Natural vegetation of the Carolinas: Classification and Description of Plant Communities of the Upper Tar, Roanoke, Meherrin, Chowan, and Cashie Rivers

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INTRODUCTION

The riverine and associated vegetation of the Upper Tar, Roanoke, Meherrin, Chowan, and Cashie Rivers are ecologically significant and floristically unique components of the North Carolina Piedmont and Atlantic Coastal Plain. Along with the Neuse and Pamlico Rivers, these rivers form the dominant drainages of northeastern North Carolina, and are responsible for the dominant terrestrial flow into Albemarle and Pamlico Sounds. The headwaters of the Tar River are in the upper Piedmont of North Carolina, in eastern Person County. The Swift Creek and Fishing Creek subbasins of the Tar River occupy some of the most biologically diverse riparian natural areas of brownwater rivers in North Carolina. Both of these creeks flow into the Tar River above Tarboro, in central Edgecombe County. Natural communities of interest within these drainages include bottomland hardwood forests, cypress-gum swamps, levee forests, and small stream swamps. The Meherrin River flows from south-central Virginia into North Carolina near Margarettsville, and eventually into the Chowan River above Winton. Natural communities of interest within these drainages include bottomland hardwood forests, cypress-gum swamps, levee forests, and mixed mesic hardwood forests. The Chowan and Cashie Rivers are blackwater rivers (headwaters originating in the Coastal Plain rather than in the Piedmont) whose banks can be influenced by tidal fluctuations brought on by wind events across the Albemarle Sound. Natural communities of interest along these rivers include tidal cypress-gum swamps, peatland Atlantic white cedar forests, nonriverine swamp forests, and tidal freshwater marshes.

In mid-July 2008, the Carolina Vegetation Survey conducted an initial inventory of natural communities throughout the Albemarle-Pamlico region of northeastern North Carolina. The study focused on two general subregions: 1) the Upper Tar and Roanoke River systems, including Coastal Plain riparian sites along Fishing and Swift Creek in Edgecombe County, broad, nonalluvial flats of the west edge of the Roanoke River in Halifax County, and Piedmont upland and alluvial sites in Warren and Halifax Counties, and 2) the Meherrin, Chowan, and Cashie River systems of Northampton, Hertford, and Bertie Counties. There have been numerous floristic and natural community studies that have taken place along the Roanoke River floodplain. However, broad patterns in distribution of both upland and wetland communities have not been undertaken in this region of North Carolina. The data captured from this study will enable us to refine the community classification within the broader region. The goal of this report is to determine a classification structure based on the synthesis of vegetation data obtained from the July 2008 sampling event, and to use the resulting information to develop restoration targets for disturbed ecosystems located in this general region of North Carolina.

STUDY AREA AND FIELD METHODS

During July 2008, a total of 66 vegetation plots were established in the Upper Tar, Roanoke, Meherrin, Chowan, and Cashie River drainages of northeastern North Carolina (Figure 1). Focus locations within the study area included Shocco Creek Game Lands, Medoc Mountain State Park, Fishing Creek-Enfield Bottoms, Tillery Game Lands, Meherrin River Swamps, and Chowan and Cashie River Swamps. Other sites worthy of a natural community inventory within the sample region included Salmon and Wading Place Creek in Bertie County, the Wyanoke Sandhills in northwestern Gates County, and the Roanoke River Breastworks southeast of Roanoke Rapids. Target natural communities throughout the week included dry-mesic oak-hickory forests, brownwater river forests (levees and swamps), blackwater river forests (swamps, small streams, and fringing hardwoods), nonriverine swamp forests, and tidal cypress-gum swamps.

Vegetation was sampled following the North Carolina Vegetation Survey protocol described in Peet et al. (1998), and data collected conformed to established and proposed federal standards (see: Jennings et al. 2007, and Federal Geographic Data Committee 2007) http://www.fgdc.gov/standards/projects/FGDC-standards-projects/vegetation/index_html). Plots were subjectively located to best capture the composition of the target plant community. Each plot contained from 1 to 10 100 m^2 modules, the number reflecting the area of visually homogeneous vegetation available to sample. Species presence was recorded across a logarithmic sequence of subplot sizes including 0.01, 0.1, 1, 10, 100, and where sufficient modules were sampled 400 and 1000 m^2. Species cover was recorded individually for up to 4 intensively sampled modules (those containing the nested subplots), and overall cover for the plot was also recorded for species not found in intensively sampled modules. Soil samples were collected and sent to Brookside Laboratories for analysis. Soil nutrients were extracted by the Mehlich III technique. Mean soil nutrient and texture values are summarized by community in Appendix 1. Tree stems were recorded for each plot by diameter.

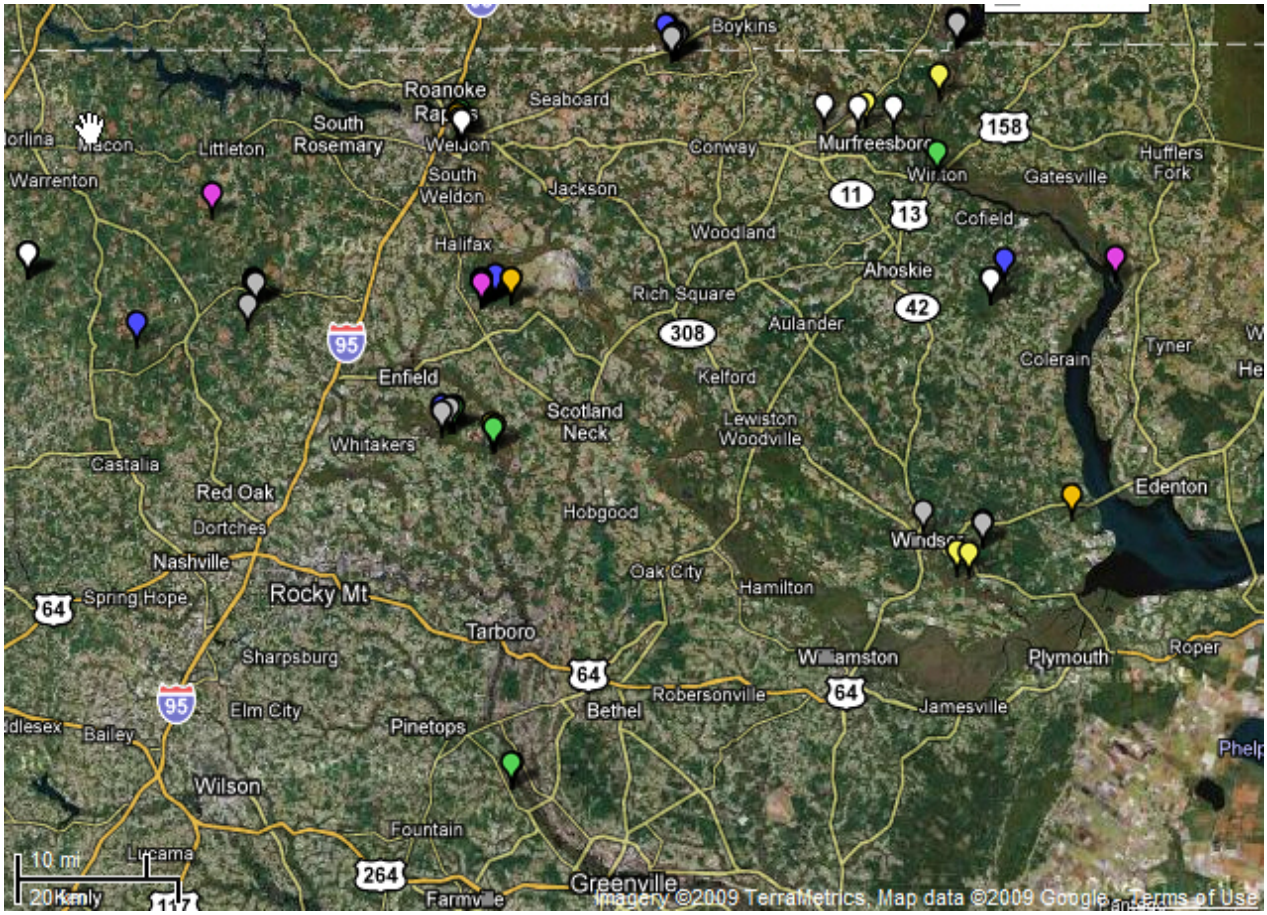

FIGURE 1. Pulse 2008B sample region and established plots: Upper Tar, Chowan, Meherrin, and Cashie River Drainages (Map courtesy of VegBank: http://vegbank.org/vegbank/views/map_userplots.jsp?latlongfile=http://www.bio.unc.edu/faculty/peet/lab/CVS/maps/89-points.csv)

VEGETATION CLASSIFICATION

Plots were classified to Association following the US National Vegetation Classification (NVC) standard (Grossman et al. 1998, Jennings et al. 2006) and the Carolina Vegetation Survey's "Vegetation of the Carolinas" project (http://cvs.bio.unc.edu/vegetation.htm). The 'Association' is defined as a group of plots having similar species composition, structure, and habitat. Plot assignment was accomplished through a qualitative assessment of vegetation composition, landscape position, hydrologic regime, and soil characteristics. The Associations were grouped into higher categories following the classification hierarchy developed by the "Vegetation of the Carolinas" project and include the Formation (e.g., Coastal Plain lowland evergreen forests and shrublands) and Ecological Group (e.g., White cedar forests) levels. The lowest, finest level of the classification scheme used was the NVC Association.

Where possible, plots were assigned to an NVC Association, identified by Association name and unique CEGL identifier. Also, a degree of fit was applied to the classification scheme based on the plot's correspondence with its assigned Association. The 5-level scale of fit we employ conforms to that the standards employed by the VegBank archive and the proposed US Federal standards (see Jennings et al. 2007): Excellent, Good, Fair, Poor (similar but wrong), and Incorrect (unambiguously wrong). In some cases it was necessary to assign a plot to more than one community because of its intermediate character. In 49 of the 76 cases (see Appendix 2), the fit was either fair or poor, suggesting a need for numerous revisions of the NVC to better represent the vegetation of this part of North Carolina.

For each community type to which we assigned plots, we provide a brief summery. We also provide hotlinks (with the CEGL codes) to the formal descriptions of these types in the National Vegetation Classification. Where the fit is weak or poor, we briefly explain the problem. Composition is shown in detail in Appendix 3 where the prevalent species (most frequent species with the number equal to the average number of species per 100 m^2 plot) are listed by constancy among plots, and mean percent cover where present. Average cover class was calculated using the geometric mean of the true cover range for each cover class. Vegetation that was novel or failed to fit well in established Associations of the National Vegetation Classification are summarized in Appendix 2. Botanical nomenclature follows Weakley 2006.

Our classification yielded assignments to 38 high-order community Associations, from 21 Ecological Groups and 12 Formations. A community characterization is presented for each Association below. Names are based on the naming system used in the U.S. National Vegetation Classification (NatureServe 2007). Names reflect species with high constancy and high cover; a "-" separates species within the same vertical strata, while a "/" separates species of different strata.

ASSOCIATIONS

I. Piedmont mesic forests

A. Felsic Dry-Mesic Forests

1) *Fagus grandifolia - Quercus rubra / Cornus florida / Polystichum acrostichoides - Hexastylis virginica* Forest (CEGL008465)

NVC Fit = Good to Excellent Plots = 089-01-1230, 089-04-1229

This is a typical mesic mixed hardwood forest of the Piedmont of the Carolinas. Both of these plots are located on the Shocco Creek Gamelands of Warren County, NC. The canopy of these stands is dominatd by a mix of mesopheytic species such as *Fagus grandifolia, Liriodendron tulipifera, Quercus rubra*, and *Quercus alba*. The understory contains *Oxydendrum arboreum, Ilex opaca, Cornus florida*, and canopy dominants. The shrub stratum is composed of *Viburnum rafinesquianum, Viburnum prunifolium*, and *Euonymus americanus*. These plots are moderately rich with herbaceous species, which include *Polysticum acrostichoides, Desmodium nudiflorum, Arisaema triphyllum, Mitchella repens, Brachyelytrum erectum,* and *Maianthemum racemosum*.

B. Mafic Dry-Mesic Forests

1) *Fagus grandifolia - Quercus rubra / Ostrya virginiana - Acer (barbatum, leucoderme) / Actaea racemosa - Sanguinaria canadensis* Forest (CEGL008466)

NVC Fit = Fair to Excellent Plots = 089-09-1227, 089-09-1228

This Association represents intermediate to mesic, basic mixed hardwood forests of the southeastern US Piedmont. Stands of this Association are generally found on northeast-facing slopes or steep ravines over mafic bedrock, such as diabase, gabbro, or amphibolite. The canopy of these two plots includes *Fagus grandifolia, Liriodendron tulipifera, Fraxinus americana*, and *Acer floridanum*. The understory and shrub

strata are composed of canapy species, as well as *Asimina triloba, Viburnum rafinesquianum, Ilex opaca*, and *Ostrya virginiana*. Characteristic herbs include *Polystichum acrostichoides, Brachyelytrum erectum, Polygonatum biflorum, Menispermum canadense*, and *Carex pensylvanica*. Plot 089-09-1227 moderately maps onto this Association because of its similarity with another Piedmont/Coastal Plain mesopytic forest type—Association 6055. The canopy diversity closely resembles the composition of Association 6055, but the lower strata resemble Association 8466.

C. Bluff Forests

1) *Quercus prinus - Quercus alba / Oxydendrum arboreum / Kalmia latifolia* Forest (CEGL004415)

NVC Fit = Good Plots = 089-07-1225

This plot is found along a steep, acidic bluff within Medoc Mountain State Park, Halifax County, NC. The canopy is dominated by *Quercus montana, Pinus taeda, Acer rubrum var. rubrum*, and *Quercus falcata*. The subcanopy is composed of Oxydendrum arboreum, while the shrub stratum is composed of *Kalmia latifolia* and *Vaccinium pallidum*. Herb diversity is low and frequency is sparse in this xeric forest, though species encountered include *Epigaea repens, Chimaphila maculata*, and seedlings of *Quercus alba* and *Nyssa sylvatica*. This Association occurs over highly acidic soils on north-facing bluffs of the Carolina Piedmont. A pH of 4.0 is observed from soil samples taken from this plot (see Appendix 1).

2) *Fagus grandifolia - Quercus alba - (Quercus prinus) / Kalmia latifolia - (Rhododendron catawbiense)* Forest (CEGL004539)

NVC Fit = Good Plots = 089-06-1225

This Association occurs on steep, north-facing bluffs in the Piedmont and Inner Coastal Plain of the North Carolina and Virginia. The plot example is located within Medoc Mountain State Park, Halifax County, NC. These heath bluffs generally occur on acidic (pH=4.4 (see Appendix 1)), thin and rocky soils that are excessively well-drained. Alternatively, these bluffs are found on relatively cooler, more protected north-facing slopes that undergo minimal evapotranspiration rates. This plot is dominated by a shrub layer of *Kalmia latifolia*. The canopy of this plot is closed (cover=90%), and composed of *Quercus montana, Fagus grandifolia, Oxydendrum arboreum, Acer rubrum*, and *Quercus rubra*. Herb species are sparse in this plot, and only occur in shrub stratum openings. Herb diversity is a mixture of acidic-tolerant and mesopyhtic species. Those encountered include *Athyrium asplenoides, Maianthemum racemosum, Polygonatum biflorum, Chamaelirium luteum, Hexastylis sp.*, and *Goodyera pubescens*.

II. Piedmont sub-xeric oak and hickory forests

A. Basic Oak – Hickory Forests

1) *Quercus alba - Quercus rubra - Carya glabra - Carya ovata / Viburnum rafinesquianum / Viola tripartita* Forest (CEGL007236)

NVC Fit = Good Plots = 089-04-1231

This Association represents mesic to dry-mesic oak-hickory forests of the southerneastern US Piedmont. It differs from other Piedmont dry-mesic oak hickory forests by the occurrence of more base-loving species. The plot example is from Shocco Creek Gamelands, Warren County, NC. Canopy species include *Quercus alba, Quercus rubra, Carya glabra, Quercus velutina,* and *Carya ovata*, with a lesser amount of *Carya cordiformis, Fraxinum americana, Juniperus virginiana,* and *Quercus stellata*. The shrub stratum is dominated by *Viburnum rafinesquianum*. The herbaceous stratum is moderately dense (cover=40%) and includes *Polygonatum biflorum, Desmodium nudiflorum, Euphorbia corrolata, Carex pensylvanica*, and *Dichanthelium boscii*.

B. Acidic Oak – Hickory Forests

1) *Quercus falcata - Quercus alba - Carya alba / Oxydendrum arboreum / Vaccinium stamineum* Forest (CEGL007244)

NVC Fit = Fair Plots = 089-06-1226

This dry oak-hickory forest is found throughout the Piedmont of the southeastern US, and typically occurs on upper slope positions over low fertility Ultisols. This plot is located on a xeric ridge within Medoc Mountain State Park, Halifax County, NC. Like most of these forests within this Association, this plot represents a second-growth seral stage. Canopy species in this middle-aged forest include *Carya alba, Quercus montana, Quercus rubra, Quercus falcata*, and *Pinus echinata*. The subcanopy is composed of canopy species, as well as *Oxydendrum arboreum, Nyssa sylvatica*, and *Diospyros virginiana*. The low and tall shrub strata are diverse, and include *Vaccinium pallidum, Callicarpa americana*, and *Viburumum*

prunifolium. The herbaceous strata is also diverse, and dense. Species encountered include *Chimaphila maculata, Galium circaezans, Desmodium nudiflorum*, and *Polygonatum biflorum*. This plot is mapped as a 'fair' fit to the NVC Association due to the range of variation in species composition. Dry site species, like *Pinus echinata* and *Vaccinium pallidum*, are found with moist-loving species, like *Juglans nigra* and *Cercis canadensis*.

2) *Quercus alba - Quercus (rubra, coccinea) - Carya (alba, glabra) / Vaccinium pallidum Piedmont Dry-Mesic* Forest (CEGL008475)

NVC Fit = Fair Plots = 089-04-1228, 089-07-1226

This is an oak-hickory forest of the southeastern US Piedmont that is typically located on subxeric sites, with a dry to intermediate soil moisture regime. Soils are relatively acidic (soil pH in these plots averages 4.3, see Appendix 1) and weathered from nutrient poor bedrock (e.g. felsic metamorphic, sedimentary rocks). These two plots are located within Medoc Mountain State Park, Halifax County, NC. The canopy is composed of *Quercus alba, Quercus montana, Carya alba,* and *Acer rubrum*. The understory includes canopy species, as well as *Nyssa sylvatica, Fagus grandifolia,* and *Cornus florida*. The shrub stratum in these forests is not well developed, but includes *Vaccinium pallidum* in the low shrub stratum and *Vaccinium arboreum* and *Vaccinium stamineum* in the high shrub stratum. Vines such as *Toxicodendron radicans, Vitis rotundifolia, Parthenocissus quinquefolia, Smilax glauca,* and *Lonicera sempervirens* are typical of these forests. Herb species diversity is low, but typical herbs include *Euphorbia corollata, Desmodium nudiflorum,* and *Chimaphila maculata*. These plots differ from the NVC-described Association due to the co-dominance of *Quercus montana* in the overstory.

