

## Dutch Elm Disease — An Old Problem in a New Place

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Dutch elm disease (DED) has been present in the United States for more than half a century. DED was first discovered in Boise in 1968 in Moscow and Weiser in 1990.

*The Disease.* Dutch elm disease is caused by a fungus (*Ceratocystis ulmi*) that is spread by the European elm bark beetle. American and European elms are the most susceptible, although all species of elms fall prey to this disease.

Healthy elms become infected from late May to early July. DED fungus is spread to healthy elms through wounds made by feeding beetles. This disease is also transmitted through root-grafts between healthy and infected trees.

The fungus quickly spreads through the tree, clogging water conducting vessels and literally causing the tree to die from thirst. Death can be rapid, sometimes as quickly as 1-2 weeks of infection.

*Symptoms.* The first symptom of DED is a sudden discoloration and drooping of leaves at the tips of branches. A branch displaying these symptoms is called a flag. Internally, brown discoloration occurs under the bark. Brown streaks can easily be seen by peeling the bark off of a recently infected twig.

*Controls.* There is currently no recognized cure for DED. Sanitation can effectively stop the spread of the elm bark beetle and the fungus. Within the first year of death of an infected elm, any elm wood with bark on it — firewood, windthrown trees, broken limbs — is subject to colonization by beetles and fungal spores. Infected trees should be removed, including the entire stump, and all wood should be buried or burned. Pruning out dead and dying branches is only effective in controlling DED when less than 10% of the tree is infected. Pruning involves removing relatively large branches that show signs of flag-

ging until no streaking under the bark is seen. If the discoloration extends into the trunk, no surgical cure is possible and the entire tree must be removed.

Other controls are available, though no one control has proven to be 100% effective. Application of contact insecticides to healthy elms has been used to prevent

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