VASCULAR FLORA OF LONG POND SLOUGH, MONTGOMERY COUNTY, TENNESSEE

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ABSTRACT—Long Pond Slough is a 12-ha wetland on the flood plain of the lower Cumberland River, Montgomery Co., Tennessee. The site appears to be an old river-meander channel and is designated as a State wetland partly owned and managed by the Tennessee Wildlife Resources Agency. Although completely surrounded by agricultural fields, the slough supports habitat types ranging from permanent standing water with submerged, nonrooted-floating and rooted-floating taxa to emergent marsh, shrub-tree swamp, and bottomland hardwood forest. The diverse vascular flora, studied by one or both of us for >30 years and presented here in an annotated list, includes 251 species (240 native) with six species that are listed as threatened or of special concern in Tennessee.

Long Pond Slough is a state-owned (in part) wetland on the flood plain of the lower Cumberland River (Barlkley Reservoir) in Montgomery Co., northwestern Middle Tennessee. The site, known since settlement in the late 1700s as "Long Pond," appears to be an old river-meander channel that contains permanent water. Such slow-flowing, shallow swamps-marshes historically have been referred to as sloughs in the southeastern United States (Mitsch and Gosselink, 1986), and the recent addition of "Slough" to the name is appropriate.

Long Pond Slough is significant because: most lower Cumberland River wetlands of this type have been inundated by United States Army Corps of Engineers high dams or drained and now used for agricultural production; and the site supports a number of hydrophytic communities in a small area, and several rare plant species occur there. These features were pointed out by Quartersen and Powell (1978), who evaluated Long Pond Slough for potential designation as a National Natural Landmark, and by Scott et al. (1980), who recommended designation as a Tennessee Natural Area. As a result of these recommendations, Long Pond Slough is now a designated Tennessee wetland. More than one-half of the site is owned and managed by the Tennessee Wildlife Resources Agency as part of a program to acquire targeted wetlands across the state (Tennessee Environmental Policy Office, 1996). The remainder of the site is owned and controlled by area farmers who also own the surrounding agricultural fields.

The purpose of this study was to document the vascular flora of Long Pond Slough and to qualitatively describe the major wetland communities. A description of the area is included, along with information on soils and climate taken from published reports. The included data will add to the recent and growing literature on the flora of Tennessee wetlands, e.g., those of Guthrie (1989) and Henson (1990a, 1990b, 1990c, 1990d) from western Tennessee, Webb and Bates (1989) from along the Tennessee River system, Ellis and Chester (1989) from the eastern and northern Highland Rim, Jones (1989) from the Cumberland Plateau, and Van Horn (1986) from the Ridge and Valley.

STUDY AREA

Long Pond Slough lies ca. 10 km west of Clarksville, Tennessee, centered at 87°26'00" W longitude and 36°30'10" N latitude on the New Providence United States Geological Survey quadrangle 1957, and the Palmyra United States Geological Survey quadrangle 1958. It is within the Western Highland Rim Subsection, Highland Rim Section, of the Interior Low Plateau Physiographic Province (Fenneman, 1938).

The site is on an alluvial terrace and includes ca. 12 ha with an elongated pond of 6 ha. The permanent water is surrounded by a narrow band of woodlands where conditions range from emergent marsh to swamp and bottomland hardwood forest (Fig. 1). At midpoint of the pond, the eastern edge is ca. 500 m west of the Cumberland River while the western edge is ca. 150 m east of footslopes of adjacent uplands. Cultivated fields (corn, soybeans, and tobacco) or pastures completely surround the wetland, and it is rarely visited except by hunters (of deer, small game, and waterfowl). The elevation is 114 m above sea level or 4.6 m above normal summer pool elevation of Barkley Reservoir. Water levels of the slough are maintained by run-off from adjacent lands and by occasional flooding from the river; yearly and sometimes multi-yearly river overflow (backwater) occurred before construction of Barkley Dam in 1966. Underground springs also may be significant because the water level drops only slightly in dry years. Long Pond Slough drains from the south end where beaver dams also affect water levels.

The substrate is Quaternary (Pleistocene and Recent) alluvium consisting of unconsolidated silt, sand, clay, and gravel <15 m in thickness (Marsh, 1969; Marsh and Marcher, 1975). This substrate lies within a bedrock valley developed in the St. Louis and Warsaw Limestones of middle Mississippian age (Quartarman and Powell, 1978).

Soils of three series occur in the area (Lampey et al., 1975). Newark silts loam (Newark Series) on the west side of Long Pond Slough is a poorly drained soil of first bottoms. It mostly occurs in narrow bands with slopes of 0-2%, has slight to medium acidity, and has a high natural fertility. However, ponding is common, the water table is high, and it
is not well suited to row crops. Lindside silt loam (Lindside Series) occupies the east side. This nearly level soil (slopes <2%) has medium to neutral acidity and high natural fertility and occurs on first bottoms. It is moderately well drained and suitable for row crops. Soils of the Arrington Series surround the area just outside of the study zones. This is the deep, occasionally flooded but well drained and highly productive soil of floodplains. Slopes are <2%, and almost all Arrington soils are in tith.

