

OAK WILT

A Disease of Oak Trees

What is oak wilt?

Oak wilt is a disease that affects oak trees. It is caused by *Ceratocystis fagacearum*, a fungus that develops in the xylem, the water-carrying cells of trees. All oaks are susceptible to the fungus, but the red oak group (with pointed leaf tips) often die much faster than white oaks (rounded leaf tips).

Why is oak wilt a problem?

The oak wilt fungus blocks the flow of water and nutrients from the roots to the crown, causing the leaves to wilt and fall off, usually killing the tree. Red oaks (scarlet oak, pin oak, black oak, etc.) can die within a few weeks to six months, and the disease spreads quickly from tree to tree. White oaks (bur oak, scrub oak, etc.), however, often take years to die and the disease usually cannot spread to additional trees.

Where does it come from?

Oak wilt was first discovered in Wisconsin in 1944, but where it originated is still unknown. It has spread throughout the Midwest and Texas, killing tens of thousands of trees.

Where has it been found in New York State?

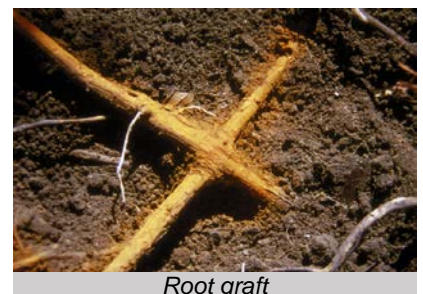
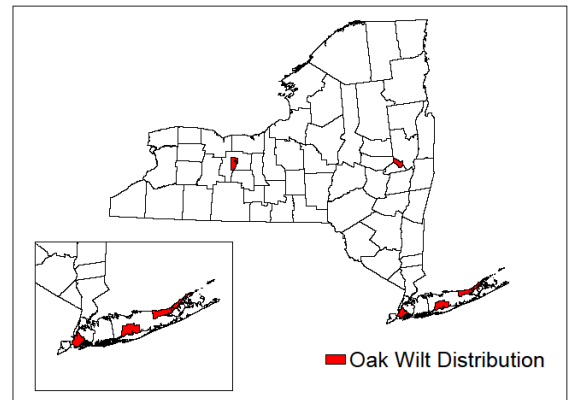
In 2008, a small infection was discovered in Glenville, NY. It was quickly dealt with to prevent further spread. The disease resurfaced in the same location in 2013, and additional steps were taken to eradicate the infection. In 2016, oak wilt was discovered in Islip, Riverhead, and Southold in Suffolk County; Brooklyn in Kings County; and Canandaigua in Ontario County.

How does it spread?

There are two main ways oak wilt is spread: 1) above ground by beetles, and 2) below ground through tree roots.

Fungal spore mats form just under the bark of infected red oaks after they have died from the disease. During the warmer months, these spore mats emit a sweet odor that attracts sap-feeding beetles and bark beetles, which can pick up fungal spores as they crawl around. The beetles are also highly attracted to fresh wounds in other trees—often caused by pruning. In this way, they spread the fungus from infected trees to healthy trees sometimes miles away. Infected firewood and other wood materials also pose a threat because they can harbor the fungus and/or beetles that can spread the disease.

Spread underground occurs when roots of nearby red oaks graft to each other (fuse together), creating a connection through which nutrients and the disease can move. In the Midwest, large blocks of red oak forests have died from the disease in a single season due to their vast network of interconnected roots. In contrast, *white* oaks are much less likely to create root grafts, and spore mats rarely form under their bark, significantly reducing the chance of spread from these trees.



What are the symptoms?

Symptoms of oak wilt infection are often very noticeable in red oak species, but aren't easily seen in white oaks.

- Brown coloration develops on leaves starting at the outer edge and progressing inward toward the mid-vein of the leaf.
- Branch dieback may be visible starting at the top of the tree's canopy and progressing downward.
- Leaves suddenly wilt in the spring and summer and may fall while there is still some green on them.
- Fungal spore mats may develop under the bark of infected trees.



Diseased red oak leaves



Fungal spore mat under bark

What is being done?

- During the growing season, DEC will take samples from oak trees around the infection sites to determine the extent of the disease.
 - These areas will continue to be monitored for at least five years using aerial and ground surveys.
- Established Protective Zones will prohibit the movement of potentially diseased oak wood including firewood.
- DEC is attempting to eradicate the disease in Canandaigua and Brooklyn using methods similar to those used in Glenville.
 - Oak-free zones will be established where infected and surrounding oak trees will be removed.
 - Where possible, trenching will be used to break root connections to lower the chance of spread.
- In Suffolk County, DEC will only attempt to contain the disease due to the number of infection sites and distribution across Long Island. Only infected trees will be removed.



Trenching to break grafted roots

What can I do?

- Learn to recognize the symptoms of oak wilt including leaf discoloration, rapid leaf loss, and fungal spore mats. If you think your tree is infected with oak wilt, contact DEC Forest Health (see Contact Information below).
- Avoid pruning or wounding oak trees in the spring and summer, when spore mats are present and beetles are the most active. If an oak wound occurs during spring or summer, it should be sealed immediately with wound dressing. This will slow wound recovery, but also deter beetles from landing on those areas – which will lower the spread of oak wilt.
- Adhere to the NYS firewood regulation which limits firewood movement to no more than 50 miles and obey the rules of the Protective Zones which prevent firewood or oak wood from leaving those areas.
- Visit www.dec.ny.gov/lands/46919.html for more information.

Updated January 23, 2017

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