III. Piedmont alluvial forests and shrublands

A. Large River Floodplain and Levee Forests

1) *Fagus grandifolia - Acer barbatum / Asimina triloba / Toxicodendron radicans / Carex blanda* Forest (CEGL007321)

NVC Fit = Fair Plots = 089-02-1229

This plot occurs along within the larger matrix of floodplain forests along the Roanoke River in western Northampton County, NC. This forest type is a minor component of small stream forests along tributaries of the Roanoke River, just south of the Fall-Line. Compositionally, this plot is similar to the NVC-described Association; however, this plot does not occur on the same geomorphic position as the Association. Instead of forming along a temporarily flooded levee adjacent to the large river, this plot occurs within a concave landform along a small tributary of the main river channel. The forest canopy is dominated by *Fagus grandifolia*, along with *Acer floridanum, Liquidambar styraciflua, Ulmus americana*, and *Carya cordiformis*. The understory is dominated by *Carpinus caroliniana*. The shrub stratum is relatively open, and contains several patches of *Aesculus sylvatica*. The herbaceous stratum is dense, and contains *Arisaema triphyllum, Euonymus americanus, Carex intumescens, Carex cumberlandensis*, and *Athyrium asplenoides*.

2) *Liquidambar styraciflua - Liriodendron tulipifera / Onoclea sensibilis* Forest (CEGL007329)

NVC Fit = Fair Plots = 089-04-1227

This Association has been described from the Inner Coastal Plain and Piedmont of the Savanna River Site in South Carolina. Plot 089-04-1227 is found along the Little Fishing Creek floodplain within Medoc Mountain State Park, Halifax County, NC. In spite of the geographical gap between the Association's type locality and the location of this plot, there are significant similarities between the two. Both plot and Association share a dominance of *Liquidambar styraciflua* in the canopy and *Carpinus caroliniana* in the subcanopy. Other canopy and subcanopy dominants found in this plot include *Quercus nigra, Quercus phellos, Quercus alba, Ulmus alata,* and *Fagus grandifolia*. The shrub stratum is dominated by canopy and subcanopy species, as well as *Viburnum dentatum, Viburnum prunifolium*, and *Cornus florida*. Herbaceous richness is high in this plot, and dominant species include *Mitchella repens, Potentilla canadensis, Dichanthelium laxiflorum, Desmodium nudiflorum*, and *Elephantopus tomentosus*. This plot occurs along a linear floodplain zone of a small stream Piedmont forest.

3) *Quercus pagoda - Quercus phellos - Quercus lyrata - Quercus michauxii / Chasmanthium latifolium* Forest (CEGL007356)

NVC Fit = Fair Plots = 089-06-1227

Floristically, this plot resembles the composition (tree and herb) of this NVC-described Association. The canopy and subcanopy are dominated by *Carya cordiformis, Quercus pagoda, Liquidambar styraciflua*, and *Carpinus caroliniana*. The herbaceous stratum is dominated by a dense cover of *Chasmanthium*

latifolium, along with other species like *Carex lurida, Elymus virginicus,* and *Passiflora lutea*. However, unlike the geomorphic position of this Association—broad, flat floodplains—this plot is located on a high levee adjacent to Fishing Creek in Edgecombe County, NC. Like most of the levee forests in the area, the canopy of this stand has experienced significant wind-throw damage from a storm 10-years earlier from sample date. The plot is only three ares in size because it was the best 'intact' portion of this vegetation type within the conservation easement tract.

B. Small Stream Floodplain Forests

1) *Liquidambar styraciflua / Lindera benzoin / Arisaema triphyllum ssp. triphyllum* Forest (CEGL004418)

NVC Fit = Poor Plots = 089-04-1230

This floodplain forest occurs along small-sized streams of the southeastern US Piedmont. The NVC describes this Association as having high constancy of *Liriodendron tulipifera* and *Liquidambar styraciflua* in the canopy, although this plot has neither. Instead, the canopy is dominated by *Carya cordiformis* and *Carpinus caroliniana*. This plot is found along a narrow, seepy strip along Shocco Creek, in Warren County, North Carolina. Due to its small drainage, this alluvial forest type includes more of an even mixture of upland and riverine species. The shrub stratum is dominated by *Lindera benzoin* and *Asimina triloba*—both indicators of nutrient-rich site conditions. The woody vine component includes *Bignonia capreolata, Lonicera japonica, Toxicondendron radicans*, and *Campsis radicans*. Herbaceous species diversity is high and includes *Onoclea sensibilis, Carex typhina, Chasmanthium latifolium, Scutellaria lateriflia*, and *Rudbeckia laciniata*.

IV. Coastal Plain mixed mesic forests

A. Eutrophic Mesic Forests

1) *Fagus grandifolia - Quercus alba - (Acer barbatum) / Mixed Herbs* Forest (CEGL007206)

NVC Fit = Fair Plots = 089-09-1225

This mixed mesic forest is associated with calcareous slopes of the Atlantic Coastal Plain, and is usually dominated by *Fagus grandifolia* and *Quercus alba* in the canopy. This plot occurs on the Coastal Plain side of the Fall Zone, southeast of Roanoke Rapids on the Roanoke River Breastworks site, and lacks the canopy dominants typically associated with this community. Instead, the canopy on this mesic slope forest is composed of *Liriodendron tulipifera, Fraxinus americana,* and *Liquidambar styraciflua*, with *Acer floridanum* dominating the subcanopy. The shrub stratum is dominated by a dense layer of *Asimina triloba*, an indicator of the nutrient-rich soil conditions of this upland slope along the Roanoke River. The diverse herb stratum includes such mesophytic species as *Polystichum acrtostichoides, Arisaema triphyllum*, and a number of *Carex spp.* The woody vine diversity is also high in this plot, and includes *Bignonia capreolata, Toxicodendron radicans* var. *radicans, Vitis vulpina*, and *Vitis rotundifolia* var. *rotundifolia*.

2) *Quercus alba - Carya glabra - Carya alba / Aesculus pavia* Forest (CEGL007225)

NVC Fit = Good Plots = 089-01-1225

This mesic oak - hickory dominated forest occurs on fertile soils, usually associated with mafic/intermediate crystalline rocks or calcareous sedimentary rocks of the Piedmont and Coastal Plain of Atlantic Coastal Plain. This plot is located on similar site conditions within the Tillery Game Lands of eastern Halifax County. The canopy is dominated by *Quercus alba* and *Liriodendron tulipifera*, with lesser amounts of *Quercus michauxii, Liquidambar syraciflua*, and *Quercus pagoda*. The subcanopy is dominated by *Carpinus caroliniana* var. *caroliniana* and *Acer rubrum*, and the shrub stratum is composed of a mixture of species including *Gaylussacia frondosa, Vaccinium fuscatum,* and *Aronia arbutifolia*. This plot is species rich (n = 115), and includes a diverse herbaceous stratum. Some typical species include *Mitchella repens, Desmodium nudiflorum, Athyrium asplenoides, Galium circaezans* var. *circaezans,* and *Geum canadense.*

B. Mesotrophic Mesic Forests

1) *Fagus grandifolia - Liriodendron tulipifera / Euonymus americana / Athyrium filix-femina ssp. asplenioides* Forest (CEGL007201)

NVC Fit = Fair Plots = 089-04-1238

This NVC Association is described from the lower Piedmont of Alabama and adjacent states and is currently not recognized in North Carolina. These forests are known to occur along small streams or coves, and typically lack an oak component within the canopy. The canopy of this plot, which occurs

along a slope forest of the Meherrin River north of Margarettsville, is composed of a similar combination of species as this Association. Canopy dominants include *Fagus grandifolia var. caroliniana* and *Liriodendron tulipifera var. tulipifera.* The small tree and shrub strata are dominated by *Carpinus caroliniana* var. *caroliniana* and *Lindera benzoin.* The herbaceous stratum is composed of *Polystichum acrostichoides, Mitchella repens, Euonymus americanus,* and *Sanguinaria canadensis*.

2) *Fagus grandifolia - Quercus alba - Liquidambar styraciflua / Magnolia grandiflora / Smilax pumila - Hexastylis arifolia* Forest (CEGL007210)

NVC Fit = Fair Plots = 089-05-1227

This mesic mixed hardwood forest Association is known from the Gulf Coastal Plain, and is currently not recognized in North Carolina. Typically, these stands contain a component of *Magnolia grandiflora* in the canopy, along with other Association nominals. This plot occurs along a north-facing mesic slope of the Embro Game Lands in Warren County, North Carolina. The canopy is dominated by *Fagus grandifolia* var. *caroliniana*, along with *Carya glabra, Nyssa sylvatica,* and *Oxydendrum arboreum*. Other small trees and shrubs include *Ilex opaca var. opaca, Asimina triloba, Cercis canadensis*, and *Ulmus alata*. The herbaceous stratum is extremely diverse, and dominants include *Dioscorea quaternata, Sanicula canadensis, Iris cristata,* and *Botrypus virginianus*.

3) *Fagus grandifolia - Quercus nigra* Forest (CEGL007211)

NVC Fit = Good Plots = 089-01-1229

This Association includes mesic hardwood forests of acidic bluffs in the Piedmont and Mid-Atlantic Coastal Plain. These forests typically lack the component of rich coves, and could include species of drier sites, such as *Quercus falacata* or xeric-tolerant *Pinus spp.* This plot is located on the Tillery Game Lands of Halifax County, North Carolina. The canopy is dominated by *Fagus grandifolia* and *Quercus alba*, along with *Liquidambar styraciflua, Nyssa sylvatica,* and *Carya alba*. The shrub and small

tree strata are dominated by *Carpinus caroliniana* var. *caroliniana, Callicarpa americana,* and *Symplocos tinctoria*. The diverse herbaceous stratum includes *Athyruim asplenoides, Arisaema triphyllum, Chasmanthium laxum, Melica mutica,* and *Polystichum acrostichoides*.

V. Coastal Plain subxeric forests

A. Acid Oak Forests

1) *Quercus falcata - Quercus alba - Carya alba / Oxydendrum arboreum / Vaccinium stamineum* Forest (CEGL007244)

NVC Fit = Fair to Good

Plots = 089-01-1236, 089-02-1227, 089-02-1232, 089-03-1225

This forest type occurs on acidic soils on upper, sub-xeric slope positions, and includes a more acid-tolerant compositon compared to other oak-hickory forests of the region. All plots mapped to this Assocation contain a significant amount of *Quercus alba, Quercus falcata, Nyssa* sylvatica, and *Oxydendrum arboreum* in the canopy and sub-canopy. The three plots that are assigned a fair fit to the Association also include a significant amount of *Fagus grandifolia* in the canopy. All plots include acid-tolerant low shrubs such as *Vaccinium pallidum*, *Vaccinium tenellum,* and *Chimaphila maculata*.

2) *Quercus alba - Quercus nigra - Quercus falcata / Ilex opaca / Clethra alnifolia - Arundinaria gigantea ssp. tecta* Forest (CEGL007862)

NVC Fit = Fair Plots = 089-05-1225

This Association has only been described for the Blackwater Ecological Preserve of coastal Virginia, and occurs on submesic bluffs of this site. The canopy of this Association is dominated by *Quercus alba, Quercus nigra,* and *Quercus falcata* and the shrub stratum is composed of dense amount of *Arundinaria tecta* and *Clethra alnifolia*. This plot, located on the Tillery Game Lands of Halifax County, North Carolina, is dominated by *Liriodendron tulipifera* and *Quercus alba* in the canopy, with a diverse subcanopy of *Cornus florida, Quercus nigra, Carya glabra,* and *Acer rubrum*. Although both shrub species nominals are found here, neither occurs as densely as described for the Association. The herbaceous component of this plot is extremely diverse, and includes species such as *Athyruim asplenioides, Mithcella repens, Arisaema triphyllum, Chasmanthium laxum,* and *Desmodium nudiflorum*.

B. Pine – Oak Forests

1) *Pinus taeda - Quercus (alba, falcata, stellata)* Forest [Placeholder] (CEGL004766)

NVC Fit = Fair Plots = 089-09-1232

This Association of seral *Pinus taeda - Quercus spp.* forests of the Virginia and Maryland Coastal Plain has not been described for North Carolina. The canopy of this successional forest along upper slopes of Chinkapin Creek in Hertford County North Carolina is dominated by *Acer rubrum, Pinus taeda, Quercus alba, Quercus falcata*, and *Carya glabra*. This seral stage probably represents an earlier stage of the *Quercus falcata - Quercus stellata - Carya alba / Vaccinium spp*. Coastal Plain Forest (CEGL007246). Acidic-tolerant low shrubs dominate the shrub canopy of this plot. Species include *Vaccinium pallidum, Vaccinium tenellum,* and *Vaccinium stamineum*. The herbaceous stratum is not as diverse in this plot when compared to other Coastal Plain subxeric forests sampled during this study.

VI. Coastal Plain fire-maintained woodlands

A. Xeric Longleaf Pine Sand Barrens

1) *Pinus palustris / Quercus laevis - Quercus incana / Gaylussacia dumosa - Gaylussacia (baccata, frondosa)* Woodland (CEGL003592)

NVC Fit = Fair to Excellent Plots = 089-01-1233, 089-01-1235, 089-04-1235

This longleaf pine / scrub oak sandhill community occurs well north of the range of *Aristida stricta* and lacks many of the southerly species of dry site longleaf barrens. These plots occur on the Wyanoke Sandhills site of northern Gates County, North Carolina. The canopies are dominated by a variable mixture of pines--*Pinus serotina, Pinus palustris,* and *Pinus taeda*--occurring with *Quercus laevis*. Plot 089-04-1235 was assigned a fair fit with the NVC Association due to its distinct combination of five co-dominant pine species in the overstory--the three previously mentioned plus *Pinus echinata* and *Pinus*

rigida. The shrub stratum within these plots is dominated by *Gaylussacia frondosa*, *Vaccinium pallidum,* and *Morella cerifera*. The herbaceous stratum in these sites is typically sparse.

VII. Coastal Plain brownwater river forests

A. Levee and Floodplain Forests

1) *Quercus laurifolia - Quercus michauxii - Liquidambar styraciflua / Carpinus caroliniana* Forest (CEGL004678)

NVC Fit = Fair to Good Plots = 089-01-1227, 089-04-1225, 089-09-1226

This brownwater river floodplain forest occurs on terraces and ridges of the Atlantic and East Gulf Coastal Plain. These sites do not include levee forests; instead they represent more stable geomorphic positions within the floodplain landscape. These plots occur along Fishing Creek, in Halifax County, North Carolina. The canopy of these plots is dominated by a mixture of *Liquidambar styraciflua, Acer rubrum, Quercus shumardii* var. *shumardii, Quercus laurifolia,* and *Quercus pagoda*. *Carpinus caroliniana* var. *caroliniana* is a constant subcanopy species in these plots. Plot 089-04-1225 is assigned a fair fit to this Association because of its high diversity, and mixture of mesophytic upland species; plot 089-09-1226 is assigned a fair fit because of the presence of species more typically associated with wetter floodplain positions.

2) *Celtis laevigata - Fraxinus pennsylvanica - Acer negundo - (Juglans nigra) / Asimina triloba / Carex grayi* Forest (CEGL004740)

NVC Fit = Poor Plots = 089-04-1226

This Association is a high levee of brownwater rivers of the Atlantic Coastal Plain. The canopy of these sites is typically dominated by a mixture of *Acer negundo, Celtis laevigata, Fraxinus pennsylvanica, Liquidambar styraciflua*, and *Ulmus americana*. This plot occurs along Fishing Creek in Halifax County,

North Carolina. Although it occurs along the same geomorphic position as the Association, its canopy composition is distinct. The canopy and subcanopy of this plot is dominated by *Ilex opaca* var. *opaca*, occurring with *Carya cordiformis, Quercus michauxii, Celtis laevigata,* and *Ulmus rubra*. The shrub and small tree strata are composed of *Carpinus caroliniana* var. *caroliniana* and *Asimina triloba*, along with a high density of the invasive, exotic *Ligustrum sinense*. The herbaceous stratum includes graminoids *Chasmanthium latifolium, Festuca subverticillata,* and *Elymus virginicus*, as well as forbs such as *Boehmeria cylindrica* and *Passiflora lutea* var. *lutea*.

3) *Quercus michauxii / Carpinus caroliniana - Ilex opaca / Leucothoe racemosa* Forest (CEGL007737)

NVC Fit = Fair to Good Plots = 089-02-1226, 089-02-1230, 089-04-1239

This alluvial forest occurs between the edges of brownwater river floodplains and upland forest slopes in the Atlantic Coastal Plain. Soils are described as silty clays with organic matter present. These plots are composed of a canopy with *Quercus pagoda, Ilex opaca* var. *opaca, Liquidambar styraciflua*, *Quercus michauxii* and *Acer rubrum* var. *rubrum*. Small trees and shrubs include *Carpinus caroliniana*, *Ilex decidua* var. *decidua,* and *Viburnum prunifolium*. Constant herbaceous species include *Mitchella repens* and *Euonymus americanus*. Woody vines are abundant in these forests, and include *Toxicodendron radicans* var. *radicans*, *Bignonia capreolata, Campsis radicans,* and *Smilax bona-nox.* Overall, these plots fit well with the NVS-described Association. Plot 089-02-1230 is categorized as a fair fit because of the dominance of *Ulmus americana* in the canopy.

4) *Fraxinus pennsylvanica - Ulmus americana / Carpinus caroliniana / Boehmeria cylindrica* Forest (CEGL007806)

NVC Fit = Fair Plots = 089-03-1229, 089-04-1240

This alluvial forest type is found on medium-sized levees of brownwater rivers in the Piedmont and Atlantic and Gulf Coastal Plains. Because this type is found on lower geomorphologic positions, it can be distinguished from the high levee (CEGL004740) by the absence of mesophytic species like *Aesculus sylvatica* and *Lindera benzoin*, and occurrence of species with wet affinities like *Nyssa aquatica* and *Carya aquatica*. The canopies of these plots are dominated by *Fraxinus pennsylvanica, Platanus occidentalis var. occidentalis,* and *Liquidambar styraciflua*. Other canopy species include *Ulmus americana, Nyssa aquatica, Acer rubrum* var. *trilobum*, and *Nyssa biflora*. The plot from the Roanoke River Breastworks site (089-03-1229) also contains *Populus heterophylla* in the canopy. The shrub stratum is not well-defined in these plots, but the woody vine stratum is. Species include *Toxicodendron radicans* var. *radicans, Smilax rotundifolia, Campsis radicans,* and *Bignonia capreolata*. A dense layer of *Boehmeria cylindrica* is characteristic of the herbaceous stratum of these plots. Other herbs include *Persicaria spp., Sarururus cernuus, Chasmanthium latifolium*, and *Lycopus virginicus*. Canopy composition of these plots is distinct from the canopy description for the NVC-described Association.