The climate of the area is warm-temperate and characteristic of a humid-mesothermal type (Thornthwaite, 1948). The growing season often exceeds 200 days and extends from mid-April to mid-late October. Soils normally freeze to a depth of several centimeters each winter but rarely remain frozen for more than a few days. It is not uncommon for the standing water of Long Pond Slough to freeze completely, with partial or complete thawing usually within 5 days. Yearly rainfall averages 120-125 cm; late winter-spring are typically the wettest seasons, and autumn the driest. An average winter has several small snowfalls totaling 25-35 cm, but no measurable snowfall occurs some winters (Chester et al., 1995).

Long Pond Slough lies within the diverse Western Mesophytic Forest Region of Braun (1950); this transition region is characterized by a wide variety of forest types and the co-dominance of several species. All area forests are second-growth and dominated by several species of four major genera: *Acer; Caryopy; Quercus; Ulmus* (Chester et al., 1995).

METHODS

The vascular flora of Long Pond Slough and the surrounding area was studied by Dodson (1973) and incorporated, with other materials, into a thesis. In addition, the area has been regularly visited (minimally five times each growing season) for floristic studies since 1967 by E. W. Chester. After much of the area became public property, the flora was reevaluated (1990-present) with special attention given to community composition based on wetland categories of Carter and Burbank (1978) and the presence-status of listed elements. An annotated list was prepared, based on collections from wetland areas only. Surrounding areas, including agricultural fields and transitional areas dominated by weedy and often by introduced taxa, were not included. Vouchers for all cited specimens are in the herbarium of Austin Peay State University (APSC) with many duplicates at The University of Tennessee-Knoxville (TENN). Nomenclature follows Wofford and Kral (1993) except for common names, which were taken from Gleason and Cronquist (1991) and Fernald (1950).

RESULTS AND DISCUSSION

Flora--A total of 251 species from 178 genera and 89 families comprises the known vascular flora of Long Pond Slough. The distribution of taxa among the major plant groups is shown in Table 1. Large families (based on number of species) are the Asteraceae (24), Poaceae (23), and Cyperaceae (19). Large genera are *Carex* (12), *Quercus* (8), and *Panicum* (5). Trees and shrubs account for 55 species. Large woody genera are *Quercus* (eight), *Acer* (four), and *Carya* (three). There are 14 woody vine taxa with only *Smilax* (three) and *Vitis* (two) represented by more than one species. Eleven taxa (4.4%) are not native. A compilation of species with their common names is given in Appendix 1.

Rare Elements--Based on the most recent listing of Tennessee rare plants (Tennessee Department of Environment and Conservation, 1996), six species occur within the Long Pond Slough wetlands that are either...

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<td>178</td>
<td>240</td>
<td>11</td>
<td>251</td>
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</table>

threatened or of special concern in Tennessee. Lake cress (Arnora
cia lacustris, of special concern), and yellow water-crowfoot (Ranancu
lus flabellarius, threatened) are rare, mostly submerged aquatics. Featherfoil
(Hottonia inflata, of special concern), a floating-emergent species, may
be abundant in some years and noticeably absent for several successive
years. Arrowhead (Sagittaria brevirostra, threatened) is infrequent in
marshes. Blue scorpionweed (Phacelia tanunculacea, of special con
cern) is frequent, and purple fringless orchid (Platanthera peramoena,
threatened) is rare in bottomland forests.

Plant Communities--Based on the classification system of Carter and
Burbank (1978), several wetland community types occur at Long
Pond Slough. These broadly-defined types are delineated for facilitate
annotation of the checklist and to show community-habitat diversity of
the area. Community types where taxa most likely occur are given in the
checklist.

Vegetated Open Water--This community is characterized by an
herbaceous flora of three types: rooted species with floating leaves; free
floating species; submerged species. At Long Pond Slough, this com
munity occurs as a strip of water 1.0-1.5 m deep extending the length of
the slough. A dense stand of rooted (usually) Nuphar luteum ssp.
macrophyllum dominates; submerged species include Armoracia lacustris,
Ceratophyllum demersum, Elodea canadensis, Potamogeton diversifolius,
and Ranunculus flabellaris. Nonattached floating species are Azolla
caroliniana, Lemna perpusilla, Spirodea polyrhiza, and Wolffia
brasiliensis.

