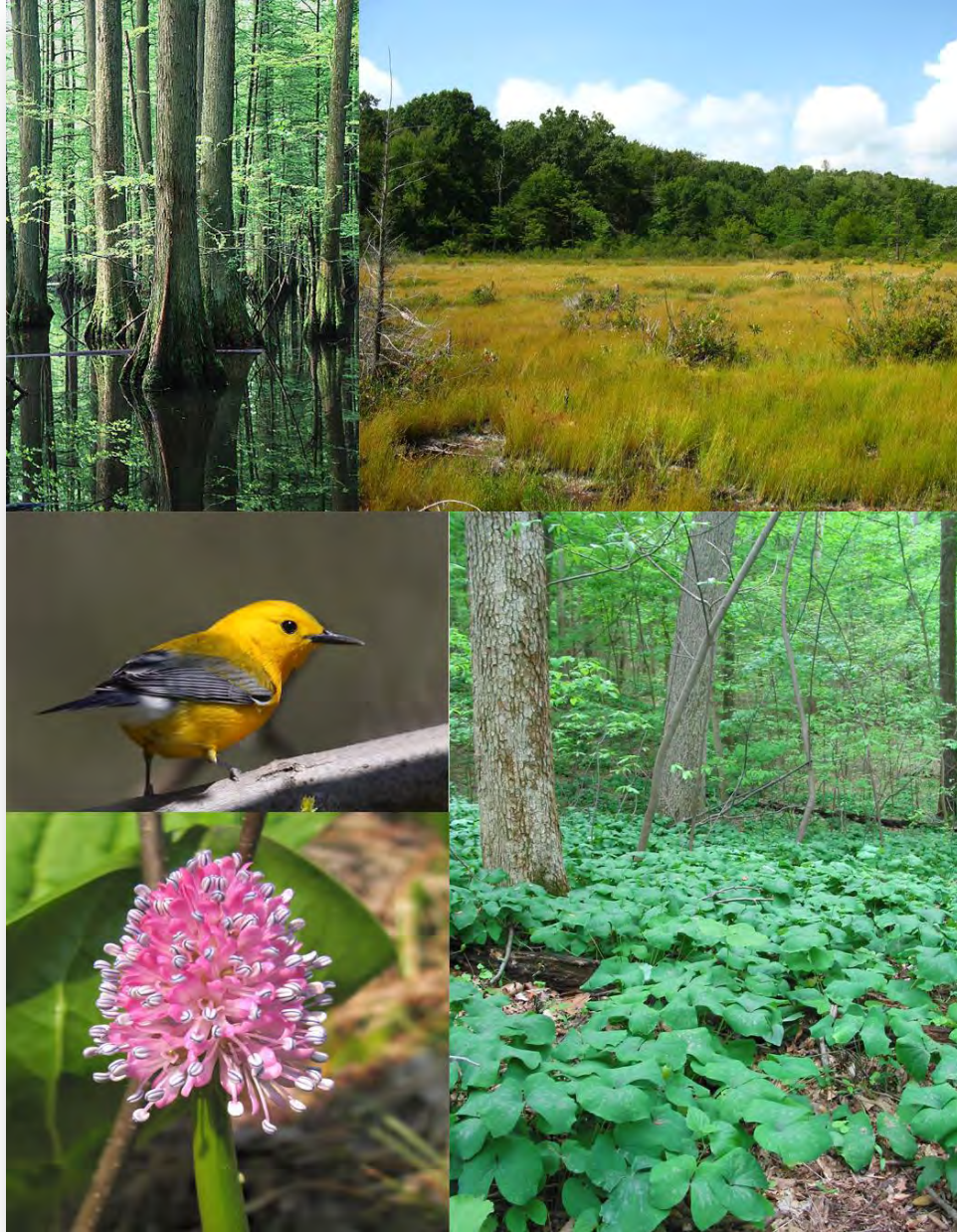


THE NATURAL COMMUNITIES OF MARYLAND

2016 NATURAL COMMUNITY CLASSIFICATION FRAMEWORK



Wildlife and Heritage Service

Cover photographs clockwise from left:

Bald Cypress - Gum Swamp along the Pocomoke River, Worcester County (Photograph by Richard Weigand); Montane Peatland, Garrett County (Photograph by Peter Stango III); Basic Mesic Forest with lush carpet of Twinleaf (*Jeffersonia diphylla*) near Snyder's Landing, Washington County (Photograph by Jason W. Harrison); Swamp Pink (*Helonias bullata*), Cecil County (Photograph by Kerry Wixted); Prothonotary Warbler (*Protonotaria citrea*) (Photograph by George Jett)

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2016 Natural Community Classification Framework

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Introduction

In 1979, the Maryland Natural Heritage Program of the Department of Natural Resources was established as the lead agency responsible for protecting and managing nongame, rare, threatened and endangered plants and animals and their respective habitats in Maryland. It currently monitors the status of more than 1,100 native plants and animals and 226 natural community types.

Since 1993, Program biologists have collected more than 2,000 vegetation sample plots from various natural community classification studies throughout the state. Examples of these studies focused on the classification of natural communities such as shale barrens, serpentine barrens, limestone glades, Delmarva bays, seepage wetlands, montane peatlands, Potomac River floodplain forests, and tidal marshes, shrublands, and forests of the coastal plain. More recently, vegetation mapping projects have yielded much information boosting our understanding of the distribution and conservation status of many different community types throughout the region. Examples of areas where these projects have occurred include Assateague Island National Seashore, Chesapeake Marshlands National Wildlife Refuge Complex, Appalachian National Scenic Trail, Patuxent Research Refuge, and parks within the National Capital Region. The data provided by these studies form the foundation of the State's natural community classification and are critical pieces of information in natural community protection efforts throughout Maryland.

The purpose of this document is to present the current natural community classification framework of 79 ecological community groups and 226 community types recognized by the Program as occurring in Maryland. Natural community classification is an iterative process so this document should be considered a fluid one with refinements likely to occur over time.

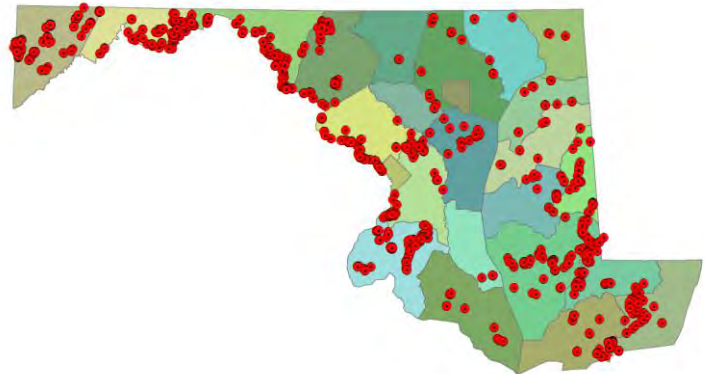


Figure 1. Vegetation sample plot locations

What are Natural Communities?

Natural communities are best described as “recurring assemblages of plants and animals found in particular physical environments.” The conservation of natural communities provides a “coarse filter” approach that ensures the protection of ecological systems and interdependent species that may not otherwise receive attention. The Maryland landscape is a diverse and complex one with a variety of natural communities represented, from beaches and fringing tidal marshes along the coast to high-elevation peatlands and ravines of old-growth hemlock in the mountains. Each of these natural communities is uniquely tied to a set of environmental conditions and species adapted to those conditions. Just as a tidal marsh is characterized by species adapted to freshwater or brackish tidal conditions, a montane peatland contains species restricted to higher elevations and cooler climates.

Why Classify Natural Communities?

Natural communities are key components of Maryland’s biological diversity. The conservation of uncommon and rare natural communities serve as coarse-filter surrogates or umbrellas for conserving a multitude of lesser-known species. This is particularly true for the thousands of invertebrate species that are poorly understood and unstudied. The Natural Heritage Program also places particular emphasis on and gives conservation priority to “exemplary” natural communities. Exemplary natural communities include nearly all examples of uncommon and rare types but also high-quality examples of common types. High-quality natural communities are identified as having relatively little human impact. These areas have greater potential to have natural dynamics that are characteristic of the original community types. It is essential to classify these natural communities to a scale that is recognizable and meaningful for conservation. The Maryland natural community classification provides a framework that organizes and describes natural communities in a logical manner. By doing so, the classification provides natural resource managers with a standard set of terms and concepts to describe habitats, and it also provides mapping units to use in plans for managing public and private natural areas such as natural area preserves, wildlife management areas, parks, and nature preserves. The classification can be used to identify natural communities for environmental review projects. In combination with the Heritage ranking system, the classification can be used to establish priorities for land acquisition by public agencies and private conservation organizations. Programs for long-term monitoring of environmental change can use the classification to guide the selection of monitoring sites.

