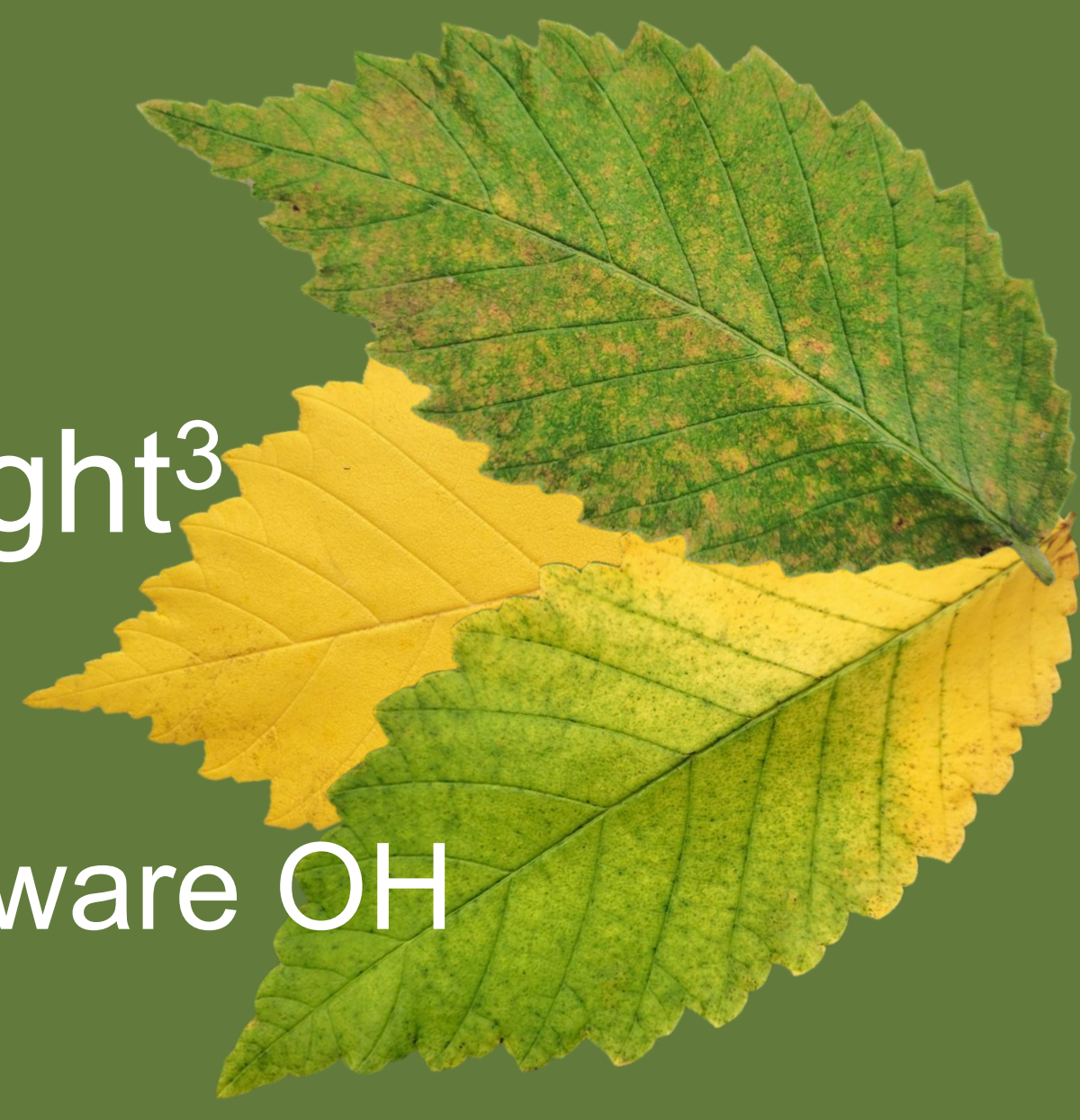


# Help Us Find Survivor American Elms!

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## Resistance Plantings

Existing resistance trial plantings in Benson (~6000 trees) and Lemington (~1000 trees), VT are being assessed to better understand performance and climate adaptation among specific crosses and genotypes. Trees at these plantings are scheduled to be inoculated in spring 2026.

**Growth** – diameter and height assessed annually for performance differences.

**Phenology** – spring bud break and flower bud development as well as fall leaf senescence to assess growing season length and susceptibility to cold damage.

**Cold Tolerance** – differential thermal analysis and relative electrolyte leakage methodologies to assess local adaptation to source climate.

**Stomatal Conductance and Chlorophyll Fluorescence** – measured using a LiCor-600 fluorometer porometer to assess differences in photosynthetic capacity and leaf performance.

## Outreach and Survivor Tree Criteria

- A tree in good health of at least 22 inches in diameter at breast height
- Located in an area where dead and/or dying American elms are within about one mile
- Identified tree has not been treated with fungicides to prevent DED



Many survivor elms have been found throughout New England. Additional trees are needed to increase the diversity of source material for successful future restoration efforts.