Emergent Marsh--These are nonforested wetlands dominated by
perennial, herbaceous emergents. This community occurs as a transition
between the vegetated open water and either the swamp or bottomland
forest community. Standing water, <1 m deep, is usually present, but
peripheral drying may occur in late summer, resulting in a narrow
mudflat. Any of the open water species and sometimes such woody taxa as
Cephalanthus occidentalis, Cornus amomum, and Salix nigra may
occur. Dominants include Alisma subcordatum, Carex spp., Cyperus
spp., Eleocharis obtusa, Glyceria striata, Hibiscus spp., Juncus effusus,
Jussiaea spp., Polygonum spp., Rumex spp., Sagittaria spp., and
Saururus cernuus.

A stump or log community as described by Guthrie (1989) for
Reelfoot Lake could be separated. Several herbaceous species regularly
colonize the numerous floating-parially submerged logs, beaver-created
stumps, and buttonbush hummocks. Most often seen are Bidens
discoidea, Lycopus americanus, Scutellaria lateriflora, and Triadenum
walteri.

Swamp--These semipermanently or permanently flooded lands are
dominated by shrub and tree species that are aquatic or at least water
tolerant. The community occurs intermittently along the shorelines and
includes a mixed shrub and tree component. Because standing water is
present for at least part of the growing season, herbaceous species from
the emergent marsh community are not uncommon. Cephalanthus
occidentalis is the dominating shrub. Other common woody plants are
Acer saccharinurn, Cornus amomum, Fraxinus pennsylvanica, Liqui
dambar styraciflua, Platanus occidentalis, Populus deltoides, Salix
nigra, and extensive clumps of Rosa palustris. Common woody vines
are Ampelopsis cordata, Parthenocissus quinquefolia, Smilax spp.,
Toxicodendron radicans, and Vitis spp. Over the past 10 years, an
apparently extensive beaver (Castor canadensis) population has wrought
considerable damage to this community.

Bottomland Forest--This community occupies a narrow strip sur
rounding areas of permanent inundation. Flooding at depths ranging
from a few centimeters to ≥1 m and for periods of 1-3 days is
commonplace in winter and spring. The soil is usually exposed in
summer and fall although it may be saturated. Standing water is
frequently present in depressions during the growing season. The very
existence of the forest attests to the wetness of soil because it would have
been long since cleared if not too wet for spring cultivation. Species of
Acer, Carya, Celtis, Quercus, Fraxinus, and Ulmus dominate, with a
dense undergrowth of Arundinaria gigantea and Smilax spp.

SUMMARY

The growing awareness and importance of wetlands as significant
landtypes supporting biological diversity make the preservation and
study of areas like Long Pond Slough imperative. Unfortunately, few
such natural wetlands exist today in the floodplain of the lower
Cumberland River due to inundation or conversion for dry-land farm
ing. This small remnant points out how floristically diverse these once
extensive wetlands were. More than 250 species and six listed elements
in an area of this size, completely surrounded by agricultural fields, is
truly remarkable. Fortunately, Tennessee citizens now own a large part
of this wetland, and management by the Tennessee Wildlife Resources
Agency, which is basically a hands-off policy, will protect and maintain
the area. The lack of yearly (or multi-yearly) extensive flooding from
river backwater, now often missing for periods of 1-5 years, is to be
determined. The included material thus provides a database, collected
over a period >30 years, for monitoring the vascular flora of this site.
ACKNOWLEDGMENTS

Appreciation is extended to the Martin and Armistead families for granting us unrestricted access to Long Pond Slough through their property. D. Johnson, Austin Peay State University Media Services, kindly prepared the figure.

LITERATURE CITED


APPENDIX I

In the following checklist, our subjective evaluation of abundance within Long Pond Slough, Montgomery Co., Tennessee, follows the scheme of Murrell and Wofford (1987): abundant = regularly encountered, usually in large numbers, although sometimes seasonal; frequent = regularly encountered but usually not in large numbers; occasional = irregular in occurrence, rarely in large numbers; infrequent = not always present, in small numbers; rare = rarely seen or not present at all some years. Community types, as defined by Carter and Burbank (1978), are designated as: OW = open water; EM = emergent marsh; SW = swamp (shrub and forest); and BH = bottomland hardwood forest. An asterisk indicates a non-native taxon.

PTERIDOPHYTA: FERNS AND FERN ALLIES

ASPLENIACEAE, Spleenwort Family

Asplenium platyneuron (L.) Britton, Sterns & Poggenb., Eddyot Spleenwort (infrequent, BH).

AZOLLACEAE, Water-Fern Family

Azolla caroliniana Willd., Mosquito Fern (abundant, OW, EM, SW).

OPHIOGLOSSACEAE, Adder’s-Tongue Family

Botrychium virginianum (L.) Swartz, Rattlesnake Fern (infrequent, BH).

Ophioglossum pycnostichum (Fern.) Löve & Löve, Adder’s-Tongue (infrequent, BH).

