

# The Outside Story



## Visiting a Floodplain Forest

By: Susan Shea

Visiting a forest along one of our major rivers, such as the Connecticut River, in late spring, is like entering a special world. Big silver maples tower overhead, with arching branches and roots reaching deep underground. Cottonwoods up to five feet in diameter and vase-shaped American elms are scattered about. Scars on the upstream side of some tree trunks bear testament to the chunks of ice that crash through when the river floods every spring. Silt stains on the trunks and dead leaves, trash, and other debris caught in crotches of trees show the height of the floodwaters. Many trees cannot withstand flooding, but the species in this forest are flood-tolerant and thrive in the nutrient-rich sediments brought by floods.

Tall clumps of ostrich fern, their fronds resembling ostrich plumes, and dense patches of wood nettle grow out of fresh sand and silt deposited by the river. There are few shrubs, but thick grapevine ropes climb tree trunks. Birds sing and flit among

the treetops. Toads trill from a depression that still holds water from the spring floods. Along the river's edge, the roots of black willow reach over the bank and the tracks of an otter can be seen in the mud.

Floodplain forests like this were common along northeastern rivers before European settlement, the meandering green ribbons extending for miles. Now they are a rare natural community. Their fertile soils with few stones were prized for farming and easy to build on, so most floodplain forests have been cleared for agriculture and development.

The many benefits these forests provide were lost with their disappearance. Floodplain forests help prevent catastrophic flooding downstream by storing and slowing floodwaters. They filter pollutants running off farm fields and urban areas, preventing them from entering streams, thereby improving water quality. Tree roots help stabilize riverbanks, controlling erosion. The overhanging tree canopy keeps the water cooler in summer, aiding cold-water fish such as brook trout.

The rich, alluvial soils of a floodplain forest create ideal habitat for insects and amphibians, which in turn become prey for animals like woodcock, mink, raccoon, and wood turtle. Spring flooding thaws the soils of floodplain forests earlier than the soils of surrounding areas, making insects available to birds earlier. For this reason, spring migrants follow rivers and feed in floodplain forests as they journey north. Some, like the warbling vireo, northern oriole, and great crested flycatcher, stay and nest here.

In addition to clearing for agriculture and development, threats to our remaining floodplain forests include dams and invasive species. Dams alter the river's natural flooding regime and trap nutrient-rich sediments that would normally be deposited in these forests. Run-of-the-river dams, which allow normal flow except in periods of high water, are better for floodplain forests. Invasive species such as Japanese knotweed do well in the

exposed soils and abundant sunlight of floodplain forests and can outcompete native vegetation.

In recent years, watershed associations have been planting buffer strips of trees along rivers. There have also been a few encouraging initiatives to restore whole floodplain forests in the Northeast.

The Nature Conservancy has completed several such projects in Vermont. "Floodplain forests are really important natural communities that provide wildlife habitat and ecosystem services to people, but are one of our most diminished communities," said Rose Paul, Director of Science. The Conservancy planted native, flood-tolerant trees and shrubs on 50 acres it purchased on Otter Creek in Cornwall. Over the past ten years, the trees have grown on these former agricultural fields that their owners decided were too wet to farm. Other floodplain forest species such as marsh bedstraw, willows, and dogwoods have sprouted from the natural seed bank that remained in the soil and from seeds washed in by floods. The types of trees that do well at a particular site varies with the duration of flooding, advised Paul. Silver maple, green ash, black willow, and swamp white oak are a few of the common species.

In Vermont's Northeast Kingdom, the organization has planted disease-tolerant American elms as well as other floodplain natives at its Maidstone Bends Natural Area along the upper Connecticut River. These elms were developed by crossing eastern "survivor" elms that were naturally tolerant of Dutch elm disease to cold-hardy Vermont elms that showed a similar resistance.

For the beaver felling a tree, the oriole bringing a caterpillar to its young, the bear digging grubs out of a rotting log, and for people living in homes downstream, bringing back floodplain forests is certainly worth the effort.

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