summary of Shrub Layer
Pinus taeda – *Quercus (alba, falcata, stellata)* Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i>	1.23	3.13	4.94	1.22	0.00	0.56	4.90	1.63
<i>Berchemia scandens</i>	1.23	3.13	9.88	2.44	0.00	1.39	6.96	2.32
<i>Callicarpa americana</i>	1.23	3.13	34.57	8.54	0.03	39.75	51.41	17.14
<i>Carpinus caroliniana</i>	1.23	3.13	4.94	1.22	0.00	0.14	4.48	1.49
<i>Ilex opaca</i>	2.47	6.25	9.88	2.44	0.00	0.70	9.39	3.13
<i>Ilex vomitoria</i>	17.28	43.75	266.67	65.85	0.03	47.14	156.74	52.25
<i>Liquidambar styraciflua</i>	4.94	12.50	24.69	6.10	0.00	3.35	21.94	7.31
<i>Persea palustris</i>	3.70	9.38	14.81	3.66	0.00	0.84	13.87	4.62
<i>Quercus alba</i>	1.23	3.13	4.94	1.22	0.00	2.23	6.58	2.19
<i>Sebatiana fruticosa</i>	1.23	3.13	4.94	1.22	0.00	0.14	4.48	1.49
<i>Smilax rotundifolia</i>	1.23	3.13	4.94	1.22	0.00	1.26	5.60	1.87
<i>Vaccinium sp.</i>	1.23	3.13	14.81	3.66	0.00	1.95	8.74	2.91

Table 8D

Summary of Herbaceous Layer
Pinus taeda – *Quercus* (*alba*, *falcata*, *stellata*) Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer barbatum</i>	2.50	0.59	0.00	0.02	0.61	30.34
<i>Acer rubrum</i>	9.58	2.27	0.03	0.31	2.58	128.77
<i>Allium canadense</i>	1.67	0.39	0.00	0.01	0.40	20.23
<i>Arundinaria gigantea</i>	0.42	0.10	0.06	0.76	0.85	42.70
<i>Aristolochia reticulata</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Aristolochia serpentaria</i>	1.67	0.39	0.00	0.01	0.40	20.23
<i>Ascyrium hypericoides</i>	2.08	0.49	0.00	0.01	0.51	25.28
<i>Asimina parviflora</i>	3.33	0.79	0.06	0.77	1.56	77.85
<i>Athyrium filix-femina</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Boehmeria species</i>	0.42	0.10	0.02	0.25	0.35	17.52
<i>Berchemia scandens</i>	9.58	2.27	0.57	6.85	9.11	455.72
<i>Bignonia capreolata</i>	4.58	1.08	0.00	0.03	1.11	55.63
<i>Botrychium biternatum</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Boehmeria cylindrica</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Botrychium dissectum</i>	1.25	0.30	0.00	0.01	0.30	15.17
<i>Carex abscondita</i>	3.33	0.79	0.13	1.52	2.31	115.61
<i>Carex albolutescens</i>	0.42	0.10	0.15	1.76	1.86	93.06
<i>Callicarpa americana</i>	15.83	3.75	0.67	8.12	11.87	593.26
<i>Carya aquatica</i>	1.25	0.30	0.00	0.01	0.31	15.30
<i>Carex caroliniana</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Carpinus caroliniana</i>	2.50	0.59	0.00	0.02	0.61	30.34
<i>Carex complanata</i>	0.83	0.20	0.02	0.25	0.45	22.58
<i>Carex flaccosperma</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Carex joorii</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Cassia nictitans</i>	0.83	0.20	0.06	0.76	0.95	47.63
<i>Carex nigromarginata</i>	2.50	0.59	0.00	0.02	0.61	30.34
<i>Carex sp.</i>	1.67	0.39	0.00	0.01	0.40	20.23

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Celtis laevigata</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Chasmanthium latifolium</i>	3.33	0.79	0.10	1.27	2.06	102.90
<i>Chasmanthium laxum</i>	2.50	0.59	0.17	2.02	2.61	130.68
<i>Chasmanthium sessiliflorum</i>	1.67	0.39	0.06	0.76	1.16	57.87
<i>Chionanthus virginica</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Clitoria mariana</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Cocculus carolinus</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Cornus florida</i>	5.83	1.38	0.00	0.04	1.42	70.80
<i>Croton argyranthemus</i>	0.42	0.10	0.02	0.25	0.35	17.52
<i>Crataegus marshallii</i>	1.25	0.30	0.00	0.01	0.30	15.17
<i>Dichantheium lanuginosum</i>	0.83	0.20	0.00	0.01	0.20	10.11
<i>Dichantheium scoparium</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Euphorbia corollata</i>	0.83	0.20	0.00	0.01	0.20	10.11
<i>Eupatorium compositifolium</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Eupatorium</i> sp.	0.83	0.20	0.02	0.25	0.45	22.58
<i>Euphorbia</i> sp.	0.42	0.10	0.00	0.00	0.10	5.06
<i>Galium trifolium</i>	1.67	0.39	0.00	0.01	0.40	20.23
<i>Gelsemium sempervirens</i>	5.42	1.28	0.02	0.28	1.56	78.20
<i>Hypericum crux-andreae</i>	0.83	0.20	0.00	0.01	0.20	10.11
<i>Hypericum</i> sp.	0.42	0.10	0.00	0.00	0.10	5.06
<i>Hydrocotyle umbellata</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Ilex decidua</i>	0.83	0.20	0.02	0.25	0.45	22.58
<i>Ilex opaca</i>	2.92	0.69	0.04	0.52	1.21	60.45
<i>Ilex vomitoria</i>	55.42	13.12	2.68	32.45	45.57	2278.34
<i>Justicia species</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Justicia ovata</i> var. <i>lanceolata</i>	2.50	0.59	0.00	0.02	0.61	30.34
<i>Lespedeza</i> sp.	0.42	0.10	0.00	0.00	0.10	5.06
<i>Linum striatum</i>	3.33	0.79	0.13	1.52	2.31	115.49
<i>Liquidambar styraciflua</i>	2.08	0.49	0.15	1.76	2.26	112.78
<i>Parietaria species</i>	1.25	0.30	0.00	0.01	0.30	15.17
<i>Mitchella repens</i>	16.25	3.85	0.30	3.60	7.44	372.21
<i>Morus rubra</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Myrica cerifera</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Myrica heterophylla</i>	0.42	0.10	0.29	3.53	3.62	181.18