SPERMATOPHYTA: GYMNOSPERMAE

CUPRESSACEAE, Cedar Family

Juniperus virginiana L., Red Cedar (infrequent, BH).
SPERMATOPHYTA: ANGIOSPERMAE, MONOCOTYLEDONEAE

ALISMATACEOAE, Water-Plantain Family

Alisma subcordatum Raf., Water-Plantain (frequent, EM).
Sagittaria australis (J.G. Sm.) Small, Southern Arrowhead (occasional, EM).
Sagittaria brevirostra Mack. & Bush, Short-Beaked Arrowhead (infrequent, EM).
Sagittaria calycina Engelm., Arrowhead (occasional, EM).

AMARYLLIDACEAE, Amaryllis Family

Hymenocallis occidentalis (Leconte) Kunth, Spider-Lily (occasional, BH).

ARACEAE, Arum Family

Arisaema dracontium (L.) Schott, Green Dragon (occasional, BH).
Arisaema triphyllum (L.) Schott, Jack-in-the-Pulpit (occasional, BH).

COMMELINACEAE, Spiderwort Family

*Commelina communis* L., Dayflower (occasional, BH).

CYPERACEAE, Sedge Family

Carex crus-corvi Shuttlew. ex Kunze, Crow-Spur Sedge (rare, EM).
Carex frankii Kunth, Frank’s Sedge (occasional, BH).
Carex granularis Muhl. ex Willd., Granular Sedge (occasional, BH).
Carex grayi J. Carey, Gray’s Sedge (frequent, BH).
Carex jamesii Schwein., James’ Sedge (occasional, BH).
Carex lupulina Muhl., Hop-Like Sedge (frequent, EM, BH).
Carex lurida Wahlenb., Sallow Sedge (frequent, EM, BH).
Carex retroflexa Willd., Reflexed Sedge (occasional, BH).
Carex roven Willd., Rose-Like Sedge (occasional, BH).
Carex squarrosa L., Spreading Sedge (frequent, EM, BH).
Carex tribuloides Wahlenb., Tribulus-Like Sedge (occasional, BH).
Carex vulpinoida Michx., Fox-Tail Sedge (abundant, EM, BH).
Cyperus erythrorhizos Muhl., Red-Rooted Sedge (occasional, EM, BH).
Cyperus esculentus L., Yellow Nut-Sedge (infrequent, EM).
Cyperus farruginescens Boeckl., Rusty Sedge (occasional, EM).
Cyperus strictus L., Strigose Sedge (occasional, EM).
Eleocharis erythropoda Steud., Red-Root Rush (occasional, EM).
Eleocharis obtusa (Willd.) Schultes, Blount Spike-Rush (abundant, EM).
Fimbristylis aquaticus (L.) Roemer & Schultes, Autumnal Fimbristylis (occasional, EM).

DIOSCOREACEAE, Yam Family

Dioscorea villosa L. Wild Yam (occasional, BH).

IRIDACEAE, Iris Family

Sisyrinchium angustifolium Mill., Narrow-Leaf Blue-Eyed Grass (occasional, BH).

JUNCACEAE, Rush Family

Juncus effusus L., Soft Rush (frequent, EM).

Juncus tenuis Willd., Path Rush (occasional, BH).

LEMNACEAE, Duckweed Family

Lemma perpusilla Torr., Duckweed (abundant, OW).
Spirodela polyrhiza (L.) Schleid., Greater Duckweed (abundant, OW).
 Wolffia brasiliensis Wedd., Water-Meal (abundant, OW).

LILIACEAE, Lily Family

Allium canadense L., Wild Onion (frequent, BH).
Erythronium albidum Nutt., White Dog’s-Tooth Violet (infrequent, BH).
Erythronium americanum KerGawl, Yellow Adder’s-Tongue (occasional, BH).
Polygonatum biflorum ( Walter) Elliott, Solomon’s Seal (occasional, BH).
Trillium cuneatum Raf., Purple Trillium (occasional, BH).
Trillium recurvatum Beck, Recurved Trillium (occasional, BH).
Trillium sessile L., Sessile Trillium (occasional, BH).

ORTHIDACEAE, Orchid Family

Platanthera peramoena (A. Gray) A. Gray, Purple Fringeless Orchid (rare, BH).

POACEAE, Grass Family

Agrostis hiemalis (Walter) Britton, Sterns & Poggenb., Hairgrass (occasional, BH).
*Arthraxon hispidus* (Thunb.) Makino, Joint-Grass (occasional, BH).
Arundinaria gigantea (Walt.) Muhl. [vars. not differentiated], Cane (abundant, BH).
Bromus pubescens Muhl. ex Willd., Woodland Bromegrass (occasional, BH).
Chasmanthium latifolium (Michx.) H. O. Yates, Wild Oats (frequent, BH, SW).

