

10 to 1,000 hectares and persist for 50 or more years. Ecological processes include natural disturbances such as fire and flooding. Substrates may include a variety of soil surface and bedrock features, such as shallow soils, alkaline parent materials, sandy gravelly soils, or peatlands. Finally, environmental

Describe potential vegetation (Daubenmire 1952, Pfister and Arno 1980), but differs in that no “climax” vegetation is implied, and all “seral” components are explicitly included in the system concept.

Pattern and Geographic Scale: Spatial patterns that we observe at “intermediate” scales can often be explained by landscape attributes that control the location and dynamics of moisture, nutrients, and disturbance events. An example can be taken from floodplains. Rivers provide moisture, nutrients, and scouring soil disturbance that regulate the regeneration of some plant species. In these settings we find a number of associations co-occurring due to controlling factors in the environment. We see mosaics of associations from different alliances and formations, such as woodlands, shrublands, and herbaceous meadows, occurring in a complex mosaic along a riparian corridor. Some individual associations may be found in wetland environments apart from riparian areas. But we can often predict that along riparian corridors within a given elevation zone, and along a given river size and gradient, we should encounter a limited suite of associations. It is these “meso” spatial scales that we address using ecological systems.

Diagnostic Classifiers

As the definition for ecological systems indicates, this is a multi-factor approach to ecological classification. Multiple environmental factors—or *diagnostic classifiers*—are evaluated and combined in different ways to explain the spatial co-occurrence of NVC

associations (Box 1). Diagnostic classifiers include several factors representing bioclimate, biogeographic history, physiography, landform, physical and chemical substrates, dynamic processes, landscape juxtaposition, and vegetation structure and composition. Diagnostic classifiers are used here in the sense of Di Gregorio and Jansen (2000); a-22.parih20ts7(-)-0..m pre Tw0.lliance 0 TD0.0003 Tcs—or r6 Twrridol0 -1.1475 TD0.0008 Tc0.000 TD “modular” in th22.pt aggregates diagnostic classifiers in multiple, varying combinations, without a specific hierarchy. Tr20focus is on a ons into alliances based on common dominant or diagnostic species in the upper most canopy. This provides mo0..m pa taxonomic aggreg1.50 with no presump.50 that associations co-occur in a given landscape. Tr20 Twrridol0 -1.1475 6(m)7.9(unit links US-NV)-4(C)0.9(0.0007(sociations)TJ0 -1.1475 TD(using m)7.9(u)-2.1(1tiple fact

Box 1

(Categories and Examples)

World Divisions

Continentl0Bioclimate and Phyogeography
diagno81(ey)-7.6()5.2426 re2 3(di0 -1.153 TD 0.001 Tc 0.05

Biogeographic and Bioclimatic Classifiers: Ewrridol0Divisions ar20sub-continental landscapes reflecting both climate and biogeographic history, modified0from Bailey0(1995 and 1998) at the Division scale (Fig-0..A1-1). Continent-scaled climatic variation, reflecting variab

disturbance regimes or human activities than to current environmental conditions. Many wetland systems could support herbaceous vegetation, shrubland, and forest structures in the same location, again, based on the particular strategies of the species involved and local site history.

Therefore, while recognizable differences in vegetation physiognomy may initially suggest distinctions among ecosystem types, knowledge of vegetation composition should be relied upon more heavily to indicate significant distinctions. As in vegetation classification, we recognize beta diversity, or the turnover of species composition and abundance through space, as a primary means of differentiating ecosystem types. The task of classification is to recognize where that turnover is relatively abrupt, and to explain why that abrupt change occurs on the ground.

References

- Barnes, B.V., D.R. Zak, S.R. Denton, and S.H. Spurr. 1998. *Forest Ecology*, Fourth Edition. John Wiley And Sons, New York.
- Brinson, M. M. (1993). A Hydrogeomorphic Classification for Wetlands. [Technical Report WRP-DE-4](#), U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS. NTIS No. AD A270 053.
- Cowardin, L. W., V. Carter, F.C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. Biological Service Program, U.S. Fish and Wildlife Service, FWS/OBS 79/31. Office of Biological

Appendix II:

Dichotomous Keys to Geographically Isolated Wetlands in the United States

Background

For this study, we have established the practical definitions to identify ‘geographically isolated’ types of wetland ecological systems. Throughout the study we interchangeably use the terms *isolated wetland ecological systems*, *ecological system types*, and *isolated wetlands* to refer to the *classification units* that are the focus of this study and the primary unit of analysis. We specifically use the term “occurrence” when we reference patterns of on-the-ground located occurrences of these classification units. If the term “occurrence” is not used, we are referring the classification unit (i.e., the isolated wetland ecological system type—like Northern California Claypan Vernal Pool). So a statement like “California has more than 12 isolated wetland ecological systems,” means that there are more than 12 different classified types of isolated wetland systems in California. A statement like “Florida has more than 40 occurrences of “Central Florida Herbaceous Pondshore” means that more than 40 places where these pondshore system types have been located, mapped, and documented as occurring on the ground in Florida.

Because commonly referenced ‘isolated wetland’ definitions are intended for application to individual wetland occurrences, we used an additional criterion to account for variation among occurrences of a given wetland

Directory of Keys

Wetland vs. Upland Key.....	3
Geographically Isolated Wetland Key	3
Key to Isolated Wetland Types of the Montane Arctic Division (102 & 104).....	4
Key to Isolated Wetland Types of the Montane Boreal Division (105)	4
Key to Isolated Wetland Types of Laurentian and Acadian Division (201)	5
Key to Isolated Wetland Types of the Central Interior and Appalachian Division (202)	7
Key to Isolated Wetland Types of the Gulf and Atlantic Coastal Plain Division (203)	10
KEY A - Isolated Wetland Types of the West Gulf Coastal Plain	10
KEY B - Isolated Wetland Types of the Florida Peninsula.....	11
KEY C - Isolated Wetland Types of the East and Upper East Gulf Coastal Plains	11
KEY D - Isolated Wetland Types of the Atlantic Coastal Plain (Chesapeake Bay to Long Island)	13
KEY E - Isolated Wetland Types of the Atlantic Coastal Plain (SE Virginia to N Florida)	13
Key to Isolated Wetland Types of the North American Pacific Maritime Division (204)	14
Key to Isolated Wetland Types of the Eastern Great Plains Division (205)	15
Key to Isolated Wetland Types of Mediterranean California Division (206)	16
Key to Isolated Wetland Types of the North American Desert Division (302)	17
Key to Isolated Wetland Types of the Western Great Plains Division (303)	19
Key to Isolated Wetland Types of the Intermountain Basin Division (304)	20
Key to Isolated Wetland Types of the Rocky Mountains Division (306).....	22
Key to Isolated Wetland Types of Tropical Florida Division (411).....	23
Key to Isolated Wetland Types of Northern Polynesia Division (412)	23

Wetland vs. Upland Key

- 1a. Land area occurring in a saturated or periodically inundated condition (e.g., marsh, swamp, bog, vernal pool, riparian, floodplain); indicators of such condition include presence of hydrophytic plants and/or hydric soils areas without soils but with hydrophytes (e.g., aquatic beds over bedrock, seaweed covered rocky shores); areas without soil or hydrophytes but occur as open shallow (<2 m) water over rock or sand substrates (e.g., gravel beaches, bedrock pools, ponds and pondshores)..... **Go to Wetland Key**
- 1b. Land area lacking indicators of a saturated or periodically inundated condition..... **Upland**

Geographically Isolated Wetland Key

- 1a. Wetland occurring on the shores of open water..... 2
- 1b. Wetland not associated with open water; occurring in areas surrounded by uplands..... 3
- 2a. Wetland occurring on shores of open water > 2 meters deep (ocean, lakes) or on the banks of rivers or streams
- 2b. Wetland occurring on shores of open water < 2 meters maximum depth
- 3a. Wetland completely surrounded by uplands and, with no apparent perennial surface water inlets and outlets..... **GEOGRAPHICALLY ISOLATED WETLAND**
- 3b. Wetland either not completely surrounded by uplands or, with apparent perennial surface water inlets and or outlets

- 5a. Dwarf-shrubs primarily ericaceous and dominated by *Chamaedaphne calyculata* (leatherleaf) 6
- 5b. Dwarf-shrubs characterized by

with the wet meadows within this system. Typical shrub species include *Cornus* spp., *Salix* spp., and/or *Cephalanthus occidentalis*.
..... **North-Central Interior Wet Meadow-Shrub Swamp (CES202.701)**

- 12a. Wetland associated with Great Lakes coastal dunes 13
- 12b. Wetland not specifically associated with

- **East Gulf Coastal Plain Dune and Coastal Grassland (CES203.500)**
- 3b. Herbaceous and shrub wetland; apparently flooded on permanent or semi-permanent basis.....
..... **Southeastern Coastal Plain Interdunal Wetland (CES203.258)**
- 4a. Seepage wetlands, found in small patches on slopes in dissected terrain, found near the Fall-line in
Georgia..... **Atlantic Coastal Plain Sandhill Seep (CES203.253)**
- 4b. Wetlands found on flat areas rather than on seepage slopes 5
- 5a. Deep sinkhole depressions with steep limestone walls.....
..... **Southern Coastal Plain Sinkhole (CES203.495)**
- 5b. Woody or herbaceous wetlands, if in sinks, then not having steep limestone walls..... 6
- 6a. Depressions or sinks on extreme deep sandy soils in the southern portions of the East Gulf Coastal Plain
of Florida and Alabama, apparently of karstic origin but without limestone near the surface. The
appearance of these pondshores is that of large, in

KEY D - Isolated Wetland Types of the Atlantic Coastal Plain (Chesapeake Bay to Long Island)

- 1a. Wetland among coastal dunes from Chesapeake Bay to southern Maine.....
..... **Atlantic Coastal Plain Northern Dune and Maritime Grassland (CES203.264)**
- 1b. Wetlands not associated with coastal dune systems 2
- 2a. Wetlands primarily herbaceous vegetation or dominated by shrubs or dwarf-shrubs 3
- 2b. Wetlands primarily forested..... 4
- 3a. Saturated peatland characterized by *Sphagnum* moss mat and low shrubs, usually *Chamaedaphne calyculata* (leatherleaf); trees may be scattered but generally is not forested
..... **Atlantic Coastal Plain Northern Bog (CES203.893)**
- 3b. Wetland surrounding ponds or in isolated basins; vegetation of small basins may be dominated by *Cephalanthus occidentalis* (buttonbush), especially in portions of the Delmarva peninsula; standing water may be present, or basin may be dry by late in growing season; where shrubs are not dominant or form a margin around the basin, zonation is usually evident, dominated by low delicate herbs and graminoids including *Rhynchospora* spp.,.

- 4a. Herbaceous wetlands (or with scattered trees) in small basins in unconsolidated sediments, most formed by subsidence of surface sediments caused by solution in underlying limestone. Others may be formed as swales in mainland eolian sands, or natural blockage of small drainages by sediment movement.
.....**Atlantic Coastal Plain Southern Depression Pondshore (CES203.262)**
- 4b. Forested wetlands..... 5
- 5a. Forested wetland dominated by Pond Cypress (*Taxodium ascendens*); which is generally taller in the center of the wetland, and shorter on the edges. Examples occupy poorly drained depressions, mostly in pine flatwoods
..... **Southern Coastal Plain Nonriverine Cypress Dome (CES203.251)**
- 5b. Forested wetland dominated by a mixture of wetland trees, found in basins with peaty substrates. Examples are generally forested; the vegetation is characterized by Bald Cypress (*Taxodium distichum*), Swamp Blackgum (*Nyssa biflora*), evergreen "bay" shrubs and/or mixed hardwoods. Emergent Slash Pine (*Pinus elliotii*) may also be present. Some characteristic shrubs include, Titi (*Cyrilla racemiflora*), Shining Fetterbush (*Lyonia lucida*), Blaspheme-vine (*Smilax laurifolia*), and south of the Savannah River, Black Titi (*Cliftonia monophylla*).....**Southern Coastal Plain Nonriverine Basin Swamp (CES302.384)**

Key to Isolated Wetland Types of the North American Pacific Maritime Division (204)

- 1a. Peatland soils that include a thick, saturated organic layer (varying from muck to fiber-rich plant material) over mineral soils, occurring with *Sphagnum* mosses 2
- 1b. Soils are mineral, a thin layer of organic material may occur on surface, soils not a thick layer of sphagnum moss 5
- 2a. Wetland is dominated by low ericaceous shrubs (*Kalmia* spp., *Ledum* spp., *Betula* spp., *Myrica* spp., *Empetrum* spp., or *Chamaedaphne* spp.), and with patches of graminoids and bryophyte lawns. *Sphagnum* species including *S. magellanicum*, *S. fuscum*, and *S. cuspidatum* may be characteristic. Conifer trees sometimes codominate the shrub layer
..... **Boreal Depressional Bog (CES103.871)**
- 2b. Wetland not as above 3
- 3a. Wetland a mix of conifer-dominated swamp, shrub swamp, and open sphagnum or sedge mire, often with small lakes and ponds interspersed. Vegetation includes many species common to boreal continental bogs and fens but is characterized by coastal species including *Chamaecyparis nootkatensis*, *Pinus contorta* var. *contorta*, *Picea sitchensis*, *Tsuga heterophylla*, *Ledum glandulosum*, *Thuja plicata*, *Gaultheria shallon*, *Spiraea douglasii*, *Carex aquatilis* var. *dives*, *Carex lyngbyei*, *Carex obnupta*, *Carex pluriflora*, *Darlingtonia californica*, *Sphagnum pacificum*, *S. henryense* and *S. mendocinum*
..... **North Pacific Bog and Fen (CES204.063) NOT ISOLATED**
- 3b. Wetland dominated by herbaceous plants..... 4
- 4a. Wetland of emergent plants, permanently flooded. Soil may be muck or mineral. Water often > 2 meters deep, although some marshes may be shallower. Dominant plants are species of *Scirpus* and/or *Schoenoplectus*, *Typha*, *Juncus*, *Potamogeton*, *Polygonum*, *Nuphar*, and *Phalaris*.....
..... **Temperate Pacific Freshwater Emergent Marsh (CES200.877) NOT ISOLATED**
- 4b. Wetland of herbaceous plants on organic soils
..... **North Pacific Bog and Fen (CES204.063) NOT ISOLATED**

- 5a. Wetlands of mineral soils, dominated by herbaceous forbs and graminoids, often in concentric rings around seasonally wet, shallow ephemeral water bodies found in very small depressions. Occur only on hardpans or on small depressions in volcanic bedrock that retain water for short periods (vernal pools).... 6
- 5b. Wetlands of mineral or organic soil, dominated by graminoids and lesser amounts of forbs and woody plants, typically not forming concentric ring patterns, soils seasonally wet, generally drying out by end of season..... 8
- 6a. Vernal pools with *Downingia elegans*, *Isoetes orcuttii*, *Pilularia americana*, *Triteleia hyacinthina*, *Eleocharis* spp., *Eryngium petiolatum*, *Plagiobothrys figuratus*, *Plagiobothrys scouleri*, *Grindelia nana*, *Veronica peregrina*, *Deschampsia danthonioides*, and/or *Callitriche* spp. Typically have hummocky micro-relief, are acidic wetlands. Found throughout intermountain valleys of California, Oregon and the Gulf and San Juan islands of Washington and British Columbia.
 **North Pacific Hardpan Vernal Pool (CES204.859)**
- 6b. Vernal Pools not as above..... 7
- 7a. Vernal Pools on volcanic substrates with flashy inundations (fill and evaporate rapidly, several times during the wet season) and have *Lasthenia californica*, *Downingia bicornuta*, *Psathyrotes* spp., and *Sedella* spp. (= *Parvisedum* spp.) often present. Pools with longer inundation periods have *Eryngium constancei* and *Eleocharis acicularis*.
 **Northern California Volcanic Vernal Pool (CES206.949)**
- 7b. Vernal pools are located on top of massive basalt flows where soils are very thin over solid bedrock. Characteristic species include *Blennosperma nanum*, *Epilobium densiflorum* (= *Boisduvalia densiflora*), *Callitriche marginata*, *Cicendia quadrangularis*, *Eryngium vaseyi*, *Psilocarphus brevissimus*, and *Sedella pumila* (= *Parvisedum pumilum*). *Artemisia cana* ssp. *bolanderi* can occur on better developed soils.....
 **Modoc Basalt Flow Vernal Pool (CES204.996)**
- 8a. Wetland of high-nutrient soils that are temporarily to seasonally flooded. Vegetation is dominated by *Deschampsia caespitosa*, *Camassia quamash*, *Carex densa*, and *Carex unilateralis*. Rare, known only from the Willamette Valley of Oregon and Washington
 **Willamette Valley Wet Prairie (CES204.874)**
- 8b. Not as above..... 9
- 9a. Wetlands in coastal interdunal swales among active or partially vegetated coastal barrier islands, spits and coastal dunes, ranging from SE Alaska through the Aleutian Islands. Wetlands are typically dominated by *Equisetum variegatum*, *Salix communtata*, *S. sitchensis*, or *Myrica gale*. Organic mats can develop
 **North Pacific Coastal Interdunal Wetland (CES204.NEW)**
- 9b. Physical setting and vegetation not in combinations as above..... **NOT IN KEY**

Key to Isolated Wetland Types of the Eastern Great Plains Division (205)

- 1a. Wetland characterized by closed basin with apparently little to no groundwater influence; i.e., on relatively impermeable substrates..... 2
- 1b. Wetland characterized by open basin and apparently influenced by groundwater; i.e., on permeable substrates..... 3
- 2a. Playa lake or rainwater basins characterized by the presence of an impermeable layer such as a dense clay. *Eleocharis* spp., *Hordeum jubatum*, *Coreopsis tinctoria*, *Symphyotrichum subulatum* (= *Aster subulatus*), and *Polygonum pensylvanicum* (= *Polygonum bicorne*) are common vegetation in the wetter and deeper depression, while *Pascopyrum smithii* and *Buchloe dactyloides* are more common in shallow

spinosus, Prunus fasciculata, Rhus microphylla, Salazaria mexicana, or Sarcobatus vermiculatus.
 Herbaceous vegetation such as perennial grasses or herbs may present. Wetland vegetation may be concentrated near occasional seeps/springs or tanks in drainage where water is perennial.....
**North American Warm Desert Wash (CES302.755) NOT ISOLATED**

3a. Wetlands occur in small (usually less than 0.1 ha) interdunal swales in wind deflation areas within active or partially vegetated dunes or sand sheets, where sand is scoured down to the water table. These wetlands areas are typically dominated by emergent herbaceous species like *Eleocharis* spp., *Juncus* spp or *Schoenoplectus* spp. Other characteristic species may include *Dasyochloa pulchella, Ephedra californica, Ericameria linearifolia, Eriogonum deserticola, Heliotropium convolvulaceum, Poliomintha incana, Prosopis glandulosa, Pleuraphis rigida, Psoralidium lanceolatum, Psorothamnus, polydenius, Psorothamnus scoparius, and Psorothamnus spinosus.*

.....**North American Warm Desert Interdunal Swale Wetland (CES302.039)**

3b. Basin wetlands are not associated with active or partially vegetated dunes or sand sheets..... 4

4a. Sparsely vegetated, intermittently flooded wetland restricted to playas that are dry most of the year.

During wet periods vegetation may become dense. However, desert playas are typically sparsely vegetated (generally less than 10% cover) depending on time since last flooding and degree of salinity.

spp 02(pl)6.cci.2(tcruandSuaeda(spp)Tj-40.Twoodi TD0.001ess than 10%)TJ.9(s)1,{Psoroth)3.8(a(..88nd restricted)-7.7

7b. Wetland typically occurs as lowland depressions or along lake borders that have a permanent water source through most of the year. A variety of species are part of this system, including *Typha*

6b. Wetland not as above. These subalpine-montane fens are confined to specific environments defined by groundwater discharge, soil chemistry, and peat accumulation of at least 40 cm. Typically dominated by *Carex aquatilis*, *Carex limosa*, *Carex lasiocarpa*,

12a. Shrubland or steppe occurring along drainages in Great Basin mountain ranges and in lowland depressional wetlands or non-alkaline playas in the northern Great Basin and Columbia Basin that is dominated by *Artemisia cana* ssp. *bolanderi* or *A. cana. s*

includes species of *Scirpus* and/or *Schoenoplectus*, *Typha*, *Juncus*, *Potamogeton*, *Polygonum*, *Nuphar*, and *Phalaris*.**North American Arid West Emergent Marsh (CES300.729) NOT ISOLATED**

- 5a. Wetland shrubland or steppe occurring along drainages in Great Basin mountain ranges and in lowland depressional wetlands or non-alkaline playas in the northern Great Basin and Columbia Basin Vegetation dominated by *Artemisia cana* ssp. *bolanderi* or *A. cana* ssp. *viscidula*. *Artemisia tridentata* ssp. *tridentatata*, *A. tridentata* ssp. *wyomingensis* or *A. tridentata* ssp. *viscidula* are occasionally co-dominant.

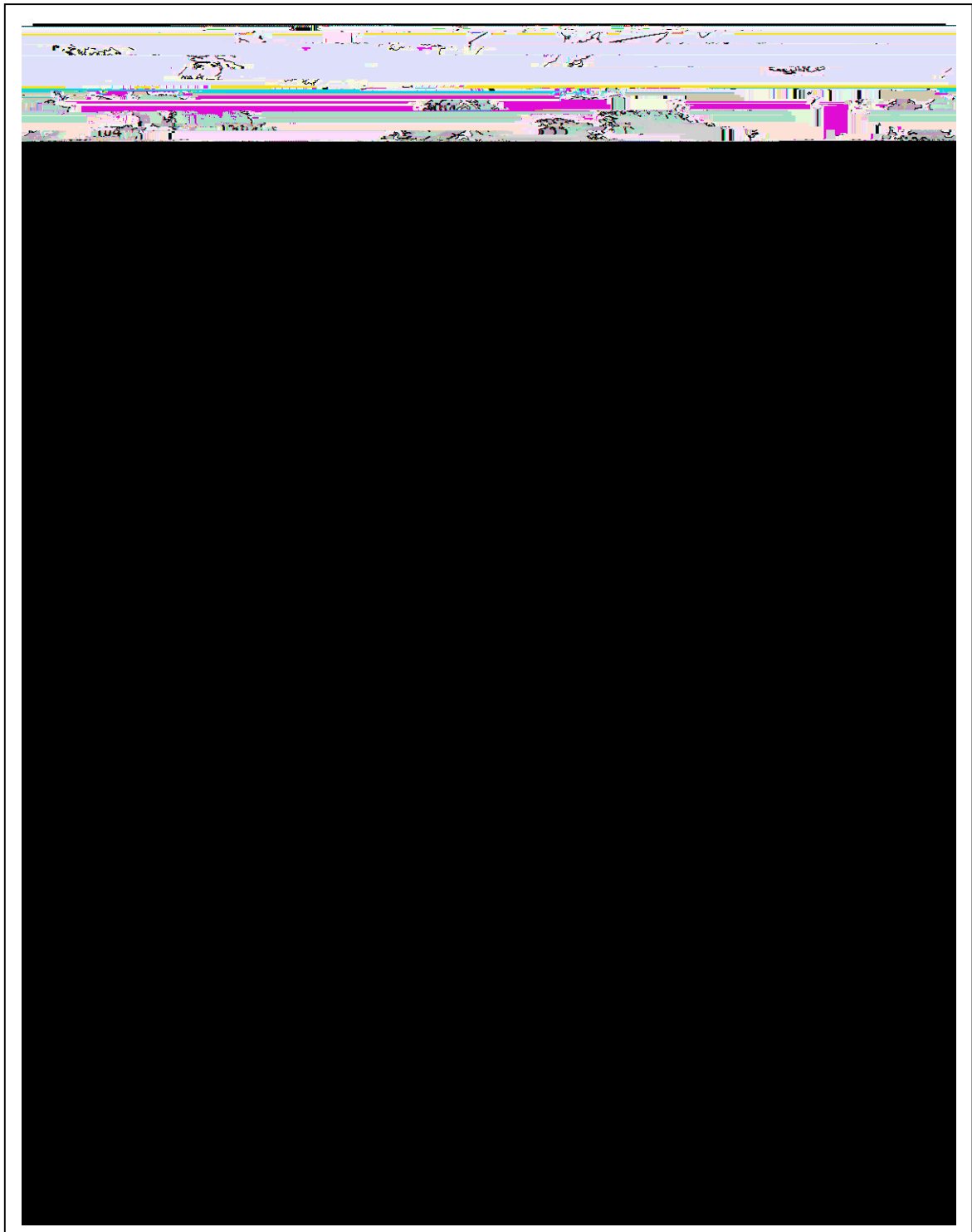
Appendix III: Wetland Ecological System Descriptions

TABLE OF CONTENTS

CES103.581 Boreal-Laurentian Bog	4
CES103.724 Boreal-Laurentian Conifer Acid Swamp	5
CES103.871 Boreal Depressional Bog	5
CES201.576 Acadian-Appalachian Conifer Seepage Forest	6
CES201.583 Boreal-Laurentian-Acadian Acidic Basin Fen	7
CES201.574 Laurentian-Acadian Conifer-Hardwood Acid Swamp	8
CES201.034 Northern Great Lakes Interdunal Wetland	9
CES201.562 Acadian Near-Boreal Spruce Flat	9
CES201.726 Great Lakes Dune and Swale	10
CES201.721 Great Lakes Alvar	12
CES202.018 Central Interior Highlands and Appalachian Sinkhole and Depression Pond	13
CES202.702 North-Central Interior Shrub-Graminoid Alkaline Fen	15
CES202.700 North-Central Interior Wet Flatwoods	16
CES202.701 North-Central Interior Wet Meadow-Shrub Swamp	16
CES202.606 North-Central Interior and Appalachian Acid Peatland	17
CES202.336 Southern Piedmont / Ridge and Valley Upland Depression Swamp	18
CES202.607 North-Central Appalachian Seepage Fen	20
CES202.899 North-Central Interior Freshwater Marsh	21
CES202.052 Ozark-Ouachita Fen	22
CES202.317 Southern Appalachian Seepage Wetland	22
CES202.027 Great Lakes Wet-Mesic Lakeplain Prairie	24
CES202.329 Southern Piedmont Granite Flatrock	24
CES203.245 Atlantic Coastal Plain Clay-Based Carolina Bay Wetland	26
CES203.522 Atlantic Coastal Plain Northern Basin Peat Swamp	28
CES203.520 Atlantic Coastal Plain Northern Basin Swamp and Wet Hardwood Forest	28
CES203.893 Atlantic Coastal Plain Northern Bog	29
CES203.262 Atlantic Coastal Plai	

CES205.687	Eastern Great Plains Wet Meadow, Prairie, and Marsh.....	56
CES301.460	South Texas Dune and Coastal Grassland.....	58
CES303.657	Edwards Plateau Granitic Forest, Woodland and Glade.....	59
CES303.666	Western Great Plains Closed Depression Wetland.....	60
CES303.675	Western Great Plains Open Freshwater Depression Wetland	61
CES303.669	Western Great Plains Saline Depression Wetland.....	63
CES303.661	Great Plains Prairie Pothole.....	64
CES304.060	Northern Rocky Mountain Wooded Vernal Pool.....	66
CES304.764	Colorado Plateau Hanging Garden.....	66
CES304.057	Columbia Plateau Vernal Pool.....	68
CES304.998	Inter-Mountain Basins Alkaline Closed Depression	69
CES304.059	Inter-Mountain Basins Interdunal Swale Wetland.....	70
CES304.058	Northern Columbia Plateau Basalt Pothole Pond.....	71
CES304.780	Inter-Mountain Basins Greasewood Flat.....	72
CES304.786	Inter-Mountain Basins Playa.....	73
CES302.039	North American Warm Desert Interdunal Swale Wetland	74
CES302.746	Chihuahuan-Sonoran Desert Bottomland and Swale Grassland.....	76
CES302.759	Sonoran Fan Palm Oasis.....	77
CES302.751	North American Warm Desert Playa.....	77
CES206.954	California Central Valley Alkali Sink.....	78
CES206.947	Mediterranean California Alkali Marsh.....	79
CES206.951	Mediterranean California Coastal Interdunal Wetland.....	80
CES206.948	Northern California Claypan Vernal Pool.....	80
CES206.949	Northern California Volcanic Vernal Pool.....	81
CES206.950	South Coastal California Vernal Pool.....	82
CES204.996	Modoc Basalt Flow Vernal Pool.....	82
CES204.062	North Pacific Coastal Interdunal Wetland.....	83
CES204.859	North Pacific Hardpan Vernal Pool.....	84
CES204.874	Willamette Valley Wet	

Ecological Divisions of North America for NatureServe Ecological Systems.



SOURCES

References: Comer et al. 2003, Damman and French 1987, Davis and Anderson 2001, Glaser 1992a, Glaser and Janssens 1986, Harris et al. 1996, National Wetlands Working Group 1988

Version: 04 Mar 2004

Concept Author: S.C. Gawler and D. Faber-Langendoen

Stakeholders: Canada, East, Midwest

LeadResp: East

CES103.724 BOREAL-LAURENTIAN CONIFER ACID S

Concept Summary: These wetlands are found at higher temperate and boreal latitudes of Canada, extending south into the Pacific Maritime and Rocky Mountain Divisions. They form where the rate of

Appalachians, often adjacent to (but above) drainage channels, in settings where groundwater seepage provides constant moisture. *Thuja occidentalis* and *Picea rubens* are the typical dominants; some areas may have a prominent deciduous component. The herbaceous and bryophyte flora is typically extensive. Because of their setting, these are often not mapped as wetlands.

Comments: This system may have application in other parts of the Laurentian-Acadian Division, depending on how the break is made between "wet-mesic" lowland white-cedar forests (with subsurface gleyed soils) and the white-cedar seepage forests described here.

DISTRIBUTION

Range: Northernmost parts of New England, north and east into Canada.

Divisions: 201:C

TNC Ecoregions: 63:C

Subnations: ME, NB, NH, NY, QC, VT

Associations:

- *Thuja occidentalis* - (*Picea rubens*) / *Tiarella cordifolia* Forest (CEGL006175, GNR)

SOURCES

References: Comer et al. 2003

Version: 09 Jan 2003

Concept Author: S.C. Gawler

Stakeholders: Canada, East

LeadResp: East

CES201.583 BOREAL-LAURENTIAN-ACADIAN ACIDIC BASIN FEN

Primary Division: Laurentian-Acadian (201)

Land Cover Class: Woody Wetland

Spatial Scale & Pattern: Large patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Diagnostic Classifiers: Depressional; Organic Peat (>40 cm); Broad-Leaved Shrub; Dwarf-Shrub; Graminoid; *Picea mariana* - *Larix laricina*; Acidic Water

Concept Summary: This peatland system ranges over a broad geographic area across the glaciated Northeast to the Great Lakes and upper Midwest. The fens have developed in open or closed, relatively shallow basins with nutrient-poor and acidic conditions. Many occur in association with larger lakes or streams. The substrate is *Sphagnum*, and vegetation typically includes areas of graminoid dominance and dwarf-shrub dominance. *Chamaedaphne calyculata* is usually present and often dominant. Scattered stunted trees may be present. These fens often develop adjacent to open water.

Particularly distinctive are the ribbed bogs or fens in which a pattern of narrow (2-3 m wide) low (less than 1 m deep) ridges are oriented at right angles to the direction of the drainage (National Wetlands Working Group 1988). Wet pools or depressions occur between the ridges. These patterned peatlands may include string bog, Atlantic ribbed fen, or northern ribbed fen (National Wetlands Working Group 1988). They develop almost entirely north of 46 degrees N latitude in east-central Canada and the adjacent U.S. They are minerotrophic peatlands in which the vegetation has developed into a pattern of strings (raised, usually linear features) and flarks (wet depressions separating the strings). The substrate chemistry is entirely acidic in some peatlands; in others, where bedrock or other substrate influence creates circumneutral to calcareous conditions, peatland chemistry may be entirely calcareous or vary from acidic to calcareous within the same peatland. In acidic portions, typical bog heaths predominate, mixed with sedges. *Dasiphora fruticosa ssp. floribunda* is diagnostic of circumneutral to calcareous conditions. These peatlands usually develop in open basins and flat plains, and the patterned portion may occupy only a fraction of the entire peatland. The edge of the basin may be shallow to deep peat over a sloping substrate, where seepage waters provide nutrients.

Comments: Need to clarify the conceptual boundaries between this and the boreal fens in central and eastern Canada.

DISTRIBUTION

Range: New England and adjacent Canada west to the Great Lakes and Minnesota, north of the glacial boundary.

Divisions: 103:C, 201:C, 202:C

TNC Ecoregions: 47:C, 48:P, 61:C, 63:C

Subnations: MA, ME, MI, MN, NB?, NH, NS?, NY, QC, VT, WI

- *Picea mariana* - (*Larix laricina*) / *Ledum groenlandicum* / *Sphagnum* spp. Forest (CEGL005271, G5)
- *Picea mariana* / *Alnus incana* / *Sphagnum* spp. Forest (CEGL002452, G5)
- *Picea rubens* - *Abies balsamea* / *Gaultheria hispidula* / *Osmunda cinnamomea* / *Sphagnum* spp. Forest (CEGL006312, GNR)
- *Picea rubens* - *Acer rubrum* / *Nemopanthus mucronatus* Forest (CEGL006198, GNR)

High-ranked species: *Carex wiegandii* (G3), *Poa paludigena* (G3)

SOURCES

References:

Diagnostic Classifiers: Lowland; Forest and Woodland (Treed); Toeslope/Valley Bottom; Glaciated; Picea (glauca, mariana, rubens) - Abies

Concept Summary:

overstory canopy and understory. In contrast to the dry or moist swales, wetter swales (where standing water is present through most of the year) may be dominated by Carices, such as *Carex aquatilis* and *Carex stricta*. Forested beach ridges, with soils of medium to coarse sand, tend to be dominated by species common to dry-mesic and mesic northern forest. Complexes located in embayments protected from prevailing winds tend to be formed entirely of low, water-lain beach ridges. As a result, even the beach ridges within these complexes support wetland vegetation.

Five major subtypes of Great Lakes Dune and Swale were described for Michigan, including the Lake Superior high dune type, the Lake Superior low dune type, the North Lake Michigan high dune type, Northern Lake Huron-Lake Michigan low dune type, and the Southern Lake Huron type. These subtypes represent patterns of floristic variation resulting from latitude and sand dune/beach ridge characteristics that constrain floristic and structural attributes. High dune types may support predominantly upland vegetation, while low dune types may support predominantly wetland vegetation

Comments: Five major subtypes of Great Lakes Dune and Swale were described for Michigan, including the Lake Superior high dune type, the Lake Superior low dune type, the North Lake Michigan high dune type, Northern Lake Huron-Lake Michigan low dune type, and the Southern Lake Huron type. These subtypes represent patterns of floristic variation resulting from latitude and sand dune/beach ridge characteristics that constrain floristic and structural attributes.

This system has rather strong variation between northern and southern Great Lakes examples (north and south of Bailey's 210-220 division line). Those occurring along the southern Lake Michigan shoreline of Indiana and Illinois have been altered significantly, but likely reflect a distinct ecological system type with oak woodland and savanna on beach ridges and wet prairie in swales. Additional classification and inventory of this system type on Lakes Erie and Ontario may suggest definition of another southern Great Lakes dune and swale system type.

DISTRIBUTION

Range: Throughout the Great Lakes shorelines of the United States and Canada.

Divisions: 201:C, 202:C

TNC Ecoregions: 48:C

Subnations: IL, IN, MI, MN, OH, ON, PA, WI

Associations:

- *Ammophila breviligulata* - (*Schizachyrium scoparium*) Herbaceous Vegetation (CEGL005098, G3G5)
- *Chamaedaphne calyculata* - *Myrica gale* / *Carex lasiocarpa* Dwarf-shrubland (CEGL005228, G4G5)
- *Dasiphora fruticosa* ssp. *floribunda* / *Cladium mariscoides* - *Juncus balticus* - (*Rhynchospora capillacea*) Herbaceous Vegetation (CEGL005105, G3?)
- *Juniperus horizontalis* - *Arctostaphylos uva-ursi* - *Juniperus communis* Dune Dwarf-shrubland (CEGL005064, G3G4)
- *Pinus banksiana* - (*Pinus resinosa*) - *Pinus strobus* / *Juniperus horizontalis* Wooded Herbaceous Vegetation (CEGL005125, G2)
- *Pinus banksiana* - *Pinus resinosa* - *Pinus strobus* Dune Forest (CEGL002589, G3Q)
- *Populus deltoides* - (*Juniperus virginiana*) Dune Woodland (CEGL005119, G1G2)
- *Prunus pumila* - (*Ptelea trifoliata*) Dune Shrubland (CEGL005075, G2Q)
- *Thuja occidentalis* - (*Picea mariana*, *Abies balsamea*) / *Alnus incana* Forest (CEGL002456, G4)
- *Thuja occidentalis* - *Fraxinus nigra* Forest (CEGL005165, GNR)

High-ranked species: *Iris lacustris* (G3), *Lycopodiella margueritiae* (G2), *Lycopodiella subappressa* (G2), *Oligoneuron houghtonii* (G3)

Environment: The system consists of a foredune, followed by a series of low to high dunes (uplands) and swales (wetlands). The system is often best developed where post-glacial streams entered an embayment and provide a dependable sand source. The combination of along-shore currents, waves, and winds form foredunes along the shoreline. With gradual long-term drops in water level, combined with post-glacial uplifting of the earth's crust, these low dunes gradually rise above the direct influence of the lakes, and new foredunes replace them. Over several thousand years, a series of ridges and swales is created. For most complexes, the flow of surface streams and groundwater maintain the wet conditions in the swales. With time, plant succession has proceeded to the point where the beach ridges are now forested while the wet swales are either forested or open wetlands. Along the Lake Superior shoreline, where post-glacial uplift is greatest, many of the complexes consist primarily of dry, forested swales. The dunes and swales differs depending on fetch and the amount of sediment available. The influence of Great Lakes water-level fluctuations is probably limited to the first few swales inland from the shoreline. For most of the complexes, the water occupying the swales comes from streams flowing from the adjacent uplands or from groundwater seepage.

Vegetation: The foredunes of most dune-and-swale complexes are commonly 1-2 m high, with *Ammophila breviligulata*, *Calamovilfa longifolia*, *Salix serissima*, *Salix cordata*, and *Populus balsamifera* most common. The swale immediately behind the foredune is influenced by short-term variation in lake levels and can be partially or occasionally completely filled by dune sands following major storm events. Species common to this first swale include *Juncus balticus*, *Juncus pelocarpus*, *Juncus nodosus*, *Eleocharis acicularis*, and *Schoenoplectus americanus* (= *Scirpus americanus*). Occasionally, such swales may contain lake-influenced, calcareous sands, and the shallow swale may contain moderately alkaline indicators, such as *Cladium mariscoides*, *Myrica gale*, *Dasiphora fruticosa* ssp. *floribunda* (= *Pentaphylloides floribunda*), and others.

A low dune field with more advanced plant succession often follows the first open dunes and swales. *Pinus banksiana*, *Pinus strobus*, and *Pinus resinosa* often form a scattered overstory canopy, while *Juniperus communis*, *Juniperus horizontalis*, *Arctostaphylos uva-ursi*, and *Koeleria macrantha* form a scattered ground layer.

Following the dune-field zone, both dunes and swales are typically forested. Moist swales are often forested, and soil organic material has often begun to accumulate. *Thuja occidentalis*, *Alnus incana*, *Salix* spp., and *Acer rubrum* dominate the partial overstory canopy and understory. In contrast to the dry or moist swales, wetter swales (where standing water is present through most of the year) may be dominated by Carices, such as *Carex aquatilis* and *Carex stricta*.

Associations:

- *Acer saccharum* - *Ostrya virginiana* - *Carya ovata* - *Quercus rubra* Limestone Woodland (CEGL005059, G3G4)
- *Carya ovata* / *Zanthoxylum americanum* / *Panicum philadelphicum* - *Carex pensylvanica* Wooded Herbaceous Vegetation (CEGL005230, GNR)
- *Danthonia spicata* - *Poa compressa* - (*Schizachyrium scoparium*) Herbaceous Vegetation (CEGL005100, G2?)
- *Deschampsia caespitosa* - (*Sporobolus heterolepis*, *Schizachyrium scoparium*) - *Carex crawei* - *Packera paupercula* Herbaceous Vegetation (CEGL005110, G2)
- *Juniperus communis* - (*Juniperus virginiana*) - *Rhus aromatica* - *Viburnum rafinesquianum* / *Oligoneuron album* Shrubland (CEGL005212, G3)
- *Juniperus horizontalis* - *Dasiphora fruticosa* ssp. *floribunda* / *Schizachyrium scoparium* - *Carex richardsonii* Dwarf-shrubland (CEGL005236, G2)
- *Juniperus virginiana* / *Ranunculus fascicularis* Woodland (CEGL005122, G3?)
- *Picea glauca* - *Thuja occidentalis* - *Juniperus communis* / *Iris lacustris* - *Carex eburnea* Shrubland (CEGL005211, G1G2)
- *Pinus banksiana* - *Thuja occidentalis* - *Picea glauca* / *Juniperus communis* Woodland (CEGL005126, G2?)
- *Sporobolus heterolepis* - *Schizachyrium scoparium* - (*Carex scirpoidea*) / (*Juniperus horizontalis*) Herbaceous Vegetation (CEGL005234, G2)
- *Sporobolus neglectus* - *Sporobolus vaginiflorus* - *Isanthus brachiatus* - *Panicum philadelphicum* - (*Poa compressa*) Herbaceous Vegetation (CEGL005235, G2)
- 56f2.0359 0 050.029.1 TD0.0008Lx e-Resp:

DISTRIBUTION

Range:

High-ranked species: *Boltonia* sp. 1 (G2?), *Carex decomposita* (G3), *Fimbristylis perpusilla* (G2), *Helenium virginicum* (G2), *Isoetes virginica* (G1), *Muhlenbergia torreyana* (G3), *Platanthera leucophaea* (G3), *Schoenoplectus hallii* (G2), *Scirpus ancistrochaetus* (G3)

Vegetation: Ponds vary from open water to herb-, shrub-, or tree-dominated systems. Tree-dominated examples typically contain *Quercus* species, *Platanus occidentalis*, *Fraxinus pennsylvanica*, *Acer saccharinum*, or *Nyssa* species, or a combination of these. In addition, *Liquidambar styraciflua* may be present in southern examples. *Cephalanthus occidentalis* is a typical shrub component. The herbaceous layer is widely variable depending on geography.

Dynamics: Water depth may vary greatly on a seasonal basis, and may be a meter deep or more in the winter. Some examples become dry in the summer.

SOURCES

References: Comer et al. 2003

Version: 18 Apr 2005

Stakeholders: East, Midwest, Southeast

Concept Author: M. Pyne, S. Menard, D. Faber-Langendoen

LeadResp: Midwest

CES202.702 NORTH-CENTRAL INTERIOR SHRUB-GRAMINOID ALKALINE FEN

Primary Division: Central Interior and Appalachian (202)

Land Cover Class: Woody Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Concept Summary: This fen system is found in the glaciated portions of the Midwest and southern Canada. Examples of this system can be located on level to sloping seepage areas, in pitted outwash or in kettle lakes associated with kettle-kame-moraine topography. Groundwater flows through marls and shallow peat soils typically minerotrophic and slightly alkaline. Examples of this system contain a core fen area of graminoids surrounded by shrubs and tall-shrubs with a fairly continuous sphagnum moss. Herbaceous and shrub cover is variable with little to no tree cover. Characteristic species include prairie grasses such as *Andropogon gerardii* and *Spartina pectinata* with prairie forbs and sedges, *Carex* spp. Common shrub species include *Dasiphora fruticosa* ssp. *floribunda*, *Cornus* spp., and *Salix* spp. Alterations in wetland hydrology and agricultural development can threaten examples of this system.

DISTRIBUTION

Range: This system is found in the northern Midwest and southern Canada.

Divisions: 201:C, 202:C

TNC Ecoregions: 35:C, 36:C, 45:C, 46:C, 47:C, 48:C, 49:P

Subnations: IA, IL, IN, MI, MN, ND, OH, ON, SD, WI

Associations:

- *Carex lasiocarpa* - *Carex oligosperma* / *Sphagnum* spp. Herbaceous Vegetation (CEGL002265, G3G4)
- *Cornus amomum* - *Salix* spp. - *Toxicodendron vernix* - *Rhamnus lanceolata* Fen Shrubland (CEGL005087, G2G3)
- *Cornus racemosa* / *Carex (sterilis, aquatilis, lacustris)* Shrub Herbaceous Vegetation (CEGL006123, G2G3)
- *Cornus* spp. - *Salix* spp. - *Vaccinium corymbosum* - *Rhamnus alnifolia* - *Toxicodendron vernix* Shrubland (CEGL005083, G4?)
- *Dasiphora fruticosa* ssp. *floribunda* / *Carex interior* - *Carex flava* - *Sarracenia purpurea* Shrub Herbaceous Vegetation (CEGL005140, G3)
- *Dasiphora fruticosa* ssp. *floribunda* / *Carex sterilis* - *Andropogon gerardii* - *Arnoglossum plantagineum* Shrub Herbaceous Vegetation (CEGL005139, G3G4)
- *Symplocarpus foetidus* Herbaceous Vegetation (CEGL002385, G4?)
-

CES202.700 NORTH-CENTRAL INTERIOR WET FLATWOODS

Primary Division: Central Interior and Appalachian (202)

Land Cover Class: Woody Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Concept Summary: This small-patch system is found throughout the northern glaciated Midwest ranging east into Lower New England. It usually occurs on poorly drained uplands or in depressions associated with glacial features such as tillplains, lakeplains or outwash plains. Soils often have an impermeable or nearly impermeable clay layer that can create a shallow, perched water table. Saturation can vary, with ponding common during wetter seasons, and drought possible during the summer and autumn months. These fluctuating moisture levels can lead to complexes of forest upland and wetland species occurring within this system. *Quercus palustris* typically dominates and is often associated with *Quercus bicolor* and *Acer*

(*Carex* spp.) and grasses such as *Calamagrostis canadensis*. This system also can contain a zone of wet prairie species such as *Spartina pectinata*. Shrub swamps can also be associated with the wet meadows within this system. Typical shrub species include *Cornus* spp., *Salix* spp., and/or *Cephalanthus occidentalis*. Trees are generally absent and, if present, are scattered. Fire originating in adjacent uplands, as well as hydrology, can influence this system. In the absence of fire, drought and/or ditching can increase the proportion of shrubs compared to the wet meadow. In the absence of fire, drought and/or ditching can increase the proportion of shrubs compared to the wet meadow or prairie species.