Organization of the Maryland Natural Community Classification

The Maryland natural community classification is a fine-scaled classification system that uses an ecologically based hierarchy of grouping levels to organize community types in a logical manner. It is conceptually based on previous classifications developed by the Natural Heritage Program (Berdine 1998, Berdine 1999), the Virginia Natural Heritage Program (Fleming *et al.* 2016), and the North Carolina Heritage Program (Schafale 2012). The classification is organized into four main levels from broad to specific: **System, Class, Ecological Community Group** and **Community Type**.



System represents the broadest or “coarsest” level of the classification. Five systems are included in this classification hierarchy: **terrestrial, palustrine, estuarine, marine, and riverine**. They are each distinguished from one another by gross hydrologic, geomorphic, chemical, and biologic features. The following system definitions have been adapted from the U.S. Fish and Wildlife Service wetland classification (Cowardin *et al.* 1979). The **terrestrial system** consists of upland habitats in Maryland that have well-drained soils ranging from dry to mesic in moisture regime. It supports vegetation that is predominately upland and never hydrophytic even if occasional flooding or soil saturation occur. The **palustrine system** encompasses all non-tidal, perennial wetlands in Maryland characterized by emergent vegetation. It is comprised of hydrophytic vegetation and includes wetlands that are permanently saturated by groundwater seepage, permanently flooded wetlands, and seasonally or intermittently flooded wetlands. The

estuarine system includes deepwater tidal habitats and adjacent tidal wetlands that are usually semienclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. Salinity values are typically less than 30.0 parts per thousand (ppt) ocean-derived salts. All tidal wetlands considered freshwater (salinity less than 0.5 ppt.) are included in this system. The **riverine system** is characterized by linear aquatic communities of flowing waterways with discrete channels characterized by floating-leaved aquatic and submerged aquatic vegetation. For purposes of this classification these communities are exclusive to non-tidal freshwater (salinity less than 0.5 ppt.) reaches of streams and rivers. Finally, the **marine system** consists of the open ocean overlying the continental shelf and its associated coastline that is exposed to the waves and wave energy. For purposes of classifying terrestrial vegetation this system is primarily associated with coastlines.

Class is the next hierarchical level in the Maryland natural community classification. There are currently 11 classes (see Table 1) that serve to group natural communities based on similar ecological characteristics such as soil moisture (*e.g., Mesic Forests versus Dry Forests*) or hydrology (*e.g., Alluvial Wetlands versus Non-Alluvial Wetlands*). In a few situations classes have been developed to accommodate certain groups of natural communities that co-occur on the landscape and/or are subject to unique ecological processes (*e.g., Maritime Upland Communities, Non-tidal Maritime Wetlands*). It should be noted that while the terrestrial and palustrine systems have multiple classes the estuarine, riverine, and marine systems each have only one class.

The hierarchy of the Maryland natural community classification is further winnowed down with each class organized into **ecological community groups**. Ecological community groups are aggregations of finer-level community types that are based on various combinations of topographic, edaphic, physiognomic, and gross floristic similarities (Fleming et al. 2012). They are the most recognized level of the Maryland natural community classification and allow for easy interpretation and application among a wide variety of users. Ecological community groups often have a direct correlation with other state natural community classifications and other ecological classifications. This practicability has made ecological community groups especially useful in identifying local and regional conservation targets as well as helping to direct land management efforts. There are currently 79 ecological community groups defined in this classification. Examples of ecological community groups include *northern hardwood forest, basic mesic forest, limestone glade, serpentine barren, montane peatland, tidal freshwater marsh and shrubland, and maritime swamp*.

Table 1. Upper levels of the Maryland natural community classification hierarchy

System	Class	Definition
Terrestrial	Mesic Forests	This class is characterized by diverse forests throughout Maryland with moist, well-drained soils regimes often supporting lush vegetation. A variety of groups comprise this class which range from northern hardwoods at higher elevations in the mountains to basic mesic forests of the coastal plain.
Terrestrial	Dry-Mesic Forests and Woodlands	This class is characterized by forests throughout Maryland with intermediate soil moisture regimes. They are widespread and commonly comprised of oak and hickory species over a number of geological substrates (e.g., limestone, metabasalt, quartzites, sandstones, shale) accounting for a wide variety of groups in this class.
Terrestrial	Dry Forests and Woodlands	This class is characterized by forests and woodlands consisting of extremely dry, drought-prone soils usually occupying exposed rocky or sandy areas such as ridges, crests, and slopes.
Terrestrial	Glades, Barrens and Rock Outcrops	This widely variable class accommodates a number of groups susceptible to drought stress conditions due to their shallow soils and impervious bedrock. They are characterized by drought-adapted forbs, warm-season grasses and open canopies which historically were maintained through natural fire cycles and grazing. Many community types within this class are recognized as globally rare.
Terrestrial	Maritime Forests, Woodlands, and Dunes	This class is represented by groups inextricably linked to coastal and marine processes such as salt spray and sand deposition derived from wind and wave action. They occur primarily along the Atlantic coast on barrier islands (e.g., Assateague Island) but are also known to occur along portions of the Chesapeake Bay.
Palustrine	Alluvial Wetlands	This class consists of groups related to river and stream floodplains with non-tidal flooding regimes. Most groups within this class are characterized by highly productive and diverse forests.
Palustrine	Non-alluvial Wetlands	This widely variable class accommodates swamps, bogs, and fens controlled by groundwater seepage. Hydrological regimes vary from perennial to seasonal. Although non-alluvial wetlands in general are widespread throughout Maryland the composition and historical extent of many have been significantly altered.
Palustrine	Non-tidal Maritime Wetlands	This class is characterized by groundwater-controlled wetlands along the Atlantic coast that are exposed to salt spray and sand deposition derived from wind and wave action. A few community types associated with this class also extend into portions of the Chesapeake Bay.
Estuarine	Tidal Wetlands	This class includes wetlands associated with tributaries of the Chesapeake Bay that are flooded twice daily by tides. Groups within this class are closely linked to salinity, elevation and the depth and duration of tidal flooding.
Riverine	Riverine Aquatic Beds	This class is characterized by submerged aquatic vegetation of Maryland's freshwater rivers and streams.
Marine	Coastal Beaches	This class consists of high energy shorelines along the Atlantic coast that supports sparse vegetation.

The foundation of the classification is built upon finer-level **community types** that are embedded within each ecological community group. In concept, community types represent the most basic unit of vegetation classification, the plant community. Most accepted definitions of plant communities include four central ideas: (1) uniform physiognomy and physical structure, (2) uniform habitat conditions, (3) sharing definite floristic composition, and (4) recurring distribution across a landscape or region (Jennings et al. 2009). Plants are the focal point because they are more easily studied, measured, and are often sensitive to physical and biological factors influencing many types of organisms. For this reason, community types are the level at which natural communities are tracked and assigned conservation status ranks (see Appendix I) by the Maryland Natural Heritage Program. This level is also compatible with the vegetation association level of the U.S. National Vegetation Classification (Grossman et al. 1998) whose framework is widely recognized as a national standard organized around ecological principles for the study of plant communities (NatureServe 2016). In most cases, community types and vegetation associations of the U.S. National Vegetation Classification are equivalent in both name and concept. However, there are situations where these may vary based on local conditions or diagnostic value. For purposes of conservation, the Maryland Natural Heritage Program maintains databases of exemplary examples of rare community types and high-quality examples of common community types. Currently there are 226 community types recognized in this classification and of these 49 are critically imperiled (S1), 34 are imperiled (S2), and 32 are vulnerable (S3). In this document, the scientific name, common name, state conservation status rank, and global conservation rank are provided for each community type. In addition, the U.S. National Vegetation Classification code for each community type is also provided and hyperlinked to a description of that community type on the NatureServe Explorer website (NatureServe 2016).