5) *Fagus grandifolia - Liquidambar styraciflua - Quercus (michauxii, nigra)* Forest (CEGL007866)

NVC Fit = Fair Plots = 089-04-1233

This alluvial levee and terrace forest is found along brown water rivers of the Atlantic Coastal Plain, and is typically dominated by *Fagus grandifolia, Liquidambar styraciflua*, *Quercus michauxii,* and *Quercus nigra*. This plot is located along Wading Place Creek in Bertie County, North Carolina, and is dominated by *Fagus grandifolia* var. *caroliniana*, *Quercus pagoda, Liriodendron tulipifera* var. *tulipifera*, *Quercus falcata,* and *Liquidambar styraciflua*. The subcanopy is dominated by aforementioned species and *Carpinus caroliniana* var. *caroliniana, Ilex opaca* var. *opaca*, and *Acer rubrum* var. rubrum. Herbaceous species include *Athyrium asplenoides, Euonymus americanus*, and *Michella repens*. The distinction between oak canopy species between this plot and the NVC-described Association explains the assignment of fair fit to this plot.

6) *Quercus lyrata - Carya aquatica* Forest (CEGL007397)

NVC Fit = Excellent Plots = 089-01-1226

This alluvial forest is dominated by a mixture of *Quercus lyrata* and *Carya aquatica* and represents the lowest geomorphic position of the bottomland hardwood zone. This plot occurs along Fishing Creek, in Halifax County, North Carolina. The canopy includes Association nominals, as well as *Liquidambar styraciflua, Fraxinus pennsylvanica,* and *Acer rubrum* var. *trilobum*. The herbaceous stratum is sparse, but includes *Carex intumescens, Carex typhina, Iris virginica,* and *Arundinaria tecta.*

B. Brownwater Swamp Forests

1) *Quercus lyrata - Quercus laurifolia - Taxodium distichum / Saururus cernuus* Forest (CEGL004735)

NVC Fit = Fair Plots = 089-03-1228, 089-06-1228

This Atlantic Coastal Plain alluvial forest of sloughs and backswamp edges typically is composed of a mixture of cypress-gum and bottomland hardwood species. These plots contain a mixture of *Quercus lyrata, Fraxinus pennsylvanica, Liquidambar styraciflua, Nyssa aquatica, Taxodium distichum*, and *Populus heterophylla* in the canopy. The shrub and small tree strata are open in these forests. The herbaceous stratum is sparse in plot 089-06-1228 and dense with *Cephalanthus occidentalis* in 089-03-1228. The only constant herb species is *Boehmeria cylindrica.* The NVC describes this Association having a well-developed herbaceous stratum. Except for the density of *Cephalanthus occidentalis* in the one plot, this was not the case in these examples.

2) *Taxodium distichum - Nyssa aquatica - Acer rubrum / Itea virginica* Forest (CEGL007422)

NVC Fit = Poor Plots = 089-05-1226

This flooded swamp forest Association is described for the Gulf Coastal Plain to the Savannah River Site and is not known to occur in North Carolina. The canopy of these forests is dominated by

Taxodium distichum and *Nyssa aquatica*, and the shrub stratum is dominated by *Itea virginica* and *Clethra alnifolia*. The dominant herb within these swamps is *Saururus cernuus* and *Boehmeria cylindrica*. This plot represents a brownwater swamp forest of the Conoconnara Swamp in Halifax County, North Carolina. Its canopy is dominated by *Acer rubrum* var. *rubrum, Ulmus americana*, *Fraxinus pennsylvanica,* and *Nyssa aquatica*. The herbaceous stratum is dominated by a dense layer of *Saururus cernuus* and *Sparganium americanum*.

3) *Taxodium distichum - Nyssa aquatica / Fraxinus caroliniana* Forest (CEGL007431)

NVC Fit = Fair to Excellent Plots = 089-01-1231, 089-04-1236, 089-07-1228

This Association covers wet forests of brownwater river floodplains of the outer Atlantic Coastal Plain dominated by a combination of *Nyssa aquatica, Taxodium distichum*, and *Taxodium ascendens.* The herbaceous stratum is typically very sparse in these brownwater cypress-gum swamps. The canopy and subcanopy of these plots are dominated by *Nyssa aquatica, Fraxinus caroliniana, Ulmus americana, Acer rubrum* var. *rubrum*, and *Taxodium distichum*. Plot 089-04-1236 and 07-1228 are characterized as having a fair fit to the Association because of the absence of *Taxodium* in the canopy.

VIII. Coastal Plain blackwater river forests

A. Blackwater Swamp Forests

1) *Nyssa aquatica - Nyssa biflora* Forest (CEGL007429)

NVC Fit = Fair to Good Plots = 089-02-1225, 089-06-1231

This forest is found along shallow borders of alluvial swamps and is dominated by a canopy of *Nyssa aquatica* and *Nyssa biflora*. Generally, these forests do not contain substantial *Taxodium distichum*. There is a poor understanding about the range of this forest type and the relationship between these naturally occurring communities and swamp forests dominated by gums that have had cypress logged out. The two plots sampled in this study occur along Fishing Creek in Halifax County and on the Cashie River in Bertie County, North Carolina. They are dominated by *Acer rubrum* var. rubrum, *Nyssa biflora, Nyssa aquatica, Quercus lyrata, Fraxinus profunda,* and *Liquidambar styraciflua.* The shrub and small tree strata are diverse and composed of *Arundinaria tecta, Alnus serrulata, Itea virginica, Cyrilla racemiflora, Clethra acuminata, Lyonia ligustrina,* and *Fraxinus caroliniana*. Characteristic herbs include *Saururus cernuus, Lobelia cardinalis,* and *Carex spp.* The Fishing Creek plot (089-02-1225) has other bottomland species typical of other alluvial types present in its canopy--*Quercus lyrata* and *Populus heterophylla*--which distinguish it from the NVC-described Association.

2) *Taxodium distichum - Nyssa aquatica - Nyssa biflora / Fraxinus caroliniana / Itea virginica* Forest (CEGL007432)

NVC Fit = Good

Plots = 089-04-1232, 089-06-1230, 089-06-1232 089-09-1230

These blackwater stream/river swamp forests are found in the Atlantic Coastal Plain, and are dominated by a combination of *Taxodium distichum, Nyssa aquatica, Nyssa biflora*, and *Taxodium ascendens* in the canopy. The four plots of this Association sampled during this survey are found along the Cashie and Meherrin Rivers. The canopy and subcanopy are dominated by *Nyssa biflora, Nyssa aquatica, Taxodium distichum, Liquidambar styraciflua, Fraxinus caroliniana*, *Acer rubrum* var. *trilobum*, and *Carpinus caroliniana* var. *caroliniana*. Shrub diversity is high in these plots, and includes *Eubotrys racemosa, Lyonia ligustrina, Alnus serrulata, Cyrilla racemiflora, Ilex verticillata,* and *Itea virginica*. Characteristic herbs include *Saururus cernuus, Boehmeria cylindrica, Peltandra virginica, Osmunda regalis var. spectabilis*, and *Woodwardia areolata*.

B. Blackwater Fringing Hardwood Forests

1) *Liquidambar styraciflua - Quercus laurifolia / Magnolia virginiana / Carex lonchocarpa* Forest (CEGL004631)

NVC Fit = Fair Plots = 089-03-1226, 089-03-1227

This Association occurs on low seepage areas of the southeastern Atlantic Coastal Plain, and has previously not been described for North Carolina. The soils in this forest are constantly saturated clay loams with organic or peat development. Canopy and subcanopy dominants include Association nominals, as well as *Acer rubrum, Carpinus caroliniana,* and *Ilex opaca* var. *opaca.* These plots are located along Conoconnara Swamp in the Tillery Game Lands of eastern Halifax County, North Carolina. They are dominated by a diverse canopy of *Acer rubrum* var. *rubrum, Liriodendron tulipifera* var. *tulipifera, Fraxinus pennsylvanica, Quercus laurifolia, Nyssa biflora, Liquidambar styraciflua,* and *Magnolia virginiana.* The shrub and vine strata are composed of *Eubotrys racemosa, Arundinaria tecta, Parthenocissus quinquefolia, Morella caroliniensis, Smilax rotundifolia,* and *Vaccinium fuscatum*. The herbaceous layer in these seeps is highly diverse, and constant species includes *Arisaema triphyllum, Leersia virginica, Euonymus americanus, Woodwardia areolata,* and *Saururus cernuus*.

2) *Taxodium distichum - Fraxinus pennsylvanica - Quercus laurifolia / Acer rubrum / Saururus cernuus* Forest (CEGL007719)

NVC Fit = Fair to Good Plots = 089-03-1230, 089-04-1234, 089-04-1237, 089-09-1231

This bottomland cypress - hardwood forest of Atlantic and Gulf Coastal Plain occurs on sloughs and alluvial flats of large, brownwater rivers. This Association represents a transition between lower-geomorphic positioned cypress-gum swamps (e.g. CEGL007431), and brownwater levees. Like cypress-gum swamps, the herbaceous diversity of these transition forests is generally low; however, the canopy of these forests represents a mixture of brownwater levee and cypress-gum species. These plots sampled during this study occur along Wading Place and Salmon Creek in Bertie County, North Carolina, and the Meherrin River in Northampton County, North Carolina. The canopy of these plots is co-dominated by *Taxodium distichum, Acer rubrum* var. *rubrum, Nyssa biflora, Liquidambar styraciflua, Ulmus americana, Ulmus alata,* and *Fraxinus pennsylvanica.* The vine diversity is high in these plots, and includes *Toxicondendron radicans* var. *radicans, Bignonia capreolata, Smilax rotundifolia,* and *Parthenocissus quinquefolia*. Herbacous species diversity is low, but includes diagnostic species of this Association such as *Boehmeria cylindrica* and *Saururus cernuus*. The diversity of herbaceous species and presence of terrace-type woody species (e.g. *Fagus grandifolia* and *Ilex opaca* var. *opaca*) in plot 089-04-1234 explains the fair fit assignment to the NVC Assocation.

IX. Coastal Plain alluvial shrub and herb communities

A. Riparian Submerged Aquatic Vegetation

1) *Nuphar lutea ssp. sagittifolia* Herbaceous Vegetation (CEGL004328)

NVC Fit = Good Plots = 089-09-1229

This submerged aquatic vegetation Association of floating mats of *Nuphar sagittifolia* is found along blackwater rivers, streams, and lakes of the Atlantic Coastal Plain. Typically, *Nuphar sagittifolia* is monospecific in these sites, but occasional wetland species may be found on exposed logs or riverbanks, overhanging these floating zones. This plot is located on the Meherrin River, outside of Murfreesboro, Northt Carolina, and contains dense cover of the Association nominal, as well as dense cover of *Leerisa spp.*, and overhanging *Quercus lyrata*.

X. Coastal Plain lowland deciduous forests

A. Coastal Plain Hardwood Flats

1) *Quercus michauxii - Quercus pagoda / Clethra alnifolia - Leucothoe axillaris* Forest (CEGL007449)

NVC Fit = Poor to Fair Plots = 089-01-1228, 089-02-1228, 089-07-1227

This wet hardwood forest Association occurs on flats with nonalluvial mineral soil, and is dominated by oak species in the canopy. Hardwood flats occupy similar a geomorphic position as nonriverine swamp forests, but typically do not contain substantial coverage of cypress or gum species in

the canopy. These three plots sampled during this study are found on the Conoconnara Swamp of the Tillery Game Lands (Halifax County, North Carolina) and Enfield Bottomlands along Fishing Creek (Edgecombe County, North Carolina). Although they occupy broad flats, and have a species composition approaching this Association, neither plot fits well with the described Association. The dominant canopy species within these plots includes *Quercus alba, Quercus phellos,* and *Liquidambar styraciflua*. Minor canopy species include *Quercus michauxii, Quercus nigra, Quercus pagoda, Nyssa biflora, Acer rubrum* var. *trilobum,* and *Liriodendron tulipifera* var. *tulipifera*. The shrub strata is composed of *Clethra alnifolia, Arundinaria tecta,* and *Vaccinium fuscatum*; the vine strata is well-developed in these plots, and includes *Vitis rotundifolia* var. *rotundifolia*, *Toxicodendron radicans* var. *radicans, Parthenocissus quinquefolia, Smilax glauca,* and *Smilax rotundifolia*. The herbaceous stratum is not described for this Association. These plots are dominated by *Chasmanthium laxum, Mitchella repens, Woodwardia areolata, Osmunda regalis var. spectabilis,* and *Leersia virginica*.

B. Coastal Plain Nonriverine Swamp Forests

1) *Taxodium ascendens / (Nyssa biflora) / Leucothoe racemosa - Lyonia lucida - Morella cerifera* Depression Forest (CEGL007420)

NVC Fit = Good Plots = 089-01-1232

This forest Association occurs primarily in permanently wet, peaty depressions of blackwater river systems of the Atlantic and Gulf Coastal Plain. These forests usually have a well-developed canopy of *Taxodium ascendens* or *Nyssa biflora*, and can also have a well-developed shrub stratum composed of species less acid-tolerant than pocosins. Like pocosins, these forests occur in deep, closed basins with little to no water flow. This plot occurs in the Wyanoke Sandhills of Gates County, North Carolina. The canopy is dominated by *Pinus taeda, Acer rubrum* var. *trilobum, Pinus serotina,* and *Nyssa biflora*. The shrub stratum is dense, and composed of *Vaccinium formosum, Vaccinium fuscatum, Eubotrys racemosa*, and *Lyonia ligustrina*. Herb diversity is low in this plot, and includes only one species--*Woodwardia virginica*.

XI. Coastal Plain ponds and marshes

A. Depression Pond Shrublands

1) *Woodwardia virginica / Sphagnum cuspidatum* Herbaceous Vegetation (CEGL004475)

NVC Fit = Fair Plots = 089-01-1234

This Association is characterized by a dominance of acid-tolerant boggy species, an absence of trees and shrubs, and an herbaceous zone covered with *Sphagnum spp.* They typically occur over sandy terrain, and experience extreme seasonal fluctuations in water levels. This plot occurs on the Wyanoke Sandhills of Gates County, North Carolina. It is dominated by a dense cover of *Sphagnum spp.* and *Dulichium arundinaceum* var. *arundinaceum*. None of the herbaceous vascular species described by the NVC for this Association are found in this plot.

XII. Freshwater tidal woodlands

A. Tidal Hardwood Swamps

1) *Nyssa biflora - Nyssa aquatica - Taxodium distichum / Saururus cernuus* Forest (CEGL004696)

NVC Fit = Fair to Good Plots = 089-02-1231, 089-05-1228, 089-06-1229

These cypress-gum swamps occur along Coastal Plain rivers that are significantly influenced by regular or irregular tidal flucutations. They are dominated by a combination of *Nyssa biflora, Nyssa aquatica,* and *Taxodium distichum*. The species composition of these tidal forests blurs the line between blackwater and brownwater riverine systems, with species of both types dominating these swamps. The plots sampled during this study are located on the Chowan River, far upstream from where it dumps into the Albemarle Sound. However, even upstream the banks of the Chowan are heavily influenced by wind-tidal fluctuations throughout the year. The canopy of these plots is dominated by *Taxodium distichum, Nyssa aquatica, Nyssa biflora,* and *Acer rubrum* var. *rubrum*. The subcanopy includes canopy species as well as *Fraxinus caroliniana*. The shrub stratum is well-developed in these plots, and includes *Alnus serrulata, Clethra alnifolia, Cornus foemina, Eubotrys racemosa, Itea virginica,* and *Lyonia ligustrina*. Herb diversity is moderately diverse in these plots, and includes *Boehmeria cylindrica, Saururus cernuus, Lobelia cardinalis*, and *Carex lupulina*. The variation in composition between these plots and the NVC-described Assocation explains the fair fit assignment.

CONCLUSIONS AND FUTURE DIRECTIONS

Collected plots were assigned to 38 vegetation types. We sampled a variety of communities unique to this portion of North Carolina, including xeric longleaf pine sand barrens. One of these plots included five species of *Pinus*. We also sampled broader-reaching upland and wetland communities that will help capture their full range of variation within the North Carolina Piedmont and Coastal Plain. In some cases the plots mapped well onto established types, but for the most part our plots deviated from the previous descriptions suggesting a need for substantial refinement of the NVC. Of the 66 total plots sampled, 35 marginally fit within the classification, and 4 seemed to not fit at all. Appendix 2 provides a summary table for identified groups that do not fit well into the current NVC schema. As illustrated in the above descriptions, much work is needed to refine hydric to mesic vegetation communities within the blackwater, brownwater and tidal riverine systems of northeastern North Carolina. Additional plots established in this region of the state will be needed to increase our understanding of these undersampled communities. For now, however, these current plots will provide a framework for future classification projects undertaken in the study area.

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Appendix 1: Soil Nutrient and Texture Values Summarized by Association. Specific soil variables include pH, Organic Matter (%), exchangeable cations (Ca, Mg, K, Na, Mn; ppm), texture class (clay, silt, sand; %).