Cinna arundinacea L., Wood Reedgrass (occasional, BH).
Diarrhena americana P. Beauv., Diarrhena (occasional, BH).
*Echinochloa crus-galli* (L.) Beauv., Barnyard Grass (infrequent, SW).
Elymus virginicus L., Virginia Wild Rye, Terrell Grass (infrequent, BH).

Eragrostis hypnoides (Lam.) Britton, Sterns & Poggenb., Creeping Love Grass (rare, SW).

Festuca obtusa Biehler, Woodland Fescue (infrequent, BH).
Glyceria striata (L.) Hitchc., Manna-Grass (abundant, EM, SW).
Leersia sylvatica (L.) Sw., Rice Cutgrass (abundant, EM, SW).
Leersia virginica Willd., Virginia Cutograss (occasional, SW).
*Microstegium vimineum* (Trin.) Cam., Eulalia (occasional, BH, SW).
Panicum capillare L. var. sylvaticum Torr., Philadelphia Panic Grass (infrequent, BH).
Panicum dichotomiflorum Michx., Forked-Flowered Panic Grass (infrequent, BH).
Panicum microcarpon Muhl. ex Elliott, Small-Fruited Panic Grass (occasional, BH).
Panicum rigidum Bosc ex Nees var. rigidulum, Agrostoid Panic Grass (occasional, BH).
Panicum scapurum Lam., Broom-Like Panic Grass (occasional, BH).
Paspalum repens Berg., Knotgrass (infrequent, SW).
Poa annulata (L.) ex Elliott, Autumnal Bluegrass (occasional, BH).
Poa annulata (L.) ex Elliott, Autumnal Bluegrass (occasional, BH).
Sphenopholis obtusa (Michx.) Scribn., Wedge-Grass (infrequent, BH).
POTAMOGETONACEAE, Pondweed Family

Potamogeton diversifolius Raf., Diverse-Leafed Pondweed (frequent, OW).

SMILACACEAE, Cattail Family

Smilax bona-nox L., China-Brier (infrequent, BH, SW).
Smilax herbacea L., Carrion-Flower (infrequent, BH, SW).
Smilax hispida Muhl., Brittle Greenbrier (infrequent, BH, SW).
Smilax rotundifolia L., Common Greenbrier (frequent, BH, SW).

SPERMATOPHYTA: ANGIOSPERMAE, DICOTYLEDONAE

ACANTHACEAE, Acanthus Family

Ruella strepens L., Smooth Wild Petunia (occasional, BH).

ACERACEAE, Maple Family

Acer negundo L., Box Elder (frequent, BH).
Acer rubrum L., Red Maple (frequent, BH).
Acer saccharinum L., Silver or Water Maple (frequent, BH).
Acer saccharum Marsh., Sugar Maple (occasional, BH).

AMARANTHACEAE, Amaranth Family

Iresine rhizomatosa Standl., Bloodleaf (rare, BH).

ANACARDIACEAE, Cashew Family

Toxicodendron radicans (L.) Kuntze, Poison Ivy (abundant, BH, SW).

ANNONACEAE, Custard-Apple Family

Asimina triloba (L.) Dunal, Pawpaw (abundant, BH).

APIACEAE, Parsley Family

Chaerophyllum tainturieri Hook., Rough Chervil (infrequent, BH).
 Cicuta maculata L., Water Hemlock (occasional, EM, SW).
 Cryptotaenia canadensis (L.) DC., Honewort (infrequent, BH).
 Sanicula canadensis L., Canada Black Snakeweed (occasional, BH).

AQUIFOLIACEAE, Holly Family

Ilex decidua Walter, Deciduous Holly (occasional, BH, SW).

ARISTOLOCHIACEAE, Birthwort Family

Asarum canadense L., Wild Ginger (occasional, BH).

ASCLEPIADACEAE, Milkweed Family

Asclepias incarnata L., Swamp Milkweed (rare, SW, BH).
 Cynanchum laeve (Michx.) Pers., Honeyvine (rare, SW, BH).
 Matelea gonocarpa (Walter) Shinners, Climbing Milkweed (rare, BH).

ASTERACEAE, Composite Family

Ambrosia trifida L., Great Ragweed (infrequent, BH, SW).
 Aster pilosus Willd., Pilose Aster (infrequent, BH).