TERRESTRIAL SYSTEM

MESIC FORESTS

Northern Hardwood Forest

Acer saccharum - Betula alleghaniensis - Prunus serotina Forest	Central Appalachian Northern Hardwood Forest	G4	S2	CEGL006045
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Acidic Cove Forest

Liriodendron tulipifera - Pinus strobus - Tsuga canadensis - Quercus (rubra, alba) / Polystichum acrostichoides Forest	Central Appalachian Acidic Cove Forest (White pine - Hemlock - Mixed Hardwoods Type)	G4	S3	CEGL006304
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Rich Cove Forest

Acer saccharum - Fraxinus americana - Tilia americana - Liriodendron tulipifera / Actaea racemosa Forest	Central Appalachian Rich Cove Forest	G4?	S3	CEGL006237
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Eastern Hemlock - Hardwood Forest

Tsuga canadensis - Fagus grandifolia - Acer saccharum / (Hamamelis virginiana, Kalmia latifolia) Forest	East-central Hemlock Hardwood Forest	G3?	SU	CEGL005043
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Tsuga canadensis - Betula alleghaniensis - Prunus serotina / Rhododendron maximum Forest	Central Appalachian Hemlock - Northern Hardwood Forest	G4?	SU	CEGL006206
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Tsuga canadensis - Fagus grandifolia - Quercus (prinus, alba) Forest	Piedmont / Coastal Plain Eastern Hemlock - Hardwood Forest	G2G3	S1	CEGL006474
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Tsuga canadensis - Quercus prinus - Betula lenta Forest	Central Appalachian Hemlock - Chestnut Oak Forest	G3	S1	CEGL006923
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Tsuga canadensis - Betula alleghaniensis - Acer saccharum / Dryopteris intermedia Forest	Hemlock - Northern Hardwood Forest	G4?	S1	CEGL006109
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Mesic Mixed Hardwood Forest

Fagus grandifolia - Quercus (alba, rubra) - Liriodendron tulipifera / (Ilex opaca var. opaca) / Polystichum acrostichoides Forest	Northern Coastal Plain / Piedmont Mesic	G5	S4	CEGL006075
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Pinus taeda - Quercus (michauxii, falcata) - Liquidambar styraciflua / Ilex opaca Forest	Mesic Coastal Plain Oak-Loblolly Pine Forest	GNR	S4?	CEGL006390
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Basic Mesic Forest

Fagus grandifolia - Liriodendron tulipifera - Carya cordiformis / Lindera benzoin / Podophyllum peltatum Forest	Northern Coastal Plain / Piedmont Basic Mesic Hardwood Forest	G4?	S3?	CEGL006055
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Acer (nigrum, saccharum) - Tilia americana / Asimina triloba / Jeffersonia diphylla - Caulophyllum thalictroides Forest	Central Appalachian / Piedmont Rich Cove / Mesic Slope Forest (Twinleaf - Blue Cohosh Type)	G4G5	S4	CEGL008412
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Quercus rubra - Acer saccharum - Liriodendron tulipifera Forest	High Allegheny Rich Red Oak - Sugar Maple Forest	G4G5	SNR	CEGL006125
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Liriodendron tulipifera - Quercus rubra - Fraxinus americana / Asimina triloba / Actaea racemosa - Uvularia perfoliata Forest	Upper Piedmont / Northern Blue Ridge Basic Mesic Hardwood Forest	G4?	S4	CEGL006186
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DRY-MESIC FORESTS AND WOODLANDS

Dry - Mesic Calcareous Forest

Quercus muehlenbergii - Quercus (alba, rubra) - Carya cordiformis / Viburnum prunifolium Forest	Ridge and Valley Limestone Oak-Hickory Forest	G3G4	S3	CEGL004793
Quercus rubra - Acer saccharum / Ostrya virginiana / Cardamine concatenata Forest	Central Appalachian Rich Red Oak - Sugar Maple Forest	G4	S4	CEGL008517

Basic Oak - Hickory Forest

Carya glabra - Quercus (rubra, prinus) - Fraxinus americana / Viburnum rafinesquianum / Piptochaetium avenaceum Forest	Potomac River Bedrock Terrace Oak-Hickory Forest	G1G2	S1	CEGL006209
Quercus alba - Carya glabra - Fraxinus americana / Cercis canadensis / Muhlenbergia sobolifera - Elymus hystrix Forest	Northern Hardpan Basic Oak-Hickory Forest	G3	S2	CEGL006216
Quercus rubra - Quercus prinus - Carya ovalis / (Cercis canadensis) / Solidago caesia Forest	Inner Piedmont / Lower Blue Ridge Basic Oak - Hickory Forest	G3G4	S3?	CEGL008514
Quercus rubra - Quercus alba - Fraxinus americana - Carya (ovata, ovalis) / Actaea racemosa Forest	Central Appalachian Montane Oak-Hickory Forest (Basic Type)	G3	S2?	CEGL008518

Acidic Oak - Hickory Forest

Quercus alba - Quercus rubra - Carya alba / Cornus florida / Vaccinium stamineum / Desmodium nudiflorum Piedmont Forest	Piedmont Dry-Mesic Acidic Oak-Hickory Forest	G4G5	S4	CEGL008475
Quercus alba - Quercus prinus - Carya glabra / Cornus florida / Vaccinium pallidum / Carex pennsylvanica Forest	Central Appalachian Acidic Oak - Hickory Forest	G5	S4	CEGL008515

Eastern White Pine - Hardwood Forest

Pinus strobus - Quercus alba - Quercus prinus / Vaccinium stamineum Forest	Central Appalachian / Piedmont White Pine - Suberic Oak Forest	G4	S4	CEGL008539
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Oak - Heath Forest

Quercus alba - Quercus falcata - (Carya pallida) / Gaylussacia frondosa Forest	Northeastern Coastal Plain Mixed Oak / Heath Forest	G4G5	S4	CEGL006269
Quercus alba - Quercus (coccinea, velutina, prinus) / Gaylussacia baccata Forest	Low-Elevation Mixed Oak / Heath Forest	G5	S5	CEGL008521
Quercus prinus - Quercus rubra / Vaccinium pallidum - (Rhododendron periclymenoides) Forest	Central Appalachian Dry Chestnut Oak - Northern Red Oak / Heath Forest	G3G4	SNR	CEGL008523
Quercus prinus / Deschampsia flexuosa - Solidago bicolor Forest	Chesapeake Bay River-Bluff Chestnut Oak Forest	GNR	S3	CEGL006490
Quercus prinus - Quercus rubra / Hamamelis virginiana Forest	Central Appalachian Dry-Mesic Chestnut Oak - Northern Red Oak Forest	G5	S4	CEGL006057

Quercus prinus - (Quercus coccinea, Quercus rubra) / Kalmia latifolia / Vaccinium pallidum Forest	Central Appalachian / Northern Piedmont Chestnut Oak Forest	G5	S5	CEGL006299
Quercus prinus - Quercus (rubra, velutina) / Vaccinium (angustifolium, pallidum) Forest	Northern Appalachian Chestnut Oak Forest	G5	S3	CEGL006282

Coastal Plain Oak - Beech Heath Forest

Fagus grandifolia - Quercus (alba, velutina, prinus) / Kalmia latifolia Forest	Northeastern Coastal Plain / Piedmont Oak - Beech / Heath Forest	G4	S3?	CEGL006919
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Boulderfield Forest and Woodland

Tilia americana - Fraxinus americana / Acer pensylvanicum - Ostrya virginiana / Parthenocissus quinquefolia - Impatiens pallida Woodland	Central Appalachian Basic Boulderfield Forest (Montane Basswood - White Ash Type)	G3	S2?	CEGL008528
Betula lenta - Quercus prinus / Parthenocissus quinquefolia Woodland	Central Appalachian Acidic Boulderfield Woodland	G3G4	S3S4	CEGL006565
Acer saccharum - Tilia americana / Staphylea trifolia / Dryopteris marginalis - (Impatiens pallida) Forest	Central Appalachian / Piedmont Low-Elevation Rich Boulderfield Forest	G3G4	SNR	CEGL006471
Lasallia (papulosa, pensylvanica) - Dimelaena oreina - (Melanelia culbertsonii) Nonvascular Vegetation	Central Appalachian Acidic Boulderfield	G5	SNR	CEGL004142
Lasallia papulosa - Stereocaulon glaucescens - Chrysothrix chlorine Nonvascular Vegetation	Central Appalachian Mafic Boulderfield	G1	SU	CEGL004143

DRY FORESTS AND WOODLANDS

Montane Pine - Oak Woodland

Pinus (pungens, rigida) - Quercus prinus / (Quercus ilicifolia) / Gaylussacia baccata Woodland	Central Appalachian Pine - Oak / Heath Woodland	G4	S4	CEGL004996
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Montane - Piedmont Acidic Woodland