Community Type	pH	Organic	Calcium	Magnesium	Potassium	Sodium	Manganese	Sand %	Silt %	Clay %
CEGL003592	4.1	1	137	31	12	25	2	96	2	2
CEGL004328	4.4	18	1137	149	99	57	143	34	50	15
CEGL004415	4.0	9	190	50	48	34	3	54	34	12
CEGL004418	5.1	2	346	93	45	37	170	85	7	8
CEGL004475	3.6	79	466	100	20	40	20	76	23	1
CEGL004539	4.4	5	192	56	55	28	27	46	43	10
CEGL004631	4.6	21	773	121	69	71	14	48	45	8
CEGL004678	4.6	7	493	110	54	38	65	39	44	17
CEGL004696	5.1	55	1360	252	68	97	27	66	29	5
CEGL004735	4.4	8	511	141	71	41	20	20	39	41
CEGL004740	4.3	6	492	126	72	35	188	22	48	30
CEGL004766	4.2	4	222	50	28	34	5	29	63	8
CEGL007201	4.6	6	467	73	67	33	8	70	23	7
CEGL007206	6.0	4	1890	215	85	33	124	81	14	4
CEGL007210	4.9	5	509	126	72	33	103	30	57	13
CEGL007211	4.5	5	313	46	32	35	58	65	29	7
CEGL007224	4.5	3	240	51	40	31	6	62	27	11
CEGL007225	4.6	4	381	74	55	35	13	73	21	6
CEGL007236	4.6	4	485	129	61	27	53	68	26	7
CEGL007244	5.3	22	1062	146	73	37	214	53	38	9
CEGL007321	4.4	5	221	66	42	44	40	21	62	17
CEGL007329	4.9	4	367	87	45	34	89	60	29	11
CEGL007356	4.3	2	248	59	42	30	34	83	10	7
CEGL007397	4.4	8	614	195	101	41	23	20	28	52
CEGL007420	3.6	12	130	39	38	36	1	96	4	1
CEGL007422	4.2	13	403	74	55	48	9	40	51	9
CEGL007429	4.7	27	1001	209	95	67	50	46	29	25
CEGL007431	4.6	6	704	139	80	41	29	20	43	37
CEGL007432	4.8	50	1153	194	75	69	38	67	28	4
CEGL007449	4.4	4	272	119	47	37	90	55	34	11
CEGL007719	4.6	20	850	149	85	58	44	40	34	26
CEGL007737	4.5	7	490	133	65	49	109	35	41	24
CEGL007806	4.7	5	669	144	54	32	151	23	47	30
CEGL007849	3.9	4	162	56	26	33	2	49	45	6
CEGL007862	4.9	4	657	95	52	28	53	75	24	1
CEGL007866	4.5	4	225	71	39	30	58	62	30	8
CEGL008465	4.8	6	556	108	67	32	96	59	29	12
CEGL008466	5.4	4	844	195	54	31	143	64	25	11
CEGL008475	4.3	6	203	47	43	30	34	54	36	10

Appendix 2: Association Groups with Poor or Fair Fit

CEGL	# of Plots	NVC Fit	Reason
Fagus grandifolia - Quercus rubra / Ostrya virginiana - Acer (barbatum, leucoderme) / Actaea racemosa - Sanguinaria canadensis Forest (CEGL008466)	2	Fair to Excellent	Compositionally, this plot resembles a gradient between Association 8466 and 6055
Quercus falcata - Quercus alba - Carya alba / Oxydendrum arboreum / Vaccinium stamineum Forest (CEGL007244)	1	Fair	Plot contains mixture of mesic species mixed in with more typic dry site species
Quercus alba - Quercus (rubra, coccinea) - Carya (alba, glabra) / Vaccinium pallidum Piedmont Dry-Mesic Forest (CEGL008475)	2	Fair	Co-dominance of *Quercus montana* in the overstory of this plot
Fagus grandifolia - Acer barbatum / Asimina triloba / Toxicodendron radicans / Carex blanda Forest (CEGL007321)	1	Fair	Plot is found on a different geomorphic position than Association
Liquidambar styraciflua - Liriodendron tulipifera / Onoclea sensibilis Forest (CEGL007329)	1	Fair	The Association has previously only been described from brownwater floodplain forests of the Savanna River Site, in wesetern South Carolina
Quercus pagoda - Quercus phellos - Quercus lyrata - Quercus michauxii / Chasmanthium latifolium Forest (CEGL007356)	1	Fair	Plot is found on a different geomorphic position than Association
Liquidambar styraciflua / Lindera benzoin / Arisaema triphyllum ssp. triphyllum Forest (CEGL004418)	1	Poor	Plot lacks Association's canopy nominal species
Fagus grandifolia - Quercus alba - (Acer barbatum) / Mixed Herbs Forest *(CEGL007206)*	1	Fair	Plot lacks Association's canopy nominal species
Fagus grandifolia - Liriodendron tulipifera / Euonymus americana / Athyrium filix-femina ssp. asplenioides Forest (CEGL007201)	1	Fair	Association not currently recognized in North Carolina
Fagus grandifolia - Quercus alba - Liquidambar styraciflua / Magnolia grandiflora / Smilax pumila - Hexastylis arifolia Forest (CEGL007210)	1	Fair	Association not currently recognized in North Carolina; plot lacks *Magnolia grandiflora*, a diagnostic species for this Assocation
Quercus falcata - Quercus alba - Carya alba / Oxydendrum arboreum / Vaccinium stamineum Forest (CEGL007244)	4	Fair to Good	The significant dominance of *Fagus grandifolia* in the canopy of fair fit plots
Quercus alba - Quercus nigra - Quercus falcata / Ilex opaca / Clethra alnifolia - Arundinaria gigantea ssp. tecta Forest (CEGL007862)	1	Fair	This Association has not been described forNorth Carolina; shrub nominals do not occur as dense in the plot as they do in the Association
Pinus taeda - Quercus (alba, falcata, stellata) Forest [Placeholder] *(CEGL004766)*	1	Fair	Association needs more floristic information across its range
Pinus palustris / Quercus laevis - Quercus incana / Gaylussacia dumosa - Gaylussacia (baccata, frondosa) Woodland (CEGL003592)	3	Fair to Excellent	The high diversity (5) of *Pinus* in the canopy

CEGL	# of Plots	NVC Fit	Reason
*Quercus laurifolia - Quercus michauxii - Liquidambar styraciflua / Carpinus caroliniana F*orest (CEGL004678)	3	Fair to Good	Compostion reflects gradient between upland forests and wetter bottomland sites
Celtis laevigata - Fraxinus pennsylvanica - Acer negundo - (Juglans nigra) / Asimina triloba / Carex grayi Forest (CEGL004740)	1	Poor	Canopy compostion is drastically different between the plot and Association
Quercus michauxii / Carpinus caroliniana - Ilex opaca / Leucothoe racemosa Forest (CEGL007737)	3	Fair to Good	Dominance of *Ulmus americana* in the canopy of the plot
Fraxinus pennsylvanica - Ulmus americana / Carpinus caroliniana / Boehmeria cylindrica Forest (CEGL007806)	2	Fair	Minor distinctions in canopy composition between the plots and the Association
Fagus grandifolia - Liquidambar styraciflua - Quercus (michauxii, nigra) Forest (CEGL007866)	1	Fair	Distinctions in oak canopy composition between the plot and the Association
Quercus lyrata - Quercus laurifolia - Taxodium distichum / Saururus cernuus Forest (CEGL004735)	2	Fair	The herbaceous stratum is not well-developed in these plots
Taxodium distichum - Nyssa aquatica - Acer rubrum / Itea virginica Forest (CEGL007422)	1	Poor	This Association is not described for North Carolina; canopy and shrub strata are widely distinct between this plot and the Assocation
Taxodium distichum - Nyssa aquatica / Fraxinus caroliniana Forest (CEGL007431)	3	Fair to Excellent	The absence of *Taxodium distichum* in the canopy
Nyssa aquatica - Nyssa biflora Forest (CEGL007429)	2	Fair to Good	Canopy compostion is slightly different between one of the plots and the NVC Association
Liquidambar styraciflua - Quercus laurifolia / Magnolia virginiana / Carex lonchocarpa Forest (CEGL004631)	1	Fair	This Association is poorly described in the northern part of its range (North Carolina)
Taxodium distichum - Fraxinus pennsylvanica - Quercus laurifolia / Acer rubrum / Saururus cernuus Forest (CEGL007719)	4	Fair to Good	Plot contains mixture of mesic species mixed in with more typic wet site species
Quercus michauxii - Quercus pagoda / Clethra alnifolia - Leucothoe axillaris Forest (CEGL007449)	3	Poor to Fair	Canopy composition in these plots is different than the described Association's canopy
Woodwardia virginica / Sphagnum cuspidatum Herbaceous Vegetation (CEGL004475)	1	Fair	Species composition is different between the Association and plot
Nyssa biflora - Nyssa aquatica - Taxodium distichum / Saururus cernuus Forest (CEGL004696)	3	Fair to Good	Composition of this Association is not well understood, nor is its compositional relationship with non-tidal cypress-gum swamps

Appendix 3: Floristic tables for Association Groups

I.A.1: ***Fagus grandifolia - Quercus rubra / Cornus florida / Polystichum acrostichoides - Hexastylis virginica*** **Forest (CEGL008465)**

Floristic table for CEGL008465

Number of Plots:	2		
Average Species Richness:	73	Species listed:	103
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	79	due to ties	

Species	Constancy	Avg Cover Class
Fagus grandifolia var. caroliniana	100%	8
Oxydendrum arboreum	100%	6
Ilex opaca var. opaca	100%	6
Liriodendron tulipifera var. tulipifera	100%	6
Cornus florida	100%	4
Quercus alba	100%	4
Polystichum acrostichoides	100%	4
Liquidambar styraciflua	100%	4
Carya glabra	100%	4
Acer rubrum var. rubrum	100%	4
Carpinus caroliniana var. caroliniana	100%	2
Euonymus americanus	100%	2
Dioscorea villosa	100%	2
Smilax glauca	100%	2
Desmodium nudiflorum	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Parthenocissus quinquefolia	100%	2
Arisaema triphyllum	100%	2
Mitchella repens	100%	2
Fraxinus americana	100%	2
Epifagus virginiana	100%	2
Toxicodendron radicans var. radicans	100%	2
Nyssa sylvatica	100%	2
Brachyelytrum erectum	100%	2
Maianthemum racemosum ssp. racemosum	100%	2
Vaccinium pallidum	100%	2
Uvularia	100%	2
Athyrium asplenioides	100%	2
Bignonia capreolata	100%	2
Carex	100%	2
Smilax rotundifolia	100%	2
Cercis canadensis var. canadensis	100%	2
Rhododendron periclymenoides	100%	1
Sanicula canadensis var. canadensis	100%	1
Rubus	100%	1
Chimaphila maculata	100%	1
Viburnum prunifolium	100%	1
Goodyera pubescens	100%	1
Lonicera sempervirens	100%	1
Galium circaezans var. circaezans	100%	1
Quercus velutina	100%	1
Pinus taeda	50%	5
Quercus rubra	50%	5
Quercus rubra var. rubra	50%	3
Vitis	50%	2
Viburnum rafinesquianum	50%	2
Medeola virginiana	50%	2
Sceptridium dissectum	50%	2
Sceptridium dissectum	50%	2
Quercus michauxii	50%	2
Unknown	50%	2
Solidago caesia	50%	2
Sassafras albidum	50%	2
Polygonatum biflorum	50%	2
Antennaria plantaginifolia	50%	2
Hamamelis virginiana	50%	2
Aralia spinosa	50%	2
Asimina triloba	50%	2
Corylus cornuta var. cornuta	50%	2
Ilex montana	50%	2
Carya alba	50%	2
Luzula	50%	2
Lonicera japonica	50%	2
Carex radiata	50%	1
Ulmus rubra	50%	1
Boehmeria cylindrica	50%	1
Tiarella cordifolia	50%	1
Betula nigra	50%	1
Ulmus alata	50%	1
Solidago	50%	1
Aureolaria	50%	1
Carya cordiformis	50%	1
Veratrum virginicum	50%	1
Uvularia perfoliata	50%	1
Viburnum dentatum	50%	1
Amphicarpaea bracteata	50%	1
Vitis aestivalis	50%	1
Xanthorhiza simplicissima	50%	1
Quercus phellos	50%	1
Aruncus dioicus var. dioicus	50%	1
Hexastylis	50%	1
Lindera benzoin var. pubescens	50%	1
Vaccinium stamineum	50%	1
Silene	50%	1
Juniperus virginiana var. virginiana	50%	1
Ilex decidua var. decidua	50%	1
Persicaria virginiana	50%	1
Morus rubra	50%	1
Poaceae	50%	1
Prenanthes serpentaria	50%	1

I.B.1: ***Fagus grandifolia - Quercus rubra / Ostrya virginiana - Acer (barbatum, leucoderme) / Actaea racemosa - Sanguinaria canadensis*** **Forest (CEGL008466)**

Floristic table for CEGL008466

Number of Plots:	2		
Average Species Richness:	69	Species listed:	72
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	74	due to ties	

Species	Constancy	Avg Cover Class
Fagus grandifolia var. caroliniana	100%	8
Polystichum acrostichoides	100%	7
Ostrya virginiana	100%	6
Liriodendron tulipifera var. tulipifera	100%	5
Asimina triloba	100%	5
Fraxinus americana	100%	5
Cornus florida	100%	5
Ulmus alata	100%	5
Carya cordiformis	100%	5
Lonicera japonica	100%	5
Quercus alba	100%	4
Phegopteris hexagonoptera	100%	4
Carya alba	100%	4
Ilex opaca var. opaca	100%	4
Carya ovata	100%	3
Brachyelytrum erectum	100%	2
Carex	100%	2
Bignonia capreolata	100%	2
Rubus	100%	2
Parthenocissus quinquefolia	100%	2
Smilax glauca	100%	2
Rhododendron	100%	2
Polygonatum biflorum	100%	2
Dioscorea villosa	100%	2
Aesculus sylvatica	100%	2
Euonymus americanus	100%	2
Menispermum canadense	100%	2
Morus rubra	100%	2
Smilax bona-nox	100%	2
Desmodium nudiflorum	100%	2
Adiantum pedatum	100%	2
Toxicodendron radicans var. radicans	100%	2
Carex pensylvanica	100%	2
Quercus	50%	6
Amphicarpaea bracteata	50%	5
Acer floridanum	50%	5
Platanus occidentalis var. occidentalis	50%	4
Acer rubrum	50%	4
Ulmus rubra	50%	4
Acer rubrum var. rubrum	50%	4
Arisaema triphyllum	50%	3
Liquidambar styraciflua	50%	3
Viburnum rafinesquianum	50%	3
Galium triflorum	50%	3
Collinsonia	50%	3
Actaea racemosa	50%	2
Callicarpa americana	50%	2
Carpinus caroliniana var. caroliniana	50%	2
Boehmeria cylindrica	50%	2
Vitis rotundifolia var. rotundifolia	50%	2
Vitis rotundifolia var. rotundifolia	50%	2
Sceptridium	50%	2
Selaginella	50%	2
Smilax	50%	2
Vitis vulpina	50%	2
Quercus rubra var. rubra	50%	2
Viburnum prunifolium	50%	2
Athyrium asplenioides	50%	2
Quercus pagoda	50%	2
Maianthemum racemosum ssp. racemosum	50%	2
Anemone	50%	2
Carya	50%	2
Cercis canadensis	50%	2
Cercis canadensis var. canadensis	50%	2
Desmodium pauciflorum	50%	2
Galium circaezans var. circaezans	50%	2
Geum canadense	50%	2
Goodyera pubescens	50%	2
Ligustrum sinense	50%	2
Lindera benzoin var. pubescens	50%	2
Phryma leptostachya var. leptostachya	50%	2
Lonicera sempervirens	50%	2
Prunus serotina var. serotina	50%	2

I.C.1: ***Quercus prinus - Quercus alba / Oxydendrum arboreum / Kalmia latifolia*** **Forest (CEGL004415)**

Number of Plots:	1		
Average Species Richness:	34	Species listed:	34
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Quercus montana	100%	7
Kalmia latifolia	100%	6
Pinus taeda	100%	6
Oxydendrum arboreum	100%	6
Vaccinium pallidum	100%	6
Acer rubrum var. rubrum	100%	5
Quercus falcata	100%	5
Pinus virginiana	100%	4
Quercus velutina	100%	4
Ilex opaca var. opaca	100%	4
Pinus echinata	100%	4
Liquidambar styraciflua	100%	3
Vaccinium arboreum	100%	3
Carya alba	100%	3
Quercus nigra	100%	2
Quercus rubra var. rubra	100%	2
Quercus alba	100%	2
Vaccinium stamineum	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Chimaphila maculata	100%	2
Nyssa sylvatica	100%	2
Moss	100%	2
Lyonia mariana	100%	2
Fagus grandifolia var. caroliniana	100%	2
Amelanchier arborea	100%	1
Quercus phellos	100%	1
Cladonia	100%	1
Cornus florida	100%	1
Smilax rotundifolia	100%	1
Epigaea repens	100%	1
Juniperus virginiana var. virginiana	100%	1
Smilax glauca	100%	1
Carex	100%	1
Prunus serotina var. serotina	100%	1

I.C.2: *Fagus grandifolia - Quercus alba - (Quercus prinus) / Kalmia latifolia - (Rhododendron catawbiense)* Forest (CEGL004539)

Number of Plots: 1
Average Species Richness: 41 Species listed: 41
Average Plot Size: 1000 May be > avg. spp. richness
Homoteneity: 100 due to ties

Species	Constancy	Avg Cover Class
Kalmia latifolia	100%	7
Quercus montana	100%	7
Fagus grandifolia var. caroliniana	100%	6
Oxydendrum arboreum	100%	6
Acer rubrum var. rubrum	100%	6
Quercus rubra	100%	4
Cornus florida	100%	4
Vaccinium pallidum	100%	3
Nyssa sylvatica	100%	3
Quercus velutina	100%	2
Sassafras albidum	100%	2
Vaccinium formosum	100%	2
Quercus alba	100%	2
Polystichum acrostichoides	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Polygonatum biflorum	100%	2
Maianthemum racemosum ssp. racemosum	100%	2
Liquidambar styraciflua	100%	2
Ligusticum canadense	100%	2
Quercus nigra	100%	2
Asteraceae	100%	2
Prenanthes	100%	2
Juniperus virginiana var. virginiana	100%	2
Amelanchier	100%	2
Athyrium asplenioides	100%	2
Carex	100%	2
Carpinus caroliniana var. caroliniana	100%	2
Carya alba	100%	2
Chamaelirium luteum	100%	2
Desmodium	100%	2
Diospyros virginiana	100%	2
Ilex opaca var. opaca	100%	2
Euonymus americanus	100%	2
Gaylussacia dumosa	100%	2
Hexastylis	100%	2
Liriodendron tulipifera var. tulipifera	100%	1
Dioscorea quaternata	100%	1
Carya cordiformis	100%	1
Smilax rotundifolia	100%	1
Goodyera pubescens	100%	1
Luzula	100%	1

II.A.1: *Quercus alba - Quercus rubra - Carya glabra - Carya ovata / Viburnum rafinesquianum / Viola tripartita* Forest (CEGL007236)

Floristic table for CEGL007236

Number of Plots:	1		
Average Species Richness:	64	Species listed:	64
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Viburnum rafinesquianum	100%	8
Quercus alba	100%	7
Ulmus alata	100%	7
Quercus rubra	100%	6
Carya glabra	100%	6
Carya alba	100%	5
Quercus velutina	100%	5
Carya ovata	100%	5
Lonicera japonica	100%	5
Fraxinus americana	100%	5
Carya cordiformis	100%	4
Juniperus virginiana var. virginiana	100%	4
Quercus stellata	100%	4
Viburnum prunifolium	100%	4
Cercis canadensis var. canadensis	100%	3
Cornus florida	100%	3
Vitis	100%	3
Quercus shumardii var. shumardii	100%	2
Scleria	100%	2
Smilax bona-nox	100%	2
Vaccinium pallidum	100%	2
Polygonatum biflorum	100%	2
Poaceae	100%	2
Parthenocissus quinquefolia	100%	2
Vaccinium stamineum	100%	2
Ilex decidua var. decidua	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Desmodium nudiflorum	100%	2
Euphorbia corollata	100%	2
Euonymus americanus	100%	2
Diospyros virginiana	100%	2
Carex pensylvanica	100%	2
Dichanthelium boscii	100%	2
Brachyelytrum erectum	100%	2
Crataegus	100%	2
Bignonia capreolata	100%	2
Campsis radicans	100%	1
Scutellaria elliptica var. elliptica	100%	1
Smilax rotundifolia	100%	1
Uvularia perfoliata	100%	1
Uvularia sessilifolia	100%	1
Sanicula canadensis var. canadensis	100%	1
Asclepias variegata	100%	1
Arisaema triphyllum	100%	1
Aralia spinosa	100%	1
Viola	100%	1
Acer rubrum var. rubrum	100%	1
Asplenium platyneuron	100%	1
Lonicera sempervirens	100%	1
Galium circaezans var. circaezans	100%	1
Galium circaezans var. circaezans	100%	1
Endodeca serpentaria	100%	1
Smilax glauca	100%	1
Dioscorea	100%	1
Rosa carolina	100%	1
Maianthemum racemosum ssp. racemosum	100%	1
Nyssa sylvatica	100%	1
Phryma leptostachya var. leptostachya	100%	1
Desmodium	100%	1
Polystichum acrostichoides	100%	1
Prunus serotina var. serotina	100%	1
Carpinus caroliniana var. caroliniana	100%	1
Carex	100%	1
Carex blanda	100%	1
Poa	100%	1

