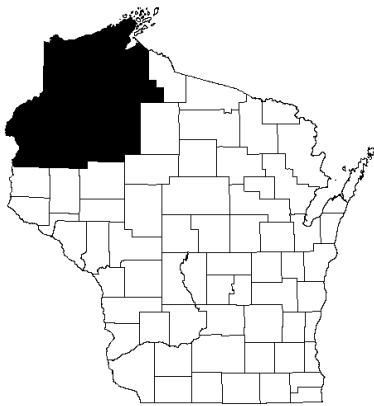




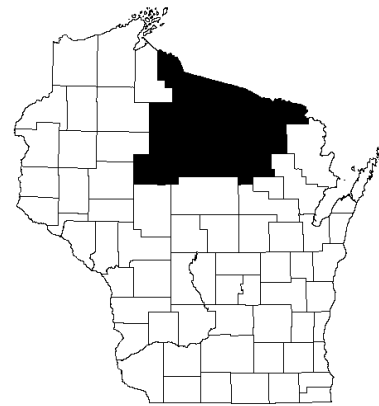
Northern Region Forest Health Report

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Even though this winter may have seemed brutal to some of us, the insects aren't minding it a bit. There might be some gypsy moth egg mortality in areas where the eggs are above the snow and temperatures dipped to -25°F for several days in a row; other than that, insects will be unabated after this winter. Cool, wet springs have more of a negative impact on insect populations than relatively normal winters, so let's hope for a miserably cold, wet spring that lasts until mid-June. This would certainly help bring down pine engraver and twolined chestnut borer populations from outbreak levels in 2007.



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Spring Pests in the Western NOR

Hunter's Moths

Location: All over the Northern Region

Problem: Last November, you may have noticed little brown nondescript moths fluttering everywhere in the woods. These are commonly known as “hunter’s moths.” More specifically, they are the adults of linden loopers, bruce spanworms, and fall cankerworms. These inchworms defoliate basswoods, sugar maples, and oaks, respectively, but they all will eat other hardwoods too. Linden loopers are widespread across northwestern Wisconsin, while the bruce spanworm is prevalent in Sawyer, Price, and Oneida counties. The fall cankerworm was confined to the Bayfield Peninsula. Other hunter’s moth reports came from Florence, Vilas, Lincoln, Langlade, and Marathon counties. They are all late spring/early summer defoliators, so look for them in 2008.



Figure 1. Male hunter's moth.



Figure 2. Linden looper larva (Steven Katovich, USDA Forest Service, Bugwood.org).

What You Can Do: Most hardwoods can handle losing 50% of their leaves without a lot of stress (barring no other stressing agent, like drought), but they also can do okay if they are defoliated a couple years in a row. Mortality may occur if trees are defoliated more than twice in a row. At the very least, it is important to note where defoliations are taking place to understand under how much stress trees may be and in what year an option of spraying an insecticide (e.g. Bt) would be viable.

Budworm Population Predictions

Location: Northwestern Wisconsin

Prediction: The jack pine budworm should continue to decline in severity in northwestern Wisconsin for 2008. Noticeable defoliation may still occur in Bayfield County, depending on spring weather. The jack pine budworm’s companion insect, the spruce budworm, also is on the decline across northwestern Wisconsin. See the table at right for county specific jack pine budworm pupal counts.

Table 1. Change from 2006 to 2007 in jack pine budworm pupae.

County	% Change from 2006-2007
Polk	↓90.6%
Burnett	↓56.6%
Washburn	↓53.8%
Douglas	↓30.1%
Bayfield	↓16.3%

Gypsy Moth Spraying

Location: Northwestern Wisconsin

Problem: Increasing numbers of gypsy moths will prompt treatments by Wisconsin's DATCP (Department of Agriculture, Trade, and Consumer Protection) on over 48,000 acres in five NOR counties (see table below). Six of the treatments will involve spring sprays of Btk, a bacterial insecticide which targets caterpillars, while seven of the treatments will use pheromone flakes to disrupt reproduction by the adult moths in the summer. Click on http://test.datcp.wi.gov/arm/environment/insects/gypsy-moth/map_index.jsp to learn exactly where these treatments will occur.