Comments: If examples of these associations are found within an immediate medium to large floodplain, those should be considered part of North-Central Interior Floodplain (CES202.694). The freshwater marsh component was removed from this system to create a new system, North-Central Interior Freshwater Marsh (CES202.899).

DISTRIBUTION

Range: This system is found in the northern Midwest and southern Canada.

Divisions: 201:C, 202:C

TNC Ecoregions: 35:C, 36:C, 45:C, 46:C, 47:C, 48:C, 49:?

Subnations: IA, IL, IN, MI, MN, MO, ND, OH, ON, SD, WI

Associations:

- *Calamagrostis canadensis* - *Phalaris arundinacea* Herbaceous Vegetation (CEGL005174, G4G5)
- *Carex aquatilis* - *Carex* spp. Herbaceous Vegetation (CEGL002262, G4?)
- *Carex atherodes* Herbaceous Vegetation (CEGL002220, G3G5)
- *Carex lacustris* Herbaceous Vegetation (CEGL002256, G4G5)
- *Carex rostrata* - *Carex lacustris* - (*Carex vesicaria*) Herbaceous Vegetation (CEGL002257, G4G5)
- *Carex stricta* - *Carex* spp. Herbaceous Vegetation (CEGL002258, G4?)
- *Cephalanthus occidentalis* / *Carex* spp. Northern Shrubland (CEGL002190, G4)
- *Cornus sericea* - *Salix* (*bebbiana*, *discolor*, *petiolaris*) / *Calamagrostis stricta* Shrubland (CEGL002187, G3G4)
- *Cornus sericea* - *Salix* spp. - (*Rosa palustris*) Shrubland (CEGL002186, G5)
- *Spartina pectinata* - *Calamagrostis stricta* - *Carex* spp. Herbaceous Vegetation (CEGL002027, G3?)
- *Spartina pectinata* - *Carex* spp. - *Calamagrostis canadensis* - *Lythrum alatum* - (*Oxypolis rigidior*) Herbaceous Vegetation (CEGL002224, G3?)
- *Spartina pectinata* - *Carex* spp. - *Calamagrostis canadensis* Sand Herbaceous Vegetation (CEGL005178, G3?)
- *Spiraea tomentosa* - *Salix humilis* / *Andropogon gerardii* - *Panicum virgatum* Shrubland (CEGL005069, G1Q)

High-ranked species: *Calephelis muticum* (G3), *Clonophis kirtlandii* (G2), *Eleocharis nitida* (G3G4), *Eleocharis wolfii* (G3G4), *Platanthera leucophaea* (G3), *Schoenoplectus hallii* (G2), *Scirpus ancistrochaetus* (G3), *Valeriana edulis* var. *ciliata* (G5T3)

SOURCES

References: Comer and Albert 1997, Comer et al. 2003

Version: 16 Apr 2004

Concept Author: S. Menard

Stakeholders: Canada, Midwest

LeadResp: Midwest

CES202.606 NORTHENTRAL 40.3 Tm0.00ncj1fp:8 24504.8()JTJerar(I-0.0002 Tc206 TwORTH)Tj10.98 0

"Gabbro Glades") which occur on gently sloping terrain or shallowly depressed upland flats over gabbro-derived clays in the Piedmont of Georgia and South Carolina.

Comments: This system is distinct from all other Piedmont systems in its ponded wetland hydrology in upland settings. The vegetation is generally also distinct from all other Piedmont systems. Though apparently quite different, Southern Piedmont Mafic Hardpan Woodland (CES202.268) is closely related by the importance of an impermeable clay hardpan, and some intermediate gradations occur. A few examples of Southern Piedmont / Ridge and Valley Upland Depression Swamp (CES202.336) appear to be closely related to Coastal Plain depressional wetlands, sharing some flora, but most are more distinct. The system has significant variation in vegetation and environment. The forested swamps and open pools represent well-marked subtypes. There is a more subtle distinction between the basic and acidic soil swamps. There is substantial variation among the pools, related to substrate, basin morphology, and geographic location. A few disjunct examples may occur in the Southern Blue Ridge because of similarity in topographic setting and general structure

vt

Dynamics: The dynamics of water levels are the most important factor in these systems, differentiating them from the surrounding uplands and differentiating the various communities within the system. Most basins have almost no watershed, so water comes largely from rainfall. Variation in rainfall patterns will drive variation in duration of flooding, though most basins have an outlet that limits water depth. Fire is presumably naturally rare in these systems. Though they would naturally be exposed to fires in the surrounding uplands, standing water and lack of continuous fuel would limit fires to the edges, expect perhaps in early fall. Presumably important as a dynamic process is the migration of amphibians, which concentrate in these systems for breeding. Ecosystem dynamics may be strongly affected by the suitability of surrounding uplands for amphibian adult habitat.

SPATIAL CHARACTERISTICS

Spatial Summary: Small-patch system, occurring as isolated bodies surrounded by upland systems. Open pools are usually less than one acre, while swamps may be up to several acres in size.

Size: Occurs as small patches. Pools are usually less than one acre, and may be substantially smaller. Swamps range up to several acres, a few to ten or more acres. Most examples occur as isolated patches, but a few occur as small groups.

Extensive mafic rock areas may support a number of swamps, but most are probably not close enough together to be treated as single occurrences. Most remain

SOURCES

References:

is distinguished from Southern and Central Appalachian Bog and Fen (CES202.300) by occurrence in sloping settings rather than flat valley bottoms, with more rapid flow of water, and by lack of dominance by the characteristic bog or fen flora (though some of it may be present). The only other systems with wetland systems within its range, floodplains and upland pools, are more distinct floristically as well as associated with very different landforms.

DISTRIBUTION

Range: Ranges throughout the Southern Appalachians, from northern Georgia and South Carolina north through Virginia, and westward into Tennessee, Kentucky?, and West Virginia.

Divisions: 202:C

TNC Ecoregions: 51:C, 59:?

Subnations: AL?, GA, KY?, NC, SC, TN, VA, WV?

Associations:

- *Alnus serrulata* - *Lindera benzoin* / *Scutellaria lateriflora* - *Thelypteris noveboracensis* Shrubland (CEGL003909, G2?)
- *Calamagrostis cainii* - *Carex ruthii* - *Parnassia asarifolia* / *Sphagnum* spp. Herbaceous Vegetation (CEGL007877, G1Q)
- *Carex gynandra* - *Platanthera clavellata* - *Drosera rotundifolia* - *Carex ruthii* - *Carex atlantica* / *Sphagnum* spp. Herbaceous Vegetation (CEGL007697, G2)
- *Diphylleia cymosa* - *Saxifraga micranthidifolia* - *Laportea canadensis* Herbaceous Vegetation (CEGL004296, G3)
- *Glyceria striata* - *Carex gynandra* - *Chelone glabra* - *Symphytotrichum puniceum* / *Sphagnum* spp. Herbaceous Vegetation (CEGL008438, G2G3)
- *Impatiens (capensis, pallida)* - *Monarda didyma* - *Rudbeckia laciniata* var. *humilis* Herbaceous Vegetation (CEGL004293, G3)
- *Schoenoplectus robustus* - *Juncus gerardii* - *Hordeum jubatum* - *Atriplex patula* Herbaceous Vegetation (CEGL006234, G1)

High-ranked species: *Cardamine clematitidis* (G2G3), *Carex mitchelliana* (G3G4), *Chelone cuthbertii* (G3), *Danthonia epilis* (G3G4), *Desmognathus aeneus* (G3G4), *Desmognathus imitator* (G3G4), *Desmognathus santeetlah* (G3G4Q), *Desmognathus wrightii* (G3G4), *Eurycea junaluska* (G3), *Glyceria nubigena* (G2), *Rhynchospora thornei* (G3), *Rudbeckia laciniata* var. *humilis* (G5T3?), *Sarracenia oreophila* (G2), *Saxifraga caroliniana* (G2), *Xyris tennesseensis* (G2)

Environment: Occurs in small patches where seepage creates saturated soil conditions permanently or seasonally. Wetness may vary substantially over short distances in response to amounts of seepage, flow, and pooling by topography or impermeable substrate. The system occurs over a wide elevational range, nearly to the highest peaks. Landforms are usually concave slopes, but may be on convex slopes or even in ridgelines and peaks. (y)4.3(7(e hi)3ne11.72.2f)1.2(a(e hi)3vs)1.2(are us - sual)3

Heterogeneity: Most patches are contiguous and contain only a single association. Vegetation is often very heterogeneous within single associations.

Adjacent Ecological System Comments: May be embedded in a variety of other systems. Most common are Southern Appalachian Northern Hardwood Forest (CES202.029) and Southern and Central Appalachian Cove Forest (CES202.373).

SOURCES

References: Comer et al. 2003

Version:

Concept Summary: This system consists of smooth, exfoliated outcrops of massive granite and related rocks in the eastern and central Piedmont of the southeastern United States, and rarely in the adjacent Atlantic Coastal Plain (confined to the Fall-Line where erosion has exposed underlying rocks). Examples occur from Virginia south to Alabama, but are found most abundantly in the upper Piedmont of Georgia. Depending upon the location, examples may rise above the surrounding landscape by as much as 200 m, or lie flush with the surrounding land surface. The vegetation is a complex of small-patch communities of different species and structure occupying different microhabitats present on the outcrops, ranging from moss and lichens to herbs to shrubs and trees. In some areas, these microhabitats include solution pits or depressions that retain water and form a distinctive wetland community. This outcrop system supports a relatively high degree of endemic plants.

Comments: Granitic domes are clearly related to other rock outcrop systems in the Piedmont but are distinct in their flora and vegetation mat succession. The smooth rock surface is crucial to their development. More fractured granitic rocks do not form this distinct system. In contrast, Southern Piedmont Cliff (CES202.386) have vertically oriented rock outcrops that tend to have fractures and ledges. Southern Piedmont Glade and Barrens (CES202.328) are similarly horizontally oriented, but have denser vegetation and rather different flora. Southern Appalachian Rocky Summit (CES202.327), which barely overlap the range of this system, has fractured rock and occurs in topographically high settings in rugged topography.

This system is closely related to Southern Appalachian Granitic Dome (CES202.297), with which it shares the distinctive structure and vegetation mat dynamics of exfoliated outcrops. The flat orientation of the flatrocks makes pools more important in them. Climatic and biogeographic differences lead to floristic differences between the two systems.

DISTRIBUTION

Range:

which occurs farther north in the Coastal Plain and to some of the flat-bottomed basin wetlands of Florida which occur outside the range of this system to the south.

DISTRIBUTION

Range: Inner to Middle Coastal Plain, from southern North Carolina, through South Carolina, perhaps into Georgia. Most numerous and extensive in South Carolina.

Divisions: 203:C

TNC Ecoregions: 56:C, 57:C

Subnations: GA?, NC, SC

Associations:

- *Taxodium ascendens* / *Cyrilla racemiflora* - *Zenobia pulverulenta* Woodland (CEGL003734, G2)

- *Taxodium ascendens* / *Panicum hemitomon* - *Polygala cymosa* Woodland (CEGL003733, G2G3)

High-ranked species: *Andropogon gyrans* var. *stenophyllus* (G5T3T4), *Carex striata* var. *striata* (G4T3T4), *Carex verrucosa* (G3G4), *Echinodorus parvulus* (G3Q), *Euphyes dukesi* (G3), *Lindera melissifolia* (G2), *Litsea aestivalis* (G3), *Lobelia boykinii* (G2G3), *Ludwigia spathulata* (G2G3), *Myriophyllum laxum* (G3), *Oxypolis canbyi* (G2), *Panicum hirstii* (G1), *Polygonum hirsutum* (G3G4), R-1.8(e rasn21.0898 0 TD0s1f2((s)1.2(H12 Tw[c]ylfcn5(rol)4.2(yldcn5(rol)4m9osD0.000cosa It)4.3

CES203.522 ATLANTIC COASTAL PLAIN NORTHERN BASIN PEAT SWAMP

Primary Division: Gulf and Atlantic Coastal Plain (203)

Land Cover Class: Woody Wetland

Spatial Scale & Pattern: Large patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Concept Summary: This system is comprised of acidic peat swamps formed in basins of various sizes, predominantly Atlantic white-cedar swamps, occurring on the northern portion of the Atlantic Coastal Plain from Massachusetts south to Virginia. The hydrology is saturated, as evidenced by *Sphagnum*-dominated hummock-and-hollow microtopography. *Chamaecyparis thyoides* is characteristic and often dominant. *Acer rubrum* may also be an important species, especially after logging.

DISTRIBUTION

Range: This system occurs on the northern portion of the Atlantic Coastal Plain from Massachusetts south to Virginia.

Divisions: 203:C

TNC Ecoregions: 58:C, 60:P, 62:?

Subnations: CT, DE, MA, MD, NJ, NY, VA

Associations:

- *Acer rubrum* - *Nyssa sylvatica* - *Magnolia virginiana* / *Viburnum nudum* var. *nudum* / *Osmunda cinnamomea* - *Woodwardia areolata* Forest (CEGL006238, G3?)
- *Acer rubrum* / *Rhododendron maximum* Forest (CEGL006396, GNR)
- *Chamaecyparis thyoides* - *Acer rubrum* - *Magnolia virginiana* Forest (CEGL006078, GNR)
- *Chamaecyparis thyoides* - *Acer rubrum* / *Lycopus* spp. Forest (CEGL006364, GNR)
- *Chamaecyparis thyoides* / *Alnus maritima* Woodland (CEGL006307, GNR)
- *Chamaecyparis thyoides* / *Ilex glabra* - *Rhododendron viscosum* Forest (CEGL006188, G3)
- *Chamaecyparis thyoides* / *Rhododendron maximum* Forest (CEGL006355, G2G3)
- *Vaccinium corymbosum* - *Rhododendron viscosum* - *Clethra alnifolia* Shrubland (CEGL006371, GNR)

High-ranked species: *Callophrys hesseli* (G3G4), *Gentiana autumnalis* (G3), *Helonias bullata* (G3), *Nartheceum americanum* (G2), *Scirpus longii* (G2G3)

SOURCES

References: Comer et al. 2003

Version: 12 Oct 2004

Concept Author: R. Evans

Stakeholders: East, Southeast

LeadResp: East

CES203.520 ATLANTIC COASTAL PLAIN NORTHERN BASIN SWAMP AND WET HARDWOOD FOREST

Primary Division: Gulf and Atlantic Coastal Plain (203)

Land Cover Class: Woody Wetland

Spatial Scale & Pattern: Large patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Diagnostic Classifiers: Forest and Woodland (Treed); Seepage-Fed Sloping; North Atlantic Coastal Plain

Concept Summary: This system is comprised of hardwood swamps of seasonally flooded habitats, including relatively shallow groundwater-influenced depressions, stream headwaters and other topographic depressions. It ranges from Long

Associations:

- *Acer rubrum* - *Fraxinus (pennsylvanica, americana)* / *Lindera benzoin* / *Symplocarpus foetidus* Forest (CEGL006406, G4G5)
- *Acer rubrum* - *Fraxinus pennsylvanica* / *Bidens laevis* - *Pilea fontana* Forest (CEGL006413, GNR)
- *Acer rubrum* - *Fraxinus pennsylvanica* / *Saururus cernuus* Forest (CEGL006606, GNR)
- *Acer rubrum* - *Nyssa sylvatica* - *Liquidambar styraciflua* - *Populus heterophylla* Forest (CEGL006013, G1)
- *Acer rubrum* - *Nyssa sylvatica* - *Magnolia virginiana* / *Viburnum nudum* var. *nudum* / *Osmunda cinnamomea* - *Woodwardia areolata* Forest (CEGL006238, G3?)
- *Liquidambar styraciflua* - *Acer rubrum* - *Nyssa biflora* / *Carex jorii* Forest (CEGL006223, G1G2)
- *Liquidambar styraciflua* - *Acer rubrum* - *Quercus phellos* / *Leucothoe racemosa* Forest (CEGL006110, GNR)
- *Pinus taeda* / *Morella cerifera* / *Osmunda regalis* var. *spectabilis* Forest (CEGL006137, G3)

High-ranked species: *Carex schweinitzii* (G3G4), *Helonias bullata* (G3), *Hydrochus spangleri* (G1), *Juncus caesariensis* (G2), *Narthecium americanum* (G2), *Scirpus longii* (G2G3), *Trillium pusillum* var. *virginianum* (G3T2)

Vegetation: Characteristic tree species include *Acer rubrum*, *Liquidambar styraciflua*, *Nyssa sylvatica*, *Quercus phellos*, and *Fraxinus pennsylvanica*. *Pinus taeda* is not uncommon south of Delaware Bay.

SOURCES

References: Comer et al. 2003

Version: 12 Oct 2004

Concept Author: R. Evans

Stakeholders: East, Southeast

LeadResp: East

CES203.893 ATLANTIC COASTAL PLAIN NORTHERN B

CES203.262 ATLANTIC COASTAL PLAIN SOUTHERN DEPRESSION POND SHORE

Primary Division: Gulf and Atlantic Coastal Plain (203)

Land Cover Class: Woody Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Diagnostic Classifiers: Woody-Herbaceous; Coastal plain; Depressional [Pond]

Concept Summary: This system consists of wetlands in small basins formed in unconsolidated sediments of the Atlantic Coastal Plain, from southeastern Virginia to Florida. Most basins are formed by subsidence of surface sediments caused by solution in underlying limestone. Others may be formed as swales in mainland eolian sands, natural blockage of small drainages by sediment movement, and more obscure causes. Soils are generally sandy, with mucky surfaces in the wettest areas. Vegetation is often zonal in response to variation in duration of flooding in different parts of the depression pond. Vegetation usually ranges from open water or floating-leaved aquatics in the center of the deepest basins, to emergent marsh zones in semipermanent water, to drawdown zones with diverse small graminoid and forb vegetation, to dense shrub or woodland edges. A smaller number of basins may have emergent trees throughout their extent. Hydroperiod can vary substantially from year to year, and vegetation can similarly vary significantly in aspect and dominants. Besides flooding and its variation, fire is an important natural force in the outer drier portions.

Comments: The boundary of this system with adjacent upland or wetland systems occurs where vegetation begins to reflect the influence of regular flooding and basin hydrology. This system shares much of its character with Atlantic Coastal Plain Clay-Based Carolina Bay Wetland (CES203.245) but generally accommodates all "limesink depressions" as opposed to mineral soil Carolina bay wetlands. Other basins, especially broad, gently sloped basins on the Outer Coastal Plain and steep-sided depressions farther inland, will need to be placed based on the preponderance of evidence. The northern and southern range limits of this system are not well known.

- *Taxodium ascendens* / (*Nyssa biflora*) / *Leucothoe racemosa* - *Lyonia lucida* - *Morella cerifera* Depression Forest (CEGL007420, G3)
- *Taxodium ascendens* / *Cyrilla racemiflora* - *Zenobia pulverulenta* Woodland (CEGL003734, G2)
- *Taxodium ascendens* / *Ilex myrtifolia* Depression Forest (CEGL007418, G3?)
- *Vaccinium formosum* - *Vaccinium fuscatum* / *Sphagnum cuspidatum* Shrubland (CEGL003907, G3?)
- *Woodwardia virginica* / *Sphagnum cuspidatum* Herbaceous Vegetation (CEGL004475, G2?)

High-ranked species: *Amaranthus floridanus* (G3), *Ambystoma cingulatum* (G2G3), *Carex decomposita* (G3), *Carex striata* var. *striata* (G4T3T4), *Carex verrucosa* (G3G4), *Coreopsis rosea* (G3), *Fimbristylis perpusilla* (G2), *Hypericum adpressum* (G3), *Iris tridentata* (G3G4), *Lachnocaulon minus* (G3G4), *Lindera melissifolia* (G2), *Linum westii* (G2), *Litsea aestivalis* (G3), *Lobelia boykinii* (G2G3), *Ludwigia curtissii* (G3G4), *Ludwigia spathulata* (G2G3), *Lythrum flagellare* (G2), *Myriophyllum laxum* (G3), *Notophthalmus perstriatus* (G2G3), *Oxypolis canbyi* (G2), *Panicum hirstii* (G1), *Pieris phillyreifolia* (G3), *Polygonum hirsutum* (G3G4), *Rana capito* (G3), *Rhexia aristosa* (G3), *Rhynchospora globularis* var. *pinetorum* (G5?T3?), *Rhynchospora inundata* (G3G4), *Rhynchospora pleiantha* (G3), *Rhynchospora thornei* (G3), *Sabatia brevifolia* (G3G4), *Sagittaria graminea* var. *chapmanii* (G5T3?), *Xyris serotina* (G3G4), *Xyris stricta* (G3G4)

Environment: This system occurs in small basins, primarily in sandy terrain of the Atlantic Coastal Plain, from southeastern Virginia to Florida. Most basins are formed by subsidence of surface sediments caused by solution in underlying limestone. Others may be formed as dune swales in mainland eolian sands, natural blockage of small drainages by sediment movement, and more obscure causes. Basins often occur in complexes of a few to dozens, which vary in size, depth, and steepness of sides. Most or all of these basins are considered groundwater windows, with water levels matching

forming concentric zones, though some may have only one. Complexes may have more associations represented due to variation in depth and steepness of basins.

Adjacent Ecological System Comments:

- *Quercus michauxii* - *Quercus (nigra, pagoda)* - *Liquidambar styraciflua* - *Pinus taeda* Forest (CEGL007715, G2G3)

High-ranked species: *Polygala hookeri* (G3), *Spiranthes brevilabris* (G3G4), *Spiranthes brevilabris* var. *floridana* (G3G4T1), *Xyris scabrifolia* (G3), *Xyris stricta* (G3G4)

Environment:

Flatwoods" are located in that area) occupies less than 2% of the total area, but localized occurrences could have been present in other parts of the region.

DISTRIBUTION

Range: The primary range of this system is limited areas of the "Jackson Purchase" or "Jackson Plain" of Kentucky and possibly related areas in adjacent western Tennessee, as well as related broad, flat areas of the western Interior Low Plateau.

Divisions: 203:C

TNC Ecoregions: 43:C, 44:C

Subnations: IL?, IN?, KY, TN

Associations:

- *Quercus falcata* Flatwoods Forest (CEGL004412, G2?)
- *Quercus palustris* - (*Quercus stellata*) - *Quercus pagoda* / *Isoetes* spp. Forest (CEGL002101, G2G3)
- *Quercus phellos* - (*Quercus lyrata*) / *Carex* spp. - *Leersia* spp. Forest (CEGL002102, G3G4Q)

Environment: These flatwoods have long been recognized as the primary vegetation type of a distinctive subdivision within the Upper East Gulf Coastal Plain region (Davis 1923, Bryant and Martin 1988), as well as related areas of the western Interior Low Plateau. Within the "Jackson Plain" portion of the Upper East Gulf Coastal Plain, these flatwoods tend to be confined to relatively small areas near the eastern flank of the "Jackson Plain" region where the loess deposits thin out. Unlike drier Post Oak Flatwoods of these areas (which are typified by microtopographic variation), this system occupies broad flats underlain by fragipans. These fragipans impede the downward migration of water resulting in wet conditions for portions of the year. Fire is probably relatively infrequent in this system (M. Evans pers. comm.). In the Pennyroyal Plain, this system occurs on upland flats and depressions with poor drainage, underlain by limestone; soils include Robertsville silt loam (Chester et al. 1995) and Henry silt loam (M. Evans pers. comm.).

Vegetation: Stand and H(la(•)Tj/TT2 1 and H(l/TT4TD0.0012Qnt00002Scn Tc)3.82677 TD0.sison (4(i)4(2.7(.)-600002.n (4(i)1.4(1.))TJ

Comments: Manifestations of this in the Atlantic and Gulf coastal plains are not differentiated at this time. There may be some minor floristic differences, particularly between the northernmost and southernmost examples, but these are not thought to warrant any subdivision of the type. Examples of this system differ from Southern Coastal Plain Hydric Hammock (CES203.501) by the absence of oaks (especially swamp laurel oak and live oak) and other less flood-tolerant species such as sweetgum (A. Johnson pers. comm.). In addition, this type is found in basins with peaty substrates as opposed to limestone-influenced substrates.

DISTRIBUTION

Range:

linear features that are parts of disconnected drainageways that arise in a pine flatwoods landscape (e.g., C EGL007419). The vegetation of the "stringers" is somewhat analogous to that of the edges of the true "dome swamps."

DISTRIBUTION

Range: This system is apparently restricted to Florida and adjacent areas of Georgia.

Divisions: 203:C

TNC Ecoregions: 53:C, 55:C, 56:C

Subnations: AL, FL, GA, MS

Associations:

- *Hypericum chapmanii* - *Ilex myrtifolia* - (*Nyssa ursina*) Shrubland (CEGL003867, G1)
- *Taxodium ascendens* / (*Nyssa biflora*) / *Leucothoe racemosa* - *Lyonia lucida* - *Morella cerifera* Depression Forest (CEGL007420, G3)
- *Taxodium ascendens* / *Ilex myrtifolia* / *Carex (striata, turgescens)* Stringer Forest (CEGL007419, G3?Q)
- *Taxodium ascendens* / *Ilex myrtifolia* / *Hypericum myrtifolium* / *Lobelia floridana* - *Polygala cymosa* Woodland (CEGL004959, G3)
- *Taxodium ascendens* / *Ilex myrtifolia* Depression Forest (CEGL007418, G3?)

High-ranked species: *Ambystoma cingulatum* (G2G3), *Carex striata* var. *striata* (G4T3T4), *Carex verrucosa* (G3G4), *Coreopsis nudata* (G3?), *Croton elliotii* (G2G3), *Euphyes dukesi* (G3), *Fuirena longa* (G3G4), *Lindera melissifolia* (G2), *Litsea aestivalis* (G3), *Pieris phillyreifolia* (G3), *Pinguicula planifolia* (G3?), *Polygonum hirsutum* (G3G4), *Rana capito* (G3), *Rhexia parviflora* (G2), *Rhynchospora inundata* (G3G4), *Sabatia brevifolia* (G3G4), *Schoenolirion albiflorum* (G3)

Environment: This system occurs in areas of low relief, occupying poorly drained to permanently wet depressions in uplands such as pine flatwoods. Pools of stagnant, highly acidic water may stand in the center of these depressions ranging from 1-4 feet in depth, but becoming increasingly shallow along the margins (Monk and Brown 1965). Some examples may have thick (50-100 cm) organic layers (Drew et al. 1998).

Vegetation: According to Drew et al. (1998), *Cyperus (Bartula) mitchellii* (D46)

DISTRIBUTION

Range: West Gulf Coastal Plain of eastern Texas and western Louisiana.

Divisions: 203:C

TNC Ecoregions: 31:?, 40:C, 41:C

Subnations: LA, TX

Associations:

- *Aristida palustris* - *Panicum virgatum* - *Eriocaulon compressum* - *Eleocharis equisetoides* Herbaceous Vegetation (CEGL004577, G2G3)
- *Aristida palustris* - *Panicum virgatum* - *Eriocaulon decangulare* var. *decangulare* - *Rhynchospora elliottii*

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Concept Summary:

- *Lysimachia terrestris* - *Dulichium arundinaceum* - *Rhexia virginica* Herbaceous Vegetation (CEGL006035, G2G3)

- *Panicum hemitomon* - *Pontederia cordata* Herbaceous Vegetation (CEGL004461, G3G4)
- *Rhynchospora (careyana, inundata)* Seasonally Flooded Herbaceous Vegetation (CEGL004132, G3?)
- *Woodwardia virginica* / *Sphagnum cuspidatum* Herbaceous Vegetation (CEGL004475, G2?)

High-ranked species: *Amaranthus floridanus* (G3), *Campanula robinsiae* (G1), *Carex verrucosa* (G3G4), *Coelorachis tuberculosa* (G3), *Cucurbita okeechobeensis* (G1), *Echinochloa paludigena* (G3Q), *Echinodorus parvulus* (G3Q), *Hypericum edisonianum* (G2), *Litsea aestivalis* (G3), *Ludwigia curtissii* (G3G4), *Lythrum flagellare* (G2), *Najas filifolia* (G1), *Neofiber alleni* (G3), *Rana capito* (G3), *Rhynchospora fernaldii* (G3G4), *Zephyranthes simpsonii* (G2G3)

Environment: Most examples are known from the Lake Wales Ridge area of central Florida. These are shallow depressions found on a variety of different soils with different hydroperiods (Abrahamson et al. 1984).

Vegetation: Most depression ponds accommodated in this system display distinct vegetational zonation. At least four vegetational zones can be readily distinguished (Abrahamson et al. 1984); the community types need to be further reconciled into associations.

SPATIAL CHARACTERISTICS

Adjacent Ecological System Comments: May grade into Central Florida Wet Prairie and Herbaceous Seep (CES203.491). Surrounding matrix vegetation can include Central Florida Pine Flatwoods (CES203.382) and Florida Dry Prairie (CES203.380).

SOURCES

References: Abrahamson et al. 1984, Comer et al. 2003

Version: 25 Mar 2004

Concept Author: R. Evans

Stakeholders: Southeast

LeadResp: Southeast

CES203.558 EAST GULF COASTAL PLAIN NORTHERN DEPRESSION POND SHORE

Primary Division: Gulf and Atlantic Coastal Plain (203)

Land Cover Class: Herbaceous Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Concept Summary: This system consists of a variety of upland depression pondshores of the northern East Gulf Coastal Plain. Included here are shallow ponds of various geomorphic origin.

- *Eleocharis microcarpa* - *Juncus repens* - *Rhynchospora corniculata* - (*Mecardonia acuminata*, *Proserpinaca* spp.)
Herbaceous Vegetation (CEGL004748, G2G3)
- *Juncus effusus* Seasonally Flooded Herbaceous Vegetation (CEGL004112, G5)
- *Nyssa biflora* / *Itea virginica* - *Cephalanthus occidentalis*

Concept Summary: This small-patch wetland system occupies upland depressions on deep sandy soils in the southern portions of the East Gulf Coastal Plain of Florida and Alabama. These depressions are apparently of karstic origin but exhibit no evidence of calcareous conditions or evidence of limestone. Limestone is buried 50 or more feet below the surface under coarse sandy soils that cover the margins and, in some cases, the entire surface extent of these depressions (A. Johnson pers. comm.). The resulting appearance of these pondshores is that of large, inland white sand beach (at least in dry years). In the drier margins they even support so

espearanc(g de,hey(nasummary: sBT/TT)3.18J19.6826 02n0.0016 TTc0.00L

versus herbaceous ponds. These tend to occupy basins that were formed by subsidence of surface sediments caused by solution in underlying limestone or as swales in eolian sand deposits. However, sinkholes with steep, vertical, exposed limestone walls are accommodated by another ecological system, as are sandhill ponds that develop on extreme sandy sites in the East Gulf Coastal Plain of Florida and adjacent Alabama. Examples of this system are relatively shallow depressions or basins with some surface soils present. Hydroperiod can vary substantially from year to year, and vegetation can similarly vary significantly in aspect and dominants. Fire is an important natural force in the outer, drier portions of many examples, and periodic fires may sweep through the interior of many examples during dry periods. Vegetation may exhibit distinct zonation in response to varia

SPATIAL CHARACTERISTICS

Other Comments: Upland depressions included in East Gulf Coastal Plain Sandhill Lakeshore Depression (CES203.292) were formerly accommodated here.

SOURCES

References: Comer et al. 2003, EPA 2004, Peet and Allard 1993

Version:

Version: 18 Apr 2005
Concept Author: R. Evans

Stakeholders: Southeast
LeadResp: Southeast

CES203.258 SOUTHEASTERN COASTAL PLAIN INTERDUNAL WETLAND

Primary Division: Gulf and Atlantic Coastal Plain (203)

Land Cover Class: Herbaceous Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Diagnostic Classifiers: Coast; Depressional

Concept Summary: This system encompasses the wettest dune swales and basins on barrier islands and coastal areas, supporting pond or marsh-like vegetation, from the Coastal Plain of Texas to Virginia. Most examples are permanently or semipermanently flooded with freshwater but are affected by salt spray or overwash during periodic storm events. It is broadly defined in terms of floristic composition and is wide-ranging throughout the southeastern Coastal Plain of the United States.

Comments: This system is currently defined with a much broader geographic range than most other coastal systems in the Southeast. The extreme variability within even a limited geographic range limits the ability to find broader vegetational patterns. Examples may vary regionally with regard to the amount of wind or salt spray and the texture of the sand. The northern end of the range is not clearly defined.

DISTRIBUTION

Range: Ranges along the Atlantic and Gulf coasts, from southern Texas to central Virginia. It ranges into central and southern Florida as well.

Divisions: 203:C

TNC Ecoregions: 31:C, 53:C, 54:?, 55:?, 56:C, 57:C

Subnations: AL, FL, GA, LA, MS, NC, SC, TX, VA

Associations:

- (*Morella cerifera*) - *Panicum virgatum* - *Spartina patens* Herbaceous Vegetation (C fo 129A, NNxTf22).

water table and is fresh, except perhaps during storm events that produce overwash. Soils are sand, sometimes with a thin layer of muck accumulated in the pond.

Vegetation: Vegetation is characterized by emergent or drawdown wetland plants, often tall graminoids. Vegetation varies substantially from one example to the next.

Dynamics: This system occurs in a geologically dynamic envi

Associations:

- (*Morella cerifera*) - *Panicum virgatum* - *Spartina patens* Herbaceous Vegetation (CEGL004129, GNR)
- *Ammophila breviligulata* - *Lathyrus japonicus* Herbaceous Vegetation (CEGL006274, G4?)
- *Ammophila breviligulata* - *Panicum amarum* var. *amarum* Herbaceous Vegetation (CEGL004043, G2)
- *Cladium mariscoides* / *Vaccinium macrocarpon* - *Morella pensylvanica* Dwarf-shrubland (CEGL006141, G2)
- *Hudsonia tomentosa* - *Arctostaphylos uva-ursi* Dwarf-shrubland (CEGL006143, G2)
- *Hudsonia tomentosa* / *Panicum amarum* var. *amarulum* Dwarf-shrubland (CEGL003950, G2)
- *Juncus (dichotomus, scirpoides)* - *Drosera intermedia* Herbaceous Vegetation (CEGL004111, GNR)
- *Juniperus virginiana* var. *virginiana* / *Morella pensylvanica* Woodland (CEGL006212, G2)
- *Morella (pensylvanica, cerifera)* / *Schizachyrium littorale* - *Eupatorium hyssopifolium* Shrub Herbaceous Vegetation (CEGL004240, G2)
- *Morella cerifera* / *Hydrocotyle verticillata* Shrubland (CEGL003840, GNR)
- *Morella cerifera* / *Spartina patens* Shrubland (CEGL003839, G3G4)
- *Morella pensylvanica* - *Prunus maritima* Shrubland (CEGL006295, G4)
- *Morella pensylvanica* / *Diodia teres* Shrubland (CEGL003881, G2)
- *Morella pensylvanica* / *Schizachyrium littorale* - *Danthonia spicata* Shrub Herbaceous Vegetation (CEGL006067, G2)
- *Myrica gale* - *Morella pensylvanica* Saturated Shrubland (CEGL006339, GNR)
- *Pinus rigida* / *Hudsonia tomentosa* Woodland (CEGL006117, G2)
- *Pinus taeda* / *Hudsonia tomentosa* Woodland (CEGL006052, G1G2)
- *Prunus serotina* / *Morella cerifera* / *Smilax rotundifolia* Scrub Forest (CEGL006319, G1G2)
- *Quercus virginiana* - (*Ilex vomitoria*) Shrubland (CEGL003833, G3)
- *Schoenoplectus pungens* - *Fimbristylis (castanea, caroliniana)* Herbaceous Vegetation (CEGL004117, GNR)
- *Smilax glauca* - *Toxicodendron radicans* Vine-Shrubland (CEGL003886, GNR)
- *Spartina patens* - *Eleocharis parvula* Herbaceous Vegetation (CEGL006342, GNR)
- *Spartina patens* - *Schoenoplectus pungens* - *Solidago sempervirens* Herbaceous Vegetation (CEGL004097, G2G3)
- *Vaccinium corymbosum* - *Rhododendron viscosum* - *Clethra alnifolia* Shrubland (CEGL006371, GNR)
- *Vitis rotundifolia* / *Triplasis purpurea* - *Panicum amarum* - *Schizachyrium littorale* Mid-Atlantic Coastal Medaño Sparse Vegetation (CEGL004397, G1)

High-ranked species: *Schizaea pusilla* (G3G4)

Environment: Occurs on barrier islands and similar coastal strands, on sand dunes and sand flats. Strong salt spray is an

Heterogeneity: May occur as contiguous patches over large areas, or ma

Divisions: 203:C
TNC Ecoregions: 53:C
Subnations: AL, FL, MS

Associations:

- (*Iva imbricata*) / *Sporobolus virginicus* - *Spartina patens* - (*Paspalum distichum*, *Sesuvium portulacastrum*) Herbaceous Vegetation (CEGL007839, G3?)
- *Fuirena scirpoidea* - *Panicum tenerum* - *Dichanthelium wrightianum* - *Andropogon capillipes* Herbaceous Vegetation (CEGL004953, G2?)
- *Schizachyrium maritimum* - (*Heterotheca subaxillaris*) Herbaceous Vegetation (CEGL004057, G2)
- *Spartina patens* - *Schizachyrium maritimum* - *Solidago sempervirens* Herbaceous Vegetation (CEGL008445, G3?)

High-ranked species: *Rhexia salicifolia* (G2)

SOURCES

References: Comer et al. 2003, Johnson 1997, Johnson and Barbour 1990

Version: 06 Feb 2003

Concept Author: R. Evans

Stakeholders: Southeast

LeadResp: Southeast

CES203.550 TEXAS-LOUISIANA COASTAL PRAIRIE

Primary Division: Gulf and Atlantic Coastal Plain (203)

Land Cover Class: Mixed Upland and Wetland

Spatial Scale & Pattern: Matrix

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.); Upland; Wetland

Diagnostic Classifiers: Herbaceous; Deep Soil; Graminoid

Concept Summary: This system encompasses non-saline tallgrass prairie vegetation ranging along the coast of Louisiana and Texas. This vegetation is found on Vertisols and Alfisols which developed over Pleistocene terraces flanking the Gulf Coast. It is often characterized by a ridge-and-swale or mound-and-intermound microtopography and encompasses both upland and wetland plant communities. Upland dominants include *Schizachyrium scoparium*, *Paspalum plicatulum*, *Sorghastrum nutans*, and *Andropogon gerardii*. Wetland dominants in undisturbed occurrences include *Panicum virgatum* and *Tripsacum dactyloides*; disturbed occurrences may be dominated by *Andropogon glomeratus*. Some estimates state that 99% of coastal prairie has been lost through conversion to other uses and environmental degradation due to the interruption of important ecological processes, such as fire, needed to maintain this system. In the absence of regular fire, this system will be invaded by woody shrubs and trees.

DISTRIBUTION

Range: Along the coast of Louisiana and Texas

Divisions: 203:C

TNC Ecoregions: 31:C

Subnations: LA, TX

Associations:

- *Andropogon gerardii* - *Panicum virgatum* - *Schizachyrium scoparium* - *Schizachyrium tenerum* - *Helianthus mollis* Herbaceous Vegetation (CEGL007938, G1)
- *Andropogon glomeratus* var. *pumilus* Herbaceous Vegetation (CEGL004099, GNA)
- *Andropogon virginicus* var. *virginicus* Herbaceous Vegetation (CEGL004044, GNA)
- *Baccharis halimifolia* Successional Shrubland (CEGL004657, GNA)
- *Euthamia leptoccephala* - *Helianthus angustifolius* - *Boltonia asteroides* - *Spartina patens* Herbaceous Vegetation (CEGL007936, G1)
- *Panicum virgatum* - *Tripsacum dactyloides* - (*Panicum hemitomon*) Herbaceous Vegetation (CEGL007937, G1)
- *Schizachyrium scoparium* - *Paspalum plicatulum* - *Sorghastrum nutans* - *Dichanthelium oligosanthes* - *Paspalum setaceum* - *Symphytotrichum pratense* Alfisol Herbaceous Vegetation (CEGL002208, G1)
- *Schizachyrium scoparium* - *Sorghastrum nutans* - *Paspalum plicatulum* - *Carex microdonta* - *Neptunia lutea* Vertisol Herbaceous Vegetation (CEGL004519, G1)

- *Schizachyrium scoparium* - *Triplasis purpurea* - *Eriogonum multiflorum* - *Liatris elegans* var. *carizzana* Herbaceous Vegetation (CEGL008483, G1)

High-ranked species: *Eleocharis wolfii* (G3G4)

SPATIAL CHARACTERISTICS

Adjacent Ecological System Comments: In Louisiana, this system grades coastward into marshes of the chenier plain and inland into West Gulf Coastal Plain Wet Longleaf Pine Savanna and Flatwoods (CES203.191). In Texas this system generally grades coastward into a saline prairie or salt marsh system and inland into West Gulf Coastal Plain Wet Longleaf Pine Savanna and Flatwoods (CES203.191), or oak woodland vegetation. Degraded examples are often dominated by the invasive exotic *Triadica sebifera*. Relatively undisturbed natural depressions (potholes) occurring within the upland matrix units of this system are included in Texas-Louisiana Coastal Prairie Pondshore (CES203.541).

SOURCES

References: Comer et al. 2003

Version: 06 Feb 2003

Concept Author: J. Teague

Stakeholders: Southeast

LeadResp: Southeast

CES203.278 WEST GULF COASTAL PLAIN PINE-HARDWOOD FLATWOODS

Primary Division: Gulf and Atlantic Coastal Plain (203)

Land Cover Class: Mixed Upland and Wetland

Spatial Scale & Pattern: Large patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.); Upland; Wetland

Diagnostic Classifiers: Forest and Woodland (Treed); Pimple mounds; Extensive Wet Flat; Needle-Leaved Tree; Broad-Leaved Deciduous Tree

Concept Summary: This system represents predominately dry flatwoods of limited areas of inland portions of the West Gulf Coastal Plain. These areas are usually found on nonriverine, Pleistocene high terraces. Soils are fine-textured and hardpans may be present in the subsurface. The limited permeability of these soils contributes to shallowly perched water tables during portions of the year when precipitation is greatest. Gulfoasre Sa2(Pl)u2.5(l)ra5(C)4.1(o)-Co

fluctuates widely throughout the growing season, from saturated to very dry, a condition sometimes referred to elsewhere as xerohydric. Saturation occurs not from overbank flooding but typically whenever precipitation events occur. Local topography is a complex of ridges and swales, often in close proximity to one another. Ridges tend to be much drier than swales, which may hold water for varying periods of time.

SOURCES

References: Comer et al. 2003

Version: 31 Mar 2003

Concept Author: R. Evans

Stakeholders: Midwest, Southeast

LeadResp: Southeast

CES203.253 ATLANTIC COASTAL PLAIN SANDHILL SEEP

Primary Division: Gulf and Atlantic Coastal Plain (203)

Land Cover Class: Barren

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Unvegetated (<10% vasc.)

Diagnostic Classifiers: Seepage-Fed Sloping

Concept Summary: This sandhill seep system occurs in small patches on slopes in dissected terrain, where a clay lens or other impermeable layer forces groundwater to the surface as seepage. This type occurs largely in the Fall-line Sandhills region of the Carolinas and Georgia but also rarely in other parts of the Atlantic Coastal Plain. Soils are seasonally to permanently saturated by seepage and range from sandy or clayey to mucky. Vegetation is variable and complex in composition and structure, consisting of a mixture of plants of pine savannas and streamhead pocosins, but contrasting with both in structure and proportions. The tree canopy may be open or absent, and patches of dense shrubs, dense grass, ferns, and various mixtures may be present. Fire is a crucial determinant of structure and composition; it tends to occur in a variable and patchy pattern that is driven by both the fire regime of the surrounding system and the wetness of the seep vegetation at the time.

Comments: This system is distinguished from Atlantic Coastal Plain Northern Wet Longleaf Pine Savanna and Flatwoods (CES203.265) by having wetland hydrology driven by seepage rather than seasonal high water table, and by vegetational and landscape differences. Occurs rarely in southeastern Georgia in escarpment areas which have greater topography than is locally typical, and perched water tables which flow to the surface in sloping areas.

DISTRIBUTION

Range: This system occurs from east-central North from da5 LonhSSavanna and sues which flow n9asC the scwimarily 2PcinIse Fall-ills but occasionally occurring in the Outer Coastal Plain. For example, this system occurs in limited parts of southeastern Georgia associated with the topography of old escarpments. It occurs primarily in the Atlantic drainage but is rarely represented in the Gulf drainage (such as at Fort Benning, Georgia).

Divisions: 203:C

TNC Ecoregions: 53:C, 56:C, 57:C

Subnations: GA, NC, SC

Associations:

- (*Pinus palustris*, *Pinus serotina*) / *Ctenium aromasng wetlAre wetriec* •sC,ng wet Shrual5(EGL -1843 Tc11)46(a)1.9 3.7725 . s:(t)3.8(h

Rhynchospora pallida (G3), Sarracenia rubra ssp. rubra (G3T3), Solidago verna (G3), Tofieldia glabra (G3), Xyris scabrifolia (G3)

Environment: Occurs on gentle to steep slopes of dissected areas in interbedded sand and clay, largely in the Fall-line Sandhills region but rarely in other parts of the Atlantic Coastal Plain. Sites are seasonally to permanently saturated with seeping groundwater, forced to the surface by an impermeable layer such as a clay bed. Soils may be sandy, clayey, or in the wettest sites, mucky. The hydrological connection to adjacent Atlantic Coastal Plain Fall-line Sandhills Longleaf Pine Woodland (CES203.254), whose well-drained sandy soils are the source of seepage water, is crucial. Fire is a crucial natural force, and is also dependent on the adjacent systems.

