

# Plant Communities of the Georgia Piedmont

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It is not easy to find comprehensive information about the plant communities of the Southeast. The following descriptions and lists were compiled using the best available resources (see references). They have been further supplemented through the experience gained over several years through the field experience of the author. These lists have been continually modified over the years and will continue to require updates as we learn more. While they are not perfect, they are good guides for determining the forest type present and for a basis for restoration plans. The community descriptions are based upon mature and relatively undisturbed natural communities.

There are three plant lists; the first two are composite lists with columns indicating the specific community type. The key to the lists is:

- X = typically occurs in the particular community
- D = dominant in particular community
- N = may indicate conditions of northern affinities
- B = may indicate the presence of basic soils
- \* following the common name = legally protected plant species

Please note: Many botanical names of plants have changed recently as classification and nomenclature are revised. While some of these have been updated in the following lists, not all have been. If you have difficulty finding information about any plant in the lists, look it up on the PLANTS Database website at [plants.usda.gov](http://plants.usda.gov). This site provides the current and all recent past names for each species.

## Upland Forests

### Mid-slope forests

The most common forest community in the Georgia piedmont is the mid-slope upland forest. These dry-mesic forests occur on the middle portion of slopes of all aspects and on some ridge-tops where there is sufficient soil depth to sustain the community. The soils of these communities are acidic and well-drained and may become quite dry during the late summer and early fall. These forests have a dense and moderately diverse canopy dominated by white oak, post oak, southern red oak, pignut hickory, and mockernut hickory. The understory is fairly diverse with dogwood, sourwood, blackgum, American hophornbeam, and American holly typically present. The shrub layer varies in density and is fairly low in diversity. Typical components are various blueberries, dwarf paw paw, beautyberry and strawberry bush. The ground layer is low in diversity. Some areas may be widely covered in vines such as muscadine grape, Virginia creeper, Carolina jessamine and poison ivy. Typical herbaceous species include wild ginger and pipsissiwa. The following variations may be found in mid-slope forests:

Basic mid-slope forests occur where the underlying rock provides a higher level of calcium and/or magnesium than is typical in most of the piedmont, creating less acidic and richer soil conditions. These

forests generally lack the abundance of acid-loving blueberries and other heath family plants found in other upland forests, and often have an abundance of chalk maple and redbud. Species that indicate the possible presence of basic soils are coralberry, fragrant sumac, Indian pink and wafer-ash. In addition to the presence of these species that are otherwise uncommon in the piedmont, often species that are commonly found in more mesic conditions, such as American beech, are found in these drier environments. The shrub and herbaceous layers are generally more diverse than in the typical mid-slope forest.

Northern affinity mid-slope forests are those that have a significant presence of species more typically found in the mountains of Georgia, in particular chestnut oak and Virginia pine. These are most commonly found in the upper range of the piedmont in or near the fault zones that separate the piedmont from the adjacent Blue Ridge and Ridge and Valley regions. They are also found on some of the large rock outcroppings lower in the piedmont, including Arabia and Stone Mountains in DeKalb County, Pine Mountain near Columbus, Kennesaw Mountain in Cobb County, and Panola Mountain in Rockdale County. The understory, shrub, and ground layers are generally similar to the typical upland forest but may be more diverse than is typical in mid-slope forests.

### **Ridge-top forests**

These sub-xeric forests are usually limited to ridge-tops, south-facing slopes, very steep slopes of other aspects, and areas that have sufficient rock to limit available soil moisture. The canopy is more open than that of mid-slope forests and may contain many of the same oak and hickory species. In addition, shortleaf and loblolly pines, post oak and blackjack oak are often dominant trees in these forests. The shrub layer is variable in density. It may be quite dense in openings and often consists primarily of blueberries. The herbaceous layer is generally low in diversity and may be sparse. Usually grasses such as the oatgrasses and broomsedge are abundant in openings of the canopy. Many herbaceous plants of dry open communities, such as asters and coreopsis, occur in the more open areas of these forests.

Variations of this community type are similar as those for mid-slope forests; that is, the presence of the same species described in mid-slope forests would indicate the presence of basic soils or define a “northern affinity” variation of the ridge-top forest.

### **Mesic forests**

Mesic forests are typically found along the lower end of slopes, most commonly those with a northerly aspect, in ravines and along the flats associated with streams where there is available moisture most of the growing season but the water drains quickly. These are more diverse in all layers than the drier upland forests. While many of the same canopy species occur, there is a notable presence and usually dominance of mesophytic, or moisture-loving, species such as American beech, tulip poplar and northern red oak. The understory and shrub layers are diverse. Typical species include musclewood, piedmont azalea, and wild hydrangea. The ground layer is generally moderately dense except under heavy shade and much more diverse than in other upland forests. Generally there is a high presence of ephemeral spring wildflowers such as bloodroot and trilliums. Ferns (Christmas, southern lady, New York, broad beech) are often important components of the ground layer. Variations of this community type:

Basic mesic forests are found where the underlying rock contains sufficient amounts of calcium or magnesium or other properties that result in less acidic and richer soils than are typically found in the piedmont. Indicators of this environment are green violet, doll’s eyes, and other herbaceous species typical of the limestone valleys of northwestern Georgia and cove forests of the mountains. In addition, a number of species usually found in floodplain or wetland environments in the piedmont are located in these well-drained conditions when basic soils are present. These species include spicebush, pawpaw,

and bladdernut.

Mesic forests having northern affinities are found in the upper piedmont in or near the fault zones that separate the region from the Blue Ridge and Ridge and Valley provinces. They also occur on north facing slopes associated with major rivers and in well-developed and extensive ravines. In the upper piedmont, Canada hemlock (*Tsuga canadensis*) and rosebay rhododendron may be abundant. These species, while common in the mountains, are very uncommon in the piedmont. Further south, the presence of other species more typically found in the mountains indicate this environment. These include Carolina rhododendron, mountain laurel, basswood, flame azalea, umbrella magnolia, and ferns such as hay-scented fern and marginal woodfern. Unlike the basic mesic forest, plants of the acid-loving heath family (blueberries, mountain laurel, Carolina rhododendron) are usually common.

