

The Waning Minnesota White Pine

By Lynn Rogers

White pine was once the ancient forest species of the East. The extent and size of the old-growth white pine forests are best personified in our cultural memory by the legend of Paul Bunyan — the gargantuan logger who conquered these great trees. While eastern white pines were once found on millions of acres of northern forests from Maine to Minnesota, today nearly all the old-growth white pine has been harvested.

In northeastern Minnesota, the Forest Service continues to allow the harvest of white pine although regenerating the next cycle of trees may be impossible. White pine regeneration in northeast Minnesota has been unsuccessful due to European-introduced blister rust, deer moving north in response to habitat changes brought about by white pine harvest, and competition with other species, such as aspen, that have become prevalent.

Eastern white pine was once the most important source of sawtimber in northern forests. Its straight grain and workability made it ideal for doors and window frames. From the 1930s through the 1970s, foresters seldom replanted white pine because it was known to be difficult to regenerate. Although replanting occurs now with a slightly rust-resistant stock, it's questionable whether the trees will survive to maturity.

TOWERING OVER THE CANOPY

Outside of the Boundary Waters Canoe Area Wilderness, only about 3,000 acres of old-growth white pine stands remain — less than one percent of its original range in Minnesota. Scattered individual white pines that

escaped the axe in earlier times now tower over surrounding forests of aspen, birch, spruce, and fir. These isolated "supercanopy" trees significantly contribute to the forests' structural diversity and provide nesting and foraging habitat for wildlife. But existing Forest Service plans will eliminate white pine from all but a few reserve areas within the next few decades.

The small numbers of these residual white pine trees belie their significant contribution to wildlife habitat. Over the last 30 years on the Superior National Forest, 80 percent of the bald eagle nests and 77 percent of osprey nests were found in white pines. White pine is also the preferred escape tree for black bears. A study in northeast Minnesota determined that mothers with cubs made their beds next to the old trees 95 percent of the time, and in times of distress, small bear cubs are better able to climb the bark of white pines than any other northeastern tree species.

Besides logging, the most significant threat to white pines is the blister rust fungus (*Cronartium ribicola*) imported on seedlings from European nurseries. Blister rust requires living tissue to survive and is usually fatal to seedlings. Under certain conditions of moisture and temperature, the fungus enters the tree through needles and grows along branches until the branch dies. Large trees usually lose only branches to the disease, but young trees often die because the fungus is able to reach the main trunk and girdle it.

The moisture and temperature conditions that favor blister rust are unfortunately common in northeastern Minnesota — a region otherwise well-suited to growing this valuable species. Nearly all young white pines



PHOTO: ROBERT LEVINE

die from blister rust, deer browsing, or insect attack before reaching maturity. Successful regeneration in this area would require individual attention to each tree — special pruning to prevent the spread of blister rust, protection from deer browsing, and retention of shade trees to protect seedlings from weevils.

A large portion of white pine sawtimber cut today comes from stands that are not typed by the Forest Service as white pine. The few scattered white pines in a timber sale may provide the only economic justification for a sale composed of low-value northeastern hardwoods. If the Forest Service can sweeten the deal with white pine, they improve the economics of logging the less valuable trees. Because these areas are primarily hardwood stands, the agency can leave the official inventory unchanged and needn't worry about regenerating the white pine component

of these "non-white pine" stands.

There will likely be a gap of decades — or even centuries — before this white pine component can return to Minnesota's forests. Researchers are actively trying to find blister-resistant strains of white pine to be used in regenerating these aging stands, but their success so far has been limited. Instead of squandering our last few white pines, we should let them stand for another century or two, at least until we develop a strain that is resistant to blister rust. The first consideration of forest management should lie that we not harvest what we cannot regenerate. In the case of white pine, the sustained yield on many sites on the Superior National Forest is zero.

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The Silence of a Researcher

As a Forest Service research biologist, Lynn Rogers realized the biological importance of the residual white pines to wildlife. In 1991, he wrote about the plight of the Minnesota white pine in a magazine article published by the Minnesota Department of Natural Resources. He also took his white pine policy suggestions to Forest Service Chief F. Dale Robertson, but his input was not welcome.

About one month after the Chief and Associate Chief George Leonard learned of Rogers' research on the last old white pines of northeastern Minnesota, the Washington Office began a non-specific investigation of him — confiscating his data, ending his study, canceling outside funding, and even locking him out of his office for three months. High-level Forest Service officials, reportedly, spent 20 months trying to manufacture ways to fire Rogers and put seven investigators on the case. Allegations included everything from taking bears out of season to insubordination to the misuse of postage stamps.

In the end, Rogers refuted all but the most trivial charges; but he had to pay huge legal fees and watch his 23-year, black bear research project crumble. After the case was moved out of the Forest Service's jurisdiction, the agency quickly settled rather than receive adverse publicity on their treatment of Rogers.

— Doug Heiken

