Oak Decline in Northern Virginia

Background

In recent years oaks in the white oak group, such as chestnut oak (*Quercus montana*) and white oak (*Quercus alba*), have started dying in significant numbers. Some reports indicate other oaks are affected as well. Reports came from urban foresters, state foresters, residents, and Virginia Tech Cooperative Extension. This fact sheet lays out potential causes, what local governments are working on, and tips for tree owners.

Potential causes and contributing factors

Water stress (drought, extreme storms)

The past decade has seen more significant changes in dry and wet seasons in Northern Virginia. Long hot spells and extreme storms have increased. This, along with historical and current changes in our stormwater network, from increases in impervious area to the undergrounding of streams, have caused long-term stress in trees that can take decades to show impacts.

Construction damage

Trees can be damaged by cutting roots and damaging bark or branches. Construction damage, either on your property or nearby, can cause significant dieback in trees, and may be a cause of decline.

What tree owners can do

- **Avoid damage** to trees. Anything from landscaping to rebuilding a home can damage tree roots. Work with an ISA Certified Arborist experienced with damage prevention, to best protect your trees.
- **Water** during dry spells. A hose running on a low setting for 30 minutes can help your mature tree.
- **Revitalize the soil with wood chips**. Spread wood chips 3 inches deep, 3 inches away from the trunk, as far as you are comfortable. See links below for more information.

Other things to consider:

- **Assess your tree** with an arborist not associated with a tree care company, or a Virginia Department of Forestry forester, if one is available. See links below for more information.
- **Consult** with Virginia Tech Cooperative Extension about advice on your trees. See links below for more information.
- **Consider leaving declining trees**, if the decline started late in the year. This may be a natural reaction, and trees may partially recover in the new year.
- **Give your tree space.** Trees and lawns do not always work well together. Consider removing part of your lawn around your trees, and replacing with native plants or wood chips.
- **Avoid fertilizer or unnecessary chemical applications.** Many fertilizers and chemical applications can harm your soil and your tree. Only use these when you know there is a problem, through soil tests, or professional assessments.

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What are local authorities doing

Local governments and extension offices are responding by:

- Providing outreach to residents, volunteer groups, and government partners.
- Monitoring emergent pests to assess needs for treatment.
- Coordinating with state and local experts on new research.
- Sharing samples of dead and dying trees with universities for analysis.
- Assessing the risk of failure and impact of dead and dying trees on public property by certified arborists.

Secondary factors not likely to be the primary cause of decline

Affected trees have shown symptoms from fungal pathogens, insect damage, and bacterial disease. Many of these sources of damage are what is called a secondary factor, or something that comes after a tree is already weakened. Our general recommendation is: **Do not treat for diseases or insects without knowing the cause of decline, and only when it will help your tree survive. Treating for diseases that are not present or treating when it will not help the tree's likelihood of survival will waste your money and can cause negative impacts to our local ecosystems.** The following secondary factors have been reported, on stressed trees. Many of these are untreatable, or treating them may not improve your tree's health:

- **Armillaria root rot**: no treatment, avoid damage to trees and keep trees healthy.
- **Hypoxylon canker**: no treatment, avoid damage to trees and keep trees healthy.
- **Ambrosia beetles**: difficult to assess, and only a heartwood borer, only treatable during limited times.
- **Bacterial leaf scorch**: can be treated temporarily, but bacteria is widespread.
- **Two-lined chestnut borer**: difficult to assess, and evidence often shows too late. Avoid damage to trees and keep trees healthy.

Reports of **Oak wilt** or **Sudden Oak death** have been made, but **not** confirmed by lab tests, in Virginia.

More information on Oak Decline from the Virginia Department of Forestry

The Virginia Department of Forestry has an in-depth analysis on broad-scale oak decline in Virginia, which can be helpful for further information:

https://forestupdate.frec.vt.edu/content/dam/forestupdate_frec_vt_edu/newsletter/archives/2018/32_2/Chamberlin.pdf

Tree information and tree care links

- Watering trees: https://environment.arlingtonva.us/trees/care-for-trees/watering/
- Proper mulching of trees: http://www.treesaregood.com/portals/0/docs/treecare/ProperMulching.pdf
- International Society of Arboriculture: https://www.treesaregood.com
- American Society of Consulting Arborists: https://www.asca-consultants.org/
- Virginia Department of Forestry: http://www.dof.virginia.gov/forestry/community/index.htm
- Virginia Cooperative Extension (VT): https://ext.vt.edu/
- Trees Virginia: https://treesvirginia.org/
- Alliance for Community Trees (Arbor Day Foundation): https://www.arborday.org/programs/alliance-for-community-trees/
- How to Kill a tree: http://gardenreboot.blogspot.com/2013/10/how-to-kill-tree.html

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