Heath bluffs are found along primarily north- and northeast-facing banks of rivers and large streams of the piedmont. Generally, the soil is thin and rocky and over-all fairly dry, but the microclimate creates cool, moist conditions. Many of the species that occur in these communities are more typical of the mountains. The canopy is open to sparse and consists of many of the same species found in the communities above. The shrub layer is dominated by heath species, most commonly mountain laurel and Carolina rhododendron, but rosebay rhododendron may also occur. Other typical shrubs are horsesugar, witch hazel, and maple-leaf viburnum. The ground layer is generally sparse. Ground layer species found in these environments include galax and trailing arbutus.

## Plants of upland forests

### Trees:

Common name	Botanical name	Ridge-top	Mid-slope	Mesic
Ash, Green	<i>Fraxinus pennsylvanica</i>		X	X
Basswood	<i>Tilia americana</i>			B
Beech, American	<i>Fagus grandifolia</i>			D
Blackgum	<i>Nyssa sylvatica</i>	X	X	X
Cedar, Eastern Red	<i>Juniperus virginiana</i>	B	B	
Cherry, Black	<i>Prunus serotina</i>	X	X	X
Chinkapin	<i>Castanea pumila</i>	X	X	
Crabapple, Southern	<i>Malus angustifolia</i>		X	X
Cucumbertree	<i>Magnolia acuminata</i>			N
Dogwood, Flowering	<i>Cornus florida</i>	X	D	X
Dogwood, Pagoda	<i>Cornus alternifolia</i>			N
Elm, Winged	<i>Ulmus alata</i>	X	X	X
Hackberry or Sugarberry	<i>Celtis laevigata</i>		X	X
Hawthorn, Cockspur	<i>Crataegus crus-galli</i>	X	X	
Hawthorn, Littlehip	<i>Crataegus spathulata</i>		X	X
Hemlock, Canadian	<i>Tsuga canadensis</i>			N
Hickory, Bitternut	<i>Carya cordiformis</i>			X
Hickory, Mockernut	<i>Carya tomentosa</i>	D	D	X
Hickory, Pignut	<i>Carya glabra</i>	D	D	X
Hickory, Red or False	<i>Carya ovalis</i>	X	X	X
Hickory, Sand	<i>Carya pallida</i>	X	X	
Hickory, Shagbark	<i>Carya ovata</i>			B

Holly, American	<i>Ilex opaca</i>	X	X	X
Hophornbeam	<i>Ostrya virginiana</i>	X	X	X
Magnolia, Bigleaf	<i>Magnolia macrophylla</i>			X
Magnolia, Umbrella	<i>Magnolia tripetala</i>			N
Maple, Chalk	<i>Acer leucoderme</i>		X	X
Maple, Red	<i>Acer rubrum</i>	X	X	X
Maple, Southern Sugar	<i>Acer barbatum</i>			X
Mulberry, Red	<i>Morus rubra</i>			X
Muscledwood	<i>Carpinus caroliniana</i>			D
Oak, Black	<i>Quercus velutina</i>	D	X	
Oak, Blackjack	<i>Quercus marilandica</i>	D		
Oak, Chestnut	<i>Quercus montana (Q. prinus)</i>	N		
Oak, Chinkapin	<i>Quercus muehlenbergii</i>	B	B	
Oak, Northern Red	<i>Quercus rubra</i>		X	D
Oak, Post	<i>Quercus stellata</i>	D	D	
Oak, Scarlet	<i>Quercus coccinea</i>	X	X	
Oak, Shumard	<i>Quercus shumardii</i>			B
Oak, Southern Red	<i>Quercus falcata</i>	X	D	
Oak, Water	<i>Quercus nigra</i>		X	X
Oak, White	<i>Quercus alba</i>	X	D	X
Paw Paw	<i>Asimina triloba</i>			B
Persimmon	<i>Diospyros virginiana</i>	X	X	
Pine, Loblolly	<i>Pinus taeda</i>	D	X	X
Pine, Shortleaf	<i>Pinus echinata</i>	D	X	
Pine, Virginia	<i>Pinus virginiana</i>	N	N	
Plum, American	<i>Prunus americana</i>	X	X	
Plum, Hog	<i>Prunus umbellata</i>	X	X	
Redbud	<i>Cercis canadensis</i>	X	X	X
Sassafras	<i>Sassafras albidum</i>	X	X	
Serviceberry	<i>Amelanchier arborea</i>	X	X	X
Silverbell, Carolina	<i>Halesia carolina</i>			X
Sourwood	<i>Oxydendrum arboreum</i>	X	X	X
Sweetgum	<i>Liquidambar styraciflua</i>	X	X	X
Tulip Poplar	<i>Liriodendron tulipifera</i>		X	D

### **Shrubs:**

<b>Common name</b>	<b>Botanical name</b>	<b>Ridgetop</b>	<b>Midslope</b>	<b>Mesic</b>
Arrowwood	<i>Viburnum dentatum</i>			X
Azalea, Flame	<i>Rhododendron calendulaceum</i>			N
Azalea, Oconee	<i>Rhododendron flammeum</i>			X
Azalea, Piedmont	<i>Rhododendron canescens</i>			D
Azalea, Pinxterbloom	<i>Rhododendron periclymenoides (R. nudiflorum)</i>			N
Basil, Georga	<i>Satureja georgiana</i>	X	X	
Beautyberry	<i>Callicarpa americana</i>	X	X	X
Bladdernut	<i>Staphylea trifolia</i>		B	B
Blueberry, Elliott's	<i>Vaccinium elliotii</i>	X	X	X
Blueberry, Highbush	<i>Vaccinium corymbosum</i>			X
Blueberry, Upland Low	<i>Vaccinium pallidum</i>	X	X	
Buckeye, Georgia	<i>Aesculus sylvatica</i>		X	X