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Nyssa sylvatica</i>	7.08	1.68	0.07	0.79	2.47	123.48
<i>Oplismenus hirtellus</i>	2.08	0.49	0.04	0.51	1.00	50.21
<i>Ostrya virginiana</i>	2.92	0.69	0.00	0.02	0.71	35.40
<i>Oxalis dillenii</i>	1.67	0.39	0.00	0.01	0.40	20.23
<i>Panicum boscii</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Panicum commutatum</i>	8.33	1.97	0.02	0.30	2.27	113.60
<i>Panicum dichotomiflorum</i>	1.67	0.39	0.00	0.01	0.40	20.23
<i>Panicum dichotomum</i>	0.83	0.20	0.00	0.01	0.20	10.11
<i>Parthenocissus quinquefolia</i>	18.75	4.44	0.32	3.87	8.31	415.39
<i>Panicum sp.</i>	1.25	0.30	0.00	0.01	0.30	15.17
<i>Persea palustris</i>	19.58	4.64	0.27	3.24	7.88	393.91
<i>Pinus echinata</i>	2.08	0.49	0.00	0.01	0.51	25.28
<i>Pinus taeda</i>	7.08	1.68	0.05	0.54	2.22	111.02
<i>Polygonum sp.</i>	0.83	0.20	0.00	0.01	0.20	10.11
<i>Prunus caroliniana</i>	2.08	0.49	0.00	0.01	0.51	25.28
<i>Prunus serotina</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Prunus sp.</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Spirodela polyrhiza</i>	0.83	0.20	0.02	0.25	0.45	22.58
<i>Pteridium aquilinum</i> var <i>pseudocaudatum</i>	0.83	0.20	0.00	0.01	0.20	10.11
<i>Quercus alba</i>	2.08	0.49	0.00	0.01	0.51	25.28
<i>Quercus falcata</i>	3.33	0.79	0.00	0.02	0.81	40.45
<i>Quercus hemisphaerica</i>	0.42	0.10	0.02	0.25	0.35	17.52
<i>Quercus laurifolia</i>	14.17	3.35	0.09	1.15	4.50	224.93
<i>Quercus michauxii</i>	1.67	0.39	0.02	0.26	0.65	32.69
<i>Quercus nigra</i>	3.33	0.79	0.00	0.02	0.81	40.45
<i>Quercus phellos</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Quercus sp.</i>	1.25	0.30	0.00	0.01	0.30	15.17
<i>Quercus stellata</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Rhus aromatica</i>	0.42	0.10	0.02	0.25	0.35	17.52
<i>Rhamnus caroliniana</i>	3.75	0.89	0.04	0.52	1.41	70.44
<i>Rhynchospora inexpansa</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Rhododendron oblongifolium</i>	1.25	0.30	0.02	0.26	0.55	27.63
<i>Telemmum species</i>	0.42	0.10	0.00	0.00	0.10	5.06

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Rubus argutus</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Rubus</i> sp.	0.42	0.10	0.00	0.00	0.10	5.06
<i>Ruellia</i> sp.	1.67	0.39	0.00	0.01	0.40	20.23
<i>Rubus trivialis</i>	2.08	0.49	0.02	0.26	0.75	37.75
<i>Sassafras albidum</i>	4.17	0.99	0.02	0.27	1.26	63.03
<i>Sabatia campestris</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Saururus cernuus</i>	0.42	0.10	0.02	0.25	0.35	17.52
<i>Sanicula species</i>	2.92	0.69	0.00	0.02	0.71	35.40
<i>Scleria oligantha</i>	5.00	1.18	0.02	0.28	1.46	73.15
<i>Scleria reticularis</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Schizachyrium scoparium</i>	2.92	0.69	0.04	0.52	1.21	60.33
<i>Scleria</i> sp.	2.50	0.59	0.00	0.02	0.61	30.34
<i>Sebatiana fruticosa</i>	6.25	1.48	0.17	2.06	3.54	176.82
<i>Smilax glauca</i>	11.25	2.66	0.01	0.07	2.73	136.54
<i>Smilax hispida</i>	2.50	0.59	0.00	0.02	0.61	30.34
<i>Smilax laurifolia</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Smilax pumila</i>	7.08	1.68	0.09	1.04	2.72	135.82
<i>Smilax rotundifolia</i>	5.00	1.18	0.00	0.03	1.21	60.68
<i>Smilax smallii</i>	19.58	4.64	0.09	1.12	5.75	287.65
<i>Smilax species</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Smilax walteri</i>	2.50	0.59	0.02	0.26	0.86	42.80
<i>Solidago</i> sp.	0.42	0.10	0.00	0.00	0.10	5.06
<i>Sphagnum</i> sp.	0.42	0.10	0.06	0.76	0.85	42.70
<i>Toxicodendron radicans</i>	21.25	5.03	0.26	3.13	8.16	407.97
<i>Unknown species 1</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Unknown vine 1</i>	0.83	0.20	0.04	0.51	0.70	35.17
<i>Unknown species 2</i>	2.92	0.69	0.00	0.02	0.71	35.40
<i>Vaccinium arboreum</i>	3.33	0.79	0.13	1.52	2.31	115.61
<i>Vaccinium corymbosum</i>	0.42	0.10	0.04	0.50	0.60	30.11
<i>Vaccinium</i> sp.	0.83	0.20	0.00	0.01	0.20	10.11
<i>Vaccinium stamineum</i>	1.25	0.30	0.08	1.01	1.30	65.15
<i>Viburnum acerifolium</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Vitis cinerea</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Viburnum dentatum</i>	0.42	0.10	0.00	0.00	0.10	5.06

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Justicia ovata</i>	0.42	0.10	0.00	0.00	0.10	5.06
<i>Vitis rotundifolia</i>	7.92	1.87	0.32	3.84	5.71	285.55
<i>Viburnum rufidulum</i>	0.83	0.20	0.00	0.01	0.20	10.11
<i>Viola sororia</i> v. <i>missouriensis</i>	0.83	0.20	0.00	0.01	0.20	10.11
<i>Viola</i> sp.	0.42	0.10	0.00	0.00	0.10	5.06

Table 9A

Summary of Overstory Layer
***Nyssa (aquatica, biflora, ogeche)* Floodplain Seasonally Flooded Forest Alliance**
Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i> var. <i>trilobum</i>	25.00	4.88	10.00	2.41	0.24	0.89	8.17	2.72
<i>Carpinus caroliniana</i>	50.00	9.76	55.00	13.25	1.31	4.81	27.82	9.27
<i>Cyrilla racemiflora</i>	12.50	2.44	5.00	1.20	0.18	0.66	4.31	1.44
<i>Fagus grandifolia</i>	12.50	2.44	5.00	1.20	0.21	0.76	4.40	1.47
<i>Fraxinus pennsylvanica</i>	25.00	4.88	10.00	2.41	0.69	2.53	9.82	3.27
<i>Ilex opaca</i>	12.50	2.44	5.00	1.20	0.12	0.44	4.08	1.36
<i>Liquidambar styraciflua</i>	75.00	14.63	50.00	12.05	2.75	10.07	36.75	12.25
<i>Magnolia grandiflora</i>	12.50	2.44	15.00	3.61	0.40	1.46	7.51	2.50
<i>Magnolia virginiana</i>	37.50	7.32	25.00	6.02	1.27	4.64	17.98	5.99
<i>Nyssa biflora</i>	87.50	17.07	115.00	27.71	5.62	20.54	65.33	21.78
<i>Ostrya virginiana</i>	12.50	2.44	10.00	2.41	0.34	1.23	6.08	2.03
<i>Pinus taeda</i>	12.50	2.44	5.00	1.20	0.26	0.93	4.58	1.53
<i>Quercus alba</i>	12.50	2.44	5.00	1.20	0.09	0.35	3.99	1.33
<i>Quercus laurifolia</i>	25.00	4.88	15.00	3.61	0.70	2.58	11.07	3.69
<i>Quercus lyrata</i>	12.50	2.44	5.00	1.20	0.57	2.07	5.72	1.91
<i>Quercus michauxii</i>	12.50	2.44	5.00	1.20	0.21	0.76	4.40	1.47
<i>Quercus nigra</i>	25.00	4.88	10.00	2.41	0.47	1.72	9.00	3.00
<i>Quercus phellos</i>	12.50	2.44	45.00	10.84	6.85	25.05	38.33	12.78
<i>Quercus texana</i>	12.50	2.44	5.00	1.20	2.27	8.30	11.94	3.98
<i>Taxodium distichum</i>	12.50	2.44	10.00	2.41	1.67	6.11	10.96	3.65
<i>Ulmus rubra</i>	12.50	2.44	5.00	1.20	1.12	4.11	7.76	2.59