Pinus virginiana - Juniperus virginiana var. virginiana - Quercus stellata / Amelanchier stolonifera / Danthonia spicata / Leucobryum glaucum Woodland	Appalachian / Northern Piedmont Riverside Outcrop Woodland	G1	S1	CEGL008449
Quercus prinus - Pinus virginiana - (Pinus pungens) / Schizachyrium scoparium - Dichanthelium depauperatum Woodland	Central Appalachian Chestnut Oak - Virginia Pine Woodland	G3?	S2?	CEGL008540

Montane - Piedmont Basic Woodland

Fraxinus americana - Carya glabra / Muhlenbergia sobolifera - Helianthus divaricatus - Solidago ulmifolia Woodland	Central Appalachian Basic Woodland	G2	S1?	CEGL003683
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Montane Dry Calcareous Forest and Woodland

Acer saccharum - Quercus muehlenbergii / Cercis canadensis Forest	Appalachian Sugar Maple - Chinkapin Oak Limestone Forest	G4?	S3S4	CEGL006017
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Coastal Plain Dry Calcareous Forest and Woodland

Quercus muehlenbergii / Erigeron pulchellus var. pulchellus - Dichanthelium boscii - (Verbesina virginica var. virginica) Forest	North Atlantic Coastal Plain Dry Calcareous Forest	G1	S1	CEGL007748
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Coastal Plain Pine - Oak Woodland

Pinus rigida - Quercus coccinea - Quercus falcata / (Quercus marilandica) / Gaylussacia frondosa Woodland	Pine Barrens Pine - Oak Woodland	G2G3	S3	CEGL006329
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Inland Sand Dune and Ridge Woodland

Pinus echinata / Quercus (falcata, nigra) / Vaccinium pallidum Forest	Inland Dune and Ridge Forest/Woodland	G3	S3	CEGL006851
Pinus virginiana - Quercus falcata - Carya pallida Forest	Inland Dune Ridge Forest	GNR	SNA	CEGL006354
Quercus (alba, velutina, stellata, falcata) / Carya pallida / Carex pennsylvanica Woodland	Hardwood Inland Dune Ridge Forest	G1	SNR	CEGL006954

GLADES, BARRENS, AND ROCK OUTCROPS

Limestone Glade

Quercus muehlenbergii - Cercis canadensis / Packeria obovata - Lithospermum canescens Woodland	Limestone Chinkapin Oak Woodland	G3G4	S2?	CEGL006231
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Sandstone Glade

Pinus rigida - Quercus prinus / Gaylussacia baccata / Carex pensylvanica Woodland	Appalachian Pitch Pine Pavement Woodland	GNR	S2	CEGL004821
Vaccinium (angustifolium, myrtilloides, pallidum) Central Appalachian Dwarf-shrubland	Central Appalachian Blueberry Shrubland	G4G5	S3	CEGL003958

Serpentine Barren

Acer rubrum - Pinus virginiana - Pinus rigida / Smilax spp. Serpentine Forest	Serpentine Red Maple - Pine Forest	G1G2	S2?	CEGL006439
Juniperus virginiana - Pinus virginiana / Smilax rotundifolia Serpentine Forest	Serpentine Red-cedar - Virginia Pine / Greenbrier Forest	G1G2	S2?	CEGL006440
Pinus rigida / Schizachyrium scoparium - Scleria pauciflora Wooded Herbaceous Vegetation	Serpentine Little Bluestem - Prairie Dropseed Grassland	G1G2	S1	CEGL006442

Shale Barren

Juniperus virginiana - Fraxinus americana - Carya glabra / Carex pensylvanica - Cheilanthes lanosa Woodland	Central Appalachian Circumneutral Barrens	G2	S1	CEGL006037
Pinus virginiana - Quercus prinus / Deschampsia flexuosa - Cunila origanoides Woodland	North-Central Appalachian Acidic Shale Woodland	G3	S2	CEGL006288
Pinus virginiana - Quercus prinus / Quercus ilicifolia / (Hieracium greenii, Viola pedata) Woodland	Central Appalachian Virginia Pine / Sparse Herbs Shale Woodland	G3	S2?	CEGL008525

Basic Outcrop Barren

Fraxinus americana - Carya glabra / Schizachyrium scoparium - (Minuartia glabra) Wooded Herbaceous Vegetation [PROVISIONAL]	Greenstone Glade	G2	S1	CEGL008529 (x)
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Riverside Outcrop Barren

(Hypericum prolificum, Leucothoe racemosa) / Schizachyrium scoparium - Solidago simplex var. racemosa - Ionactis linariifolius Sparse Vegetation	Potomac Gorge Riverside Outcrop Barrens	G2	S1	CEGL006491
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Acidic Cliff and Bluff

Asplenium montanum Central Appalachian Sandstone Sparse Vegetation	Spleenwort Acidic Cliff	GNR	SNR	CEGL004391
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Basic Cliff

Tuja occidentalis / Pellaea atropurpurea Woodland	Appalachian Cliff White-cedar Woodland	G2G3	S1	CEGL002596
Asplenium ruta-muraria - Pellaea atropurpurea Sparse Vegetation	Montane Cliff (Calcareous Type)	G3G4	S1	CEGL004476
Hydrangea arborescens / Sedum ternatum - Polypodium virginianum Shrubland	Piedmont / Central Appalachian Subcalcareous Cliff and Rock Outcrop	GNR	SNR	CEGL006479

MARITIME FORESTS, WOODLANDS, AND DUNES

Maritime Dune Grassland

Ammophila breviligulata - Panicum amarum var. amarum Herbaceous Vegetation	Beachgrass - Panicgrass Dune Grassland	G2	S2	CEGL004043
Spartina patens - Schoenoplectus pungens - Solidago sempervirens Herbaceous Vegetation	Overwash Dune Grassland	G2G3	SNR	CEGL004097
Morella (pensylvanica, cerifera) / Schizachyrium littorale - Eupatorium hyssopifolium Shrub Herbaceous Vegetation	Mid-Atlantic Coast Backdune Grassland	G2	SNR	CEGL004240

Maritime Dune Scrub

Morella pensylvanica / Diodia teres Shrubland	Chesapeake Bay Maritime Shrubland	G2	S2	CEGL003881
Smilax glauca - Toxicodendron radicans Vine-Shrubland	North Atlantic Coastal Plain Vine Dune	G1G2	S1	CEGL003886

Hudsonia tomentosa / Panicum amarum var. amarulum Dwarf-shrubland

Central Coast Beach-heather Dune Shrubland

G2G3

S2

[CEGL003950](#)

Maritime Dune Woodland

Pinus taeda / Hudsonia tomentosa Woodland

Loblolly Pine Dune Woodland

G1G2

S1

[CEGL006052](#)

Juniperus virginiana var. virginiana / Morella pensylvanica Woodland

Maritime Red-cedar Woodland

G2

S2

[CEGL006212](#)

Prunus serotina / Morella cerifera / Smilax rotundifolia Shrubland

Chesapeake Bay Tall Maritime Shrubland

G1G2

S1

[CEGL006319](#)

Maritime Forest

Pinus taeda - Quercus (falcata, nigra) / Morella cerifera / Vitis rotundifolia Forest

Mid-Atlantic Coastal Maritime Forest

G2

S2

[CEGL006040](#)

PALUSTRINE SYSTEM

ALLUVIAL WETLANDS

Bald Cypress - Gum Swamp

Taxodium distichum - Nyssa (biflora, sylvatica) / Clethra alnifolia / Boehmeria cylindrica Forest	Non-tidal Bald-cypress - Gum Swamp	G2	S2	CEGL006214
Nyssa biflora - (Taxodium distichum) / Clethra alnifolia - Viburnum nudum / Woodwardia areolata Forest	Central Atlantic Blackwater Swamp Forest	G3	S2	CEGL007054

Semipermanent Impoundment

Juncus pelocarpus - Rhynchospora alba - (Nymphaea odorata ssp. odorata) Herbaceous Vegetation [PROVISIONAL]	Coastal Plain Emergent Millpond Bog	GNR	SNR	CEGL006853
Sparganium americanum Herbaceous Vegetation	Piedmont/Mountain Semipermanent Impoundment (Montane Boggy Type)	G3?	S3	CEGL004510
Decodon verticillatus Semipermanently Flooded Shrubland	Swamp-loosestrife Shrub Swamp	GNR	S5	CEGL005089
Nymphaea odorata - Eleocharis robbinsii Herbaceous Vegetation	Coastal Plain Pond	G2	S2?	CEGL006086