Buckthorn, Carolina	<i>Rhamnus caroliniana</i>		B	B
Buffalnut	<i>Pyralaria pubera</i>			N
Coralberry	<i>Symphiocarpus orbiculatus</i>		B	B
Deerberry	<i>Vaccinium stamineum</i>	X	X	
Devil's Walkingstick	<i>Aralia spinosa</i>	X	X	X
Doghobble	<i>Leucothoe fontanesiana</i>			N
Fringetree	<i>Chionanthus virginicus</i>	X	X	X
Hazelnut	<i>Corylus americana</i>		X	X
Hazelnut, Beaked	<i>Corylus cornuta</i>	X	X	
Hydrangea, Wild	<i>Hydrangea arborescens</i>			X
Leatherwood	<i>Dirca palustris</i>			B
Mountain Laurel	<i>Kalmia latifolia</i>			N
New Jersey Tea	<i>Ceanothus americanus</i>	X	X	
Paw Paw, Dwarf	<i>Asimina parviflora</i>		X	
Rhododendron, Dwarf	<i>Rhododendron minus</i>			N
Rhododendron, Rosebay	<i>Rhododendron maximum</i>			N
Rose, Carolina	<i>Rosa carolina</i>	X	X	
Sparkleberry	<i>Vaccinium arboreum</i>	X	X	
Spicebush	<i>Lindera benzoin</i>			B
St. Andrew's Cross	<i>Hypericum hypericoides</i>	X	X	
Storax	<i>Styrax grandifolius</i>			X
Strawberry Bush	<i>Euonymus americanus</i>	X	X	X
Sumac, Fragrant	<i>Rhus aromatica</i>	B	B	
Sweetleaf or Horsesugar	<i>Symplocos tinctoria</i>			N
Sweetshrub	<i>Calycanthus floridus</i>		X	X
Viburnum, Blackhaw	<i>Viburnum prunifolium</i>		X	X
Viburnum, Mapleleaf	<i>Viburnum acerifolium</i>		X	X
Viburnum, Rusty Blackhaw	<i>Viburnum rufidulum</i>		X	
Wafer-ash	<i>Ptelea trifoliata</i>	B	B	
Witchhazel	<i>Hamamelis virginiana</i>			X
Yellowroot	<i>Xanthorhiza simplicissima</i>			X

### **Vines:**

<b>Common name</b>	<b>Botanical name</b>	<b>Ridgetop</b>	<b>Midslope</b>	<b>Mesic</b>
Bay Star-vine *	<i>Schisandra glabra (S. coccinea)</i>			B
Crossvine	<i>Bignonia capreolata</i>	X	X	X
Greenbriar	<i>Smilax glauca, S. bona-nox</i>	X	X	X
Greenbriar	<i>Smilax rotundifolia, S. smallii</i>			X
Honeysuckle, Trumpet	<i>Lonicera sempervirens</i>		X	X
Hydrangea, Climbing	<i>Decumaria barbara</i>			X
Jessamine, Carolina	<i>Gelsemium sempervirens</i>	X	X	
Moonseed	<i>Menispermum canadense</i>			X
Muscadine	<i>Vitis rotundifolia</i>	X	X	X
Poison Ivy	<i>Toxicodendron radicans</i>	X	X	X
Snailseed	<i>Cocculus carolinus</i>		X	
Spiny Pod	<i>Matalea caroliniensis</i>			X
Trumpetcreeper	<i>Campsis radicans</i>	X	X	X
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	X	X	X
Virgin's-bower	<i>Clematis virginiana</i>			X

**Flowering herbaceous plants:**

<b>Common name</b>	<b>Botanical name</b>	<b>Ridgetop</b>	<b>Midslope</b>	<b>Mesic</b>
Alumroot	<i>Heuchera americana</i>		X	X
Anemone, Lance-leaf	<i>Anemone lancifolia</i>			B
Anemone, Rue	<i>Thalictrum thalictroides</i>			X
Arbutus, Trailing	<i>Epigaea repens</i>			N
Aster, White Woods	<i>Aster divaricatus</i>			X
Avens, White	<i>Geum canadense</i>			X
Beard-tongue	<i>Penstemon australis</i>		X	X
Bedstraw	<i>Galium spp.</i>		X	X
Beech Drops	<i>Epifagus virginiana</i>			X
Beggarticks	<i>Bidens spp.</i>		X	
Bellwort	<i>Uvularia perfoliata</i>		X	X
Bloodroot	<i>Sanguinaria canadensis</i>			X
Bluet, Summer	<i>Houstonia purpurea</i>		X	X
Buttercup	<i>Ranunculus spp.</i>		X	X
Campion, Starry	<i>Silene stellata</i>			X
Cardinal Flower	<i>Lobelia cardinalis</i>			X
Carrion-flower	<i>Smilax herbacea</i>			X
Chickweed, Giant	<i>Stellaria pubera</i>			X
Cicely, Sweet	<i>Osmorhiza claytonii</i>			B
Cinquefoil	<i>Potentilla canadensis</i>	X	X	X
Cohosh, Black	<i>Cimicifuga racemosa</i>			N
Columbine	<i>Aquilegia canadensis</i>		B	B
Coneflower, Cutleaf	<i>Rudbeckia laciniata</i>			X
Coreopsis, Whorled-leaf	<i>Coreopsis major</i>	X	X	
Cucumberroot, Indian	<i>Medeola virginiana</i>			X
Devil's-bit, Fairywand	<i>Chamaelirium luteum</i>			X
Doll's Eyes	<i>Actaea pachypoda</i>			B
Elephant's Foot	<i>Elephantopus tomentosus</i>	X	X	
Fire Pink	<i>Silene virginica</i>		X	X
Fly Poison	<i>Amianthium muscaetoxicum</i>			X
Foam Flower	<i>Tiarella cordifolia</i>			X
Galax	<i>Galax urceolata</i>			N
Gentian, Soapwort	<i>Gentiana saponaria</i>			X
Geranium, Wild	<i>Geranium maculatum</i>			X
Ginger, Canada Wild	<i>Asarum canadense</i>			N
Ginger, Shuttleworth's *	<i>Hexastylis shuttleworthii</i>			X
Ginger, Wild; Heartleaf	<i>Asarum arifolium (Hexastylis)</i>		X	X
Ginseng *	<i>Panax quinquefolia</i>			N
Goat's-rue	<i>Tephrosia virginiana</i>	X	X	
Goat's-beard	<i>Aruncus dioicus</i>			N
Goldenrod, Bluestem	<i>Solidago caesia</i>			X
Grass, Blue-eyed	<i>Sisyrinchium angustifolium</i>			X
Green and Gold	<i>Chrysogonum virginianum</i>	X	X	
Hawkweed	<i>Hieracium venosum</i>	X	X	X
Heal-all	<i>Prunella vulgaris</i>		X	X
Iris, Dwarf Crested	<i>Iris cristata</i>			N

