



NATURAL COMMUNITIES OF NEW HAMPSHIRE

From the Atlantic Ocean to the Connecticut River, to the White Mountains and the North Country, New Hampshire is rich in ecological diversity and scenic beauty. The richness of physical landscapes, from estuaries and coastal shores to mountain cliffs and peaks, support plant communities whose beauty is an integral part of New Hampshire's personality. These communities also play a practical – and essential – role in keeping our soil, water, and air healthy.

A **natural community** is defined as an assemblage of plants, animals, and other organisms, together with the natural physical environment in which they are found. Natural communities include different types of upland forests, grasslands, and wetlands, and they repeat on the landscape wherever suitable conditions occur.

Natural communities are defined by three characteristics:

- **what plant species are present;**
- **the physical structure of the vegetation** (e.g., short grasses vs. tall trees); and
- **the physical environment**, which consists of the physical setting (e.g., pond shore or hillside) the water and nutrients present, and the climate.

Across the landscape, natural communities form a mosaic of patches of different sizes. Some tend to be small (such as forest seeps), while others may cover large areas (such as montane spruce-fir forests).

The living components of natural communities are closely interrelated and interact with one another and the environment. Humans also are part of the living landscape and have a tremendous influence. Human disturbance of the natural environment is, in places, occurring at a greater frequency and scale than natural communities are adapted to. Because we are so dependent on values such as clean water and air that are provided by healthy, functioning, natural communities, it is important to better understand how they are vulnerable, which ones are most sensitive, and how best to protect them.

Nature is rarely constant: two primary forces that shape natural communities are **disturbance** and **succession**.

Disturbance varies widely in type and intensity, and includes everything from earthworms working the soil to major storms and fires. As physical conditions are disturbed, different species become established in natural communities according to their adaptations to the environment.



Illustration by Libby Davidson from: Wetland, Woodland, Wildland © 2000. The Nature Conservancy & VT Dept. of Fish and Wildlife.

Most natural communities can tolerate minor disturbances. If disturbance is intense, however, (e.g., wildfires or windthrow), changes in the physical structure of both the vegetation and the environment can lead to a change in what natural community is present.

Another important type of change in natural communities is **succession**, which is a change in species composition over time. Early-successional species are those that are well-adapted to colonize newly or frequently disturbed areas. These species are often annuals, biennials or short-lived perennials, which in the absence of major disturbance, eventually get replaced by longer-lived perennial herbs and woody species.

In New Hampshire, most lands will eventually succeed to forest. However, where disturbance is frequent and intense enough, woody vegetation will be slower to become established. Some natural communities, such as open wetlands, riverbanks and pine barrens, are adapted to repeated natural disturbance and retain early-successional species over long periods of time.



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Our natural heritage is at risk in New Hampshire.

Although New Hampshire has set aside many lands for open space and conservation, much of the state's significant natural diversity remains unprotected. Consequently, New Hampshire's natural heritage is threatened and at increasing risk. A significant acreage of New Hampshire's natural communities have already been lost to development: pine barrens and dune communities are two examples of community types that have been heavily impacted because of their desirability as building sites.

Examples of natural communities that can be considered to be ecologically exemplary are increasingly hard to find in New Hampshire. Exemplary natural communities include all examples of rare types and high-quality examples of common types. Their loss has a proportionately large impact on New Hampshire's natural heritage.

Disturbance and succession: what has changed?

One major effect of human activities has been greatly altered natural patterns of disturbance and succession in the landscape. For example, the control of wildfire and the impoundment of rivers have eliminated many natural early-successional community types by removing natural disturbances. Late-successional forests have also been changed, by human-caused disturbances such as logging. New Hampshire's forests are mostly quite young and in an early- to mid-successional stage. Old-growth forests are now very rare.

What human disturbances affect which natural communities?

Wetlands and forest seeps are vulnerable to erosion created by mechanical disturbances. Any activity that changes local water levels (e.g., by damming or ditching a wetland) can severely impact bogs, fens, forested swamps, and floodplain natural communities. Heavy recreational use can compact or erode delicate soils in wetlands and rocky uplands. Development, agriculture, and recreational use of uplands can lead to increased levels of nutrients and pollutants in storm water runoff, affecting adjacent wetlands and aquatic habitats. The introduction of non-native invasive species is also threatening many natural communities in the state.

Responsible planning and land management, however, can reduce the negative effects of human activities, and protect the values provided by healthy, functioning natural communities.

Helping landowners to be good stewards of the land.

Few state laws provide protection to natural communities. Their health depends on responsible stewardship by private and public land owners. Some landowners can set aside large tracts and let natural processes occur: this is one of the best ways to maintain high-quality natural communities in New Hampshire. However, active management can co-exist with and even benefit natural communities, when land managers are aware of what natural communities are present and what activities can protect them.

The New Hampshire Natural Heritage Bureau seeks to advance conservation by providing land managers with reliable, high-quality information on natural communities and rare plants and animals. The fact sheets available at our web site are one source of this information. Other resources available from NH Heritage include detailed classifications of all natural communities and natural community systems in the state, a key to upland communities, and detailed surveys and evaluations of particular community types in New Hampshire.

NATURAL COMMUNITY FACT SHEETS

are available for the following groups of natural communities:

- ✓ **Atlantic White Cedar Swamps**
- ✓ **Basin Swamps**
- ✓ **Floodplain Forests**
- ✓ **Gulf of Maine Salt Marshes**
- ✓ **Sandy Pond Shores**
- ✓ **Mineral-enriched Swamps**
- ✓ **Rich and Semi-rich Mesic Forests**

The fact sheets available in this series provide a general introduction. More detailed descriptions are available in a variety of reports.

For more information on:

- ❖ Natural community classification
- ❖ Protection and management of rare plants and exemplary natural communities
- ❖ Criteria for evaluating the significance of natural communities in New Hampshire
- ❖ What to do if you find a rare plant population or exemplary natural community

Contact the



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Fact Sheets funded by the Conservation License Plate Trust Fund (the "Mooseplate").

Mooseplate funds received by NH Natural Heritage are vital to developing information that leads to the protection of native plant species and natural communities.