II.B.1: ***Quercus falcata - Quercus alba - Carya alba / Oxydendrum arboreum / Vaccinium stamineum*** **Forest (CEGL007244)**

Floristic table for CEGL007244

Number of Plots:	1		
Average Species Richness:	60	Species listed:	60
Average Plot Size:	800	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Carya alba	100%	7
Vaccinium pallidum	100%	6
Pinus echinata	100%	6
Quercus montana	100%	5
Quercus rubra	100%	5
Vitis rotundifolia var. rotundifolia	100%	5
Quercus velutina	100%	4
Quercus falcata	100%	4
Oxydendrum arboreum	100%	4
Nyssa sylvatica	100%	4
Diospyros virginiana	100%	3
Cornus florida	100%	3
Acer rubrum var. rubrum	100%	3
Cercis canadensis var. canadensis	100%	3
Vaccinium tenellum	100%	2
Morus rubra	100%	2
Carya ovalis	100%	2
Carex	100%	2
Callicarpa americana	100%	2
Parthenocissus quinquefolia	100%	2
Aureolaria virginica	100%	2
Prunus serotina var. serotina	100%	2
Chimaphila maculata	100%	2
Viburnum prunifolium	100%	2
Lonicera japonica	100%	2
Aralia spinosa	100%	2
Vaccinium corymbosum	100%	2
Amelanchier	100%	2
Quercus nigra	100%	2
Rubus	100%	2
Scutellaria	100%	2
Quercus alba	100%	2
Endodeca serpentaria	100%	2
Fagus grandifolia var. caroliniana	100%	2
Euonymus americanus	100%	2
Erechtites hieracifolia	100%	2
Lespedeza	100%	2
Fraxinus americana	100%	2
Eupatorium capillifolium	100%	2
Galium circaezans var. circaezans	100%	2
Desmodium nudiflorum	100%	2
Ilex opaca var. opaca	100%	2
Desmodium	100%	2
Juglans nigra	100%	2
Juniperus virginiana var. virginiana	100%	2
Asplenium platyneuron	100%	1
Desmodium rotundifolium	100%	1
Dioscorea quaternata	100%	1
Liquidambar styraciflua	100%	1
Quercus laurifolia	100%	1
Quercus laurifolia	100%	1
Polygonatum biflorum	100%	1
Galium uniflorum	100%	1
Gaylussacia baccata	100%	1
Hieracium	100%	1
Ipomoea	100%	1
Asclepias	100%	1
Solidago	100%	1
Sassafras albidum	100%	1
Vaccinium arboreum	100%	1
Smilax glauca	100%	1

II.B.2: ***Quercus alba - Quercus (rubra, coccinea) - Carya (alba, glabra) / Vaccinium pallidum Piedmont Dry-Mesic*** **Forest (CEGL008475)**

Floristic table for CEGL008475

Number of Plots:	2		
Average Species Richness:	41	Species listed:	61
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	76	due to ties	

Species	Constancy	Avg Cover Class
Quercus alba	100%	7
Quercus montana	100%	7
Carya alba	100%	5
Acer rubrum var. rubrum	100%	5
Vitis rotundifolia var. rotundifolia	100%	5
Nyssa sylvatica	100%	5
Pinus echinata	100%	5
Vaccinium pallidum	100%	5
Oxydendrum arboreum	100%	5
Fagus grandifolia var. caroliniana	100%	4
Quercus velutina	100%	4
Quercus falcata	100%	3
Vaccinium arboreum	100%	3
Vaccinium stamineum	100%	3
Cornus florida	100%	3
Diospyros virginiana	100%	2
Chimaphila maculata	100%	2
Quercus phellos	100%	2
Prunus serotina var. serotina	100%	2
Sassafras albidum	100%	2
Toxicodendron radicans var. radicans	100%	1
Pinus taeda	50%	4
Quercus stellata	50%	3
Gaylussacia frondosa	50%	2
Vaccinium tenellum	50%	2
Quercus rubra var. rubra	50%	2
Cunila origanoides	50%	2
Quercus nigra	50%	2
Lonicera sempervirens	50%	2
Liquidambar styraciflua	50%	2
Parthenocissus quinquefolia	50%	2
Quercus rubra	50%	2
Juniperus virginiana var. virginiana	50%	2
Rosa multiflora	50%	2
Fraxinus americana	50%	2
Euphorbia corollata	50%	2
Smilax glauca	50%	2
Desmodium nudiflorum	50%	2
Carex	50%	2
Amelanchier	50%	2
Rhus copallinum	50%	1
Unknown	50%	1
Smilax rotundifolia	50%	1
Endodeca serpentaria	50%	1
Asclepias	50%	1
Callicarpa americana	50%	1
Carya glabra	50%	1
Carya ovalis	50%	1
Chionanthus virginicus	50%	1
Crataegus	50%	1
Crataegus	50%	1
Gelsemium sempervirens	50%	1
Dichanthelium dichotomum var. dichotomum	50%	1
Polygonatum biflorum	50%	1
Galium circaezans var. circaezans	50%	1
Hieracium venosum	50%	1
Hypericum hypericoides	50%	1
Ilex opaca var. opaca	50%	1
Ipomoea	50%	1
Lespedeza	50%	1
Ligusticum canadense	50%	1
Dichanthelium commutatum var. ashei	50%	1

III.A.1: ***Fagus grandifolia - Acer barbatum / Asimina triloba / Toxicodendron radicans / Carex blanda*** **Forest (CEGL007321)**

Floristic table for CEGL007321

Number of Plots:	1		
Average Species Richness:	64	Species listed:	64
Average Plot Size:	400	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Acer floridanum	100%	7
Carpinus caroliniana var. caroliniana	100%	7
Fagus grandifolia var. caroliniana	100%	7
Acer rubrum var. rubrum	100%	6
Liquidambar styraciflua	100%	6
Ulmus americana	100%	6
Carya cordiformis	100%	6
Fraxinus americana	100%	5
Toxicodendron radicans var. radicans	100%	4
Ilex opaca var. opaca	100%	4
Liriodendron tulipifera var. tulipifera	100%	4
Carex	100%	4
Quercus velutina	100%	3
Carya ovata	100%	3
Betula nigra	100%	3
Arisaema triphyllum	100%	3
Polystichum acrostichoides	100%	2
Moss	100%	2
Trachelospermum difforme	100%	2
Lonicera japonica	100%	2
Viburnum prunifolium	100%	2
Ligustrum sinense	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Ilex decidua var. decidua	100%	2
Smilax	100%	2
Dichanthelium commutatum var. commutatum	100%	2
Carex intumescens	100%	2
Carex cumberlandensis	100%	2
Chasmanthium laxum	100%	2
Asimina triloba	100%	2
Campsis radicans	100%	2
Bignonia capreolata	100%	2
Athyrium asplenioides	100%	2
Euonymus americanus	100%	2
Aesculus sylvatica	100%	2
Viburnum	100%	1
Asteraceae	100%	1
Pinus	100%	1
Smilax glauca	100%	1
Poaceae	100%	1
Sisyrinchium	100%	1
Sceptridium dissectum	100%	1
Sanicula	100%	1
Rubus	100%	1
Solidago	100%	1
Dichanthelium dichotomum var. ramulosum	100%	1
Parthenocissus quinquefolia	100%	1
Epifagus virginiana	100%	1
Viola	100%	1
Goodyera pubescens	100%	1
Goodyera pubescens	100%	1
Hexastylis	100%	1
Dioscorea	100%	1
Dichanthelium laxiflorum	100%	1
Juncus	100%	1
Galium uniflorum	100%	1
Celtis	100%	1
Luzula	100%	1
Lycopus	100%	1
Maianthemum racemosum ssp. racemosum	100%	1
Microstegium vimineum	100%	1
Mitchella repens	100%	1
Carex section Ovales	100%	1
Onoclea sensibilis var. sensibilis	100%	1
Iris	100%	1

III.A.2: *Liquidambar styraciflua - Liriodendron tulipifera / Onoclea sensibilis* Forest (CEGL007329)

Floristic table for CEGL007329

Number of Plots:	1		
Average Species Richness:	79	Species listed:	79
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Carpinus caroliniana var. caroliniana	100%	7
Quercus nigra	100%	7
Quercus alba	100%	7
Viburnum dentatum	100%	6
Ulmus alata	100%	6
Liquidambar styraciflua	100%	6
Acer rubrum var. rubrum	100%	6
Ilex opaca var. opaca	100%	5
Fagus grandifolia var. caroliniana	100%	5
Cornus florida	100%	5
Quercus phellos	100%	5
Viburnum prunifolium	100%	4
Gelsemium sempervirens	100%	4
Carex	100%	4
Carya cordiformis	100%	4
Nyssa sylvatica	100%	4
Pinus taeda	100%	4
Lonicera japonica	100%	3
Mitchella repens	100%	3
Parthenocissus quinquefolia	100%	3
Vaccinium arboreum	100%	3
Acer floridanum	100%	3
Betula nigra	100%	3
Ilex decidua var. decidua	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Liriodendron tulipifera var. tulipifera	100%	2
Vaccinium pallidum	100%	2
Toxicodendron radicans var. radicans	100%	2
Rudbeckia	100%	2
Solidago	100%	2
Smilax rotundifolia	100%	2
Potentilla canadensis	100%	2
Smilax glauca	100%	2
Sanicula canadensis	100%	2
Rubus	100%	2
Trachelospermum difforme	100%	2
Carya glabra	100%	2
Dichanthelium laxiflorum	100%	2
Desmodium nudiflorum	100%	2
Crataegus marshallii	100%	2
Elephantopus tomentosus	100%	2
Euonymus americanus	100%	2
Dichanthelium commutatum var. commutatum	100%	2
Carya alba	100%	2
Athyrium asplenioides	100%	2
Carex blanda	100%	2
Fraxinus pennsylvanica	100%	2
Bignonia capreolata	100%	2
Festuca subverticillata	100%	2
Chasmanthium laxum	100%	2
Chasmanthium laxum	100%	2
Asimina parviflora	100%	2
Desmodium paniculatum	100%	1
Scutellaria integrifolia	100%	1
Hypericum hypericoides	100%	1
Silene	100%	1
Crataegus	100%	1
Solidago caesia	100%	1
Ruellia caroliniensis	100%	1
Uvularia	100%	1
Asteraceae	100%	1
Euphorbia corollata	100%	1
Houstonia purpurea var. purpurea	100%	1
Juniperus virginiana var. virginiana	100%	1
Ligustrum sinense	100%	1
Goodyera pubescens	100%	1
Galium uniflorum	100%	1
Salvia lyrata	100%	1
Morus rubra	100%	1
Oxalis	100%	1
Penstemon	100%	1
Dichanthelium dichotomum var. dichotomum	100%	1
Polystichum acrostichoides	100%	1
Elephantopus carolinianus	100%	1
Prunus serotina var. serotina	100%	1
Diospyros virginiana	100%	1
Amphicarpaea bracteata	100%	1
Phryma leptostachya var. leptostachya	100%	1
Rosa multiflora	100%	1
Maianthemum racemosum ssp. racemosum	100%	1

III.A.3: *Quercus pagoda - Quercus phellos - Quercus lyrata - Quercus michauxii / Chasmanthium latifolium* Forest (CEGL007356)

Number of Plots: 1

Average Species Richness:	39	Species listed:	39
Average Plot Size:	300	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Chasmanthium latifolium	100%	8
Carya cordiformis	100%	8
Quercus pagoda	100%	7
Liquidambar styraciflua	100%	5
Ilex opaca var. opaca	100%	5
Carya ovata	100%	5
Quercus nigra	100%	5
Asimina triloba	100%	4
Acer rubrum var. rubrum	100%	4
Elymus virginicus var. virginicus	100%	4
Carpinus caroliniana var. caroliniana	100%	4
Smilax rotundifolia	100%	3
Carex lurida	100%	3
Ilex decidua var. decidua	100%	3
Vitis rotundifolia var. rotundifolia	100%	3
Trachelospermum difforme	100%	2
Ulmus americana	100%	2
Toxicodendron radicans var. radicans	100%	2
Matelea	100%	2
Smilax bona-nox	100%	2
Pseudognaphalium obtusifolium	100%	2
Carex gigantea	100%	2
Carex cumberlandensis	100%	2
Phytolacca americana	100%	2
Parthenocissus quinquefolia	100%	2
Smilax glauca	100%	2
Gelsemium sempervirens	100%	2
Carex	100%	2
Campsis radicans	100%	2
Dichanthelium commutatum var. commutatum	100%	2
Passiflora lutea var. lutea	100%	2
Euonymus americanus	100%	2
Lonicera sempervirens	100%	2
Bignonia capreolata	100%	2
Ligustrum sinense	100%	2
Asteraceae	100%	2
Lonicera japonica	100%	2
Celtis	100%	1
Fraxinus pennsylvanica	100%	1

III.B.1: ***Liquidambar styraciflua / Lindera benzoin / Arisaema triphyllum ssp. triphyllum*** **Forest (CEGL004418)**

Floristic table for CEGL004418

Number of Plots:	1		
Average Species Richness:	78	Species listed:	78
Average Plot Size:	100	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Carpinus caroliniana var. caroliniana	100%	9
Carya cordiformis	100%	7
Asimina triloba	100%	4
Lindera benzoin var. pubescens	100%	4
Ilex decidua var. decidua	100%	4
Leersia virginica	100%	3
Carex typhina	100%	3
Chasmanthium latifolium	100%	3
Onoclea sensibilis var. sensibilis	100%	3
Fagus grandifolia var. caroliniana	100%	3
Microstegium vimineum	100%	3
Liquidambar styraciflua	100%	3
Bignonia capreolata	100%	3
Arundinaria tecta	100%	3
Vitis	100%	3
Arisaema triphyllum	100%	3
Amphicarpaea bracteata	100%	3
Acer rubrum	100%	3
Ilex opaca var. opaca	100%	3
Lycopus	100%	2
Luzula	100%	2
Lonicera japonica	100%	2
Lysimachia ciliata	100%	2
Ligustrum sinense	100%	2
Dichanthelium commutatum	100%	2
Scutellaria lateriflora	100%	2
Solidago rugosa	100%	2
Sanicula	100%	2
Sambucus canadensis	100%	2
Rudbeckia laciniata	100%	2
Prunella vulgaris	100%	2
Quercus phellos	100%	2
Ulmus alata	100%	2
Symphyotrichum dumosum	100%	2
Polystichum acrostichoides	100%	2
Symphyotrichum lateriflorum	100%	2
Thalictrum	100%	2
Toxicodendron radicans var. radicans	100%	2
Parthenocissus quinquefolia	100%	2
Rubus argutus	100%	2
Cornus amomum	100%	2
Smilax rotundifolia	100%	2
Athyrium asplenioides	100%	2
Boehmeria cylindrica	100%	2
Brachyelytrum erectum	100%	2
Campsis radicans	100%	2
Carex	100%	2
Viburnum rafinesquianum	100%	2
Carex lupulina	100%	2
Carex venusta	100%	2
Carex venusta	100%	2
Euonymus americanus	100%	2
Clematis virginiana	100%	2
Juncus biflorus	100%	2
Cryptotaenia canadensis	100%	2
Dichanthelium boscii	100%	2
Dichanthelium clandestinum	100%	2
Elephantopus carolinianus	100%	2
Viburnum prunifolium	100%	2
Eutrochium fistulosum	100%	2
Fraxinus pennsylvanica	100%	2
Galium triflorum	100%	2
Geum canadense	100%	2
Hypericum punctatum	100%	2
Impatiens	100%	2
Carya glabra	100%	2
Stachys	100%	1
Passiflora lutea var. lutea	100%	1
Smilax bona-nox	100%	1
Scirpus atrovirens	100%	1
Quercus rubra	100%	1
Quercus michauxii	100%	1
Poaceae	100%	1
Persicaria setacea	100%	1
Platanthera peramoena	100%	1
Oxalis stricta	100%	1
Eutrochium dubium	100%	1
Carex debilis	100%	1
Carex blanda	100%	1

IV.A.1: ***Fagus grandifolia - Quercus alba - (Acer barbatum) / Mixed Herbs*** **Forest (CEGL007206)**

Floristic table for CEGL007206

Number of Plots:	1		
Average Species Richness:	48	Species listed:	48
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Asimina triloba	100%	8
Fraxinus americana	100%	7
Acer floridanum	100%	7
Liriodendron tulipifera var. tulipifera	100%	6
Liquidambar styraciflua	100%	5
Sassafras albidum	100%	4
Polystichum acrostichoides	100%	4
Elymus canadensis var. canadensis	100%	3
Bignonia capreolata	100%	3
Toxicodendron radicans var. radicans	100%	3
Vitis vulpina	100%	3
Smilax hispida	100%	2
Poaceae	100%	2
Parthenocissus quinquefolia	100%	2
Osmorhiza longistylis	100%	2
Morus alba	100%	2
Menispermum canadense	100%	2
Lonicera japonica	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Ligustrum sinense	100%	2
Ulmus alata	100%	2
Cercis canadensis var. canadensis	100%	2
Carex	100%	2
Asplenium platyneuron	100%	2
Carya alba	100%	2
Celtis laevigata	100%	2
Aesculus parviflora	100%	2
Ailanthus altissima	100%	2
Acer negundo	100%	2
[Glyceria + Leersia]	100%	2
Festuca subverticillata	100%	2
Arisaema triphyllum	100%	2
Verbesina	100%	1
Asteraceae	100%	1
Smilax glauca	100%	1
Hedera helix var. helix	100%	1
Smilax bona-nox	100%	1
Dichanthelium commutatum var. commutatum	100%	1
Viola	100%	1
Sanicula	100%	1
Endodeca serpentaria	100%	1
Dichanthelium boscii	100%	1
Matelea	100%	1
Prunus serotina var. serotina	100%	1
Rosa multiflora	100%	1
Persicaria	100%	1
Carya cordiformis	100%	1
Carex pensylvanica	100%	1

IV.A.2: *Quercus alba - Carya glabra - Carya alba / Aesculus pavia* Forest (CEGL007225)