Floodplain Pool

Cephalanthus occidentalis - Decodon verticillatus Shrubland	Northeastern Buttonbush Shrub Swamp	G4G5	SNR	CEGL006069
Nuphar lutea ssp. advena - Nymphaea odorata Herbaceous Vegetation	Water-lily Aquatic Wetland	G4G5	SNR	CEGL002386
Peltandra virginica - Saururus cernuus - Boehmeria cylindrica / Climacium americanum Herbaceous Vegetation	Floodplain Pool	G3	SNR	CEGL007696

Coastal Plain - Piedmont Bottomland Forest

Quercus phellos - Liquidambar styraciflua / Claytonia virginica Forest [PROVISIONAL]	Potomac Gorge Willow Oak Floodplain Forest	GNR	S1	CEGL006494
Platanus occidentalis - (Liquidambar styraciflua - Liriodendron tulipifera) / Asimina triloba Forest	Coastal Plain Streamside Forest	G3G4	S3?	CEGL006603
Liriodendron tulipifera - Acer (rubrum, negundo) - (Platanus occidentalis) / Carpinus caroliniana / Polygonum virginianum Forest	Northern Piedmont Small-Stream Floodplain Forest	G4	S3S4	CEGL006492
Liquidambar styraciflua - Liriodendron tulipifera / Lindera benzoin / Arisaema triphyllum Forest	Coastal Plain / Piedmont Small-Stream Floodplain Forest	G4	S4	CEGL004418
Acer (rubrum, saccharinum) - Fraxinus pennsylvanica - Ulmus americana / Boehmeria cylindrica Forest	Northern Piedmont / Central Appalachian Maple-Ash Swamp Forest	G4	S4	CEGL006548

Quercus (phellos, palustris, michauxii) - Liquidambar styraciflua / Cinna arundinacea Forest	Coastal Plain Oak Floodplain Swamp	G3G4	S4	CEGL006605
Acer rubrum - Fraxinus pennsylvanica / Saururus cernuus Forest	Chesapeake / Piedmont Red Maple / Lizard's-tail Swamp	GNR	S4	CEGL006606
Quercus palustris - Quercus bicolor / Carex tribuloides - Carex radiata - (Carex squarrosa) Forest	Northern Piedmont / Central Appalachian Pin Oak Floodplain Swamp	G3G4	SNR	CEGL006497

Montane - Piedmont Bottomland Forest

Acer saccharum - Fraxinus americana / Carpinus caroliniana / Podophyllum peltatum Forest	Mid-Atlantic High Terrace Hardwood Floodplain Forest	G3?	SNR	CEGL006459
Platanus occidentalis - Acer negundo - Juglans nigra / Asimina triloba / Mertensia virginica Forest	Piedmont / Central Appalachian Rich Floodplain Forest	G4	S4	CEGL004073
Acer saccharinum - Acer negundo / Ageratina altissima - Laportea canadensis - (Elymus virginicus) Forest	Piedmont / Central Appalachian Silver Maple Forest	G4	S4	CEGL006217
Quercus rubra - Quercus shumardii - Fraxinus americana / Cercis canadensis Forest [PROVISIONAL]	Potomac Gorge Bedrock Floodplain Oak Forest	GNR	SU	CEGL006495

Montane - Piedmont Small-Stream Forest

Liriodendron tulipifera - Platanus occidentalis - Betula lenta / Linderia benzoin / Circaea lutetiana ssp. canadensis Forest	Northern Blue Ridge Montane Alluvial Forest	G3?	SNR	CEGL006255
Acer saccharum - Liriodendron tulipifera / Galium concinnum - Carex laxiculmis Forest	Central Appalachian Ridge and Valley Floodplain Forest	GNR	SNR	CEGL006473

Depositional Bar and Shore

Eragrostis hypnoides - Ludwigia palustris - Lindernia dubia - Cyperus squarrosus Herbaceous Vegetation	Appalachian-Atlantic River Bar Drawdown Shore	G3	SNR	CEGL006483
Carex torta Herbaceous Vegetation	Rocky Bar and Shore (Twisted Sedge Type)	G3G4	S4	CEGL004103
Justicia americana Herbaceous Vegetation	Water-willow Rocky Bar and Shore	G4G5	S5	CEGL004286
Verbesina alternifolia - Elymus riparius - Solidago gigantea - (Teucrium canadense) Herbaceous Vegetation	Piedmont / Central Appalachian Riverbank Tall Herbaceous Vegetation	GNR	SNR	CEGL006480
Eupatorium serotinum - Polygonum (lapathifolium, punctatum, pennsylvanicum) Herbaceous Vegetation	Piedmont / Central Appalachian Scour Bar Herbaceous Vegetation	GNR	SNR	CEGL006481

River-Scour Woodland

Quercus bicolor - Fraxinus pennsylvanica - (Platanus occidentalis) / Chasmanthium latifolium - Dichanthelium clandestinum - Zizia aurea Woodland	Piedmont / Central Appalachian River-Scour Woodland	G1G2	S1	CEGL006218
Platanus occidentalis - Acer saccharinum - Betula nigra - Fraxinus pennsylvanica / Boehmeria cylindrica - Carex emoryi Woodland	Central Appalachian / Piedmont Bedrock Floodplain Woodland	G2?	S2	CEGL006476
Carpinus caroliniana - Ilex decidua Shrubland	Piedmont Riverscour Shrubland	G1?	S1	CEGL006484
Platanus occidentalis - Betula nigra - Salix (caroliniana, nigra) Woodland	Piedmont / Central Appalachian Sycamore - River Birch Scour Woodland	G4G5	S4	CEGL003896

Riverside Prairie

Andropogon gerardii - Panicum virgatum - Baptisia australis Herbaceous Vegetation	Fall-line Riverwash Bedrock Prairie	G3	S3	CEGL006283
Panicum virgatum - Andropogon gerardii Gravel Wash Herbaceous Vegetation	Ridge and Valley Gravel-Wash Prairie	G2G3	S2	CEGL006477
Fraxinus americana / Andropogon gerardii - Sorghastrum nutans - Schizachyrium scoparium - Pycnanthemum tenuifolium Herbaceous Vegetation	Piedmont / Central Appalachian Riverside Outcrop Prairie	G1	S1	CEGL006478

NON-ALLUVIAL WETLANDS

High-Elevation Seepage Swamp

Picea rubens - (Tsuga canadensis) / Rhododendron maximum Saturated Forest	Swamp Forest - Bog Complex (Spruce Type)	G2?	S1	CEGL006277
Tsuga canadensis - Betula alleghaniensis / Veratrum viride - Carex scabrata - Oclemea acuminata Forest	High-Elevation Hemlock - Yellow Birch Seepage Swamp	G2	S1	CEGL008533
Tsuga canadensis / Rhododendron maximum / Sphagnum spp. Forest	Eastern Hemlock - Great Laurel Swamp	G4?	S1	CEGL006279
Larix laricina / Photinia melanocarpa / Sphagnum spp. Forest	Southern Tamarack Poor Swamp	G4?	S1	CEGL002472
Acer rubrum - Nyssa sylvatica High Allegheny Plateau, Central Appalachian Forest	Central Appalachian Forested Acidic Seep	GNR	S3?	CEGL006132

Montane - Piedmont Acidic Seepage Swamp

Acer rubrum - Nyssa sylvatica / Ilex verticillata - Vaccinium fuscatum / Osmunda cinnamomea Forest	Central Appalachian Acidic Seepage Swamp	G2	S2	CEGL007853
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Montane - Piedmont Basic Seepage Swamp

Fraxinus nigra - Liriodendron tulipifera - Acer rubrum / Caltha palustris - Carex bromoides Forest	Central Appalachian Basic Seepage Swamp	G3	S3	CEGL008416
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Coastal Plain - Piedmont Acidic Seepage Swamp

Acer rubrum - Nyssa sylvatica - Magnolia virginiana Forest	Southern Red Maple - Blackgum Swamp Forest	G3?	S3	CEGL006238
Pinus rigida - Nyssa sylvatica / Clethra alnifolia - Leucothoe racemosa Forest	Pine Barrens Lowland Forest	G2G3	S2?	CEGL006926

Coastal Plain - Piedmont Basic Seepage Swamp

Acer rubrum - Fraxinus (pennsylvanica, americana) / Lindera benzoin / Symplocarpus foetidus Forest	Southern New England / Northern Piedmont Red Maple Seepage Swamp	G4G5	S2	CEGL006406
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Coastal Plain - Piedmont Acidic Seepage Bog/Fen