Table 9B

Summary of Midstory Layer
Nyssa (aquatica, biflora, ogeche) Floodplain Seasonally Flooded Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer barbatum</i>	12.50	2.04	5.00	0.50	0.04	1.29	3.83	1.28
<i>Acer rubrum</i>	25.00	4.08	20.00	1.98	0.02	0.55	6.62	2.21
<i>Acer rubrum</i> var. <i>trilobum</i>	25.00	4.08	25.00	2.48	0.14	4.04	10.59	3.53
<i>Carya aquatica</i>	12.50	2.04	10.00	0.99	0.06	1.67	4.70	1.57
<i>Carpinus caroliniana</i>	62.50	10.20	260.00	25.74	0.90	26.79	62.74	20.91
<i>Carya</i> sp.	12.50	2.04	5.00	0.50	0.03	0.95	3.49	1.16
<i>Crataegus opaca</i>	12.50	2.04	10.00	0.99	0.07	1.99	5.02	1.67
<i>Cyrilla racemiflora</i>	25.00	4.08	50.00	4.95	0.21	6.13	15.16	5.05
<i>Fraxinus pennsylvanica</i>	12.50	2.04	15.00	1.49	0.06	1.94	5.47	1.82
<i>Ilex opaca</i>	37.50	6.12	60.00	5.94	0.11	3.43	15.49	5.16
<i>Ilex vomitoria</i>	12.50	2.04	5.00	0.50	0.00	0.14	2.68	0.89
<i>Liquidambar styraciflua</i>	62.50	10.20	70.00	6.93	0.24	7.30	24.44	8.15
<i>Magnolia virginiana</i>	37.50	6.12	40.00	3.96	0.14	4.10	14.19	4.73
<i>Nyssa biflora</i>	62.50	10.20	155.00	15.35	0.59	17.72	43.27	14.42
<i>Ostrya virginiana</i>	12.50	2.04	10.00	0.99	0.03	0.84	3.88	1.29
<i>Parthenocissus quinquefolia</i>	12.50	2.04	5.00	0.50	0.00	0.11	2.64	0.88
<i>Persea palustris</i>	37.50	6.12	20.00	1.98	0.04	1.28	9.39	3.13
<i>Quercus laurifolia</i>	25.00	4.08	140.00	13.86	0.42	12.43	30.37	10.12
<i>Quercus michauxii</i>	12.50	2.04	5.00	0.50	0.01	0.19	2.72	0.91
<i>Quercus nigra</i>	37.50	6.12	15.00	1.49	0.04	1.14	8.75	2.92
<i>Taxodium distichum</i>	12.50	2.04	5.00	0.50	0.02	0.57	3.11	1.04
<i>Ulmus rubra</i>	12.50	2.04	15.00	1.49	0.12	3.72	7.25	2.42
<i>Vaccinium</i> sp.	12.50	2.04	25.00	2.48	0.02	0.62	5.13	1.71
<i>Vitis rotundifolia</i>	25.00	4.08	40.00	3.96	0.04	1.05	9.09	3.03

Table 9C

**Summary of Shrub Layer
Nyssa (aquatica, biflora, ogeche) Floodplain Seasonally Flooded Forest Alliance
Big Sandy Creek Unit, Big Thicket National Preserve**

Genus species	Frequency [%]	Relative Frequency [%]	Density (# individuals/ha)	Relative Density [%]	Dominance (sq m/ha)	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer rubrum</i>	12.50	14.29	50.00	11.11	0.02	0.20	25.60	8.53
<i>Cyrilla racemiflora</i>	12.50	14.29	50.00	11.11	0.00	0.05	25.45	8.48
<i>Ilex opaca</i>	12.50	14.29	50.00	11.11	0.01	0.12	25.51	8.50
<i>Liquidambar styraciflua</i>	12.50	14.29	50.00	11.11	0.02	0.20	25.60	8.53
<i>Myrica species</i>	12.50	14.29	100.00	22.22	0.00	0.06	36.57	12.19
<i>Quercus michauxii</i>	12.50	14.29	50.00	11.11	7.60	99.19	124.59	41.53
<i>Rhododendron sp.</i>	12.50	14.29	100.00	22.22	0.01	0.17	36.67	12.22

Table 9D

Summary of Herbaceous Layer
Nyssa (aquatica, biflora, ogeche) Floodplain Seasonally Flooded Forest Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Acer barbatum</i>	4.29	0.64	0.00	0.01	0.65	32.47
<i>Acer rubrum</i>	11.43	1.71	0.01	0.03	1.73	86.59
<i>Acer rubrum</i> var. <i>trilobum</i>	8.57	1.28	0.08	0.34	1.62	81.10
<i>Ambrosia artemisiifolia</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Ampelopsis arborea</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Arundinaria gigantea</i>	20.00	2.99	1.01	4.59	7.58	378.95
<i>Ascyrum hypericoides</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Berchemia scandens</i>	14.29	2.13	0.08	0.36	2.49	124.39
<i>Bignonia capreolata</i>	22.86	3.41	0.08	0.38	3.79	189.34
<i>Boehmeria cylindrica</i>	10.00	1.49	0.22	1.00	2.49	124.38
<i>Carex abscondita</i>	7.14	1.07	0.36	1.64	2.70	135.20
<i>Callicarpa americana</i>	2.86	0.43	0.07	0.33	0.76	37.80
<i>Capsicum annuum</i>	2.86	0.43	0.00	0.01	0.43	21.65
<i>Carex atlantica</i>	12.86	1.92	1.43	6.53	8.45	422.39
<i>Carex blanda</i>	2.86	0.43	0.00	0.01	0.43	21.65
<i>Carex caroliniana</i>	11.43	1.71	0.08	0.35	2.05	102.74
<i>Carpinus caroliniana</i>	11.43	1.71	0.01	0.03	1.73	86.59
<i>Carex cherokeensis</i>	1.43	0.21	0.14	0.65	0.87	43.29
<i>Carya cordiformis</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Carex corrugata</i>	4.29	0.64	0.00	0.01	0.65	32.47
<i>Carex commutatum</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Carex debilis</i>	5.71	0.85	0.00	0.01	0.87	43.30
<i>Carex flaccosperma</i>	10.00	1.49	0.15	0.67	2.16	108.23
<i>Carya glabra</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Carex intumescens</i>	20.00	2.99	2.07	9.46	12.45	622.35
<i>Carya leioderms</i>	7.14	1.07	0.15	0.67	1.73	86.58
<i>Carex leptalea</i>	1.43	0.21	0.07	0.33	0.54	26.97