Floristic table for CEGL007225

Number of Plots:	1		
Average Species Richness:	114	Species listed:	114
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Quercus alba	100%	7
Liriodendron tulipifera var. tulipifera	100%	7
Liquidambar styraciflua	100%	6
Quercus michauxii	100%	6
Oxydendrum arboreum	100%	6
Mitchella repens	100%	5
Quercus pagoda	100%	5
Cornus florida	100%	5
Carpinus caroliniana var. caroliniana	100%	4
Polystichum acrostichoides	100%	4
Vaccinium fuscatum	100%	4
Parthenocissus quinquefolia	100%	4
Gaylussacia frondosa	100%	4
Vitis rotundifolia var. rotundifolia	100%	4
Lonicera japonica	100%	4
Nyssa sylvatica	100%	3
Euonymus americanus	100%	3
Toxicodendron radicans var. radicans	100%	3
Desmodium nudiflorum	100%	3
Aronia arbutifolia	100%	3
Vaccinium tenellum	100%	3
Quercus nigra	100%	3
Ilex opaca var. opaca	100%	2
Juglans nigra	100%	2
Oxalis	100%	2
Lonicera sempervirens	100%	2
Maianthemum racemosum ssp. racemosum	100%	2
Magnolia virginiana	100%	2
Lysimachia quadrifolia	100%	2
Lindera benzoin var. pubescens	100%	2
Smilax glauca	100%	2
Woodwardia areolata	100%	2
Scleria oligantha	100%	2
Vitis cinerea var. floridana	100%	2
Ilex glabra	100%	2
Vaccinium stamineum	100%	2
Vaccinium pallidum	100%	2
Viburnum dentatum	100%	2
Smilax rotundifolia	100%	2
Prunus serotina var. serotina	100%	2
Scutellaria	100%	2
Sassafras albidum	100%	2
Sanicula canadensis var. floridana	100%	2
Rubus	100%	2
Quercus velutina	100%	2
Quercus phellos	100%	2
Vaccinium formosum	100%	2
Berchemia scandens	100%	2
Desmodium rotundifolium	100%	2
Chasmanthium laxum	100%	2
Chasmanthium laxum	100%	2
Castanea pumila	100%	2
Carya pallida	100%	2
Carya ovata	100%	2
Carex debilis	100%	2
Dichanthelium commutatum var. commutatum	100%	2
Callicarpa americana	100%	2
Carya alba	100%	2
Athyrium asplenioides	100%	2
Arundinaria tecta	100%	2
Arisaema triphyllum	100%	2
Aralia spinosa	100%	2
Amphicarpaea bracteata	100%	2
Acer rubrum var. rubrum	100%	2
Hypericum hypericoides	100%	2
Carex	100%	2
Dichanthelium laxiflorum	100%	2
Geum canadense	100%	2
Diospyros virginiana	100%	2
Galium obtusum var. filifolium	100%	2
Galium circaezans var. circaezans	100%	2
Sceptridium dissectum	100%	1
Elephantopus tomentosus	100%	1
Endodeca serpentaria	100%	1
Smilax bona-nox	100%	1
Fagus grandifolia var. caroliniana	100%	1
Campsis radicans	100%	1
Festuca subverticillata	100%	1
Bignonia capreolata	100%	1
Smilax walteri	100%	1
Solidago	100%	1
Salvia lyrata	100%	1
Tilia americana var. caroliniana	100%	1
Asplenium platyneuron	100%	1
Gelsemium sempervirens	100%	1
Arnoglossum muehlenbergii	100%	1
Ligustrum sinense	100%	1
Juncus	100%	1
Ipomoea	100%	1
Heuchera americana	100%	1
Osmunda cinnamomea var. cinnamomea	100%	1
Desmodium laevigatum	100%	1
Ulmus alata	100%	1
Diphasiastrum digitatum	100%	1

IV.B.1: ***Fagus grandifolia - Liriodendron tulipifera / Euonymus americana / Athyrium filix-femina ssp. asplenioides*** **Forest (CEGL007201)**

Floristic table for CEGL007201

Number of Plots:	1		
Average Species Richness:	70	Species listed:	70
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Fagus grandifolia var. caroliniana	100%	8
Liriodendron tulipifera var. tulipifera	100%	7
Carpinus caroliniana var. caroliniana	100%	5
Lindera benzoin var. pubescens	100%	4
Polystichum acrostichoides	100%	4
Carya cordiformis	100%	3
Ulmus alata	100%	3
Cornus florida	100%	3
Euonymus americanus	100%	2
Hamamelis virginiana	100%	2
Hexastylis	100%	2
Toxicodendron radicans var. radicans	100%	2
Ilex opaca var. opaca	100%	2
Desmodium nudiflorum	100%	2
Liquidambar styraciflua	100%	2
Lonicera japonica	100%	2
Mitchella repens	100%	2
Phryma leptostachya var. leptostachya	100%	2
Polygonatum biflorum	100%	2
Smilax rotundifolia	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Sanguinaria canadensis	100%	2
Chimaphila maculata	100%	2
Circaea canadensis ssp. canadensis	100%	2
Carex	100%	2
Sceptridium dissectum	100%	1
Bignonia capreolata	100%	1
Pleopeltis polypodioides ssp. michauxiana	100%	1
Berchemia scandens	100%	1
Athyrium asplenioides	100%	1
Quercus michauxii	100%	1
Quercus nigra	100%	1
Asplenium platyneuron	100%	1
Sanicula canadensis var. floridana	100%	1
Persicaria virginiana	100%	1
Sceptridium biternatum	100%	1
Rhododendron periclymenoides	100%	1
Smilax glauca	100%	1
Asimina triloba	100%	1
Stellaria pubera	100%	1
Arisaema triphyllum	100%	1
Amphicarpaea bracteata	100%	1
Uvularia perfoliata	100%	1
Agrimonia	100%	1
Xanthorhiza simplicissima	100%	1
Campsis radicans	100%	1
Saururus cernuus	100%	1
Celtis laevigata	100%	1
Sanicula	100%	1
Diospyros virginiana	100%	1
Diospyros virginiana	100%	1
Parthenocissus quinquefolia	100%	1
Festuca subverticillata	100%	1
Fraxinus pennsylvanica	100%	1
Galium	100%	1
Galium circaezans var. circaezans	100%	1
Geum	100%	1
Goodyera pubescens	100%	1
Carya pallida	100%	1
Carya glabra	100%	1
Menispermum canadense	100%	1
Dichanthelium commutatum var. commutatum	100%	1
Acer rubrum var. rubrum	100%	1
Boehmeria cylindrica	100%	1
Maianthemum	100%	1
Luzula	100%	1
Lonicera sempervirens	100%	1
Botrypus virginianus	100%	1
Callicarpa americana	100%	1
Lespedeza	100%	1
Morus rubra	100%	1

IV.B.2: *Fagus grandifolia - Quercus alba - Liquidambar styraciflua / Magnolia grandiflora / Smilax pumila - Hexastylis arifolia* Forest (CEGL007210)

Floristic table for CEGL007210

Number of Plots:	1		
Average Species Richness:	88	Species listed:	88
Average Plot Size:	500	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Fagus grandifolia var. caroliniana	100%	7
Carya glabra	100%	6
Nyssa sylvatica	100%	5
Polystichum acrostichoides	100%	5
Oxydendrum arboreum	100%	4
Carya ovata	100%	4
Cornus florida	100%	3
Acer rubrum var. rubrum	100%	3
Desmodium nudiflorum	100%	3
Liquidambar styraciflua	100%	2
Phryma leptostachya var. leptostachya	100%	2
Parthenocissus quinquefolia	100%	2
Morus rubra	100%	2
Mitchella repens	100%	2
Maianthemum racemosum ssp. racemosum	100%	2
Luzula	100%	2
Ilex opaca var. opaca	100%	2
Lonicera japonica	100%	2
Liriodendron tulipifera var. tulipifera	100%	2
Lindera benzoin var. pubescens	100%	2
Viburnum prunifolium	100%	2
Iris cristata	100%	2
Ulmus alata	100%	2
Houstonia purpurea	100%	2
Epifagus virginiana	100%	2
Vitis vulpina	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Viola	100%	2
Viburnum rafinesquianum	100%	2
Vaccinium pallidum	100%	2
Uvularia perfoliata	100%	2
Ulmus rubra	100%	2
Prenanthes	100%	2
Thelypteris	100%	2
Thaspium barbinode	100%	2
Smilax rotundifolia	100%	2
Smilax glauca	100%	2
Sanicula canadensis	100%	2
Quercus velutina	100%	2
Quercus rubra	100%	2
Quercus alba	100%	2
Unknown	100%	2
Anemone americana	100%	2
Amphicarpaea bracteata	100%	2
Anemonella thalictroides	100%	2
Arisaema triphyllum	100%	2
Asteraceae	100%	2
Bignonia capreolata	100%	2
Botrypus virginianus	100%	2
Brachyelytrum erectum	100%	2
Brachyelytrum erectum	100%	2
Carex	100%	2
Carpinus caroliniana var. caroliniana	100%	2
Carya cordiformis	100%	2
Cercis canadensis var. canadensis	100%	2
Chamaelirium luteum	100%	2
Corylus americana	100%	2
Crataegus marshallii	100%	2
Geranium maculatum	100%	2
Amelanchier arborea	100%	2
Dichanthelium boscii	100%	2
Dichanthelium	100%	2
Dichanthelium dichotomum	100%	2
Dioscorea quaternata	100%	2
Acer floridanum	100%	2
Endodeca serpentaria	100%	2
Euonymus americanus	100%	2
Galium circaezans var. circaezans	100%	2
Fraxinus americana	100%	2
Toxicodendron radicans var. radicans	100%	1
Aureolaria	100%	1
Asimina triloba	100%	1
Agrimonia pubescens	100%	1
Euphorbia	100%	1
Goodyera pubescens	100%	1
Heuchera americana	100%	1
Diospyros virginiana	100%	1
Passiflora lutea var. lutea	100%	1
Poaceae	100%	1
Chimaphila maculata	100%	1
Prunus serotina var. serotina	100%	1
Eutrochium dubium	100%	1
Quercus phellos	100%	1
Stellaria pubera	100%	1
Elephantopus tomentosus	100%	1
Sanguinaria canadensis	100%	1
Carya alba	100%	1
Scutellaria	100%	1
Smilax hispida	100%	1

IV.B.3: *Fagus grandifolia* - *Quercus nigra* Forest (CEGL007211)

Floristic table for CEGL007211

Number of Plots:	1
Average Species Richness:	61
Average Plot Size:	1000
Homoteneity:	100

Species listed: 61
May be > avg. spp. richness due to ties

Species	Constancy	Avg Cover Class
Fagus grandifolia var. caroliniana	100%	9
Quercus alba	100%	7
Thelypteris noveboracensis	100%	6
Carya alba	100%	5
Nyssa sylvatica	100%	4
Quercus rubra var. rubra	100%	4
Carpinus caroliniana var. caroliniana	100%	4
Ulmus alata	100%	4
Liquidambar styraciflua	100%	4
Vitis rotundifolia var. rotundifolia	100%	3
Athyrium asplenioides	100%	3
Acer rubrum var. rubrum	100%	2
Polystichum acrostichoides	100%	2
Parthenocissus quinquefolia	100%	2
Cornus florida	100%	2
Mitchella repens	100%	2
Melica mutica	100%	2
Polypodium virginianum	100%	2
Quercus michauxii	100%	2
Ilex opaca var. opaca	100%	2
Ilex decidua var. decidua	100%	2
Bignonia capreolata	100%	2
Fraxinus americana	100%	2
Toxicodendron radicans var. radicans	100%	2
Smilax rotundifolia	100%	2
Euonymus americanus	100%	2
Eubotrys racemosa	100%	2
Carex	100%	2
Rubus	100%	2
Smilax glauca	100%	2
Arisaema triphyllum	100%	2
Callicarpa americana	100%	2
Symplocos tinctoria	100%	2
Viburnum dentatum	100%	2
Chasmanthium laxum	100%	2
Prunus serotina var. serotina	100%	1
Quercus nigra	100%	1
Quercus laurifolia	100%	1
Viola	100%	1
Rhododendron periclymenoides	100%	1
Quercus falcata	100%	1
Dioscorea quaternata	100%	1
Desmodium	100%	1
Polygonatum biflorum	100%	1
Arundinaria tecta	100%	1
Asplenium platyneuron	100%	1
Carex debilis	100%	1
Carya glabra	100%	1
Crataegus	100%	1
Aralia spinosa	100%	1
Aralia spinosa	100%	1
Diospyros virginiana	100%	1
Erechtites hieracifolia	100%	1
Festuca subverticillata	100%	1
Galium circaezans var. circaezans	100%	1
Juncus coriaceus	100%	1
Liriodendron tulipifera var. tulipifera	100%	1
Lonicera japonica	100%	1
Phegopteris hexagonoptera	100%	1
Phytolacca americana	100%	1
Poaceae	100%	1
Carya ovata	100%	1

V.A.1: *Quercus falcata - Quercus alba - Carya alba / Oxydendrum arboreum / Vaccinium stamineum* Forest (CEGL007244)

Floristic table for CEGL007244

Number of Plots:	1		
Average Species Richness:	60	Species listed:	60
Average Plot Size:	800	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Carya alba	100%	7
Vaccinium pallidum	100%	6
Pinus echinata	100%	6
Quercus montana	100%	5
Quercus rubra	100%	5
Vitis rotundifolia var. rotundifolia	100%	5
Quercus velutina	100%	4
Quercus falcata	100%	4
Oxydendrum arboreum	100%	4
Nyssa sylvatica	100%	4
Diospyros virginiana	100%	3
Cornus florida	100%	3
Acer rubrum var. rubrum	100%	3
Cercis canadensis var. canadensis	100%	3
Vaccinium tenellum	100%	2
Morus rubra	100%	2
Carya ovalis	100%	2
Carex	100%	2
Callicarpa americana	100%	2
Parthenocissus quinquefolia	100%	2
Aureolaria virginica	100%	2
Prunus serotina var. serotina	100%	2
Chimaphila maculata	100%	2
Viburnum prunifolium	100%	2
Lonicera japonica	100%	2
Aralia spinosa	100%	2
Vaccinium corymbosum	100%	2
Amelanchier	100%	2
Quercus nigra	100%	2
Rubus	100%	2
Scutellaria	100%	2
Quercus alba	100%	2
Endodeca serpentaria	100%	2
Fagus grandifolia var. caroliniana	100%	2
Euonymus americanus	100%	2
Erechtites hieracifolia	100%	2
Lespedeza	100%	2
Fraxinus americana	100%	2
Eupatorium capillifolium	100%	2
Galium circaezans var. circaezans	100%	2
Desmodium nudiflorum	100%	2
Ilex opaca var. opaca	100%	2
Desmodium	100%	2
Juglans nigra	100%	2
Juniperus virginiana var. virginiana	100%	2
Asplenium platyneuron	100%	1
Desmodium rotundifolium	100%	1
Dioscorea quaternata	100%	1
Liquidambar styraciflua	100%	1
Quercus laurifolia	100%	1
Quercus laurifolia	100%	1
Polygonatum biflorum	100%	1
Galium uniflorum	100%	1
Gaylussacia baccata	100%	1
Hieracium	100%	1
Ipomoea	100%	1
Asclepias	100%	1
Solidago	100%	1
Sassafras albidum	100%	1
Vaccinium arboreum	100%	1
Smilax glauca	100%	1

V.A.2: *Quercus alba - Quercus nigra - Quercus falcata / Ilex opaca / Clethra alnifolia – Arundinaria gigantea ssp. tecta* Forest (CEGL007862)

Floristic table for CEGL007862

Number of Plots:	1		
Average Species Richness:	96	Species listed:	96
Average Plot Size:	400	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Quercus alba	100%	6
Liriodendron tulipifera var. tulipifera	100%	6
Liquidambar styraciflua	100%	6
Cornus florida	100%	5
Oxydendrum arboreum	100%	4
Rubus argutus	100%	4
Quercus nigra	100%	4
Acer rubrum var. rubrum	100%	4
Vitis rotundifolia var. rotundifolia	100%	4
Lonicera japonica	100%	3
Carya glabra	100%	3
Quercus michauxii	100%	3
Mitchella repens	100%	3
Clethra alnifolia	100%	3
Ilex opaca var. opaca	100%	3
Athyrium asplenioides	100%	3
Arundinaria tecta	100%	3
Toxicodendron radicans var. radicans	100%	3
Ligustrum sinense	100%	2
Hypericum hypericoides	100%	2
Gaylussacia frondosa	100%	2
Lonicera sempervirens	100%	2
Galium obtusum	100%	2
Nyssa sylvatica	100%	2
Geum canadense	100%	2
Parthenocissus quinquefolia	100%	2
Poa autumnalis	100%	2
Polystichum acrostichoides	100%	2
Prunus serotina var. serotina	100%	2
Pycnanthemum incanum	100%	2
Quercus phellos	100%	2
Quercus velutina	100%	2
Sassafras albidum	100%	2
Smilax glauca	100%	2
Smilax rotundifolia	100%	2
Vaccinium formosum	100%	2
Galium circaezans var. circaezans	100%	2
Vaccinium pallidum	100%	2
Vitis vulpina	100%	2
Dichanthelium boscii	100%	2
Carya alba	100%	2
Carex pensylvanica	100%	2
Decumaria barbara	100%	2
Carex	100%	2
Campsis radicans	100%	2
Desmodium nudiflorum	100%	2
Callicarpa americana	100%	2
Atrichum	100%	2
Chasmanthium laxum	100%	2
Asplenium platyneuron	100%	2
Asplenium platyneuron	100%	2
Circaea canadensis ssp. canadensis	100%	2
Dichanthelium commutatum	100%	2
Euonymus americanus	100%	2
Dichanthelium laxiflorum	100%	2
Arisaema triphyllum	100%	2
Aralia spinosa	100%	2
Diospyros virginiana	100%	2
Amphicarpaea bracteata	100%	2
Pseudognaphalium obtusifolium	100%	1
Celtis laevigata	100%	1
Carya ovata	100%	1
Ulmus americana	100%	1
Fabaceae	100%	1
Carex debilis	100%	1
Solidago rugosa	100%	1
Viola	100%	1
Asclepias	100%	1
Sanicula canadensis	100%	1
Bignonia capreolata	100%	1
Viburnum prunifolium	100%	1
Viburnum dentatum	100%	1
Vitis cinerea var. floridana	100%	1
Desmodium rotundifolium	100%	1
Eupatorium rotundifolium	100%	1
Eupatorium pubescens	100%	1
Eupatorium capillifolium	100%	1
Elephantopus	100%	1
Hypericum punctatum	100%	1
Juncus tenuis	100%	1
Lactuca	100%	1
Lespedeza	100%	1
Lichen	100%	1
Potentilla canadensis	100%	1
Dichanthelium	100%	1
Oxalis stricta	100%	1
Conyza canadensis	100%	1
Persicaria setacea	100%	1
Lindera benzoin var. pubescens	100%	1
Crataegus	100%	1
Lysimachia quadrifolia	100%	1
Osmunda cinnamomea var. cinnamomea	100%	1
Desmodium	100%	1
Medeola virginiana	100%	1
Malus angustifolia	100%	1

V.B.1: *Pinus taeda - Quercus (alba, falcata, stellata)* Forest [Placeholder] (CEGL004766)

Floristic table for CEGL004766

Number of Plots:	1		
Average Species Richness:	49	Species listed:	49
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Acer rubrum var. rubrum	100%	7
Quercus alba	100%	7
Oxydendrum arboreum	100%	6
Pinus taeda	100%	6
Quercus falcata	100%	5
Ilex opaca var. opaca	100%	5
Nyssa sylvatica	100%	4
Liquidambar styraciflua	100%	4
Fagus grandifolia var. caroliniana	100%	4
Cornus florida	100%	3
Vaccinium tenellum	100%	2
Rubus trivialis	100%	2
Rhododendron	100%	2
Quercus rubra	100%	2
Quercus laurifolia	100%	2
Smilax rotundifolia	100%	2
Amelanchier arborea	100%	2
Vaccinium pallidum	100%	2
Parthenocissus quinquefolia	100%	2
Vaccinium formosum	100%	2
Mitchella repens	100%	2
Vaccinium stamineum	100%	2
Chasmanthium laxum	100%	2
Uvularia sessilifolia	100%	2
Gelsemium sempervirens	100%	2
Gaylussacia dumosa	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Toxicodendron radicans var. radicans	100%	1
Unknown	100%	1
Symplocos tinctoria	100%	1
Smilax bona-nox	100%	1
Scleria oligantha	100%	1
Danthonia sericea	100%	1
Vaccinium corymbosum	100%	1
Vitis	100%	1
Chimaphila maculata	100%	1
Sassafras albidum	100%	1
Carex	100%	1
Euonymus americanus	100%	1
Carya glabra	100%	1
Dichanthelium laxiflorum	100%	1
Galium obtusum	100%	1
Hypericum hypericoides	100%	1
Ipomoea	100%	1
Lonicera sempervirens	100%	1
Pleopeltis polypodioides ssp. michauxiana	100%	1
Poaceae	100%	1
Prunus serotina var. serotina	100%	1
Carya alba	100%	1

