

Rare & Uncommon Species

Description

The species component includes both rare and uncommon species tracked by the Vermont Fish & Wildlife Department Natural Heritage Inventory. Uncommon species are defined as facing a “moderate risk of extinction or extirpation due to restricted range, relatively few populations or occurrences (often 80 or fewer), recent and widespread declines, or other factors.” In contrast, rare species face a higher risk of extirpation and generally have 20 or fewer populations statewide. The Vermont Fish and Wildlife Department uses a ranking scheme to describe the relative rarity of species in Vermont, using a national Natural Heritage methodology.

Ecological importance

A species may be rare in Vermont for several reasons, including the following: the species is near the edge of the geographic range; the species only occurs in specialized habitats or rare natural communities; or human activities have resulted in a direct loss of the species or the habitat it requires. Uncommon species of plants and animals are restricted in their distribution because of limited suitable habitat, either from natural causes or due to habitat loss and fragmentation associated with development. Some uncommon species in Vermont may be at or near the edge of their geographic range. Rare and uncommon species are important for their intrinsic values – as organisms that have evolved over millennia. Each species is assumed to serve an important role in maintaining ecological integrity. Sometimes the details of this role may not be known until a species is lost or becomes extinct. Rare and uncommon species, especially populations occurring at the edge of the species’ geographic range, provide important genetic diversity which may be especially significant in allowing species to adapt and evolve to changes in the environment.

Species Conservation Goal

To conserve viable populations of all rare & uncommon plant and animal species in Vermont, the habitat they need to survive, the ecological processes that support them, and landscape connectivity to allow individuals to disperse and populations to shift distribution over time in response to changing environmental conditions. Uncommon species are less at risk than rare species, but conserving all of these species is critical to conserving biological diversity. Understanding trends in uncommon species and taking appropriate conservation action is important in preventing uncommon species from becoming rare.

Component Mapping Goal

To identify and map all of Vermont’s documented uncommon species populations 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. For these purposes, the publicly-available rare, threatened & endanger species layer was combined with the uncommon species layer. Both are the products of the Natural Heritage Database. The data used for BioFinder are current as of August 2019.

Selection Criteria

Highest Priority - All Rare, Threatened, & Endangered species are included as highest priority.

Priority - All uncommon species are included as priority.

Component Strengths

Rare & Uncommon species records from the Natural Heritage Inventory are based on detailed site surveys and data collected by consistent methods. Element occurrence data for rare species are mapped using consistent methodology developed by the Vermont Fish and Wildlife Department and NatureServe. Rare species records are typically considered one of the most important "fine filters" for conserving biological diversity. More recent records have high spatial accuracy.

Component Limitations

Inventories of rare & uncommon species of plants and animals are incomplete, especially for many invertebrate animals and bryophytes (non-vascular plants). Many rare & uncommon species populations that are mapped in the Natural Heritage Database are mapped as circles, with the circle centered on the expected location of the population and the size of the circle representing uncertainty in the mapping accuracy. For older records with poor mapping accuracy this means that more area is mapped for the species population than it actually inhabits.

Component Priority & Justification

Highest Priority - Rare species are designated Highest Priority due to the critical importance of rare species for conserving biological diversity.

Priority - Uncommon species were ranked as Priority. This is based on the high importance of all species in their contribution to biological diversity, but the relatively moderate risk of extirpation of these species, compared to rare species. The priority ranking also reflects the relatively incomplete set of occurrence records for uncommon species in the Natural Heritage Database.



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