Jack-in-the-Pulpit	<i>Arisaema triphyllum</i>			X
Lady's Slipper, Pink *	<i>Cypripedium acaule</i>		X	
Lady's Slipper, Yellow *	<i>Cypripedium calceolus var pubescens</i>			B
Larkspur	<i>Delphinium tricorne</i>			B
Lily, Trout	<i>Erythronium umbilicatum</i>			X
Lion's Foot	<i>Prenanthes serpentaria</i>		X	X
Liverleaf	<i>Hepatica americana</i>			X
Loosestrife, Fringed	<i>Lysimachia ciliata</i>			X
Lousewort	<i>Pedicularis canadensis</i>			N
Mayapple	<i>Podophyllum peltatum</i>			X
Mint, Mountain	<i>Pycnanthemum incanum</i>	X	X	
Nettle, Wood	<i>Laportea canadensis</i>			X
Orchid, Cranefly	<i>Tipularia discolor</i>		X	X
Partridgeberry	<i>Mitchella repens</i>		X	X
Phlox, Blue Woodland	<i>Phlox divaricata</i>		B	B
Phlox, Carolina	<i>Phlox carolina</i>		X	
Phlox, Hairy	<i>Phlox amoena</i>		X	
Phlox, Smooth	<i>Phlox glaberrima</i>		X	X
Pink, Indian	<i>Spigelia marilandica</i>		B	B
Pipsissewa or Spotted Wintergreen	<i>Chimaphila maculata</i>	X	X	X
Plantain, Pale Indian	<i>Cacalia atriplicifolia</i>			N
Plantain, Rattlesnake	<i>Goodyera pubescens</i>		X	X
Pussy-toes	<i>Antennaria plataginifolia</i>	X	X	
Sage, Lyre-leaf	<i>Salvia lyrata</i>	X	X	
Shooting Star	<i>Dodocatheon meadia</i>		B	
Skullcap	<i>Scutellaria integrifolia</i>	X	X	
Solomon's Seal	<i>Polygonatum biflorum</i>		X	X
Solomon's Seal, False	<i>Smilacina racemosa</i>			X
Spurge, Allegheny	<i>Pachysandra procumbens</i>			B
Spurge, Flowering	<i>Euphorbia corollata</i>		X	
Tick-trefoil	<i>Desmodium spp.</i>	X	X	X
Toothwort	<i>Cardamine diphylla</i>			N
Trillium, Catesby's	<i>Trillium catesbaei</i>			X
Trillium, Sessile	<i>Trillium cuneatum</i>			X
Trillium, Southern Nodding	<i>Trillium rugelii</i>			B
Violet, Bird's-foot	<i>Viola pedata</i>		X	X
Violet, Green	<i>Hybanthes concolor</i>			B
Wood-sorrel, Violet	<i>Oxalis violacea</i>			X
Yam, Wild	<i>Dioscorea villosa</i>			X

### **Ferns:**

<b>Common name</b>	<b>Botanical name</b>	<b>Ridgetop</b>	<b>Midslope</b>	<b>Mesic</b>
Bracken Fern	<i>Pteridium aquilinum</i>	X	X	
Broad Beech Fern	<i>Phegopteris hexagonoptera</i>			X
Christmas Fern	<i>Polystichum acrostichoides</i>		X	X
Cinnamon Fern	<i>Osmunda cinnamomea</i>			X
Coarse-lobed Grape Fern	<i>Botrychium biternatum</i>			X
Cut-leaf Grape Fern	<i>Botrychium dissectum</i>			X
Glade Fern	<i>Diplazium pycnocarpon</i>			B

Hay-scented Fern	<i>Dennstaedtia punctilobula</i>	N	N
Marginal Wood Fern	<i>Dryopteris marginalis</i>		N
New York Fern	<i>Thelypteris noveboracensis</i>		X
Northern Maidenhair Fern	<i>Adiantum pedatum</i>		N
Rattlesnake Fern	<i>Botrychium virginianum</i>	X	X
Resurrection Fern	<i>Pleopeltis polypodioides</i>	X	X
Rockcap Fern	<i>Polypodium virginianum</i>		N
Royal Fern	<i>Osmunda regalis</i>		X
Sensitive Fern	<i>Onoclea sensibilis</i>		X
Silvery Glade Fern	<i>Deparia acrostichoides</i>		B
Small or Netted Chain Fern	<i>Woodwardia areolata</i>		X
Southern Fragile Fern	<i>Cystopteris protrusa</i>		B
Southern Lady Fern	<i>Athyrium filix-femina</i>		X
Spleenwort, Ebony	<i>Asplenium platyneuron</i>	X	X