Nyssa sylvatica - Magnolia virginiana - (Pinus rigida) / Rhododendron viscosum - Toxicodendron vernix / Smilax pseudochina Woodland	Fall-line Terrace Gravel Magnolia Bog	G1	S1	CEGL006219
Cladium mariscoides - Dichanthelium scabriusculum - Eriocaulon (compressum, decangulare) - Sarracenia purpurea Herbaceous Vegetation [PROVISIONAL]	Delmarva Poor Fen	GNR	S1	CEGL006467(x)
Alnus serrulata - Magnolia virginiana / Andropogon glomeratus - Eupatorium pilosum - Rhynchospora gracilentia - Xyris torta Shrubland	Coastal Plain Acidic Seepage Swale	GNR	S2?	CEGL006499
Chamaedaphne calyculata - Vaccinium macrocarpon / Rhynchospora alba / Sphagnum spp. Dwarf Shrubland [PROVISIONAL]	Coastal Plain Dwarf-Shrub Peatland	GNR	S1	CEGL006852

Montane Peatland

Eriophorum virginicum - (Carex folliculata) / Sphagnum spp. - Polytrichum spp. Herbaceous Vegetation	Cottongrass Bog	G3	S2S3	CEGL006570
Picea rubens / Rhododendron maximum - Kalmia latifolia / Eriophorum virginicum / Sphagnum spp. Forest	Red Spruce Peat Swamp	G2G3	S1S2	CEGL006588
Pinus rigida - Picea rubens / Viburnum nudum var. cassinoides / Sphagnum spp. Woodland	Pitch Pine Peat Swamp	G1G2	S1	CEGL006587
Photinia (melanocarpa, pyrifolia) - Viburnum nudum var. cassinoides / Eriophorum virginicum / Sphagnum spp. Shrub Peatland	Chokeberry - Northern Wild Raisin Shrub Peatland	GNR	S3	CEGL006545
Vaccinium oxycoccos - (Vaccinium macrocarpon) / Rhynchospora alba - Drosera rotundifolia / Sphagnum spp. Dwarf-shrubland	Cranberry - Beakrush Peatland	G2	S2	CEGL007856
Carex canescens - Eriophorum virginicum / Sphagnum spp. Herbaceous Vegetation	Silvery Sedge Fen	GNR	S3	CEGL006549

Dulichium arundinaceum - Carex folliculata - Juncus spp. Herbaceous Vegetation	Threeway Sedge Basin Marsh	GNR	S3	CEGL006552
Carex buxbaumii Herbaceous Vegetation [PROVISIONAL]	Buxbaum's Sedge Fen	GNR	S1	n/a

Montane - Piedmont Wet Meadow/Fen

Carex lacustris Herbaceous Vegetation	Lake Sedge Fen	G4G5	S1	CEGL002256
Carex utriculata Herbaceous Vegetation	Beaked Sedge Fen	G4G5	S3?	CEGL002257
Juncus effusus Seasonally Flooded Herbaceous Vegetation	Common Rush Marsh	G5	S5	CEGL004112
Calamagrostis canadensis Herbaceous Vegetation	Bluejoint Grass Wet Meadow	G4G5	S4S5	CEGL005448
Carex stricta Herbaceous Vegetation	Eastern Upright Sedge Meadow	G4G5	S4	CEGL006412
Alnus serrulata Swamp Shrubland	Smooth Alder Shrub Swamp	G4G5	SNR	CEGL005082
Alnus incana ssp. rugosa Shrub Swamp	Speckled Alder Shrub Swamp	G5	S4	CEGL002381
Alnus incana ssp. rugosa - Viburnum recognitum / Calamagrostis canadensis Shrubland	Gray Alder - Arrow- wood / Bluejoint Shrub Swamp	GNR	S3?	CEGL006546
Dichanthelium dichotomum - Andropogon gerardii - Schizachyrium scoparium - Sorghastrum nutans - Polygonum sagittatum Herbaceous Vegetation [PROVISIONAL]	Northern Piedmont Wet Prairie	GNR	S1	n/a
Deschampsia cespitosa - Eleocharis tenuis - Dichanthelium clandestinum Herbaceous Vegetation [PROVISIONAL]	Wet Ultramafic Prairie	GNR	S1	n/a
Leersia oryzoides Herbaceous Vegetation	Central Appalachian Cutgrass Marsh	GNR	S4S5	CEGL006461
Scirpus cyperinus Seasonally Flooded Herbaceous Vegetation	Woolgrass Wet Marsh	GNR	SNR	CEGL006349

Montane - Piedmont Seep

Chrysosplenium americanum Herbaceous Vegetation	Golden-saxifrage Forested Seep	G3G5	S4	CEGL006193
Cinna arundinacea - Glyceria melicaria - Impatiens capensis Herbaceous Vegetation [PROVISIONAL]	Mafic Seep	GNR	S5	n/a
Caltha palustris - Impatiens pallida - Viola cucullata Herbaceous Vegetation [PROVISIONAL]	Central Appalachian Woodland Seep	GNR	SNR	CEGL006298

Upland Depression Swamp

Quercus palustris - Quercus bicolor / Viburnum prunifolium / Leersia virginica - Impatiens capensis Forest	Piedmont Pin Oak - Swamp White Oak Seasonal Pond	G2	S1	CEGL004643
Quercus phellos / Carex (albolutescens, intumescens, jorii) / Climacium americanum Forest	Piedmont Upland Depression Willow Oak Swamp Forest	G2G3	S1	CEGL007403
Quercus palustris - (Quercus bicolor) - Acer rubrum / Vaccinium corymbosum / Osmunda cinnamomea Forest	Northeastern Pin Oak - Swamp White Oak Forest	GNR	SNR	CEGL006240

Liquidambar styraciflua - Acer rubrum - Quercus phellos / Leucothoe racemosa Forest	Coastal Plain Red Maple - Sweetgum Swamp	G3	S3	CEGL006110
Liquidambar styraciflua - Acer rubrum - Nyssa biflora / Carex jorii Forest	Central Coastal Plain Basin Swamp	G1G2	S1	CEGL006223

Coastal Plain Non-Riverine Hardwood Swamp

Quercus (phellos, pagoda, michauxii) / Ilex opaca - Clethra alnifolia / Woodwardia areolata Forest	Chesapeake Bay Nonriverine Wet Hardwood Forest	G2?	S1	CEGL004644
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Atlantic White Cedar Swamp

Chamaecyparis thyoides / Persea palustris - Clethra alnifolia Forest	Peatland Atlantic White-cedar Forest	G2	S1	CEGL006146
Chamaecyparis thyoides - Acer rubrum - Magnolia virginiana Forest	Coastal Plain Atlantic White-cedar - Red Maple Swamp	GNR	S3	CEGL006078

Delmarva Bay

Woodwardia virginica / Sphagnum cuspidatum Herbaceous Vegetation	Chainfern Small Depression Pond	G2?	S1	CEGL004475
Rhexia virginica - Panicum verrucosum Herbaceous Vegetation	Coastal Plain Muck Pondshore	G2G3	S2	CEGL006264
Cephalanthus occidentalis / Polygonum hydropiperoides - Panicum verrucosum Shrubland	Buttonbush Coastal Plain Pond	G3?	S2	CEGL006242
Saccharum giganteum - (Dichanthelium spretum, Panicum verrucosum) Herbaceous Vegetation	Delmarva Bay Tall Grassland	G1G2	S1	CEGL006609
Panicum hemitomon - Panicum verrucosum Herbaceous Vegetation	Panicgrass Pondshore	GNR	S2	CEGL006338
Carex striata var. brevis Herbaceous Vegetation	Northern Peatland Sedge Coastal Plain Pond	G3G4	S2S3	CEGL004120

NON-TIDAL MARITIME WETLANDS

Interdunal Swale

Morella cerifera - Vaccinium corymbosum Shrubland	Barrier Island Bog	G2G4	SU	CEGL003906
Juncus (dichotomus, scirpoides) - Drosera intermedia Herbaceous Vegetation	Forked Rush Dune Swale	G2G3	S1	CEGL004111
Schoenoplectus pungens - Fimbristylis (castanea, caroliniana) Herbaceous Vegetation	Interdunal Swale	G1G2	S1	CEGL004117
(Morella cerifera) - Panicum virgatum - Spartina patens Herbaceous Vegetation	Interdune Switchgrass Brackish Depression	G2G4	SNR	CEGL004129
Morella cerifera / Spartina patens Shrubland	Atlantic Coast Interdune Swale	G3G4	SNR	CEGL003839