VI.A.1: ***Pinus palustris / Quercus laevis - Quercus incana / Gaylussacia dumosa - Gaylussacia (baccata, frondosa)*** **Woodland (CEGL003592)**

Number of Plots:	3		
Average Species Richness:	27	Species listed:	36
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	75	due to ties	

Species	Constancy	Avg Cover Class
Pinus taeda	100%	7
Quercus laevis	100%	7
Gaylussacia frondosa	100%	7
Pinus palustris	100%	6
Vaccinium pallidum	100%	4
Sassafras albidum	100%	3
Quercus falcata	100%	3
Diospyros virginiana	100%	3
Castanea pumila	100%	2
Quercus nigra	100%	2
Euphorbia ipecacuanhae	100%	2
Vaccinium tenellum	100%	2
Pinus serotina	67%	5
Morella cerifera	67%	4
Schizachyrium scoparium	67%	3
Gaylussacia dumosa	67%	3
Lyonia mariana	67%	2
Smilax glauca	67%	1
Toxicodendron pubescens	67%	1
Cnidoscolus stimulosus	67%	1
Clitoria mariana var. mariana	67%	1
Carphephorus bellidifolius	67%	1
Gaylussacia baccata	33%	6
Pinus rigida	33%	4
Vaccinium formosum	33%	2
Carex	33%	2
Symplocos tinctoria	33%	2
Poaceae	33%	2
Moss	33%	2
Lupinus perennis ssp. perennis	33%	2
Gelsemium sempervirens	33%	2
Galactia	33%	2
Eubotrys racemosa	33%	2
Dichanthelium angustifolium	33%	2
Cyperaceae	33%	2
Pinus echinata	33%	2

VII.A.1: *Quercus laurifolia - Quercus michauxii - Liquidambar styraciflua / Carpinus caroliniana* Forest (CEGL004678)

Floristic table for CEGL004678

Number of Plots:	3		
Average Species Richness:	66	Species listed:	68
Average Plot Size:	767	May be > avg. spp. richness	
Homoteneity:	69	due to ties	

Species	Constancy	Avg Cover Class
Acer rubrum var. rubrum	100%	7
Liquidambar styraciflua	100%	6
Carpinus caroliniana var. caroliniana	100%	5
Quercus shumardii var. shumardii	100%	4
Toxicodendron radicans var. radicans	100%	3
Parthenocissus quinquefolia	100%	3
Fraxinus pennsylvanica	100%	3
Carex	100%	2
Microstegium vimineum	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Mitchella repens	100%	2
Leersia virginica	100%	2
Bignonia capreolata	100%	2
Lonicera japonica	100%	2
Campsis radicans	100%	2
Boehmeria cylindrica	100%	2
Carya ovata	67%	6
Quercus laurifolia	67%	6
Quercus pagoda	67%	5
Chasmanthium laxum	67%	5
Quercus michauxii	67%	5
Asimina triloba	67%	5
Woodwardia areolata	67%	5
Arundinaria tecta	67%	5
Festuca subverticillata	67%	4
Ilex opaca var. opaca	67%	3
Quercus phellos	67%	3
Ilex decidua var. decidua	67%	3
Fraxinus caroliniana	67%	3
Nyssa biflora	67%	2
Dichanthelium commutatum var. commutatum	67%	2
Athyrium asplenioides	67%	2
Smilax walteri	67%	2
Trachelospermum difforme	67%	2
Smilax rotundifolia	67%	2
Crataegus marshallii	67%	2
Smilax glauca	67%	2
Lindera benzoin var. pubescens	67%	2
Solidago	67%	2
Euonymus americanus	67%	2
Viola	67%	2
Crataegus	67%	2
Commelina virginica	67%	2
Ligustrum sinense	67%	2
Smilax bona-nox	67%	2
Sceptridium dissectum	67%	2
Asplenium platyneuron	67%	2
Elymus virginicus var. virginicus	67%	2
Matelea	67%	2
Oxalis	67%	2
Oxalis	67%	2
Berchemia scandens	67%	1
Ruellia caroliniensis	67%	1
Hypericum hypericoides	67%	1
Celtis laevigata	67%	1
Saururus cernuus	33%	6
Quercus lyrata	33%	5
Nyssa sylvatica	33%	5
Morus rubra	33%	5
Carex section Ovales	33%	5
Acer rubrum var. trilobum	33%	5
Viburnum nudum	33%	4
Carya cordiformis	33%	4
Cuscuta	33%	3
Quercus velutina	33%	3
Pinus taeda	33%	3
Betula nigra	33%	3
Carex typhina	33%	3
Ulmus alata	33%	3

VII.A.2: ***Celtis laevigata - Fraxinus pennsylvanica - Acer negundo - (Juglans nigra) / Asimina triloba / Carex grayi*** **Forest (CEGL004740)**

Number of Plots: 1
Average Species Richness: 44 Species listed: 44
Average Plot Size: 400 May be > avg. spp. richness
Homoteneity: 100 due to ties

Species	Constancy	Avg Cover Class
Carex intumescens	100%	7
Carya cordiformis	100%	7
Ilex opaca var. opaca	100%	7
Chasmanthium latifolium	100%	6
Ligustrum sinense	100%	6
Celtis laevigata	100%	6
Asimina triloba	100%	6
Ulmus rubra	100%	5
Lonicera japonica	100%	4
Quercus michauxii	100%	4
Lindera benzoin var. pubescens	100%	4
Liquidambar styraciflua	100%	4
Carpinus caroliniana var. caroliniana	100%	4
Vitis	100%	4
Festuca subverticillata	100%	3
Smilax rotundifolia	100%	3
Toxicodendron radicans var. radicans	100%	3
Smilax walteri	100%	2
Parthenocissus quinquefolia	100%	2
Microstegium vimineum	100%	2
Matelea	100%	2
Ulmus alata	100%	2
Viola	100%	2
Ilex decidua var. decidua	100%	2
Fraxinus pennsylvanica	100%	2
Bignonia capreolata	100%	2
Boehmeria cylindrica	100%	2
Acer negundo	100%	2
Solidago	100%	1
Juncus	100%	1
Callicarpa americana	100%	1
Carex	100%	1
Sanicula canadensis var. canadensis	100%	1
Carex blanda	100%	1
Commelina virginica	100%	1
Nyssa aquatica	100%	1
Mitchella repens	100%	1
Rubus	100%	1
Quercus shumardii var. shumardii	100%	1
Elymus virginicus var. virginicus	100%	1
Passiflora lutea var. lutea	100%	1
Euonymus americanus	100%	1
Nyssa sylvatica	100%	1

VII.A.3: *Quercus michauxii / Carpinus caroliniana - Ilex opaca / Leucothoe racemosa* Forest (CEGL007737)

Floristic table for CEGL007737

Number of Plots:	3		
Average Species Richness:	52	Species listed:	62
Average Plot Size:	800	May be > avg. spp. richness	
Homoteneity:	74	due to ties	

Species	Constancy	Avg Cover Class
Quercus pagoda	100%	7
Ilex opaca var. opaca	100%	6
Liquidambar styraciflua	100%	6
Carpinus caroliniana var. caroliniana	100%	6
Quercus michauxii	100%	6
Toxicodendron radicans var. radicans	100%	6
Carex	100%	5
Ulmus alata	100%	5
Bignonia capreolata	100%	5
Vitis rotundifolia var. rotundifolia	100%	3
Ilex decidua var. decidua	100%	3
Viburnum prunifolium	100%	2
Lonicera japonica	100%	2
Parthenocissus quinquefolia	100%	2
Mitchella repens	100%	2
Viola	100%	2
Campsis radicans	100%	2
Smilax bona-nox	100%	2
Crataegus marshallii	100%	2
Diospyros virginiana	100%	2
Ligustrum sinense	100%	2
Euonymus americanus	100%	2
Endodeca serpentaria	100%	1
Smilax rotundifolia	67%	5
Acer rubrum var. rubrum	67%	5
Carya ovata	67%	5
Fraxinus	67%	5
Nyssa sylvatica	67%	3
Berchemia scandens	67%	2
Carex typhina	67%	2
Carex grayi	67%	2
Sceptridium dissectum	67%	2
Galium	67%	2
Persicaria virginiana	67%	2
Trachelospermum difforme	67%	2
Dichanthelium commutatum var. commutatum	67%	2
Boehmeria cylindrica	67%	1
Chasmanthium laxum	67%	1
Poaceae	67%	1
Dioscorea villosa	67%	1
Celtis	67%	1
Ulmus americana	33%	6
Acer rubrum var. trilobum	33%	5
Carex intumescens	33%	5
Carya alba	33%	3
Poa autumnalis	33%	3
Carex lupulina	33%	3
Vitis	33%	3
Carex ovalis	33%	3
Asimina triloba	33%	2
Asimina triloba	33%	2
Vitis cinerea	33%	2
Moss	33%	2
Polygonum	33%	2
Celtis laevigata	33%	2
Vitis cinerea var. floridana	33%	2
Festuca subverticillata	33%	2
Asteraceae	33%	2
Arisaema triphyllum	33%	2
Cornus	33%	2
Fraxinus pennsylvanica	33%	2
Solidago	33%	2
Smilax walteri	33%	2

VII.A.4: ***Fraxinus pennsylvanica - Ulmus americana / Carpinus caroliniana / Boehmeria cylindrica*** **Forest (CEGL007806)**

Floristic table for CEGL007806

Number of Plots:	2		
Average Species Richness:	41	Species listed:	49
Average Plot Size:	350	May be > avg. spp. richness	
Homoteneity:	68	due to ties	

Species	Constancy	Avg Cover Class
Fraxinus pennsylvanica	100%	7
Boehmeria cylindrica	100%	6
Liquidambar styraciflua	100%	6
Persicaria	100%	5
Platanus occidentalis var. occidentalis	100%	5
Toxicodendron radicans var. radicans	100%	5
Saururus cernuus	100%	5
Leersia virginica	100%	4
Carex section Ovales	100%	4
Carex	100%	3
Pilea pumila	100%	3
Smilax rotundifolia	100%	2
Campsis radicans	100%	2
Lamiaceae	100%	2
Carpinus caroliniana var. caroliniana	50%	5
Chasmanthium latifolium	50%	5
Ulmus americana	50%	5
Nyssa aquatica	50%	5
Acer rubrum var. trilobum	50%	5
Dulichium arundinaceum var. arundinaceum	50%	4
Nyssa biflora	50%	4
Ulmus rubra	50%	4
Populus heterophylla	50%	4
Lycopus	50%	3
Triadenum	50%	3
Persicaria virginiana	50%	3
Viburnum prunifolium	50%	3
Lycopus virginicus	50%	2
Smilax hispida	50%	2
Carex grayi	50%	2
Quercus rubra	50%	2
Ulmus alata	50%	2
Woodwardia areolata	50%	2
Lobelia	50%	2
Viola	50%	2
Commelina virginica	50%	2
Peltandra virginica	50%	2
Ludwigia glandulosa	50%	2
Bignonia capreolata	50%	2
Cephalanthus occidentalis	50%	2
Diospyros virginiana	50%	2
Geum	50%	2
Ilex decidua var. decidua	50%	2
Ilex opaca var. opaca	50%	2
Ipomoea	50%	2
Lobelia cardinalis	50%	2
Asteraceae	50%	2
Ludwigia palustris	50%	2
Carex lupulina	50%	2

VII.A.5: ***Fagus grandifolia - Liquidambar styraciflua - Quercus (michauxii, nigra)*** **Forest (CEGL007866)**

Number of Plots:	1		
Average Species Richness:	39	Species listed:	39
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Fagus grandifolia var. caroliniana	100%	8
Quercus pagoda	100%	7
Liriodendron tulipifera var. tulipifera	100%	6
Quercus falcata	100%	5
Liquidambar styraciflua	100%	5
Carpinus caroliniana var. caroliniana	100%	3
Ilex opaca var. opaca	100%	2
Acer rubrum var. rubrum	100%	2
Mitchella repens	100%	2
Euonymus americanus	100%	2
Parthenocissus quinquefolia	100%	2
Athyrium asplenioides	100%	2
Bignonia capreolata	100%	2
Quercus michauxii	100%	1
Rubus	100%	1
Sanicula canadensis	100%	1
Smilax glauca	100%	1
Smilax rotundifolia	100%	1
Vaccinium virgatum	100%	1
Toxicodendron radicans var. radicans	100%	1
Viburnum dentatum	100%	1
Vitis rotundifolia var. rotundifolia	100%	1
Woodwardia areolata	100%	1
Ulmus alata	100%	1
Gelsemium sempervirens	100%	1
Vaccinium pallidum	100%	1
Quercus alba	100%	1
Crataegus	100%	1
Chimaphila maculata	100%	1
Carex	100%	1
Galium uniflorum	100%	1
Desmodium	100%	1
Goodyera pubescens	100%	1
Carya glabra	100%	1
Ligustrum sinense	100%	1
Callicarpa americana	100%	1
Nyssa sylvatica	100%	1
Poaceae	100%	1
Prunus caroliniana	100%	1

VII.A.6: *Quercus lyrata - Carya aquatica* Forest (CEGL007397)

Number of Plots:	1		
Average Species Richness:	26	Species listed:	26
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Quercus lyrata	100%	8
Fraxinus pennsylvanica	100%	6
Carya aquatica	100%	6
Carya ovata	100%	5
Acer rubrum var. trilobum	100%	5
Ulmus americana	100%	5
Crataegus	100%	4
Fraxinus profunda	100%	4
Liquidambar styraciflua	100%	4
Quercus shumardii var. shumardii	100%	3
Ulmus alata	100%	3
Smilax rotundifolia	100%	2
Taxodium distichum	100%	2
Quercus michauxii	100%	2
Iris virginica	100%	2
Ilex decidua var. decidua	100%	2
Carex typhina	100%	2
Carex intumescens	100%	2
Carex section Ovales	100%	2
Arundinaria tecta	100%	1
Poaceae	100%	1
Vitis rotundifolia var. rotundifolia	100%	1
Smilax bona-nox	100%	1
Celtis laevigata	100%	1
Diospyros virginiana	100%	1
Nyssa biflora	100%	1

VII.B.1: *Quercus lyrata - Quercus laurifolia - Taxodium distichum / Saururus cernuus* Forest (CEGL004735)

Number of Plots:	2		
Average Species Richness:	23	Species listed:	30
Average Plot Size:	800	May be > avg. spp. richness	
Homoteneity:	67	due to ties	

Species	Constancy	Avg Cover Class
Quercus lyrata	100%	7
Fraxinus pennsylvanica	100%	5
Liquidambar styraciflua	100%	4
Boehmeria cylindrica	100%	2
Parthenocissus quinquefolia	100%	2
Carex	100%	2
Ligustrum sinense	100%	1
Toxicodendron radicans var. radicans	100%	1
Acer rubrum var. trilobum	50%	6
Cephalanthus occidentalis	50%	5
Taxodium distichum	50%	5
Nyssa aquatica	50%	5
Populus heterophylla	50%	5
Ulmus americana	50%	3
Ulmus rubra	50%	2
Vitis rotundifolia var. rotundifolia	50%	2
Triadenum walteri	50%	2
Saururus cernuus	50%	2
Sassafras albidum	50%	2
Carex lurida	50%	2
Smilax rotundifolia	50%	2
Nyssa biflora	50%	2
Lycopus virginicus	50%	2
Ludwigia	50%	2
Ilex opaca var. opaca	50%	2
Diospyros virginiana	50%	2
Carex ovalis	50%	2
Campsis radicans	50%	2
Berchemia scandens	50%	2
Carpinus caroliniana var. caroliniana	50%	2

VII.B.2: *Taxodium distichum - Nyssa aquatica - Acer rubrum / Itea virginica* Forest (CEGL007422)

Number of Plots:	1		
Average Species Richness:	44	Species listed:	44
Average Plot Size:	100	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Acer rubrum var. rubrum	100%	7
Saururus cernuus	100%	7
Murdannia keisak	100%	6
Sparganium americanum	100%	5
Fraxinus pennsylvanica	100%	5
Persicaria glabra	100%	4
Persicaria punctata	100%	3
Cuscuta	100%	3
Ulmus americana	100%	3
Hypericum mutilum	100%	3
Leersia oryzoides	100%	3
Cephalanthus occidentalis	100%	3
Ludwigia palustris	100%	2
Liquidambar styraciflua	100%	2
Ludwigia alternifolia	100%	2
Nyssa aquatica	100%	2
Pluchea camphorata	100%	2
Proserpinaca palustris	100%	2
Rhynchospora corniculata var. corniculata	100%	2
Smilax rotundifolia	100%	2
Vitis labrusca	100%	2
Woodwardia virginica	100%	2
Scirpus cyperinus	100%	2
Carex	100%	2
Limnobium spongia	100%	2
Apios americana	100%	2
Arundinaria gigantea	100%	2
Bidens discoidea	100%	2
Campsis radicans	100%	2
Carex crinita	100%	2
Carex festucacea	100%	2
Carex lupulina	100%	2
Carex lurida	100%	2
Itea virginica	100%	2
Peltandra virginica	100%	2
Dichanthelium	100%	2
Alternanthera philoxeroides	100%	2
Juncus effusus ssp. solutus	100%	2
Eupatorium capillifolium	100%	2
Boehmeria cylindrica	100%	2
Eutrochium dubium	100%	2
Commelina virginica	100%	2
Lonicera japonica	100%	1

VII.B.3: *Taxodium distichum - Nyssa aquatica / Fraxinus caroliniana* Forest (CEGL007431)

Floristic table for CEGL007431

Number of Plots:	3		
Average Species Richness:	37	Species listed:	51
Average Plot Size:	833	May be > avg. spp. richness	
Homoteneity:	72	due to ties	

