

American Elm Restoration Project

Planting DED Tolerant American Elm in the Upper Mississippi Watershed

The Challenge

Dutch elm disease (DED) devastated the population of American elm street trees as it moved across the US in the 1970's. The natural population of American elm has essentially no resistance to this disease, so DED also significantly altered the make-up of bottomland forests, where American elm was a dominant tree species. This has affected wildlife, overall forest health, and the entire ecology of bottomland forests.

The Solution

Research identified several cultivars of American elm with high tolerance to DED for use in urban tree plantings, and many of these are now commercially available. These elms naturally have tolerance to DED that allows them to survive, even when the disease is present. In 2003 the Northern Research Station began a project to reintroduce some of these cultivars into wildland plantings in Ohio, where their seedling progeny (of which a proportion should carry the genetic basis for DED tolerance) will be free to grow. In 2005, the Northeastern Area facilitated establishment of plantings with DED tolerant cultivars of American elm in the Upper Mississippi watershed at sites in Minnesota, Iowa, and Wisconsin.

Resulting Benefits

The US Forest Service Northern Research Station and Northeastern Area have effectively partnered with the Army Corps of Engineers in Wisconsin, the Carpenter St. Croix Valley Nature Center in Minnesota, and Luther College in Iowa, to establish three viable plantings of DED tolerant American elm in the Upper Mississippi Watershed. These trees will grow and produce seed on site, preserving and spreading the genetic basis for DED tolerance. The progeny from these trees should increase the level of DED tolerance in the local natural population of American elm.

Planting of DED tolerant cultivars of American elm into "wildland areas" restores the genetic basis for disease tolerance into the natural population of elms.



Forest Service scientists plant DED tolerant American elm at Roslein Woods near Luther College, in Decorah, Iowa.

These plantings will also serve as genetic reservoirs for future DED tolerant elm selections adapted to local weather and soil conditions. We intend to continue to add sites and use additional DED tolerant cultivars as resources become available.

Sharing Success

Many groups and individuals are eager to plant DED tolerant elms. However, the cost of individual DED tolerant elm trees remains high, and many cultivars are not readily available to the public. A Federal role to expand upon this success would be to facilitate the propagation and distribution of a suite of DED tolerant elms for establishment of new sites.



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