### **Grasses and sedges**

<b>Common name</b>	<b>Botanical name</b>	<b>Ridgetop</b>	<b>Midslope</b>	<b>Mesic</b>
Bentgrass, Small	<i>Agrostis hyemalis</i>			X
Bluegrass, Early	<i>Poa cuspidate</i>			X
Bluegrass, Woodland	<i>Poa sylvestris</i>			X
Bluestem, Little	<i>Schizachyrium scoparium</i>	X	X	
Broomsedge	<i>Andropogon virginicus</i>	X		
Indiangrass	<i>Sorghastrum nutans</i>	X	X	
Melic Grass, Two-flowered	<i>Melica mutica</i>			X
Needlegrass, Black Seeded	<i>Piptochaetium avenaceum</i> ( <i>Stipa</i> )	X	X	X
Oat Grass, Poverty	<i>Danthonia spicata</i>		X	X
Oatgrass, Downy Poverty	<i>Danthonia sericea</i>	X	X	
Panic Grass, Beaked	<i>Panicum anceps</i>	X	X	
Plumegrass	<i>Saccharum alopecuroidum</i> ( <i>Erianthus</i> )	X	X	
River Cane	<i>Arundinaria gigantea</i>			X
Rosette Grass	<i>Dichanthelium spp.</i>	X	X	X
Sedge	<i>Carex spp.</i>	X	X	X
Wood Rush	<i>Luzula acuminata</i>			X
Woodoats, Longleaf	<i>Chasmanthium sessiliflorum</i>		X	X

## **Bottomlands**

Bottomlands of the piedmont consist of floodplains and wetlands. These are two distinct community types but are grouped together because they contain many of the same plant species. The type of community that evolves in low areas will depend on the topography of the area, soils and geology, and the size of the river or stream associated with the area. Floodplains are generally not wetlands themselves, but often contain wetlands within them. Wetlands are areas that are saturated or inundated at least part of the growing season that develop distinctive soils and are dominated by vegetation tolerant of these conditions.

Large floodplains consist of the levee forest nearest the river, the floodplain forest located beyond the levee, and, in some cases, swamp forests in low-lying areas, which are wetlands. In smaller floodplains, these features generally do not develop. Small streams do not have floodplains but may have wetlands associated with them.

The soils of bottomlands tend to be high in fertility due to the deposition of sediment during flooding. Because of this, bottomlands have been extensively cleared and drained for agricultural crops. Examples of intact, relatively undisturbed bottomlands are difficult to find as a result. Compounding the widespread clearing is the typically high presence of invasive plants, especially Chinese privet, which thrive in these environments and readily invade soils that are exposed from natural flood events.

## **Floodplains**

Floodplain forests comprise most of the area of a typical floodplain. They are located on one or more terraces behind the levee and, while flooded one or more times a year, generally drain fairly rapidly. These forests are dominated by species that tolerate this flooding such as water oak, willow oak, overcup oak, and eastern cottonwood. The understory and shrub layers tend to be fairly sparse under dense canopies although extensive stands of river cane may occur. Vines such as crossvine and greenbriers are often important components of these forests. The ground layer is relatively sparse and is dominated by vines and flood-tolerant ferns, forbs, grasses, sedges, and rushes.

Levee forests occur on river banks and point bar deposits on large floodplains. The levee is formed by deposits of sediment during flood events and is generally higher than the land on its back side. These environments are well-drained and exposed to sunlight on the river side. They are typically dominated by river birch, sycamore, and boxelder. Also usually present are black willow, river cane, river oats, and sun-tolerant shrubs such as alder, elderberry, silky dogwood, and Virginia sweetspire, and a number of herbaceous plants and vines.

## **Wetlands**

Swamp forests are forested wetlands. Within a floodplain, these are located in the lowest areas or in areas that do not drain readily. Dominant trees are typically green ash, red maple, swamp tupelo, and often sweetgum. Shrubs occur sporadically and may include swamphaw, winterberry, alder, and the shrub dogwoods. The ground layer is generally poorly developed under dense canopies. Typical ground layer species include sensitive fern, small chain fern, cardinal flower, false nettle, and smartweeds. Extensive swamp forests are relatively uncommon in the Georgia piedmont. Small areas of swamp forest may occur along smaller streams that lack floodplains and are often associated with seepages from adjacent slopes.

Open wetlands are usually called marshes (treeless wetlands) or emergent wetlands and are dominated by shrubs and herbaceous plants. Typical woody plants are alder, buttonbush, silky dogwood, black willow,

and elderberry. Rushes and sedges, most notably woolgrass, soft rush, and a number of sedges, usually dominate the ground layer. In the Georgia piedmont, these communities are frequently associated with beaver activity.

In the following list, the “floodplain” column includes the levee forest and the “wetland” column includes all wetland communities.