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Carex longii</i>	4.29	0.64	0.50	2.28	2.92	146.18
<i>Carex louisianica</i>	8.57	1.28	0.08	0.34	1.62	81.10
<i>Cassia nictitans</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Carex sp.</i>	20.00	2.99	1.22	5.58	8.56	428.06
<i>Carex tribuloides</i>	1.43	0.21	0.07	0.33	0.54	26.97
<i>Chasmanthium latifolium</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Chasmanthium laxum</i>	34.29	5.12	5.15	23.51	28.63	1431.60
<i>Cyrilla racemiflora</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Dichantheum commutatum</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Dichantheum lanuginosum</i>	5.71	0.85	0.07	0.34	1.19	59.45
<i>Dichantheum sp.</i>	4.29	0.64	0.00	0.01	0.65	32.47
<i>Hymenocallis caroliniana</i>	7.14	1.07	0.00	0.02	1.08	54.12
<i>Fraxinus pennsylvanica</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Galium trifolium</i>	4.29	0.64	0.00	0.01	0.65	32.47
<i>Gelsemium sempervirens</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Hydrocotyle verticillata</i>	5.71	0.85	0.00	0.01	0.87	43.30
<i>Ilex coriacea</i>	8.57	1.28	1.07	4.90	6.18	309.00
<i>Ilex opaca</i>	7.14	1.07	0.43	1.96	3.03	151.35
<i>Ilex vomitoria</i>	8.57	1.28	0.08	0.34	1.62	81.10
<i>Itea virginica</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Justicia americana</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Juncus coriaceus</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Juncus effusus</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Juncus interior</i>	2.86	0.43	0.00	0.01	0.43	21.65
<i>Justicia species</i>	4.29	0.64	0.29	1.31	1.95	97.40
<i>Justicia ovata var. lanceolata</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Juncus sp.</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Juncus tenuis</i>	4.29	0.64	0.07	0.33	0.97	48.62
<i>Leersia lenticularis</i>	2.86	0.43	0.00	0.01	0.43	21.65
<i>Linum striatum</i>	1.43	0.21	0.07	0.33	0.54	26.97
<i>Magnolia virginiana</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Mitchella repens</i>	7.14	1.07	0.07	0.34	1.41	70.27
<i>Mikania scandens</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Myrica cerifera</i>	1.43	0.21	0.00	0.00	0.22	10.82

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Myrica species</i>	8.57	1.28	0.43	1.97	3.25	162.34
<i>Nyssa biflora</i>	12.86	1.92	0.08	0.35	2.27	113.57
<i>Rhus species</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Nyssa sylvatica</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Oplismenus hirtellus</i>	5.71	0.85	0.07	0.34	1.19	59.45
<i>Ostrya virginiana</i>	5.71	0.85	0.00	0.01	0.87	43.30
<i>Oxalis dillenii</i>	11.43	1.71	0.01	0.03	1.73	86.59
<i>Oxalis stricta</i>	2.86	0.43	0.00	0.01	0.43	21.65
<i>Panicum commutatum</i>	17.14	2.56	0.29	1.33	3.89	194.49
<i>Panicum dichotomum</i>	2.86	0.43	0.00	0.01	0.43	21.65
<i>Panicum gymnocarpon</i>	8.57	1.28	0.50	2.29	3.57	178.65
<i>Parthenocissus quinquefolia</i>	21.43	3.20	0.72	3.30	6.49	324.68
<i>Persea palustris</i>	2.86	0.43	0.00	0.01	0.43	21.65
<i>Poa autumnalis</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Polygonum virginianum</i>	4.29	0.64	0.07	0.33	0.97	48.62
<i>Quercus laurifolia</i>	7.14	1.07	0.07	0.34	1.41	70.27
<i>Quercus nigra</i>	10.00	1.49	0.00	0.02	1.52	75.77
<i>Quercus phellos</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Quercus sp.</i>	5.71	0.85	0.14	0.66	1.51	75.60
<i>Ranunculus sp.</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Rhododendron sp.</i>	5.71	0.85	0.22	0.99	1.84	91.91
<i>Rubus sp.</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Saururus cernuus</i>	2.86	0.43	0.36	1.63	2.06	103.05
<i>Sapium sebiferum</i>	2.86	0.43	0.00	0.01	0.43	21.65
<i>Sanicula species</i>	8.57	1.28	0.15	0.67	1.94	97.25
<i>Sebastiania fruticosa</i>	15.71	2.35	0.72	3.29	5.63	281.55
<i>Smilax glauca</i>	2.86	0.43	0.00	0.01	0.43	21.65
<i>Smilax hispida</i>	8.57	1.28	0.00	0.02	1.30	64.94
<i>Smilax laurifolia</i>	4.29	0.64	0.14	0.66	1.30	64.77
<i>Smilax smallii</i>	18.57	2.77	0.01	0.04	2.81	140.71
<i>Sphagnum sp.</i>	5.71	0.85	0.14	0.66	1.51	75.60
<i>Taxodium distichum</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Toxicodendron radicans</i>	25.71	3.84	0.65	2.97	6.81	340.35
<i>Ulmus rubra</i>	2.86	0.43	0.00	0.01	0.43	21.65

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Ulmus</i> sp.	1.43	0.21	0.00	0.00	0.22	10.82
<i>Unknown species 1</i>	4.29	0.64	0.23	1.04	1.68	84.19
<i>Unknown species 2</i>	2.86	0.43	0.07	0.33	0.76	37.80
<i>Vaccinium corymbosum</i>	1.43	0.21	1.00	4.57	4.78	239.05
<i>Vitis cinerea</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Viola cornuta</i>	1.43	0.21	0.07	0.33	0.54	26.97
<i>Viola lanceolata</i> subsp. <i>vittata</i>	10.00	1.49	0.15	0.67	2.16	108.23
<i>Vitis rotundifolia</i>	12.86	1.92	0.29	1.33	3.25	162.35
<i>Viola</i> sp.	7.14	1.07	0.00	0.02	1.08	54.12
<i>Elephantopus species</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Ammannia species</i>	1.43	0.21	0.00	0.00	0.22	10.82
<i>Woodwardia areolata</i>	4.29	0.64	0.00	0.01	0.65	32.47
<i>Nyssa species</i>	2.86	0.43	0.07	0.33	0.76	37.80
<i>Zizi aurea</i>	4.29	0.64	0.00	0.01	0.65	32.47

Table 10A

Summary of Herbaceous Layer
Paspalum notatum Herbaceous Alliance
 Big Sandy Creek Unit, Big Thicket National Preserve

