

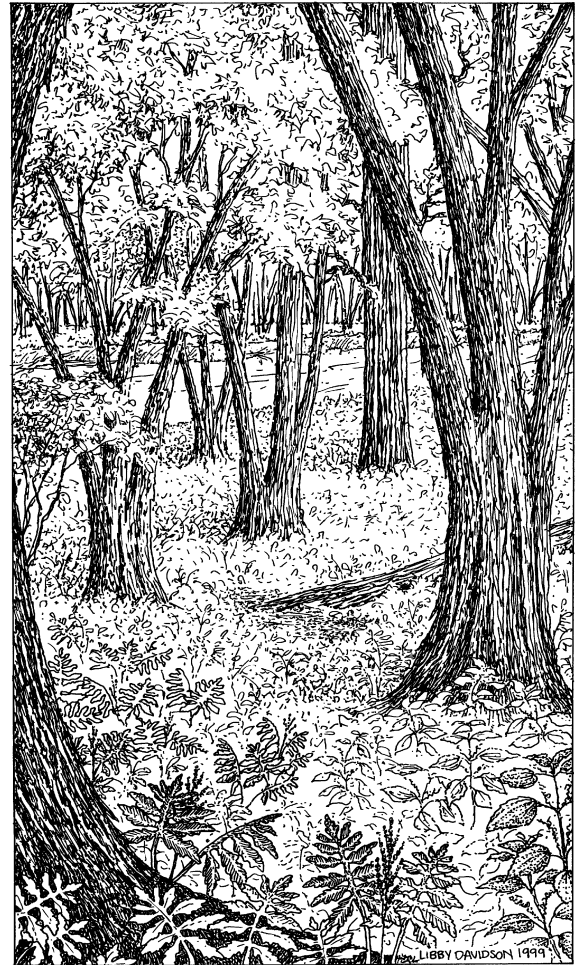


Floodplain Forests

Floodplain forests are diverse natural communities that experience seasonal floods: natural disturbances that often deposit rich soil but also physically remove shrubs and other low-growing plants. Along major rivers, these forests are typically dominated by silver maple trees, widely-spaced with trunks composed of many tall upward arching limbs. A scarcity of shrubs and a forest floor lush with ferns and herbs contributes to an open atmosphere. Sugar maple tends to be more prominent on major river floodplains near the White Mountains.

Along minor rivers, red maple (*Acer rubrum*) is usually the dominant tree in floodplain forests. Shrubs and vines tend to be denser than on major river floodplains and impart a jungle-like appearance. Less commonly, trees other than red maple dominate a minor river floodplain, including swamp white oak (*Quercus bicolor*), sycamore (*Platanus occidentalis*), balsam fir (*Abies balsamea*), and river birch (*Betula nigra*), a rare species in New Hampshire.

Differences in flood frequency, duration, and intensity are the most important factors that determine differences in floodplain forest vegetation. These factors are in turn controlled by physical attributes of the river and its floodplain such as water volume, channel shape, and slope of the river bed. Streams and minor rivers occur on steeper slopes and floodwaters rush by with great energy, disturbing riverbanks along the way. However, they do not flood with the volume or duration of major rivers. Major rivers descend into the valley bottoms where floodwaters spread out, slow down and deposit nutrient-rich sediments in broad expansive plains. Floodplains that are more frequently and intensely disturbed by river currents cannot support trees. The more disturbed the river habitat, the less vegetation there will be.



Species found in floodplain forests are adapted to the dynamic conditions found along the river. Herbaceous species tend to spread by rhizome, grow in perennial rooted clumps or have high numbers of wind- or water-dispersed seeds. The deep, loamy nature of floodplain soils provide excellent growing conditions for trees and other plants.

Characteristic and rare* plant species:

American elm (*Ulmus americana*)
black cherry (*Prunus serotina*)
bladdernut (*Staphylea trifolia*)*
blue-joint (*Calamagrostis canadensis*)
eastern meadow-sweet (*Spiraea alba*)
grass-leaved goldenrod (*Euthamia graminifolia*)
green dragon (*Arisaema dracontium*)*
hackberry (*Celtis occidentalis*)*
musclewood (*Carpinus caroliniana* var. *virginiana*)

ostrich fern (*Matteuccia struthiopteris* var. *pensylvanica*)
red maple (*Acer rubrum*)
river birch (*Betula nigra*)*
rough goldenrod (*Solidago rugosa*)
sensitive fern (*Onoclea sensibilis*)
silver maple (*Acer saccharinum*)
spotted Joe-pye-weed (*Eupatorium maculatum*)
swamp white oak (*Quercus bicolor*)





NATURAL COMMUNITIES OF NEW HAMPSHIRE

Where Are They Found?

Floodplain forests are found along major and minor rivers, and major streams. Silver maple floodplain forests occur primarily along the Connecticut, Merrimack, and Dead Diamond rivers, as well as some of their larger tributaries. Sugar maple floodplain forests are more common near the mountains, e.g., along the Saco and Pemigewasset rivers. Red maple and other types occur throughout the state along minor rivers and major streams, depending on local conditions.

Types: Silver maple/wood nettle-ostrich fern floodplain forest; Silver maple/false nettle-wood reed-sedge floodplain forest; Sugar maple/ironwood/short husk floodplain forest; Sugar maple-silver maple-white ash floodplain forest; Swamp white oak floodplain forest; Basswood-white-black maple floodplain forest; Rich sugar maple-ash-oak-hickory forest (high floodplain); Red maple floodplain forest; Balsam fir floodplain forest; Sycamore floodplain forest; Low hemlock-hardwood/cinnamon fern forest.

Conservation status: Floodplain forests are regionally imperiled. Most floodplain forests have been converted to agriculture or been developed. New Hampshire's floodplain forests were once found in every valley along every major and minor river as well as many major streams. Very few large or undisturbed examples still exist in New Hampshire. Floodplain forests, with their deep, rich, loamy soils, probably had some of New Hampshire's most magnificent and largest trees prior to European settlement.

Conservation Considerations:

Floodplain forests dissipate and absorb a considerable amount of water during floods, helping to buffer surrounding and downstream lands from flood damage. With the loss of these forests, the collective losses of other streamside wetlands, and increased area of impervious surfaces throughout watersheds, the intensity and amplitude of floodwaters has increased along major rivers.

Some remaining examples of these forests are in remarkably good condition and worthy of conservation. Others have good potential for restoration. Continued threats include impoundment or alteration of river flows, direct alteration of the forests by logging or filling, off-road vehicle use, and allowing polluted upland runoff to drain into the floodplain. Another major threat is the introduction of invasive species, whose seeds are readily washed downstream to other floodplain forests and become easily established in the open soils naturally disturbed by ice and flood scouring. Of New Hampshire's ecosystems, floodplains have been one of the first and hardest-hit by the spread of invasive species.

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For more information, please visit our web page at www.nh.gov/dred/divisions/forestandlands/bureaus/naturalheritage or call (603) 271-2215.



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