## Plants of piedmont bottomlands

### Trees:

Common name	Botanical name	Floodplain	Wetland
Ash, Green	<i>Fraxinus pennsylvanica</i>	X	D
Birch, River	<i>Betula nigra</i>	D	X
Boxelder	<i>Acer negundo</i>	D	X
Carolina Silverbell	<i>Halesia carolina</i>	X	
Cottonwood, Eastern	<i>Populus deltoides</i>	X	X
Elm, American	<i>Ulmus americana</i>	X	
Elm, Slippery or Red	<i>Ulmus rubra</i>	X	
Elm, Winged	<i>Ulmus alata</i>	X	
Hackberry or Sugarberry	<i>Celtis laevigata</i>	X	X
Hawthorn, Parsley	<i>Crataegus marshallii</i>	X	
Hawthorn, Green	<i>Crataegus viridis</i>	X	X
Hickory, Bitternut	<i>Carya cordiformis</i>	X	
Holly, American	<i>Ilex opaca</i>	X	
Magnolia, Sweetbay	<i>Magnolia virginiana</i>		X
Maple, Red	<i>Acer rubrum</i>	X	D
Maple, Southern Sugar	<i>Acer barbatum</i>	X	
Mulberry, Red	<i>Morus rubra</i>	X	
Muscledwood	<i>Carpinus caroliniana</i>	X	
Oak, Cherrybark	<i>Quercus pagoda</i>	X	
Oak, Overcup	<i>Quercus lyrata</i>	X	X
Oak, Swamp Chestnut	<i>Quercus michauxii</i>	X	X
Oak, Water	<i>Quercus nigra</i>	D	
Oak, Willow	<i>Quercus phellos</i>	D	
Paw Paw	<i>Asimina triloba</i>	X	
Pine, Loblolly	<i>Pinus taeda</i>	X	
Poison Sumac	<i>Toxicodendron vernix</i>		X
Sweetgum	<i>Liquidamber styraciflua</i>	D	D
Sycamore	<i>Platanus occidentalis</i>	D	X
Tulip or Yellow Poplar	<i>Liriodendron tulipifera</i>	X	
Tupelo, Swamp	<i>Nyssa biflora</i> ( <i>N. sylvatica</i> <i>biflora</i> )	X	D
Walnut, Black	<i>Juglans nigra</i>	X	
Willow, Black	<i>Salix nigra</i>	X	D

### Shrubs:

Common name	Botanical name	Floodplain	Wetland
Alder, Tag	<i>Alnus serrulata</i>	X	D

Azalea, Swamp	<i>Rhododendron viscosum</i>	X	X
Azalea, Sweet	<i>Rhododendron arborescens</i>	X	
Blueberry, Highbush	<i>Vaccinium corymbosum</i>	X	X
Buckeye, Georgia or Painted	<i>Aesculus sylvatica</i>	X	
Buttonbush	<i>Cephalanthus occidentalis</i>	X	X
Chokeberry	<i>Aronia arbutifolia</i>		X
Devil's Walking-Stick	<i>Aralia spinosa</i>	X	
Dogwood, Silky	<i>Cornus amomum</i>	X	D
Dogwood, Swamp or stiff	<i>Cornus foemina</i>	X	X
Elderberry	<i>Sambucus canadensis</i>	X	D
Indigobush	<i>Amorpha fruticosa</i>		X
Leucothoe, Swamp	<i>Leucothoe racemosa</i>		X
Maleberry	<i>Lyonia ligustrina</i>	X	X
Possumhaw	<i>Ilex decidua</i>	X	X
Rose, Swamp	<i>Rosa palustris</i>	X	X
Snowbell, American	<i>Styrax americana</i>	X	X
Spicebush	<i>Lindera benzoin</i>	X	X
St. John's-wort, Naked-flowered	<i>Hypericum nudiflorum</i>	X	
Strawberrybush	<i>Euonymus americanus</i>	X	
Swamphaw	<i>Viburnum nudum</i>	X	D
Sweetspire, Virginia	<i>Itea virginica</i>	X	X
Winterberry	<i>Ilex verticillata</i>	X	X
Yellowroot	<i>Xanthorhiza simplicissima</i>	X	

### Vines:

<b>Common name</b>	<b>Botanical name</b>	<b>Floodplain</b>	<b>Wetland</b>
Blackjack Vine	<i>Berchemia scandens</i>	X	X
Climbing Hemp	<i>Mikania scandens</i>		X
Crossvine	<i>Bignonia capreolata</i>	X	
Greenbriar	<i>Smilax rotundifolia, S. smallii. S. laurifolia</i>	X	X
Groundnut	<i>Apios americana</i>	X	
Hydrangea, Climbing	<i>Decumaria barbara</i>	X	
Muscadine	<i>Vitis rotundifolia</i>	X	
Poison Ivy	<i>Toxicodendron radicans</i>	X	
Spiny Pod	<i>Matelea carolinensis</i>	X	
Trumpetcreeper	<i>Campsis radicans</i>	X	
Virgin's Bower	<i>Clematis virginiana</i>	X	
Wisteria, American	<i>Wisteria frutescens</i>	X	

### Flowering herbaceous plants:

<b>Common name</b>	<b>Botanical name</b>	<b>Floodplain</b>	<b>Wetland</b>
Arrow Arum	<i>Peltandra virginica</i>		X
Arrow Vine	<i>Polygonum sagittatum</i>		X
Aster, Swamp	<i>Aster puniceus</i>		X
Avens, White	<i>Geum canadense</i>	X	X
Bedstraw	<i>Galium spp.</i>	X	
Beggarticks	<i>Bidens aristosa, B. frondosa</i>	X	X
Blue Lobelia	<i>Lobelia puberula</i>	X	X

