Vegetation Classification: Concepts and Standards

Vegetation = Community = Habitat
Natural vs. Cultural
Physiognomy

Deciduous Forest

Evergreen Woodland

Shrubland

Grassland
Floristics
U. S. National Vegetation Classification

- Maintained by NatureServe (and Natural Heritage Programs)
- Describes existing vegetation
- Hierarchical system: physiognomy and floristics
- Built from plot data, peer reviewed

U. S. National Vegetation Classification Hierarchy

<table>
<thead>
<tr>
<th>Level</th>
<th>#</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Class</td>
<td>8</td>
</tr>
<tr>
<td>2. Subclass</td>
<td>18</td>
</tr>
<tr>
<td>3. Formation</td>
<td>38</td>
</tr>
<tr>
<td>4. Division</td>
<td>77</td>
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<tr>
<td>5. Macrogroup</td>
<td>214</td>
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<tr>
<td>6. Group</td>
<td>430</td>
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<tr>
<td>7. Alliance (under review)</td>
<td>1558</td>
</tr>
<tr>
<td>8. Association</td>
<td>6105</td>
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</tbody>
</table>
U.S. National Vegetation Classification

Class: Forest and Woodland
Formation: Temperate Flooded and Swamp Forest
Division: Eastern North American Flooded and Swamp Forest
Group: Northern & Central Conifer & Hardwood Acidic Swamp Group

Association:
Red spruce – Eastern hemlock / Great Rhododendron / Peatmoss swamp

Explore The Classification

1 Forest & Woodland
2 Shrubland & Grassland
3 Semi-Desert
4 Polar & High Montane Vegetation
5 Aquatic Vegetation
6 Nonvascular & Sparse Vascular Rock Vegetation
7 Agricultural Vegetation
8 Developed Vegetation
Class: Forest & Woodland (Formation examples)

FL  (Temperate Flooded & Swamp Forest)  MT  (Cool Temperate Forest)

WV  (Cool Temperate Forest)  WV  (Temperate Flooded & Swamp Forest)

Forest & Woodland Groups

Bald-cypress – Tupelo Floodplain Forest Group

Northern Rocky Mountain Whitebark Pine – Subalpine Larch Woodland Group

Red Spruce – Fir Forest Group

Silver Maple – Green Ash – Sycamore Floodplain Group
Forest & Woodland Associations

- Swamp Tupelo / Virginia Sweetspire – Common Buttonbush Depression Forest G3G4
- Subalpine Larch / Square-twig Blueberry / Hitchcock’s Smooth Woodrush Woodland G2G3
- Red Spruce / Yellow Birch / Three-lobed Bazzania Forest G2
- American Sycamore - River Birch / Silky Dogwood / (Big Bluestem, River-oats) Woodland G3

Class: Shrubland & Grassland

- MI Eastern North American Boreal Acidic Bog & Poor Fen Group
- TN Southern Appalachian Grass & Shrub Bald Group
- FL North American Atlantic Tidal Flat & Panne Group
- KS Central Great Plains Tallgrass Prairie Group
Class: Semi-Desert

CO: Intermountain Shadscale – Saltbrush Scrub Group
AZ: Mojave-Sonoran Semi-Desert Scrub Group
NM: Apacherian-Chihuahuan Mesquite Upland Scrub Group
CO: Intermountain Mountain Big Sagebrush Shrubland & Steppe Group

Class: Polar & High Montane Vegetation

AK: North American Arctic Low Shrub Tundra Group
NY: Eastern Alpine Dwarf-Shrub & Herbaceous Meadow Group
HI: Hawaiian Alpine Dwarf Shrubland Group
MT: Rocky Mountain Alpine Dwarf-Shrubland Group
Class: Aquatic Vegetation

WV Eastern North American Freshwater Aquatic Vegetation Group

CA North American Pacific Intertidal Algal Flat Group

FL Southeastern North American Freshwater Aquatic Vegetation Group

FL Caribbean Seagrass Group

Class: Nonvascular & Sparse Vascular Rock Vegetation

WV Eastern North American Temperate Cliff Group

MT Rocky Mountain Alpine Bedrock & Scree Group

WV Eastern North American Talus & Bluff group

ND Great Plains Badlands Vegetation Group
Conservation Ranking

Rarity | Threats
Status | Trends

2013
Conservation Ranking

G = Global  S = State
1 = critically imperiled  2 = imperiled
3 = vulnerable  4 = apparently secure
5 = widespread, abundant, and secure
X = Extirpated, H = Historic
NR = Not Ranked, NA = Not Applicable

USNVC Hierarchy for Cultural Vegetation (2008)

