

Restoring the elm to a cold weather forest



by Sally Sedgwick

To a tree lover, the American elm is the whole package. It can grow in acidic soil – even to a pH of 5. It can grow along city streets or in mine reclamation projects. Its range is Florida to North Dakota. And its lovely umbrella shape is hard to miss.

“The American elm is a tough tree,” said Research Biologist Jim Slavicek of the USDA Forest Service’s Northern Research Station in Delaware, Ohio. It was also important in the forest ecology of northern woodlands where it helped to control groundwater levels.

Then came Dutch Elm Disease (DED) and its vector, the elm bark beetle. Introduced into the U.S. in the 1930s, by 1976 over half of the majestic elms that lined the urban streets of the country had been destroyed.

In the Chippewa National Forest, the ash tree took over the function of the disappearing elm in the woods, keeping the water table low enough so that more swampland was not created and trees with good wood value could thrive. But now the emerald ash borer is drawing closer, threatening the ash population.

Forest researchers saw this coming and looked at possible solutions. DED resistant elms had been developed, like the variety Valley Forge, but the trick was to also make them cold hardy. The Chippewa National Forest is solidly in Zone 3b, with an annual extreme minimum temperature hitting -35°F.

In addition to needing to develop cold-hardy elm trees, Jim Slavicek and his team are also trying to expand the elm genotype so a new disease or pest could not necessarily kill them all off.

Slavicek designed a research study that would span almost a decade, and the results are coming in now.

First, four large elms that had survived DED were located on the Chippewa. Flowering branches were sent to Ohio to be crossed with DED tolerant elms from Wisconsin and Ohio along with survivor trees from pesticide toxicity testing. Trees with known susceptibility were also used as controls...

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