Buttercup	<i>Ranunculus spp.</i>	X	
Butterweed or Ragwort	<i>Senecio glabellus</i>	X	X
Cardinal Flower	<i>Lobelia cardinalis</i>	X	X
Clearweed	<i>Pilea pumila</i>		X
Crown-beard	<i>Verbesina alternifolia</i>	X	
Cutleaf Coneflower	<i>Rudbeckia laciniata</i>	X	
Dayflower, Virginia	<i>Commelina virginica</i>	X	
Duck Potato, Arrowhead	<i>Sagittaria latifolia</i>	X	X
Gentian, Soapwort	<i>Gentiana saponaria</i>	X	X
Ginger, Shuttleworth's *	<i>Hexastylis shuttleworthii</i> var. <i>harperi</i>		X
Goldenrod	<i>Solidago rugosa, S. gigantea</i>	X	X
Grass, Blue-eyed	<i>Sisyrinchium angustifolium</i>	X	
Green Dragon	<i>Arisaema dracontium</i>	X	X
Iris, Virginia	<i>Iris virginica</i>		X
Ironweed	<i>Vernonia altissima, V.</i> <i>novaboracensis</i>	X	X
Jack-in-the-Pulpit	<i>Arisaema triphyllum</i>	X	
Jewelweed or Touch-me-not	<i>Impatiens capensis</i>	X	X
Joe Pye Weed	<i>Eupatorium fistulosum</i>	X	X
Lily, Atamasco	<i>Zephyranthes atamasco</i>	X	X
Lily, Spider	<i>Hymenocallis occidentalis</i>	X	
Lizard's Tail	<i>Saururus cernuus</i>		X
Loosestrife, Fringed	<i>Lysimachia ciliata</i>	X	X
Lopseed	<i>Phryma letpostachya</i>	X	X
Mallow, Swamp	<i>Hibiscus moscheutos</i>		X
Mayapple	<i>Podophyllum peltatum</i>	X	
Mistflower	<i>Eupatorium coelestinum</i>	X	
Monkeyflower, Swamp	<i>Mimulus ringens</i>		X
Nettle, False	<i>Boehmeria cylindrica</i>	X	X
Ragweed, Giant	<i>Ambrosia trifida</i>	X	X
Smartweed	<i>Polygonum spp.</i>	X	X
Sneezeweed	<i>Helenium autumnale</i>	X	X
St. John's Wort	<i>Hypericum mutilum</i>	X	
Stinkweed	<i>Pluchea camphorata</i>		X
Sunflower, Swamp	<i>Helianthus angustifolius</i>		X
Trillium, Sessile	<i>Trillium cuneatum</i>	X	
Turtlehead	<i>Chelone glabra</i>		X
Yam, Wild	<i>Dioscorea villosa</i>	X	

### **Ferns:**

<b>Common name</b>	<b>Botanical name</b>	<b>Floodplain</b>	<b>Wetland</b>
Cinnamon Fern	<i>Osmunda cinnamomea</i>	X	X
Coarse-lobed Fern	<i>Botrychium biternatum</i>	X	
New York Fern	<i>Thelypteris noveboracensis</i>	X	
Rattlesnake Fern	<i>Botrychium virginianum</i>	X	
Royal Fern	<i>Osmunda regalis</i> var. <i>spectabilis</i>	X	X
Sensitive Fern	<i>Onoclea sensibilis</i>	X	X
Small or Netted Chain Fern	<i>Woodwardia areolata</i>	X	X
Southern Lady Fern	<i>Athyrium filix-femina</i>	X	



### Grasses, sedges, and rushes:

<b>Common name</b>	<b>Botanical name</b>	<b>Floodplain</b>	<b>Wetland</b>
Broomsedge, Bushy	<i>Andropogon glomeratus</i>	X	X
Bur-reed, Eastern	<i>Sparganium americanum</i>		X
Cattail	<i>Typha latifolia</i>		X
Cutgrass	<i>Leersia oryzoides</i>	X	X
Deer-tongue Grass	<i>Panicum clandestinum</i>	X	X
Eastern Gama Grass	<i>Tripsacum dactyloides</i>	X	
Fowl Manna Grass	<i>Glyceria striata</i>	X	X
Long-leaf wood oats	<i>Chasmanthium sessiliflorum</i>	X	
River Cane	<i>Arundinaria gigantea</i>	X	
River Oats	<i>Chasmanthium latifolium</i>	X	
Rush, Soft	<i>Juncus effusus</i>		X
Sedges	<i>Carex and Cyperus spp.</i>		X
Slender Woodoats	<i>Chasmanthium laxum</i>	X	X
Sugarcane Plume Grass	<i>Saccharum giganteus (Erianthus)</i>	X	
Switch Grass	<i>Panicum virgatum</i>	X	X
Woodreed	<i>Cinna arundinacea</i>		X
Woolgrass	<i>Scirpus cyperinus</i>		X

### **Open upland communities**

The piedmont of Georgia largely consists of forested communities. However, where disturbance creates openings in a forest or there are conditions that prevent the development of a forest, open communities may develop.

The most well-studied open community type is the granitic outcrop. These are unique communities that develop over exposures of granite and granite-like rock. The vegetation consists of a number of species found in other communities that can tolerate the hot, dry environments and thin soils, including loblolly pine, winged elm, eastern red cedar, fringe-tree, sparkleberry, and broomsedge. Many of the species found in these communities have developed adaptations such as succulent or hairy leaves and stems to retain moisture and many are annuals that are dormant throughout the hottest time of the year. Granite outcrops contain many unusual species, some of them endemic or restricted to these communities, including several rare species. The best known examples of this community type in the Atlanta area are Stone, Panola, and Arabia Mountains. These highly specialized communities are sporadically located throughout the Georgia piedmont. Since they are not common in Atlanta area greenspaces and the species list is quite involved, these communities will not be discussed further.

Other open communities are not as well understood. Because of the extent of land disturbance since European settlement, non-forested land is far more common than it was before 1700. Since then, many introduced plants have naturalized and have become common components of open communities. It is likely that there are many differences in the abundance and diversity of native species. For example, broomsedge is probably more dominant in open areas today because it establishes rapidly in disturbed areas, while, very likely, little bluestem may have been more common prior to European settlement. These changes make studying and understanding “natural” open communities difficult. Historically, open communities would develop where natural disturbances such as fires or wind throws occurred and where Native Americans managed by controlled fires for hunting and agriculture. In some areas, thin or rocky soil might limit the development of a permanent canopy and there would be a more or less stable

open community that would be maintained by periodic fires and/or grazing by native herbivores. With the elimination of large native herbivores and the wide-scale suppression of fire, what open communities exist now are generally maintained by mowing or active management.