Vegetation: Vegetation is a potentially diverse mixture of plants of wet savannas and pocosins. Vegetation structure may vary widely, with dense shrubs, dense herbs, or mixtures of shrubs and herbs, and with an open tree canopy or absent tree canopy occurring in complexes or in different patches. *Pinus palustris*, *Pinus serotina*, or several hardwood species may dominate the canopy. Characteristic Streamhead Pocosin shrubs such as *Ilex glabra*, *Lyonia lucida*, *Clethra alnifolia*, *Toxicodendron vernix*, *Ilex coriacea*, and *Zenobia pulverulenta* may mix with flatwoods shrubs such as *Gaylussacia frondosa* and *Kalmia carolina*. The herbs are primarily species shared with wet savannas, such *Aristida stricta*, *Calamovilfa brevipilis*, *Ctenium aromaticum*, *Andropogon glomeratus*, and a variety of showy forbs and insectivorous plants, but often occur in very different proportions. Large wetland ferns such as *Osmunda cinnamomea*, *Osmunda regalis*, and *Pteridium aquilinum* also often dominate.

Dynamics: foityereTD -0 ci2 Tw [001 . , andfD -0 ci2 Tw24.2(serbs, a ands.00omuniw [pl)4.2(prim8 814h as)]TJ /TT4 1 Tf 5ie

mosses, liverworts, and ferns, with occasional herbs and shrubs in crevices where organic soils have developed (FNAI 1990). The steepness and depth of these depressions help create a generally moist microclimate which is often enhanced by seepage from surrounding uplands, and the presence of standing water.

Comments: Excluded from this system are sinkholes of extreme southern Florida and the Mid-Atlantic Coastal Plain of the Carolinas which do not develop such extreme depth and microclimatic features.

DISTRIBUTION

Range: Gulf Coastal Plain of Florida and Georgia.

Divisions: 203:C

TNC Ecoregions: 53:C, 55:C

Subnations: FL, GA

Associations:

- *Adiantum capillus-veneris* - *Thelypteris kunthii* / *Dumortiera hirsuta* Herbaceous Vegetation (CEGL004717, G3?)
- *Adiantum tenerum* - *Parietaria praetermissa* - *Arenaria lanuginosa* Herbaceous Vegetation (CEGL004469, G2?)

SOURCES

References: Comer et al. 2003, FNAI 1990

Version: 14 Dec 2004

Concept Author: R. Evans

Stakeholders: Southeast

LeadResp: Southeast

CES411.365 SOUTH FLORIDA CYPRESS DOME

Primary Division:

CES411.054 SOUTH FLORIDA DEPRESSION PONDSHORE

Primary Division: Caribbean (411)

Land Cover Class: Herbaceous Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Concept Summary: This system occupies shallow depression wetlands in southern and south-central Florida. As currently defined, this system includes a variety of wetlands occupying somewhat different environments. Included for now in this concept are isolated drainages or seasonal ponds as well as solution holes (may have only subsurface or historic water presence), and possibly the shores of large natural lakes. Examples found in these different environments tend to have obviously different landscape contexts, and often different floristics.

Concept Summary: This system is found along creeks and streams from Nebraska and Iowa to Illinois, and from Minnesota to Texas. It is also found along lake borders, especially in the northern extension of its range into Minnesota. It is often adjacent to a floodplain system, but is devoid of trees and riparian vegetation. It is also distinct from upland prairie systems by having more hydrology, especially associated with silty, dense clay soils that are often hydric soils, classified as Vertic Haplaquolls. The landform is usually floodplain or poorly drained, relatively level land. The vegetation is dominated by *Spartina pectinata*, *Tripsacum dactyloides*, numerous large sedges, such as *Carex frankii* and *Carex hyalinolepis*, and in wetter areas,

granitic material varies, with hornblende schist, graphite schist, quartz-feldspar gneiss and quartz-plagioclase-microcline rock common (Riskind and Diamond 1988). Soils are predominantly acidic.

Vegetation: This system is typified by a mosaic of mixed oak forests and savannas over coarse soils and sparsely vegetated areas on rock outcrops. Species such as *Quercus marilandica*, *Quercus fusiformis*, *Quercus stellata*, *Carya texana*, *Ulmus crassifolia*, and *Prosopis glandulosa* may dominate the canopy of this system. Some areas are characterized by dense forest patches (mottes) of *Quercus fusiformis*, with various mixtures of other oaks and shrubs surrounded by open grasslands. Subcanopy species may include *Diospyros texana*, *Ungnadia speciosa*, *Ziziphus obtusifolia* var. *obtusifolia*, *Eysenhardtia texana*, *Aesculus glabra* var. *arguta*, *Opuntia lindheimeri*, *Yucca elata*, *Nolina texana*, and *Opuntia leptocaulis*. The ground flora may contain

Concept Summary: Communities associated with the playa lakes in the southern areas of this province and the rainwater basins in Nebraska characterize this system. They are primarily upland depressional basins. This hydric system is typified by the presence of an impermeable layer such as a dense clay, hydric soil and is usually recharged by rainwater and nearby runoff. They are rarely linked to outside groundwater sources and do not have an extensive watershed. Ponds and lakes associated with this system can experience periodic drawdowns during drier seasons and years, and are often replenished by spring rains. *Eleocharis* spp., *Hordeum jubatum*, along with common forbs such as *Coreopsis tinctoria*, *Symphyotrichum subulatum* (= *Aster subulatus*), and *Polygonum pensylvanicum* (= *Polygonum bicorne*) are common vegetation in the wetter and deeper depression, while *Pascopyrum smithii* and *Buchloe dactyloides* are more common in shallow depressions in rangeland. Species richness can vary considerably among individual examples of this system and is especially influenced by adjacent land use, which is often agriculture, and may provide nutrient and herbicide runoff. Dynamic processes that affect these depressions are hydrological changes, grazing, and conversion to agricultural use.

Comments: Open and emergent marshes may be a separate system from wet meadows and wet prairies.

DISTRIBUTION

Range: This system can be found throughout the eastern portion of the Western Great Plains Division, however, it is most prevalent in the central states of Nebraska, Kansas and Oklahoma.

Divisions: 205:P, 303:C

TNC Ecoregions: 27:C, 28:C, 32:P, 33:C

Subnations: CO, KS, NE, NM?, OK, TX

Associations:

- *Argentina anserina* Herbaceous Vegetation [Provisional] (CEGL005825, GNA)
- *Eleocharis palustris* - (*Eleocharis compressa*) - *Leptochloa fusca* ssp. *fascicularis* Herbaceous Vegetation (CEGL002259, GNR)
- *Eleocharis palustris* Herbaceous Vegetation (CEGL001833, G5)
- *Heteranthera limosa* - *Bacopa rotundifolia* - *Sagittaria latifolia* Herbaceous Vegetation (CEGL002279, GNR)
- *Hordeum jubatum* Herbaceous Vegetation (CEGL001798, G4)
- *Panicum obtusum* - *Buchloe dactyloides* Herbaceous Vegetation (CEGL001573, GNRQ)
- *Panicum obtusum* - *Panicum hallii* Herbaceous Vegetation (CEGL001575, GNR)
- *Pascopyrum smithii* - (*Elymus trachycaulus*) Clay Pan Herbaceous Vegetation (CEGL002239, GNR)
- *Pascopyrum smithii* - *Buchloe dactyloides* - (*Phyla cuneifolia*, *Oenothera canescens*) Herbaceous Vegetation (CEGL002038, G2G3)
- *Pascopyrum smithii* - *Distichlis spicata* Herbaceous Vegetation (CEGL001580, G4)
- *Pascopyrum smithii* - *Eleocharis* spp. Herbaceous Vegetation (CEGL001581, G1)
- *Pascopyrum smithii* - *Hordeum jubatum* Herbaceous Vegetation (CEGL001582, G4)
- *Pleuraphis mutica* - *Panicum obtusum* Herbaceous Vegetation (CEGL001639, G3)
- *Polygonum* spp. - *Echinochloa* spp. - *Distichlis spicata* Playa Lake Herbaceous Vegetation (CEGL002039, G2G4)
- *Sarcobatus vermiculatus* / *Leymus cinereus* Shrubland (CEGL001366, G3)
- *Schoenoplectus americanus* - *Eleocharis* spp. Herbaceous Vegetation (CEGL001586, GNR)
- *Spartina pectinata* - *Eleocharis* spp. - *Carex* spp. Herbaceous Vegetation (CEGL002223, G2G4)

High-ranked species: *Ambrosia linearis* (G3), *Branchinecta potassa* (G3), *Eleocharis wolfii* (G3G4)

Environment: This system is typified by upland depressional basins with an impermeable layer such as dense clay, hydric soils. Rainwater and runoff primarily recharge this system and it is rarely linked to outside groundwater sources.

Vegetation: Species richness varies considerably among individual examples of this system. Commonly, *Eleocharis* spp., *Hordeum jubatum*, along with *Coreopsis tinctoria*, *Symphyotrichum subulatum* (= *Aster subulatus*), and *Polygonum pensylvanicum* (= *Polygonum bicorne*) are found in the wetter and deeper depression. Shallower depressions in rangelands commonly contain *Pascopyrum smithii* and *Buchloe dactyloides*.

Dynamics: Hydrological changes, grazing and conversion to agriculture are the primary processes influencing this system.

SOURCES

References: Comer et al. 2003, Hoagland 2000, Lauver et al. 1999

Version: 14 Dec 2004

Concept Author: S. Menard and K. Kindscher

Stakeholders: Midwest, Southeast, West

LeadResp: Midwest

CES303.675 WESTERN GREAT PLAINS OPEN FRESHWATER DEPRESSION WETLAND

Primary Division: Western Great Plains (303)

Land Cover Class: Herbaceous Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Concept Summary: This system is composed of lowland depressions and also occurs along lake borders that have more open basins and a permanent water source through most of the year except during exceptional drought years. These areas are distinct from Western Great Plains Closed Depression Wetland (CES303.666) by having a large watershed and/or significant connection to the groundwater table. Some of the specific communities will also be found in the floodplain system and should not be considered a separate system in that case. These types should also not be considered a separate system if they are occurring in lowland areas of the prairie matrix only because of an exceptional wet year. A variety of species are part of this system, including *Typha* spp. and *Schoenoplectus* spp. The system includes submergent and emergent marshes, and associated wet meadows and wet prairies. These types can also drift into stream margins that are more permanently wet and linked directly to basin via groundwater flow from/into the pond or lake.

Comments: This system occurs widely throughout the western Great Plains, but in the arid shortgrass region, it is replaced by North American Arid West Emergent Marsh (CES300.729). Open and emergent marshes may be a separate system from wet meadows and wet prairies.

DISTRIBUTION

Range: This system can occur throughout the northwestern Great Plains Division, but not in the arid shortgrass region.

Divisions: 205:P, 303:C

TNC Ecoregions: 26:C, 33:C, 34:C, 37:?, 66:P, 67:P

Subnations: KS, MT, ND, NE, OK, SD, WY

Associations:

- *Alnus incana* Swamp Shrubland (CEGL002381, G5?)
- *Betula occidentalis* - *Dasiphora fruticosa* ssp. *floribunda* Shrubland (CEGL001083, G2Q)
- *Calamagrostis canadensis* - *Juncus* spp. - *Carex* spp. Sandhills Herbaceous Vegetation (CEGL002028, G3G4)
-

- *Schoenoplectus acutus* - *Typha latifolia* - (*Schoenoplectus tabernaemontani*) Sandhills Herbaceous Vegetation (CEGL002030, G4)
- *Schoenoplectus tabernaemontani* - *Typha* spp. - (*Sparganium* spp., *Juncus* spp.) Herbaceous Vegetation (CEGL002026, G4G5)
- *Schoenoplectus tabernaemontani* Temperate Herbaceous Vegetation (CEGL002623, G5)
- *Scolochloa festucacea* Herbaceous Vegetation (CEGL002260, G4G5)
- *Spartina pectinata* - *Calamagrostis stricta* - *Carex*Sp TD0.)

Associations:

- *Calamagrostis stricta* - *Carex sartwellii* - *Carex praegracilis* - *Plantago eriopoda* Saline Herbaceous Vegetation (CEGL002255, G2G3)
- *Distichlis spicata* - (*Hordeum jubatum*, *Poa arida*, *Sporobolus airoides*) Herbaceous Vegetation (CEGL002042, G3)
- *Distichlis spicata* - *Hordeum jubatum* - (*Poa arida*, *Iva annua*) Herbaceous Vegetation (CEGL002031, G2G3)
- *Distichlis spicata* - *Hordeum jubatum* - *Puccinellia nuttalliana* - *Suaeda calceoliformis* Herbaceous Vegetation (CEGL002273, G2G3)
- *Distichlis spicata* - *Schoenoplectus maritimus* - *Salicornia rubra* Herbaceous Vegetation (CEGL002043, G1G2)
- *Distichlis spicata* - *Spartina* spp. Herbaceous Vegetation (CEGL002275, G4)
- *Distichlis spicata* Herbaceous Vegetation (CEGL001770, G5)
- *Hordeum jubatum* Herbaceous Vegetation (CEGL001798, G4)
- *Pascopyrum smithii* - *Distichlis spicata* Herbaceous Vegetation (CEGL001580, G4)
- *Pascopyrum smithii* - *Hordeum jubatum* Herbaceous Vegetation (CEGL001582, G4)
- *Puccinellia nuttalliana* Herbaceous Vegetation (CEGL001799, G3?)
- *Salicornia rubra* Herbaceous Vegetation (CEGL001999, G2G3)
- *Sarcobatus vermiculatus* / *Distichlis spicata* - (*Puccinellia nuttalliana*) Shrub Herbaceous Vegetation (CEGL002146, GNR)
- *Sarcobatus vermiculatus* / *Pascopyrum smithii* - (*Elymus lanceolatus*) Shrub Herbaceous Vegetation (CEGL001508, G4)
- *Schoenoplectus americanus* - *Carex* spp. Herbaceous Vegetation (CEGL004144, GNR)
- *Schoenoplectus americanus*

Concept Summary: The prairie pothole system is found primarily in glaciated northern Great Plains of the United States and Canada, and is dominated by depressional wetlands formed by glaciers scraping the landscape during the Pleistocene era. This system is typified by several classes of wetlands distinguished by changes in topography, soils and hydrology. Many of the basins within this system are closed basins and receive irregular inputs of water from their surroundings (groundwater and precipitation), and export water as groundwater. Hydrology of the potholes is complex. Precipitation and runoff from snowmelt are often the principal water sources, with groundwater inflow secondary. Evapotranspiration is the major water loss, with seepage loss secondary. Most of the wetlands and lakes contain water that is alkaline (pH >7.4). The concentration of dissolved solids in these waters ranges from fresh to extremely saline. The flora and vegetation of this system is a function of the topography, water regime, and salinity. In addition, because of periodic droughts and wet periods, many wetlands within this system may undergo vegetation cycles. This system includes elements of emergent marshes and wet, sedge meadows that develop into a pattern of concentric rings. This system is responsible for a significant percentage of the annual production of many economically important waterfowl in North America and houses more than 50% of North American's migratory waterfowl with several species reliant on this system for breeding and feeding. Much of the original extent of this system has been converted to agriculture and only approximately 40-50% of the system remains undrained.

Comments: More data from Canada is needed to really define this system completely.

DISTRIBUTION

Range: This system can be found throughout the northern Great Plains ranging from central Iowa northeast to southern Saskatchewan and Alberta. It encompasses approximately 870,000 km² with approximately 80% of its range in southern Canada. It is also prevalent in North Dakota, South Dakota, and northern Minnesota.

Divisions: 205:C, 303:C

TNC Ecoregions: 34:C, 35:C, 66:P, 67:P

Subnations:

agriculture can also significantly impact this system. Much of the original extent of this system has been converted to cropland, and many remaining examples are under pressure to be drained.

SOURCES

References: Comer et al. 2003, Johnson et al. 1987, Kantrud et al. 1989

Version: 05 Mar 2003

Concept Author: S. Menard

Stakeholders: Canada, Midwest

footslope where the plants tend to conceal the alcove base. The outer and drier edges support grasses typical of the prairies and plains of the western U.S. In the Utah High Plateaus gardens, the dominants are usually *Sullivantia hapemanii* var. *purpusii* and *Aquilegia barnebyi* with *Mimulus guttatus* common.

Variation in hanging garden vegetation varies from canyon to canyon as well as separate alcoves within a canyon. The vegetation of hanging gardens generally has some common species that are found at most of the hanging gardens, e.g., *Maianthemum stellatum*, *Adiantum capillus-veneris*, *Adiantum pedatum*, and *Mimulus* spp. But numerous endemics occur of which some may be represented by just one or two sites. The following species are endemic to hanging gardens of the Colorado Plateau region: *Aquilegia micrantha*, *Carex curatorum*, *Cirsium rydbergii*, *Erigeron kachinensis* (one occurrence outside of hanging gardens in the Abajo Mountains), *Erigeron sionis*, *Erigeron zothecinus*, *Platanthera zothecina* (= *Habenaria zothecina*), *Mimulus eastwoodiae*, *Perityle specuicola*, and *Primula specuicola*.

SOURCES

References: Comer et al. 2003, Keammerer and Keammerer 1978, Malanson 1980, Malanson 1982, Malanson and Kay 1980, Romme et al. 1993, Tuhy et al. 2002, Welsh 1989, Welsh and Toft 1981

Version: 14 Dec 2004

Stakeholders: West

Concept Author: NatureServe Western Ecology Team; R. Rondeau

LeadResp: West

CES304.057 COLUMBIA PLATEAU VERNAL POOL

Primary Division: Inter-Mountain Basins (304)

Land Cover Class: Herbaceous Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Diagnostic Classifiers: Depressional [Vernal Pool]; Impermeable Layer; 1-29-day hydroperiod; Vernal Pool Mosaic

Concept Summary: This system includes shallow ephemeral water bodies found in very small (3 square meters to 1 acre) to large depressions (1500 square meters to a square mile, average size of vernal pools are 1600 square meters, while average size on non-alkaline playa lakes are 5-10 acres) throughout the exposed volcanic scablands of the Columbia Plateau in Washington, Oregon, and northern Nevada. Most of these pools and lakes are located on massive basalt flows exposed by Pleistocene floods; southward they also occur on andesite or rhyodacite caprock. Inundation is highly irregular, sometimes not occurring for several years. Depressions usually (but not always) fill with water during winter and spring. They are generally dry again within 9 months, though in exceptional times they can remain inundated for two years in a row. Water is from rainfall and snowmelt in relatively small closed basins, on average probably no more than 5-15 times the area of the ponds themselves. Because these pools and playas are perched above the general surrounding landscape, they are not generally subject to runoff from major stream systems. They typically have silty clay soils, sometimes with sandy margins. Pools are often found within a mounded or biscuit-swale topography with *Artemisia* shrub-steppe or rarely *Pinus ponderosa* savanna. In the northern Columbia Plateau, characteristic species are predominantly annual and diverse. Floristically akin to California vernal pool flora (one-third), however, many of the most abundant species are not reported in Californian pools. Characteristic species include *Callitriche marginata*, *Camissonia tanacetifolia*, *Elatine* spp., *Epilobium densiflorum* (= *Boisduvalia densiflora*), *Eryngium vaseyi*, *Juncus uncialis*, *Myosurus X clavicaulis*, *Plagiobothrys* spp., *Polygonum polygaloides ssp. confertiflorum*, *Polygonum polygaloides ssp. polygaloides*, *Psilocarphus brevissimus*, *Psilocarphus elatior*, *Psilocarphus oregonus*, and

•
High-ranked species: *Ivesia pityocharis* (G2), *Juncus uncialis* (G3G4), *Myosurus sessilis* (G2), *Polycnium williamsiae* (G2Q), *Polygonum polygaloides* ssp. *confertiflorum* (G4G5T3T4)

Environment: Winters are colder (coldest average median temperature month in the high 20 degrees F) than California vernal pools and are climatically defined by wet winters (November through January, sporadically so southward) and severe summer drought (July-September), although May or June can be wet. The northernmost vernal pools are adapted to cold spring and long summer days (18 hours).

SPATIAL CHARACTERISTICS

Size: Depressions (3-4608 square meters to a square mile; average 1600 sq.m to 10 acres), mean depth 0.47 to 1.5 m.

Adjacent Ecological System Comments: Primarily Columbia Plateau Scabland Shrubland (CES304.770) or Inter-Mountain Basins Big Sagebrush Steppe (CES304.778) (three-tip sagebrush) rarely into ponderosa pine savanna or pinyon-juniper.

SOURCES

References:

High-ranked species: *Astragalus applegatei* (G1), *Astragalus diversifolius* (G2), *Astragalus lemmonii* (G3?), *Astragalus phoenix* (G2), *Astragalus pterocarpus* (G3), *Calochortus striatus* (G2), *Castilleja salsuginosa* (G1Q), *Centaurium namophilum* (G2Q), *Cirsium mohavense* (G2G3), *Cordylanthus tecopensis* (G2), *Downingia bicornuta* (G3G4), *Downingia bicornuta* var. *bicornuta* (G3G4T3T4), *Eriogonum ampullaceum* (G3), *Eriogonum argophyllum* (G1), *Goodmania luteola* (G3), *Grindelia fraxinopratisensis* (G2), *Ivesia kingii* (G3), *Ivesia kingii* var. *eremica* (G3T1T2Q), *Juncus kelloggii* (G3?), *Juncus uncialis* (G3G4), *Lepidium davisii* (G3), *Microtus californicus scirpensis* (G5T1), *Phacelia parishii* (G2G3), *Plagiobothrys salsus* (G2G3), *Plagiobothrys stipitatus* var. *micranthus* (G4T3T4), *Pogogyne floribunda* (G3), *Polygonum polygaloides* ssp. *confertiflorum* (G4G5T3T4), *Polygonum polygaloides* ssp. *esotericum* (G4G5T2), *Potentilla basaltica* (G1), *Potentilla newberryi* (G3G4), *Pseudocopaeodes eunus obscurus* (G3G4T1), *Sisyrinchium funereum* (G2G3), *Spiranthes infernalis* (G1), *Thelypodium brachycarpum* (G3), *Thelypodium howellii* ssp. *spectabilis* (G2T1)

Environment: This system is distinct from the freshwater depression systems by its brackish nature caused by strongly saline soils. Salt encrustations could occur near the surface in some examples of this system.

Vegetation: Salt-tolerant and halophytic species such as *Distichlis spicata* typify the system.

Dynamics: Hydrology processes primarily drive this system. Increases in precipitation and/or runoff can dilute the salt concentration and allow for less salt-tolerant species to occur. Conversion to agriculture and pastureland can also impact this system, especially when it alters the hydrology of the system.

SOURCES

References: Western Ecology Working Group n.d.

Version: 07 Jun 2004

Concept Author: J. Kagan

Stakeholders: West

LeadResp: West

CES304.059 INTER-M

- *Juncus balticus* Herbaceous Vegetation (CEGL001838, G5)
- *Salicornia rubra* Herbaceous Vegetation (CEGL001999, G2G3)
- *Schoenoplectus acutus* Herbaceous Vegetation (CEGL001840, G5)
- *Schoenoplectus americanus* - *Carex* spp. Herbaceous Vegetation (CEGL004144, GNR)
- *Schoenoplectus americanus* - *Eleocharis palustris* Herbaceous Vegetation (CEGL001585, G4)
- *Schoenoplectus americanus* - *Eleocharis* spp. Herbaceous Vegetation (CEGL001586, GNR)
- *Schoenoplectus americanus* Western Herbaceous Vegetation (CEGL001841, G3Q)
- *Schoenoplectus maritimus* Herbaceous Vegetation (CEGL001843, G4)
- *Schoenoplectus pungens* Herbaceous Vegetation (CEGL001587, G3G4)
- *Typha (latifolia, angustifolia)* Western Herbaceous Vegetation (CEGL002010, G5)
- *Typha domingensis* Western Herbaceous Vegetation (CEGL001845, G5?)

Environment: Occurs in wet interdunal swales.

Vegetation: A variety of emergent herbaceous vegetation may occur including, *Juncus balticus*, *Schoenoplectus pungens*, *Typha* spp., *Cyperus* spp., *Eleocharis* spp., and *Salix exigua*.

Dynamics: The dunes are shaped by the wind and continue to change. The size and exact location of the wet swales may change as the sand dunes shift, due to active dune migration. Dune "blowouts" and subsequent stabilization through succession are characteristic processes of the active dunes which surround the interdunal swales.

SPATIAL CHARACTERISTICS

Spatial Summary: Small patch.

Adjacent Ecological System Comments: This wetland system occurs in wet swales within Inter-Mountain Basins Active and Stabilized Dune (CES304.775).

SOURCES

References: Bowers 1982, Bowers 1984, Bowers 1986, Brand and Sanderson 2002, Cooper and Severn 1992, Hammond 1998, Pineada et al. 1999, Pineda 2000, Rondeau 2001, Western Ecology Working Group n.d.

Version: 12 May 2005

Concept Author: Hammond (1998)

Stakeholders: West

LeadResp: West

CES304.058 NORTHERN COLUMBIA PLATEAU BASALT POTHOLE POND

Primary Division: Inter-Mountain Basins (304)

Land Cover Class: Herbaceous Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers:

- *Carex vesicaria* Herbaceous Vegetation (CEGL002661, G4Q)
- *Juncus balticus* Herbaceous Vegetation (CEGL001838, G5)
- *Lemna* spp. Permanently Flooded Herbaceous Vegetation (CEGL003059, G3?)
-

Diagnostic Classifiers: Dune (Landform); Dune field; Dune (Substrate); Temperate [Temperate Xeric]; Isolated Wetland [Partially Isolated]; Sand Soil Texture; W-Landscape/High Intensity; Graminoid

Concept Summary: This interdunal wetland ecological system occurs in dune fields in the Chihuahuan Desert and likely in the Sonoran and Mojave deserts. This isolated or partially isolated wetland system is an occasional component of the more extensive active and stabilized desert dune system. Stands are typically small (usually less than 0.1 ha) interdunal swales that occur in wind deflation areas, where sands are scoured down to the water table. Water table may be perched over an impermeable layer of caliche or clay layer. These wetland areas are typically dominated by common emergent herbaceous vegetation, such as species of *Eleocharis*, *Juncus*, and *Schoenoplectus*, but may include endemic plants or animals. Occasionally wetlands are dominated by trees and shrubs, such as *Populus fremontii* and *Baccharis salicifolia*, which survive both being buried as dunes advance and having their root system exposed when deflation of the dune occurs. The specific dune field ecological processes distinguish these wetlands from non-dune emergent wetlands with similar species composition.

Comments: Additional interdunal wetland surveys and classification work are needed at dune systems in the Chihuahuan Desert at Cuatro Ciénegas, Guadalupe Mountains, and Samala

In west Texas, stands in the Monahan and Kermit sandsheets wet interdunal swales, ponds and fringing wetlands are vegetated by herbaceous graminoids (generally >10% plant cover) between active dunes in sandsheets derived from quartz sands. Common vegetation is characterized by herbaceous graminoids and *Salix* spp. These interdunal valleys over

- *Sporobolus airoides* - *Distichlis spicata* Herbaceous Vegetation (CEGL001687, G4?)
- *Sporobolus airoides* - *Scleropogon brevifolius* Herbaceous Vegetation (CEGL001692, G5)
- *Sporobolus airoides* Monotype Herbaceous Vegetation (CEGL001688, GUQ)
- *Sporobolus airoides* Sod Herbaceous Vegetation [Placeholder] (CEGL001791, GNR)
- *Sporobolus airoides* Southern Plains Herbaceous Vegetation (CEGL001685, G3Q)
- *Sporobolus wrightii* - *Panicum hallii* Herbaceous Vegetation (CEGL001485, GNRQ)
- *Sporobolus wrightii* - *Panicum obtusum*

Concept Summary: This ecological system is composed of barren and sparsely vegetated playas (generally <10% plant cover) found across the warm deserts of North America, extending into the extreme southern end of the San Joaquin Valley in California. Playas form with intermittent flooding, followed by evaporation, leaving behind a saline residue. Salt crusts are common throughout, with small saltgrass beds in depressions and sparse shrubs around the margins. Subsoils often include an impermeable layer of clay or caliche. Large desert playas tend to be defined by vegetation rings formed in response to salinity. Given their common location in windswept desert basins, dune fields often form downwind of large playas. In turn, playas associated with dunes often have a deeper water supply. Species may include *Allenrolfea occidentalis*, *Suaeda* spp., *Distichlis spicata*, *Eleocharis palustris*, *Oryzopsis* spp., *Sporobolus* spp., *Tiquilia* spp., or *Atriplex* spp. Ephemeral herbaceous species may have high cover periodically. Adjacent vegetation is typically Sonora-Mojave Mixed Salt Desert Scrub (CES302.749), Chihuahuan Mixed Salt Desert Scrub (CES302.017), Gulf of California Coastal Mixed Salt Desert Scrub (CES302.015), Baja California del Norte Gulf Coast Ocotillo-Limberbush-Creosotebush Desert Scrub (CES302.014), or Chihuahuan Creosotebush Xeric Basin Desert Scrub (CES302.731).

DISTRIBUTION

Range: Found across the warm deserts of North America, extending into the extreme southern end of the San Joaquin Valley in California.

Divisions: 302:C

TNC Ecoregions: 17:C, 22:C, 23:C, 24:C

Subnations: AZ, CA, MXBC, MXCH, MXSO, NM, NV, TX

Associations:

- (*Sarcocornia utahensis*) - (*Arthrocnemum subterminale*) Seasonally Flooded Herbaceous Vegetation [Placeholder] (CEGL003120, GNR)
- *Allenrolfea occidentalis* Shrubland (CEGL000988, G3)
- *Atriplex (lentiformis, polycarpa)* Shrubland [Placeholder] (CEGL003016, G3)
- *Atriplex polycarpa* / *Pleuraphis mutica* Shrubland (CEGL001319, GU)
- *Atriplex polycarpa* Shrubland (CEGL001318, G5)
- *Atriplex spinifera* Shrubland [Placeholder] (CEGL003015, G3?)
- *Bouteloua breviseta* Sparse Vegetation (CEGL004609, G3?)
- *Sesuvium verrucosum* Sparse Vegetation (CEGL004595, G3?)

High-ranked species: *Atriplex griffithsii* (G2G3), *Atriplex spinifera* (G3?), *Branchinella acaciodea* (G2G3), *Branchinella sublettei* (G3), *Goodmania luteola* (G3), *Iva hayesiana* (G3?), *Ivesia kingii* (G3), *Nitrophila mohavensis* (G1), *Phacelia parishii* (G2G3), *Pseudocopaodes eunus* (G3G4), *Puccinellia simplex* (G3G4), *Streptocephalus moorei* (G1G2)

SPATIAL CHARACTERISTICS

Adjacent Ecological System Comments: Adjacent vegetation is typically Sonora-Mojave Mixed Salt Desert Scrub (CES302.749), Chihuahuan Mixed Salt Desert Scrub (CES302.017), Gulf of California Coastal Mixed Salt Desert Scrub (CES302.015), Baja California del Norte Gulf Coast Ocotillo-Limberbush-Creosotebush Desert Scrub (CES302.014), or Chihuahuan Creosotebush Xeric Basin Desert Scrub (CES302.731).

SOURCES

References: Barbour and Major 1988, Brown 1982, Comer et al. 2003, Dick-Peddie 1993, Holland and Keil 1995, Muldavin et al. 2000b, Thomas et al. 2004

Version: 14 Dec 2004

Stakeholders: Latin America, Southeast, West

Concept Author: NatureServe Western Ecology Team

LeadResp: West

CES206.954 CALIFORNIA CENTRAL VALLEY ALKALI SINK

Primary Division: Mediterranean California (206)

Land Cover Class: Woody Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Diagnostic Classifiers: Lowland [Lowland]; Mediterranean [Mediterranean Xeric-Oceanic]; Depressional; Playa Mosaic

Concept Summary: These strongly saline/alkaline playa-like depressions are limited to the San Joaquin Valley and typically occur in a matrix of mixed salt desert scrub. These areas are seasonally to intermittently flooded. They are not flooded every year and respond to localized thunderstorms. Soils typically are fine-textured with an impermeable caliche

layer or clay pan. Salt encrustations are often deposited on the surface as the playa dries. Species are salt-tolerant and halophytic species such as *Allenrolfea occidentalis*, *Suaeda moquinii*, *Distichlis spicata*, and *Salicornia rubra*. During

Concept Author: P. Comer, T. Keeler-Wolf

LeadResp: West

CES206.951 MEDITERRANEAN CALIFORNIA COASTAL INTERDUNAL WETLAND

Primary Division: Mediterranean California (206)

Land Cover Class: Herbaceous Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Diagnostic Classifiers: Herbaceous; Mediterranean [Mediterranean Xeric-Oceanic]; Depressional [Pond]; Mineral: W/ A-

TNC Ecoregions: 13:C

Subnations: CA

Associations:

•
High-ranked species: *Agrostis hendersonii* (G1Q), *Ambystoma californiense* (G2G3), *Boisduvalia cleistogama* (G3G4), *Branchinecta conservatio* (G1), *Branchinecta longiantenna* (G1), *Branchinecta lynchi* (G3), *Branchinecta mesovallensis* (G2), *Callitriche longipedunculata* (G2G3), *Cyzicus californicus* (G2G3), *Cyzicus elongatus* (G2G3Q), *Downingia bella* (G2G3), *Downingia bicornuta* var. *bicornuta* (G3G4T3T4), *Downingia cuspidata* (G3?), *Downingia ornatissima* (G2G3), *Downingia ornatissima* var. *eximia* (G2G3T1T3), *Downingia ornatissima* var. *ornatissima* (G2G3T1T3), *Downingia pulchella* (G3?), *Downingia pusilla* (G3), *Elaphrus viridis* (G1), *Eryngium aristulatum* var. *hooveri* (G5T2), *Gratiola heterosepala* (G3), *Hesperevax caulescens* (G3), *Hordeum intercedens* (G3G4), *Isoetes orcuttii* (G2?), *Ivesia sericoleuca* (G2), *Juncus kelloggii* (G3?), *Juncus leiospermus* (G2), *Juncus leiospermus* var. *ahartii* (G2T1), *Juncus leiospermus* var. *leiospermus* (G2T2), *Lasthenia burkei* (G1), *Lasthenia chrysantha* (G3?), *Lasthenia conjugens* (G1), *Lasthenia ferrisiae* (G3), *Legenere limosa* (G2), *Limnanthes alba* ssp. *versicolor* (G4T3T4), *Limnanthes bakeri* (G1), *Limnanthes douglasii* ssp. *nivea* (G4T3T4), *Limnanthes douglasii* ssp. *rosea* (G4T3T4), *Limnanthes douglasii* ssp. *sulphurea* (G4T1), *Limnanthes floccosa* ssp. *bellingiana* (G4T2), *Limnanthes floccosa* ssp. *grandiflora* (G4T1), *Limnanthes vinculans* (G2), *Linderiella occidentalis* (G3G4), *Lomatium cookii* (G1), *Myosurus sessilis* (G2), *Navarretia eriocephala* (G3), *Navarretia heterandra* (G3), *Navarretia myersii* (G1), *Navarretia myersii* ssp. *deminuta* (G1T1), *Orcuttia viscida* (G1), *Plagiobothrys* hy(G(4)-2.9gre3.78(a) conjug001

Limnanthes floccosa ssp. californica (G4T1), Limnanthes floccosa ssp. pumila (G4T1), Limnanthes striata (G3?), Navarretia heterandra (G3), Navarretia leucocephala ssp. pauciflora (G4T1), Navarretia leucocephala ssp. pliantha (G4T1), Paronychia ahartii (G2), Sedella leiocarpa (G1)

SOURCES

References: Barbour and Major 1988, Comer et al. 2003, Holland and Keil 1995, Sawyer and Keeler-Wolf 1995

Version: 17 Mar 2003

Stakeholders: West

Concept Author: P. Comer, T. Keeler-Wolf

LeadResp: West

CES206.950 SOUTH COASTAL CALIFORNIA VERNAL POOL

Primary Division: Mediterranean California (206)

Land Cover Class: Herbaceous Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Diagnostic Classifiers:

better developed, they trend towards Vertisols (freeze-thaw characteristics). Characteristic species include *Blennosperma nanum*, *Epilobium densiflorum* (= *Boisduvalia densiflora*), *Callitriche marginata*, *Cicendia quadrangularis*, *Eryngium vaseyi*, *Psilocarphus brevissimus*, and *Sedella pumila* (= *Parvisedum pumilum*). *Artemisia cana* ssp. *bolanderi* can occur on better developed soils. Endemic plant species *Eryngium mathiasiae*, as well as several species of *Mimulus* and *Pogogyne*, may occur.

DISTRIBUTION

Range: Throughout the Lassen, Klamath, and upper Pit river drainages, as well as the Devils Garden area of northern California, and along the eastern flanks of the Columbia River Gorge along the Oregon-Washington border.

Divisions: 204:C, 206:C

TNC Ecoregions: 4:C, 5:P

Subnations: CA, OR, WA

Associations:

•

High-ranked species: *Downingia bicornuta* (G3G4), *Downingia bicornuta* var. *bicornuta* (G3G4T3T4), *Gratiola heterosepala* (G3), *Pogogyne floribunda* (G3), *Polygonum polygaloides* ssp. *esotericum* (G4G5T2)

SOURCES

References: Barbour and Major 1988, Bjork 1997, Comer et al. 2003, Holland and Keil 1995, Sawyer and Keeler-Wolf 1995

Version: 21 Nov 2003

Concept Author: P. Comer, T. Keeler-Wolf

Stakeholders: West

LeadResp: West

CES204.062 NORTH PACIFIC COASTAL INTERDUNAL WETLAND

Primary Division: North American Pacific Maritime (204)

Land Cover Class: Herbaceous Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Diagnostic Classifiers: Herbaceous; Depressional [Pond]; Isolated Wetland [Partially Isolated]; Mineral: W/ A-Horizon <10 cm; Graminoid; Shallow (<15 cm) Water; Sand Subsoil Texture; Coastal Dune Mosaic

Concept Summary: Coastal interdunal wetlands are common components of larger active and stabilized coastal barrier islands, spits, and coastal dunes, ranging from southeastern Alaska through the Aleutian Islands. Distinct landform and vegetation patterns are common to these dune systems. Landforms on the ocean side include low-gradient beaches, sparse to unvegetated dunes, slacks dominated by low herbaceous vegetation and back dunes dominated by tall herbaceous, shrub, or forested communities.

The slacks between dunes are colonized by *Equisetum variegatum* (northern horsetail) and other herbaceous species. The sites are elevated by the deposition of wind-blown sand, tectonic uplift and isostatic rebound. This further removes the sites from tidal water and allows shrubs, such as *Salix commutata* (undergreen willow), *Salix sitchensis* (Sitka willow), and *Myrica gale* (sweet gale) to invade. Organic mats also develop. Some slacks may develop into forested sites or peatlands, whereas other slacks may not persist to late succession because of dune encroachment.

The higher portions of dunes are dry and nutritionally poor because of leaching, moving the moisture and nutrients into the dune bases and slacks.

DISTRIBUTION

Range: This system ranges from southeastern Alaska through the Aleutian Islands.

Divisions: 204:C

Subnations: AK

Associations:

•

SOURCES

References: Western Ecology Working Group n.d.

Version: 26 May 2005

Concept Author: K. Boggs and G. Kittel

Stakeholders: West

LeadResp: West

CES204.859 NORTH PACIFIC HARDPAN VERNAL POOL

Primary Division: North American Pacific Maritime (204)

Land Cover Class: Herbaceous Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Diagnostic Classifiers: Herbaceous; Depressional [Vernal Pool]

Concept Summary: This system includes shallow ephemeral water bodies found in depressions (up to several hectares in size) among grasslands and open woodlands throughout intermountain valleys of California, Oregon and the Gulf and San Juan islands of Washington and British Columbia. Northern hardpan vernal pools include an indurated clay or cemented (Si or Fe) hardpan that retains water inputs throughout some portion of the spring, but typically the depression dries down entirely into early summer months. In the Sand Juan and Gulf islands, they are created in small depressions in bedrock. This system typically occurs with a hummocky micro-relief. They tend to be acidic wetlands with characteristic plant species including *Downingia elegans*, *Isoetes orcuttii*, *Pilularia americana*, *Triteleia hyacinthina*, *Eleocharis* spp., *Eryngium petiolatum*, *Plagiobothrys figuratus*, *Plagiobothrys scouleri*, *Grindelia nana*, *Veronica peregrina*, *Deschampsia danthonioides*, and *Callitriche* spp. Due to draw-down characteristics, vernal pools typically form concentric rings of similar vegetation. Given their relative isolation in upland-dominated landscapes, many endemic plant species are common in California vernal pools.

Comments: This system includes both duripan/hardpan and bedrock types, which are segregated in the California systems. Decided to lump them for this system because both occur intermixed in the geographic area defined.

DISTRIBUTION

Range: Found in depressions among grasslands and open woodlands throughout intermountain valleys of California, Oregon and the Gulf and San Juan islands of Washington.

Divisions: 204:C

TNC Ecoregions: 2:C

Subnations: BC, CA, OR, WA

Associations:

- *Eryngium petiolatum* - *Grindelia nana* Herbaceous Vegetation (CEGL003345, G1G2)
- *Eryngium petiolatum* - *Lasthenia glaberrima* Herbaceous Vegetation (CEGL003458, G1G2)
- *Plagiobothrys figuratus* Vernal Pool Herbaceous Vegetation (CEGL003346, G1G2)
- *Plagiobothrys scouleri* - *Plantago bigelovii* Herbaceous Vegetation (CEGL003459, G2)

High-ranked species: *Blennosperma bakeri* (G1), *Castilleja campestris* ssp. *succulenta* (G4?T2), *Chamaesyce hooveri* (G2), *Downingia concolor* var. *concolor* (G4T3T4), *Downingia concolor* var. *tricolor* (G4T1?), *Eryngium spinosepalum* (G2), *Juncus kelloggii* (G3?), *Mimulus angustatus* (G3G4), *Navarretia leucocephala* ssp. *bakeri* (G4T2), *Navarretia myersii* (G1), *Navarretia myersii* ssp. *myersii* (G1T1), *Navarretia prostrata* (G2?), *Neostapfia colusana* (G3), *Orcuttia inaequalis* (G2), *Orcuttia pilosa* (G2), *Orcuttia tenuis* (G3), *Plagiobothrys bracteatus* var. *aculeolatus* (G4?T1T3Q), *Plagiobothrys chorisianus* var. *hickmanii* (G3T3Q), *Plagiobothrys hirtus* (G1), *Plagiobothrys humistratus* (G2?), *Plagiobothrys strictus* (G1), *Plagiobothrys trachycarpus* (G3G4), *Poa napensis* (G1), *Pogogyne douglasii* ssp. *parviflora* (G4T3Q), *Polygonum polygaloides* ssp. *confertiflorum* (G4G5T3T4), *Psilocarphus brevissimus* var. *multiflorus* (G4T3), *Spergularia macrotheca* var. *leucantha* (G5T3T4), *Trichostema rubisepalum* (G3), *Trifolium jokerstii* (G1)

SOURCES

References: Chappell and Christy 2004, Comer et al. 2003, Holland and Keil 1995

Version: 21 Nov 2003

Concept Author: C. Chappell

Stakeholders: Canada, West

LeadResp: West

CES204.874 WILLAMETTE VALLEY WET PRAIRIE

Primary Division: North American Pacific Maritime (204)

Land Cover Class: Herbaceous Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Concept Summary: This system is largely restricted to the Willamette Valley of Oregon and adjacent Washington. It is nearly extirpated from the Puget Trough of Washington. These are high-nutrient wetlands that are temporarily to seasonally

DISTRIBUTION

Range: This system occurs at elevations between 424 and 1032 m (1391-3385 feet) on O'ahu and Moloka'i. Historically it also occurred on Ni'ihau.

Divisions: 412:C

TNC Ecoregions: 65:C

Subnations: HI

Associations:

•

High-ranked species: *Marsilea villosa* (G1)

SOURCES

References: Palmer 2003, USFWS 1996, USFWS 2003, Wagner et al. 1999, Western Ecology Working Group n.d.

Version: 20 Apr 2005

Concept Author: M. Castillo and G. Kittel

Stakeholders: West

LeadResp: West

CES412.216 HAWAI'I MONTANE BOG

Primary Division: Northern Polynesia (412)

Land Cover Class: Herbaceous Wetland

Spatial Scale & Pattern: Small patch

Required Classifiers: Natural/Semi-natural; Vegetated (>10% vasc.)