Aster simplex Willd., Simple Aster (occasional, SW, BH).
 Bidens cernua L., Nodding Sticktights (occasional, BH, EM, SW).
 Bidens discoidea (Torr. & A. Gray) Britton, Sticktights (frequent, EM, SW).
 Bidens pycnophleps Blake, Scaled Sticktights (frequent, BH, SW).
 Boltonia diffusa Elliott, Diffuse Boltonia (rare, BH, SW).
 *Eclipta prostrata (L.) L., Yerba-De-Tago (infrequent, SW).
 Erigeron annuus (L.) Pers., Daisy Fleabane (occasional, BH).
 Erigeron philadelphicus L., Philadelphia Fleabane (occasional, BH).
 Eupatorium coelestinum L., Mist Flower (occasional, BH, SW).
 Eupatorium perfoliatum L., Boneset (infrequent, BH).
 Eupatorium purpureum L., Sweet Joe Pye Weed (infrequent, BH).
 Eupatorium rugosum Houtt., White Snakeroot (frequent, BH, SW).
 Lactuca floridana (L.) Gaertn., Blue Lettuce (infrequent, BH).
 Pluchea camphorata (L.) DC., Camphor Weed (occasional, BH, SW).
 Pyrrhopappus carolinianus (Walt.) DC., False Dandelion (infrequent, BH).

BALSAMINACEAE, Touch-Me-Not Family

Impatiens capensis Meerb., Spotted Touch-Me-Not (abundant, BH).

BERBERIDACEAE, Barberry Family

Podophyllum peltatum L., Mayapple (frequent, BH).

BETULACEAE, Birch Family

Carpinus caroliniana Walter, Blue Beech (infrequent, BH).
 Corylus americana Walter, Hazelnut (occasional, BH).
 Ostrya virginiana (Mill.) K. Koch, Hop Hornbeam (rare, BH).

BIGNONIACEAE, Bignonia Family

Bignonia capreolata L., Cross-Vine (frequent, BH).
 Campsis radicans (L.) Seem. ex Bureau, Trumpet Creeper (infrequent, BH, SW).

BORAGINACEAE, Borage Family

Heliotropium indicum L., Turnsole (occasional, EM, SW).

BRASSICACEAE, Mustard Family

 Cardamine rhomboidea (Pers.) DC., Spring Cress (frequent, BH, SW).
 Dentaria laciniata Muhl. ex Willd., Laciniate Toothwort (occasional, BH).
 Iodanthus pinnatifidus (Michx.) Steud., Purple Rocket (infrequent, BH, SW).
 Rorippa sessiliflora (Nutt.) Hitchc., Yellow Cress (occasional, EM, SW).
CAMPANULACEAE, Bluebell Family

*Lobelia cardinalis* L., Cardinal Flower (infrequent, BH, SW).

CAPRIFOLIACEAE, Honeysuckle Family

*Viburnum lantana* L., American Highbush Cranberry (frequent, BH), New Jersey Honeysuckle (frequent, BH), Snowball (frequent, BH), Swamp Elder (occasional, BH).

CELASTRACEAE, Staff-Tree Family

*Euonymus atropurpureus* Jacq., Wahoo (rare, BH).

CERATOPHYLLACEAE, Hornwort Family

*Ceratophyllum demersum* L., Coontail (abundant, OW).

CLUSIACEAE, St. John’s-Wort Family


CONVOLVULACEAE, Morning-Glory Family

*Cuscuta gronovii* Willd., Gronovius’ Dodder (infrequent, SW).

*Ipomoea lacunosa* L., White Morning-Glory (occasional, BH, SW).

*Ipomoea purpurea* L. (G. Mey.), Wild Potato-Vine (rare, BH).

CORNACEAE, Dogwood Family

*Cornus amomum* Mill., Swamp Dogwood (abundant, SW).

*Cornus florida* L., Flowering Dogwood (infrequent, BH).

CUCURBITACEAE, Gourd Family

*Sicyos angulatus* L., Bur Cucumber (occasional, BH, SW).

EBENACEAE, Ebony Family

* Diospyros virginiana* L., Common Persimmon (rare, BH)

FABACEAE, Legume Family

*Apios americana* Medik., American Potato Bean (abundant, SW)

*Cercis canadensis* L., Redbud (infrequent, BH).

*Gleditsia triacanthos* L., Honey-Locust (frequent, BH, SW).

*Robinia pseudoacacia* L., Black Locust (rare, BH).

*Wisteria frutescens* (L.) Poir., American Wisteria (infrequent, SW).

FAGACEAE, Beech Family

*Quercus imbricaria* Michx., Shingle Oak (occasional, BH).

*Quercus lyrata* Walter, Overcup Oak (infrequent, BH, SW).

*Quercus macrocarpa* Michx., Moseycup or Bur Oak (rare, BH, SW).

*Quercus michauxii* Nutt., Swamp Chestnut Oak (occasional, BH, SW).

*Quercus pagoda* Raf., Cherrybark Oak (frequent, BH, SW).

*Quercus palustris* Muenchh., Pin Oak (frequent, BH, SW).

*Quercus rubra* L., Northern Red Oak (rare, BH).

*Quercus shumardii* Buckley, Shumard Red Oak (abundant, BH, SW).

FUMARIACEAE, Fumitory Family

*Corydalis flavula* (Raf.) DC., Yellow Corydalis (abundant, BH, SW).

HAMAMELIDACEAE, Witch-Hazel Family

*Liquidambar styraciflua* L., Sweetgum (frequent, BH, SW).