Species	Constancy	Avg Cover Class
Nyssa aquatica	100%	8
Saururus cernuus	100%	6
Fraxinus caroliniana	100%	5
Ulmus americana	100%	4
Boehmeria cylindrica	100%	3
Itea virginica	100%	3
Toxicodendron radicans var. radicans	100%	3
Liquidambar styraciflua	100%	3
Carex	100%	2
Poaceae	100%	2
Campsis radicans	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Acer rubrum var. rubrum	67%	6
Taxodium distichum	67%	5
Murdannia keisak	67%	4
Peltandra virginica	67%	2
Nyssa biflora	67%	2
Quercus phellos	67%	2
Smilax rotundifolia	67%	2
Dulichium arundinaceum var. arundinaceum	67%	2
Smilax walteri	67%	2
Carex section Ovales	67%	2
Unknown	67%	2
Pilea pumila	67%	2
Populus heterophylla	67%	2
Smilax bona-nox	67%	2
Phytolacca americana	67%	1
Solidago	67%	1
Persicaria virginiana	67%	1
Lycopus	67%	1
Persicaria	67%	1
Acer rubrum	33%	6
Microstegium vimineum	33%	3
Fraxinus pennsylvanica	33%	3
Carex lupulina	33%	2
Hydrocotyle verticillata	33%	2
Carex intumescens	33%	2
Carex gigantea	33%	2
Athyrium asplenioides	33%	2
Commelina virginica	33%	2
Mimulus alatus	33%	2
Triadenum tubulosum	33%	2
Berchemia scandens	33%	2
Bignonia capreolata	33%	2
Quercus laurifolia	33%	2
Calamagrostis cinnoides	33%	2
Bidens discoidea	33%	2
Carex crinita	33%	2
Onoclea sensibilis var. sensibilis	33%	2
Glyceria striata var. striata	33%	2
Glyceria striata var. striata	33%	2
Symphyotrichum dumosum	33%	2

VIII.A.1: *Nyssa aquatica - Nyssa biflora* Forest (CEGL007429)

Floristic table for CEGL007429

Number of Plots:	2		
Average Species Richness:	40	Species listed:	55
Average Plot Size:	600	May be > avg. spp. richness	
Homoteneity:	63	due to ties	

Species	Constancy	Avg Cover Class
Acer rubrum var. rubrum	100%	7
Nyssa biflora	100%	7
Nyssa aquatica	100%	7
Saururus cernuus	100%	6
Carex	100%	5
Liquidambar styraciflua	100%	5
Smilax walteri	100%	2
Toxicodendron radicans var. radicans	100%	2
Mikania scandens	100%	2
Lobelia cardinalis	100%	2
Fraxinus profunda	50%	6
Quercus lyrata	50%	5
Arundinaria tecta	50%	4
Morella cerifera	50%	4
Ulmus rubra	50%	4
Magnolia virginiana	50%	3
Lyonia ligustrina	50%	3
Alnus serrulata	50%	3
Osmunda regalis var. spectabilis	50%	3
Itea virginica	50%	3
Ilex verticillata	50%	3
Eubotrys racemosa	50%	3
Fraxinus caroliniana	50%	3
Ilex opaca var. opaca	50%	3
Cyrilla racemiflora	50%	3
Smilax laurifolia	50%	2
Clethra acuminata	50%	2
Pleopeltis polypodioides ssp. michauxiana	50%	2
Poaceae	50%	2
Quercus laurifolia	50%	2
Rhododendron viscosum	50%	2
Viburnum dentatum	50%	2
Ulmus americana	50%	2
Vaccinium fuscatum	50%	2
Boehmeria cylindrica	50%	2
Vaccinium formosum	50%	2
Unknown	50%	2
Rosa palustris	50%	2
Ilex decidua var. decidua	50%	2
Decumaria barbara	50%	2
Diospyros virginiana	50%	2
Fraxinus	50%	2
Persicaria	50%	2
Glyceria septentrionalis	50%	2
Peltandra virginica	50%	2
Juncus effusus ssp. solutus	50%	2
Leersia virginica	50%	2
Cornus foemina	50%	2
Cephalanthus occidentalis	50%	2
Moss	50%	2
Moss	50%	2
Murdannia keisak	50%	2
Carex lurida	50%	2
Campsis radicans	50%	2
Ligustrum sinense	50%	2
Fraxinus pennsylvanica	50%	2

VIII.A.2: *Taxodium distichum - Nyssa aquatica - Nyssa biflora / Fraxinus caroliniana / Itea virginica* Forest (CEGL007432)

Floristic table for CEGL007432

Number of Plots:	4		
Average Species Richness:	62	Species listed:	62
Average Plot Size:	1000	May be > avg. spp. richness	
Homoteneity:	68	due to ties	

Species	Constancy	Avg Cover Class
Nyssa aquatica	100%	7
Nyssa biflora	100%	6
Taxodium distichum	100%	6
Fraxinus caroliniana	100%	6
Eubotrys racemosa	100%	5
Saururus cernuus	100%	5
Carex	100%	5
Liquidambar styraciflua	100%	4
Decumaria barbara	100%	4
Toxicodendron radicans var. radicans	100%	4
Boehmeria cylindrica	100%	2
Ulmus americana	100%	2
Peltandra virginica	100%	2
Acer rubrum var. trilobum	75%	6
Osmunda regalis var. spectabilis	75%	5
Acer rubrum var. rubrum	75%	5
Fraxinus profunda	75%	5
Carpinus caroliniana var. caroliniana	75%	5
Lyonia ligustrina	75%	4
Alnus serrulata	75%	4
Cyrilla racemiflora	75%	4
Smilax walteri	75%	3
Ilex verticillata	75%	3
Ilex opaca var. opaca	75%	3
Itea virginica	75%	3
Smilax laurifolia	75%	2
Viburnum dentatum	75%	2
Persicaria	75%	2
Smilax rotundifolia	75%	2
Cornus foemina	75%	2
Woodwardia areolata	75%	2
Bidens	75%	1
Galium	75%	1
Fraxinus pennsylvanica	50%	6
Murdannia keisak	50%	4
Clethra alnifolia	50%	4
Arundinaria tecta	50%	4
Rhododendron viscosum	50%	3
Triadenum	50%	2
Pinus taeda	50%	2
Vaccinium fuscatum	50%	2
Leersia	50%	2
Osmunda cinnamomea var. cinnamomea	50%	2
Lobelia cardinalis	50%	2
Ludwigia palustris	50%	2
Aronia arbutifolia	50%	2
Lonicera japonica	50%	2
Triadenum walteri	50%	2
Viburnum nudum	50%	2
Vaccinium formosum	50%	2
Vaccinium formosum	50%	2
Cicuta maculata var. maculata	50%	2
Viola	50%	2
Mitchella repens	50%	2
Rosa palustris	50%	2
Proserpinaca palustris var. palustris	50%	2
Pleopeltis polypodioides ssp. michauxiana	50%	2
Phoradendron serotinum ssp. serotinum	50%	2
Unknown	50%	1
Hydrocotyle verticillata	50%	1
Scutellaria lateriflora	50%	1
Lobelia	50%	1
Fraxinus	25%	4

VIII.B.1: *Liquidambar styraciflua - Quercus laurifolia / Magnolia virginiana / Carex lonchocarpa* Forest (CEGL004631)

Floristic table for CEGL004631

Number of Plots:	2		
Average Species Richness:	53	Species listed:	64
Average Plot Size:	300	May be > avg. spp. richness	
Homoteneity:	85	due to ties	

Species	Constancy	Avg Cover Class
Acer rubrum var. rubrum	100%	8
Liriodendron tulipifera var. tulipifera	100%	7
Fraxinus pennsylvanica	100%	7
Nyssa biflora	100%	6
Liquidambar styraciflua	100%	6
Arisaema triphyllum	100%	6
Magnolia virginiana	100%	5
Carex	100%	5
Smilax rotundifolia	100%	4
Carpinus caroliniana var. caroliniana	100%	4
Sphagnum	100%	4
Eubotrys racemosa	100%	4
Quercus michauxii	100%	4
Quercus laurifolia	100%	4
Parthenocissus quinquefolia	100%	4
Leersia virginica	100%	3
Ilex opaca var. opaca	100%	3
Saururus cernuus	100%	3
Bignonia capreolata	100%	3
Morella caroliniensis	100%	2
Hypericum	100%	2
Viola	100%	2
Eupatorium	100%	2
Euonymus americanus	100%	2
Dioscorea villosa	100%	2
Decumaria barbara	100%	2
Toxicodendron radicans var. radicans	100%	2
Viburnum dentatum	100%	2
Vitis cinerea	100%	2
Woodwardia areolata	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Moss	100%	2
Vaccinium fuscatum	100%	2
Rubus	100%	2
Solidago	100%	2
Pinus taeda	100%	1
Mikania scandens	100%	1
Arundinaria tecta	50%	4
Viburnum nudum	50%	3
Quercus nigra	50%	3
Smilax hispida	50%	2
Ilex verticillata	50%	2
Dichanthelium dichotomum var. ramulosum	50%	2
Campsis radicans	50%	2
Carex debilis	50%	2
Carex lurida	50%	2
Carex ovalis	50%	2
Unknown	50%	2
Chasmanthium laxum	50%	2
Dichanthelium lucidum	50%	2
Dichanthelium lucidum	50%	2
Glyceria striata var. striata	50%	2
Berchemia scandens	50%	2
Hexastylis	50%	2
Mitchella repens	50%	2
Sambucus canadensis	50%	2
Ilex ambigua	50%	2
Quercus velutina	50%	2
Ligustrum sinense	50%	2
Quercus alba	50%	2
Lobelia cardinalis	50%	2
Lonicera japonica	50%	2
Panicum	50%	2
Osmunda cinnamomea var. cinnamomea	50%	2
Smilax glauca	50%	2

VIII.B.2: *Taxodium distichum - Fraxinus pennsylvanica - Quercus laurifolia / Acer rubrum / Saururus cernuus* Forest (CEGL007719)

Floristic table for CEGL007719

Number of Plots:	4		
Average Species Richness:	46	Species listed:	50
Average Plot Size:	625	May be > avg. spp. richness	
Homoteneity:	60	due to ties	

Species	Constancy	Avg Cover Class
Taxodium distichum	100%	7
Carex	100%	6
Saururus cernuus	100%	6
Toxicodendron radicans var. radicans	100%	3
Boehmeria cylindrica	100%	2
Bignonia capreolata	100%	2
Acer rubrum var. rubrum	75%	6
Nyssa biflora	75%	6
Poaceae	75%	6
Carpinus caroliniana var. caroliniana	75%	6
Liquidambar styraciflua	75%	5
Ulmus americana	75%	5
Smilax rotundifolia	75%	4
Berchemia scandens	75%	2
Ulmus alata	75%	2
Persicaria	75%	2
Mitchella repens	75%	2
Smilax walteri	75%	2
Parthenocissus quinquefolia	75%	2
Fraxinus pennsylvanica	50%	5
Fraxinus profunda	50%	4
Quercus lyrata	50%	3
Ilex opaca var. opaca	50%	3
Itea virginica	50%	2
Quercus michauxii	50%	2
Justicia ovata	50%	2
Galium	50%	2
Smilax hispida	50%	2
Hydrocotyle	50%	2
Smilax laurifolia	50%	2
Crataegus marshallii	50%	2
Campsis radicans	50%	2
Diospyros virginiana	50%	2
Solidago	50%	2
Unknown	50%	2
Woodwardia areolata	50%	2
Bidens	50%	2
Lycopus virginicus	50%	2
Lonicera japonica	50%	1
Dichanthelium dichotomum var. dichotomum	25%	5
Acer rubrum var. trilobum	25%	5
Quercus phellos	25%	4
Quercus stellata	25%	4
Ulmus rubra	25%	4
Leucothoe axillaris	25%	3
Dulichium arundinaceum var. arundinaceum	25%	3
Carex lupulina	25%	3
Quercus laurifolia	25%	3
Eubotrys racemosa	25%	3
Ilex verticillata	25%	3
Ilex verticillata	25%	3

IX.A.1: *Nuphar lutea ssp. sagittifolia* Herbaceous Vegetation (CEGL004328)

Number of Plots:	1		
Average Species Richness:	17	Species listed:	17
Average Plot Size:	100	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Nuphar sagittifolia	100%	9
Leersia	100%	7
Quercus lyrata	100%	5
Carex	100%	3
Ulmus alata	100%	2
Ampelopsis brevipedunculata	100%	2
Woodwardia areolata	100%	2
Solidago	100%	2
Persicaria	100%	2
Decumaria barbara	100%	2
Mitchella repens	100%	2
Mikania scandens	100%	2
Carex intumescens	100%	2
Ilex decidua var. decidua	100%	2
Eubotrys racemosa	100%	2
Carya aquatica	100%	1
Murdannia keisak	100%	1

X.A.1: *Quercus michauxii - Quercus pagoda / Clethra alnifolia - Leucothoe axillaris* Forest (CEGL007449)

Floristic table for CEGL007449

Number of Plots:	3		
Average Species Richness:	52	Species listed:	60
Average Plot Size:	600	May be > avg. spp. richness	
Homoteneity:	66	due to ties	

Species	Constancy	Avg Cover Class
Quercus alba	100%	7
Quercus phellos	100%	6
Liquidambar styraciflua	100%	6
Quercus michauxii	100%	4
Quercus nigra	100%	4
Nyssa biflora	100%	3
Ilex opaca var. opaca	100%	2
Chasmanthium laxum	100%	2
Mitchella repens	100%	2
Vitis rotundifolia var. rotundifolia	100%	2
Carex	100%	2
Toxicodendron radicans var. radicans	100%	2
Parthenocissus quinquefolia	100%	2
Smilax glauca	100%	2
Diospyros virginiana	100%	1
Bignonia capreolata	100%	1
Quercus velutina	100%	1
Acer rubrum var. trilobum	50%	7
Carpinus caroliniana var. caroliniana	50%	6
Liriodendron tulipifera var. tulipifera	50%	6
Quercus pagoda	50%	6
Ulmus alata	50%	5
Acer rubrum var. rubrum	50%	5
Carya	50%	5
Viburnum nudum	50%	4
Vaccinium fuscatum	50%	4
Arundinaria tecta	50%	4
Pinus taeda	50%	4
Clethra alnifolia	50%	4
Smilax rotundifolia	50%	3
Woodwardia areolata	50%	3
Vaccinium formosum	50%	3
Carya cordiformis	50%	3
Gaylussacia frondosa	50%	3
Oxydendrum arboreum	50%	3
Ulmus rubra	50%	2
Amelanchier	50%	2
Osmunda cinnamomea var. cinnamomea	50%	2
Vaccinium virgatum	50%	2
Ilex decidua var. decidua	50%	2
Sphagnum	50%	2
Euonymus americanus	50%	2
Osmunda regalis var. spectabilis	50%	2
Juncus	50%	2
Juncus coriaceus	50%	2
Leersia virginica	50%	2
Eubotrys racemosa	50%	2
Dichanthelium laxiflorum	50%	2
Magnolia virginiana	50%	2
Carex section Ovales	50%	2
Carex section Ovales	50%	2
Dichanthelium commutatum var. commutatum	50%	2
Nyssa sylvatica	50%	2
Desmodium	50%	2
Carex debilis	50%	2
Asimina triloba	50%	2
Moss	50%	2
Apios americana	50%	2
Rhododendron viscosum	50%	2
Amianthium muscitoxicum	50%	2
Poaceae	50%	2

X.B.1: *Taxodium ascendens / (Nyssa biflora) / Leucothoe racemosa - Lyonia lucida - Morella cerifera* Depression Forest (CEGL007420)

Floristic table for CEGL007420

Number of Plots:	1		
Average Species Richness:	18	Species listed:	18
Average Plot Size:	400	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Acer rubrum var. trilobum	100%	7
Vaccinium formosum	100%	6
Pinus taeda	100%	6
Eubotrys racemosa	100%	6
Lyonia ligustrina	100%	6
Nyssa biflora	100%	6
Vaccinium fuscatum	100%	6
Magnolia virginiana	100%	5
Smilax rotundifolia	100%	4
Clethra alnifolia	100%	4
Pinus serotina	100%	4
Woodwardia virginica	100%	3
Smilax glauca	100%	2
Persea palustris	100%	2
Sphagnum	100%	2
Phoradendron serotinum ssp. serotinum	100%	1
Sassafras albidum	100%	1
Ilex opaca var. opaca	100%	1

XI.A.1: *Woodwardia virginica / Sphagnum cuspidatum* Herbaceous Vegetation (CEGL004475)

Number of Plots:	1		
Average Species Richness:	8	Species listed:	8
Average Plot Size:	200	May be > avg. spp. richness	
Homoteneity:	100	due to ties	

Species	Constancy	Avg Cover Class
Sphagnum	100%	9
Dulichium arundinaceum var. arundinaceum	100%	7
Xyris difformis	100%	2
Smilax rotundifolia	100%	2
Pinus taeda	100%	2
Nyssa biflora	100%	2
Acer rubrum var. trilobum	100%	2
Smilax laurifolia	100%	2

XII.A.1: ***Nyssa biflora - Nyssa aquatica - Taxodium distichum / Saururus cernuus*** **Forest (CEGL004696)**

Floristic table for CEGL004696

Number of Plots:	3
Average Species Richness:	43
Average Plot Size:	700
Homoteneity:	73

Species listed: 65
May be > avg. spp. richness due to ties

Species	Constancy	Avg Cover Class
Taxodium distichum	100%	7
Alnus serrulata	100%	6
Clethra alnifolia	100%	5
Osmunda regalis var. spectabilis	100%	5
Cornus foemina	100%	5
Acer rubrum var. rubrum	100%	5
Boehmeria cylindrica	100%	5
Eubotrys racemosa	100%	4
Itea virginica	100%	4
Carex	100%	4
Toxicodendron radicans var. radicans	100%	3
Viburnum dentatum	100%	3
Rosa palustris	100%	2
Ilex opaca var. opaca	100%	2
Nyssa aquatica	67%	6
Fraxinus caroliniana	67%	6
Nyssa biflora	67%	5
Lyonia ligustrina	67%	5
Saururus cernuus	67%	4
Liquidambar styraciflua	67%	3
Smilax walteri	67%	3
Fraxinus profunda	67%	3
Morella cerifera	67%	3
Cyrilla racemiflora	67%	2
Triadenum walteri	67%	2
Rhododendron	67%	2
Lobelia cardinalis	67%	2
Parthenocissus quinquefolia	67%	2
Pleopeltis polypodioides ssp. michauxiana	67%	2
Persicaria	67%	2
Decumaria barbara	67%	2
Carex crinita	67%	2
Amelanchier	67%	2
Hydrocotyle verticillata	67%	2
Vaccinium fuscatum	67%	2
Carex lupulina	67%	2
Smilax rotundifolia	67%	1
Arundinaria gigantea	33%	6
Moss	33%	4
Acer rubrum var. trilobum	33%	3
Hydrangeaceae	33%	3
Ulmus americana	33%	2
Tillandsia usneoides	33%	2
Leersia virginica	33%	2
Arundinaria tecta	33%	2
Unknown	33%	2
Styrax americanus var. americanus	33%	2
Woodwardia areolata	33%	2
Smilax laurifolia	33%	2
Scutellaria lateriflora	33%	2
Scutellaria lateriflora	33%	2
Carex comosa	33%	2
Cuscuta compacta var. compacta	33%	2
Ipomoea	33%	2
Sabatia calycina	33%	2
Hypericum	33%	2
Lycopus	33%	2
Mikania scandens	33%	2
Apios americana	33%	2
Dulichium arundinaceum var. arundinaceum	33%	2
Carpinus caroliniana var. caroliniana	33%	2
Persea palustris	33%	2
Carex section Ovales	33%	2
Poaceae	33%	2
Carex decomposita	33%	2
Murdannia keisak	33%	2