Diagnostic Classifiers: Peat and mud; Depressional; Isolated Wetland [Strictly Isolated]; Impermeable Layer; Saturated Soil

Concept Summary: Hawai'i Upland Bog occurs primarily between 1067 and 1670 m (3500-5500 feet) elevation as isolated small patches on flat or gently sloping topography in high rainfall areas in cloud forests and other wet forests on all of the high islands. They are also known to occur at a subalpine bog at 2270 m (7446 feet) elevation on Maui, and a low elevation bog at 646 m (2120 feet) on Kaua'i. Soils remain saturated on a shallow to deep layer of peat (0.01-5 m), underlain by an

Appendix IV: At-Risk Animal Species Closely Tied to Isolated Wetland Ecological Systems

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
VERTEBRATES						
<i>Ambystoma cingulatum</i>	Flatwoods Salamander	Obligate	G2G3	LT	AL(S1), FL(S2S3), GA(S2), SC(S1)	Atlantic Coastal Plain Southern Depression Pondshore
						East Gulf Coastal Plain Northern Depression Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore
						Southern Coastal Plain Nonriverine Cypress Dome
<i>Batrachoseps major aridus</i>	Desert Slender Salamander	Facultative	G4T1	LE	CA(S1)	Sonoran Fan Palm Oasis
<i>Bufo houstonensis</i>	Houston Toad	Facultative	G1	LE	TX(S1)	West Gulf Coastal Plain Flatwoods Pond
						West Gulf Coastal Plain Pine-Hardwood Flatwoods
<i>Microtus californicus scirpensis</i>	Amargosa Vole	Facultative	G5T1	LE	CA(S1)	Inter-Mountain Basins Alkaline Closed Depression
<i>Notophthalmus perstriatus</i>	Striped Newt	Obligate	G2G3		FL(S2S3), GA(S2)	Atlantic Coastal Plain Southern Depression Pondshore
						East Gulf Coastal Plain Northern Depression Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore
<i>Rana capito</i>	Carolina Gopher Frog	Obligate	G3		AL(S2), FL(S3), GA(S2S3), NC(S2), SC(S1), TN(S1)	Atlantic Coastal Plain Clay-Based Carolina Bay Wetland
						Atlantic Coastal Plain Southern Depression Pondshore
						Central Florida Herbaceous Pondshore
						East Gulf Coastal Plain Northern Depression Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore
						Southern Coastal Plain Nonriverine Cypress Dome
<i>Rana sevosa</i>	Dusky Gopher Frog	Obligate	G1	LE	AL(SH), LA(SH), MS(S1)	East Gulf Coastal Plain Southern Depression Pondshore

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
<i>Sorex ornatus relictus</i>	Buena Vista Lake Shrew	Facultative	G5T1	LE	CA(S1)	Mediterranean California Alkali Marsh
INSECTS						
<i>Elaphrus viridis</i>	Delta Green Ground Beetle	Facultative	G1	LT	CA(S1)	Northern California Claypan Vernal Pool
<i>Hydrochus spangleri</i>	Seth Forest Water Scavenger Beetle	Obligate	G1		DE(SNR), MD(S1)	Atlantic Coastal Plain Northern Basin Swamp and Wet Hardwood Forest
<i>Oecanthus laricis</i>	Laricis Tree Cricket	Unconfirmed	G1G2		MI(S1S2), OH(SNR)	North-Central Interior Shrub-Graminoid Alkaline Fen
<i>Papaipema sulphurata</i>	Decodon Stem Borer Moth	Unconfirmed	G2		MA(S2)	Atlantic Coastal Plain Northern Bog
						Atlantic Coastal Plain Northern Pondshore
<i>Pseudocopaeodes eunus obscurus</i>	Carson Wandering Skipper	Obligate	G3G4T1	LE	CA(S1), NV(S1)	Inter-Mountain Basins Alkaline Closed Depression
CRUSTACEANS						
<i>Branchinecta conservatio</i>	Conservancy Fairy Shrimp	Obligate	G1	LE	CA(S1)	Northern California Claypan Vernal Pool
<i>Branchinecta longiantenna</i>	Longhorn Fairy Shrimp	Obligate	G1	LE	CA(S1)	Mediterranean California Coastal Interdunal Wetland
						Northern California Claypan Vernal Pool
						South Coastal California Vernal Pool
<i>Branchinecta lynchi</i>	Vernal Pool Fairy Shrimp	Obligate	G3	LT	CA(S2S3), OR(S2S3)	Mediterranean California Coastal Interdunal Wetland
						Northern California Claypan Vernal Pool
						South Coastal California Vernal Pool
<i>Branchinecta mesovallensis</i>	Midvalley Fairy Shrimp	Obligate	G2		CA(S2)	Northern California Claypan Vernal Pool
<i>Branchinecta potassa</i>	Potassium Loving Fairy Shrimp	Obligate	G3		NE(SNR)	Western Great Plains Closed Depression Wetland
<i>Branchinecta sandiegonensis</i>	San Diego Fairy Shrimp	Obligate	G1	LE	CA(S1)	South Coastal California Vernal Pool
<i>Branchinella acaciodea</i>	Acacia Fairy Shrimp	Obligate	G2G3		TX(SNR)	North American Warm Desert Playa
<i>Branchinella sublettei</i>	Salt Playa Fairy Shrimp	Obligate	G3		TX(SNR)	North American Warm Desert Playa
<i>Caenestheriella gynecia</i>	Feminine Clam Shrimp	Obligate	G2G3		MA(SNR), OH(SNR), PA(SNR)	North-Central Interior and Appalachian Acid Peatland

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
<i>Cyzicus californicus</i>	California Clam Shrimp	Facultative	G2G3		CA(SNR)	Mediterranean California Coastal Interdunal Wetland
						Northern California Claypan Vernal Pool
						South Coastal California Vernal Pool
<i>Cyzicus elongatus</i>	Elongate Clam Shrimp	Facultative	G2G3Q		CA(SNR)	Northern California Claypan Vernal Pool
<i>Eocyclus concavus</i>	Swaybacked Clam Shrimp	Unconfirmed	G1G3		AZ(SNR), NM(SNR), TX(SNR)	unable to assign ecological system; too little known
<i>Eulimnadia agassizii</i>	Agassiz Clam Shrimp	Facultative	G1G2		CT(SH), MA(S1)	Atlantic Coastal Plain Northern Pondshore
<i>Eulimnadia astraova</i>	Star Cyst Clam Shrimp	Facultative	G1G3		LA(SNR)	unable to assign ecological system; too little known
<i>Fallicambarus danielae</i>	Speckled Burrowing Crayfish	Facultative	G2		AL(S1), MS(S2)	Atlantic Coastal Plain Sandhill Seep
<i>Linderiella occidentalis</i>	California Fairy Shrimp	Facultative	G3G4		CA(S2S3)	Northern California Claypan Vernal Pool
						South Coastal California Vernal Pool
<i>Linderiella santarosae</i>	Santa Rosa Plateau Fairy Shrimp	Obligate	G1G2		CA(S1S2)	South Coastal California Vernal Pool
<i>Procambarus econfinae</i>	Panama City Crayfish	Facultative	G1		FL(S1)	East Gulf Coastal Plain Southern Depression Pondshore
<i>Streptocephalus moorei</i>	Spinythumb Fairy Shrimp	Obligate	G1G2		NM(SNR)	North American Warm Desert Playa
<i>Streptocephalus woottoni</i>	Riverside Fairy Shrimp	Obligate	G2	LE	CA(S1)	South Coastal California Vernal Pool

Appendix V: At-Risk Plant Species Closely Tied to Isolated Wetland Ecological Systems

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
<i>Acaena exigua</i>	Liliwai	Obligate	G1	LE	HI(S1)	Hawai'i Montane Bog
<i>Aeschynomene pratensis</i>	Meadow Joint-vetch	Unconfirmed	G1		FL(S1)	South Florida Cypress Dome
<i>Agrostis hendersonii</i>	Henderson's Bentgrass	Facultative	G1Q		CA(S1.1), OR(SH)	Northern California Claypan Vernal Pool
<i>Amaranthus floridanus</i>	Florida Amaranth	Facultative	G3		FL(S3)	Atlantic Coastal Plain Southern Depression Pondshore
						Central Florida Herbaceous Pondshore
<i>Ambrosia linearis</i>	Linear-leaf Bursage	Facultative	G3		CO(S3)	Western Great Plains Closed Depression Wetland
<i>Amphianthus pusillus</i>	Little Amphianthus	Obligate	G2	LT	AL(S1), GA(S2), SC(S1)	Southern Piedmont Granite Flatrock
<i>Argyroxiphium caliginis</i>	Eke Silversword	Obligate	G1		HI(S1.2)	Hawai'i Montane Bog
<i>Argyroxiphium grayanum</i>	Greensword	Facultative	G1		HI(S1)	Hawai'i Montane Bog
<i>Astelia waialealae</i>		Facultative	G1	C	HI(SNR)	Hawai'i Montane Bog
<i>Astragalus applegatei</i>	Applegate's Milk-vetch	Obligate	G1	LE	OR(S1)	Inter-Mountain Basins Alkaline Closed Depression
<i>Astragalus diversifolius</i>	Mesic Milkvetch	Unconfirmed	G2		ID(S2), NV(S1), UT(S1), WY(SH)	Inter-Mountain Basins Alkaline Closed Depression
<i>Astragalus lemmonii</i>	A Milk-vetch	Facultative	G3?		CA(S2.2), NV(S1), OR(SNR)	Inter-Mountain Basins Alkaline Closed Depression
<i>Astragalus phoenix</i>	Ash Meadows Milk-vetch	Obligate	G2	LT	NV(S2)	Inter-Mountain Basins Alkaline Closed Depression
<i>Astragalus pterocarpus</i>	Winged Milk-vetch	Facultative	G3		NV(S3)	Inter-Mountain Basins Alkaline Closed Depression
						Inter-Mountain Basins Greasewood Flat
<i>Astragalus pycnostachyus</i>	Marsh Milk-vetch	Facultative	G2		CA(SNR)	Mediterranean California Coastal Interdunal Wetland
<i>Astragalus pycnostachyus var. lanosissimus</i>	Ventura Marsh Milkvetch	Facultative	G2T1	LE	CA(S1.1)	Mediterranean California Coastal Interdunal Wetland

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
-----------------	-------------	--------------------	-------------	-----------------	--------------------------	------------------------------------

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
<i>Cardamine clematitis</i>	Mountain Bitter Cress	Unconfirmed	G2G3		AL(SH), NC(S2), SC(SNR), TN(S2), VA(S1S2)	Southern Appalachian Seepage Wetland
<i>Carex decomposita</i>	Cypress-knee Sedge	Unconfirmed	G3		AL(S1), AR(S2), DC(SH), DE(S1), FL(SNR), GA(S2?), IL(S1), IN(S2), KY(S2), LA(S1), MD(S1), MI(SX), MO(S3), MS(S3), NC(S1), NY(SH), OH(S1), OK(SU), SC(SNR), TN(S2), TX(S1), VA(S2)	Atlantic Coastal Plain Southern Depression Pondshore
						Central Interior Highlands and Appalachian Sinkhole and Depression Pond
						East Gulf Coastal Plain Northern Depression Pondshore
						Southern Piedmont / Ridge and Valley Upland Depression Swamp
						West Gulf Coastal Plain Flatwoods Pond
<i>Carex montis-eeka</i>	A Sedge	Facultative	G2		HI(S2)	Hawai'i Montane Bog
<i>Carex sp. 2</i>	Fen Sedge	Facultative	G1		NC(S1), VA(S1)	North-Central Appalachian Seepage Fen
<i>Carex specuicola</i>	Navajo Sedge	Obligate	G2	LT	AZ(S2), UT(S1)	Colorado Plateau Hanging Garden
<i>Carex verrucosa</i>	Warty Sedge	Facultative	G3G4		AL(SNR), FL(SNR), GA(S4?), LA(SNR), MS(S2), NC(S1), SC(SNR), TX(S2S3), VA(SNR)	Atlantic Coastal Plain Clay-Based Carolina Bay Wetland
						Atlantic Coastal Plain Southern Depression Pondshore
						Central Florida Herbaceous Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore
						Southern Coastal Plain Nonriverine Cypress Dome

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
<i>Carex wiegandii</i>	Wiegand's Sedge	Facultative	G3		MA(S1), ME(S3), MI(S2), NH(S1S2), NY(S1), PA(S1), VT(S1)	Boreal-Laurentian-Acadian Acidic Basin Fen
						Laurentian-Acadian Conifer-Hardwood Acid Swamp
<i>Castilleja campestris</i> ssp. <i>succulenta</i>	Fleshy Owl's-clover	Facultative	G4?T2	LT	CA(S2.2)	North Pacific Hardpan Vernal Pool
<i>Castilleja salsuginosa</i>	Monte Neva Paintbrush	Obligate	G1Q		NV(S1)	Inter-Mountain Basins Alkaline Closed Depression
<i>Centaurium namophilum</i>	Spring-loving Centaury	Obligate	G2Q	LT	NV(S2)	Inter-Mountain Basins Alkaline Closed Depression
<i>Chamaesyce hooveri</i>	Hoover's Broomsurge	Obligate	G2	LT	CA(S2.1)	North Pacific Hardpan Vernal Pool
<i>Chamaesyce sparsiflora</i>		Obligate	G1		HI(S1.1)	Hawai'i Montane Bog
<i>Chelone cuthbertii</i>	Cuthbert's Turtlehead	Facultative	G3		GA(S1), NC(S3?), SC(SNR), VA(S2)	Atlantic Coastal Plain Sandhill Seep
						North-Central Appalachian Seepage Fen
						Southern Appalachian Seepage Wetland
<i>Cirsium loncholepis</i>	La Graciosa Thistle	Facultative	G2	LE	CA(S2.2)	Mediterranean California Coastal Interdunal Wetland
<i>Cirsium mohavense</i>	Mohave Thistle	Facultative	G2G3		AZ(S1), CA(SNR), NV(SNR)	Inter-Mountain Basins Alkaline Closed Depression
<i>Coelorachis tuberculosa</i>	Florida Jointgrass	Facultative	G3		AL(S1), FL(S3)	Central Florida Herbaceous Pondshore
						East Gulf Coastal Plain Northern Depression Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore
<i>Coprosma elliptica</i>	Elliptic Coprosma	Facultative	G3		HI(SNR)	Hawai'i Montane Bog
<i>Cordylanthus palmatus</i>	Palmate-bracted Bird's-beak	Facultative	G1	LE	CA(S1.1)	California Central Valley Alkali Sink
<i>Cordylanthus tecopensis</i>	Tecopa Bird's-beak	Obligate	G2		CA(S1.2), NV(S2)	Inter-Mountain Basins Alkaline Closed Depression

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
<i>Coreopsis nudata</i>	Georgia Tickseed	Facultative	G3?		AL(S1), FL(SNR), GA(S3S4), LA(S2), MS(S1S2)	East Gulf Coastal Plain Southern Depression Pondshore
						Southern Coastal Plain Nonriverine Basin Swamp
						Southern Coastal Plain Nonriverine Cypress Dome
<i>Coreopsis rosea</i>	Rose Coreopsis	Facultative	G3		DE(S1), GA(SNR), MA(S3), MD(S1), MS(SNR), NJ(S2), NY(S3), PA(SX), RI(S2), SC(S2)	Atlantic Coastal Plain Northern Pondshore
						Atlantic Coastal Plain Southern Depression Pondshore
<i>Croton elliotii</i>	Elliott's Croton	Obligate	G2G3		AL(S1), FL(SH), GA(S2S3), SC(SNR)	East Gulf Coastal Plain Northern Depression Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore
						Southern Coastal Plain Nonriverine Cypress Dome
<i>Cucurbita okeechobeensis</i>	Okeechobee Gourd	Facultative	G1	LE	FL(S1)	Central Florida Herbaceous Pondshore
<i>Cyperus granitophilus</i>	Granite-loving Flatsedge	Obligate	G3Q		AL(S2), GA(S3), NC(S1), SC(SNR), TN(S1), VA(S1)	Southern Piedmont Granite Flatrock
<i>Cyperus onerosus</i>	Dune Flat-sedge	Obligate	G2		TX(S2)	North American Warm Desert Interdunal Swale Wetland
<i>Delphinium recurvatum</i>	Byron Larkspur	Facultative	G2		CA(S2.2)	California Central Valley Alkali Sink
<i>Dichanthelium cynodon</i>	Dog-tooth Witchgrass	Facultative	G2G3		HI(S2S3)	Hawai'i Montane Bog
<i>Dichanthelium hillebrandianum</i>	Hillebrand's Witchgrass	Facultative	G2G3		HI(S2S3)	Hawai'i Montane Bog
<i>Dichanthelium isachnoides</i>		Facultative	G2G3		HI(S2S3)	Hawai'i Montane Bog
<i>Downingia bella</i>	Hoover's Downingia	Obligate	G2G3		CA(SNR)	Northern California Claypan Vernal Pool

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
<i>Downingia bicornuta</i>	Double-horn Downingia	Unconfirmed	G3G4		CA(SNR), ID(SNR), NV(SNR), OR(SNR)	Inter-Mountain Basins Alkaline Closed Depression Modoc Basalt Flow Vernal Pool Northern California Volcanic Vernal Pool
<i>Downingia cuspidata</i>						

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
						Western Great Plains Saline Depression Wetland
<i>Eriogonum ampullaceum</i>	Mono Buckwheat	Facultative	G3		CA(SNR), NV(S1)	Inter-Mountain Basins Alkaline Closed Depression
<i>Eriogonum argophyllum</i>	Ruby Valley Buckwheat	Obligate	G1		NV(S1)	Inter-Mountain Basins Alkaline Closed Depression
<i>Eryngium aristulatum</i> <i>var. parishii</i>	San Diego Button Celery	Facultative	G5T2	LE	CA(S2.1)	South Coastal California Vernal Pool
<i>Eryngium castrense</i>		Facultative	G1G2		CA(SNR)	Northern California Volcanic Vernal Pool
<i>Eryngium constancei</i>	Loch Lomond Coyote-thistle	Obligate	G1	LE, PT	CA(S1.1)	Northern California Volcanic Vernal Pool
<i>Eryngium mathiasiae</i>	Mathias' Coyote-thistle	Facultative	G3		CA(SNR)	Northern California Volcanic Vernal Pool
<i>Eryngium pendletonensis</i>		Obligate	G1		CA(S1.1)	South Coastal California Vernal Pool
<i>Eryngium pinnatisectum</i>	Tuolumne Coyote-thistle	Facultative	G3		CA(S3.2)	Northern California Volcanic Vernal Pool
<i>Eryngium spinosepalum</i>	Spiny Sepaled Coyote-thistle	Facultative	G2		CA(S2.2)	North Pacific Hardpan Vernal Pool
<i>Euthamia galetorum</i>	Narrow-leaf Fragrant Golden-rod	Facultative	G3		MA(S1?)	Atlantic Coastal Plain Northern Pondshore
<i>Fimbristylis perpusilla</i>	Harper's Fimbristylis	Facultative	G2		DE(S1), GA(S1), MD(S2), NC(S1), SC(S2), TN(S1), VA(S1)	Atlantic Coastal Plain Northern Pondshore
<i>Frankenia salina</i> <i>Fuirena longa</i>	Alkali Heath Coastal-plain Umbrella-sedge	Obligate Unconfirmed	G3G4 G3G4		CA(SNR) AL(SNR), FL(SNR), MS(S3S4), TX(S2)	Atlantic Coastal Plain Southern Depression Pondshore Central Interior Highlands and Appalachian Sinkhole and Depression Pond Mediterranean California Alkali Marsh East Gulf Coastal Plain Southern Depression Pondshore Southeastern Coastal Plain Interdunal Wetland Southern Coastal Plain Nonriverine Cypress Dome West Gulf Coastal Plain Flatwoods PondVA(S1)

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
<i>Hypericum adpressum</i>	Creeping St. John's-wort	Facultative	G3		CT(SH), DE(S2), GA(S2?), IL(S1), IN(S1), KY(SH), MA(S2), MD(S1), MO(S1), NC(SH), NJ(S2), NY(S2), PA(SX), RI(S2), SC(S1), TN(S1), VA(S1), WV(SH)	Atlantic Coastal Plain Northern Pondshore
						Atlantic Coastal Plain Southern Depression Pondshore
						East Gulf Coastal Plain Northern Depression Pondshore
						North-C/Cs&l Interior Shrub-Graminoid Alkaline Fen
<i>Hypericum chapmanii</i>	Chapman's St. John's-wort	Facultative	G3		FL(S3)	East Gulf Coastal Plain Southern Depression Pondshore
<i>Hypericum edisonianum</i>	Edison's Ascyrum	Facultative	G2		FL(S2)	C/Cs&l Florida Herbaceous Pondshore
<i>Hypericum lissophloeus</i>	Smooth-barked St. John's-wort	Obligate	G2		FL(S2)	East Gulf Coastal Plain Sandhill Lakeshore Depression
<i>Iris lacustris</i>	Dwarf Lake Iris	Facultative	G3	LT	MI(S3), WI(S3)	Great Lakes Alvar
						Great Lakes Dune and Swale
<i>Isocoma arguta</i>	Suisun Goldenbush	Facultative	G1		CA(S1.1)	California C/Cs&l Valley Alkali Sink
<i>Isoetes hawaiiensis</i>		Unconfirmed	G1		HI(S1.2)	Hawai'i Montane Bog
<i>Isoetes lithophila</i>	Rock Quillwort	Obligate	G2		TX(S2)	Edwards Plateau Granitic Forest, Woodland and Glade
<i>Isoetes melanospora</i>	Black-spored Quillwort	Obligate	G1	LE	GA(S1), SC(S1)	Southern Piedmont Granite Flatrock
<i>Isoetes orcuttii</i>	Orcutt's Quillwort	Obligate	G2?		CA(SNR)	Northern California Claypan Vernal Pool
						South Coastal California Vernal Pool
<i>Isoetes piedmontana</i>	Piedmont Quillwort	Facultative	G3		AL(S2), GA(S3), NC(S1), SC(S2), TX(S1), VA(S1?)	Southern Piedmont / Ridge and Valley Upland Depression Swamp
						Southern Piedmont Granite Flatrock
<i>Isoetes tegetiformans</i>	Merlin's-grass	Obligate	G1	LE	GA(S1)	Southern Piedmont Granite Flatrock

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
<i>Isoetes virginica</i>	Virginia Quillwort	Facultative	G1		NC(S1), VA(S1?)	Central Interior Highlands and Appalachian Sinkhole and Depression Pond
						Southern Piedmont / Ridge and Valley Upland Depression Swamp
<i>Ivesia kingii</i>	King's Ivesia	Facultative	G3		CA(SNR), NV(S3), UT(S1)	Inter-Mountain Basins Alkaline Closed Depression
						North American Warm Desert Playa
<i>Ivesia kingii</i> var. <i>eremica</i>	Ash Meadows Mousetails	Obligate	G3T1T2Q	LT	NV(S1S2)	Inter-Mountain Basins Alkaline Closed Depression
<i>Ivesia pityocharis</i>	Pine Nut Ivesia	Facultative	G2		NV(S2)	Columbia Plateau Vernal Pool
<i>Ivesia sericoleuca</i>	Plumas Ivesia	Facultative	G2		CA(S2.2)	Northern California Claypan Vernal Pool
<i>Juncus caesariensis</i>	New Jersey Rush	Unconfirmed	G2		MD(S1), NC(S1), NJ(S2), VA(S2)	Atlantic Coastal Plain Northern Basin Swamp and Wet Hardwood Forest
<i>Juncus kelloggii</i>	Kellogg's Rush	Facultative	G3?		CA(SNR), NV(SNR), WA(S1)	Inter-Mountain Basins Alkaline Closed Depression
						North Pacific Hardpan Vernal Pool
						Northern California Claypan Vernal Pool
<i>Juncus leiospermus</i>	Red Bluff Rush	Facultative	G2		CA(S2.2)	Northern California Claypan Vernal Pool
<i>Juncus luciensis</i>		Facultative	G3?		CA(SNR)	South Coastal California Vernal Pool
<i>Juncus triformis</i>	Yosemite Dwarf Rush	Facultative	G2G3		CA(SNR)	South Coastal California Vernal Pool
<i>Juncus uncialis</i>	Inch-high Rush	Facultative	G3G4		CA(SNR), NV(SNR), OR(SNR), WA(S2)	Columbia Plateau Vernal Pool
						Inter-Mountain Basins Alkaline Closed Depression
<i>Keysseria erici</i>		Facultative	G1	C	HI(S1.2)	Hawai'i Montane Bog
<i>Labordia pumila</i>		Facultative	G1	C	HI(S1.2)	Hawai'i Montane Bog
<i>Lachnocaulon engleri</i>	Engler's Bogbutton	Facultative	G3		AL(S1?), FL(S3)	Southeastern Coastal Plain Interdunal Wetland
<i>Lagenifera helenae</i>		Facultative	G1	C	HI(S1.1)	Hawai'i Montane Bog
<i>Lagenifera maviensis</i>	Howaiaulu	Facultative	G2		HI(S2.2)	Hawai'i Montane Bog
<i>Lasthenia burkei</i>	Burke's Goldfields	Facultative	G1	LE	CA(S1.1)	Northern California Claypan Vernal Pool
<i>Lasthenia chrysantha</i>		Facultative	G3?		CA(SNR)	Northern California Claypan Vernal Pool
<i>Lasthenia conjugens</i>	Contra Costa Goldfields	Facultative	G1	LE	CA(S1.1)	Northern California Claypan Vernal Pool

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Biological System	Original System	Stentia ferrisia	EA(S)
-----------------	-------------	--------------------	-------------	-----------------	--------------------------	-------------------	-----------------	------------------	-------

Not in
Madroam
EA(S)

Erubomyces folia G2

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
						Central Florida Herbaceous Pondshore
						East Gulf Coastal Plain Northern Depression Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore
						Southern Coastal Plain Nonriverine Cypress Dome
<i>Lobelia boykinii</i>	Boykin's Lobelia	Obligate	G2G3		AL(S1S2), DE(SX), FL(S1), GA(S2S3), MS(S1), NC(S1), NJ(S1), SC(SNR)	Atlantic Coastal Plain Clay-Based Carolina Bay Wetland
						Atlantic Coastal Plain Northern Pondshore
						Atlantic Coastal Plain Southern Depression Pondshore
						East Gulf Coastal Plain Northern Depression Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore
<i>Lobelia gloria-montis</i>	Hawaiian Lobelia	Facultative	G1G2		HI(S1S2)	Hawai'i Montane Bog
<i>Lobelia kauaensis</i>		Facultative	G2		HI(S2)	Hawai'i Montane Bog
<i>Lobelia villosa</i>	Hairy Lobelia	Facultative	G1		HI(S1)	Hawai'i Montane Bog
<i>Lomatium bradshawii</i>	Bradshaw's Lomatium	Facultative	G2	LE	OR(S2), WA(S1)	Willamette Valley Wet Prairie
<i>Lomatium cookii</i>	Agate Desert Lomatium	Facultative	G1	LE	OR(S1)	Northern California Claypan Vernal Pool
<i>Ludwigia lanceolata</i>	Lance-leaf Seedbox	Unconfirmed	G3		FL(SNR), GA(SNR), NC(S1), SC(SNR)	Southeastern Coastal Plain Interdunal Wetland
<i>Ludwigia spathulata</i>	Spathulate Seedbox	Facultative	G2G3		AL(S1S2), FL(S1S2), GA(S2S3), SC(SNR)	Atlantic Coastal Plain Clay-Based Carolina Bay Wetland
						Atlantic Coastal Plain Southern Depression Pondshore
						East Gulf Coastal Plain Northern Depression Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
<i>Lycopodiella margueritiae</i>	Northern Prostrate Clubmoss	Facultative	G2		MI(S2), OH(S1), PA(SU), VA(S1)	Atlantic Coastal Plain Northern Pondshore
						Boreal-Laurentian-Acadian Acidic Basin Fen
						Great Lakes Dune and Swale
<i>Lycopodiella subappressa</i>	Northern Appressed Clubmoss	Facultative	G2		IN(S1), MI(S2), OH(S1)	Atlantic Coastal Plain Northern Pondshore
						Boreal-Laurentian-Acadian Acidic Basin Fen
						Great Lakes Dune and Swale
<i>Lysimachia daphnoides</i>	Pacific Loosestrife	Facultative	G1	C	HI(S1.2)	Hawai'i Montane Bog
<i>Lythrum flagellare</i>	Lowland Loosestrife	Obligate	G2		FL(S2)	Atlantic Coastal Plain Southern Depression Pondshore
						Central Florida Herbaceous Pondshore
						South Florida Cypress Dome
<i>Melicope waialealae</i>	Alaniawai	Facultative	G2		HI(S2)	Hawai'i Montane Bog
<i>Mimulus angustatus</i>	Narrow-leaf Pansy Monkey-flower	Facultative	G3G4		CA(SNR)	North Pacific Hardpan Vernal Pool
<i>Mimulus eastwoodiae</i>	Eastwood Monkeyflower	Unconfirmed	G3		AZ(SNR), CO(S1), NV(SNR), UT(S3)	Colorado Plateau Hanging Garden
<i>Muhlenbergia torreyana</i>	Torrey's Dropseed	Facultative	G3		DE(SX), GA(SH), MD(S1), NC(S1), NJ(S3), TN(S1)	Central Interior Highlands and Appalachian Sinkhole and Depression Pond
<i>Muilla clevelandii</i>	San Diego Goldenstar	Facultative	G2		CA(S2.2)	South Coastal California Vernal Pool
<i>Myosurus sessilis</i>	Sessile Mousetail	Facultative	G2		CA(SNR), OR(S1)	Columbia Plateau Vernal Pool
						Mediterranean California Alkali Marsh
						Northern California Claypan Vernal Pool
<i>Myriophyllum laxum</i>	Piedmont Water-milfoil	Unconfirmed	G3		AL(S2), FL(S3), GA(S2), MS(S1), NC(S1), SC(S2), VA(S1)	Atlantic Coastal Plain Clay-Based Carolina Bay Wetland
						Atlantic Coastal Plain Southern Depression Pondshore
						East Gulf Coastal Plain Northern Depression Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
<i>Myrsine denticulata</i>		Unconfirmed	G1G2		HI(S1S2)	Hawai'i Montane Bog
<i>Myrsine helleri</i>		Facultative	G1G2		HI(S1S2)	Hawai'i Montane Bog
<i>Myrsine vaccinioides</i>		Facultative	G1	C	HI(S1.2)	Hawai'i Montane Bog
<i>Najas filifolia</i>	Narrowleaf Naiad	Obligate	G1		FL(S1), GA(S1)	Central Florida Herbaceous Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore
<i>Navarretia eriocephala</i>	Hoary Navarretia	Facultative	G3		CA(S3.3)	Northern California Claypan Vernal Pool
<i>Navarretia fossalis</i>	Spreading Navarretia	Facultative	G2	LT	CA(S2.1)	South Coastal California Vernal Pool
<i>Navarretia heterandra</i>	Tehama Navarretia	Facultative	G3		CA(S3.3), OR(S1)	Northern California Claypan Vernal Pool
						Northern California Volcanic Vernal Pool
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	Few-flowered Navarretia	Obligate	G4T1	LE	CA(S1.1)	Northern California Volcanic Vernal Pool
<i>Navarretia leucocephala</i> ssp. <i>plieantha</i>	Many-flowered Navarretia	Obligate	G4T1	LE	CA(S1.2)	Northern California Volcanic Vernal Pool
<i>Navarretia myersii</i>	Pincushion Navarretia	Facultative	G1		CA(SNR)	North Pacific Hardpan Vernal Pool
						Northern California Claypan Vernal Pool
<i>Navarretia prostrata</i>	Prostrate Navarretia	Facultative	G2?		CA(S2.1?)	North Pacific Hardpan Vernal Pool
<i>Neostapfia colusana</i>	Colusa Grass	Obligate	G3	LT	CA(S3.1)	North Pacific Hardpan Vernal Pool
<i>Nitrophila mohavensis</i>	Amargosa Niterwort	Obligate	G1	LE	CA(S1.1), NV(S1)	North American Warm Desert Playa
<i>Oligoneuron houghtonii</i>	Houghton's Goldenrod	Obligate	G3	LT	MI(S3), NY(S1)	Great Lakes Dune and Swale
						Northern Great Lakes Interdunal Wetland
<i>Orcuttia californica</i>	California Orcutt Grass	Obligate	G2	LE	CA(S2.1)	South Coastal California Vernal Pool
<i>Orcuttia inaequalis</i>	San Joaquin Valley Orcutt Grass	Obligate	G2	LT	CA(S2.1)	North Pacific Hardpan Vernal Pool
<i>Orcuttia pilosa</i>	Hairy Orcutt Grass	Obligate	G2	LE	CA(S2.1)	North Pacific Hardpan Vernal Pool
<i>Orcuttia tenuis</i>	Slender Orcutt Grass	Obligate	G3	LT	CA(S3.1)	North Pacific Hardpan Vernal Pool
<i>Orcuttia viscida</i>	Sacramento Orcutt Grass	Obligate	G1	LE	CA(S1.1)	Northern California Claypan Vernal Pool

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
-----------------	-------------	--------------------	-------------	-----------------	--------------------------	------------------------------------



Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
						East Gulf Coastal Plain Northern Depression Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore
						Southern Coastal Plain Nonriverine Cypress Dome
<i>Polyradicion lindenii</i>	Ghost Orchid	Obligate	G2G4		FL(S2)	South Florida Cypress Dome
<i>Potentilla basaltica</i>	Soldier Meadow Cinquefoil	Obligate	G1	C	CA(S1.3), NV(S1)	Inter-Mountain Basins Alkaline Closed Depression
<i>Potentilla newberryi</i>	Newberry Cinquefoil	Facultative	G3G4		CA(S2.3?), NV(SNR), OR(SNR), WA(SH)	Inter-Mountain Basins Alkaline Closed Depression
<i>Puccinellia simplex</i>	Little Alkali-grass	Facultative	G3G4		CA(SNR), UT(S1)	California Central Valley Alkali Sink
						Inter-Mountain Basins Greasewood Flat
						North American Warm Desert Playa
<i>Rhexia aristosa</i>	Awned Meadowbeauty	Facultative	G3		AL(S1), DE(S1), GA(S2), NC(S3), NJ(S1), SC(S2)	Atlantic Coastal Plain Clay-Based Carolina Bay Wetland
						Atlantic Coastal Plain Northern Pondshore
						Atlantic Coastal Plain Southern Depression Pondshore
						East Gulf Coastal Plain Northern Depression Pondshore
<i>Rhexia parviflora</i>	Small-flowered Meadowbeauty	Facultative	G2		AL(S1), FL(S2), GA(SH)	East Gulf Coastal Plain Northern Depression Pondshore
						East Gulf Coastal Plain Southern Depression Pondshore
						Southern Coastal Plain Nonriverine Basin Swamp
						Southern Coastal Plain Nonriverine Cypress Dome
<i>Rhexia salicifolia</i>	Panhandle Meadowbeauty	Obligate	G2		AL(S1), FL(S2)	East Gulf Coastal Plain Dune and Coastal Grassland
						East Gulf Coastal Plain Northern Depression Pondshore
						East Gulf Coastal Plain Sandhill Lakeshore Depression

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
						East Gulf Coastal Plain Southern Depression Pondshore
<i>Rhynchospora fernaldii</i>	Fernald's Beakrush	Obligate	G3G4		AL(S1?), FL(SNR), GA(SNR), MS(S1)	Central Florida Herbaceous Pondshore
<i>Rhynchospora inundata</i>	Drowned Hornedrush	Facultative	G3G4		AL(SNR), DE(S1), FL(SNR), GA(S3?), MA(S2), MD(S1), MS(SNR), NC(S3), NJ(S2), NY(S2), RI(S1), SC(SNR)	East Gulf Coastal Plain Southern Depression Pondshore Atlantic Coastal Plain Clay-Based Carolina Bay Wetland Atlantic Coastal Plain Northern Pondshore Atlantic Coastal Plain Southern Depression Pondshore East Gulf Coastal Plain Northern Depression Pondshore East Gulf Coastal Plain Southern Depression Pondshore Southern Coastal Plain Nonriverine Cypress Dome
<i>Rhynchospora pleiantha</i>	Brown Beakrush	Facultative	G3		AL(S1), FL(S3), GA(SH), NC(S2), SC(SNR)	Atlantic Coastal Plain Southern Depression Pondshore East Gulf Coastal Plain Southern Depression Pondshore
<i>Rhynchospora saxicola</i>	Stone Mountain Beakrush	Obligate	G3Q		AL(S1), GA(S3)	Southern Piedmont Granite Flatrock
<i>Sabatia kennedyana</i>	Plymouth Gentian	Facultative	G3		MA(S3), NC(S1), RI(S1), SC(S1)	Atlantic Coastal Plain Northern Pondshore
<i>Sagittaria teres</i>	Slender Arrowhead	Obligate	G3		MA(S3), NH(S1), NJ(S1), NY(S1), RI(S1), SC(SNR)	Atlantic Coastal Plain Northern Pondshore
<i>Sanicula purpurea</i>	Purple-flowered Sanicle	Unconfirmed	G1	LE	HI(S1.2)	Hawai'i Montane Bog
<i>Sarracenia oreophila</i>	Green Pitcherplant	Unconfirmed	G2	LE	AL(S2), GA(S1), NC(S1), TN(SX)	Southern Appalachian Seepage Wetland

Scientific Name	Common Name	Indicator Category	Global Rank	U.S. ESA Status	State (Subnational Rank)	Isolated Wetland Ecological System
<i>Saxifraga caroliniana</i>	Carolina Saxifrage	Facultative	G2		GA(SH), NC(S2), TN(S1S2), VA(S2?), WV(S1)	Southern Appalachian Seepage Wetland
<i>Schoenoplectus hallii</i>	Hall's Bulrush	Facultative	G2		GA(SH), IA(S1), IL(S1), IN(S1), KS(S1), KY(S1), MA(SX), MI(S2), MO(S2), NE(S1), OK(S1), SC(SNR), TX(S1), WI(S1)	Central Interior Highlands and Appalachian Sinkhole and Depression Pond East Gulf Coastal Plain Northern Depression Pondshore Eastern Great Plains Wet Meadow, Prairie, and Marsh North-Central Interior Wet Meadow-Shrub Swamp Western Great Plains Open Freshwater Depression Wetland Western Great Plains Saline Depression Wetland
<i>Scirpus ancistrochaetus</i>	Northeastern Bulrush	Facultative	G3	LE	MA(S1), MD(S1), NH(S1), NY(SX), PA(S3), VA(S2), VT(S2), WV(S1)	Atlantic Coastal Plain Northern Pondshore Central Interior Highlands and Appalachian Sinkhole and Depression Pond North-Central Interior Wet Meadow-Shrub Swamp
<i>Sedella leiocarpa</i>	Lake County Stonecrop	Facultative	G1	LE	CA(S1.1)	Northern California Volcanic Vernal Pool
<i>Sedum pusillum</i>	Granite Rock Stonecrop	Facultative	G3		AL(SNR), GA(S3), NC(S1), SC(S2)	Southern Piedmont Granite Flatrock
<i>Selaginella deflexa</i>	Deflexed Spike-moss	Unconfirmed	G1G2		HI(S1S2)	Hawai'i Montane Bog

Scientific Name

Common Name

Indicator

Appendix VI

This table includes only counties for which there is *at least one* documented occurrence of an at-risk Trisk 7e1occurren07nTI.fBT37.sk dix VI



STATE	COUNTY NAME	# SPECIES/100km ²
	Poinsett	0.50
	Prairie	0.56
	Saline	0.52
	Woodruff	0.66
California	Alameda	4.67
	Butte	3.02
	Calaveras	0.75
	Colusa	0.66
	Contra Costa	3.63
	El Dorado	0.22
	Fresno	0.91
	Glenn	2.05
	Imperial	0.09
	Inyo	0.31
	Kern	0.42
	Kings	0.84
	Lake	2.35
	Lassen	0.58
	Los Angeles	0.56
	Madera	2.17
	Marin	0.71
	Mendocino	0.22
	Merced	3.95
	Modoc	0.55
	Mono	0.12
	Monterey	0.58
	Napa	4.42
	Nevada	0.40
	Orange	1.94
	Placer	1.55
	Plumas	0.44
	Riverside	0.58
	Sacramento	3.24
	San Benito	0.84
	San Bernardino	0.08
	San Diego	1.18
	San Joaquin	1.90
	San Luis Obispo	0.92
	Santa Barbara	0.42
	Santa Clara	0.60
	Santa Cruz	0.86
	Shasta	0.90
	Sierra	0.40
	Siskiyou	0.24
	Solano	7.19
	Sonoma	2.17
	Stanislaus	2.75
	Sutter	1.27
	Tehama	1.58
	Tulare	0.57
	Tuolumne	0.34

STATE	COUNTY NAME	# SPECIES/100km ²
	Ventura	0.84
	Yolo	3.00
	Yuba	3.01
Colorado	Delta	0.34
	El Paso	0.18
	Elbert	0.21
	Kiowa	0.22
	Lincoln	0.15
	Mesa	0.12
	Moffat	0.08
	Montrose	0.17
	Pueblo	0.16
	San Miguel	0.30
Delaware	Kent	1.27
	New Castle	1.70
	Sussex	1.95
Florida	Alachua	2.37
	Baker	1.95
	Bay	4.19
	Bradford	2.66
	Brevard	0.38
	Broward	0.32
	Calhoun	3.38
	Citrus	0.63
	Clay	2.96
	Collier	0.39
	Columbia	1.48
	DeSoto	1.20
	Dixie	0.55
	Duval	1.99
	Franklin	3.69
	Gadsden	1.49
	Gilchrist	1.12
	Glades	0.78
	Gulf	4.76
	Hamilton	0.78
	Hardee	0.61
	Hernando	2.36
	Highlands	1.40
	Hillsborough	0.36
	Holmes	0.79
	Jackson	2.05
	Jefferson	0.62
	Lake	1.98
	Leon	3.29
	Levy	0.34
	Liberty	1.81
	Madison	0.55
	Manatee	0.53

STATE	COUNTY NAME	# SPECIES/100km ²
	Marion	1.15
	Martin	1.19
	Miami-Dade	0.77
	Monroe	0.45
	Nassau	0.63
	Okaloosa	3.80
	Okeechobee	0.44
	Orange	0.76
	Osceola	0.26
	Palm Beach	0.36
	Pasco	1.03
	Pinellas	1.26
	Polk	0.77
	Putnam	1.87
	9S1 9Srasot643.78 0.9	



STATE	COUNTY NAME	# SPECIES/100km ²
	Elbert	1.02
	Emanuel	1.12
	Evans	10.22
	Floyd	0.77
	Gilmer	0.90
	Glynn	1.99
	Gordon	1.09
	Greene	3.84
	Gwinnett	2.60
	Hancock	1.62
	Harris	0.81
	Heard	2.51
	Henry	2.43
	Houston	2.10
	Irwin	2.13
	Jackson	3.46
	Jenkins	4.39
	Lanier	1.95
	Lee	2.23
	Liberty	2.96
	Long	4.68
	Lowndes	1.50
	Marion	2.11
	McIntosh	2.57
	Meriwether	1.53
	Miller	1.33
	Muscogee	1.72
	Newton	2.83
	Oglethorpe	1.77
	Pierce	1.13
	Pike	1.77
	Putnam	2.18
	Richmond	1.14
	Rockdale	8.60
	Schley	2.26
	Screven	3.58
	Seminole	4.44
	Sumter	3.17
	Talbot	2.02
	Taylor	1.99
	Terrell	2.31
	Towns	2.08
	Walton	3.52
	Ware	0.85
	Warren	1.37
	Wayne	0.61
	Wheeler	2.55
	Whitfield	1.34
	Wilcox	1.02
	Wilkes	0.81
	Worth	2.01

STATE	COUNTY NAME	# SPECIES/100km ²
Hawaii	Hawaii	0.19
	Honolulu	0.63
	Kauai	5.69
	Maui	3.45
Idaho	Ada	0.37
	Clark	0.22
	Custer	0.08
	Elmore	0.12
	Latah	0.36
	Lemhi	0.08
	Owyhee	0.05
	Twin Falls	0.20
	Illinois	Alexander
Cass		2.03
Cook		0.40
DuPage		1.16
Grundy		0.90
Hancock		0.47
Henry		0.47
Iroquois		0.70
Johnson		1.10
Kane		0.73
Kankakee		1.14
Lake		0.84
Mason		0.68
McHenry		0.64
Morgan		0.68
Union		0.91
Will	0.91	
Indiana	Daviess	1.78
	Hamilton	0.94
	Harrison	0.81
	Henry	0.96
	Jasper	0.70
	Lake	1.57
	Owen	1.04
	Porter	1.77
	Posey	0.93
	Pulaski	0.91
	Ripley	0.88
	Spencer	0.95
	Warrick	0.99
	White	1.57
Iowa	Decatur	0.72
	Jackson	0.60
	Johnson	0.63
	Jones	0.66

STATE	COUNTY NAME	# SPECIES/100km ²
Kansas	Cherokee	0.67
	Crawford	0.64
	Douglas	0.80
	Harper	0.49
	Harvey	0.72
	Reno	0.30
Kentucky	Ballard	1.51
	Carlisle	1.99
	Christian	0.55
	Edmonson	1.28
	Hart	0.94
	Hickman	1.47
	Marshall	1.19
	McCracken	1.50
	Louisiana	Evangeline
Franklin		0.61
Grant		0.58
Morehouse		0.48
Ouachita		0.61
St. Martin		0.48
St. Tammany		1.82
Tensas		0.59
Maine	Aroostook	0.11
	Franklin	0.22
	Hancock	0.24
	Knox	1.17
	Oxford	0.18
	Penobscot	0.11
	Piscataquis	0.09
	Somerset	0.09
	Waldo	0.53
	Washington	0.14
	York	0.38
Maryland	Caroline	4.65
	Charles	0.85
	Dorchester	1.45
	Kent	1.59
	Queen Anne's	3.27
	Somerset	1.43
	Talbot	1.62
	Washington	0.81
	Wicomico	3.02
Michigan	Allegan	0.89
	Alpena	0.66
	Barry	0.68
	Bay	0.85
	Branch	0.74

STATE	COUNTY NAME	# SPECIES/100km ²
	Cass	0.75
	Charlevoix	2.07
	Cheboygan	0.97
	Chippewa	0.79
	Clinton	1.33
	Crawford	0.68



STATE	COUNTY NAME	# SPECIES/100km ²
	Newton	0.67
	Perry	0.59
	Rankin	0.49
	Sharkey	0.86
	Stone	0.85
	Sunflower	0.55
	Tallahatchie	0.59
	Washington	0.51
Missouri	Barton	0.65
	Benton	0.51
	Bollinger	0.63
	Butler	0.55
	Callaway	0.46
	Carter	0.75
	Cedar	0.79
	Henry	0.53
	Holt	0.85
	Howell	1.66
	Jasper	0.62
	Morgan	0.62
	Newton	0.61
	Oregon	0.95
	Pettis	0.56
	Polk	0.59
	Reynolds	0.47
	Ripley	1.18
	Scott	1.80
	Shannon	0.76
	St. Clair	0.55
	Stoddard	0.46
	Texas	0.66
	Vernon	0.47
	Webster	0.65
	Wright	0.56
Montana	Lake	0.23
	Missoula	0.15
Nebraska	Brown	0.31
	Cherry	0.06
	Custer	0.15
	Garfield	1.35
	Holt	0.16
	Loup	0.68
	Rock	0.38
	Wheeler	0.68
Nevada	Carson City	2.39
	Churchill	0.08
	Clark	0.10
	Douglas	0.52