We are asking for the help of state foresters and other forestry professionals, park employees, and the interested public to identify large American elm trees surviving on their landscapes.

Please report survivor elms via the Survivor Elm Survey Tool on the USDA Forest Service website or email [chansen@uvm.edu](mailto:chansen@uvm.edu)

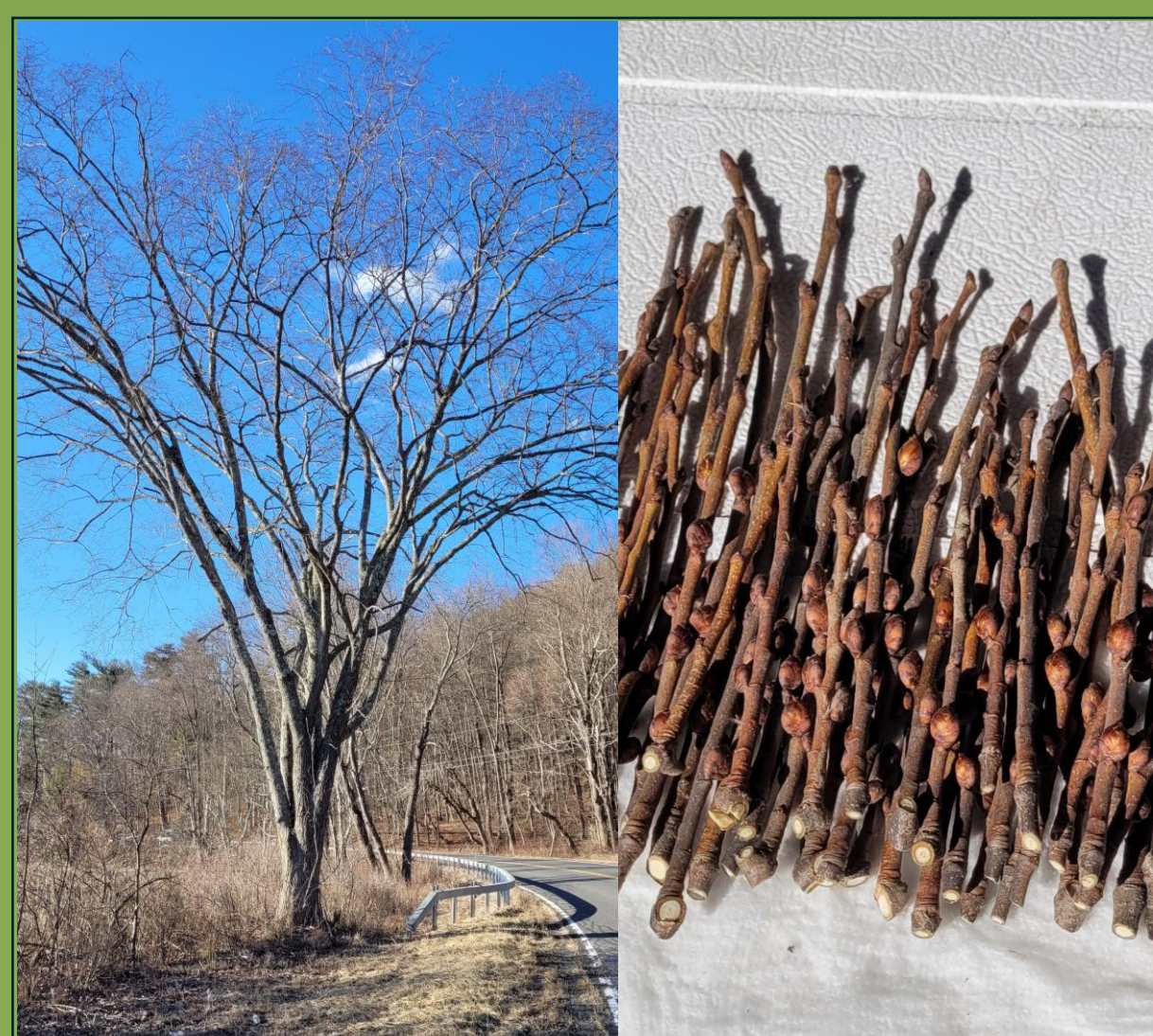
<https://research.fs.usda.gov/nrs/products/dataandtools/survivor-elm-survey>



## Background

The American elm (*Ulmus americana* L.) was a foundational floodplain species that provided substantial ecological benefits before its significant decline due to Dutch elm disease (DED). First introduced in the 1920's, DED functionally removed mature American elm from the floodplain forests of New England. However, mature "survivor" trees still exist on the landscape that may exhibit disease tolerance. Breeding programs, led by the USDA Northern Research Station and partnering with The Nature Conservancy and the University of Vermont, aim to develop locally adapted and genetically diverse seed orchards for future restoration efforts.

### Identify Survivor Elms And Collect Scion



### Graft Scion Onto Rootstock



### Clonal Propagation Via Softwood Cuttings



### Resistance Plantings And DED Inoculations



### Most Resistance Sources To Be Planted In Seed Orchard