<table>
<thead>
<tr>
<th>Levels</th>
<th>Example</th>
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</thead>
<tbody>
<tr>
<td>1. Class</td>
<td>Developed Vegetation</td>
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<tr>
<td>2. Subclass</td>
<td>Herbaceous &amp; Woody Developed Vegetation</td>
</tr>
<tr>
<td>3. Formation</td>
<td>Developed (Close-cropped) Vegetation</td>
</tr>
<tr>
<td>4. Subformation</td>
<td>Lawn (with or without trees, urban &amp; recreational)</td>
</tr>
<tr>
<td>5. Group [optional]</td>
<td>Temperate and Tropical Lawns</td>
</tr>
<tr>
<td>6. Subgroup</td>
<td>Cool-season Lawn</td>
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<tr>
<td>7. Type</td>
<td>Fescue Lawn</td>
</tr>
<tr>
<td>8. Subtype [optional]</td>
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</tbody>
</table>
Class: Agricultural Vegetation

GA

GA

WA

Class: Developed Vegetation

DC

DE

HI

VA
<table>
<thead>
<tr>
<th>Forest &amp; Woodland</th>
<th>Shrubland &amp; Grassland</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Mesomorphic)</td>
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</tr>
<tr>
<td>Aquatic</td>
<td>Semi-Desert</td>
</tr>
<tr>
<td>(Hydromorphic Vegetation)</td>
<td>(Xeromorphic Vegetation)</td>
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<tr>
<td>Nonvascular Vegetation</td>
<td></td>
</tr>
<tr>
<td>(Lithomorphic Vegetation)</td>
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</tbody>
</table>

**Polar and High Montane**
(Cryomorphir Vegetation)

**CULTURAL VEGETATION**
Agricultural Vegetation; Developed Vegetation

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**Ecological Systems**
Bluestone National Scenic River, WV
Associations vs. Ecological Systems

Vegetation Classification for your Project
Compile existing data

Envision map purpose
Stratify assessment units

Sample Plots
Natural Heritage Database

Analyze Plot Data
Ordination: plots in “species space”

Axes 1 and 2

2013
Crosswalk to NVC

Build map units

Map Class

- Beaver-influenced Wetland
- Cliff
- Cliff Top Virginia Pine Forest
- Deciduous Tree / Great Laurel Forest
- Developed Area
- Disturbed Area
- Eastern Hemlock – Chestnut Oak / Catawba Rhododendron Forest
- Eastern Hemlock – Sweet Birch – Tuliptree / Great Laurel Forest
- Oak / Ericad Forest
- Oak – Hickory Forest
- Oak – Hickory – Sugar Maple Forest
- Strip Mine Reclamation
- Successional Tuliptree Forest
- Sugar Maple – Yellow Buckeye – American Basswood Forest
- Utility Corridor
Write local descriptions

**Cottongrass Fen**

**Scientific Name:** *Eriophorum virginicum* - (*Carex folliculata*) / *Sphagnum spp.* - *Polytrichum spp.* Fen

**Translated Name:** Tawny Cotton-grass - (Northern Long Sedge) / Peatmoss - Haircap Moss Fen

**NVC Name:** CEGL006570: *Eriophorum virginicum* - (*Carex folliculata*) / *Sphagnum spp.* - *Polytrichum spp.*

**Herbaceous Vegetation**

**Conservation Rank:** S3 / G3

This acidic herbaceous community occurs on temporarily flooded, semi-permanently flooded, or saturated peat in the Allegheny Mountains region of West Virginia, at elevations between 770 and 1210 m. It is a small-patch type that occupies flat-lying land (0- to 1-degree slopes) in headwater basins. Older stands typically occur over shallow bedrock, where they are kept open by high water tables. Younger stands occur in beaver-influenced wetland mosaics, often behind breached dams on the site of former beaver ponds. The type also occurs as a successional community on

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Create field key

1. Riparian and floodplain forests. Site subject to flooding of the Potomac River (within the mapped flood-prone zone). ........................................................................................................ 2

Not as above; forests and woodlands of upland sites (slopes, ridges, and upland flats not subject to flooding) .................................................................................................................. 5

2. Natural floodplain forest communities with tall canopies dominated by *Platanus occidentalis* (sycamore), *Acer saccharinum* (silver maple), or *Carya cordiformis* (bitternut hickory), often with *Acer negundo* (box elder) abundant in the subcanopy. .................................................. 3

Forests and thickets strongly dominated by a short canopy of *Acer negundo* (box elder). Semi-natural communities developed on abandoned farmland. ......... CEGL005033 *Acer negundo forest*

3. Frequently flooded communities along the river’s edge with canopies dominated by *Platanus occidentalis* (sycamore) and/or *Acer saccharinum* (silver maple). ................................................................. 4

Infrequently flooded communities on or behind a natural levee above the river’s edge with canopies dominated by *Carya cordiformis* (bitternut hickory), often with *Juglans nigra* (black walnut) and *Fraxinus spp.* (ash) ….. CEGL006445 *Carya cordiformis – Prunus serotina – Ageratina altissima* forest
Classification Review

1. Floodplain
2. Not Floodplain

Ready to Map!
Questions?

Reports and additional information:
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