STATE	COUNTY NAME	# SPECIES/100km ²
	Elko	0.05
	Esmeralda	0.21
	Eureka	0.09
	Humboldt	0.12
	Lander	0.07
	Lincoln	0.04
	Mineral	0.10
	Nye	0.21
	Pershing	0.06
	Washoe	0.18
	White Pine	0.13
New Jersey	Atlantic	5.74
	Burlington	2.79
	Camden	5.10
	Cape May	8.41
	Cumberland	2.25
	Gloucester	2.30
	Monmouth	0.84
	Ocean	1.85
	Salem	2.20
New Mexico	Hidalgo	0.11
	Luna	0.13
New York	Erie	0.37
	Franklin	0.23
	Genesee	1.59
	Lewis	0.30
	Niagara	0.76
	Oneida	0.31
	Orleans	0.99
	Seneca	1.03
	Suffolk	1.60
	Yates	1.02
North Carolina	Alexander	1.50
	Alleghany	4.91
	Anson	1.43
	Ashe	1.76
	Avery	6.24
	Beaufort	0.49
	Bladen	1.75
	Brunswick	5.08
	Buncombe	0.59
	Burke	1.49
	Caldwell	0.82
	Carteret	4.75
	Caswell	0.88
	Chatham	0.55
	Clay	3.85
	Cleveland	0.84

STATE	COUNTY NAME	# SPECIES/100km ²
	Columbus	1.22
	Craven	1.12
	Cumberland	4.03
	Dare	1.06
	Franklin	1.57
	Gates	1.11
	Graham	3.84
	Granville	1.40
	Halifax	0.53
	Haywood	2.07
	Henderson	2.08
	Hoke	6.03
	Jackson	1.58
	Macon	1.51
	Madison	0.85
	McDowell	0.86
	Mecklenburg	0.69
	Mitchell	3.42
	New Hanover	11.61
	Northampton	0.66
	Onslow	5.05
	Pender	0.92
	Person	0.92
	Richmond	2.44
	Robeson	1.23
	Rowan	1.48
	Rutherford	1.36
	Sampson	1.64
	Scotland	6.18
	Swain	2.11
	Transylvania	2.03
	Union	0.61
	Wake	0.91
	Warren	0.85
	Watauga	2.46
	Wayne	0.70
	Yadkin	1.16
	Yancey	3.75
Ohio	Clark	0.97
	Franklin	0.69
	Holmes	0.89
	Jackson	0.92
	Lucas	2.29
	Ottawa	1.57
	Pike	0.89
	Portage	0.79
	Sandusky	0.93
	Wayne	0.69
Oklahoma	Atoka	0.79
	Comanche	0.36



STATE	COUNTY NAME	# SPECIES/100km ²
	Barnwell	6.92
	Beaufort	1.34
	Berkeley	3.18
	Calhoun	0.99
	Charleston	3.94
	Chesterfield	0.48
	Clarendon	3.35
	Colleton	1.48
	Dorchester	0.67
	Edgefield	2.38
	Fairfield	1.09
	Florence	1.44
	Georgetown	0.93
	Hampton	2.77
	Horry	1.35
	Jasper	1.75
	Kershaw	2.10
	Lancaster	2.79
	Lee	1.91
	Lexington	1.02
	Marlboro	2.32
	Oconee	0.57
	Orangeburg	2.39
	Pickens	1.54
	Richland	3.02
	Saluda	5.01
	Spartanburg	0.47
	Sumter	2.29
	Union	0.76
	Williamsburg	1.24
	York	1.66
Tennessee	Carter	2.14
	Cocke	0.85
	Coffee	3.62
	Cumberland	0.57
	Franklin	0.68
	Johnson	2.53
	Lewis	1.37
	Marion	0.74
	Marshall	1.05
	Monroe	0.58
	Polk	0.88
	Sevier	1.28
	Unicoi	1.93
	Warren	0.87
	Washington	1.18
Texas	Andrews	0.26
	Austin	0.59
	Bastrop	0.43
	Brazos	0.65

STATE	COUNTY NAME	# SPECIES/100km ²
	Burleson	0.56
	Burnet	0.38
	Colorado	0.39
	Fort Bend	0.43
	Freestone	0.43
	Harris	0.22
	Lavaca	0.40
	Leon	0.36
	Liberty	0.66
	Llano	0.41
	Marion	0.89
	Mason	0.42
	Milam	0.38
	Nueces	0.45
	Robertson	0.44
	San Patricio	0.55
	Ward	0.46
	Winkler	0.45
	Wise	0.42
	Wood	0.55
Utah	Beaver	0.15
	Garfield	0.22
	Grand	0.21
	Juab	0.11
	Kane	0.19
	Piute	0.50
	San Juan	0.24
	Sanpete	0.25
	Uintah	0.09
Vermont	Essex	0.57
	Franklin	1.15
	Windham	0.48
	Windsor	0.79
Virginia	Alleghany	0.86
	Amelia	1.05
	Augusta	1.58
	Bath	0.73
	Bland	1.06
	Brunswick	0.68
	Caroline	0.72
	Carroll	1.60
	Charles City	1.93
	Chesapeake	1.14
	Chesterfield	0.88
	Dinwiddie	0.76
	Grayson	3.48
	Greensville	1.35
	Halifax	0.46
	Henrico	3.23



APPENDIX VII. At-Risk US-NVC Associations that are Closely Tied to Isolated Wetland Ecological Systems

	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
North Atlantic Coast			
Chamaecyparis thyoides / Chamaedaphne calyculata Woodland	G3G4	North-Central Interior and Appalachian Acid Peatland	Obligate
Chamaecyparis thyoides / Ilex glabra - Rhododendron viscosum Forest	G3	Atlantic Coastal Plain Northern Basin Peat Swamp, Atlantic Coastal Plain Northern Bog	

Project Region and US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
Vaccinium corymbosum - Gaylussacia baccata - Photinia melanocarpa / Calla palustris Shrubland	G2G3	North-Central Interior Shrub-Graminoid Alkaline Fen, North-Central Interior and Appalachian Acid Peatland	Obligate
Vaccinium formosum - Vaccinium fuscatum / Sphagnum cuspidatum Shrubland	G3?	Atlantic Coastal Plain Southern Depression Pondshore	Obligate
Woodwardia virginica / Sphagnum cuspidatum Herbaceous Vegetation	G2?	Atlantic Coastal Plain Southern Depression Pondshore, Central Florida Herbaceous Pondshore	Obligate
Zizania (aquatica, palustris) Herbaceous Vegetation	G3G4	North-Central Interior Freshwater Marsh	Facultative
South Atlantic and Gulf Coast			
(Pinus palustris, Pinus serotina) / Ctenium aromaticum - Muhlenbergia expansa - Calamovilfa brevifolia Woodland	G2	Atlantic Coastal Plain Sandhill Seep	Obligate
(Quercus laurifolia) / Crataegus opaca - Crataegus viridis Forest	G1	East Gulf Coastal Plain Southern Loblolly-Hardwood Flatwoods, West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Obligate
(Stillingia aquatica) / Panicum tenerum - Dichanthelium erectifolium Herbaceous Vegetation	G2?	Southeastern Coastal Plain Interdunal Wetland	Obligate
Acer rubrum - Nyssa sylvatica - Magnolia virginiana / Viburnum nudum var. nudum / Osmunda cinnamomea - Woodwardia areolata Forest	G3?	Atlantic Coastal Plain Northern Basin Peat Swamp, Atlantic Coastal Plain Northern Basin Swamp and Wet Hardwood Forest	Facultative
Adiantum capillus-veneris - Thelypteris kunthii / Dumortiera hirsuta Herbaceous Vegetation	G3?	Southern Coastal Plain Sinkhole	Obligate
Alnus serrulata - Linderia benzoin / Osmunda regalis var. spectabilis - Carex tetanica Shrubland	G1?	North-Central Appalachian Seepage Fen	Obligate
Alnus serrulata - Linderia benzoin / Scutellaria lateriflora - Thelypteris noveboracensis Shrubland	G2?	Southern Appalachian Seepage Wetland	Facultative
Amphianthus pusillus - Isoetes melanospora - Isoetes tegetiformans Herbaceous Vegetation	G1	Southern Piedmont Granite Flatrock	Obligate
Amphicarpum muehlenbergianum - (Panicum hemitomom) Herbaceous Vegetation	G2G3	Central Florida Herbaceous Pondshore	Obligate
Andropogon (capillipes, glaucopsis) - Rhynchospora fascicularis var. fascicularis - Rhexia mariana Herbaceous Vegetation	G2?	Central Florida Herbaceous Pondshore	Obligate
Aristida palustris - Panicum virgatum - Eriocaulon compressum - Eleocharis equisetoides Herbaceous Vegetation	G2G3	West Gulf Coastal Plain Flatwoods Pond	Obligate
Aristida palustris - Panicum virgatum - Eriocaulon decangulare var. decangulare - Rhynchospora elliotii Herbaceous Vegetation	G2G3	West Gulf Coastal Plain Flatwoods Pond	Obligate
Arundinaria gigantea ssp. tecta Shrubland	G1	Atlantic Coastal Plain Sandhill Seep	Facultative
Carex aquatilis - Dulichium arundinaceum Herbaceous Vegetation	G1?	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Carex atlantica - Solidago patula var. patula - Lilium grayi / Sphagnum bartlettianum Herbaceous Vegetation	G1	North-Central Appalachian Seepage Fen	Facultative
Carex barrattii Herbaceous Vegetation	G1	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate

Project Region and US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
Carex gynandra - Platanthera clavellata - Drosera rotundifolia - Carex ruthii - Carex atlantica / Sphagnum spp. Herbaceous Vegetation	G2	Southern Appalachian Seepage Wetland	Facultative
Carex hyalinolepis Seasonally Flooded Herbaceous Vegetation	G1G3	Atlantic Coastal Plain Southern Depression Pondshore, Southeastern Coastal Plain Interdunal Wetland	Obligate
Carex striata var. striata - Xyris fimbriata - Lachnanthes carolina Herbaceous Vegetation	G2G3	Atlantic Coastal Plain Southern Depression Pondshore	Obligate
Cephalanthus occidentalis - (Leucothoe racemosa) / Carex jorii Shrubland	G1	Southern Piedmont / Ridge and Valley Upland Depression Swamp	Obligate
Cephalanthus occidentalis - (Salix nigra, Quercus lyrata) Karst Depression Shrubland	G1Q	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Cephalanthus occidentalis / Dulichium arundinaceum Shrubland	G1	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Cephalanthus occidentalis / Hibiscus moscheutos ssp. moscheutos Depression Pond Shrubland	G3?	Central Interior Highlands and Appalachian Sinkhole and Depression Pond, East Gulf Coastal Plain Northern Depression Pondshore	Obligate
Cephalanthus occidentalis / Limnobium spongia - Salvinia minima Shrubland	G3?	Floridian Highlands Freshwater Marsh	Facultative
Cephalanthus occidentalis / Polygonum hydropiperoides - Panicum verrucosum Shrubland	G3?	Atlantic Coastal Plain Northern Pondshore	Obligate
Cephalanthus occidentalis / Torreyochloa pallida Shrubland	G1?	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Cladium mariscus ssp. jamaicense - Woodwardia virginica Herbaceous Vegetation	G2?	Southeastern Coastal Plain Interdunal Wetland	Obligate
Clethra alnifolia - Toxicodendron vernix / Aristida stricta - Osmunda cinnamomea - Sarracenia spp. Shrub Herbaceous Vegetation	G2?	Atlantic Coastal Plain Sandhill Seep	Obligate
Crataegus rufula Forest	G2G3	East Gulf Coastal Plain Southern Depression Pondshore	Obligate
Cyrilla racemiflora - Lyonia lucida Shrubland	G3?	Atlantic Coastal Plain Southern Depression Pondshore	Facultative
Diamorpha smallii - Minuartia glabra - Minuartia uniflora - Cyperus granitophilus Herbaceous Vegetation	G3	Southern Piedmont Granite Flatrock	Obligate
Dichanthelium wrightianum - Dichanthelium erectifolium Herbaceous Vegetation	G2G3	Atlantic Coastal Plain Southern Depression Pondshore, East Gulf Coastal Plain Northern Depression Pondshore, East Gulf Coastal Plain Southern Depression Pondshore	Obligate
Diphylleia cymosa - Saxifraga micranthidifolia - Laportea canadensis Herbaceous Vegetation	G3	Southern Appalachian Seepage Wetland	Facultative
Eleocharis (elongata, equisetoides) - Rhynchospora tracyi Semipermanently Flooded Herbaceous Vegetation	G3?	East Gulf Coastal Plain Southern Depression Pondshore	Obligate
Eleocharis elongata - Panicum tenerum - Nymphaea odorata Herbaceous Vegetation	G2?	Southeastern Coastal Plain Interdunal Wetland	Obligate
Eleocharis interstincta - Pontederia cordata - Crinum americanum Herbaceous Vegetation	G2G3	South Florida Depression Pondshore	Obligate
Eleocharis microcarpa - Juncus repens - Rhynchospora corniculata - (Mecardonia acuminata, Proserpinaca spp.) Herbaceous Vegetation	G2G3	East Gulf Coastal Plain Northern Depression Pondshore	Obligate

Project Region and US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
Euthamia leptcephala - Helianthus angustifolius - Boltonia asteroides - Spartina patens			

Project Region and US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
Nelumbo lutea - Pontederia cordata - Schoenoplectus tabernaemontani Herbaceous Vegetation	G2G3	Floridian Highlands Freshwater Marsh	Facultative
Nymphaea odorata - Nuphar lutea ssp. advena - (Nymphoides aquatica, Xyris smalliana) Herbaceous Vegetation	G3?	Atlantic Coastal Plain Southern Depression Pondshore	Facultative
Nymphoides aquatica - Nymphaea odorata - Gratiola brevifolia Herbaceous Vegetation	G3?	West Gulf Coastal Plain Flatwoods Pond	Obligate
Nyssa biflora - Crataegus opaca - (Fraxinus caroliniana) / Rhynchospora mixta Woodland	G2?	West Gulf Coastal Plain Flatwoods Pond	Obligate
Nyssa biflora - Quercus laurifolia / Sphagnum spp. Depression Forest	G3?	West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Obligate
Nyssa biflora / Cephalanthus occidentalis - Leucothoe racemosa Forest	G1	Southern Piedmont / Ridge and Valley Upland Depression Swamp	Obligate
Nyssa biflora / Cephalanthus occidentalis - Lyonia lucida Sagpond Forest	G1G2	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Nyssa biflora / Ilex myrtifolia / Carex glaucescens - Eriocaulon compressum Forest	G2G3	Southern Coastal Plain Nonriverine Basin Swamp	Obligate
Nyssa biflora / Itea virginica - Cephalanthus occidentalis Depression Forest	G3G4	Atlantic Coastal Plain Southern Depression Pondshore, East Gulf Coastal Plain Northern Depression Pondshore	Obligate
Nyssa ogeche / Ilex myrtifolia / Carex turgescens - Carex striata Forest	G2?	Atlantic Coastal Plain Southern Depression Pondshore	Obligate
Orontium aquaticum - Schoenoplectus subterminalis - Eriocaulon aquaticum Herbaceous Vegetation	G1	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Facultative
Osmunda regalis var. spectabilis - Peltandra virginica - Sagittaria lancifolia Herbaceous Vegetation	G2?	Floridian Highlands Freshwater Marsh	Facultative
Panicum hemitomon - (Cladium mariscus ssp. jamaicense, Muhlenbergia filipes) Herbaceous Vegetation	G2G3	Southeastern Coastal Plain Interdunal Wetland	Obligate
Panicum hemitomon - Eleocharis equisetoides - Rhynchospora inundata Herbaceous Vegetation	G3	Atlantic Coastal Plain Southern Depression Pondshore, East Gulf Coastal Plain Northern Depression Pondshore	Obligate
Panicum hemitomon - Eriocaulon compressum - Rhynchospora corniculata Herbaceous Vegetation	G2	West Gulf Coastal Plain Flatwoods Pond	Obligate
Panicum hemitomon - Pluchea (camphorata, rosea) - Ludwigia spp. Herbaceous Vegetation	G3	Central Florida Herbaceous Pondshore, East Gulf Coastal Plain Northern Depression Pondshore	Obligate
Panicum hemitomon - Pontederia cordata Herbaceous Vegetation	G3G4	Central Florida Herbaceous Pondshore, Floridian Highlands Freshwater Marsh	Facultative
Panicum hemitomon Tropical Herbaceous Vegetation	G3?	South Florida Depression Pondshore	Facultative
Panicum virgatum - Andropogon (capillipes, glaucopsis) - Aristida palustris Herbaceous Vegetation	G2?	Atlantic Coastal Plain Southern Depression Pondshore, East Gulf Coastal Plain Southern Depression Pondshore	Obligate
Paspalum vaginatum Herbaceous Vegetation	G3G4	South Texas Dune and Coastal Grassland, Southeastern Coastal Plain Interdunal Wetland	Obligate
Pinus glabra - Quercus laurifolia / Crataegus opaca / Sabal minor Forest	G1G2	East Gulf Coastal Plain Southern Loblolly-Hardwood Flatwoods	Obligate
Pinus palustris - Pinus serotina / Ilex glabra - Lyonia lucida / Ctenium aromaticum Woodland	G3	Atlantic Coastal Plain Sandhill Seep	Facultative

Project Region and US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
Pinus serotina - Pinus eliottii var. eliottii / Cliftonia monophylla - Cyrilla racemiflora Woodland	G3?Q	Southern Coastal Plain Nonriverine Basin Swamp	Obligate
Pinus serotina / Cyrilla racemiflora - Lyonia lucida - Vaccinium fuscatum Woodland	G2G3	Atlantic Coastal Plain Southern Depression Pondshore	Obligate
Pinus serotina / Lyonia lucida - Ilex glabra - (Cyrilla racemiflora) Shrubland	G3	Southern Coastal Plain Nonriverine Basin Swamp	Facultative
Pinus taeda / Morella cerifera / Osmunda regalis var. spectabilis Forest	G3	Atlantic Coastal Plain Northern Basin Swamp and Wet Hardwood Forest	Facultative
Quercus (pagoda, phellos, shumardii) - Celtis laevigata / Cornus foemina / Podophyllum peltatum - Hymenocallis occidentalis Flatwoods Forest	G2?	Southern Piedmont / Ridge and Valley Upland Depression Swamp	Obligate
Quercus alba - Nyssa sylvatica Sandstone Ridgetop Depression Forest	G2Q	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Quercus laurifolia - Liquidambar styraciflua - Nyssa biflora - Acer rubrum / Sabal minor Forest	G3?	West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Facultative
Quercus lyrata - Quercus phellos - Ulmus americana / Rhynchospora spp. Forest	G2G3	West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Obligate
Quercus michauxii - Quercus (nigra, pagoda) - Liquidambar styraciflua - Pinus taeda Forest	G2G3	East Gulf Coastal Plain Southern Loblolly-Hardwood Flatwoods	Obligate
Quercus palustris - Quercus bicolor / Carex spp. Forest	G1G3	Southern Piedmont / Ridge and Valley Upland Depression Swamp	Obligate
Quercus palustris / Panicum rigidulum var. rigidulum - Panicum verrucosum - Eleocharis acicularis Herbaceous Vegetation	G1	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Quercus phellos - Liquidambar styraciflua / Chasmanthium laxum Cumberland Plateau Forest	G3	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Quercus phellos - Nyssa biflora / Panicum hemitomom - Carex spp. - Woodwardia virginica Forest [Provisional]	G2G3	Atlantic Coastal Plain Southern Depression Pondshore	Obligate
Quercus phellos - Quercus (michauxii, shumardii) - Fraxinus americana / (Quercus oglethorpensis) / Zephyranthes atamasca Gabbro Upland Depression Forest	G2?	Southern Piedmont / Ridge and Valley Upland Depression Swamp	Obligate
Quercus phellos - Quercus similis / Crataegus marshallii - Crataegus spathulata / Chasmanthium laxum Forest	G3?	West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Obligate
Quercus phellos / Carex (albolutescens, intumescens, jorii) - Chasmanthium laxum / Sphagnum lescurii Forest	G2G3	Southern Piedmont / Ridge and Valley Upland Depression Swamp	Obligate
Quercus phellos / Carex striata var. brevis Forest	G2?	Atlantic Coastal Plain Northern Pondshore	Obligate
Quercus phellos / Chasmanthium laxum - Carex (flaccosperma, intumescens) - Hymenocallis liriosme Flatwoods Forest	G3G4	West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Obligate
Rhynchospora (careyana, inundata) Seasonally Flooded Herbaceous Vegetation	G3?	Atlantic Coastal Plain Southern Depression Pondshore, Central Florida Herbaceous Pondshore	Obligate
Rhynchospora alba Saturated Herbaceous Vegetation	G1?	Atlantic Coastal Plain Southern Depression Pondshore	Obligate
Rhynchospora filifolia - Juncus abortivus Herbaceous Vegetation	G2?	Atlantic Coastal Plain Southern Depression Pondshore, East Gulf Coastal Plain Southern Depression Pondshore	Obligate
Saccharum baldwinii - Carex glaucescens - Rhynchospora corniculata Herbaceous Vegetation	G2G3	Atlantic Coastal Plain Southern Depression Pondshore	Obligate

Project Region and US-NVC Association Name

**NatureServe
Global Rank**

Isolated Wetland Systems

**Oblig./Fac.
Status**

US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
despitosa - (Sporobolus heterolepis, Schizachyrium scoparium) - Carex crawei - Patula Herbaceous Vegetation	G2	Great Lakes Alvar	Obligate
- Hordeum jubatum - Puccinellia nuttalliana - Suaeda calceoliformis Herbaceous Vegetation	G2G3	Western Great Plains Saline Depression Wetland	Facultative
huja occidentalis - Juniperus communis / Iris lacustris - Carex eburnea	G1G2	Great Lakes Alvar	Obligate
s - Quercus bicolor - Acer rubrum Flatwoods Forest	G2G3	North-Central Interior Wet Flatwoods	Obligate
s - Quercus bicolor - Nyssa sylvatica - Acer rubrum Sand Flatwoods Forest	G2?	North-Central Interior Wet Flatwoods	Obligate
capitellata - Rhexia virginica - Rhynchospora scirpoides - Schoenoplectus hallii Herbaceous Vegetation	G2?	Atlantic Coastal Plain Northern Pondshore	Obligate
Herbaceous Vegetation	G2G3	Inter-Mountain Basins Greasewood Flat, Inter-Mountain Basins Interdunal Swale Wetland, Western Great Plains Saline Depression Wetland	Facultative
fluviatilis - Schoenoplectus spp. Herbaceous Vegetation	G3G4	Eastern Great Plains Wet Meadow, Prairie, and Marsh, North-Central Interior Freshwater Marsh	Facultative
maritimus - Atriplex patula - Eleocharis parvula Herbaceous Vegetation	G1	Eastern Great Plains Wet Meadow, Prairie, and Marsh	Facultative
a - Calamagrostis stricta - Carex spp. Herbaceous Vegetation	G3?	Eastern Great Plains Wet Meadow, Prairie, and Marsh, North-Central Interior Wet Meadow-Shrub Swamp, Western Great Plains Open Freshwater Depression Wetland	Facultative
Pj0m - a3cde6.7.1 (At10.2 Vegetation) - 27.6G27.8a - Carex spp. - Calamagrostis canadensis - Lythrum (Spartina) tinatum alatum - (Oxycoccus) spp. - Camn	G2G3	Open Freshwater Depress - C	

Project Region and US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
Pontederia cordata - Sagittaria graminea - Sagittaria latifolia Semipermanently Flooded Herbaceous Vegetation	G1G2Q	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Quercus bicolor - Fraxinus pennsylvanica / Carex spp. Forest	G1G2	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Quercus lyrata - Quercus (palustris, phellos) - Liquidambar styraciflua - (Populus heterophylla) Forest	G2G3	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Quercus lyrata / Betula nigra / Pleopeltis polypodioides ssp. michauxiana Forest	G1	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Quercus lyrata Pond Forest	G1G3	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Quercus palustris - (Quercus bicolor) / Carex crinita / Sphagnum spp. Forest	G3?	Central Interior Highlands and Appalachian Sinkhole and Depression Pond	Obligate
Quercus palustris - (Quercus stellata) - Quercus pagoda / Isoetes spp. Forest	G2G3	North-Central Interior Wet Flatwoods, South-Central Interior / Upper Coastal Plain Wet Flatwoods	Facultative
Quercus palustris - Quercus bicolor - (Liquidambar styraciflua) Mixed Hardwood Forest	G3G4	North-Central Interior Wet Flatwoods	Facultative

Project Region and US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
Spartina pectinata - Carex spp. - Calamagrostis canadensis Sand Herbaceous Vegetation	G3?	Eastern Great Plains Wet Meadow, Prairie, and Marsh, North-Central Interior Wet Meadow-Shrub Swamp	Facultative
Typha latifolia - Equisetum hyemale - Carex (hystericina, pellita) Seep Herbaceous Vegetation	G3	Western Great Plains Open Freshwater Depression Wetland	Facultative
Vaccinium corymbosum - Gaylussacia baccata - Photinia melanocarpa / Calla palustris Shrubland	G2G3	North-Central Interior Shrub-Graminoid Alkaline Fen, North-Central Interior and Appalachian Acid Peatland	Obligate
Zizania (aquatica, palustris) Herbaceous Vegetation	G3G4	North-Central Interior Freshwater Marsh	Facultative
Great Plains and Tallgrass Prairie Region			
Calamagrostis canadensis - Juncus spp. - Carex spp. Sandhills Herbaceous Vegetation	G3G4	Western Great Plains Open Freshwater Depression Wetland	Facultative
Calamagrostis stricta - Carex sartwellii - Carex praegracilis - Plantago eriopoda Saline Herbaceous Vegetation	G2G3	Eastern Great Plains Wet Meadow, Prairie, and Marsh, Western Great Plains Open Freshwater Depression Wetland, Western Great Plains Saline Depression Wetland	Facultative
Carex interior - Eleocharis elliptica - Thelypteris palustris Herbaceous Vegetation	G1G2	Western Great Plains Open Freshwater Depression Wetland	Facultative
Carex lasiocarpa - Carex oligosperma - (Lysimachia terrestris) / Sphagnum spp. / Spiraea tomentosa Herbaceous Vegetation	G3G4	North-Central Interior and Appalachian Acid Peatland	Facultative
Carex lasiocarpa - Carex oligosperma / Sphagnum spp. Herbaceous Vegetation	G3G4	Boreal-Laurentian Conifer Acid Swamp, Boreal-Laurentian-Acadian Acidic Basin Fen, Great Plains Prairie Pothole, North-Central Interior Shrub-Graminoid Alkaline Fen	Facultative
Carex prairea - Schoenoplectus pungens - Rhynchospora capillacea Herbaceous Vegetation	G2	Western Great Plains Open Freshwater Depression Wetland	Facultative
Carex spp. - Triglochin maritima - Eleocharis quinqueflora Marl Fen Herbaceous Vegetation	G1?	Western Great Plains Open Freshwater Depression Wetland	Facultative
Cephalanthus occidentalis / Hibiscus moscheutos ssp. moscheutos Depression Pond Shrubland	G3?	Central Interior Highlands and Appalachian Sinkhole and Depression Pond, East Gulf Coastal Plain Northern Depression Pondshore	Obligate
Chamaedaphne calyculata / Carex oligosperma - Eriophorum virginicum Dwarf-shrubland	G3G4	North-Central Interior and Appalachian Acid Peatland	Facultative
Cornus amomum - Salix spp. - Toxicodendron vernix - Rhamnus lanceolata Fen Shrubland	G2G3	North-Central Interior Shrub-Graminoid Alkaline Fen	Obligate
Cornus sericea - Salix (bebbiana, discolor, petiolaris) / Calamagrostis stricta Shrubland	G3G4	Eastern Great Plains Wet Meadow, Prairie, and Marsh, North-Central Interior Wet Meadow-Shrub Swamp, Western Great Plains Open Freshwater Depression Wetland	Facultative
Dasiphora fruticosa ssp. floribunda / Carex sterilis - Andropogon gerardii - Arnoglossum plantagineum Shrub Herbaceous Vegetation	G3G4	North-Central Interior Shrub-Graminoid Alkaline Fen	Obligate
Dasiphora fruticosa ssp. floribunda / Cladium mariscoides - Juncus balticus - (Rhynchospora capillacea) Herbaceous Vegetation	G3?	Great Lakes Dune and Swale, Northern Great Lakes Interdunal Wetland	Facultative

Project Region and US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
Spartina pectinata - Carex spp. - Calamagrostis canadensis Lakeplain Herbaceous Vegetation	G2G3	Great Lakes Wet-Mesic Lakeplain Prairie	Facultative
Spartina pectinata - Carex spp. - Calamagrostis canadensis Sand Herbaceous Vegetation	G3?	Eastern Great Plains Wet Meadow, Prairie, and Marsh, North-Central Interior Wet Meadow-Shrub Swamp	Facultative
Spartina pectinata - Carex spp. Herbaceous Vegetation	G3?	Western Great Plains Open Freshwater Depression Wetland	Facultative
Spartina pectinata - Eleocharis spp. - Carex spp. Herbaceous Vegetation	G2G4	Western Great Plains Closed Depression Wetland, Western Great Plains Open Freshwater Depression Wetland	Facultative
Stuckenia pectinata - Myriophyllum (sibiricum, spicatum) Herbaceous Vegetation	G3G4	Western Great Plains Open Freshwater Depression Wetland	Facultative
Stuckenia pectinata - Ruppia maritima Herbaceous Vegetation	G2?	Western Great Plains Saline Depression Wetland	Facultative
Stuckenia pectinata - Zannichellia palustris Herbaceous Vegetation	G3G4	Western Great Plains Open Freshwater Depression Wetland, Western Great Plains Saline Depression Wetland	Facultative
Typha (angustifolia, domingensis, latifolia) - Schoenoplectus americanus Herbaceous Vegetation	G3G4	Eastern Great Plains Wet Meadow, Prairie, and Marsh, Western Great Plains Open Freshwater Depression Wetland	Facultative
Typha latifolia - Equisetum hyemale - Carex (hystericina, pellita) Seep Herbaceous Vegetation	G3	Western Great Plains Open Freshwater Depression Wetland	Facultative
Zizania (aquatica, palustris) Herbaceous Vegetation	G3G4	North-Central Interior Freshwater Marsh	Facultative
Intermountain and Rocky Mountain			
Aquilegia micrantha - Mimulus eastwoodiae Herbaceous Vegetation	G2G3	Colorado Plateau Hanging Garden	Obligate
Betula occidentalis - Dasiphora fruticosa ssp. floribunda Shrubland	G2Q	Western Great Plains Open Freshwater Depression Wetland	Facultative
Camassia quamash Wet Prairie Herbaceous Vegetation	G3	Willamette Valley Wet Prairie	Obligate
Carex aperta Herbaceous Vegetation	G1?	Willamette Valley Wet Prairie	Facultative
Distichlis spicata - Hordeum jubatum - Puccinellia nuttalliana - Suaeda calceoliformis Herbaceous Vegetation	G2G3	Western Great Plains Saline Depression Wetland	Facultative
Dulichium arundinaceum Seasonally Flooded Herbaceous Vegetation	G3	Boreal Depressional Bog	Facultative
Eleocharis palustris - Distichlis spicata Herbaceous Vegetation	G2G4	Inter-Mountain Basins Alkaline Closed Depression	Facultative
Eleocharis palustris - Juncus balticus Herbaceous Vegetation	G2G4	Inter-Mountain Basins Alkaline Closed Depression	Facultative
Juncus balticus - Carex rossii Herbaceous Vegetation	G2G4	Inter-Mountain Basins Interdunal Swale Wetland	Facultative
Lemna spp. Permanently Flooded Herbaceous Vegetation	G3?	Northern Columbia Plateau Basalt Pothole Ponds	Facultative
Leymus cinereus - Distichlis spicata Herbaceous Vegetation	G3	Inter-Mountain Basins Greasewood Flat, Inter-Mountain Basins Playa	Obligate
Leymus cinereus Bottomland Herbaceous Vegetation	G1	Inter-Mountain Basins Greasewood Flat, Inter-Mountain Basins Playa	Obligate
Panicum virgatum - (Pascopyrum smithii) Herbaceous Vegetation	G2Q	Western Great Plains Open Freshwater Depression Wetland	Facultative
Pascopyrum smithii - Eleocharis spp. Herbaceous Vegetation	G1	Western Great Plains Closed Depression Wetland	Obligate

Project Region and US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
Pluchea sericea Seasonally Flooded Shrubland [Placeholder]	G3?	Inter-Mountain Basins Playa	Facultative
Populus fremontii / Baccharis salicifolia Woodland	G2	North American Warm Desert Interdunal Swale Wetland	Facultative
Potamogeton richardsonii - Myriophyllum spicatum Herbaceous Vegetation	G2Q	Western Great Plains Open Freshwater Depression Wetland	Obligate
Puccinellia nuttalliana Herbaceous Vegetation	G3?	Inter-Mountain Basins Greasewood Flat, Western Great Plains Saline Depression Wetland	Obligate
Salicornia rubra Herbaceous Vegetation	G2G3	Inter-Mountain Basins Greasewood Flat, Inter-Mountain Basins Interdunal Swale Wetland, Western Great Plains Saline Depression Wetland	Facultative
Sarcobatus vermiculatus / Juncus balticus Sparse Vegetation	G3?	Inter-Mountain Basins Greasewood Flat	Obligate
Sarcobatus vermiculatus / Leymus cinereus Shrubland	G3	Inter-Mountain Basins Greasewood Flat, Inter-Mountain Basins Playa, Western Great Plains Closed Depression Wetland	Facultative
Sarcobatus vermiculatus / Sporobolus airoides Sparse Vegetation	G3?	Inter-Mountain Basins Greasewood Flat, Inter-Mountain Basins Playa	Facultative
Schoenoplectus americanus Western Herbaceous Vegetation	G3Q	Inter-Mountain Basins Interdunal Swale Wetland, Northern Columbia Plateau Basalt Pothole Ponds	Facultative
Schoenoplectus pungens Herbaceous Vegetation	G3G4	Inter-Mountain Basins Interdunal Swale Wetland, Western Great Plains Saline Depression Wetland	Facultative
Spartina pectinata - Calamagrostis stricta - Carex spp. Herbaceous Vegetation	G3?	Eastern Great Plains Wet Meadow, Prairie, and Marsh, North-Central Interior Wet Meadow-Shrub Swamp, Western Great Plains Open Freshwater Depression Wetland	Facultative
Spartina pectinata - Carex spp. Herbaceous Vegetation	G3?	Western Great Plains Open Freshwater Depression Wetland	Facultative
Spartina pectinata - Schoenoplectus pungens Herbaceous Vegetation	G3?	Western Great Plains Open Freshwater Depression Wetland, Western Great Plains Saline Depression Wetland	Obligate
Stuckenia pectinata - Myriophyllum (sibiricum, spicatum) Herbaceous Vegetation	G3G4	Western Great Plains Open Freshwater Depression Wetland	Facultative
Stuckenia pectinata - Ruppia maritima Herbaceous Vegetation	G2?	Western Great Plains Saline Depression Wetland	Facultative
Stuckenia pectinata - Zannichellia palustris Herbaceous Vegetation	G3G4	Western Great Plains Open Freshwater Depression Wetland, Western Great Plains Saline Depression Wetland	Facultative
Southwest			
(Quercus laurifolia) / Crataegus opaca - Crataegus viridis Forest	G1	East Gulf Coastal Plain Southern Loblolly-Hardwood Flatwoods, West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Obligate
Aristida palustris - Panicum virgatum - Eriocaulon compressum - Eleocharis equisetoides Herbaceous Vegetation	G2G3	West Gulf Coastal Plain Flatwoods Pond	Obligate
Aristida palustris - Panicum virgatum - Eriocaulon decangulare var. decangulare - Rhynchospora elliottii Herbaceous Vegetation	G2G3	West Gulf Coastal Plain Flatwoods Pond	Obligate

Project Region and US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
Baccharis salicifolia - Baccharis neglecta / Eustoma exaltatum Shrubland	G2?	North American Warm Desert Interdunal Swale Wetland	Obligate
Distichlis spicata - (Hordeum jubatum, Poa arida, Sporobolus airoides) Herbaceous Vegetation	G3	Western Great Plains Saline Depression Wetland	Obligate
Eleocharis palustris - Carex praeegracilis - Berula erecta Herbaceous Vegetation	G2	North American Warm Desert Interdunal Swale Wetland	Facultative
Eleocharis quadrangulata - Sagittaria spp. Herbaceous Vegetation	G3?	Central and Upper Texas Coast Dune and Coastal Grassland, Texas-Louisiana Coastal Prairie Pondshore	Obligate
Fraxinus caroliniana Seasonally Flooded Forest	G2G3	West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Obligate
Fuirena scirpoidea - Fuirena longa - Rhynchospora microcarpa - Rhynchospora divergens Herbaceous Vegetation	G2	Central and Upper Texas Coast Dune and Coastal Grassland, Southeastern Coastal Plain Interdunal Wetland	Obligate
Nymphoides aquatica - Nymphaea odorata - Gratiola brevifolia Herbaceous Vegetation	G3?	West Gulf Coastal Plain Flatwoods Pond	Obligate
Nyssa biflora / Panicum hemitomom - Woodwardia virginica Woodland	G3?	West Gulf Coastal Plain Flatwoods Pond	Obligate
Panicum hemitomom - Eriocaulon compressum - Rhynchospora corniculata Herbaceous Vegetation	G2	West Gulf Coastal Plain Flatwoods Pond	Obligate
Paspalum vaginatum Herbaceous Vegetation	G3G4	South Texas Dune and Coastal Grassland, Southeastern Coastal Plain Interdunal Wetland	Obligate
Pleuraphis mutica - Panicum obtusum Herbaceous Vegetation	G3	Chihuahuan-Sonoran Desert Bottomland and Swale Grassland, Western Great Plains Closed Depression Wetland	Obligate
Populus fremontii / Baccharis salicifolia Woodland	G2	North American Warm Desert Interdunal Swale Wetland	Facultative
Quercus laurifolia - Liquidambar styraciflua - Nyssa biflora - Acer rubrum / Sabal minor Forest	G3?	West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Facultative
Quercus laurifolia - Quercus phellos - Quercus nigra / Viburnum dentatum - (Sebastiania fruticosa) / Carex glaucescens Upper West Gulf Flatwoods Forest	G2G3	West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Obligate
Quercus phellos - Quercus similis / Crataegus marshallii - Crataegus spathulata / Chasmanthium laxum Forest	G3?	West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Obligate
Quercus phellos / Chasmanthium laxum - Carex (flaccosperma, intumescens) - Hymenocallis lirioides Flatwoods Forest	G3G4	West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Obligate
Quercus phellos / Chasmanthium laxum Forest	G3?	West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods	Obligate
Quercus stellata - Pinus taeda Flatwoods Depression Forest	G2G3	West Gulf Coastal Plain Pine-Hardwood Flatwoods	Obligate
Salix exigua / Baccharis salicifolia - Baccharis neglecta / Schoenoplectus spp. Woodland	G2?	North American Warm Desert Interdunal Swale Wetland	Obligate
Sarcobatus vermiculatus / Elymus elymoides - Pascopyrum smithii Shrubland	G2?	Inter-Mountain Basins Greasewood Flat, Inter-Mountain Basins Playa	Facultative
Schoenoplectus americanus - Flaveria chlorifolia - (Helianthus paradoxus) Herbaceous Vegetation	G1	North American Warm Desert Interdunal Swale Wetland	Facultative

Project Region and US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
--	-------------------------	--------------------------	--------------------

Schoenoplectus pungens Herbaceous Vegetation	G3G4	Inter-Mountain Basins Interdunal Swale Wetland, Western Great Plains Saline Depression Wetland	Facultative
Sedum nuttallianum - Selaginella peruviana Granitic Outcrop Sparse Vegetation	G2	Edwards Plateau Granitic Forest, Woodland and Glade	Facultative
Sesuvium verrucosum Sparse Vegetation	G3?	North American Warm Desert Playa	Obligate
Spartina patens - Fimbristylis (caroliniana, castanea) - (Panicum virgatum) Herbaceous Vegetation	G2G3	South Texas Dune and Coastal Grassland, Southeastern Coastal Plain Interdunal Wetland	Obligate
Typha domingensis Seasonally Flooded Gulf Coastal Plain Herbaceous Vegetation	G3?	Southeastern Coastal Plain Interdunal Wetland	Obligate
Washingtonia filifera Woodland	G3?	Sonoran Fan Palm Oasis	Obligate

Pacific Coast

Camassia quamash Wet Prairie Herbaceous Vegetation	G3	Willamette Valley Wet Prairie	Obligate
Carex aperta Herbaceous Vegetation	G1?	Willamette Valley Wet Prairie	Facultative
Carex densa - Deschampsia caespitosa Herbaceous Vegetation [Provisional]	G2	Willamette Valley Wet Prairie	Obligate

Carex densa -veWforniaate

Typha domingee

Carex aperta147tatierbaceous VBwarn Cern Great n CBogespit4Valley Wet Prairie

Carex densa- 08(uni3.0alnsa - Eleocharis palustaespp70bace[Provisional])-1138 (G2)-522(Willamette Valley Wet Prairie)-1208 yng. 06eustltanea- Grinde2.7num - Eleocharis palustaespp267 1e[Pr. 5] on V.3(3.

Carex aperta H10 herbaceous Vegetat074(G3)-522(Willamette Valley Wet Prairie)-12K3?G gain /TDhag05 spp. Shrubshingt1057 [ProvisionBwarn Cern Great n CBogespit4Valley Wet Prairie

Carex aperta12arse VegetationG3?nnab -15.0G2)30 an en Wet Prairie dwnause D(Spichnag deate)IT /T/Censigs tt Pros99herbaceous Vion) 2357(G3G4) 40 Fawomia das Pion

Carex aperta Herbaceous Pr5Bwarn Cern G3G4 CBogespitSwale Wetland,

Project Region and US-NVC Association Name	NatureServe Global Rank	Isolated Wetland Systems	Oblig./Fac. Status
Rosa nutkana / Deschampsia caespitosa Shrubland [Provisional]	G2	Willamette Valley Wet Prairie	Obligate
Rosa nutkana / Oenanthe sarmentosa Shrubland [Provisional]	G1	Willamette Valley Wet Prairie	Obligate
Sarcobatus vermiculatus / Leymus cinereus Shrubland	G3	Inter-Mountain Basins Greasewood Flat, Inter-Mountain Basins Playa, Western Great Plains Closed Depression Wetland	Facultative
Sarcobatus vermiculatus / Sporobolus airoides Sparse Vegetation	G3?	Inter-Mountain Basins Greasewood Flat, Inter-Mountain Basins Playa	Facultative
Schoenoplectus americanus Western Herbaceous Vegetation	G3Q	Inter-Mountain Basins Interdunal Swale Wetland, Northern Columbia Plateau Basalt Pothole Ponds	Facultative
Spiraea douglasii / Sphagnum spp. Shrubland	G3	Boreal Depressional Bog	Facultative
Tsuga heterophylla - (Thuja plicata) / Ledum groenlandicum / Sphagnum spp. Forest	G3	Boreal Depressional Bog	Facultative
Tsuga heterophylla - (Thuja plicata) / Sphagnum spp. Forest	G1	Boreal Depressional Bog	Facultative
Washingtonia filifera Woodland	G3?	Sonoran Fan Palm Oasis	Obligate
Alaska			
Pinus contorta / Carex aquatilis var. dives Woodland	G3	Boreal Depressional Bog	Facultative
Pinus contorta / Vaccinium ovalifolium Woodland	G3	Boreal Depressional Bog	Facultative
Hawaii			
Metrosideros polymorpha / Rhynchospora spp. / Dicranopteris linearis Mixed Lowland Bog Dwarf-shrubland	G1	Hawai'i Montane Bog	Obligate
Metrosideros polymorpha Mixed Montane Bog Dwarf-shrubland	G2	Hawai'i Montane Bog	Obligate

Isolated Wetland Ecological System (Isolation Type)

System distribution

Alabama

Central Interior Highlands and Appalachian Sinkhole and Depression Pond (Partial)

AL, AR, DE, GA, IL, IN, KY, MD, MO,
NC, NJ, OH, PA, TN, VA, WV

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
<i>Plant</i>	<i>Carex decomposita</i> (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DC:SH, DE:S1, FL:SNR,





Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1,
	Sarracenia oreophila (Green Pitcherplant)	G2	LE	AL:S2, GA:S1, NC:S1
	Xyris tennesseensis (Tennessee Yellow-eyed-grass)	G2	LE	AL:S1, GA:S1, TN:S1

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Alaska

Boreal Depressional Bog (Partial)				AK, BC, ID, MT, OR, WA
Assoc.	Pinus contorta / Carex aquatilis var. dives Woodland	G3		AK:S3
	Pinus contorta / Vaccinium ovalifolium Woodland	G3		AK:S3
North Pacific Coastal Interdunal Wetland (Partial)				AK

no at-risk isolated wetland elements confirmed in this isolated wetland system in state

At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Plant	Eleocharis nitida (Slender Spikerush)	G3G4		AK:S1, ME:SNR, MI:S1, MN:S2, NH:SH, VT:SH, WI:S2

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Arizona

Chihuahuan-Sonoran Desert Bottomland and Swale Grassland (Partial)
 Assoc.