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Andropogon virginicus</i>	40.00	4.71	0.03	4.39	9.09	454.59
<i>Berlandiera betonicifolia</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Croton argyranthemus</i>	30.00	3.53	0.01	2.63	6.16	308.05
<i>Cyclosperma species</i>	20.00	2.35	0.01	1.75	4.11	205.37
<i>Hymenocallis caroliniana</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Eriogonum annuum</i>	70.00	8.24	0.04	6.14	14.38	718.78
<i>Eragrostis elliotii</i>	20.00	2.35	0.01	1.75	4.11	205.37
<i>Erigeron philadelphicus</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Gnaphalium pennsylvanicum</i>	50.00	5.88	0.03	4.39	10.27	513.42
<i>Galium sp.</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Gynopogon ambiguus</i>	100.00	11.76	0.05	8.77	20.54	1026.83
<i>Helianthemum carolinianum</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Krigia gracilis</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Krigia oppositifolia</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Krigia virginica</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Linum sp.</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Paspalum notatum</i>	80.00	9.41	0.15	26.32	35.73	1786.38
<i>Panicum sp.</i>	60.00	7.06	0.04	7.02	14.08	703.82
<i>Solanum pycanthum</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Pityopsis graminifolia</i>	90.00	10.59	0.06	11.40	21.99	1099.59
<i>Pinus taeda</i>	20.00	2.35	0.01	1.75	4.11	205.37
<i>Plantago sp.</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Polypremum procumbens</i>	40.00	4.71	0.02	3.51	8.21	410.73
<i>Rhynchospora difformis</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Rhynchosia latifolia</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Rhynchospora sp.</i>	30.00	3.53	0.01	2.63	6.16	308.05
<i>Scleria sp.</i>	10.00	1.18	0.00	0.88	2.05	102.68

Genus species	Frequency [%]	Relative Frequency [%]	Dominance [groundcover %]	Relative Dominance [%]	Importance Value [%]	Relative Importance Value [%]
<i>Smilax glauca</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Stylosanthes biflora</i>	30.00	3.53	0.01	2.63	6.16	308.05
<i>Triodanis perfoliata</i>	10.00	1.18	0.00	0.88	2.05	102.68
<i>Unknown moss</i>	10.00	1.18	0.00	0.88	2.05	102.68

APPENDIX B

SAMPLE PLOT INVENTORY LIST

**Big Thicket National Preserve
Big Sandy Creek Unit
Sample Plots**

PLOT ID	ALLIANCE ID	BURN COMPARTMENT	SHRUB AND HERBACEOUS PLOT	SOIL PLOT
010-160	3	N	Y	N
076-078	4	N	Y	N
088-088	8	N	Y	Y
088-089	8	N	Y	N
088-090	4	N	Y	N
091-131	4	N	Y	N
091-132	4	N	Y	N
091-133	4	N	Y	Y
097-091	4b	N	Y	Y
097-092	8	N	Y	Y
097-093	4	N	Y	N
116-012	9	N	Y	N
036-163	4b	N	Y	N
013-013	4	N	Y	N
014-014	4	N	Y	N
030-030	4	N	Y	N
034-033	4	N	Y	N
038-157	8	N	Y	N
041-035	8	N	Y	N
053-150	4	N	Y	N
077-080	4	N	Y	N
082-126	4	N	Y	N
094-097	8	N	Y	N
094-098	8	N	Y	N
094-099	4	N	Y	N
097-094	9	N	Y	N
098-096	5	N	Y	Y
099-101	4	N	Y	Y
100-149	4	N	Y	N
110-104	8	N	Y	N
110-105	8	N	Y	N
112-067	9	N	Y	Y
051-166	4	N	Y	N
063-167	4b	N	Y	N
063-168	4b	N	Y	N
052-042	4	N	Y	N
059-143	4	N	Y	N
099-102	4	N	Y	N
103-051	4b	N	Y	Y
103-053	4	N	Y	Y
107-118	4	N	Y	N
107-119	9	N	Y	N
115-117	4	N	Y	N
022-169	9	N	Y	N
108-170	4	N	Y	N
003-005	7	N	Y	Y
004-006	2	N	Y	N
004-007	5	N	Y	N
020-022	4	N	Y	N
021-024	8	N	Y	N
023-025	4	N	Y	Y
024-026	8	N	Y	N
025-027	4	N	Y	N
033-031	4	N	Y	Y
044-161	4	N	Y	N
045-037	9	N	Y	N
047-140	4b	N	Y	N
048-038	4	N	Y	Y
049-138	4	N	Y	N

**Big Thicket National Preserve
Big Sandy Creek Unit
Sample Plots**

<i>PLOT ID</i>	<i>ALLIANCE ID</i>	<i>BURN COMPARTMENT</i>	<i>SHRUB AND HERBACEOUS PLOT</i>	<i>SOIL PLOT</i>
050-139	4	N	Y	N
067-141	2	N	Y	Y
079-087a	4	N	Y	N
079-087b	4	N	Y	N
105-036	8	N	Y	N
105-066	4	N	Y	N
106-021	4	N	Y	N
106-023	4	N	Y	N
106-032	4	N	Y	N
106-106	8	N	Y	Y
106-111	4	N	Y	N
106-112	8	N	Y	N
107-028	4	N	Y	N
107-039	4	N	Y	Y
107-040	4	N	Y	N
107-115	4	N	Y	Y
107-116	4	N	Y	N
107-120	2	N	Y	N
107-121	4	N	Y	N
109-019	8	N	Y	N
109-020	8	N	Y	N
109-041	4	N	Y	N
109-114	4b	N	Y	N
015-172	2	N	Y	N
016-173	2	N	Y	N
031-175	6	N	Y	N
031-176	6	N	Y	N
090-162	4	Y	N	N
060-049	8	Y	N	N
072-071	7	Y	N	N
080-103	8	Y	N	N
089-046	4	Y	N	N
089-047	8	Y	N	N
089-048	8	Y	N	N
091-001	4b	Y	N	N
091-045	8	Y	N	N
092-079	8	Y	N	N
092-159	4	Y	N	N
095-164	8	Y	Y	Y
001-002	8	Y	N	N
008-010	8	Y	N	N
008-011	8	Y	N	N
018-017	8	Y	N	N
028-155	4	Y	N	N
039-034	8	Y	N	N
056-043	4b	Y	N	N
058-148	4b	Y	N	N
061-151	8	Y	N	N
061-152	4b	Y	N	N
070-069	11	Y	N	Y
071-070	8	Y	N	N
072-072	8	Y	N	N
073-074	8	Y	N	N
075-147	8	Y	N	N
081-123	7	Y	N	N
081-124	8	Y	N	N
083-127	4	Y	N	N
084-136	8	Y	N	N
093-079	4	Y	N	Y

**Big Thicket National Preserve
Big Sandy Creek Unit
Sample Plots**

PLOT ID	ALLIANCE ID	BURN COMPARTMENT	SHRUB AND HERBACEOUS PLOT	SOIL PLOT
101-125	4	Y	N	N
101-129	8	Y	N	N
101-130	8	Y	N	N
106-107	8	Y	N	N
111-134	4	Y	Y	Y
111-135	8	Y	N	N
111-158	8	Y	N	N
112-068	4b	Y	N	N
112-153	4b	Y	N	N
112-156	8	Y	N	N
113-095	8	Y	N	N
114-081	8	Y	N	N
114-082	8	Y	N	N
114-086	8	Y	N	N
114-154	8	Y	N	N
066-165	4	Y	N	N
002-003	8	Y	N	N
017-016	8	Y	N	N
019-018	8	Y	Y	Y
068-062	8	Y	N	N
074-075	8	Y	N	N
074-076	8	Y	N	N
096-060	8	Y	N	N
106-108	4	Y	N	N
114-015	8	Y	N	N
114-050	8	Y	N	N
114-083	8	Y	N	N
114-084	8	Y	N	N
114-085	8	Y	N	N
005-008	5	Y	Y	N
056-044	4	Y	N	N
062-054	4b	Y	N	N
062-146	4b	Y	N	N
063-055	4b	Y	N	N
064-058	4b	Y	N	N
074-077	8	Y	Y	Y
083-128	4	Y	N	N
102-057	8	Y	N	N
103-056	4b	Y	N	N
104-061	4	Y	N	N
104-142	4	Y	N	N
106-109	4	Y	N	N
107-122	4	Y	Y	Y
115-145	4	Y	N	N
006-009	8	Y	N	N
065-059	4	Y	N	N
068-063	8	Y	N	N
068-064	8	Y	N	N
068-065	8	Y	Y	N
106-110	8	Y	N	N
106-113	8	Y	N	N
042-174	8	Y	N	N
092-184	8	Y	N	N
084-183	8	Y	N	N
084-182	8	Y	Y	Y
114-188	8	Y	N	N
114-191	8	Y	N	N
029-029	4	Y	N	Y
114-193	4	Y	N	N