Maritime Swamp

Morella cerifera / Hydrocotyle verticillata Shrubland	Wax-myrtle Shrub Swamp	G2G3	SNR	CEGL003840
Pinus taeda / Morella cerifera / Osmunda regalis var. spectabilis Forest	Coastal Loblolly Pine Wetland Forest	G3	S2S3	CEGL006137

Sea-Level Fen

Cladium mariscoides - Drosera intermedia - Eleocharis rostellata Herbaceous Vegetation	Sea Level Fen	G1	S1	CEGL006310
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ESTUARINE SYSTEM

TIDAL WETLANDS

Intertidal Shore

Sagittaria subulata - Limosella australis Tidal Herbaceous Vegetation	North Atlantic Coastal Plain River Brackish Intertidal Mudflat	G2G4	S1	CEGL004473
Eriocaulon parkeri - Polygonum punctatum Herbaceous Vegetation	Estuary Pipewort Freshwater Intertidal Flat	G2	S1	CEGL006352
Schoenoplectus pungens Tidal Herbaceous Vegetation	Atlantic Coast Brackish Tidal Marsh	GNR	S1	CEGL004188
Isoetes riparia Tidal Herbaceous Vegetation	Shore Quillwort Tidal Flat	GNR	S1	CEGL006058

Tidal Freshwater / Oligohaline Aquatic Bed

Ceratophyllum demersum - Vallisneria americana - Najas spp. Tidal Herbaceous Vegetation	Mixed Freshwater Subtidal Community	GNR	SNR	CEGL006048
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Tidal Freshwater Marsh and Shrubland

Zizania aquatica Tidal Herbaceous Vegetation	Atlantic Coast Wild Rice Tidal Marsh	G4?	S4	CEGL004202
Nuphar lutea ssp. advena Tidal Herbaceous Vegetation	Broadleaf Pond-lily Tidal Marsh	G4G5	S4	CEGL004472
Peltandra virginica - Pontederia cordata Tidal Herbaceous Vegetation	Pickerelweed Tidal Marsh	G3G4	S4	CEGL004706
Impatiens capensis - Peltandra virginica - Polygonum arifolium - Schoenoplectus fluviatilis - Typha angustifolia Tidal Herbaceous Vegetation	Freshwater Tidal Mixed High Marsh	GNR	S4	CEGL006325
Acorus calamus Tidal Herbaceous Vegetation	Sweetflag Tidal Marsh	GNR	S4	CEGL006833
Nelumbo lutea Tidal Herbaceous Vegetation	American Lotus Tidal Marsh	GNR	SU	CEGL006913
Alnus maritima / Acorus calamus Shrubland	Seaside Alder Tidal Shrubland	GNR	S3	CEGL006841
Alnus serrulata - Viburnum recognitum / Impatiens capensis Tidal Shrubland	Smooth Alder Tidal Shrubland	GNR	S4	CEGL006843
Amorpha fruticosa Tidal Shrubland	Desert False Indigo Tidal Shrubland	GNR	SU	CEGL006844

Tidal Hardwood Swamp

Fraxinus (profunda, pennsylvanica) - (Nyssa biflora) / Polygonum arifolium Woodland	Ash - Swamp Tupelo Freshwater Tidal Swamp	G3	S3	CEGL006287
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Tidal Bald Cypress Swamp

Taxodium distichum / Carex hyalinolepis Woodland	Bald-cypress / Shoreline Sedge Woodland	G2?	S1	CEGL004654
Taxodium distichum - Nyssa biflora - Fraxinus profunda / Peltandra virginica - (Bignonia capreolata) Tidal Forest	Chesapeake Bay Tidal Cypress - Swamp Tupelo Swamp	G3	S1	CEGL006850

Tidal Oligohaline Marsh and Shrubland

Eleocharis (fallax, rostellata) Herbaceous Vegetation	Atlantic Coast Tidal Oligohaline Spikerush Marsh	G1G2	S2S3	CEGL004628
Carex hyalinolepis Tidal Herbaceous Vegetation	Shoreline Sedge Tidal Marsh	GNR	S1	CEGL006177
Spartina cynosuroides Herbaceous Vegetation	Atlantic Big Cordgrass Marsh	G4	S4?	CEGL004195
Typha angustifolia - Hibiscus moscheutos Herbaceous Vegetation	Cattail Brackish Tidal Marsh	G4G5	S4	CEGL004201
Panicum virgatum - Spartina patens Herbaceous Vegetation	Brackish Meadow	GNR	S4	CEGL006150
Hibiscus moscheutos - Polygonum punctatum - Peltandra virginica Tidal Herbaceous Vegetation	Oligohaline Mixed Forbs Tidal Marsh	GNR	S4	CEGL006181
Schoenoplectus americanus - Spartina patens Herbaceous Vegetation	Transitional Tidal Marsh	GNR	S4	CEGL006612
Morella cerifera - Rosa palustris / Thelypteris palustris var. pubescens Shrubland	Wax Myrtle - Swamp Rose Tidal Shrubland	G4	S3S4	CEGL004656
Morella cerifera - Baccharis halimifolia / Eleocharis fallax Shrubland	Brackish Tidal Creek Shrubland	GNR	S3	CEGL006846

Tidal Mesohaline / Polyhaline Aquatic Bed

Zostera marina Herbaceous Vegetation	North Atlantic Seawrack Bed	G4G5	SNR	CEGL004336
Ruppia maritima Acadian/Virginian Zone Temperate Herbaceous Vegetation	Northern Atlantic Coast Widgeongrass Bed	GNR	SNR	CEGL006167

Tidal Mesohaline Marsh and Shrubland

Juncus roemerianus Herbaceous Vegetation	Needlerush High Marsh	G5	S5	CEGL004186
Spartina alterniflora / (Ascophyllum nodosum) Acadian/Virginian Zone Herbaceous Vegetation	North Atlantic Low Salt Marsh	G5	S5	CEGL004192
Spartina patens - Distichlis spicata - (Juncus roemerianus) Herbaceous Vegetation	Mid- and Southern Atlantic High Salt Marsh	G4G5	SNR	CEGL004197
Spartina alterniflora - Distichlis spicata Tidal Herbaceous Vegetation [Provisional]	Mid-Atlantic Low Salt Marsh	GNR	SNR	CEGL006586
Baccharis halimifolia - Iva frutescens / Panicum virgatum Shrubland	Irregularly Flooded Eastern Tidal Salt Shrub	G5	S5	CEGL003921
Iva frutescens / Spartina cynosuroides Tidal Shrubland	Brackish Shrubland	GNR	S4	CEGL006847
Iva frutescens / Spartina patens Shrubland	Eastern Tidal Salt Shrub	G5	S5	CEGL006848

Salt Pannes

Salicornia (virginica, bigelovii, maritima) - Spartina alterniflora Herbaceous Vegetation	Salt Panne (Salicornia Type)	G5	S4	CEGL004308
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RIVERINE SYSTEM

Riverine Aquatic Bed

Vallisneria americana - (Heteranthera dubia) Riverine Herbaceous Vegetation	Eel-grass River Channel	G3G4	SNR	CEGL004333
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MARINE SYSTEM

MARINE INTERTIDAL

Coastal Beach

Cakile edentula ssp. edentula - Chamaesyce polygonifolia Sparse Vegetation	North Atlantic Upper Ocean Beach	G4G5	S3	CEGL004400
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SUCCESSIONAL / MODIFIED VEGETATION

Successional / Modified Terrestrial Forest

Pinus virginiana Successional Forest	Successional Virginia Pine Forest	GNA	SNA	CEGL002591
Pinus taeda / Liquidambar styraciflua - Acer rubrum var. rubrum / Vaccinium stamineum Forest	Early- to Mid-Successional Loblolly Pine Forest	GNA	SNA	CEGL006011
Pinus taeda - Liquidambar styraciflua Semi-natural Forest	Mid- to Late-Successional Loblolly Pine - Sweetgum Forest	GNA	SNA	CEGL008462
Pinus taeda - Quercus (alba, falcata, stellata) Successional Coastal Plain Forest [Provisional]	Loblolly Pine - (White Oak, Southern Red Oak, Post Oak) Successional Coastal Plain Forest	GNR	SNA	CEGL004766
Pinus taeda Planted Forest	Loblolly Pine Plantation	GNA	SNA	CEGL007179
Pinus virginiana / Quercus marilandica Forest	Virginia Pine / Blackjack Oak Serpentine Forest	GNA	SNA	CEGL006266
Prunus serotina - Liriodendron tulipifera - Acer rubrum - Fraxinus americana - (Robinia pseudoacacia) Forest	Successional / Modified Mixed Hardwood Forest	GNA	SNA	CEGL006599
Liriodendron tulipifera / (Cercis canadensis) / (Lindera benzoin) Forest	Successional Tuliptree Forest (Rich Type)	GNA	SNA	CEGL007220
Robinia pseudoacacia Successional Forest	Successional Black Locust Forest	GNA	SNA	CEGL007279
Juglans nigra / Verbesina alternifolia Forest	Successional Black Walnut Forest	GNA	SNA	CEGL007879
Pinus strobus Successional Forest	Successional White Pine Forest	GNA	SNA	CEGL007944
Betula lenta - Acer rubrum / Spinulum annotinum - Dennstaedtia punctilobula Forest	Successional Sweet Birch / Clubmoss Northern Hardwood Forest	GNA	SNA	CEGL008503

