



THE AMERICAN ELM – *ULMUS AMERICANA*: Iconic species of floodplain forest and city streets



American Elm leaf (*Ulmus americana*)

GMCT Collaborated with The Nature Conservancy and the U.S. Forest Service in the American Elm Restoration Project

Elms were one of the largest trees in New England before the arrival of the Dutch elm disease (DED). As the first Europeans sailed up the Connecticut River, giant elms lined the banks, towering above the floodplain forest. Over the next centuries, elms were planted to line and shade city streets across the country. The fungus that causes DED was first identified in 1910 in the Netherlands, and spread to elms across Europe and the U.S. As the disease spread and accelerated in the second half of the 20th Century,

devastating city tree canopies, elms in the forest continued to sprout and grow to moderate size before succumbing to the disease.

In 2010 floodplain ecologist Christian Marks, working for The Nature Conservancy (TNC), began a study of the floodplain forest from the source of the Connecticut River on the Canadian border to its mouth at Long Island Sound, labeling and recording over 14,000 trees of all species. His analysis showed that the elm species, in spite of the devastating effects of DED, is still the

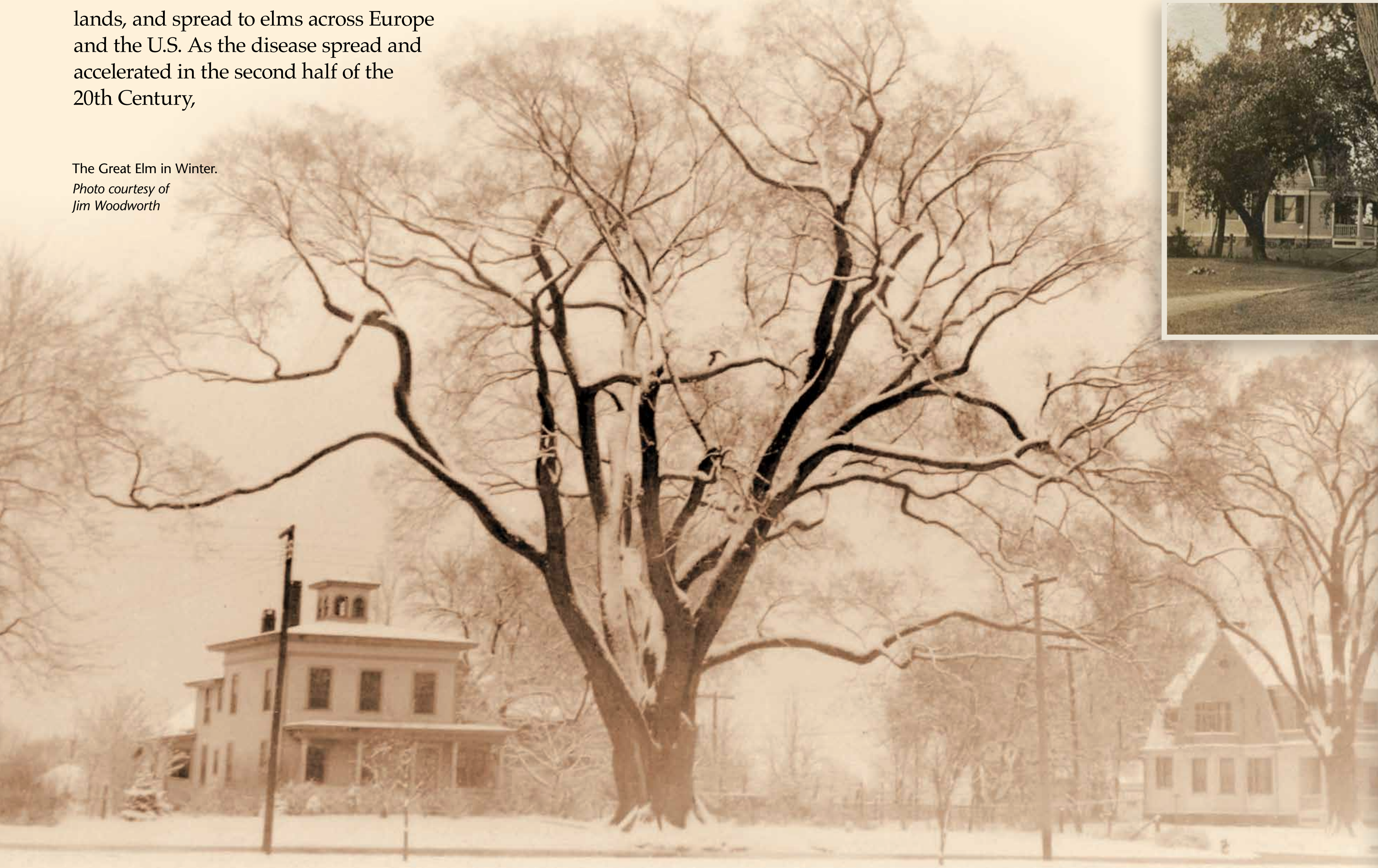
second most numerous species in the floodplain forest. While cities have been planting disease tolerant cultivars along streets and in parks, the aim of the Elm Restoration Project, a partnership between TNC in New England and the U.S. Forest Service, is to disperse the seeds of the disease tolerant cultivars into the wild forest. This will allow the DNA to be shared with trees in the wild, and to evolve naturally with the fungus, in hopes that the species will regain its rightful place as a dominant species of the floodplain forest.