**Big Thicket National Preserve
Big Sandy Creek Unit
Sample Plots**

PLOT ID	ALLIANCE ID	BURN COMPARTMENT	SHRUB AND HERBACEOUS PLOT	SOIL PLOT
114-192	8	Y	Y	Y
114-190	8	Y	N	N
068-181	8	Y	N	N
104-186	4b	Y	N	N
104-187	4	Y	N	N
104-185	4	Y	N	N
007-180	8	Y	N	N
006-178	8	Y	N	N
006-179	8	Y	Y	N
012-001	2	N	Y	N
012-002	2	N	Y	N
012-003	2	N	Y	N
010-060a	3	N	N	N
010-060b	3	N	N	N
114-189	8	Y	N	N
089-046	4	N	N	N
094-097a	2	N	N	N
094-097b	2	N	Y	N
067-141a	2	N	N	N
081-123a	4b	Y	N	N
066-165a	4	Y	N	N
066-165b	4	Y	N	N
096-060a	8	Y	N	N

ALLIANCE	ID
Fraxinus pennsylvanica - Ulmus americana - Celtis (occidentalis, laevigata) Temporarily Flooded Forest Alliance [1.B.2.N.d.11]	3
Cyrilla racemiflora - Ilex coriacea - (Cliftonia monophylla) Saturated Shrubland Alliance [111.A.2.N.i.3]	7
Paspalum notatum Herbaceous Alliance [V.A.5.N.c.14]	11
Quercus alba - (Quercus nigra) Forest Alliance [1.B.2.N.a.26]	4b
Nyssa aquatica - (Taxodium distichum) Semi-permanently Flooded Forest Alliance [1.B.2.N.f.2]	2
Pinus taeda - Quercus (alba, falcata, stellata) Forest Alliance [1.C.3.N.a.24]	8
Nyssa (aquatic, biflora, ogeche) Floodplain Seasonally Flooded Forest [1.B.2.N.e.8]	9
Sparganium americanum Seasonally Flooded Herbaceous Alliance [V.A.5.N.k.27]	6
Magnolia virginiana - Nyssa biflora - (Quercus laurifolia) Saturated Forest Alliance [1.C.2.N.d.1]	5
Quercus (laurifolia, phellos) Seasonally Flooded Forest Alliance [1.B.2.N.e.12]	4

APPENDIX C
VOUCHER SPECIES LIST

**PLANTS COLLECTED AT BIG THICKET NATIONAL PRESERVE:
BIG SANDY UNIT**

Acer barbatum
Acer negundo
Acer rubrum var. *drummondii*
Acer rubrum var. *rubrum*
Aira elegans
Albizia julibrissin
Allium canadense var. *mobile*
Alnus serrulata
Alophia drummondii
Aralia spinosa
Arisaema triphylla subsp. *triphylla*
Aristolochia reticulata
Aristolochia serpentaria
Arundinaria gigantea subsp. *gigantea*
Asclepias amplexicaulis
Asclepias tuberosa
Asclepias variegata
Asimaena parviflora
Asplenium platyneuron
Baptisia leucantha
Berchemia scandens
Betula nigra
Bignonia speciosa
Botrychium biternatum
Brasenia schreberi
Briza minor
Bromus catharticus
Bromus tectorum
Bulbostylis ciliatifolia var. *coarctata*
Callicarpa americana
Callitriche heterophylla
Campsis radicans
Capsicum annuum
Carex abscondita
Carex albicans var. *australis*
Carex albolutescens
Carex atlantica var. *capillacea*
Carex basiantha
Carex caroliniana
Carex cephalophora
Carex cherokeensis
Carex complanata
Carex corrugata

Diospyros virginiana
Echinacea sanguinea
Eleocharis montevidensis
Eleocharis obtusa
Eleocharis tortilis
Eleocharis tortulosa
Elymus canadensis
Eriocaulon texense
Erythrina herbacea
Fagus grandifolia
Frangula caroliniana
 Sy = Rhamnus carliniana
Fraxinus americana
Fraxinus caroliniana
Galium triflorum
Geranium carolinianum var. carolinianum
Glandularia canadensis
 Sy = Verbena canadensis
Halesia diptera
Hamamelis virginiana
Herbertia lahue subsp. caerulea
Hedeoma hispida
Helianthemum carolinianum
Hydrocotyle verticillata
Hygrophila lacustris
Hymenopappus artemisiifolius var. artemisiifolius
Hypoxis curtisii
Ilex ambigua
Ilex coriacea
Ilex montana
Ilex vomitoria
Iris brevicaulis
Itea virginica
Juglans nigra
Juncus acuminatus
Juncus capitatus
Juncus debilis
Juncus dichotomus
Juncus diffussissimus
Juncus effuses var. soltus
Juncus marginatus
Juncus tenuis
Juncus validus
Juniperus virginiana var. virginiana
Justicia ovata var. lanceolata
Lechea tenuifolia

Carex crebriflora
Carex debilis var. debilis
Carex digitalis var. floridana
Carex festucacea
Carex flaccosperma
Carex frankii
Carex intumescens
Carex leavenworthii
Carex leptalea subsp. harperi
Carex longii
Carex louisianica
Carex lupulina
Carex lurida
Carex muehlenbergii var. enervis
Carex nigromarginata var. floridana
Carex oxylepis
Carex planispicata
Carex reniformis
Carex retroflexa
Carex styloflexa
Carex texensis
Carex triangularis
Carex tribuloides
Carpinus caroliniana subsp. caroliniana
Carya cordiformis
Carya tomentosa
Castanea pumila
Centella erecta
Cercis canadensis var. canadensis
Chasmanthium latifolium
Chionanthus virginicus
Clematis pitcheri
Clitoria mariana
Cnidoscolus texensis
Commelina erecta
Cornus florida subsp. florida
Crataegus marshallii
Crataegus opaca
Crataegus spathulata
Crotalaria sagittalis
Cyperus filiculmis
Cyperus pseudovegetus
Cyperus virens
Cyrilla racemiflora
Dichondra caroliniana
Dioscorea villosa