AZ, MXCH, MXSO, NM, TX

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Arkansas

Central Interior Highlands and Appalachian Sinkhole and Depression Pond (Partial)				AL, AR, DE, GA, IL, IN, KY, MD, MO, NC, NJ, OH, PA, TN, VA, WV
Assoc.	Nyssa aquatica / Cephalanthus occidentalis Pond Forest	G1?		AR?, MO, TN
	Quercus lyrata Pond Forest	G1G3		AR, MO
	Quercus palustris - (Quercus bicolor) / Carex crinita / Sphagnum spp. Forest	G3?		AR, MO
	Quercus palustris Pond Forest	G2		AR
Plant	Carex decomposita (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DC:SH, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2, TV:SNR
Ozark-Ouachita Fen (Partial)				AR, MO
Assoc.	(Carex interior, Carex lurida) - Carex leptalea - Parnassia grandifolia - Rhynchospora capillacea Herbaceous Vegetation	G2G3		AR, MO
West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods (Partial)				AR, LA, OK?, TX
Assoc.	Nyssa biflora - Quercus laurifolia / Sphagnum spp. Depression Forest	G3?		AR?, LA, TX?
	Quercus laurifolia - Quercus phellos - Quercus nigra / Viburnum dentatum - (Sebastiania fruticosa) / Carex glaucescens Upper West Gulf Flatwoods Forest	G2G3		AR?, LA?, TX
	Quercus lyrata - Quercus phellos - Ulmus americana / Rhynchospora spp. Forest	G2G3		AR?, LA, TX?
	Quercus phellos - Quercus similis / Crataegus marshallii - Crataegus spathulata / Chasmanthium laxum Forest	G3?		AR?, LA, TX
	Quercus phellos / Chasmanthium laxum - Carex (flaccosperma, intumescens) - Hymenocallis liriosme Flatwoods Forest	G3G4		AR, LA, OK?, TX
	Quercus phellos / Chasmanthium laxum Forest	G3?		AR?, LA?, OK?, TX
West Gulf Coastal Plain Pine-Hardwood Flatwoods (Partial)				AR, LA, OK?, TX
Assoc.	Quercus stellata - Pinus taeda Flatwoods Depression Forest	G2G3		AR?, LA?, TX
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Quercus palustris - (Quercus stellata) - Quercus pagoda / Isoetes spp. Forest	G2G3		AR, IL, IN, KY?, MO, TN?
	Quercus phellos - (Quercus lyrata) / Carex spp. - Leersia spp. Forest	G3G4Q		AR, IL, KY, MO?, MS?, TN
Plant	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1,
	Lindera melissifolia (Pondberry)	G2	LE	AL:S1, AR:S2, GA:S1, LA:SNR, MS:S2, NC:S1, SC:S1, MO:S1

Isolated Wetland Ecological System (Isolation Type)

System distribution

Type

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Trifolium jokerstii (Butte County Golden Clover)	G1		CA:S1.2
Northern California Claypan Vernal Pool (Strict)				CA, OR
<i>Animal</i>	Branchinecta conservatio (Conservancy Fairy Shrimp)	G1	LE	CA:S1
	Branchinecta longiantenna (Longhorn Fairy Shrimp)	G1	LE	CA:S1
	Branchinecta lynchi (Vernal Pool Fairy Shrimp)	G3	LT	CA:S2S3, OR:S2S3
	Branchinecta mesoallensis (Midvalley Fairy Shrimp)	G2		CA:S2
	Cyzicus californicus (California Clam Shrimp)	G2G3		CA:SNR
	Cyzicus elongatus (Elongate Clam Shrimp)	G2G3Q		CA:SNR
	Elaphrus viridis (Delta Green Ground Beetle)	G1	LT	CA:S1
	Linderiella occidentalis (California Fairy Shrimp)	G3G4		CA:S2S3
<i>Plant</i>	Agrostis hendersonii (Henderson's Bentgrass)	G1Q		CA:S1.1, OR:SH
	Boisduvalia cleistogama (Cleistogamous Spike-primrose)	G3G4		CA:SNR
	Callitriche longipedunculata (Long-stock Water-starwort)	G2G3		CA:SNR
	Downingia bella (Hoover's Downingia)	G2G3		CA:SNR
	Downingia cuspidata (Cuspidate Downingia)	G3?		CA:SNR
	Downingia ornatissima (Sollano Downingia)	G2G3		CA:SNR
	Downingia pulchella (Flat-face Downingia)	G3?		CA:SNR
	Downingia pusilla (Dwarf Downingia)	G3		CA:S3.1
	Gratiola heterosepala (Boggs Lake Hedge-hyssop)	G3		CA:S3.1, OR:S1
	Hesperevax caulescens (Involucrate Evax)	G3		CA:S3.2
	Hordeum intercedens	G3G4		CA:S3S4
	Isoetes orcuttii (Orcutt's Quillwort)	G2?		CA:SNR
	Ivesia sericoleuca (Plumas Ivesia)	G2		CA:S2.2
	Juncus kelloggii (Kellogg's Rush)	G3?		CA:SNR, NV:SNR, WA:S1
	Juncus leiospermus (Red Bluff Rush)	G2		CA:S2.2
	Lasthenia burkei (Burke's Goldfields)	G1	LE	CA:S1.1
	Lasthenia chrysantha	G3?		CA:SNR
	Lasthenia conjugens (Contra Costa Goldfields)	G1	LE	CA:S1.1
	Lasthenia ferrisiae (Ferris' Goldfields)	G3		CA:S3.2
	Legenere limosa (Legenere)	G2		CA:S2.2
	Limnanthes bakeri (Baker's Meadowfoam)	G1		CA:S1.1
	Limnanthes vinculans (Sebastopol Meadowfoam)	G2	LE	CA:S2.1
	Myosurus sessilis (Sessile Mousetail)	G2		CA:SNR, OR:S1
	Navarretia eriocephala (Hoary Navarretia)	G3		CA:S3.3
	Navarretia heterandra (Tehama Navarretia)	G3		CA:S3.3, OR:S1
	Navarretia myersii (Pincushion Navarretia)	G1		CA:SNR
	Orcuttia viscida (Sacramento Orcutt Grass)	G1	LE	CA:S1.1
	Tuctoria greenei (Green's Awnless Orcutt-grass)	G2	LE	CA:S2.2
	Tuctoria mucronata (Mucronate Orcutt Grass)	G1	LE	CA:S1.1
	Northern California Volcanic Vernal Pool (Strict)			
<i>Plant</i>	Downingia bicornuta (Double-horn Downingia)	G3G4		CA:SNR, ID:SNR, NV:SNR, OR:SNR
	Eryngium castrense	G1G2		CA:SNR
	Eryngium constancei (Loch Lomond Coyote-thistle)	G1	LE, PT	CA:S1.1
	Eryngium mathiasiae (Mathias' Coyote-thistle)	G3		CA:SNR
	Eryngium pinnatisectum (Tuolumne Coyote-thistle)	G3		CA:S3.2
	Gratiola heterosepala (Boggs Lake Hedge-hyssop)	G3		CA:S3.1, OR:S1
	Limnanthes floccosa ssp. californica (Shippee Meadowfoam)	G4T1	LE	CA:S1.1
	Limnanthes striata (Foot-hill Meadow-foam)	G3?		CA:SNR
	Navarretia heterandra (Tehama Navarretia)	G3		CA:S3.3, OR:S1
	Navarretia leucocephala ssp. pauciflora (Few-flowered Navarretia)	G4T1	LE	CA:S1.1
	Navarretia leucocephala ssp. plieantha (Many-flowered Navarretia)	G4T1	LE	CA:S1.2

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Colorado

Colorado Plateau Hanging Garden (Strict)				AZ, CO, NV?, UT
Assoc.	Aquilegia micrantha - Mimulus eastwoodiae Herbaceous Vegetation	G2G3		CO:S2S3, UT
Plant	Mimulus eastwoodiae (Eastwood Monkeyflower)	G3		AZ:SNR, CO:S1, NV:SNR, UT:S3, NN:S3S4
	Platanthera zothecina (Alcove Bog-orchid)	G2		UT:S2, CO:S1, AZ:S2, NN:S2
Inter-Mountain Basins Greasewood Flat (Partial)				AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, WY
Assoc.	Leymus cinereus - Distichlis spicata Herbaceous Vegetation	G3		CA:S1, CO, ID:S1, NV, OR:S3, UT, WA:S1
	Puccinellia nuttalliana Herbaceous Vegetation	G3?		CO:S1?, MT, NV?, SK?, UT?
	Salicornia rubra Herbaceous Vegetation	G2G3		CA?, CO:S1?, MB:S2, MN, MT:S2?, ND, NV?, SD, SK
	Sarcobatus vermiculatus / Juncus balticus Sparse Vegetation	G3?		CO:S3?
	Sarcobatus vermiculatus / Sporobolus airoides Sparse Vegetation	G3?		CO, OR:S4, UT, WY:S3?
Inter-Mountain Basins Interdunal Swale Wetland (Partial)				AZ?, CO, ID, NV, UT, WY?
Assoc.	Salicornia rubra Herbaceous Vegetation	G2G3		CA?, CO:S1?, MB:S2, MN, MT:S2?, ND, NV?, SD, SK
	Schoenoplectus pungens Herbaceous Vegetation	G3G4		CO:S3, ID, KS, MT:S3, ND, NM, NV, SD, UT:S2S4, WY
Inter-Mountain Basins Playa (Partial)				CA, CO, ID, NM, NV, OR, UT, WA?, WY
Assoc.	Leymus cinereus - Distichlis spicata Herbaceous Vegetation	G3		CA:S1, CO, ID:S1, NV, OR:S3, UT, WA:S1
	Sarcobatus vermiculatus / Sporobolus airoides Sparse Vegetation	G3?		CO, OR:S4, UT, WY:S3?
Western Great Plains Closed Depression Wetland (Strict)				CO, KS, NE, NM?, OK, SD, TX, WY
Assoc.	Pascopyrum smithii - Eleocharis spp. Herbaceous Vegetation	G1		CO, MT?, SD, WY:S1
Plant	Ambrosia linearis (Linear-leaf Bursage)	G3		CO:S3
Western Great Plains Saline Depression Wetland (Partial)				CO, KS, MT, ND, NE, NM, OK, SD, TX, WY
Assoc.	Puccinellia nuttalliana Herbaceous Vegetation	G3?		CO:S1?, MT, NV?, SK?, UT?
	Salicornia rubra Herbaceous Vegetation	G2G3		CA?, CO:S1?, MB:S2, MN, MT:S2?, ND, NV?, SD, SK
	Schoenoplectus pungens Herbaceous Vegetation	G3G4		CO:S3, ID, KS, MT:S3, ND, NM, NV, SD, UT:S2S4, WY
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Lemna spp. Permanently Flooded Herbaceous Vegetation	G3?		CA:S3, CO

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Delaware

Atlantic Coastal Plain Northern Basin Peat Swamp (Partial)

- Assoc. *Acer rubrum* - *Nyssa sylvatica* - *Magnolia virginiana* / *Viburnum nudum* var. *nudum* / *Osmunda cinnamomea* - Woodwardia areolata Forest G3?
- Chamaecyparis thuyoides* / *Ilex glabra* - *Rhododendron viscosum* Forest G3

CT, DE, MA, MD, NJ, NY, VA
DC, DE, MD, NJ:S4S5, NY, PA, VA:S3?

CT, DE, MA, NJ:S3, NY, RI

Atlantic Coastal Plain Northern Basin Swamp and Wet Hardwood Forest (Partial)

- Assoc. *Acer rubrum* - *Nyssa sylvatica* - *Magnolia virginiana* / *Viburnum nudum* var. *nudum* / *Osmunda cinnamomea* - Woodwardia areolata Forest G3?
- Pinus taeda* / *Morella cerifera* / *Osmunda regalis* var. *spectabilis* Forest G3
- Animal* *Hydrochus spangleri* (Seth Forest Water Scavenger Beetle) G1

DE, MD, NJ, NY, VA
DC, DE, MD, NJ:S4S5, NY, PA, VA:S3?

DE, MD, NC, NJ:S1?, VA

DE:SNR, MD:S1

Atlantic Coastal Plain Northern Dune and Maritime Grassland (Partial)

- Assoc. *Cladium mariscoides* / *Vaccinium macrocarpon* - *Morella pensylvanica* Dwarf-shrubland G2

CT, DE, MA, MD, ME, NC, NH, NJ, NY, RI, VA

DE, MA, NH:S1, NJ:S1S2, NY, RI

Atlantic Coastal Plain Northern Pondshore (Partial)

- Assoc. *Cephalanthus occidentalis* / *Polygonum hydropiperoides* - *Panicum verrucosum* Shrubland G3?
- Cladium mariscoides* - *Coelorachis rugosa* Herbaceous Vegetation G1
- Nymphaea odorata* - *Eleocharis robbinsii* Herbaceous Vegetation G2
- Rhexia virginica* - *Panicum verrucosum* Herbaceous Vegetation G2G3
- Plant* *Coreopsis rosea* (Rose Coreopsis) G3
- Fimbristylis perpusilla* (Harper's Fimbristylis) G2
- Hypericum adpressum* (Creeping St. John's-wort) G3
- Panicum hirtii* (Hirsts' Panic Grass) G1
- Rhexia aristosa* (Awned Meadowbeauty) G3
- Rhynchospora inundata* (Drowned Hornedrush) G3G4

DE, MA, MD, MI, NJ, NY, VA, VT
DE, MA?, MD, RI?, VA

DE, NJ:S1

DE, MA, MD, NH, NJ:S1S2, NY, RI

CT, DE, MA, MD:S2, NH?, NJ:S1S3, NY, RI?, VT

DE:S1, GA:SNR, MA:S3, MD:S1, MS:SNR, NJ:S2, NY:S3, RI:S2, SC:S2

DE:S1, GA:S1, MD:S2, NC:S1, SC:S2, TN:S1, VA:S1, TV:SNR

CT:SH, DE:S2, GA:S2?, IL:S1, IN:S1, KY:SH, MA:S2, MD:S1, MO:S1, NC:SH, NJ:S2, NY:S2, RI:S2, SC:S1, TN:S1, VA:S1, WV:SH, TV:SNR

C

DE:S1.1, NC:S1, GA:SH, NJ:S1

AL:S1, DE:S1, GA:S2, NC:S3, NJ:S1, SC:S2

AL:SNR, DE:S1, FL:SNR, GA:S3?, MA:S2, MD:S1, MS:SNR, NC:S3, NJ:S2, NY:S2, RI:S1, SC:SNR

Central Interior Highlands and Appalachian Sinkhole and Depression Pond (Partial)

- Assoc.

AL, AR, DE, GA, IL, IN, KY, MD, MO, NC, NJ, OH, PA, TN, VA, WV

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Woodwardia virginica / Sphagnum cuspidatum Herbaceous Vegetation	G2?		DE, FL, GA, MD, NC, SC, VA?



Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Rhynchospora pleiantha (Brown Beakrush)	G3		AL:S1, FL:S3, GA:SH, NC:S2, SC:SNR
Central Florida Herbaceous Pondshore (Partial)				FL
Assoc.	Amphicarpum muehlenbergianum - (Panicum hemitomom) Herbaceous Vegetation	G2G3		FL
	Andropogon (capillipes, glaucopsis) - Rhynchospora fascicularis var. fascicularis - Rhexia mariana Herbaceous Vegetation	G2?		FL
	Hypericum brachyphyllum Dwarf-shrubland	G3?		FL, GA?
	Panicum hemitomom - Pluchea (camphorata, rosea) - Ludwigia spp. Herbaceous Vegetation	G3		AL, FL, GA, LA?, MS
	Panicum hemitomom - Pontederia cordata Herbaceous Vegetation	G3G4		FL
	Rhynchospora (careyana, inundata) Seasonally Flooded Herbaceous Vegetation	G3?		FL, GA, NC, SC?
	Woodwardia virginica / Sphagnum cuspidatum Herbaceous Vegetation	G2?		DE, FL, GA, MD, NC, SC, VA?
Animal	Rana capito (Carolina Gopher Frog)	G3		AL:S2, FL:S3, GA:S2S3, NC:S2, SC:S1, TN:S1, TV:SNR
Plant	Amaranthus floridanus (Florida Amaranth)	G3		FL:S3
	Campanula robinsiae (Robins' Bellflower)	G1	LE	FL:S1
	Carex verrucosa (Warty Sedge)	G3G4		AL:SNR, FL:SNR, GA:S4?, LA:SNR, MS:S2, NC:S1, SC:SNR, TX:S2S3, VA:SNR
	Coelorachis tuberculosa (Florida Jointgrass)	G3		AL:S1, FL:S3
	Cucurbita okeechobeensis (Okeechobee Gourd)	G1	LE	FL:S1
	Echinochloa paludigena (Florida Cockspur)	G3Q		FL:S3
	Hypericum edisonianum (Edison's Ascyrum)	G2		FL:S2
	Litsea aestivalis (Pondspice)	G3		FL:S2, GA:S2, LA:SH, MD:S1, NC:S2, SC:S3, VA:S1
	Lythrum flagellare (Lowland Loosestrife)	G2		FL:S2
	Najas filifolia (Narrowleaf Naiad)	G1		FL:S1, GA:S1
	Rhynchospora fernaldii (Fernald's Beakrush)	G3G4		AL:S1?, FL:SNR, GA:SNR, MS:S1
East Gulf Coastal Plain Dune and Coastal Grassland (Partial)				AL, FL, MS
Assoc.	Fuirena scirpoidea - Panicum tenerum - Dichantherium wrightianum - Andropogon capillipes Herbaceous Vegetation	G2?		AL, FL?, MS:S2
Plant	Rhexia salicifolia (Panhandle Meadowbeauty)	G2		AL:S1, FL:S2
East Gulf Coastal Plain Sandhill Lakeshore Depression (Partial)				AL, FL
Assoc.	Hypericum lissophloeus Shrubland	G1		FL
Plant	Hypericum lissophloeus (Smooth-barked St. John's-wort)	G2		FL:S2
	Rhexia salicifolia (Panhandle Meadowbeauty)	G2		AL:S1, FL:S2
	Xyris isoetifolia (Quillwort Yellow-eyed Grass)	G1		AL:SH, FL:S1
East Gulf Coastal Plain Southern Depression Pondshore (Partial)				AL, FL, GA, LA?, MS
Assoc.	Crataegus rufula Forest	G2G3		AL, FL, GA
	Dichantherium wrightianum - Dichantherium erectifolium Herbaceous Vegetation	G2G3		AL?, FL, GA, MS, NC, SC
	Eleocharis (elongata, equisetoides) - Rhynchospora tracyi Semipermanently Flooded Herbaceous Vegetation	G3?		AL, FL, GA, LA?, MS?, NC, SC
	Fuirena scirpoidea - Rhynchospora tracyi Herbaceous Vegetation	G3G4		AL, FL, GA?
	Hypericum chapmanii - Ilex myrtifolia - (Nyssa ursina) Shrubland	G1		FL
	Hypericum fasciculatum / Rhynchospora (chapmanii, harperi) Shrubland	G2G3		AL, FL, GA, SC
	Panicum virgatum - Andropogon (capillipes, glaucopsis) - Aristida palustris Herbaceous Vegetation	G2?		AL, FL, GA, LA?, NC, SC



Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
South Florida Depression Pondshore (Partial)				FL
Assoc.	Eleocharis interstincta - Pontederia cordata - Crinum americanum Herbaceous Vegetation	G2G3		FL
	Panicum hemitomom Tropical Herbaceous Vegetation	G3?		FL
	Typha domingensis - Pontederia cordata Herbaceous Vegetation	G3?		FL
	Zizaniopsis miliacea Subtropical Herbaceous Vegetation	G2G4Q		FL
Plant	Echinochloa paludigena (Florida Cockspur)	G3Q		FL:S3
	Selaginella eatonii (Eaton Spike-moss)	G2G3		FL:S2
Southeastern Coastal Plain Interdunal Wetland (Partial)				AL, FL, GA, LA, MS, NC, SC, TX, VA
Assoc.	(Stillingia aquatica) / Panicum tenerum - Dichantherium erectifolium Herbaceous Vegetation	G2?		AL, FL?
	Cladium mariscus ssp. jamaicense - Woodwardia virginica Herbaceous Vegetation	G2?		AL, FL, GA
	Eleocharis elongata - Panicum tenerum - Nymphaea odorata Herbaceous Vegetation	G2?		AL, FL?
	Fimbristylis castanea - Paspalum distichum Herbaceous Vegetation	G3		FL
	Hypericum reductum - Licania michauxii / Andropogon capillipes - Polygonella gracilis - Xyris caroliniana Dwarf-shrubland	G2		AL, FL
	Panicum hemitomom - (Cladium mariscus ssp. jamaicense, Muhlenbergia filipes) Herbaceous Vegetation	G2G3		FL
	Paspalum vaginatum Herbaceous Vegetation	G3G4		FL, TX
	Spartina bakeri - Muhlenbergia filipes - Andropogon glomeratus -			

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Rana capito (Carolina Gopher Frog)	G3		AL:S2, FL:S3, GA:S2S3, NC:S2, SC:S1, TN:S1, TV:SNR
<i>Plant</i>	Carex verrucosa (Warty Sedge)	G3G4		AL:SNR, FL:SNR, GA:S4?, LA:SNR, MS:S2, NC:S1, SC:SNR, TX:S2S3, VA:SNR
	Coreopsis nudata (Georgia Tickseed)	G3?		AL:S1, FL:SNR, GA:S3S4, LA:S2, MS:S1S2
	Croton elliotii (Elliott's Croton)	G2G3		AL:S1, FL:SH, GA:S2S3, SC:SNR
	Fuirena longa (Coastal-plain Umbrella-sedge)	G3G4		AL:SNR, FL:SNR, MS:S3S4, TX:S2
	Litsea aestivalis (Pondspice)	G3		FL:S2, GA:S2, LA:SH, MD:S1, NC:S2, SC:S3, VA:S1
	Pieris phillyreifolia (Climbing Fetter-bush)	G3		AL:S2, FL:SNR, GA:S3, MS:S1, SC:SNR
	Polygonum hirsutum (Hairy Smartweed)	G3G4		AL:SNR, FL:SNR, GA:SNR, MS:SNR, NC:S1, SC:SNR
	Rhexia parviflora (Small-flowered Meadowbeauty)	G2		AL:S1, FL:S2, GA:SH
	Rhynchospora inundata (Drowned Hornedrush)	G3G4		AL:SNR, DE:S1, FL:SNR, GA:S3?, MA:S2, MD:S1, MS:SNR, NC:S3, NJ:S2, NY:S2, RI:S1, SC:SNR
	Southern Coastal Plain Sinkhole (Partial)			AL, FL, GA
	<i>Assoc.</i>			

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Georgia

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Fimbristylis perpusilla (Harper's Fimbristylis)	G2		DE:S1, GA:S1, MD:S2, NC:S1, SC:S2, TN:S1, VA:S1, TV:SNR
	Hypericum adpressum (Creeping St. John's-wort)	G3		CT:SH, DE:S2, GA:S2?, IL:S1, IN:S1, KY:SH, MA:S2, MD:S1, MO:S1, NC:SH, NJ:S2, NY:S2, RI:S2, SC:S1, TN:S1, VA:S1, WV:SH, TV:SNR
	Lindera melissifolia (Pondberry)	G2	LE	AL:S1, AR:S2, GA:S1, LA:SNR, MS:S2, NC:S1, SC:S1, TV:SNR, MO:S1
	Linum westii (West's Flax)	G2		FL:S2, GA:SH, MS:SNR
	Litsea aestivalis (Pondspice)	G3		FL:S2, GA:S2, LA:SH, MD:S1, NC:S2, SC:S3, VA:S1
	Lobelia boykinii (Boykin's Lobelia)	G2G3		AL:S1S2, FL:S1, GA:S2S3, MS:S1, NC:S1, NJ:S1, SC:SNR, TV:SNR
	Ludwigia spathulata (Spathulate Seedbox)	G2G3		AL:S1S2, FL:S1S2, GA:S2S3, SC:SNR
	Myriophyllum laxum (Piedmont Water-milfoil)	G3		AL:S2, FL:S3, GA:S2, MS:S1, NC:S1, SC:S2, VA:S1
	Oxypolis canbyi (Canby's Dropwort)	G2	LE	GA:S2, MD:S1, NC:S1, SC:S1
	Panicum hirstii (Hirsts' Panic Grass)	G1	C	DE:S1.1, NC:S1, GA:SH, NJ:S1
	Pieris phillyreifolia (Climbing Fetter-bush)	G3		AL:S2, FL:SNR, GA:S3, MS:S1, SC:SNR
	Polygonum hirsutum (Hairy Smartweed)	G3G4		AL:SNR, FL:SNR, GA:SNR, MS:SNR, NC:S1, SC:SNR
	Rhexia aristosa (Awned Meadowbeauty)	G3		AL:S1, DE:S1, GA:S2, NC:S3, NJ:S1, SC:S2
	Rhynchospora inundata (Drowned Hornedrush)	G3G4		AL:SNR, DE:S1, FL:SNR, GA:S3?, MA:S2, MD:S1, MS:SNR, NC:S3, NJ:S2, NY:S2, RI:S1, SC:SNR
	Rhynchospora pleiantha (Brown Beakrush)	G3		AL:S1, FL:S3, GA:SH, NC:S2, SC:SNR

Central Interior Highlands and Appalachian Sinkhole and Depression Pond (Partial)

SC:S2
MO:S1

Isolated Wetland Ecological System (Isolation Type)

<i>Type</i>	Scientific Name (Common Name)	NatureServe Global Rank	System distribution Subnational distribution (subnational rank)
-------------	-------------------------------	----------------------------	---

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Hypericum fasciculatum / Rhynchospora (chapmanii, harperi) Shrubland	G2G3		AL, FL, GA, SC
	Panicum virgatum - Andropogon (capillipes, glaucopsis) - Aristida palustris Herbaceous Vegetation	G2?		AL, FL, GA, LA?, NC, SC
	Rhynchospora filifolia - Juncus abortivus Herbaceous Vegetation	G2?		AL, FL, GA, NC, SC
	Taxodium distichum East Gulf Coastal Plain Pondshore Woodland	G3		AL, FL?, GA?, MS
Animal	Ambystoma cingulatum (Flatwoods Salamander)	G2G3	LT	AL:S1, FL:S2S3, GA:S2, SC:S1
	Notophthalmus perstriatus (Striped Newt)	G2G3		FL:S2S3, GA:S2
	Rana capito (Carolina Gopher Frog)	G3		AL:S2, FL:S3, GA:S2S3, NC:S2, SC:S1, TN:S1, TV:SNR
Plant	Carex verrucosa (Warty Sedge)	G3G4		AL:SNR, FL:SNR, GA:S4?, LA:SNR, MS:S2, NC:S1, SC:SNR, TX:S2S3, VA:SNR
	Coreopsis nudata (Georgia Tickseed)	G3?		AL:S1, FL:SNR, GA:S3S4, LA:S2, MS:S1S2
	Croton elliotii (Elliott's Croton)	G2G3		AL:S1, FL:SH, GA:S2S3, SC:SNR
	Lindera melissifolia (Pondberry)	G2	LE	AL:S1, AR:S2, GA:S1, LA:SNR, MS:S2, NC:S1, SC:S1, TV:SNR, MO:S1
	Litsea aestivalis (Pondspice)	G3		FL:S2, GA:S2, LA:SH, MD:S1, NC:S2, SC:S3, VA:S1
	Lobelia boykinii (Boykin's Lobelia)	G2G3		AL:S1S2, FL:S1, GA:S2S3, MS:S1, NC:S1, NJ:S1, SC:SNR, TV:SNR
	Ludwigia spathulata (Spathulate Seedbox)	G2G3		AL:S1S2, FL:S1S2, GA:S2S3, SC:SNR
	Myriophyllum laxum (Piedmont Water-milfoil)	G3		AL:S2, FL:S3, GA:S2, MS:S1, NC:S1, SC:S2, VA:S1
	Myriophyllum spicatum (Piedmont Water-milfoil)	G3		AL:S1S2, FL:S1S2, GA:S2S3, SC:SNR

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
<i>Plant</i>	Chelone cuthbertii (Cuthbert's Turtlehead)	G3		GA:S1, NC:S3?, SC:SNR, VA:S2, TV:SNR
	Sarracenia oreophila (Green Pitcherplant)	G2	LE	AL:S2, GA:S1, NC:S1, TV:SNRTV:S?NR

hehehehehehtdnNRMore 9(A0erruco[00]((Taxodium um asantdnts guClophila (Green PitcRhal(4sis nudat2)-3eorg))Ticks7?, SC:251, VA?SC:20501.13FL9(3293S4, LAV:

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Quercus phellos - Quercus (michauxii, shumardii) - Fraxinus americana / (Quercus oglethorpensis) / Zephyranthes atamasca Gabbro Upland Depression Forest	G2?		GA, SC
	Quercus phellos / Carex (albolutescens, intumescens, jorii) - Chasmanthium laxum / Sphagnum lescurii Forest	G2G3		AL, GA?, NC, SC, VA:S2?
	Scirpus cyperinus - Dulichium arundinaceum / Sphagnum spp. Herbaceous Vegetation	G1Q		GA, NC, SC?, TN, VA?
Plant	Carex decomposita (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DC:SH, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2, TV:SNR
	Isoetes piedmontana (Piedmont Quillwort)	G3		AL:S2, GA:S3, NC:S1, SC:S2, TX:S1, VA:S1?
Southern Piedmont Granite Flatrock (Strict)				AL, GA, NC, SC, VA
Assoc.	Amphianthus pusillus - Isoetes melanospora - Isoetes tegetiformans Herbaceous Vegetation	G1		AL, GA, SC
	Diamorpha smallii - Minuartia glabra - Minuartia uniflora - Cyperus granitophilus Herbaceous Vegetation	G3		AL, GA, NC, SC
Plant	Amphianthus pusillus (Little Amphianthus)	G2	LT	AL:S1, GA:S2, SC:S1
	Cyperus granitophilus (Granite-loving Flatsedge)	G3Q		AL:S2, GA:S3, NC:S1, SC:SNR, TN:S1, VA:S1, TV:SNR

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Hawaii

Hawai'i 'Ihi'ihiluakea Vernal Pool (Partial)

no at-risk isolated wetland elements confirmed in this isolated wetland system in state

HI

Hawai'i Montane Bog (Strict)

HI

Assoc. *Metrosideros polymorpha* / *Rhynchospora* spp. / *Dicranopteris linearis* Mixed Lowland Bog Dwarf-shrubland G1

HI:S1.1

Metrosideros polymorpha Mixed Montane Bog Dwarf-shrubland G2

HI:S2.2

<i>Plant</i>	<i>Acaena exigua</i> (Liliwai)	G1	LE	HI:S1
	<i>Argyroxiphium caliginis</i> (Eke Silversword)	G1		HI:S1.2
	<i>Argyroxiphium grayanum</i> (Greensword)	G1		HI:S1
	<i>Astelia waialealae</i>	G1	C	HI:SNR
	<i>Calamagrostis expansa</i>	G1	C	HI:S1
	<i>Calamagrostis hillebrandii</i> (Hillebrand's Small-reedgrass)	G1	C	HI:S1.1
	<i>Carex montis-eeka</i> (A Sedge)	G2		HI:S2
	<i>Chamaesyce sparsiflora</i>	G1		HI:S1.1
	<i>Coprosma elliptica</i> (Elliptic Coprosma)	G3		HI:SNR
	<i>Dichanthelium cynodon</i> (Dog-tooth Witchgrass)	G2G3		HI:S2S3
	<i>Dichanthelium hillebrandianum</i> (Hillebrand's Witchgrass)	G2G3		HI:S2S3
	<i>Dichanthelium isachnoides</i>	G2G3		HI:S2S3
	<i>Dubautia paleata</i> (Naena Puakea)	G1G2		HI:S1S2
	<i>Dubautia waialealae</i> (Na`ena`e)	G1	C	HI:S1
	<i>Geranium hanaense</i> (Nohoanu)	G1	C	HI:S1
	<i>Geranium humile</i> (Hinahina)	G1	C	HI:S1.2
	<i>Geranium kauaiense</i>	G1	C	HI:S1.1
	<i>Isoetes hawaiiensis</i>	G1		HI:S1.2
	<i>Keysseria erici</i>	G1	C	HI:S1.2
	<i>Labordia pumila</i>	G1	C	HI:S1.2
	<i>Lagenifera helenae</i>	G1	C	HI:S1.1
	<i>Lagenifera maviensis</i> (Howaiaulu)	G2		HI:S2.2
	<i>Lobelia gloria-montis</i> (Hawaiian Lobelia)	G1G2		HI:S1S2
	<i>Lobelia kauaensis</i>	G2		HI:S2
	<i>Lobelia villosa</i> (Hairy Lobelia)	G1		HI:S1
	<i>Lysimachia daphnoides</i> (Pacific Loosestrife)	G1	C	HI:S1.2
	<i>Melicope waialealae</i> (Alaniawai)	G2		HI:S2
	<i>Myrsine denticulata</i>	G1		HI:S2



Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
Assoc.	Carex lasiocarpa - Carex oligosperma - (Lysimachia terrestris) / Sphagnum spp. / Spiraea tomentosa Herbaceous Vegetation	G3G4		IL:S2, MI, MN:S3, WI:S2
	Chamaedaphne calyculata / Carex oligosperma - Eriophorum virginicum Dwarf-shrubland	G3G4		IL:S2, IN, MI, OH, ON, WI:S3
Plant	Platanthera leucophaea (Eastern Prairie White-fringed Orchid)	G3	LT	IA:S1, IL:S1, IN:S1, ME:S1, MI:S1, MO:SH, NY:SH, OH:S2, OK:SH, VA:S1, WI:S2S3
North-Central Interior Freshwater Marsh (Partial)				IA, IL, IN, MI, MN, MO, ND, OH, ON?, SD, WI
Assoc.	Schoenoplectus fluviatilis - Schoenoplectus spp. Herbaceous Vegetation	G3G4		IA, IL, IN, MB:S3, MN, MO, OH, WI
North-Central Interior Shrub-Graminoid Alkaline Fen (Partial)				IA, IL, IN, MI, MN, ND, OH, ON, SD, WI
Assoc.	Carex lasiocarpa - Carex oligosperma / Sphagnum spp. Herbaceous Vegetation	G3G4		IA:S1, IL?, MB:SU, MI, MN, ND, ON, WI:S3
	Cornus amomum - Salix spp. - Toxicodendron vernix - Rhamnus lanceolata Fen Shrubland	G2G3		IL:S1S2, IN, MI, OH, ON, WI
	Dasiphora fruticosa ssp. floribunda / Carex sterilis - Andropogon gerardii - Arnoglossum plantagineum Shrub Herbaceous Vegetation	G3G4		IL, IN, MI, MN:S1, OH, ON:S1, WI:S3
Plant	Hypericum adpressum (Creeping St. John's-wort)	G3		CT:SH, DE:S2, GA:S2?, IL:S1, IN:S1, KY:SH, MA:S2, MD:S1, MO:S1, NC:SH, NJ:S2, NY:S2, RI:S2, SC:S1, TN:S1, VA:S1, WV:SH, TV:SNR
North-Central Interior Wet Flatwoods (Partial)				CT, IA, IL, IN, MA, MI, MN, MO, NY, OH, ON, PA, VT, WI
Assoc.	Quercus palustris - (Quercus stellata) - Quercus pagoda / Isoetes spp. Forest	G2G3		AR, IL, IN, KY?, MO, TN?
	Quercus palustris - Quercus bicolor - (Liquidambar styraciflua) Mixed Hardwood Forest	G3G4		IA, IL, IN, KY, MO, OH, PA?, TN?, WV?
	Quercus palustris - Quercus bicolor - Acer rubrum Flatwoods Forest	G2G3		IL:S2, IN:S2, MI, OH, ON
	Quercus palustris - Quercus bicolor - Nyssa sylvatica - Acer rubrum Sand Flatwoods Forest	G2?		IL:S1, IN:S1, MI, OH, ON
North-Central Interior Wet Meadow-Shrub Swamp (Partial)				IA, IL, IN, MI, MN, MO, ND, OH, ON, SD, WI
Assoc.	Cornus sericea - Salix (bebbiana, discolor, petiolaris) / Calamagrostis stricta Shrubland	G3G4		IA:S3?, IL, MB:SU, MN:S3, ND, WI
	Spartina pectinata - Carex spp. - Calamagrostis canadensis - Lythrum alatum - (Oxypolis rigidior) Herbaceous Vegetation	G3?		IA:SU, IL, IN:S1, MI:S2, MN, MO:S1, NE:S1, OH, WI:S1
	Spartina pectinata - Carex spp. - Calamagrostis canadensis Sand Herbaceous Vegetation	G3?		IL, IN, ON?, WI
Plant	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR
	Platanthera leucophaea (Eastern Prairie White-fringed Orchid)	G3	LT	IA:S1, IL:S1, IN:S1, ME:S1, MI:S1, MO:SH, NY:SH, OH:S2, OK:SH, VA:S1, WI:S2S3
	Schoenoplectus hallii (Hall's Bulrush)	G2		GA:SH, IA:S1, IN:S1, MI:S2, NE:S1, OK:S1, SC:SNR, WI:S1, TV:SNR, IL:S1, KS:S1, KY:S1, MO:S2, TX:S1
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Quercus phellos - (Quercus lyrata) / Carex spp. - Leersia spp. Forest	G3G4Q		AR, IL, KY, MO?, MS?, TN

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Dasiphora fruticosa ssp. floribunda / Carex sterilis - Andropogon gerardii - Arnoglossum plantagineum Shrub Herbaceous Vegetation	G3G4		IL, IN, MI, MN:S1, OH, ON:S1, WI:S3
	Vaccinium corymbosum - Gaylussacia baccata - Photinia melanocarpa / Calla palustris Shrubland	G2G3		IN, MI?, NY, OH:S1, ON
<i>Plant</i>	Hypericum adpressum (Creeping St. John's-wort)	G3		CT:SH, DE:S2, GA:S2?, IL:S1, IN:S1, KY:SH, MA:S2, MD:S1, MO:S1, NC:SH, NJ:S2, NY:S2, RI:S2, SC:S1, TN:S1, VA:S1, WV:SH, TV:SNR
North-Central Interior Wet Flatwoods (Partial)				CT, IA, IL, IN, MA, MI, MN, MO, NY, OH, ON, PA, VT, WI
<i>Assoc.</i>	Fagus grandifolia - Acer saccharum - Quercus bicolor - Acer rubrum Flatwoods Forest	G2G3		IN:S2, MI?, OH, ON?
	Fagus grandifolia - Quercus alba - (Quercus michauxii) - Acer rubrum Flatwoods Forest	G3		IN:S2, OH
	Quercus palustris - (Quercus stellata) - Quercus pagoda / Isoetes spp. Forest	G2G3		AR, IL, IN, KY?, MO, TN?
	Quercus palustris - Quercus bicolor - (Liquidambar styraciflua) Mixed Hardwood Forest	G3G4		IA, IL, IN, KY, MO, OH, PA?, TN?, WV?
	Quercus palustris - Quercus bicolor - Acer rubrum Flatwoods Forest	G2G3		IL:S2, IN:S2, MI, OH, ON
	Quercus palustris - Quercus bicolor - Nyssa sylvatica - Acer rubrum Sand Flatwoods Forest	G2?		IL:S1, IN:S1, MI, OH, ON
North-Central Interior Wet Meadow-Shrub Swamp (Partial)				IA, IL, IN, MI, MN, MO, ND, OH, ON, SD, WI
<i>Assoc.</i>	Spartina pectinata - Carex spp. - Calamagrostis canadensis - Lythrum alatum - (Oxypolis rigidior) Herbaceous Vegetation	G3?		IA:SU, IL, IN:S1, MI:S2, MN, MO:S1, NE:S1, OH, WI:S1
	Spartina pectinata - Carex spp. - Calamagrostis canadensis Sand Herbaceous Vegetation	G3?		IL, IN, ON?, WI
<i>Plant</i>				

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Iowa

Eastern Great Plains Wet Meadow, Prairie, and Marsh (Partial)

				IA, IL, KS, MN, MO, ND, NE, OK, SD, TX?
Assoc.	Cornus sericea - Salix (bebbiana, discolor, petiolaris) / Calamagrostis stricta Shrubland	G3G4		IA:S3?, IL, MB:SU, MN:S3, ND, WI
	Schoenoplectus fluviatilis - Schoenoplectus spp. Herbaceous Vegetation	G3G4		IA, IL, IN, MB:S3, MN, MO, OH, WI
	Spartina pectinata - Calamagrostis stricta - Carex spp. Herbaceous Vegetation	G3?		IA:SU, MB:S1S2, MN, MT, ND:S2?, NE:S1, SD
	Spartina pectinata - Carex spp. - Calamagrostis canadensis - Lythrum alatum - (Oxypolis rigidior) Herbaceous Vegetation	G3?		IA:SU, IL, IN:S1, MI:S2, MN, MO:S1, NE:S1, OH, WI:S1
Plant	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR
	Platanthera leucophaea (Eastern Prairie White-fringed Orchid)	G3	LT	IA:S1, IL:S1, IN:S1, ME:S1, MI:S1, MO:SH, NY:SH, OH:S2, OK:SH, VA:S1, WI:S2S3
	Schoenoplectus hallii (Hall's Bulrush)	G2		GA:SH, IA:S1, IN:S1, MI:S2, NE:S1, OK:S1, SC:SNR, WI:S1, TV:SNR, IL:S1, KS:S1, KY:S1, MO:S2, TX:S1

baceous



Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Kansas

Eastern Great Plains Wet Meadow, Prairie, and Marsh (Partial)				IA, IL, KS, MN, MO, ND, NE, OK, SD, TX?
Assoc.	Typha (angustifolia, domingensis, latifolia) - Schoenoplectus americanus Herbaceous Vegetation	G3G4		KS:SU, OK, TX?
Plant	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR
	Schoenoplectus hallii (Hall's Bulrush)	G2		GA:SH, IA:S1, IN:S1, MI:S2, NE:S1, OK:S1, SC:SNR, WI:S1, TV:SNR, IL:S1, KS:S1, KY:S1, MO:S2, TX:S1
Western Great Plains Closed Depression Wetland (Strict)				CO, KS, NE, NM?, OK, SD, TX, WY
Assoc.	Pascopyrum smithii - Buchloe dactyloides - (Phyla cuneifolia, Oenothera canescens) Herbaceous Vegetation	G2G3		KS:SU, NE:S1, OK:S2, TX?
	Polygonum spp. - Echinochloa spp. - Distichlis spicata Playa Lake Herbaceous Vegetation	G2G4		KS:SU, NE:S1, OK?
	Spartina pectinata - Eleocharis spp. - Carex spp. Herbaceous Vegetation	G2G4		KS:SU, OK:S2
Plant	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR
Western Great Plains Open Freshwater Depression Wetland (Partial)				KS, MT, ND, NE, OK, SD, TX, WY
Assoc.	Calamagrostis canadensis - Juncus spp. - Carex spp. Sandhills Herbaceous Vegetation	G3G4		KS:SU, ND:SU, NE:S3, SD:SU, SK?
	Polygonum spp. - Echinochloa spp. - Distichlis spicata Playa Lake Herbaceous Vegetation	G2G4		KS:SU, NE:S1, OK?
	Spartina pectinata - Eleocharis spp. - Carex spp. Herbaceous Vegetation	G2G4		KS:SU, OK:S2
	Typha (angustifolia, domingensis, latifolia) - Schoenoplectus americanus Herbaceous Vegetation	G3G4		KS:SU, OK, TX?
	Typha latifolia - Equisetum hyemale - Carex (hystericina, pellita) Seep Herbaceous Vegetation	G3		IA, KS:SU, MO:S2, NE:S3, SD
Plant	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR
	Schoenoplectus hallii (Hall's Bulrush)	G2		GA:SH, IA:S1, IN:S1, MI:S2, NE:S1, OK:S1, SC:SNR, WI:S1, TV:SNR, IL:S1, KS:S1, KY:S1, MO:S2, TX:S1
Western Great Plains Saline Depression Wetland (Partial)				CO, KS, MT, ND, NE, NM, OK, SD, TX, WY
Assoc.	Distichlis spicata - (Hordeum jubatum, Poa arida, Sporobolus airoides) Herbaceous Vegetation	G3		KS:S2, NE:S3, OK, TX
	Distichlis spicata - Schoenoplectus maritimus - Salicornia rubra Herbaceous Vegetation	G1G2		AR?, KS:SU, MO, NE:S1, TX?
	Schoenoplectus pungens - Suaeda calceoliformis Alkaline Herbaceous Vegetation	G3G4		KS, NE:S3
	Schoenoplectus pungens Herbaceous Vegetation	G3G4		CO:S3, ID, KS, MT:S3, ND, NM, NV, SD, UT:S2S4, WY
Plant	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Schoenoplectus hallii (Hall's Bulrush)	G2		GA:SH, IA:S1, IN:S1, MI:S2, NE:S1, OK:S1, SC:SNR, WI:S1, TV:SNR, IL:S1, KS:S1, KY:S1, MO:S2, TX:S1

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Kentucky

Central Interior Highlands and Appalachian Sinkhole and Depression Pond (Partial)				AL, AR, DE, GA, IL, IN, KY, MD, MO, NC, NJ, OH, PA, TN, VA, WV
Assoc.	Carex comosa - Carex decomposita - Dulichium arundinaceum - Lycopus rubellus Herbaceous Vegetation	G3G4		IN, KY?, MO:S4S5, TN?
	Cephalanthus occidentalis / Hibiscus moscheutos ssp. moscheutos Depression Pond Shrubland	G3?		AL?, GA, IL, IN, KY, MO:S1, MS?, TN
	Quercus bicolor - Fraxinus pennsylvanica / Carex spp. Forest	G1G2		KY
	Quercus lyrata - Quercus (palustris, phellos) - Liquidambar styraciflua - (Populus heterophylla) Forest	G2G3		KY, TN
	Quercus phellos - Liquidambar styraciflua / Chasmanthium laxum Cumberland Plateau Forest	G3		AL, GA, KY, TN
	Scirpus cyperinus - Panicum rigidulum - Rhynchospora corniculata - (Dulichium arundinaceum) Herbaceous Vegetation	G2G3		AL, IN, KY, TN
Plant	Carex decomposita (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DC:SH, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2, TV:SNR
	Schoenoplectus hallii (Hall's Bulrush)	G2		GA:SH, IA:S1, IN:S1, MI:S2, NE:S1, OK:S1, SC:SNR, WI:S1, TV:SNR, IL:S1, KS:S1, KY:S1, MO:S2, TX:S1
South-Central Interior / Upper Coastal Plain Wet Flatwoods (Partial)				IL?, IN?, KY, TN
Assoc.	Quercus palustris - (Quercus stellata) - Quercus pagoda / Isoetes spp. Forest	G2G3		AR, IL, IN, KY?, MO, TN?
	Quercus phellos - (Quercus lyrata) / Carex spp. - Leersia spp. Forest	G3G4Q		AR, IL, KY, MO?, MS?, TN
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Quercus palustris - Quercus bicolor - (Liquidambar styraciflua) Mixed Hardwood Forest	G3G4		IA, IL, IN, KY, MO, OH, PA?, TN?, WV?
Plant	Hypericum adpressum (Creeping St. John's-wort)	G3		CT:SH, DE:S2, GA:S2?, IL:S1, IN:S1, KY:SH, MA:S2, MD:S1, MO:S1, NC:SH, NJ:S2, NY:S2, RI:S2, SC:S1, TN:S1, VA:S1, WV:SH

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Louisiana

East Gulf Coastal Plain Southern Loblolly-Hardwood Flatic Be (Partial)

Assoc. *Quercus laurifolia* / *Crataegus opaca* - *Crataegus viridis* Forest G1

AL, FL?, GA?, LA, MS
AL?, LA, MS, TX

Pinus glabra - *Quercus laurifolia* / *Crataegus opaca* / *Sabal minor* Forest G1G2

LA

Quercus michauxii - *Quercus (nigra, pagoda)* - *Liquidambar styraciflua* - *Pinus taeda* Forest G2G3

LA

Southeastern Coastal Plain Interdunal Wetland (Partial)

Assoc. *Spartina patens* - *Fimbristylis (caroliniana, castanea)* - (*Panicum virgatum*) Herbaceous Vegetation G2G3

AL, FL, GA, LA, MS, NC, SC, TX, VA
LA?, MXTM?, TX

Typha domingensis Seasonally Flc Bed Gulf Coastal Plain Herbaceous Vegetation G3?