Grasses typically dominate stable open communities (other than granitic outcrops) and usually comprise 70-80% of the vegetation. An assortment of annual and perennial forbs occurs within the grasses. We commonly refer to such areas as meadows or prairies. The community is called a savanna where there are scattered trees within such grasslands. Several woody species such as Chickasaw plum and sumacs are frequently found within or around open communities. The following list includes the species found in dry to dry-mesic conditions only. Further study is needed to develop more comprehensive lists for open communities.

### **Plants of dry to dry-mesic open communities (grasslands and meadows)**

#### **Grasses and sedges:**

Barley, little	<i>Hordeum pusillum</i>
Bentgrass, Small	<i>Agrostis hyemalis</i>
Bluegrass, Forest	<i>Poa sylvestris</i>
Broomsedge, Virginia	<i>Andropogon virginicus</i>
Bluestem, Elliott's	<i>Andropogon gyrans</i>
Bluestem, Little	<i>Schizachyrium scoparium</i>
Bluestem, Splitbeard	<i>Andropogon tenarius</i>
Carpetgrass	<i>Axonopus fissifolius</i>
Hairgrass or Pink Muhly	<i>Muhlenbergia capillaris</i>
Indiangrass, Elliott's	<i>Sorghastrum elliottii</i>
Indiangrass, Yellow	<i>Sorghastrum nutans</i>
Lacegrass	<i>Eragrostis capillaries</i>
Lovegrass, Bigtop	<i>Eragrostis hirsuta</i>
Lovegrass, Purple	<i>Eragrostis spectabilis</i>
Oat Grass	<i>Danthonia spicata</i>
Oat grass, Downy	<i>Danthonia sericea</i>
Panic grass, Beaked	<i>Panicum anceps</i>
Plumegrass, Bent-awn	<i>Saccharum brevibarbe var. contortum</i>
Plumegrass, Silver	<i>Saccharum alopecuroides</i>
Purpletop	<i>Tridens flavus</i>
Rosette Grass	<i>Dichanthelium spp.</i>
Sedge, Upland	<i>Carex nigomarginata</i>
Switchgrass	<i>Panicum virgatum</i>
Three-awn Grass	<i>Aristida spp.</i>

#### **Flowering herbaceous plants:**

Angelica	<i>Angelica venenosa</i>
Asters	<i>Aster dumosus, A. ericoides, A. patens &amp; A. pilosus</i>
Black-eyed Susan	<i>Rudbeckia hirta</i>
Blazing-star	<i>Liatris graminifolia</i>
Coreopsis	<i>Coreopsis major, C. lanceolata</i>
Daisy Fleabane	<i>Erigeron philadelphicus</i>

Dog Fennel	<i>Eupatorium capillifolium</i>
False-dandelion	<i>Pyrrhopappus carolinianus</i>
Goat's Rue	<i>Tephrosia virginiana</i>
Goldenrods	<i>Solidago altissima, S. canadensis, S. rugosa, S. nemoralis, S. odora, S. speciosa</i>
Maryland Golden Aster	<i>Chrysopsis mariana</i>
Milkweed, Butterfly Weed	<i>Asclepias tuberosa</i>
Milkweed, Claspig	<i>Asclepias amplexicaulis</i>
Milkweed, White	<i>Asclepias variegata</i>
Mountain Mint, Narrowleaf	<i>Pycnanthemum tenuifolium</i>
Mountain Mint, White	<i>Pycnanthemum incanum</i>
Partridge Pea	<i>Chamaecrista fasciculata (Cassia)</i>
Purple-disc Sunflower	<i>Helianthus atrorubens</i>
Ragwort, Common	<i>Senecio anonymous</i>
Rattlesnake Master	<i>Eryngium yuccifolium</i>
Sage, Lyre-leaf	<i>Salvia lyrata</i>
Sensitive Brier	<i>Schrankia microphylla</i>
Silkgrass	<i>Pityopsis graminifolia</i>
Silphiums	<i>Silphium astericus, S. compositum</i>
Spotted Horsemint	<i>Monarda punctata</i>
Sundrops	<i>Oenothera biennis, O. fruticosa</i>
Thistle, Pasture	<i>Cirsium discolor</i>
Toadflax	<i>Nuttallanthus canadensis (Linaria)</i>
Wild Bergamot	<i>Monarda fistulosa</i>
Yucca, Adam's Needle	<i>Yucca filamentosa</i>

**Trees, shrubs, and vines:**

Beautyberry	<i>Callicarpa americana</i>
Blackberry	<i>Rubus argutus</i>
Carolina Jessamine	<i>Gelsemium sempervirens</i>
Chickasaw plum	<i>Prunus angustifolia</i>
Eastern red cedar	<i>Juniperus virginiana</i>
Elm, Winged	<i>Ulmus alata</i>
Fringe-tree	<i>Chionanthus virginicus</i>
Hawthorn, Cockspur	<i>Crataegus crus-galli</i>
Muscadine	<i>Vitis rotundifolia</i>
New Jersey Tea	<i>Ceanothus americanus</i>
Pasture or Carolina Rose	<i>Rosa carolina</i>
Pine, Loblolly	<i>Pinus taeda</i>
Poison ivy	<i>Toxicodendron radicans</i>
Red bud	<i>Cercis canadensis</i>
Serviceberry	<i>Amelanchier arborea</i>
Sparkleberry	<i>Vaccinium arboreum</i>
Sumac, Smooth	<i>Rhus glabra</i>
Sumac, Winged	<i>Rhus copallina</i>
Trumpet creeper	<i>Campsis radicans</i>
Virginia creeper	<i>Parthenocissus quinquefolia</i>

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