HYDROPHYLLACEAE, Waterleaf Family

*Nemophila aphylia* (L.) Brunn., Nemophila (frequent, BH, SW).

*Phacelia ranunculacea* (Nutt.) Constance, Blue Scorpionweed (frequent, BH, SW).

JUGLANDACEAE, Walnut Family

*Carya cordiformis* (Wangenh.) K. Koch, Bitternut Hickory (occasional, BH).

*Carya laciniosa* (F. Michx.) Loudon, Big Shellbark Hickory, Kingnut (occasional, BH)

*Carya ovata* (Mill.) K. Koch, Shagbark Hickory (frequent, BH, SW).

*Juglans nigra* L., Black Walnut (rare, BH).

LAMIACEAE, Mint Family

*Agastache nepetoides* (L.) Kunz, Giant Hyssop (rare, BH).

*Blephilia hirsuta* (Pursh) Benth., Wood-Mint (infrequent, BH).

*Glechoma hederacea* L., Ground Ivy (abundant, BH, SW).

*Lycopus americanus* Muhl., Water Horehound (frequent, BH, EM, SW).

*Scutellaria lateriflora* L., Mad-Dog Skullcap (frequent, BH, EM, SW).

*Teucrium canadense* L., American Germander (abundant, BH, SW).

LAURACEAE, Laurel Family

*Lindera benzoin* (L.) Blume, Spicebush (abundant, BH).

*Sassafras albidum* (Nutt.) Nees, Sassafras (rare, BH).

LOGANIACEAE, Logania Family

*Spigelia marilandica* L., Indian Pink (occasional, BH).

LYTHRACEAE, Loosestrife Family

*Ammannia coccinea* Rothb., Long-Leaved Ammamia (frequent, EM).

*Rotala ramosior* (L.) Koehne, Tooth-Cup (infrequent, SW).

MALVACEAE, Mallow Family

*Hibiscus laevis* All., Halberd-Leaved Rose Mallow (occasional, EM, SW).

*Hibiscus moscheutos* L., Swamp Rose Mallow, Swamp Cotton (occasional, EM, SW).

MENISPERMACEAE, Moonseed Family

*Cocculus carolinus* (L.) DC., Red-Berried Moonseed (frequent, BH, SW).

*Menispermum canadense* L., Yellow Parilla, Moonseed (occasional, BH, SW).

MORACEAE, Mulberry Family

*Morus nigra* L., Red Mulberry (infrequent, BH).
NYMPHAECACEAE, Water-Lily Family

*Nuphar lutea* (L.) Sibth. & Sm. *ssp. macrophyllum* (Small) Beal, Satter-Dock (abundant, EM, OW).

NYSSACEAE, Sour-Gum Family

*Nyssa sylvatica* Marshall, Black-Gum (frequent, BH).

OLEACEAE, Olive Family

*Fraxinus americana* L., American Ash (in frequent, BH).
*Fraxinus pennsylvanica* Marshall, Green Ash (frequent, BH, SW).

ONAGRACEAE, Evening Primrose Family

*Ludwigia alternifolia* L., Seedbox (frequent, EM, SW).
*Ludwigia decurrens* Walt., Decurrent Primrose-Willow (frequent, EM, SW).

OXALIDACEAE, Wood-Sorrel Family

*Oxalis grandis* Small, Giant Wood Sorrel (occasional, BH).

PAPAVERACEAE, Poppy Family

*Sanguinaria canadensis* L., Bloodroot (occasional, BH).

PASSIFLORACEAE, Passion-Flower Family

Passiflora lutea L., Small Passion-Flower (rare, BH).

PHYTOLACCACEAE, Pokeweed Family

*Phytolacca americana* L., Pokeweed (rare, BH).

PLATANACEAE, Plane-Tree Family

*Platanus occidentalis* L., Sycamore (occasional, BH, SW).

POLEMONIACEAE, Phlox Family

*Phlox paniculata* L., Fall Phlox (in frequent, BH).
*Polemonium reptans* L., Jacob’s Ladder (occasional, BH).

POLYGONACEAE, Buckwheat Family

*Polygonum hydropiperoides* Michx., Mild Water Pepper (abundant, EM, SW).
*Polygonum pensylvanicum* (L.) Small, Pinkweed (abundant, EM, SW).
*Polygonum punctatum* Elliott, Water Smartweed (frequent, BH, SW).
*Polygonum virginianum* L., Jumpseed (occasional, BH).
*Rubus conglomeratus* Murray, Clustered-Flowered Dock (rare, EM, SW).
*Rubus crispus* L., Curly Dock (rare, SW).
*Rubus verticillatus* L., Swamp Dock (in frequent, EM, SW).

PORTULACACEAE, Purslane Family

*Claytonia virginica* L., Spring Beauty (abundant, BH).

