North Shore Tree Concerns

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Keep up-to-date on Minnesota’s tree insect and disease action by signing up for DNR’s Forest Health Newsletter.
See this before?
See any defoliation this year?
Emerald Ash Borer (EAB)
This ash has been infested with EAB for at least 2 years!
Ash forest 6 years after EAB signs first show up
Emerald ash borer discovered in Duluth in 2015!

http://www.mda.state.mn.us/emeraldashborer
Be on the lookout for woodpecker activity on ash trees. Peel back bark and look for windy galleries.
A bunch of common critters attract woodpeckers to ash trees!
Report suspect EAB to the Arrest the Pest website

Arrest the Pest

SLOW THE SPREAD

Arrest the Pest relies on Minnesota residents acting as volunteers to report potential threats to Minnesota’s forests and crops. To report a pest there are three important steps:

1. Take pictures of the pest or disease and the immediate area on which it was found.

2. Take notes of the surroundings. Note the exact location of the pest.

3. Take pictures of the pest or disease and the immediate area on which it was found.
Report suspect EAB with the GLEDN app

Great Lakes Early Detection Network

GLEDN is an invasive species early detection and warning system for the Great Lakes region developed through funding provided by the National Park Service as part of the Great Lakes Restoration Initiative.

GLEDN is an online system that collects invasive species reports from casual observers, verifies these reports and integrates them with others networks. The system then uses this integrated information to send customized early detection email alerts.
Yard Ash Trees

• Work on **diversifying** trees in your yard.

• Treat extremely important ash trees when EAB is quite close (e.g. 2 miles) (emamectin benzoate works for about 3 years)
Prepping Woodlots for EAB

• Increase tree diversity in your woods, yesterday!

• Take advantage of available markets for ash timber and pulp.

• Once EAB is in your general area, you’ll likely have over 6 years before all ash trees are dead.
Growing Healthy White Pines
White pine blister rust (WPBR) kills branches and trees
>99% of infections happen within 9 feet of ground
WPBR makes swollen, bleeding cankers
White pine blister makes sunken, bleeding cankers on trunks
Remedies to Combat WPBR

- Prune up lower canopy
- Prune out flagging branches
- Avoid planting in depressions
- Avoid planting in small canopy openings
Prune up white pine canopies to minimize blister rust risk
Plant some **resistant** white pines

‘**Patton’s Silver Splendor**’
HOW to

Manage Eastern White Pine to Minimize Damage from Blister Rust and White Pine Weevil
Spruce Budworm
Situation
Spruce budworm damage and signs
Not budworm: Spruce needleminer
Not budworm:
yellowheaded spruce sawfly
Spruce budworm really likes older balsam fir
Spruce budworm outbreaks can last 8 - 12 years in a given area.
Spruce budworm outbreak on-going in parts of northeast Minnesota.
After 5 years of significant feeding, many balsam fir will die
Yard Spruce and Fir Care

• Avoid harming them:
  – No soil disturbance
  – No herbicide contact

• Water them during droughts (infrequently and deeply)

• Mulch them properly

• Prevent heavy defoliation over 2 - 3 consecutive years
Yard Spruce and Fir Care

• Kill caterpillars by spraying an insecticide with BTK in it.
  – Spray only after 1 or 2 years of noticeable defoliation
  – Spray needles when they are ½ - ¾ inch long
  – Spray the entire canopy, but especially the upper crown
Dealing with Budworm in the Woods

- Salvage after 3 years of defoliation
- Diversify
- Favor non-fir/spruce as residuals
Aspen and Birch Problems
shallow soils + old age + stress + opportunistic pests = decline
Amount of declining aspen and birch: stagnant and persistent

Acres


0  50,000  100,000  150,000  200,000  250,000  300,000  350,000
Areas of declining aspen, birch, and other hardwoods (not ash) in 2015
What stresses aspen and birch?

Early season defoliators

Soil manipulation

Total Precipitation Anomaly: May 2009 - September 2009
Period ending 7 AM EST 30 Sep 2009
Base period: 1981-2010
(Map created 10 Sep 2015)

droughts
What stresses aspen and birch?

If a tree doesn’t produce a second set of leaves, the leaf munching isn’t a big deal.
Few concerns with forest tent caterpillar in 2015
Areas visibly affected by forest tent caterpillar in 2015
Consecutive severe defoliations are hard on aspens.
What opportunists kill off aspen and birch?
Cut yard birch trees down that have over 50% of their crown dead. Destroy the wood before the following May.
Yard Birch and Aspen Care

• Avoid harm: No soil disturbance, no herbicide contact, no shade
• Water them during droughts (infrequently and deeply)
• Mulch them properly
• Prevent heavy defoliation for two consecutive years
Yard Birch and Aspen Care

• Kill caterpillars by spraying an insecticide with BTK in it.
  – Spray after one year of over 50% defoliation
  – Spray leaves before they are 50% of their mature size.
  – Spray before average forest tent caterpillar reaches 0.5 inches

• Birch leafminers are not caterpillars. BTK won’t kill them. Baby the trees.
Birch and Aspen Woodlots

• Rotate at appropriate ages for your site
• **Diversify** the forest
• Grow in full sunlight
• Avoid thinning
• **Consider the best tree for your site** in 100 years
Current conditions for paper birch range (modeled by USDA FS)

Future conditions for paper birch under increased CO$_2$ emissions (modeled by USDA FS)
Current conditions for trembling aspen range (modeled by USDA FS)

Future conditions for trembling aspen under increased CO$_2$ emissions (modeled by USDA FS)
Climate Trends – State: MN, Climate Division: 03, Season: Annual
Bark Beetle Mitigation
Remedies against bark beetles in yard conifers

1. Do NOT stack fresh conifer firewood near your yard conifers!

2. Drip-irrigate your conifers during droughts, infrequently and deeply

3. Mulch properly

4. Spruce/fir: prevent defoliation over two or three consecutive years
Remedies against bark beetles in yard conifers

5. Cutting Dec. 1 – May 31 (or wind damage)? Remove/destroy slash over 3 inches by June 15ish

6. Cutting June 1 – Aug. 15ish (or wind damage)? Remove/destroy slash within 5 weeks of cutting

7. Destroy dead/dying spruce over 8 inches in diameter before May

8. Do not leave bark-covered stumps
Gypsy Moth Section
Yard Tree Protection Against Gypsy Moth

1. Survey your property for egg masses each September.
2. Destroy egg masses (between first hard frost and April)
Yard Tree Protection Against Gypsy Moth

2. Destroy caterpillars
Questions?