

## **Uncommon Natural Communities (SN4)**

### **Description**

A natural community is an interacting assemblage of plants and animals, their physical environment, and the natural processes that affect them. As these assemblages of plants and animals repeat across the landscape wherever similar environmental conditions exist, it is possible to describe these repeating assemblages as natural community types. The Vermont Fish and Wildlife Department uses a ranking scheme that is part of the national Natural Heritage methodology to describe the relative rarity of natural community types in Vermont. The range is from S1 (very rare) to S5 (common and widespread), and S3 (uncommon) and S4 (uncommon to widespread) natural community types are considered uncommon for BioFinder. Examples of uncommon natural community types include Montane Spruce-Fir Forest (S3), Dry Oak-Hickory-Hophornbeam Forest (S3), Boreal Outcrop (S4), Northern White Cedar Swamp (S3), and Silver Maple-Ostrich Fern Riverine Floodplain Forest (S3). All of these are naturally uncommon, since their soils are uncommon, but Silver Maple-Ostrich Fern Riverine Floodplain Forest has been made more uncommon by the conversion of many floodplain areas to agriculture.

### **Ecological importance**

Natural communities represent the distribution of plant and animal species in response to current environmental conditions and natural processes. Although the species composition of natural communities may shift over time in response to changing climate, it is believed that the locations of high quality natural communities represent physical landscape settings that will continue to support important natural communities into the future. Uncommon natural communities typically include rare species and occur in environmental settings that are uncommon. The mapped locations of the uncommon natural communities used in BioFinder represent the best know examples in the state. Natural communities are commonly referred to as one of the “coarse filters” for conserving biological diversity. This is because there are relatively few natural community types (89 types are currently recognized by Vermont Fish and Wildlife Department) compared to the thousands of plant and animal species, and one approach to conserve most species is to conserve high quality examples of all natural community types across their natural range of distribution. By this approach, natural communities act as a “coarse filter” for conserving species.

### **Uncommon Natural Community Conservation Goal**

To conserve, enhance, and restore multiple high quality examples of all uncommon natural community types across their geographic range of distribution and representing all physical settings (soil, bedrock, elevation, etc.) in which they occur. Effective conservation should include the ecological processes that support the communities and their component species and a network of connected lands, waters, and riparian areas to allow ecological exchange between communities, including the ability of component species to shift over time in response to changing environmental conditions.

## **Component Mapping Goal**

To identify and map all of Vermont's documented uncommon natural communities using the best available data.

## **Source Data and Selection Criteria**

### **Natural Heritage Database, Vermont Fish and Wildlife Department**

#### **Description**

The Natural Heritage Database contains detailed, geographically-referenced information on Vermont's uncommon, rare, threatened, and species and on Vermont's significant natural communities. The database is periodically updated as new information on species and natural communities becomes available. The data used for BioFinder are current as of March 2012.

#### **Selection Criteria**

All natural communities Element Occurrences in the Natural Heritage Database with S-rank of S3 and S4.

## **Component Strengths**

Natural community Element Occurrences from Natural Heritage Inventory are based on detailed site surveys and data collected by consistent methods. Inventories for uncommon natural community types, especially S3 communities, are more complete than for common types. Natural communities represent critical coarse-filter elements for conserving biological diversity.

## **Component Limitations**

Statewide inventories for uncommon natural community types are on-going and therefore our knowledge of uncommon natural community locations is incomplete. Inventories for S4 communities are less complete than for S3 community types. Site visits are always needed to identify whether uncommon natural communities occur on a site.

## **Component Weight and Justification**

Uncommon natural communities were assigned a weight of 6 out of 10. This medium priority weight is based on the high importance of all high quality natural communities in their contribution to biological diversity but the relative abundance of these community types compared to rare communities. The medium priority also reflects that inventory of S4 community types is incomplete.

## Summary Statistics for Uncommon Natural Communities

Table 1. BioFinder component datasets, component weights, and the distribution (%) of components across tiers

Data #	Weight	Component	Tier 1 Greatest	Tier 2 Very High	Tier 3 High	Tier 4 Moderate	Tier 5 Low
<b>Landscapes</b>							
L1	7	Habitat Blocks	12.7%	18.1%	30.1%	39.1%	0.0%
L2	3	Grasslands & Shrublands	4.3%	20.8%	22.7%	10.9%	41.3%
L3	9	Rare Physical Landscape	15.7%	53.9%	11.0%	19.4%	0.0%
L4	4	Representative Physical Landscape	17.2%	19.1%	43.4%	13.7%	6.6%
L5	7	Connecting Lands (<2000ac)	10.1%	23.4%	19.1%	47.4%	0.0%
L6	4	Connecting Blocks	9.2%	12.2%	24.0%	51.8%	2.7%
L7	3	Anchor Blocks	12.1%	19.7%	35.3%	32.7%	0.1%
L8	8	Riparian Connectivity	36.4%	52.9%	10.8%	0.0%	0.0%
L9	4	Wildlife Road Crossings	12.8%	28.1%	20.9%	26.8%	11.4%
<b>Aquatics</b>							
A1	6	Surface Waters & Riparian Areas	31.1%	48.6%	12.9%	7.4%	0.0%
A2	4	Representative Lakes	10.3%	84.5%	5.3%	0.0%	0.0%
A3	8	Important Aquatic Habitats & Species Assemblages	19.9%	75.2%	4.9%	0.0%	0.0%
<b>Species &amp; Natural Communities</b>							
SN1	Tier 1	Rare Species	100.0%	0.0%	0.0%	0.0%	0.0%
SN2	6	Uncommon Species	62.1%	21.7%	10.0%	6.1%	0.0%
SN3	Tier 1	Rare Natural Communities	100.0%	0.0%	0.0%	0.0%	0.0%
<b>SN4</b>	<b>6</b>	<b>Uncommon Natural Communities</b>	<b>57.4%</b>	<b>31.0%</b>	<b>11.4%</b>	<b>0.2%</b>	<b>0.0%</b>
SN5	3	Common Natural Communities	9.8%	52.9%	37.1%	0.2%	0.0%
SN6	7	Vernal Pools (Confirmed)	20.5%	57.0%	8.3%	14.1%	0.0%
SN7	5	Vernal Pools (Potential)	6.0%	30.1%	52.3%	2.4%	9.2%
SN8	8	Wetlands	60.9%	31.0%	5.1%	3.0%	0.0%
SN9	4	Mast production areas	10.3%	49.3%	35.2%	4.0%	1.2%

The sum of percentages for each component is 100.

### For more information

A complete report on BioFinder development, methods and findings, including all 21 component summaries can be found at [www.BioFinder.vt.gov](http://www.BioFinder.vt.gov). For more information specific to this component, contact Eric Sorenson, Vermont Fish & Wildlife Department, 802-476-0126, [eric.sorenson@state.vt.us](mailto:eric.sorenson@state.vt.us)