PRIMULACEAE, Primrose Family

*Hottonia inflata* Elliott, Featherfoil (frequent, OW, EM).
*Lysimachia ciliata* L., Fringed Loosestrife (in frequent, BH, SW).
*Lysimachia nummularia* L., Moneywort (abundant, BH, SW).

RANUNCULACEAE, Crowfoot Family

*Ranunculus carolinianus* DC., Carolina Buttercup (abundant, BH, SW).
*Ranunculus flabellarius* Raf., Yellow Water Crowfoot (rare, OW).
*Ranunculus sceleratus* L., Cursed Crowfoot (rare, SW).

RHAMNACEAE, Buckthorn Family

*Rhamnus caroliniana* Walter, Carolina Buckthorn (rare, BH).

ROSACEAE, Rose Family

*Geum canadense* Jacq., Canada Avens (occasional BH, SW).
*Prunus serotina* Ehrh., Wild Black Cherry (occasional, BH).
*Rosa palustris* Marshall, Swamp Rose (abundant, BH, SW).
*Rosa setigera* Michx., Prairie Rose (in frequent, BH).

RUBIACEAE, Madder Family

*Cephalanthus occidentalis* L., Buttonbush (abundant, EM, SW).
*Diodia virginiana* L., Buttonweed (frequent, EN, SW).
*Galium tinctorium* L., Swamp Bedstraw (in frequent, BH, SW).
*Galium triflorum* Michx., Sweet-Scented Bedstraw (in frequent, BH).

RUTACEAE, Rue Family

*Ptelea trifoliata* L., Bladdernut (rare, BH).

SALICACEAE, Willow Family

*Populus deltoides* Bartram ex Marshall, Cottonweeds (frequent, BH, SW).
*Salix nigra* Marshall, Black Willow (abundant, BH, SW).

SAPINDACEAE, Soapberry Family

*Cardiospermum halicacabum* L., Balloon Vine (frequent, BH, SW).

SAPOTACEAE, Sapodilla Family

*Bumelia lycioides* (L.) Pers., Southern Buckthorn (rare, BH).

SAURURACEAE, Lizard’s-Tail Family

*Saururus cernuus* L., Lizard’s-Tail (abundant, EM).

SAXIFRAGACEAE, Saxifrage Family

*Penthorum sedoides* L., Ditch Stonecrop (occasional, EM, SW).

SCROPHULARIACEAE, Figwort Family

*Leucospora multifida* (Michx.) Nutt., Conoeba (occasional, EM).
*Gratiola neglecta* Torr., Hedge-Hyssop (occasional, EM).
*Lindernia dubia* (L.) Pennell, False Pimpernel (occasional, EM).
*Minulus alatus* Aiton, Winged Monkey Flower (occasional, EM, SW).
Penstemon calycosus Small, Large-Calyxed Beard-Tongue (rare, BH).
Scrophularia marilandica L., Carpenter’s-Square (rare, BH).

SOLANACEAE, Nightshade Family

Physalis longifolia Nutt. var. subglabrata Mack. & Bush (rare, BH).

STAPHYLEACEAE, Bladdernut Family

Staphylea trifolia L., Bladdernut (rare, BH).

ULMACEAE, Elm Family

Celtis laevigata Willd., Sugarberry (abundant, BH).
Celtis occidentalis L., Hackberry (infrequent, BH).
Ulmus americana L., American Elm (occasional, BH).
Ulmus rubra Muhl., Red or Slippery Elm (abundant, BH).

URTICACEAE, Nettle Family

Boehmeria cylindrica (L.) Sw., False Nettle, Bog-Hemp (abundant, EM, SW, BH).
Pilea pumila (L.) A. Gray, Clearweed (occasional, BH, SW).

VALERIANACEAE, Valerian Family

Valerianella radiata (L.) Dufr., Corn-Salad (rare, BH).

VERBENACEAE, Vervain Family

Phyla lanceolata (Michx.) Greene, Fog-fruit (abundant, EM, SW).
Verbena urticifolia L., White Vervain (rare, BH).

VIOLACEAE, Violet Family

Viola pubescens Aiton, Yellow Violet (abundant, BH).
Viola sororia Willd., Meadow Violet (abundant, BH).
Viola striata Aiton, Cream Violet (frequent, BH).

VISCACEAE, Mistletoe Family

Phoradendron leucarpum (Raf.) Reveal & M.C. Johnson, Mistletoe (rare, BH).

VITACEAE, Grape Family

Ampelopsis cordata Michx., Heart-Leaf Ampelopsis (abundant, BH, SW).
Parthenocissus quinquefolia (L.) Planch., Virginia Creeper (abundant, BH, SW).
Vitis riparia Michx., Riverside Grape (frequent, BH, SW).
Vitis vulpina L., Frost Grape (frequent, BH, SW).