Researchers have identified native elm cultivars with a high tolerance to Dutch elm disease. In the fall of 2020, over 60 participants, including GMCT members, environmental club members, Boy Scouts, Girl Scouts, and families, planted a total of 25 disease tolerant elms of 6 different cultivars at designated locations dispersed throughout the floodplain forest of the Wood parcel. GMCT volunteers and TNC floodplain ecologist Christian Marks also planted disease tolerant elms on GMCT's DiPaola parcel in Rocky Hill and Walker easement (the coal wharf) in Glastonbury. All three of these areas will serve as research sites.

Above left the Kaye family proudly poses with the tree they planted. Above center, TNC Steward Sophie Duncan begins the first step of scientific research by recording the species, location, and size of the planted elm trees in the TNC database. Over the coming years, she will return to observe and record the health and growth of each tree. Above right, Christian Marks, center, and GMCT members Rick Doran, left, and Gerry Hayes plant a St. Croix elm.

The Great Elm in Winter.
Photo courtesy of Jim Woodworth



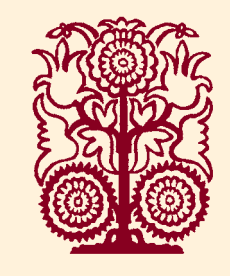
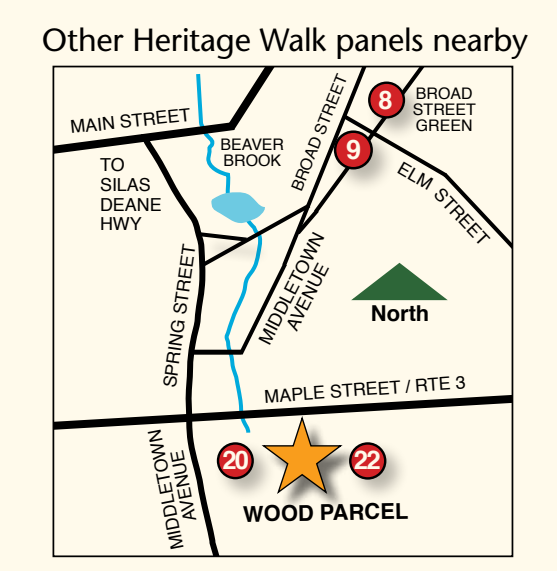
Wethersfield's iconic Great Elm as it stood on the Broad Street Green in the early 1900's in its glory. Edward W. Willard, Sr. (left) and four other men stand in front of the trunk. When this magnificent tree died of Dutch elm disease in the 1950's, it was about 200 years old and 14.5 feet in diameter.
Photo courtesy of Jim Woodworth

Another Endangered Tree Species: The American Ash Tree Tree of baseball bats and tool handles



While the DED fungus has devastated the elm species, the emerald ash borer (EAB), an invasive insect from Asia has, over the last two decades, devastated the white and green ash species. EAB lay eggs under the bark. When they hatch, the larvae eat the inner bark and phloem layers. The tree trunk at left shows the "blonding" effect of woodpeckers eating EAB larvae. Sadly they don't eat enough larvae to save the tree. Ash trees have been killed at the Wood parcel and across the country. Restoring the elm species will help to fill the gap in the forest ecology left by the destruction of the ash species.

"Blonded" Ash Tree bark, photo courtesy of Jim Woodworth. Emerald Ash Borer insert photo, courtesy of Matthew L. Brust



This project was developed through a partnership between the Town of Wethersfield, Wethersfield Historical Society, the Webb-Deane-Stevens Museum, the Wethersfield Tourism Commission and interested residents. This project was also assisted by grants from Connecticut Humanities and the Hartford Foundation For Public Giving.