Ligustrum sinense
Limnoscium pinnatum
Lindernia dubia
Liquidambar styraciflua
Lolium perenne
Lygodium japonicum
Magnolia grandiflora
Magnolia virginica
Matelea decipiens
Matelea gonocarpa
Micranthemum umbrosum
Mimosa hystrix
 Sy = Schrankia hystrix
Minuartia sp.
Mitchella repens
Mollugo verticillata
Morus rubra
Morella cerifera
 Sy = Myrica cerifera
Myriophyllum aquaticum
Nyssa aquatica
Nyssa biflora
Nyssa sylvatica
Oenothera biennis
Oenothera speciosa
Opuntia stricta var. stricta
Ostrya virginiana
Oxalis corymbosa
Packera glabella
 Sy = Senecio glabellus
Panicum aciculare
Panicum acuminatum
Panicum boscii
Panicum clandestinum
Panicum commutatum
Panicum dichotomum var. ensifolium
Panicum dichotomum var. nitidum
Panicum dichotomum var. ramulosum
Panicum dichotomum var. roanokense
Panicum erectifolium
Panicum hians
Panicum laxiflorum
Panicum oligosanthos
Panicum ovale var. ovale
Panicum ravenelii
Panicum scoparium

Panicum sphaerocarpon var. *isophyllum*
Panicum sphaerocarpon var. *sphaerocarpon*
Panicum tenue
Parthenocissus quinqueloba
Paspalum notatum
Paspalum plicatulum
Paspalum urvillei
Penstemon australis
Persea palustris
Phalaris caroliniana
Phlox pilosa
Phyla nodiflora
Phyrrhopappus carolinianus
Pinus echinata
Pinus palustris
Pinus taeda
Piptochaetium avenaceum
Planera aquatica
Plantago aristata
Platanus occidentalis
Polygala mariana
Polygala polygama
Polystichum acrostichoides
Poncirus trifoliata
Potamogeton diversifolius
Prunus serotina
Prunus umbellata
Pteridium aquilinum
Ptilimnium capillaceum
Pycnanthemum tenuifolium
Pyrrhopappus carolinianus
Quercus alba
Quercus falcata var. *falcata*
Quercus falcata var. *pagodifolia*
Quercus hemispherica
Quercus incana
Quercus laurifolia
Quercus lyrata
Quercus marilandica
Quercus michauxii
Quercus nigra
Quercus phellos
Quercus stellata
Rhododendron canescens
Rhododendron oblongifolium
Rhus copallinum var. *latifolia*

Rhynchosia reniformis
Rhynchospora caduca
Rhynchospora colorata
Rhynchospora globularis var. globularis
Rhynchospora harveyi var. harveyi
Rhynchospora mixta
Rhynchospora rariflora
Rubus argutus
Rudbeckia hirta
Ruellia humilis var. humilis
Rumex hastatulus
Rumex pulcher
Sabal minor
Salix nigra
Samolus valerandi subsp. parviflorus
Sanicula odorata
Sapium sebiferum
Sassafras albida
Saururus cernuus
Scleria oligantha
Scleria reticulata
Scleria triglomerata
Scutellaria cardiophylla
Scutellaria elliptica
Scutellaria integrifolia
Sebastiania fruticosa
Selaginella apoda
Sideroxylon lanuginosum
 Sy = Bumelia lanuginosa
Smilax laurifolia
Smilax pumila
Smilax rotundifolia
Smilax walteri
Solanum ptycanthum
Sparganium americanum
Spermolepis intermis
Sphenopholis obtusa
Spiranthes praecox
Stilliga sylvatica
Stylosanthes biflora
Styrax americana
Symplocos tinctoria
Taxodium distichum
Tephrosia virginiana
Thelypteris kunthii
Toxicodendron vernix

Tradescantia hirsutiflora
Tragia smallii
Trepocarpus aethusae
Trifolium campestre
Trifolium incarnatum
Trifolium repens
Ulmus alata
Ulmus americana
Ulmus rubra
Vaccinium arboreum
Vaccinium stamineum
Viburnum acerifolium
Viburnum dentatum
Viburnum nudum
Viola pedata var. pedata
Viola primulifolia
Viola villosa
Vitis aestivalis
Vitis cinerea
Vitis rotundifolia
Wahlenbergia marginata
Wisteria frutescens
Woodisia obtusa
Xanthosoma sagittifolium
Yucca flaccida
Sy = Yucca louisianensis

APPENDIX D

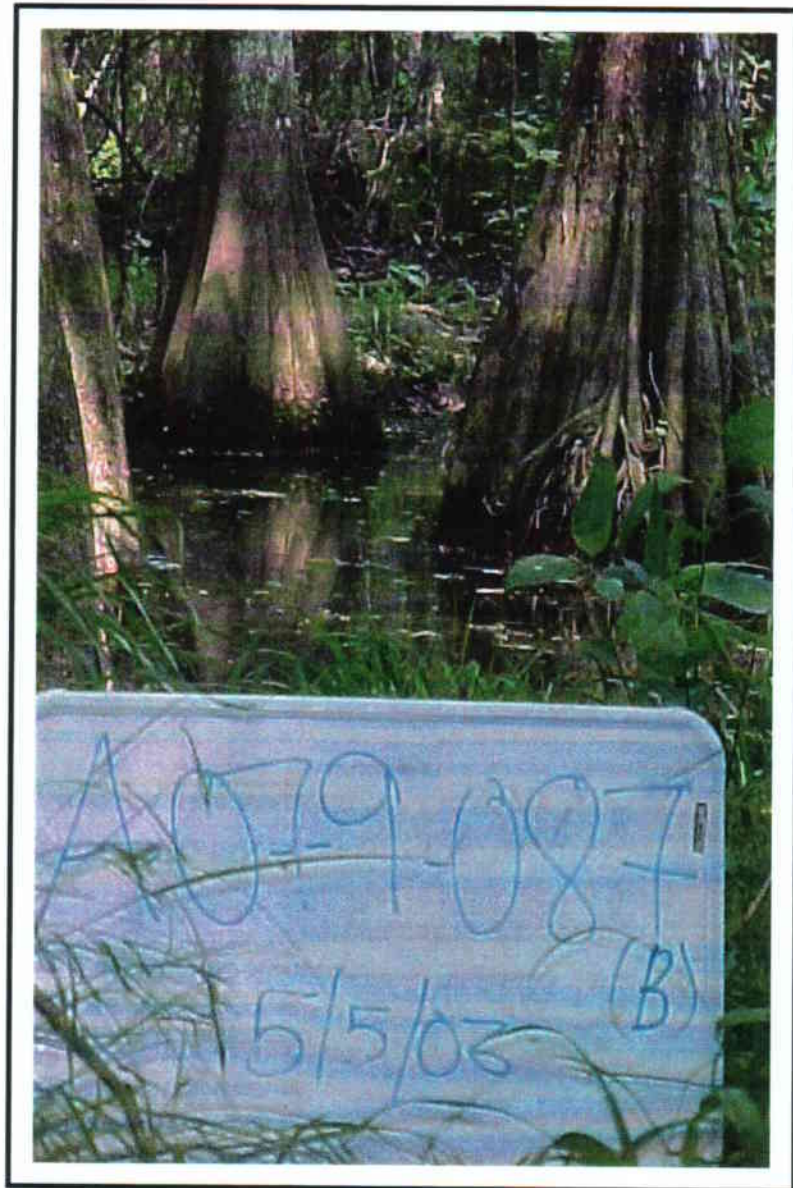
**REPRESENTATIVE PHOTOGRAPHS
OF ALLIANCE CLASSIFICATIONS**



Nyssa aquatica - (*Taxodium distichum*) Semi-permanently Flooded Forest Alliance



Quercus alba - (*Quercus nigra*) Forest Alliance



Nyssa aquatica - (*Taxodium distichum*) Semi-permanently Flooded Forest Alliance



Nyssa aquatica - (*Taxodium distichum*) Semi-permanently Flooded Forest Alliance



Nyssa aquatica - (*Taxodium distichum*) Semi-permanently Flooded Forest Alliance



Fraxinus pennsylvanica - *Ulmus americana* - *Celtis (occidentalis, laevigata)*
Temporarily Flooded Forest Alliance



