National Vegetation Classification System (NVCS) Hierarchy Revision Process in Alaska

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USFS/MFSL

LANDFIRE Webinar
March 16th, 2011
Federal Geographic Data Committee
Vegetation Subcommittee

FGDC Vegetation Classification and Information Standards

June 3, 1996

International Classification of Ecological Communities:

TERRESTRIAL VEGETATION of the UNITED STATES

VOLUME I
The National Vegetation Classification System: Development, Status, and Applications
Structure of the NVCS

Class

Subclass

Formation Group

Formation Subgroup

physiognomic levels

floristic levels

Alliance

Association

Woodland

Evergreen Woodland

Temperate or Subpolar needle-leaved...

Natural vs. Cultural

Rounded-crowned...

Pinus ponderosa Woodland Alliance

Pinus ponderosa / Arctostaphylos patula Woodland Alliance

(Grossman et al. 1998; UNESCO 1973)
Mapping the NVCS

- **Class (7)**
  - Subclass (22)
    - **Woodland**
    - **Evergreen**
    - **Formation Group (63)**
      - **Formation Subgroup**
        - **Temperate or Subpolar needle-leaved**
        - **Natural vs. Cultural**
      - **physiognomic levels**
        - **Formation (218)**
          - **Rounded-crowned**

- **floristic levels**
  - **Alliance (1571)**
    - **Pinus ponderosa Woodland Alliance**
  - **Association (4149)**
    - **Pinus ponderosa / Arctostaphylos patula Woodland**

(Grossman et al. 1998; UNESCO 1973)
Thematic Target Legend
Developed with NatureServe

<table>
<thead>
<tr>
<th>NatureServe Ecological Systems</th>
<th>Gap Analysis Program</th>
<th>National Park Mapping</th>
</tr>
</thead>
<tbody>
<tr>
<td>~ NVC Class/Subclass</td>
<td>~700 units</td>
<td>~1,800 units</td>
</tr>
<tr>
<td>~ NVC Formation</td>
<td>~20 units</td>
<td>~5,000 units</td>
</tr>
<tr>
<td>MRLC 2000</td>
<td>~300 units</td>
<td>(Natural/Semi-natural types)</td>
</tr>
<tr>
<td></td>
<td>~1,800 units</td>
<td></td>
</tr>
<tr>
<td>(Slide Courtesy Pat Comer, Nature Serve)</td>
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<td></td>
</tr>
</tbody>
</table>
Hierarchy Revisions: Five Major Recommendations.

1. Reorganize physiognomic (formation) levels (Levels 1-3) to reflect ecological criteria.
2. Separate cultural vegetation from natural / semi-natural vegetation as a higher “categorical” level.
3. Redefine wetland formations based on broad vegetation criteria.
4. Define the mid-level units (Levels 4 – 6) based on both floristic and physiognomic criteria.
5. Separate semi-natural vegetation at mid-levels.
<table>
<thead>
<tr>
<th>FGDC 1997 – standard</th>
<th>Revised Hierarchy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 CLASS</td>
<td>CLASS</td>
</tr>
<tr>
<td>2 SUBCLASS</td>
<td>SUBCLASS</td>
</tr>
<tr>
<td>3 FORMATION GROUP</td>
<td>FORMATION</td>
</tr>
<tr>
<td>4 FORMATION SUBGROUP</td>
<td>DIVISION</td>
</tr>
<tr>
<td>5 FORMATION</td>
<td>MACROGROUP</td>
</tr>
<tr>
<td>6 ALLIANCE</td>
<td>GROUP</td>
</tr>
<tr>
<td>7 ASSOCIATION</td>
<td>ALLIANCE</td>
</tr>
<tr>
<td>8</td>
<td>ASSOCIATION</td>
</tr>
</tbody>
</table>
Define the mid-level units (Levels 4 - 6) based on both floristic and physiognomic criteria.

By relying on a combination of floristic and physiognomic criteria for mid-level hierarchy units we provide the much-needed bridge between world-scale formation units and local-regional scale floristic units. Many vegetation ecologists have developed and use these kinds of mid-level units for assessing broad vegetation patterns.
Status

1. Revised NVC Standard.
   * Officially released Feb. 2008
   

2. Implementation Plan.
   1. Core Funded Implementation (FGDC / USFS)
      - Core activities (maintain content and data)
      - Screening process for peer review of lower levels
   2. User Funded Implementation (LANDFIRE/ National Park Service).
      - Defining types for new mid-levels
      - Screening process for mid and upper level types.
LANDFIRE – NPS
Hierarchy Revision Workshops

- **Western Workshop** in Boulder, CO - Nov. 2008
  - Western Forests, Shrublands, and Grasslands only
  - Not including Great Plains
  - Not Including Wetlands or Riparian

- **Eastern Workshop** in Raleigh-Durham, NC – Feb, 2009
  - Eastern Forests
  - Eastern Grasslands & Shrublands east of the Great Plains (glades, alvars, barrens, etc).
  - Eastern Wetlands
Mid-Level Development of Revised U.S. National Vegetation Classification

A Landfire Funded Project

Alaska NVC Workshop
Jan 11-13, 2011, Anchorage
OUTCOMES OF THE WORKSHOP

- Understand the NVC approach, and IVC/CNVC collaborations
- Solid list of Groups and Macrogroups
- NatureServe staff write up Group descriptions, with support from Alaska HP.
- Plan for Peer review of Group Descriptions
# USNVC Hierarchy: Alaska Example

<table>
<thead>
<tr>
<th>Revised Hierarchy</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Upper</strong></td>
<td></td>
</tr>
<tr>
<td>Level 1 – Class</td>
<td>Mesomorphic Tree Vegetation</td>
</tr>
<tr>
<td>Level 2 – Subclass</td>
<td>Boreal Forest</td>
</tr>
<tr>
<td>Level 3 - Formation</td>
<td>Lowland-Montane Boreal Forest</td>
</tr>
<tr>
<td><strong>Mid</strong></td>
<td></td>
</tr>
<tr>
<td>Level 4 – Division</td>
<td>North American Boreal Forest</td>
</tr>
<tr>
<td>Level 5 – Macrogroup</td>
<td>Western North American Boreal Conifer and Hardwood Forest</td>
</tr>
<tr>
<td>Level 6 – Group</td>
<td>Alaskan Mesic-Moist Black Spruce Forest Group</td>
</tr>
<tr>
<td><strong>Lower</strong></td>
<td></td>
</tr>
<tr>
<td>Level 7 – Alliance</td>
<td>Picea mariana Saturated Forest Alliance</td>
</tr>
<tr>
<td>Level 8 – Association</td>
<td><em>Picea mariana / Ledum groenlandicum / Carex trisperma / Sphagnum spp.</em> Forest</td>
</tr>
</tbody>
</table>