

Oak Forest Health Issues in Newaygo County

Newaygo's oak trees and forests are showing signs of poor health in many areas of the County. As you drive along the rural roads you can notice trees that have died or are in decline based off the lack of leaves, this has been evident for a few years now. Our oak resource is getting older, and it is commonly growing on sandy, droughty, low nutrient soils. Oak forests are fire dependent, and the lack of fire allows our oak forests to grow more densely, the land no longer has this natural process that reduces tree density. These issues cause the aging oak resource to experience stress! To complicate the issue, we now have other tree stressors that have become evident across the landscape.

Spongy Moth (Formerly Gypsy Moth)

In 2019, Michigan began to see the latest outbreak of this defoliating insect. The moth quickly spread across the landscape, peaking in 2020 and 2021 with 1 million and 1.3 million acres defoliated respectively. However, population collapse began in 2022, continued in 2023, and it is expected to continue in 2024. Fungus, virus and insect predators are responsible for this population decline. Here in Newaygo County, we have seen in some places three years of tree defoliation. Healthy trees can typically withstand some leaf defoliation, but repeated defoliation of many years, along with an aging resource starts to have an impact on an oak tree's health. This tree stress also makes it easier for native insect and disease issues to begin to have an impact on a tree's health.

Oak Decline Disease Complex

Spongy moth greatly accelerated tree stress across the landscape. Now we are seeing "oak decline", a disease complex driven by two opportunistic native insect and disease issues. A native beetle called two-lined chestnut borer is now being attracted to lots of oak in stress. Their larvae galleries girdle the trees conducting tissue. This causes branch dieback from the top of the tree and downward, typically over multiple years. As dieback progresses, epicormic branches (little tufts of leaves) develop along the trunk. Trees can eventually be killed by the invasion.

A fungus, called armillaria root rot is also attracted to trees in stress. This native fungus is common in our soils. A typical healthy oak has high starch levels in their roots, this will produce defensive chemicals that prevent root rot invasion. However, as a tree becomes stressed – starch is mobilized to sugars, making the tree vulnerable to root rot attack! Eventually root rot can kill a tree over many years.



Oak Wilt

Another tree disease that can be found in our forest is oak wilt. Oak wilt can be found across the Midwest U.S. in 24 states. It is found in 57 of the 83 Michigan counties. It impacts red oak group oaks – Northern red oak, black oak, Northern pin oak commonly in Newaygo County. It can also impact white oak group oaks but is much less severe. The disease is caused by a fungus that will clog the water transport system of a tree, causing the “wilt” and death.

Common symptoms are bronzing of the leaves, crown dieback – pale leaves begin at the top of tree and drop rapidly causing a tree to lose all of its leaves in two to three weeks. This typically happens in June, July, and August, when you would not expect a tree to lose its leaves. Tree death can occur in a month!

Oak wilt can spread naturally two ways, one is a sap feeding beetle that spreads it overland, being attracted to fresh wounds on oak trees. The high-risk period is April 15 to July 15, this is when the beetle is most active. Once the tree is infected, it moves the fungus to neighboring oaks that share root grafts with each other. Slowly this spread the disease around the forest causing dead tree pockets.

To stop the spread of the disease it is recommended that you **don't trim or harvest oak trees between April 15th and July 15th**! If a tree is infected you should destroy the infected tree by burning, burying, debarking, or chipping the tree into mulch.

In Conclusion

The bottom line is that we have an aging oak resource, denser oak forest stands, and poor site conditions of sandy, droughty soils, with low nutrients. Then an outbreak of defoliation caused by spongy moth came along, then “oak decline” caused by the secondary issues of armillaria root rot fungus, and two-lined chestnut borer. The Result? Oak tree mortality showing up across the landscape.

If you think you have trees that are experiencing oak decline or oak wilt and would like help determining what is happening on your property, and how to move forward? What next steps to take? reach out to your District Forester, Rod Denning at 616-920-9775 or email at rod.denning@macd.org.