

Wild Ones

St. Croix Oak Savanna Chapter

Table Topics: Major Tree Insects & Diseases

Emerald Ash Borer

An exotic pest and insect borer found in MN in 2009. It has now spread to 12 MN counties, incl. Washington (2015)

The State of MN has the largest population of ash compared to other states in U.S.

Hosts: all ash species - little to no resistance in ash population

Spread: EAB larvae hatch from eggs laid on trees and feed on sapwood,

disrupting the tissues of the tree through which water moves. EAB adults can fly a few miles per year. Movement of adults or larvae in infested trees or wood by humans is a major means of spread.

Management: remove un-infested trees in poor condition or poor locations to

reduce the amount of ash wood that EAB can reproduce in. The only way to save valuable ash, which are important to the landscape, is to treat healthy ash in good condition, with systemic insecticides – trunk injection is the best method to limit environmental exposure. Do not move infested ash trees or wood between May 1 and Sept. 30th. Quarantines have been placed on the movement of deciduous wood out of counties where EAB has been found. Research is being done by MN Dept. of Agriculture on the release of biological control insects to see if these small wasps (parasites of EAB eggs and larvae), can have an effect on slowing the movement of EAB.

Oak Wilt

Major fungal wilt disease in MN. Most cases found in southern half of MN. Fungal pathogen is related to the Dutch elm disease fungus. Pathogen thought to be native to North America.

Hosts: All oak species in MN are susceptible, red and pin oaks are most susceptible.

Spread: several insect vectors feed on oak wilt spore pads formed on red and pin oaks in spring and early summer, then feed on fresh wounds on oaks and introduce the fungus to healthy trees. The disease organism is also spread by humans moving and improperly storing wood from recently infected pin or red oaks. The oak wilt fungus can also move between diseased and healthy oaks (of the same or similar species) through underground root grafting.

Management: remove infected (currently wilting) red and pin oaks by Feb. of the year following wilting. Before removing currently wilting trees, consult a local forester or an oak wilt management company regarding the possibility of doing root graft disruption to isolate diseased from healthy trees. Store wood from currently wilting red or pin oaks under heavy plastic sealed to the ground. Wood can be uncovered and used the fall after the first summer season following wilting. Avoid wounding oaks from April 1st to Sept. 30th. If oaks are pruned or wounded during this period, paint fresh wounds with latex house paint or tree wound paint to discourage feeding by insect vectors. Wilting bur oaks may benefit from fungicide injection during the growing season if symptoms are not widespread in the tree.

Pine Bark Beetle (pine engraver)

Native insect which attacks pines under stress due to root damage, construction around root systems, crowded pine plantations, drought or transplanting. Pine bark beetles can also colonize fresh cut trees, logs or trees recently killed by other insects or diseases.

Hosts: pine species, especially red pine, jack pine, Scots pine. Less frequently attacked are white pine and spruce.

Spread: adults fly to stressed trees and lay eggs if sap pressure is not sufficient to push the adults out. Larvae develop in galleries in sapwood under the bark and disrupt the tissues through which water moves. Death of trees follows larval development.

Management: thin pine plantations (during winter is best) to reduce tree competition and remove tree debris. Remove and destroy dead and dying trees (before adult beetles emerge – if see pin-sized exit holes in bark the adults have already emerged). Water (rainfall or watering) is the best control to prevent tree death by bark beetles. Systemic insecticides (soil drench or trunk injection) are not usually effective since the tissues through which those chemicals would move inside the tree are being destroyed.

Note: Planting diverse tree species can reduce the impact of major tree insects and diseases.

References: Info. on Tree Pests & Diseases, Identification & Management

Minnesota Dept. of Agriculture: www.mda.state.mn.us

Minnesota Dept. of Natural Resources: www.dnr.state.mn.us

My Minnesota Woods (U of M Extension): www.myminnesotawoods.umn.edu