Fraxinus pennsylvanica - *Ulmus americana* - *Celtis (occidentalis, laevigata)*
Temporarily Flooded Forest Alliance



Fagus grandifolia - *Magnolia grandiflora* Forest Alliance



Fagus grandifolia - *Magnolia grandiflora* Forest Alliance



Quercus alba - (*Quercus nigra*) Forest Alliance



Quercus (*laurifolia*, *phellos*) Seasonally Flooded Forest Alliance



Quercus (*laurifolia*, *phellos*) Seasonally Flooded Forest Alliance



Quercus (*phellos*, *nigra*, *laurifolia*) Temporarily Flooded Forest Alliance



Magnolia virginiana - *Nyssa biflora* - (*Quercus laurifolia*) Saturated Forest Alliance



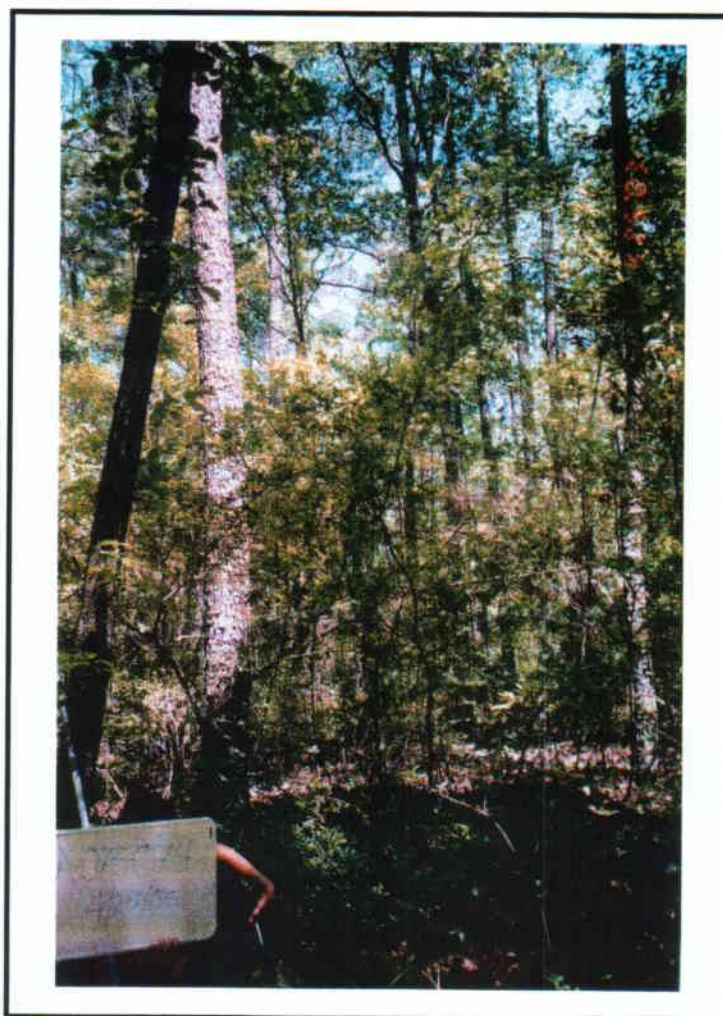
Sparganium americanum Seasonally Flooded Herbaceous Alliance



Sparganium americanum Seasonally Flooded Herbaceous Alliance



Cyrilla racemiflora - *Ilex coriacea* - (*Cliftonia monophylla*) Saturated Shrubland Alliance



Pinus taeda - *Quercus* (*alba*, *falcata*, *stellata*) Forest Alliance



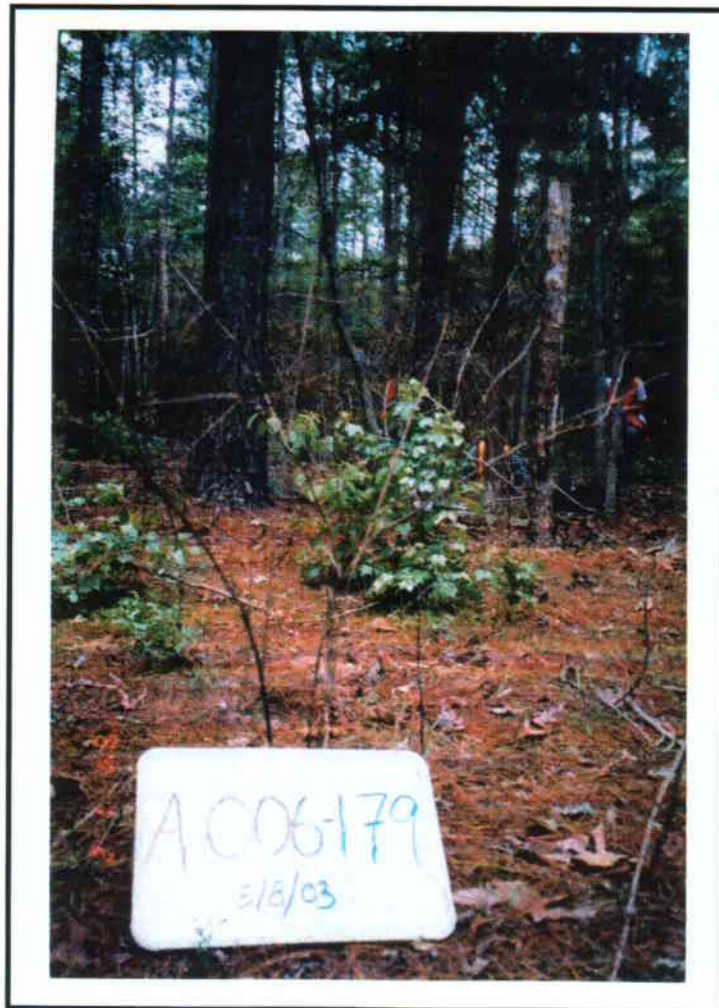
Pinus taeda - *Quercus* (*alba*, *falcata*, *stellata*) Forest Alliance



Nyssa (*aquatic*, *biflora*, *ogche*) Floodplain Seasonally Flooded Forest



Nyssa (aquatic, biflora, ogeche) Floodplain Seasonally Flooded Forest



Pinus palustris/*Quercus* spp. Woodland Alliance



Pinus palustris/Quercus spp. Woodland Alliance

APPENDIX E

VEGETATION ALLIANCE MAPS