

Natural Communities

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).

Ecological importance

Natural communities are one of the most important “coarse filters” for conserving biological diversity (Hunter 1991, Thompson and Sorenson 2000). This is because there are relatively few natural community types—97 in Vermont—compared to the tens of thousands of plant and animal species. Collectively, these 97 types in Vermont encompass the full range of habitat conditions that native flora and fauna evolved with and are adapted to. Therefore, conserving high-quality examples of all the natural community types is an efficient way to conserve most species.

Natural communities are relatively stable in a human timeframe, but their species assemblages have changed over thousands of years and will continue to shift in response to a changing climate. Sites with high-quality natural communities today represent places that are expected to continue to support important natural communities, and associated species, into the future.

Natural Community Conservation Goal

Vermont Conservation Design identifies conserving state-significant examples of each of the natural community types as a highest priority for maintaining ecological function. Specifically, this means conserving all significant examples of rare natural community types, and 50% of the significant examples of more common types, distributed across biophysical regions, and within an intact and connected natural landscape whenever possible. Some community types can be effectively conserved by other coarse filters. Matrix community types, such as Northern Hardwood Forest, are effectively captured by forest blocks and old forests. Seeps and vernal pools are captured by forest blocks and wetlands, respectively.

These natural communities should be maintained in, or restored to, a state of high ecological integrity. This translates into several measurable characteristics. Each natural community should be dominated by the native species characteristic of that community type. The species composition and physical conditions (soils, hydrology, etc.) should be largely unaltered by, or mostly recovered from, human disturbances. Natural disturbance processes should predominate. In general, high ecological integrity will correspond to an A or B- ranked element occurrence, and A-ranked condition, using Vermont Fish and Wildlife Department’s Natural Community Ranking Specifications.

Component Mapping Goal

To identify and map all of Vermont’s documented 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 November 2023.

Selection Criteria

Highest Priority:

- All natural communities with a state rank of S1-S4 & all old forest natural communities

Priority

- All natural communities with a state rank of S5 that are not old forest

Component Strengths

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

Component Limitations

Statewide natural community inventories are on-going and therefore our knowledge of natural community locations is incomplete. Inventories for rare communities are more complete than for uncommon and common communities. Of uncommon communities, inventories for S3 communities are more complete than for S4 community types. A field assessment is always needed to identify whether rare natural communities occur on a site.

The majority of mapped examples of common natural communities are on state-owned land. Statewide inventory of Northern Hardwood Forest, the most widespread natural community type in Vermont, is especially incomplete.

Component Priority & Justification

Highest Priority - All natural communities with a state rank of S1-S4 & all old forest natural communities were ranked as Highest Priority.

Priority - Common natural communities S5 that are not old forest were ranked Priority. This is based on the high importance of all high quality natural communities in their contribution to biological diversity, but the low level of inventory that has been completed for common community types and the overall low threat to these common community types.



For more information

For more information specific to this component, contact Vermont Fish & Wildlife Department, Jens Hilke, at 802-461-6791, jens.hilke@vermont.gov and Bob Zaino, at 802-476-0128, Robert.Zaino@vermont.gov