AL, LA?, MS, TX

Southern Coastal Plain Nonriverine Cypress Dome (Partial)

Assoc. *Taxodium ascendens* / (*Nyssa biflora*) / *Leucothoe racemosa* - *Lyonia lucida* - *Morella cerifera* Depression Forest G3

AL, FL, GA, LA, MS
AL, FL, GA, LA, MS, NC, SC

Taxodium ascendens / *Ilex myrtifolia* / *Carex (striata, turgescens)* Stringer Forest G3?Q

AL, FL, GA, LA, MS, SC

Taxodium ascendens / *Ilex myrtifolia* Depression Forest G3?

AL:S1S2, FL, GA, LA?, MS, NC, SC

Plant *Carex verrucosa* (Warty Sedge) G3G4

AL:SNR, FL:SNR, GA:S4?, LA:SNR, MS:S2, NC:S1, SC:SNR, TX:S2S3, VA:SNR

Coreopsis nudata (Georgia Tickseed) G3?

AL:S1, FL:SNR, GA:S3S4, LA:S2, MS:S1S2

Lindera melissifolia (Pondberry) G2

LE

AL:S1, AR:S2, GA:S1, LA:SNR, MS:S2, NC:S1, SC:S1, TV:SNR, MO:S1

Litsea aestivalis (Pondspice) G3

FL:S2, GA:S2, LA:SH, MD:S1, NC:S2, SC:S3, VA:S1

Texas-Louisiana Coastal Prairie (Partial)

Assoc. *Euthamia leptoccephala* - *Helianthus angustifolius* - *Boltonia asteroides* - *Spartina patens* Herbaceous Vegetation G1

LA, TX
LA, TX?

Plant *Eleocharis wolfii* (Wolf Spikerush) G3G4

AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR

Texas-Louisiana Coastal Prairie Pondshore (Partial)

no at-risk isolated wetland elements confirmed in this isolated wetland system in state

LA, TX

West Gulf Coastal Plain Flatic Be Pond (Partial)

Assoc. *Aristida palustris* - *Panicum virgatum* - *Eriocaulon compressum* - *Eleocharis equisetoides* Herbaceous Vegetation G2G3

LA, TX
LA, TX

Aristida palustris - *Panicum virgatum* - *Eriocaulon decangulare* var. *decangulare* - *Rhynchospora elliottii* Herbaceous Vegetation G2G3

LA, TX

Nymphoides aquatica - *Nymphaea odorata* - *Gratiola brevifolia* Herbaceous Vegetation G3?

LA, TX

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
Plant	Carex decomposita (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DC:SH, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2, TV:SNR
West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods (Partial)				AR, LA, OK?, TX
Assoc.	(Quercus laurifolia) / Crataegus opaca - Crataegus viridis Forest	G1		AL?, LA, MS, TX
	Fraxinus caroliniana Seasonally Flooded Forest	G2G3		LA, TX
	Nyssa biflora - Quercus laurifolia / Sphagnum spp. Depression Forest	G3?		AR?, LA, TX?
	Quercus laurifolia - Liquidambar styraciflua - Nyssa biflora - Acer rubrum / Sabal minor Forest	G3?		LA, TX
	Quercus laurifolia - Quercus phellos - Quercus nigra / Viburnum dentatum - (Sebastiania fruticosa) / Carex glaucescens Upper West Gulf Flatwoods Forest	G2G3		AR?, LA?, TX
	Quercus lyrata - Quercus phellos - Ulmus americana / Rhynchospora spp. Forest	G2G3		AR?, LA, TX?
	Quercus phellos - Quercus similis / Crataegus marshallii - Crataegus spatulata / Chasmanthium laxum Forest	G3?		AR?, LA, TX
	Quercus phellos / Chasmanthium laxum - Carex (flaccosperma, intumescens) - Hymenocallis liriosme Flatwoods Forest	G3G4		AR, LA, OK?, TX
	Quercus phellos / Chasmanthium laxum Forest	G3?		AR?, LA?, OK?, TX
	Taxodium distichum - Nyssa biflora - Magnolia virginiana - Acer rubrum Forest	G2?		LA, TX?
West Gulf Coastal Plain Pine-Hardwood Flatwoods (Partial)				AR, LA, OK?, TX
Assoc.	Quercus stellata - Pinus taeda Flatwoods Depression Forest	G2G3		AR?, LA?, TX
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Fraxinus pennsylvanica - Populus heterophylla - Ulmus americana - (Quercus texana) Forest	G2?		AR?, LA
	Ilex coriacea - Lyonia lucida - Smilax laurifolia Shrubland	G3G4		AL?, GA, LA, MS
	Nyssa biflora / Itea virginica - Cephalanthus occidentalis Depression Forest	G3G4		AL:S1, FL, GA, LA, MS, NC, SC, VA?
Animal	Eulimnadia astraova (Star Cyst Clam Shrimp)	G1G3		LA:SNR
	Rana sevosia (Dusky Gopher Frog)	G1	LE	AL:SH, LA:SH, MS:S1

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Maine

Acadian Near-Boreal Spruce Flat (Partial)

ME, NB, NH, NY, QC, VT

no at-risk isolated wetland elements confirmed in this isolated wetland system in state

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Maryland

Atlantic Coastal Plain Northern Basin Peat Swamp (Partial)				CT, DE, MA, MD, NJ, NY, VA
Assoc.	Acer rubrum - Nyssa sylvatica - Magnolia virginiana / Viburnum nudum var. nudum / Osmunda cinnamomea - Woodwardia areolata Forest	G3?		DC, DE, MD, NJ:S4S5, NY, PA, VA:S3?

Atlantic Coastal Plain Northern Basin Swamp and Wet Hardwood Forest (Partial)				DE, MD, NJ, NY, VA
Assoc.	Acer rubrum - Nyssa sylvatica - Liquidambar styraciflua - Populus heterophylla Forest	G1		MD?, NJ:S1
	Acer rubrum - Nyssa sylvatica - Magnolia virginiana / Viburnum nudum var. nudum / Osmunda cinnamomea - Woodwardia areolata Forest	G3?		DC, DE, MD, NJ:S4S5, NY, PA, VA:S3?
	Liquidambar styraciflua - Acer rubrum - Nyssa biflora / Carex jorii Forest	G1G2		MD, VA
	Pinus taeda / Morella cerifera / Osmunda regalis var. spectabilis Forest	G3		DE, MD, NC, NJ:S1?, VA
Animal	Hydrochus spangleri (Seth Forest Water Scavenger Beetle)	G1		DE:SNR, MD:S1
Plant	Juncus caesariensis (New Jersey Rush)	G2		MD:S1, NC:S1, NJ:S2, VA:S2

Atlantic Coastal Plain Northern Dune and Maritime Grassland (Partial)				CT, DE, MA, MD, ME, NC, NH, NJ, NY, RI, VA
---	--	--	--	--

no at-risk isolated wetland elements confirmed in this isolated wetland system in state

Atlantic Coastal Plain Northern Pondshore (Partial)				DE, MA, MD, MI, NJ, NY, VA, VT
Assoc.	Cephalanthus occidentalis / Polygonum hydropiperoides - Panicum verrucosum Shrubland	G3?		DE, MA?, MD, RI?, VA
	Leersia hexandra - (Panicum verrucosum, Scleria reticularis) Herbaceous Vegetation [Provisional]	G2G3		MD:S1, NC
	Liquidambar styraciflua - Acer rubrum - Nyssa biflora / Carex jorii Forest	G1G2		MD, VA
	Nymphaea odorata - Eleocharis robbinsii Herbaceous Vegetation	G2		DE, MA, MD, NH, NJ:S1S2, NY, RI
	Quercus phellos / Carex striata var. brevis Forest	G2?		MD?, VA:S2?
	Rhexia virginica - Panicum verrucosum Herbaceous Vegetation	G2G3		CT, DE, MA, MD:S2, NH?, NJ:S1S3, NY, RI?, VT
	Saccharum giganteum - (Dichanthelium spretum, Panicum verrucosum) Herbaceous Vegetation	G1G2		MD, VA?
Plant	Coreopsis rosea (Rose Coreopsis)	G3		DE:S1, GA:SNR, MA:S3, MD:S1, MS:SNR, NJ:S2, NY:S3, RI:S2, SC:S2
	Fimbristylis perpusilla (Harper's Fimbristylis)	G2		DE:S1, GA:S1, MD:S2, NC:S1, SC:S2, TN:S1, VA:S1, TV:SNR
	Hypericum adpressum (Creeping St. John's-wort)	G3		CT:SH, DE:S2, GA:S2?, IL:S1, IN:S1, KY:SH, MA:S2, MD:S1, MO:S1, NC:SH, NJ:S2, NY:S2, RI:S2, SC:S1, TN:S1, VA:S1, WV:SH, TV:SNR
	Oxypolis canbyi (Canby's Dropwort)	G2	LE	GA:S2, MD:S1, NC:S1, SC:S1
	Rhynchospora inundata (Drowned Hornedrush)	G3G4		AL:SNR, DE:S1, FL:SNR, GA:S3?, MA:S2, MD:S1, MS:SNR, NC:S3, NJ:S2, NY:S2, RI:S1, SC:SNR
	Scirpus ancistrochaetus (Northeastern Bulrush)	G3	LE	MA:S1, MD:S1, NH:S2, PA:S3, VA:S2, VT:S2, WV:S1

Central Interior Highlands and Appalachian Sinkhole and Depression Pond (Partial)				AL, AR, DE, GA, IL, IN, KY, MD, MO, NC, NJ, OH, PA, TN, VA, WV
Assoc.	Platanus occidentalis - Fraxinus pennsylvanica - Ulmus americana / Cornus sericea Forest	G2G3		MD?, NJ:S1S2, PA?

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
Plant	Carex decomposita (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DC:SH, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2, TV:SNR
	Fimbristylis perpusilla (Harper's Fimbristylis)	G2		DE:S1, GA:S1, MD:S2, NC:S1, SC:S2, TN:S1, VA:S1, TV:SNR
	Muhlenbergia torreyana (Torrey's Dropseed)	G3		GA:SH, MD:S1, NC:S1, NJ:S3, TN:S1, TV:SNR
	Scirpus ancistrochaetus (Northeastern Bulrush)	G3	LE	MA:S1, MD:S1, NH:S2, PA:S3, VA:S2, VT:S2, WV:S1
North-Central Appalachian Seepage Fen (Partial)				CT, MA, MD, NJ, NY, PA, VA, VT, WV?

no at-risk isolated wetland elements confirmed in this isolated wetland system in state

At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Vaccinium formosum - Vaccinium fuscatum / Sphagnum cuspidatum Shrubland	G3?		DE, MD, NC, SC, VA?
	Woodwardia virginica / Sphagnum cuspidatum Herbaceous Vegetation	G2?		DE, FL, GA, MD, NC, SC, VA?
Plant	Litsea aestivalis (Pondspice)	G3		FL:S2, GA:S2, LA:SH, MD:S1, NC:S2, SC:S3, VA:S1

Isolated Wetland Ecological System (Isolation Type)

System distribution

Type

Scientific Name (Common Name)

NatureServe

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
Assoc.	Chamaecyparis thyoides / Chamaedaphne calyculata Woodland	G3G4		CT, MA, ME:S1, NH, NJ, NY, RI
	Myrica gale - Dasiphora fruticosa ssp. floribunda / Carex lasiocarpa - Cladium mariscoides Shrub Herbaceous Vegetation	G2G3		CT, MA, NH?, NJ:S1, NY, PA, RI?, VT
Animal	Caenestheriella gynecia (Feminine Clam Shrimp)	G2G3		MA:SNR, OH:SNR, PA:SNR
North-Central Interior Wet Flatwoods (Partial)				CT, IA, IL, IN, MA, MI, MN, MO, NY, OH, ON, PA, VT, WI

no at-risk isolated wetland elements confirmed in this isolated wetland system in state

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Michigan

Atlantic Coastal Plain Northern Pondshore (Partial)

Assoc. Rhynchospora capitellata - Rhexia virginica - Rhynchospora scirpoides - Schoenoplectus hallii Herbaceous Vegetation G2?

DE, MA, MD, MI, NJ, NY, VA, VT
IN, MI:S2, ON:S3, WI:S1

Plant

Isolated Wetland Ecological System (Isolation Type)

System distribution

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Minnesota

Boreal-Laurentian Bog (Partial)				MB, ME, MI, MN, NB, NH, NS, NY, ON, PE?, QC, VT, WI
Assoc.	Carex lasiocarpa - Rhynchospora alba - Scheuchzeria palustris Herbaceous Vegetation	G2?		MB:S2?, MN:S2, ON?
Boreal-Laurentian Conifer Acid Swamp (Partial)				MB, ME, MI, MN, NB, NH?, NS, NY, ON, PE?, VT, WI
Assoc.	Carex lasiocarpa - Carex oligosperma / Sphagnum spp. Herbaceous Vegetation	G3G4		IA:S1, IL?, MB:SU, MI, MN, ND, ON, WI:S3
Boreal-Laurentian-Acadian Acidic Basin Fen (Partial)				MA, ME, MI, MN, NB?, NH, NS?, NY, QC, VT, WI
Assoc.	Carex lasiocarpa - Carex oligosperma / Sphagnum spp. Herbaceous Vegetation	G3G4		IA:S1, IL?, MB:SU, MI, MN, ND, ON, WI:S3
Eastern Great Plains Wet Meadow, Prairie, and Marsh (Partial)				IA, IL, KS, MN, MO, ND, NE, OK, SD, TX?
Assoc.	Calamagrostis stricta - Carex sartwellii - Carex praegracilis - Plantago eriopoda Saline Herbaceous Vegetation	G2G3		MB:SU, MN, ND:SU, SD
	Cornus sericea - Salix (bebbiana, discolor, petiolaris) / Calamagrostis stricta Shrubland	G3G4		IA:S3?, IL, MB:SU, MN:S3, ND, WI
	Schoenoplectus fluviatilis - Schoenoplectus spp. Herbaceous Vegetation	G3G4		IA, IL, IN, MB:S3, MN, MO, OH, WI
	Spartina pectinata - Calamagrostis stricta - Carex spp. Herbaceous Vegetation	G3?		IA:SU, MB:S1S2, MN, MT, ND:S2?, NE:S1, SD
	Spartina pectinata - Carex spp. - Calamagrostis canadensis - Lythrum alatum - (Oxypolis rigidior) Herbaceous Vegetation	G3?		IA:SU, IL, IN:S1, MI:S2, MN, MO:S1, NE:S1, OH, WI:S1
Plant	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR
Great Lakes Dune and Swale (Partial)				IL, IN, MI, MN, OH, ON, PA, WI
<i>no at-risk isolated wetland elements confirmed in this isolated wetland system in state</i>				
Great Plains Prairie Pothole (Partial)				AB, IA?, MB, MN, ND, SD, SK
Assoc.	Carex lasiocarpa - Carex oligosperma / Sphagnum spp. Herbaceous Vegetation	G3G4		IA:S1, IL?, MB:SU, MI, MN, ND, ON, WI:S3
Plant	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR
Laurentian-Acadian Conifer-Hardwood Acid Swamp (Partial)				ME, MI, MN, NB?, NH, NY, ON, VT, WI
<i>no at-risk isolated wetland elements confirmed in this isolated wetland system in state</i>				
North-Central Interior and Appalachian Acid Peatland (Partial)				CT, IL, IN, MA, ME, MI, MN, NH, NJ, NY, OH, ON, PA, RI, VT, WI
Assoc.	Carex lasiocarpa - Carex oligosperma - (Lysimachia terrestris) / Sphagnum spp. / Spiraea tomentosa Herbaceous Vegetation	G3G4		IL:S2, MI, MN:S3, WI:S2
North-Central Interior Freshwater Marsh (Partial)				IA, IL, IN, MI, MN, MO, ND, OH, ON?, SD, WI
Assoc.	Schoenoplectus fluviatilis - Schoenoplectus spp. Herbaceous Vegetation	G3G4		IA, IL, IN, MB:S3, MN, MO, OH, WI
	Zizania (aquatica, palustris) Herbaceous Vegetation	G3G4		IA:SU, IN, MB?, MI, MN, NY, ON, VT:S3, WI:S3
North-Central Interior Shrub-Graminoid Alkaline Fen (Partial)				IA, IL, IN, MI, MN, ND, OH, ON, SD, WI

Isolated Wetland Ecological System (Isolation Type)

System distribution

Type

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Mississippi

East Gulf Coastal Plain Dune and Coastal Grassland (Partial)				AL, FL, MS
Assoc.	Fuirena scirpoidea - Panicum tenerum - Dichanthelium wrightianum - Andropogon capillipes Herbaceous Vegetation	G2?		AL, FL?, MS:S2
East Gulf Coastal Plain Northern Depression Pondshore (Partial)				AL, GA, MS
Assoc.	Cephalanthus occidentalis / Hibiscus moscheutos ssp. moscheutos Depression Pond Shrubland	G3?		AL?, GA, IL, IN, KY, MO:S1, MS?, TN
	Dichanthelium wrightianum - Dichanthelium erectifolium Herbaceous Vegetation	G2G3		AL?, FL, GA, MS, NC, SC
	Nyssa biflora / Itea virginica - Cephalanthus occidentalis Depression Forest	G3G4		AL:S1, FL, GA, LA, MS, NC, SC, VA?
	Panicum hemitomon - Pluchea (camphorata, rosea) - Ludwigia spp. Herbaceous Vegetation	G3		AL, FL, GA, LA?, MS
	Saccharum spp. - Panicum verrucosum - (Rhexia spp., Sabatia spp.) Herbaceous Vegetation	G2G3		AL?, GA, MS?, SC?
	Taxodium ascendens / Ilex myrtifolia Depression Forest	G3?		AL:S1S2, FL, GA, LA?, MS, NC, SC
	Taxodium distichum East Gulf Coastal Plain Pondshore Woodland	G3		AL, FL?, GA?, MS
Plant	Carex decomposita (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DC:SH, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2, TV:SNR
	Lindera melissifolia (Pondberry)	G2	LE	AL:S1, AR:S2, GA:S1, LA:SNR, MS:S2, NC:S1, SC:S1, TV:SNR, MO:S1
	Lobelia boykinii (Boykin's Lobelia)	G2G3		AL:S1S2, FL:S1, GA:S2S3, MS:S1, NC:S1, NJ:S1, SC:SNR, TV:SNR
	Myriophyllum laxum (Piedmont Water-milfoil)	G3		AL:S2, FL:S3, GA:S2, MS:S1, NC:S1, SC:S2, VA:S1
	Polygonum hirsutum (Hairy Smartweed)	G3G4		AL:SNR, FL:SNR, GA:SNR, MS:SNR, NC:S1, SC:SNR
	Rhynchospora inundata (Drowned Hornedrush)	G3G4		AL:SNR, DE:S1, FL:SNR, GA:S3?, MA:S2, MD:S1, MS:SNR, NC:S3, NJ:S2, NY:S2, RI:S1, SC:SNR
East Gulf Coastal Plain Southern Depression Pondshore (Partial)				AL, FL, GA, LA?, MS
Assoc.	Dichanthelium wrightianum - Dichanthelium erectifolium Herbaceous Vegetation	G2G3		AL?, FL, GA, MS, NC, SC
	Eleocharis (elongata, equisetoides) - Rhynchospora tracyi Semipermanently Flooded Herbaceous Vegetation	G3?		AL, FL, GA, LA?, MS?, NC, SC
	Taxodium distichum East Gulf Coastal Plain Pondshore Woodland	G3		AL, FL?, GA?, MS
Animal	Rana sevosia (Dusky Gopher Frog)	G1	LE	AL:SH, LA:SH, MS:S1
Plant	Carex verrucosa (Warty Sedge)	G3G4		AL:SNR, FL:SNR, GA:S4?, LA:SNR, MS:S2, NC:S1, SC:SNR, TX:S2S3, VA:SNR
	Coreopsis nudata (Georgia Tickseed)	G3?		AL:S1, FL:SNR, GA:S3S4, LA:S2, MS:S1S2
	Fuirena longa (Coastal-plain Umbrella-sedge)	G3G4		AL:SNR, FL:SNR, MS:S3S4, TX:S2
	Lindera melissifolia (Pondberry)	G2	LE	AL:S1, AR:S2, GA:S1, LA:SNR, MS:S2, NC:S1, SC:S1, TV:SNR, MO:S1
	Lobelia boykinii (Boykin's Lobelia)	G2G3		AL:S1S2, FL:S1, GA:S2S3, MS:S1, NC:S1, NJ:S1, SC:SNR, TV:SNR
	Myriophyllum laxum (Piedmont Water-milfoil)	G3		AL:S2, FL:S3, GA:S2, MS:S1, NC:S1, SC:S2, VA:S1

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Polygonum hirsutum (Hairy Smartweed)	G3G4		AL:SNR, FL:SNR, GA:SNR, MS:SNR, NC:S1, SC:SNR
	Rhynchospora fernaldii (Fernald's Beakrush)	G3G4		AL:S1?, FL:SNR, GA:SNR, MS:S1
	Rhynchospora inundata (Drowned Hornedrush)	G3G4		AL:SNR, DE:S1, FL:SNR, GA:S3?, MA:S2, MD:S1, MS:SNR, NC:S3, NJ:S2, NY:S2, RI:S1, SC:SNR
East Gulf Coastal Plain Southern Loblolly-Hardwood Flatwoods (Partial)				AL, FL?, GA?, LA, MS
	Assoc. (Quercus laurifolia) / Crataegus opaca - Crataegus viridis Forest	G1		AL?, LA, MS, TX
Southeastern Coastal Plain Interdunal Wetland (Partial)				AL, FL, GA, LA, MS, NC, SC, TX, VA
	Assoc. Typha domingensis Seasonally Flooded Gulf Coastal Plain Herbaceous Vegetation	G3?		AL, LA?, MS, TX
	Plant Fuirena longa (Coastal-plain Umbrella-sedge)	G3G4		AL:SNR, FL:SNR, MS:S3S4, TX:S2
Southern Coastal Plain Nonriverine Basin Swamp (Partial)				AL, FL, GA, LA?, MS, SC
	Plant Coreopsis nudata (Georgia Tickseed)	G3?		AL:S1, FL:SNR, GA:S3S4, LA:S2, MS:S1S2
	Pieris phillyreifolia (Climbing Fetter-bush)	G3		AL:S2, FL:SNR, GA:S3, MS:S1, SC:SNR
Southern Coastal Plain Nonriverine Cypress Dome (Partial)				AL, FL, GA, LA, MS
	Assoc.			

Isolated Wetland Ecological System (Isolation Type)

<i>Type</i>	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	System distribution Subnational distribution (subnational rank)
-------------	-------------------------------	----------------------------	--------------------	---

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
<i>Plant</i>	<i>Eleocharis wolfii</i> (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR
	<i>Platanthera leucophaea</i> (Eastern Prairie White-fringed Orchid)	G3	LT	IA:S1, IL:S1, IN:S1, ME:S1, MI:S1, MO:SH, NY:SH, OH:S2, OK:SH, VA:S1, WI:S2S3
	<i>Schoenoplectus hallii</i> (Hall's Bulrush)	G2		GA:SH, IA:S1, IN:S1, MI:S2, NE:S1, OK:S1, SC:SNR, WI:S1, TV:SNR, IL:S1, KS:S1, KY:S1, MO:S2, TX:S1
Ozark-Ouachita Fen (Partial)				AR, MO
<i>Assoc.</i>	(<i>Carex interior</i> , <i>Carex lurida</i>) - <i>Carex leptalea</i> - <i>Parnassia grandifolia</i> - <i>Rhynchospora capillacea</i> Herbaceous Vegetation	G2G3		AR, MO
	<i>Carex interior</i> - <i>Carex lurida</i> - <i>Andropogon gerardii</i> - <i>Parnassia grandifolia</i> Herbaceous Vegetation	G1G2		MO:S1
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
<i>Assoc.</i>	<i>Distichlis spicata</i> - <i>Schoenoplectus maritimus</i> - <i>Salicornia rubra</i> Herbaceous Vegetation	G1G2		AR?, KS:SU, MO, NE:S1, TX?
	<i>Typha latifolia</i> - <i>Equisetum hyemale</i> - <i>Carex (hystericina, pellita)</i> Seep Herbaceous Vegetation	G3		IA, KS:SU, MO:S2, NE:S3, SD
<i>Plant</i>	<i>Hypericum adpressum</i> (Creeping St. John's-wort)	G3		CT:SH, DE:S2, GA:S2?, IL:S1, IN:S1, KY:SH, MA:S2, MD:S1, MO:S1, NC:SH, NJ:S2, NY:S2, RI:S2, SC:S1, TN:S1, VA:S1, WV:SH

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Montana

Boreal Depressional Bog (Partial)				AK, BC, ID, MT, OR, WA
Assoc.	Dulichium arundinaceum Seasonally Flooded Herbaceous Vegetation	G3		BC:S2, CA:S1?, ID:S2, MT:S2, OR:S3, WA:S2S3, WY?
Inter-Mountain Basins Greasewood Flat (Partial)				AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, WY
Assoc.	Puccinellia nuttalliana Herbaceous Vegetation	G3?		CO:S1?, MT, NV?, SK?, UT?
	Salicornia rubra Herbaceous Vegetation	G2G3		CA?, CO:S1?, MB:S2, MN, MT:S2?, ND, NV?, SD, SK
	Sarcobatus vermiculatus / Leymus cinereus Shrubland	G3		CA?, ID:S2, MT:S2S3, NV?, OR:S2, WA:S1
Northern Rocky Mountain Wooded Vernal Pool (Strict)				ID, MT
Plant	Howellia aquatilis (Water Howellia)	G3	LT	CA:S1.2, ID:S1, MT:S2, OR:S1, WA:S2S3
Western Great Plains Open Freshwater Depression Wetland (Partial)				KS, MT, ND, NE, OK, SD, TX, WY
Assoc.	Betula occidentalis - Dasiphora fruticosa ssp. floribunda Shrubland	G2Q		ID, MT?
	Panicum virgatum - (Pascopyrum smithii) Herbaceous Vegetation	G2Q		MT:S2, SD
	Potamogeton richardsonii - Myriophyllum spicatum Herbaceous Vegetation	G2Q		MT:S2
	Spartina pectinata - Calamagrostis stricta - Carex spp. Herbaceous Vegetation	G3?		IA:SU, MB:S1S2, MN, MT, ND:S2?, NE:S1, SD
	Spartina pectinata - Carex spp. Herbaceous Vegetation	G3?		MT:S3, ND, SD
	Spartina pectinata - Schoenoplectus pungens Herbaceous Vegetation	G3?		MT:S3, WY:S2S3
	Stuckenia pectinata - Myriophyllum (sibiricum, spicatum) Herbaceous Vegetation	G3G4		AB, CA?, MT:S1, ND:SU, ON?, SD:SU, SK:SU
	Stuckenia pectinata - Zannichellia palustris Herbaceous Vegetation	G3G4		MT:S1, ND:SU, SD:SU, SK:SU
Western Great Plains Saline Depression Wetland (Partial)				CO, KS, MT, ND, NE, NM, OK, SD, TX, WY
Assoc.	Distichlis spicata - Hordeum jubatum - Puccinellia nuttalliana - Suaeda calceoliformis Herbaceous Vegetation	G2G3		MB:S3, MN, MT, ND, SD:SU
	Puccinellia nuttalliana Herbaceous Vegetation	G3?		CO:S1?, MT, NV?, SK?, UT?
	Salicornia rubra Herbaceous Vegetation	G2G3		CA?, CO:S1?, MB:S2, MN, MT:S2?, ND, NV?, SD, SK
	Schoenoplectus pungens Herbaceous Vegetation	G3G4		CO:S3, ID, KS, MT:S3, ND, NM, NV, SD, UT:S2S4, WY
	Spartina pectinata - Schoenoplectus pungens Herbaceous Vegetation	G3?		MT:S3, WY:S2S3
	Stuckenia pectinata - Ruppia maritima Herbaceous Vegetation	G2?		IA:SU, MT:S2, ND:S3, SD
	Stuckenia pectinata - Zannichellia palustris Herbaceous Vegetation	G3G4		MT:S1, ND:SU, SD:SU, SK:SU
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Carex aperta Herbaceous Vegetation	G1?		ID?, MT, OR:S1, WA

Isolated Wetland Ecological System (Isolation Type)

System distribution

Type



Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Nevada

Columbia Plateau Vernal Pool (Strict)

<i>Plant</i>	<i>Ivesia pityocharis</i> (Pine Nut Ivesia)	G2		BC?, NV, OR, WA NV:S2
	<i>Juncus uncialis</i> (Inch-high Rush)	G3G4		CA:SNR, NV:SNR, OR:SNR, WA:S2
	<i>Polyctenium williamsiae</i> (William's Comb-leaf)	G2Q		NV:SNR

Inter-Mountain Basins Alkaline Closed Depression (Partial)

<i>Assoc.</i>	<i>Leymus triticoides</i> - <i>Poa secunda</i> Herbaceous Vegetation	G2		CA, ID, NV, OR, UT, WA? CA, NV?, OR:S2
<i>Animal</i>				

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
Assoc.	Leymus cinereus - Distichlis spicata Herbaceous Vegetation	G3		CA:S1, CO, ID:S1, NV, OR:S3, UT, WA:S1
	Leymus triticoides - Poa secunda Herbaceous Vegetation	G2		CA, NV?, OR:S2
	Sarcobatus vermiculatus / Leymus cinereus Shrubland	G3		CA?, ID:S2, MT:S2S3, NV?, OR:S2, WA:S1
Plant	Lepidium davisii (Davis' Peppergrass)	G3		ID:S3, NV:S1, OR:S1
	Phacelia inundata (Playa Phacelia)	G2		CA:S2.3, NV:S2?, OR:S1
	Phacelia parishii (Parish's Phacelia)	G2G3		AZ:S1, CA:S1.1, NV:S2S3
	Sisyrinchium funereum (Funeral Mountain Blue-eye-grass)	G2G3		CA:S2.3, NV:S1
North American Warm Desert Playa (Partial)				AZ, CA, MXBC, MXCH, MXSO, NM, NV, TX
Plant	Goodmania luteola (golden goodmania)	G2G3		CA:S3.2, NV:S1
	Ivesia kingii (King's Ivesia)	G3	PS	CA:SNR, NV:S3, UT:S1
	Nitrophila mohavensis (Amargosa Niterwort)	G1	LE	CA:S1.1, NV:S1
	Phacelia parishii (Parish's Phacelia)	G2G3		AZ:S1, CA:S1.1, NV:S2S3
Sonoran Fan Palm Oasis (Partial)				AZ, CA, MXBC, MXSO, NV
<i>no at-risk isolated wetland elements confirmed in this isolated wetland system in state</i>				
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Plant	Mimulus eastwoodiae (Eastwood Monkeyflower)	G3		AZ:SNR, CO:S1, NV:SNR, UT:S3

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

New Hampshire

Acadian Near-Boreal Spruce Flat (Partial)

no at-risk isolated wetland elements confirmed in this isolated wetland system in state

ME, NB, NH, NY, QC, VT

Acadian-Appalachian Conifer Seepage Forest (Partial)

no at-risk isolated wetland elements confirmed in this isolated wetland system in state

ME, NB, NH, NY, QC, VT

Atlantic Coastal Plain Northern Dune and Maritime Grassland (Partial)

Assoc. Cladium mariscoides / Vaccinium macrocarpon - Morella pensylvanica Dwarf-shrubland(Partial)RIMNME, NB, NH,SNJ, NYON,la

CT, DE, MA, MD, ME, NC, NH, NJ, NY, RI, VA

AcadiaAcidntiBasm iFennd (Partial)RIMNME, ?NB, NH,S?NJ, NY, Carex wiegtlaiind Wiegtla'ser dgype)132(G3)-1259(MA:S1NHME:S3MEM(:S2NJ,H:S1S2NJon)JT43.6

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

New Jersey

Atlantic Coastal Plain Northern Basin Peat Swamp (Partial)

Assoc. Acer rubrum - Nyssa sylvatica - Magnolia virginiana / Viburnum nudum var. nudum / Osmunda cinnamomea - Woodwardia areolata Forest G3?

CT, DE, MA, MD, NJ, NY, VA
DC, DE, MD, NJ:S4S5, NY, PA, VA:S3?

Chamaecyparis thyoides / Ilex glabra - Rhododendron viscosum Forest G3

CT, DE, MA, NJ:S3, NY, RI

Chamaecyparis thyoides / Rhododendron maximum Forest G2G3

CT, NH, NJ:S1, NY, RI

Atlantic Coastal Plain Northern Basin Swamp and Wet Hardwood Forest (Partial) (New Jersey) T3B - Nyssa sylvatica - Magnolia virginiana / Viburnum nudum var. nudum / Osmunda cinnamomea - Woodwardia

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Muhlenbergia torreyana (Torrey's Dropseed)	G3		GA:SH, MD:S1, NC:S1, NJ:S3, TN:S1, TV:SNR
North-Central Appalachian Seepage Fen (Partial)				CT, MA, MD, NJ, NY, PA, VA, VT, WV?
Assoc.	Cornus amomum - Salix candida / Dasiphora fruticosa ssp. floribunda / Carex stricta Shrubland	G3?		CT, MA, NJ:S2S3, NY, OH, PA
	Dasiphora fruticosa ssp. floribunda / Rhynchospora capillacea - Scleria verticillata Shrub Herbaceous Vegetation	G1		NJ:S1, NY
	Juniperus virginiana / Betula pumila / Carex sterilis - Oligoneuron rigidum Shrub Herbaceous Vegetation	G1Q		NJ:S1
	Juniperus virginiana / Dasiphora fruticosa ssp. floribunda / Carex flava - Carex tetanica Shrub Herbaceous Vegetation	G1G2		NJ:S1S2, NY, PA
	Morella pensylvanica - Dasiphora fruticosa ssp. floribunda / Carex sterilis - Carex flava Shrub Herbaceous Vegetation	G2		NJ:S2, NY?, PA
North-Central Interior and Appalachian Acid Peatland (Partial)				CT, IL, IN, MA, ME, MI, MN, NH, NJ, NY, OH, ON, PA, RI, VT, WI
Assoc.	Chamaecyparis thyoides / Chamaedaphne calyculata Woodland	G3G4		CT, MA, ME:S1, NH, NJ, NY, RI
	Myrica gale - Dasiphora fruticosa ssp. floribunda / Carex lasiocarpa - Cladium mariscoides Shrub Herbaceous Vegetation	G2G3		CT, MA, NH?, NJ:S1, NY, PA, RI?, VT

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

New Mexico

Chihuahuan-Sonoran Desert Bottomland and Swale Grassland (Partial)				AZ, MXCH, MXSO, NM, TX
Assoc.	Pleuraphis mutica - Panicum obtusum Herbaceous Vegetation	G3		AZ:S2, MXCH?, MXCO?, MXSO?, NM:S3, TX
Inter-Mountain Basins Greasewood Flat (Partial)				AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, WY
Assoc.	Sarcobatus vermiculatus / Elymus elymoides - Pascopyrum smithii Shrubland	G2?		NM:S2?
Inter-Mountain Basins Playa (Partial)				CA, CO, ID, NM, NV, OR, UT, WA?, WY
Assoc.	Sarcobatus vermiculatus / Elymus elymoides - Pascopyrum smithii Shrubland	G2?		NM:S2?
North American Warm Desert Interdunal Swale Wetland (Partial)				NM, TX
Assoc.	Eleocharis palustris - Carex praegracilis - Berula erecta Herbaceous Vegetation	G2		AZ:S2, MXSO, NM
	Populus fremontii / Baccharis salicifolia Woodland	G2		NM:S1?, UT:S1S2
	Schoenoplectus americanus - Flaveria chlorifolia - (Helianthus paradoxus) Herbaceous Vegetation	G1		NM?, TX
North American Warm Desert Playa (Partial)				AZ, CA, MXBC, MXCH, MXSO, NM, NV, TX
Animal	Streptocephalus moorei (Spinythumb Fairy Shrimp)	G1G2		NM:SNR
Plant	Atriplex griffithsii (Griffith's Saltbush)	G2G3		AZ:S2S3, NM:S2
Western Great Plains Saline Depression Wetland (Partial)				CO, KS, MT, ND, NE, NM, OK, SD, TX, WY
Assoc.	Schoenoplectus pungens Herbaceous Vegetation	G3G4		CO:S3, ID, KS, MT:S3, ND, NM, NV, SD, UT:S2S4, WY
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Animal	Eocyclus concavus (Swaybacked Clam Shrimp)	G1G3		AZ:SNR, NM:SNR, TX:SNR

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

New York

Acadian Near-Boreal Spruce Flat (Partial)

no at-risk isolated wetland elements confirmed in this isolated wetland system in state

ME, NB, NH, NY, QC, VT

Acadian-Appalachian Conifer Seepage Forest (Partial)

no at-risk isolated wetland elements confirmed in this isolated wetland system in state

ME, NB, NH, NY, QC, VT

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
Assoc.	Deschampsia caespitosa - (Sporobolus heterolepis, Schizachyrium scoparium) - Carex crawei - Packeria paupercula Herbaceous Vegetation	G2		MI, NY, ON:S2
Laurentian-Acadian Conifer-Hardwood Acid Swamp (Partial)				ME, MI, MN, NB?, NH, NY, ON, VT, WI
Plant	Carex wiegandii (Wiegand's Sedge)	G3		MA:S1, ME:S3, MI:S2, NH:S1S2, NY:S1, PA:S1, VT:S1
North-Central Appalachian Seepage Fen (Partial)				CT, MA, MD, NJ, NY, PA, VA, VT, WV?
Assoc.	Cornus amomum - Salix candida / Dasiphora fruticosa ssp. floribunda / Carex stricta Shrubland	G3?		CT, MA, NJ:S2S3, NY, OH, PA
	Cornus racemosa / Carex (sterilis, aquatilis, lacustris) Shrub Herbaceous Vegetation	G2G3		CT, MA, NY, VT
	Dasiphora fruticosa ssp. floribunda / Carex (sterilis, hystericina, flava) Shrub Herbaceous Vegetation	G2		CT, MA, NH, NY, VT
	Dasiphora fruticosa ssp. floribunda / Carex interior - Carex flava - Sarracenia purpurea Shrub Herbaceous Vegetation	G3		NY, OH, ON:S4
	Dasiphora fruticosa ssp. floribunda / Rhynchospora capillacea - Scleria verticillata Shrub Herbaceous Vegetation	G1		NJ:S1, NY
	Juniperus virginiana / Dasiphora fruticosa ssp. floribunda / Carex flava - Carex tetanica Shrub Herbaceous Vegetation	G1G2		NJ:S1S2, NY, PA
	Morella pensylvanica - Dasiphora fruticosa ssp. floribunda / Carex sterilis - Carex flava Shrub Herbaceous Vegetation	G2		NJ:S2, NY?, PA
North-Central Interior and Appalachian Acid Peatland (Partial)				CT, IL, IN, MA, ME, MI, MN, NH, NJ, NY, OH, ON, PA, RI, VT, WI
Assoc.	Chamaecyparis thyoides / Chamaedaphne calyculata Woodland	G3G4		CT, MA, ME:S1, NH, NJ, NY, RI
	Myrica gale - Dasiphora fruticosa ssp. floribunda / Carex lasiocarpa - Cladium mariscoides Shrub Herbaceous Vegetation	G2G3		CT, MA, NH?, NJ:S1, NY, PA, RI?, VT
	Vaccinium corymbosum - Gaylussacia baccata - Photinia melanocarpa / Calla palustris Shrubland	G2G3		IN, MI?, NY, OH:S1, ON
Plant	Platanthera leucophaea (Eastern Prairie White-fringed Orchid)	G3	LT	IA:S1, IL:S1, IN:S1, ME:S1, MI:S1, MO:SH, NY:SH, OH:S2, OK:SH, VA:S1, WI:S2S3
North-Central Interior Wet Flatwoods (Partial)				CT, IA, IL, IN, MA, MI, MN, MO, NY, OH, ON, PA, VT, WI
<i>no at-risk isolated wetland elements confirmed in this isolated wetland system in state</i>				
Northern Great Lakes Interdunal Wetland (Partial)				MI, MN, NY, ON, WI
Plant	Oligoneuron houghtonii (Houghton's Goldenrod)	G3	LT	MI:S3, NY:S1
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Schoenoplectus maritimus - Atriplex patula - Eleocharis parvula Herbaceous Vegetation	G1		IL:S1, MI:S1, NY:S1, ON?
	Zizania (aquatica, palustris) Herbaceous Vegetation	G3G4		IA:SU, IN, MB?, MI, MN, NY, ON, VT:S3, WI:S3
Plant	Carex decomposita (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Pinus serotina / Cyrilla racemiflora - Lyonia lucida - Vaccinium fuscatum Woodland	G2G3		NC, SC, VA?
	Quercus phellos - Nyssa biflora / Panicum hemitomon - Carex spp. - Woodwardia virginica Forest [Provisional]	G2G3		GA?, NC?, SC
	Rhynchospora (careyana, inundata) Seasonally Flooded Herbaceous Vegetation	G3?		FL, GA, NC, SC?
	Rhynchospora alba Saturated Herbaceous Vegetation	G1?		NC
	Rhynchospora filifolia - Juncus abortivus Herbaceous Vegetation	G2?		AL, FL, GA, NC, SC
	Sphagnum cuspidatum Nonvascular Vegetation	G2?		FL, GA, NC, SC
	Taxodium ascendens / (Nyssa biflora) / Leucothoe racemosa - Lyonia lucida - Morella cerifera Depression Forest	G3		AL, FL, GA, LA, MS, NC, SC
	Taxodium ascendens / Cyrilla racemiflora - Zenobia pulverulenta Woodland	G2		NC, SC
	Taxodium ascendens / Ilex myrtifolia Depression Forest	G3?		AL:S1S2, FL, GA, LA?, MS, NC, SC
	Vaccinium formosum - Vaccinium fuscum / Sphagnum cuspidatum Shrubland	G3?		DE, MD, NC, SC, VA?
	Woodwardia virginica / Sphagnum cuspidatum Herbaceous Vegetation	G2?		DE, FL, GA, MD, NC, SC, VA?
Animal	Rana capito (Carolina Gopher Frog)	G3		AL:S2, FL:S3, GA:S2S3, NC:S2, SC:S1, TN:S1, TV:SNR
Plant	Carex decomposita (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DC:SH, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2, TV:SNR
	Carex verrucosa (Warty Sedge)	G3G4		AL:SNR, FL:SNR, GA:S4?, LA:SNR, MS:S2, NC:S1, SC:SNR, TX:S2S3, VA:SNR
	Fimbristylis perpusilla (Harper's Fimbristylis)	G2		DE:S1, GA:S1, MD:S2, NC:S1, SC:S2, TN:S1, VA:S1, TV:SNR
	Hypericum adpressum (Creeping St. John's-wort)	G3		CT:SH, DE:S2, GA:S2?, IL:S1, IN:S1, KY:SH, MA:S2, MD:S1, MO:S1,

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
Assoc.	Liquidambar styraciflua - Acer rubrum / Carex spp. - Sphagnum spp. Forest	G2Q		AL, GA, NC, TN
	Scirpus cyperinus - Dulichium arundinaceum / Sphagnum spp. Herbaceous Vegetation	G1Q		GA, NC, SC?, TN, VA?
	Sparganium americanum - Epilobium leptophyllum Herbaceous Vegetation	G2G3		NC, TN, VA:S1?, WV
Plant	Carex decomposita (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DC:SH, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2, TV:SNR
	Fimbristylis perpusilla (Harper's Fimbristylis)	G2		DE:S1, GA:S1, MD:S2, NC:S1, SC:S2, TN:S1, VA:S1, TV:SNR
	Isoetes virginica (Virginia Quillwort)	G1		NC:S1, VA:S1?
	Muhlenbergia torreyana (Torrey's Dropseed)	G3		GA:SH, MD:S1, NC:S1, NJ:S3, TN:S1, TV:SNR
Southeastern Coastal Plain Interdunal Wetland (Partial)				
Assoc.	Typha domingensis - Setaria magna Herbaceous Vegetation	G2G3		AL, FL, GA, LA, MS, NC, SC, TX, VA FL, GA, NC, SC
Plant	Ludwigia lanceolata (Lance-leaf Seedbox)	G3		FL:SNR, GA:SNR, NC:S1, SC:SNR
Southern Appalachian Seepage Wetland (Partial)				
Assoc.	Alnus serrulata - Linderia benzoin / Scutellaria lateriflora - Thelypteris noveboracensis Shrubland	G2?		AL?, GA, KY?, NC, SC, TN, VA, WV? GA?, KY?, NC, SC?, TN?
	Carex gynandra - Platanthera clavellata - Drosera rotundifolia - Carex ruthii - Carex atlantica / Sphagnum spp. Herbaceous Vegetation	G2		NC, TN, VA?
	Diphylleia cymosa - Saxifraga micranthidifolia - Laportea canadensis Herbaceous Vegetation	G3		GA, NC, SC?, TN, VA
	Glyceria striata - Carex gynandra - Chelone glabra - Symphyotrichum puniceum / Sphagnum spp. Herbaceous Vegetation	G2G3		AL?, GA, NC, SC?, TN
	Impatiens (capensis, pallida) - Monarda didyma - Rudbeckia laciniata var. humilis Herbaceous Vegetation	G3		GA, NC, SC, TN, VA, WV?
Plant	Cardamine clematitis (Mountain Bitter Cress)	G2G3		AL:SH, NC:S2, SC:SNR, TN:S2, VA:S1S2, TV:SNR, GS:P2
	Chelone cuthbertii (Cuthbert's Turtlehead)	G3		GA:S1, NC:S3?, SC:SNR, VA:S2, TV:SNR
	Glyceria nubigena (Smoky Mountains Manna-grass)	G2		NC:S2, TN:S1S2, TV:SNR, GS:P1
	Sarracenia oreophila (Green Pitcherplant)	G2	LE	AL:S2, GA:S1, NC:S1, TV:SNR
	Saxifraga caroliniana (Carolina Saxifrage)	G2		GA:SH, NC:S2, TN:S1S2, VA:S2?, WV:S1, TV:SNR, GS:PNR

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
Plant	Carex decomposita (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DC:SH, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2, TV:SNR
	Isoetes piedmontana (Piedmont Quillwort)	G3		AL:S2, GA:S3, NC:S1, SC:S2, TX:S1, VA:S1?
	Isoetes virginica (Virginia Quillwort)	G1		NC:S1, VA:S1?
Southern Piedmont Granite Flatrock (Strict)				AL, GA, NC, SC, VA
Assoc.	Diamorpha smallii - Minuartia glabra - Minuartia uniflora - Cyperus granitophilus Herbaceous Vegetation	G3		AL, GA, NC, SC
Plant	Cyperus granitophilus (Granite-loving Flatsedge)	G3Q		AL:S2, GA:S3, NC:S1, SC:SNR, TN:S1, VA:S1, TV:SNR
	Isoetes piedmontana (Piedmont Quillwort)	G3		AL:S2, GA:S3, NC:S1, SC:S2, TX:S1, VA:S1?
	Sedum pusillum (Granite Rock Stonecrop)	G3		AL:SNR, GA:S3, NC:S1, SC:S2
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Carex atlantica - Solidago patula var. patula - Lilium grayi / Sphagnum bartlettianum Herbaceous Vegetation	G1		NC, TN?, VA?
	Eleocharis (elongata, equisetoides) - Rhynchospora tracyi Semipermanently Flooded Herbaceous Vegetation	G3?		AL, FL, GA, LA?, MS?, NC, SC
	Leersia hexandra - (Panicum verrucosum, Scleria reticularis) Herbaceous Vegetation [Provisional]	G2G3		MD:S1, NC
	Pinus serotina / Lyonia lucida - Ilex glabra - (Cyrilla racemiflora) Shrubland	G3		FL, GA, NC, SC, VA
	Pinus taeda / Morella cerifera / Osmunda regalis var. spectabilis Forest	G3		DE, MD, NC, NJ:S1?, VA
	Taxodium distichum - Taxodium ascendens / Panicum hemitomom - Sclerolepis uniflora Woodland	G1		NC
	Taxodium distichum - Taxodium ascendens / Panicum hemitomom Woodland	G3?		NC
Plant	Carex sp. 2 (Fen Sedge)	G1		NC:S1, VA:S1
	Juncus caesariensis (New Jersey Rush)	G2		MD:S1, NC:S1, NJ:S2, VA:S2
	Sabatia kennedyana (Plymouth Gentian)	G3		MA:S3, NC:S1, RI:S1, SC:S1



Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Ohio

Central Interior Highlands and Appalachian Sinkhole and Depression Pond (Partial)

AL, AR, DE, GA, IL, IN, KY, MD, MO, NC, NJ, OH, PA, TN, VA, WV

Plant

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
<i>Animal</i>	<i>Oecanthus laricis</i> (Laricis Tree Cricket)	G1G2		MI:S1S2, OH:SNR
North-Central Interior Wet Flatwoods (Partial)				
Assoc.	<i>Fagus grandifolia</i> - <i>Acer saccharum</i> - <i>Quercus bicolor</i> - <i>Acer rubrum</i> Flatwoods Forest	G2G3		CT, IA, IL, IN, MA, MI, MN, MO, NY, OH, ON, PA, VT, WI IN:S2, MI?, OH, ON?
	<i>Fagus grandifolia</i> - <i>Quercus alba</i> - (<i>Quercus michauxii</i>) - <i>Acer rubrum</i> Flatwoods Forest	G3		IN:S2, OH
	<i>Quercus palustris</i> - <i>Quercus bicolor</i> - (<i>Liquidambar styraciflua</i>) Mixed Hardwood Forest			

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Oklahoma

Eastern Great Plains Wet Meadow, Prairie, and Marsh (Partial)

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
<i>Plant</i>	<i>Carex decomposita</i> (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Pennsylvania

Central Interior Highlands and Appalachian Sinkhole and Depression Pond (Partial)

Assoc. Platanus occidentalis - Fraxinus pennsylvanica - Ulmus americana / Cornus sericea Forest G2G3

Plant Scirpus ancistrochaetus (Northeastern Bulrush) G3 LE

AL, AR, DE, GA, IL, IN, KY, MD, MO, NC, NJ, OH, PA, TN, VA, WV
MD?, NJ:S1S2, PA?

