

White Pine, Eastern Hemlock Were Once More Common

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White pine and eastern hemlock are the tree species most often considered when foresters and wildlife biologists talk about upland conifers. These species often occur in association with other forest types, mostly northern hardwoods, but can also form their own forest types.

Both species were once more common than they are today. Both have served valuable utilitarian roles in the history of the Lake States. Both have recovery or restoration challenges as a result of the historical logging and massive wildfire era common to the region.

White pine and hemlock no longer have high demand from commodity markets. However,

they provide critical habitat components for many species of wildlife, especially a suite of popular songbirds. They also have high visual and aesthetic appeal, a romance with the past. After all, white pine is Michigan's state tree.

While these upland conifers frequent our forests less than in the recent past, they remain major forest components. Both are among the

most common tree species in Michigan, particularly in the Upper Peninsula. In fact, the U.P. has some of the largest hemlock reserves in North America.

Nevertheless, upland conifer

restoration has growing popularity among public agencies and many private forest owners. A good portion of our northern hardwood forest lacks what some ecologists regard as historical levels of upland conifers.

So, how does a forest owner increase the upland conifer component of a forest?

For the most part, nature will take its course.

Active forest management, especially timber harvest, will accelerate the natural tendency of upland conifer regeneration. Across parts of Michigan, this successional process is taking place, and has been for decades.

These upland conifers will regenerate best under canopies opened up by timber harvest (or natural processes mimicked by timber harvest) and where mineral soil has been exposed. Astute observers will see seedlings and saplings most common along roads and skid trails. Recent research indicates that certain micro-topographical features (such as old logs and tip-ups from fallen trees) provide adequate sites in less disturbed places.

However, where seed sources are not available, human beings can plant trees in the understory. Partial sunlight and well-drained, reasonably fertile soils provide the best sites. These young trees will grow best without competing veg-

etation.

Aside from the expense and labor involved with planting, there are several challenges to successfully regenerating or restoring upland conifers in northern hardwood forests.

White pine is susceptible to blister rust, an exotic disease that has more impact in shadier and moister conditions, such as understories. More open-grown white pine are susceptible to our native tip weevils, which kill the leader of the tree, often rendering a misshapen white pine "bush."

Hemlock across much of eastern North America has succumbed to an exotic insect called a woolly adelgid. To date, the adelgid has not gained a foothold in Michigan. The thought of this insect in our large hemlock reserves is disturbing.

By far the leading challenge to these young upland conifers is browsing by deer, and to a lesser degree, by rabbits and hares. In areas where browsing pressure is moderate to high, regeneration of white pine and hemlock is next to impossible. So, before embarking on a restoration effort, it would be worthwhile to consider local browsing pressure.

White pine and hemlock are beautiful trees. They have played a key role in human settlement and provide important wildlife habitat. Where possible, increasing their presence in upland forest types is a worthy objective. Managing for these species requires an assessment of several related factors. As always, working with a professional forester is recommended.

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The Les Cheneaux Historical Association's 2006 raffle quilt is called Cabin in the Woods and will be given away Sunday, September 3.

Raffles Planned at Museums

*Continued from page 3

and brown colors in its squares. The quilt also has more hand quilting detail than in previous years' quilts. It was made entirely by volunteer quilters in the winter and spring months.

Both museums will be open Monday, September 4, for the Labor Day holiday, from 1 p.m. to

4 p.m.

The museums will remain open Tuesday through Saturday, from 10 a.m. to 4 p.m. until Saturday, September 9.

The museums will close Sunday, September 10, and then will be open by appointment only.

Appointments can be made by calling (906) 484-2821 or (906) 484-2234.

Researchers Study River Sturgeon

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will lead researchers to her spawning habitat within the St. Marys in subsequent years.

Tagged sturgeon have largely remained in a 15-mile tract of the St. Marys between Michigan's Sugar Island and Canada. However, one fish traveled 10 miles downstream through Lake George, actually a widening in the channel, to reach a section that borders Michigan's East Neebish Island and Ontario.

Researchers have also noted movement in other fish that

exceeded five miles over a period of three days in June.

This season's trapping and tagging wraps up in early September. Funds for sonic tracking continue through 2007.

LSSU's Aquatic Laboratory is still looking for boat owners willing to transport researchers on tracking expeditions. For more information on the project, or to volunteer, contact the laboratory at (906) 635-1949.

Invasive Plants Not Hindered by Diversity

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around hybrids. A third plot received both live hybrids and litter, and the fourth was left alone.

Litter accumulation was the deciding factor, she found.

"Plots with the litter treatment had higher levels of nitrogen in the soil and higher turnover rates of nitrogen, along with much lower light levels and lower soil temperatures," Ms. Farrer said. "So the litter was creating a pretty different environment."

When she tallied other plants in the experimental plots, she found that both the diversity and the density of native species were lower when litter was present. But while native plants suffered, invaders prospered.

"The hybrid plants performed better with litter addition," Ms. Farrer said. "They obviously aren't hindered by the litter, and the increase in nutrients may help them grow larger."

The results suggest that invasive cattails set in motion a feedback loop that helps them gain a stronghold.

"The invasive cattails change the ecosystem through litter accumulation, producing an environment in which native plants don't perform well but the invaders do," said Ms. Farrer. "As the environment changes, the cattails get more abundant and change the environment even more, resulting in even more cattails. It's interesting – and sobering – to think that it's not just humans that go out and mess up the habitat; invasive species can actually initiate that cycle."



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