Successional / Modified Terrestrial Shrubland

Pueraria montana Vine-Shrubland	Kudzu Vine-shrubland	GNA	SNA	CEGL003882
Rubus allegheniensis - Rubus canadensis / Carex pensylvanica Shrubland	Successional Blackberry Shrubland	GNA	SNA	CEGL003892

Successional / Modified Terrestrial Herbaceous Vegetation

Andropogon virginicus Herbaceous Vegetation	Successional Broomsedge Grassland	GNA	SNA	CEGL004044
Danthonia spicata - Solidago rugosa Herbaceous Vegetation	Successional Central Appalachian Montane Grassland	GNA	SNA	CEGL004760
Lolium (arundinaceum, pratense) Ruderal Herbaceous Vegetation	Cultivated Meadow	GNA	SNA	CEGL004048

Successional / Modified Palustrine Forest

Betula nigra - Acer rubrum - (Liquidambar styraciflua, Platanus occidentalis) Forest	Successional Coastal Plain / Piedmont Floodplain Forest (River Birch - Red Maple Type)	GNA	SNA	CEGL006976
Acer rubrum - (Nyssa biflora) / Coastal Sweet-pepperbush - (Swamp Bay) Forest	Red Maple - (Swamp Tupelo) / Coastal Sweet-pepperbush - (Swamp Bay) Forest	GNA	SNR	CEGL007445
Acer rubrum - (Liquidambar styraciflua - Nyssa sylvatica) / Clethra alnifolia Successional Forest [Provisional]	Red Maple - Gum Successional Swamp Forest	GNA	SNA	CEGL006832

Successional / Modified Palustrine Shrubland

Hypericum densiflorum / Rubus hispidus / Sphagnum spp. Shrub Swamp	Successional Bushy St. Johns-wort Shrub Swamp	GNA	SNA	CEGL006464
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Successional / Modified Estuarine Forest

Pinus taeda / Morella cerifera / Spartina patens Tidal Woodland	Loblolly Pine / Wax-myrtle / Saltmeadow Cordgrass Tidal Woodland	GNR	S5	CEGL006849
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Successional / Modified Estuarine Herbaceous Vegetation

Phragmites australis ssp. australis Tidal Herbaceous Vegetation	Common Reed Modified Tidal Marsh	GNA	SNA	CEGL004187
Nelumbo lutea Tidal Herbaceous Vegetation	American Lotus Tidal Marsh	GNR	SNA	CEGL006913

Appendix I. State and Global Conservation Status Ranks

The following are definitions of state and global conservation status ranks developed by NatureServe and network of Natural Heritage Programs for all plants, animals and ecological communities. Based on range-wide data collected by Natural Heritage Programs, these ranks are critical in setting conservation priorities at both the state and regional levels. Conservation status ranks are assigned on a scale of 1 to 5, with 1 being critically imperiled and in risk of extirpation and 5 representing little to no risk of extirpation. The primary factors influencing ranks are the number of known distinct occurrences with consideration given to the total number of individuals (species) or area (ecological communities) occupied. Additional factors considered include the current level of protection, the types and degree of threats, geographic range, and viability of the occurrence.

Information regarding NatureServe's Conservation Status Assessment standards and methods may be found at: (<http://www.natureserve.org/conservation-tools/conservation-status-assessment>)

Global Conservation Status Ranks and Definitions

- GX** **Presumed Extirpated** - Eliminated throughout its range, with no restoration potential due to extinction of dominant or characteristic taxa and or elimination of the sites and ecological processes on which the type depends.
- GH** **Possibly Extinct (Historical)** - Presumed eliminated throughout its range, with no, or virtually no, likelihood that it will be rediscovered, but with potential for restoration (e.g., American Chestnut Forest).
- G1** **Critically Imperiled** - At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
- G2** **Imperiled** - At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
- G3** **Vulnerable** - Rare or uncommon. At moderate risk of extinction or elimination due to a restricted range, relatively few occurrences, recent and widespread declines, or other factors.
- G4** **Apparently Secure** - Uncommon but not rare. Apparently secure, but with cause for long-term concern.
- G5** **Secure** - Demonstrably widespread, abundant, and secure. Common, widespread, and abundant, although it may be quite rare in parts of its range, especially at the periphery; not vulnerable in most of its range.

- GNA** **Not Applicable** - A global conservation status rank is not applicable because the species is not a suitable target for conservation activities. A global conservation status rank may be not applicable for several reasons, related to its relevance as a conservation target. In such cases, typically the species is a hybrid without conservation value, of domestic origin, or the ecosystem is non-native, for example, ruderal vegetation, a plantation, agricultural field, or developed vegetation (lawns, gardens etc).
- GNR** **Not Ranked** - Global status has not yet been assessed.
- GU** **Unrankable** - Possibly in peril range-wide, but its status is uncertain; more information is needed.
- G#G#** **Range Rank** - The actual rank of the element is within the range specified by the numbers; however, the exact status of the rarity of the element is uncertain. For example, G2G3 indicates that the rank may be either G2 or G3.
- ?** **Inexact or Uncertain** - A question mark added to a rank expresses an uncertainty about the rank in the range of 1 in either way on the 1-5 scale; for example, a G2? rank indicates that the rank is thought to be G2, but could be G1 or G3.

State Conservation Status Ranks and Definitions

- SX** **Extirpated** - Species or community type is believed to be extirpated from Maryland. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
- SH** **Historical** - Possibly extirpated. Historically known from Maryland, but not verified for an extended period (usually 20 or more years), with the expectation that it may be rediscovered.
- S1** **Critically Imperiled** - Critically imperiled in the state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state; generally with 5 or fewer occurrences state-wide, and/or covering less than 50 ha (124 ac) in aggregate; or covering a larger area but highly threatened with destruction or modification. Species and community types with this rank are considered highly state rare and are actively tracked by the Natural Heritage Program.
- S2** **Imperiled** - Imperiled in the state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state. Generally with 6-20 occurrences state-wide, and/or covering less than 250 ha (618 ac) in aggregate; or covering a larger area but threatened with destruction or modification. Species and community types with this rank are considered state rare and are actively tracked by the Natural Heritage Program.

- S3** **Vulnerable** - Vulnerable in the state either because rare and uncommon, or found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extirpation. Generally with 21–100 occurrences state-wide; or with a larger number of occurrences subject to relatively high levels of threat; may be of relatively frequent occurrence in specific localities or geographic parts of the state. Species or Community Types with this rank are considered “watchlist” and are not actively tracked by the Natural Heritage Program.
- S4** **Apparently Secure** - Uncommon but not rare, and usually widespread in the state. Some cause for longterm concern due to declines or other factors.
- S5** **Secure** – Common, widespread, abundant, and secure in the state, and essentially ineradicable under present conditions.
- SNA** **Not Applicable** - A conservation status rank is not applicable because the species or community type is not a suitable target for conservation activities. Examples include community types of cultural, ruderal, planted, modified, managed, invasive, and/or non natural vegetation.
- SNR** **Not ranked** – State status has not yet been assessed.
- SU** **Unrankable** - Possibly in peril range-wide, but its status is uncertain; more information is needed.
- S#S#** **Range Rank** - The actual rank of the element is within the range specified by the numbers; however, the exact status of the rarity of the element is uncertain. For example, S2S3 indicates that the rank may be either S2 or S3.
- ?** **Inexact or Uncertain** - A question mark added to a rank expresses an uncertainty about the rank in the range of 1 in either way on the 1-5 scale; for example, a S2? rank indicates that the rank is thought to be S2, but could be S1 or S3.

Appendix II. Literature Cited

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