Relationship of the Natural Communities of Virginia classification system to the USNVC and NatureServe's Ecological System Classification

The United States National Vegetation Classification (USNVC) is a subset of the larger International Classification of Ecological Communities (ICEC). The USNVC is a hierarchical system that classifies vegetation using physiognomic (structural) features at the highest levels of the hierarchy and floristic features at the lower levels (Grossman et al 1997, FGDC 2008, Jennings et al 2009). Over the past twenty years, the USNVC has been developed and implemented by The Nature Conservancy (TNC), the network of Natural Heritage Programs, and, since 2001, NatureServe. NatureServe is the organization that currently maintains and updates the USNVC. Refinements to the floristic levels of the classification occur in the process of application, leading to ongoing proposed revisions that are reviewed both locally and nationally. DCR-DNH Ecologists work in partnership with NatureServe to develop the finest floristic level of the classification, the Association. USNVC Associations are equal in scale to Community Types in The Natural Communities of Virginia classification and, for the most part, have a one-to-one relationship to the Community Type. However, Community Types have Virginia-specific names and concepts, while Associations are named and defined based on the range-wide expression of the vegetation.

In 2003, NatureServe developed a classification of Ecological Systems (Comer et al 2003). Ecological Systems are not part of the USNVC hierarchy, but are vegetation-based, and can be linked to the USNVC at the middle levels of the hierarchy (Groups and Macrogroups) (Gawler et al 2008). Ecological Systems have been used as the basis for several national and regional scale classification and mapping efforts, including the Northeastern Terrestrial Wildlife Habitat Classification (Gawler et al 2008), LANDFIRE (The National Map Landfire 2007), and the Southeast GAP analysis project (USGS. National Gap Analysis Program 2008). Ecological Systems are recurring groups of biological communities (i.e. associations) that are found in similar physical environments and are influenced by similar dynamic ecological processes (Comer et al. 2003). Ecological Systems are defined based on biogeographic region, landscape scale, dominant cover type, and disturbance regime and, as such, are coarser in scale than the Association or Community Type. A single Association may occur in more than one Ecological System depending on the geographic regions in which is found. In Virginia, a single Community Type may be split among several Ecological Systems that have been defined by geographic regions. The Ecological Group level in The Natural Communities of Virginia classification is similar in concept to Ecological System, but the two classification units differ in geographic scale. Ecological Groups are defined within the constraints of the state of Virginia, while Ecological Systems are regional in scope, with divisions along physiographic provinces. To illustrate this relationship, an Excel spreadsheet containing the crosswalk of The Natural Communities of Virginia to Ecological Systems is provided as a download file here.

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