MA:S1, MD:S1, NH:S2, PA:S3, VA:S2, VT:S2, WV:S1

Great Lakes Dune and Swale (Partial)

Plant Lycopodiella margueritiae (Northern Prostrate Clubmoss) G2

IL, IN, MI, MN, OH, ON, PA, WI
OH:S1, PA:SU, MI:S2, VA:S1, TV:SNR

North-Central Appalachian Seepage Fen (Partial)

Assoc. Cornus amomum - Salix candida / Dasiphora fruticosa ssp. floribunda / Carex stricta Shrubland G3?

Juniperus virginiana / Dasiphora fruticosa ssp. floribunda / Carex flava - Carex tetanica Shrub Herbaceous Vegetation G1G2

CT, MA, MD, NJ, NY, PA, VA, VT, WV?
CT, MA, NJ:S2S3, NY, OH, PA

NJ:S1S2, NY, PA

Morella pensylvanica - Dasiphora fruticosa ssp. floribunda / Carex sterilis - Carex flava Shrub Herbaceous Vegetation G2

NJ:S2, NY?, PA

North-Central Interior and Appalachian Acid Peatland (Partial)

Assoc. Myrica gale - Dasiphora fruticosa ssp. floribunda / Carex lasiocarpa - Cladium mariscoides Shrub Herbaceous Vegetation G2G3

Animal Caenestheriella gynecia (Feminine Clam Shrimp) G2G3

CT, IL, IN, MA, ME, MI, MN, NH, NJ, NY, OH, ON, PA, RI, VT, WI
CT, MA, NH?, NJ:S1, NY, PA, RI?, VT

MA:SNR, OH:SNR, PA:SNR

North-Central Interior Wet Flatwoods (Partial)

Assoc. Quercus palustris - Quercus bicolor - (Liquidambar styraciflua)

CT, IA, IL, IN, MA, MI, MN, MO, NY, OH, ON, PA, VT, WI

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Rhode Island

Atlantic Coastal Plain Northern Dune and Maritime Grassland (Partial)

CT, DE, MA, MD, ME, NC, NH, NJ, NY, RI, VA

Assoc.	Cladium mariscoides / Vaccinium macrocarpon - Morella pensylvanica Dwarf-shrubland	G2
--------	--	----

DE, MA, NH:S1, NJ:S1S2, NY, RI

North-Central Interior and Appalachian Acid Peatland (Partial)

CT, IL, IN, MA, ME, MI, MN, NH, NJ, NY, OH, ON, PA, RI, VT, WI

Assoc.	Chamaecyparis thyoides / Chamaedaphne calyculata Woodland	G3G4
--------	---	------

CT, MA, ME:S1, NH, NJ, NY, RI

	Myrica gale - Dasiphora fruticosa ssp. floribunda / Carex lasiocarpa - Cladium mariscoides Shrub Herbaceous Vegetation	G2G3
--	--	------

CT, MA, NH?, NJ:S1, NY, PA, RI?, VT

At-risk isolated wetland elements not confirmed in any isolated wetland system in state

Assoc.	Chamaecyparis thyoides / Ilex glabra - Rhododendron viscosum Forest	G3
--------	---	----

CT, DE, MA, NJ:S3, NY, RI

	Chamaecyparis thyoides / Rhododendron maximum Forest	G2G3
--	--	------

CT, NH, NJ:S1, NY, RI

	Nymphaea odorata - Eleocharis robbinsii Herbaceous Vegetation	G2
--	---	----

DE, MA, MD, NH, NJ:S1S2, NY, RI

	Rhexia virginica - Crotalaria sagittalis Herbaceous Vegetation	G2
--	--	----

CT, MA, NY, RI

	Rhynchospora capitellata - Cyperus dentatus - Rhexia virginica - Xyris difformis Herbaceous Vegetation	G2
--	--	----

CT, MA, ME, NH, NJ?, NS?, NY, ON, RI, VT

Plant	Coreopsis rosea (Rose Coreopsis)	G3
-------	----------------------------------	----

DE:S1, GA:SNR, MA:S3, MD:S1, MS:SNR, NJ:S2, NY:S3, RI:S2, SC:S2

	Hypericum adpressum (Creeping St. John's-wort)	G3
--	--	----

CT:SH, DE:S2, GA:S2?, IL:S1, IN:S1, KY:SH, MA:S2, MD:S1, MO:S1, NC:SH, NJ:S2, NY:S2, RI:S2, SC:S1, TN:S1, VA:S1, WV:SH

	Rhynchospora inundata (Drowned Hornedrush)	G3G4
--	--	------

AL:SNR, DE:S1, FL:SNR, GA:S3?, MA:S2, MD:S1, MS:SNR, NC:S3, NJ:S2, NY:S2, RI:S1, SC:SNR

	Sabatia kennedyana (Plymouth Gentian)	G3
--	---------------------------------------	----

MA:S3, NC:S1, RI:S1, SC:S1

	Sagittaria teres (Slender Arrowhead)	G3
--	--------------------------------------	----

MA:S3, NH:S1, NJ:S1, NY:S1, RI:S1, SC:SNR

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

South Carolina

Atlantic Coastal Plain Clay-Based Carolina Bay Wetland (Partial)				GA?, NC, SC
Assoc.	Taxodium ascendens / Cyrilla racemiflora - Zenobia pulverulenta Woodland	G2		NC, SC
	Taxodium ascendens / Panicum hemitomon - Polygala cymosa Woodland	G2G3		GA?, NC, SC
Animal	Rana capito (Carolina Gopher Frog)	G3		AL:S2, FL:S3, GA:S2S3, NC:S2, SC:S1, TN:S1, TV:SNR
Plant	Carex verrucosa (Warty Sedge)	G3G4		AL:SNR, FL:SNR, GA:S4?, LA:SNR, MS:S2, NC:S1, SC:SNR, TX:S2S3, VA:SNR
	Lindera melissifolia (Pondberry)	G2	LE	AL:S1, AR:S2, GA:S1, LA:SNR, MS:S2, NC:S1, SC:S1, TV:SNR, MO:S1
	Litsea aestivalis (Pondspice)	G3		FL:S2, GA:S2, LA:SH, MD:S1, NC:S2, SC:S3, VA:S1
	Lobelia boykinii (Boykin's Lobelia)	G2G3		AL:S1S2, FL:S1, GA:S2S3, MS:S1, NC:S1, NJ:S1, SC:SNR, TV:SNR
	Ludwigia spathulata (Spathulate Seedbox)	G2G3		AL:S1S2, FL:S1S2, GA:S2S3, SC:SNR
	Myriophyllum laxum (Piedmont Water-milfoil)	G3		AL:S2, FL:S3, GA:S2, MS:S1, NC:S1, SC:S2, VA:S1
	Oxypolis canbyi (Canby's Dropwort)	G2	LE	GA:S2, MD:S1, NC:S1, SC:S1
	Polygonum hirsutum (Hairy Smartweed)	G3G4		AL:SNR, FL:SNR, GA:SNR, MS:SNR, NC:S1, SC:SNR
	Rhexia aristosa (Awed Meadowbeauty)	G3		AL:S1, DE:S1, GA:S2, NC:S3, NJ:S1, SC:S2
	Rhynchospora inundata (Drowned Hornedrush)	G3G4		AL:SNR, DE:S1, FL:SNR, GA:S3?, MA:S2, MD:S1, MS:SNR, NC:S3, NJ:S2, NY:S2, RI:S1, SC:SNR
	Atlantic Coastal Plain Sandhill Seep (Partial)			
Assoc.	(Pinus palustris, Pinus serotina) / Ctenium aromaticum - Muhlenbergia expansa - Calamovilfa brevipilis Woodland	G2		NC, SC
	Arundinaria gigantea ssp. tecta Shrubland	G1		AL?, FL?, GA, MS?, NC, SC?, VA
	Clethra alnifolia - Toxicodendron vernix / Aristida stricta - Osmunda cinnamomea - Sarracenia spp. Shrub Herbaceous Vegetation	G2?		NC, SC
	Gaylussacia frondosa - Clethra alnifolia - Arundinaria gigantea ssp. tecta / Aristida stricta - Pteridium aquilinum var. pseudocaudatum Herbaceous Vegetation	G3?		NC, SC
Plant	Chelone cuthbertii (Cuthbert's Turtlehead)	G3		GA:S1, NC:S3?, SC:SNR, VA:S2, TV:SNR
Atlantic Coastal Plain Southern Depression Pondshore (Partial)				FL, GA, NC, SC, VA
Assoc.	Carex hyalinolepis Seasonally Flooded Herbaceous Vegetation	G1G3		SC
	Carex striata var. striata - Xyris fimbriata - Lachnanthes caroliiana Herbaceous Vegetation	G2G3		FL, GA?, SC
	Cyrilla racemiflora - Lyonia lucida Shrubland	G3?		AL, FL, GA, LA?, MS, NC, SC
	Dichanthelium wrightianum - Dichanthelium erectifolium Herbaceous Vegetation	G2G3		AL?, FL, GA, MS, NC, SC
	Nymphaea odorata - Nuphar lutea ssp. advena - (Nymphaeoides aquatica, Xyris smalliana) Herbaceous Vegetation	G3?		FL?, GA?, NC, SC
	Nyssa biflora / Itea virginica - Cephalanthus occidentalis Depression Forest	G3G4		AL:S1, FL, GA, LA, MS, NC, SC, VA?
	Nyssa ogeche / Ilex myrtifolia / Carex turgescens - Carex striata Forest	G2?		GA, SC
	Panicum hemitomon - Eleocharis equisetoides - Rhynchospora inundata Herbaceous Vegetation	G3		AL?, FL?, GA, NC, SC



Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Cyperus granitophilus (Granite-loving Flatsedge)	G3Q		AL:S2, GA:S3, NC:S1, SC:SNR, TN:S1, VA:S1, TV:SNR
	Isoetes melanospora (Black-spored Quillwort)	G1	LE	GA:S1, SC:S1
	Isoetes piedmontana (Piedmont Quillwort)	G3		AL:S2, GA:S3, NC:S1, SC:S2, TX:S1, VA:S1?
	Sedum pusillum (Granite Rock Stonecrop)	G3		AL:SNR, GA:S3, NC:S1, SC:S2
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Eleocharis (elongata, equisetoides) - Rhynchospora tracyi Semipermanently Flooded Herbaceous Vegetation	G3?		AL, FL, GA, LA?, MS?, NC, SC
	Hypericum fasciculatum / Rhynchospora (chapmanii, harperi) Shrubland	G2G3		AL, FL, GA, SC
	Morella cerifera / Spartina patens Shrubland	G3G4		FL, GA, NC, SC, VA?
	Taxodium ascendens / Ilex myrtifolia / Carex (striata, turgescens) Stringer Forest	G3?Q		AL, FL, GA, LA, MS, SC
Plant	Croton elliotii (Elliott's Croton)	G2G3		AL:S1, FL:SH, GA:S2S3, SC:SNR
	Sabatia kennedyana (Plymouth Gentian)	G3		MA:S3, NC:S1, RI:S1, SC:S1
	Sagittaria teres (Slender Arrowhead)	G3		MA:S3, NH:S1, NJ:S1, NY:S1, RI:S1, SC:SNR
	Schoenoplectus hallii (Hall's Bulrush)	G2		GA:SH, IA:S1, IN:S1, MI:S2, NE:S1, OK:S1, SC:SNR, WI:S1, IL:S1, KS:S1, KY:S1, MO:S2, TX:S1

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

South Dakota

Eastern Great Plains Wet Meadow, Prairie, and Marsh (Partial)

Assoc. Calamagrostis stricta - Carex sartwellii - Carex praegracilis -
Plantago eriopoda Saline Herbaceous Vegetation G2G3

IA, IL, KS, MN, MO, ND, NE, OK, SD,
TX?

MB:SU, MN, ND:SU, SD

Spartina pectinata - Calamagrostis stricta - Carex spp.
Herbaceous Vegetation G3?

IA:SU, MB:S1S2, MN, MT, ND:S2?,
NE:S1, SD

Great Plains Prairie Pothole (Partial)

AB, IA?, MB, MN, ND, SD, SK



Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Tennessee

Central Interior Highlands and Appalachian Sinkhole and Depression Pond (Partial)				AL, AR, DE, GA, IL, IN, KY, MD, MO, NC, NJ, OH, PA, TN, VA, WV
Assoc.	Carex comosa - Carex decomposita - Dulichium arundinaceum - Lycopus rubellus Herbaceous Vegetation	G3G4		IN, KY?, MO:S4S5, TN?
	Cephalanthus occidentalis - (Salix nigra, Quercus lyrata) Karst Depression Shrubland	G1Q		AL, TN?
	Cephalanthus occidentalis / Hibiscus moscheutos ssp. moscheutos Depression Pond Shrubland	G3?		AL?, GA, IL, IN, KY, MO:S1, MS?, TN
	Liquidambar styraciflua - Acer rubrum / Carex spp. - Sphagnum spp. Forest	G2Q		AL, GA, NC, TN
	Nyssa aquatica / Cephalanthus occidentalis Pond Forest	G1?		AR?, MO, TN
	Nyssa biflora / Cephalanthus occidentalis - Lyonia lucida Sagpond Forest	G1G2		AL, GA, TN?
	Panicum hemitomon - Dulichium arundinaceum Herbaceous Vegetation	G1		TN
	Pontederia cordata - Sagittaria graminea - Sagittaria latifolia Semipermanently Flooded Herbaceous Vegetation	G1G2Q		TN
	Quercus alba - Nyssa sylvatica Sandstone Ridgetop Depression Forest	G2Q		AL, TN?
	Quercus lyrata - Quercus (palustris, phellos) - Liquidambar styraciflua - (Populus heterophylla) Forest	G2G3		KY, TN
	Quercus lyrata / Betula nigra / Pleopeltis polypodioides ssp. michauxiana Forest	G1		TN
	Quercus phellos - Liquidambar styraciflua / Chasmanthium laxum Cumberland Plateau Forest	G3		AL, GA, KY, TN
	Scirpus cyperinus - Dulichium arundinaceum / Sphagnum spp. Herbaceous Vegetation	G1Q		GA, NC, SC?, TN, VA?
	Scirpus cyperinus - Panicum rigidulum - Rhynchospora corniculata - (Dulichium arundinaceum) Herbaceous Vegetation	G2G3		AL, IN, KY, TN
	Sparganium americanum - Epilobium leptophyllum Herbaceous Vegetation	G2G3		NC, TN, VA:S1?, WV
Plant	Carex decomposita (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DC:SH, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2, TV:SNR
	Fimbristylis perpusilla (Harper's Fimbristylis)	G2		DE:S1, GA:S1, MD:S2, NC:S1, SC:S2, TN:S1, VA:S1, TV:SNR
	Muhlenbergia torreyana (Torrey's Dropseed)	G3		GA:SH, MD:S1, NC:S1, NJ:S3, TN:S1, TV:SNR
South-Central Interior / Upper Coastal Plain Wet Flatwoods (Partial)				IL?, IN?, KY, TN
Assoc.	Quercus palustris - (Quercus stellata) - Quercus pagoda / Isoetes spp. Forest	G2G3		AR, IL, IN, KY?, MO, TN?
	Quercus phellos - (Quercus lyrata) / Carex spp. - Leersia spp. Forest	G3G4Q		AR, IL, KY, MO?, MS?, TN
Southern Appalachian Seepage Wetland (Partial)				AL?, GA, KY?, NC, SC, TN, VA, WV?
Assoc.	Alnus serrulata - Lindera benzoin / Scutellaria lateriflora - Thelypteris noveboracensis Shrubland	G2?		GA?, KY?, NC, SC?, TN?
	Calamagrostis cainii - Carex ruthii - Parnassia asarifolia / Sphagnum spp. Herbaceous Vegetation	G1Q		TN
	Carex gynandra - Platanthera clavellata - Drosera rotundifolia - Carex ruthii - Carex atlantica / Sphagnum spp. Herbaceous Vegetation	G2		NC, TN, VA?
	Diphylleia cymosa - Saxifraga micranthidifolia - Laportea canadensis Herbaceous Vegetation	G3		GA, NC, SC?, TN, VA

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Texas

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Aristida palustris - Panicum virgatum - Eriocaulon decangulare var. decangulare - Rhynchospora elliottii Herbaceous Vegetation	G2G3		LA, TX
	Nymphoides aquatica - Nymphaea odorata - Gratiola brevifolia Herbaceous Vegetation	G3?		LA, TX
	Nyssa biflora - Crataegus opaca - (Fraxinus caroliniana) / Rhynchospora mixta Woodland	G2?		LA, TX?
	Nyssa biflora / Panicum hemitomom - Woodwardia virginica Woodland	G3?		LA?, TX
	Panicum hemitomom - Eriocaulon compressum - Rhynchospora corniculata Herbaceous Vegetation	G2		LA, TX
Animal	Bufo houstonensis (Houston Toad)	G1	LE	TX:S1
Plant	Carex decomposita (Cypress-knee Sedge)	G3		AL:S1, AR:S2, DC:SH, DE:S1, FL:SNR, GA:S2?, IL:S1, IN:S2, KY:S2, LA:S1, MD:S1, MO:S3, MS:S3, NC:S1, NY:SH, OH:S1, OK:SU, SC:SNR, TN:S2, TX:S1, VA:S2, TV:SNR
	Fuirena longa (Coastal-plain Umbrella-sedge)	G3G4		AL:SNR, FL:SNR, MS:S3S4, TX:S2
West Gulf Coastal Plain Nonriverine Wet Hardwood Flatwoods (Partial)				AR, LA, OK?, TX
Assoc.	(Quercus laurifolia) / Crataegus opaca - Crataegus viridis Forest	G1		AL?, LA, MS, TX
	Fraxinus caroliniana Seasonally Flooded Forest	G2G3		LA, TX
	Nyssa biflora - Quercus laurifolia / Sphagnum spp. Depression Forest	G3?		AR?, LA, TX?
	Quercus laurifolia - Liquidambar styraciflua - Nyssa biflora - Acer rubrum / Sabal minor Forest	G3?		LA, TX
	Quercus laurifolia - Quercus phellos - Quercus nigra / Viburnum dentatum - (Sebastiania fruticosa) / Carex glaucescens Upper West Gulf Flatwoods Forest	G2G3		AR?, LA?, TX
	Quercus lyrata - Quercus phellos - Ulmus americana / Rhynchospora spp. Forest	G2G3		AR?, LA, TX?
	Quercus phellos - Quercus similis / Crataegus marshallii - Crataegus spathulata / Chasmanthium laxum Forest	G3?		AR?, LA, TX
	Quercus phellos / Chasmanthium laxum - Carex (flaccosperma, intumescens) - Hymenocallis liriosme Flatwoods Forest	G3G4		AR, LA, OK?, TX
	Quercus phellos / Chasmanthium laxum Forest	G3?		AR?, LA?, OK?, TX
	Taxodium distichum - Nyssa biflora - Magnolia virginiana - Acer rubrum Forest	G2?		LA, TX?
West Gulf Coastal Plain Pine-Hardwood Flatwoods (Partial)				AR, LA, OK?, TX
Assoc.	Quercus stellata - Pinus taeda Flatwoods Depression Forest	G2G3		AR?, LA?, TX
Animal	Bufo houstonensis (Houston Toad)	G1	LE	TX:S1
Western Great Plains Closed Depression Wetland (Strict)				CO, KS, NE, NM?, OK, SD, TX, WY
Assoc.	Pascopyrum smithii - Buchloe dactyloides - (Phyla cuneifolia, Oenothera canescens) Herbaceous Vegetation	G2G3		KS:SU, NE:S1, OK:S2, TX?
	Pleuraphis mutica - Panicum obtusum Herbaceous Vegetation	G3		AZ:S2, MXCH?, MXCO?, MXSO?, NM:S3, TX
Plant	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR
Western Great Plains Open Freshwater Depression Wetland (Partial)				KS, MT, ND, NE, OK, SD, TX, WY
Assoc.	Typha (angustifolia, domingensis, latifolia) - Schoenoplectus americanus Herbaceous Vegetation	G3G4		KS:SU, OK, TX?

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
Plant	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR
	Schoenoplectus hallii (Hall's Bulrush)	G2		GA:SH, IA:S1, IN:S1, MI:S2, NE:S1, OK:S1, SC:SNR, WI:S1, TV:SNR, IL:S1, KS:S1, KY:S1, MO:S2, TX:S1, CO, KS, MT, ND, NE, NM, OK, SD, TX, WY KS:S2, NE:S3, OK, TX
Western Great Plains Saline Depression Wetland (Partial)				
Assoc.	Distichlis spicata - (Hordeum jubatum, Poa arida, Sporobolus airoides) Herbaceous Vegetation	G3		AR?, KS:SU, MO, NE:S1, TX?
	Distichlis spicata - Schoenoplectus maritimus - Salicornia rubra Herbaceous Vegetation	G1G2		
Plant	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR
	Schoenoplectus hallii (Hall's Bulrush)	G2		GA:SH, IA:S1, IN:S1, MI:S2, NE:S1, OK:S1, SC:SNR, WI:S1, TV:SNR, IL:S1, KS:S1, KY:S1, MO:S2, TX:S1
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Animal	Eocyclus concavus (Swaybacked Clam Shrimp)	G1G3		AZ:SNR, NM:SNR, TX:SNR
Plant	Carex verrucosa (Warty Sedge)	G3G4		AL:SNR, FL:SNR, GA:S4?, LA:SNR, MS:S2, NC:S1, SC:SNR, TX:S2S3, VA:SNR
	Isoetes piedmontana (Piedmont Quillwort)	G3		AL:S2, GA:S3, NC:S1, SC:S2, TX:S1, VA:S1?

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Utah

Colorado Plateau Hanging Garden (Strict)				AZ, CO, NV?, UT
Assoc.	Aquilegia micrantha - Mimulus eastwoodiae Herbaceous Vegetation	G2G3		CO:S2S3, UT
Plant	Carex specuicola (Navajo Sedge)	G2	LT	AZ:S2, UT:S1, NN:S2
	Mimulus eastwoodiae (Eastwood Monkeyflower)	G3		AZ:SNR, CO:S1, NV:SNR, UT:S3, NN:S3S4
	Platanthera zothecina (Alcove Bog-orchid)	G2		UT:S2, CO:S1, AZ:S2, NN:S2
Inter-Mountain Basins Alkaline Closed Depression (Partial)				CA, ID, NV, OR, UT, WA?
Assoc.	Eleocharis palustris - Distichlis spicata Herbaceous Vegetation	G2G4		UT:S2S4
	Eleocharis palustris - Juncus balticus Herbaceous Vegetation	G2G4		UT:S2S4
Plant	Astragalus diversifolius (Mesic Milkvetch)	G2		WY:SH, ID:S2, NV:S1, UT:S1
	Ivesia kingii (King's Ivesia)	G3	PS	CA:SNR, NV:S3, UT:S1
Inter-Mountain Basins Greasewood Flat (Partial)				AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, WY
Assoc.	Leymus cinereus - Distichlis spicata Herbaceous Vegetation	G3		CA:S1, CO, ID:S1, NV, OR:S3, UT, WA:S1
	Puccinellia nuttalliana Herbaceous Vegetation	G3?		CO:S1?, MT, NV?, SK?, UT?
	Sarcobatus vermiculatus / Sporobolus airoides Sparse Vegetation	G3?		CO, OR:S4, UT, WY:S3?
Plant	Atriplex bonnevillensis (Bonneville Saltbush)	G2G3Q		NV:SNR, UT:S2
	Puccinellia simplex (Little Alkali-grass)	G3G4		CA:SNR, UT:S1
Inter-Mountain Basins Interdunal Swale Wetland (Partial)				AZ?, CO, ID, NV, UT, WY?
Assoc.	Juncus balticus - Carex rossii Herbaceous Vegetation	G2G4		UT:S2S4
	Schoenoplectus pungens Herbaceous Vegetation	G3G4		CO:S3, ID, KS, MT:S3, ND, NM, NV, SD, UT:S2S4, WY
Inter-Mountain Basins Playa (Partial)				CA, CO, ID, NM, NV, OR, UT, WA?, WY
Assoc.	Leymus cinereus - Distichlis spicata Herbaceous Vegetation	G3		CA:S1, CO, ID:S1, NV, OR:S3, UT, WA:S1
	Pluchea sericea Seasonally Flooded Shrubland [Placeholder]	G3?		CA:S3, UT
	Sarcobatus vermiculatus / Sporobolus airoides Sparse Vegetation	G3?		CO, OR:S4, UT, WY:S3?
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Populus fremontii / Baccharis salicifolia Woodland	G2		NM:S1?, UT:S1S2

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Vermont

Acadian Near-Boreal Spruce Flat (Partial)				ME, NB, NH, NY, QC, VT
<i>no at-risk isolated wetland elements confirmed in this isolated wetland system in state</i>				
Acadian-Appalachian Conifer Seepage Forest (Partial)				ME, NB, NH, NY, QC, VT
<i>no at-risk isolated wetland elements confirmed in this isolated wetland system in state</i>				
Boreal-Laurentian Bog (Partial)				MB, ME, MI, MN, NB, NH, NS, NY, ON, PE?, QC, VT, WI
<i>no at-risk isolated wetland elements confirmed in this isolated wetland system in state</i>				
Boreal-Laurentian-Acadian Acidic Basin Fen (Partial)				MA, ME, MI, MN, NB?, NH, NS?, NY, QC, VT, WI
Plant	Carex wiegandii (Wiegand's Sedge)	G3		MA:S1, ME:S3, MI:S2, NH:S1S2, NY:S1, PA:S1, VT:S1
Laurentian-Acadian Conifer-Hardwood Acid Swamp (Partial)				ME, MI, MN, NB?, NH, NY, ON, VT, WI
Plant	Carex wiegandii (Wiegand's Sedge)	G3		MA:S1, ME:S3, MI:S2, NH:S1S2, NY:S1, PA:S1, VT:S1
North-Central Appalachian Seepage Fen (Partial)				CT, MA, MD, NJ, NY, PA, VA, VT, WV?
Assoc.	Cornus racemosa / Carex (sterilis, aquatilis, lacustris) Shrub Herbaceous Vegetation	G2G3		CT, MA, NY, VT
	Dasiphora fruticosa ssp. floribunda / Carex (sterilis, hystericina, flava) Shrub Herbaceous Vegetation	G2		CT, MA, NH, NY, VT
North-Central Interior and Appalachian Acid Peatland (Partial)				CT, IL, IN, MA, ME, MI, MN, NH, NJ, NY, OH, ON, PA, RI, VT, WI
Assoc.	Myrica gale - Dasiphora fruticosa ssp. floribunda / Carex lasiocarpa - Cladium mariscoides Shrub Herbaceous Vegetation	G2G3		CT, MA, NH?, NJ:S1, NY, PA, RI?, VT
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Lysimachia terrestris - Dulichium arundinaceum - Rhexia virginica Herbaceous Vegetation	G2G3		CT, MA, ME, NH, ON, VT
	Rhexia virginica - Panicum verrucosum Herbaceous Vegetation	G2G3		CT, DE, MA, MD:S2, NH?, NJ:S1S3, NY, RI?, VT
	Rhynchospora capitellata - Cyperus dentatus - Rhexia virginica - Xyris difformis Herbaceous Vegetation	G2		CT, MA, ME, NH, NJ?, NS?, NY, ON, RI, VT
	Zizania (aquatica, palustris) Herbaceous Vegetation	G3G4		IA:SU, IN, MB?, MI, MN, NY, ON, VT:S3, WI:S3
Plant	Eleocharis nitida (Slender Spikerush)	G3G4		AK:S1, ME:SNR, MI:S1, MN:S2, NH:SH, VT:SH, WI:S2
	Scirpus ancistrochaetus (Northeastern Bulrush)	G3	LE	MA:S1, MD:S1, NH:S2, PA:S3, VA:S2, VT:S2, WV:S1

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Virginia

Atlantic Coastal Plain Northern Basin Peat Swamp (Partial)

Assoc. Acer rubrum - Nyssa sylvatica - Magnolia virginiana / Viburnum nudum var. nudum / Osmunda cinnamomea - Woodwardia areolata Forest G3?

CT, DE, MA, MD, NJ, NY, VA
DC, DE, MD, NJ:S4S5, NY, PA, VA:S3?

Atlantic Coastal Plain Northern Basin Swamp and Wet Hardwood Forest (Partial)

Assoc. Acer rubrum - Nyssa sylvatica - Magnolia virginiana / Viburnum nudum var. nudum / Osmunda cinnamomea - Woodwardia areolata Forest G3?

DE, MD, NJ, NY, VA
DC, DE, MD, NJ:S4S5, NY, PA, VA:S3?

Liquidambar styraciflua - Acer rubrum - Nyssa biflora / Carex jorii Forest G1G2

MD, VA

Pinus taeda / Morella cerifera / Osmunda regalis var. spectabilis Forest G3

DE, MD, NC, NJ:S1?, VA

Plant Juncus caesariensis (New Jersey Rush) G2

MD:S1, NC:S1, NJ:S2, VA:S2

Atlantic Coastal Plain Northern Dune and Maritime Grassland (Partial)

Assoc. Morella cerifera / Spartina patens Shrubland G3G4

CT, DE, MA, MD, ME, NC, NH, NJ, NY, RI, VA
FL, GA, NC, SC, VA?

Atlantic Coastal Plain Northern Pondshore (Partial)

Assoc. Cephalanthus occidentalis / Polygonum hydropiperoides - Panicum verrucosum Shrubland G3?

DE, MA, MD, MI, NJ, NY, VA, VT
DE, MA?, MD, RI?, VA

Liquidambar styraciflua - Acer rubrum - Nyssa biflora / Carex jorii Forest G1G2

MD, VA

Quercus phellos / Carex striata var. brevis Forest G2?

MD?, VA:S2?

Saccharum giganteum - (Dichanthelium spretum, Panicum verrucosum) Herbaceous Vegetation G1G2

MD, VA?

Plant Fimbristylis perpusilla (Harper's Fimbristylis) G2

DE:S1, GA:S1, MD:S2, NC:S1, SC:S2, TN:S1, VA:S1, TV:SNR

Helenium virginicum (Virginia Sneezeweed) G2

LT

MO:S3, VA:S2

Hypericum adpressum (Creeping St. John's-wort) G3

CT:SH, DE:S2, GA:S2?, IL:S1, IN:S1, KY:SH, MA:S2, MD:S1, MO:S1, NC:SH, NJ:S2, NY:S2, RI:S2, SC:S1, TN:S1, VA:S1, WV:SH, TV:SNR

Lycopodiella margueritiae (Northern Prostrate Clubmoss) G2

OH:S1, PA:SU, MI:S2, VA:S1, TV:SNR

Scirpus ancistrochaetus (Northeastern Bulrush) G3

LE

MA:S1, MD:S1, NH:S2, PA:S3, VA:S2, VT:S2, WV:S1

MAS1MDS9(Partial)

DE, MA, MD, Me Td(Plant)Tj/TT2 1 5aial)

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
	Hypericum adpressum (Creeping St. John's-wort)	G3		CT:SH, DE:S2, GA:S2?, IL:S1, IN:S1, KY:SH, MA:S2, MD:S1, MO:S1, NC:SH, NJ:S2, NY:S2, RI:S2, SC:S1, TN:S1, VA:S1, WV:SH, TV:SNR
	Litsea aestivalis (Pondspice)	G3		FL:S2, GA:S2, LA:SH, MD:S1, NC:S2, SC:S3, VA:S1
	Myriophyllum laxum (Piedmont Water-milfoil)	G3		AL:S2, FL:S3, GA:S2, MS:S1, NC:S1, SC:S2, VA:S1
Central Interior Highlands and Appalachian Sinkhole and Depression Pond (Partial)				
Assoc.	Carex aquatilis - Dulichium arundinaceum Herbaceous Vegetation	G1?		VA:S1
	Carex barrattii Herbaceous Vegetation	G1		VA:S1
	Cephalanthus occidentalis / Dulichium arundinaceum Shrubland	G1		VA:S1
	Cephalanthus occidentalis / Torreyochloa pallida Shrubland	G1?		VA
	Orontium aquaticum - Schoenoplectus subterminalis - Eriocaulon aquaticum Herbaceous Vegetation	G1		DE, VA:S1
	Quercus palustris / Panicum rigidulum var. rigidulum - Panicum verrucosum - Eleocharis acicularis Herbaceous Vegetation	G1		VA:S1
	Scirpus cyperinus - Dulichium arundinaceum / Sphagnum spp. Herbaceous Vegetation	G1Q		GA, NC, SC?, TN, VA?
	Sparganium americanum - Epilobium leptophyllum Herbaceous Vegetation	G2G3		NC, TN, VA:S1?, WV
	Vaccinium macrocarpon / Pogonia ophio4Y2p.			

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Washington

Boreal Depressional Bog (Partial)

Assoc.	Carex exsiccata Herbaceous Vegetation [Provisional]	G2G3		AK, BC, ID, MT, OR, WA BC:S2, WA:S2S3
	Dulichium arundinaceum Seasonally Flooded Herbaceous Vegetation	G3		BC:S2, CA:S1?, ID:S2, MT:S2, OR:S3, WA:S2S3, WY?
	Kalmia microphylla - Ledum groenlandicum / Xerophyllum tenax Shrubland	G1		WA:S1
	Ledum groenlandicum - Myrica gale / Sphagnum spp. Shrubland	G2		BC:S2, WA:S1
	Malus fusca Shrubland	G3		BC:S2S3, OR:S2, WA:S2S3
	Pinus contorta var. contorta / Ledum groenlandicum / Sphagnum spp. Woodland	G3		BC:S2S3, WA:S2
	Pinus monticola / Ledum groenlandicum / Sphagnum spp. Woodland	G1		WA:S1
	Rhynchospora alba - (Vaccinium oxycoccos) / Sphagnum tenellum Herbaceous Vegetation [Provisional]	G3		BC:S3, WA:S2
	Spiraea douglasii / Sphagnum spp. Shrubland	G3		BC:S2?, OR:S1, WA:S2
	Tsuga heterophylla - (Thuja plicata) / Ledum groenlandicum / Sphagnum spp. Forest	G3		BC:S3, WA:S2
	Tsuga heterophylla - (Thuja plicata) / Sphagnum spp. Forest	G1		WA:S1

Columbia Plateau Vernal Pool (Strict)

Plant	Juncus uncialis (Inch-high Rush)	G3G4		BC?, NV, OR, WA CA:SNR, NV:SNR, OR:SNR, WA:S2 AZ, CA, CO, ID, MT, NM, NV, OR, UT, WA, WY
-------	----------------------------------	------	--	--

Inter-Mountain Basins Greasewood Flat (Partial)

Assoc.	Leymus cinereus - Distichlis spicata Herbaceous Vegetation	G3		CA:S1, CO, ID:S1, NV, OR:S3, UT, WA:S1
	Leymus cinereus Bottomland Herbaceous Vegetation	G1		CA:S1, ID:S1, OR:S1, WA:S1
	Sarcobatus vermiculatus / Leymus cinereus Shrubland	G3		CA?, ID:S2, MT:S2S3, NV?, OR:S2, WA:S1
				CA, OR, WA

Modoc Basalt Flow Vernal Pool (Strict)

no at-risk isolated wetland elements confirmed in this isolated wetland system in state

North Pacific Hardpan Vernal Pool (Strict)

Assoc.	Plagiobothrys scouleri - Plantago bigelovii Herbaceous Vegetation	G2		BC, CA, OR, WA BC:S2, WA:S1?
Plant	Juncus kelloggii (Kellogg's Rush)	G3?		CA:SNR, NV:SNR, WA:S1

Northern Columbia Plateau Basalt Pothole Ponds (Strict)

Assoc.				OR, WA
--------	--	--	--	--------

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

West Virginia

Central Interior Highlands and Appalachian Sinkhole and Depression Pond (Partial)				AL, AR, DE, GA, IL, IN, KY, MD, MO, NC, NJ, OH, PA, TN, VA, WV
Assoc.	Sparganium americanum - Epilobium leptophyllum Herbaceous Vegetation	G2G3		NC, TN, VA:S1?, WV
Plant	Scirpus ancistrochaetus (Northeastern Bulrush)	G3	LE	MA:S1, MD:S1, NH:S2, PA:S3, VA:S2, VT:S2, WV:S1
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Plant	Hypericum adpressum (Creeping St. John's-wort)	G3		CT:SH, DE:S2, GA:S2?, IL:S1, IN:S1, KY:SH, MA:S2, MD:S1, MO:S1, NC:SH, NJ:S2, NY:S2, RI:S2, SC:S1, TN:S1, VA:S1, WV:SH
	Saxifraga caroliniana (Carolina Saxifrage)	G2		GA:SH, NC:S2, TN:S1S2, VA:S2?, WV:S1

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)
<i>no at-risk isolated wetland elements confirmed in this isolated wetland system in state</i>				
North-Central Interior Wet Meadow-Shrub Swamp (Partial)				IA, IL, IN, MI, MN, MO, ND, OH, ON, SD, WI
Assoc.	Cornus sericea - Salix (bebbiana, discolor, petiolaris) / Calamagrostis stricta Shrubland	G3G4		IA:S3?, IL, MB:SU, MN:S3, ND, WI
	Spartina pectinata - Carex spp. - Calamagrostis canadensis - Lythrum alatum - (Oxypolis rigidior) Herbaceous Vegetation	G3?		IA:SU, IL, IN:S1, MI:S2, MN, MO:S1, NE:S1, OH, WI:S1
	Spartina pectinata - Carex spp. - Calamagrostis canadensis Sand Herbaceous Vegetation	G3?		IL, IN, ON?, WI
Plant	Eleocharis nitida (Slender Spikerush)	G3G4		AK:S1, ME:SNR, MI:S1, MN:S2, NH:SH, VT:SH, WI:S2
	Eleocharis wolfii (Wolf Spikerush)	G3G4		AL:S1, AR:S2, GA:S1, IA:S1, IL:S1, IN:S2, KS:S1, LA:S1?, MN:S1, MO:S3, MS:SNR, ND:SH, NE:S1, OH:S1, OK:SU, TN:S1, TX:S1, WI:S1, TV:SNR
	Platanthera leucophaea (Eastern Prairie White-fringed Orchid)	G3	LT	IA:S1, IL:S1, IN:S1, ME:S1, MI:S1, MO:SH, NY:SH, OH:S2, OK:SH, VA:S1, WI:S2S3
	Schoenoplectus hallii (Hall's Bulrush)	G2		GA:SH, IA:S1, IN:S1, MI:S2, NE:S1, OK:S1, SC:SNR, WI:S1, TV:SNR, IL:S1, KS:S1, KY:S1, MO:S2, TX:S1
Northern Great Lakes Interdunal Wetland (Partial)				MI, MN, NY, ON, WI
Assoc.	Dasiphora fruticosa ssp. floribunda / Cladium mariscoides - Juncus balticus - (Rhynchospora capillacea) Herbaceous Vegetation	G3?		IL:S1, IN:S1, MI:S2, ON, WI:S1
At-risk isolated wetland elements not confirmed in any isolated wetland system in state				
Assoc.	Rhynchospora capitellata - Rhexia virginica - Rhynchospora scirpoides - Schoenoplectus hallii Herbaceous Vegetation	G2?		IN, MI:S2, ON:S3, WI:S1

Isolated Wetland Ecological System (Isolation Type)				System distribution
Type	Scientific Name (Common Name)	NatureServe Global Rank	U.S. ESA Status	Subnational distribution (subnational rank)

Wyoming

Inter-Mountain Basins Greasewood Flat (Partial)

AZ, CA, CO, ID, MT, NM, NV, OR, UT,
WA, WY

Assoc. Sarcobatus vermiculatus / Sporobolus airoides (Flatsus arseus) (Vegetation) 42918 d (WA, WY) (G3?) - 1205 (1, NOR: S401, WY: S3?) 1 T f 0093 r