County	BTK Sites	# Pheromone Flake Sites	Total Acres
Ashland	2	1	6741
Bayfield	2	2	10735
Price	0	1	6898
Rusk	1	0	1290
Taylor	1	3	22920

Spring Pests in the Eastern NOR

Hunter's Moths

See article [above](#)

Red Pine Pocket Mortality – sudden death this fall and winter

Location: Eastern Vilas, eastern Oneida, and eastern Florence counties

Problem: *Ips pini* (the pine engraver bark beetle) was able to infest drought-stressed red pines and jack pines last growing season, causing small groups of trees (typically 6-10 trees) to die suddenly. Most of these stands were thinned last year. Symptoms are whole-canopy color change, from green to orange to brown, and signs of the bark beetle are very small exit holes in the bark and feeding galleries etched on the inside of the



Figure 3. Sudden canopy color change of red pine can be indicative of infestation by the pine engraver.

bark and on the sapwood surface. You may not see bark beetle signs because they tend to first infest the upper part of the tree. This same pest also caused problems this past fall in the western half of NOR (<http://dnr.wi.gov/forestry/Fh/PDF/NORpestsupdate2007-11.pdf>).

What You Can Do: If the pine engraver has killed only a few scattered individual trees or small pockets of trees, don't worry about that mortality. If mortality from this bark beetle is significant, consider removing symptomatic trees, as well as stressed trees, from that stand before April 15 (I realize this advice is a little late, but keep it in mind for the future). In future thinnings, consider thinning these susceptible stands between October and February, since they may be pre-disposed to beetle attack by growing on droughty soils, and the slash created in the winter is less inviting for emerging beetles in the spring. If cutting must be done in the spring or summer, decks of logs should not be left in the stand for more than three weeks, and the smallest possible diameter should be utilized.

Red Pine Pocket Mortality – thin crowns

Location: Vilas County, northeastern Oneida County, and Florence County

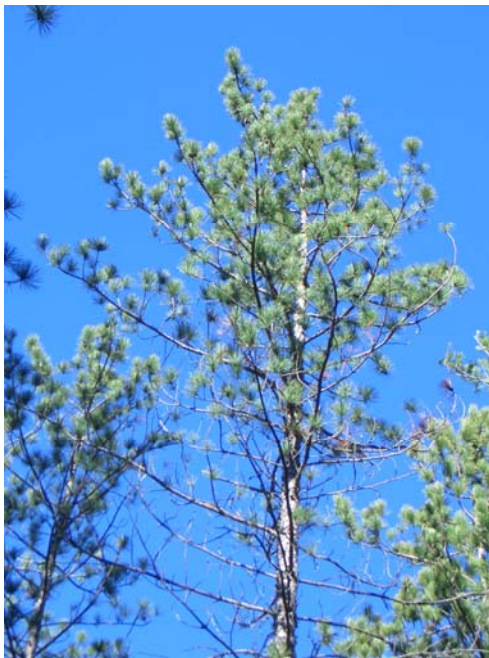


Figure 4. A red pine with a thin crown. This tree's roots were infected by *Leptographium*.

Problem: Red pines have very thin canopies (needles that were produced over 2 years ago are typically missing), and their structural roots near the root crown are resinous and discolored black. Pines toward the center of the symptomatic pockets are often dead, and trees radiating out from the center are in various stages of decline. This is a distinct problem from the pine engraver issue (see above article).

Leptographium, a fungal root pathogen, is partly to blame on some of these sites. *Leptographium* is vectored to these sites by pine root collar weevils and likely other insects. *Armillaria*, commonly seen as white mycelial fans under the bark at the base of the bole, is taking advantage of pines in a weakened state at these sites, as is the pine engraver.

What You Can Do: The only management we're recommending is to salvage dying trees and harvest healthy trees bordering the mortality pocket. We suspect *Leptographium* will continue to progress outward from the pocket through root grafts, even

when trees are cut that were attached to those roots. *Leptographium* will spread on its own at the rate of about one chain every 10-15 years, so a forester could theoretically thin in advance of the inevitable wave-of-death from the advancing *Leptographium*. Unfortunately, this fungus is vectored by insects, so its spread could be faster than what it could do on its own. See <http://dnr.wi.gov/forestry/fh/annosum/pdf/AnnosumRPPM.pdf> for additional management options.

Keep a Lookout for the Forest Tent Caterpillar

Location: Vilas and Iron Counties

Problem: Foresters in Vilas and Iron Counties should be alert for pockets of aspen defoliation caused by the forest tent caterpillar (FTC) this summer. Populations of FTC were on the rise in the Arrowhead region of Minnesota, and we are about due for our next outbreak of this beauty.



Figure 5. Forest tent caterpillar larva (Gerald J. Lenhard, Bugwood.org).

Keep a Lookout for the Hemlock Borer

Location: Lincoln and Iron Counties

Problem: Hemlock borer mortality of hemlocks has occurred in three small locations. After severe droughts and windstorms, hemlock borer has erupted to outbreak proportions a couple times in Wisconsin's history. Given our recent drought and lots of hemlocks showing dieback (see <http://dnr.wi.gov/forestry/Fh/PDF/NORpestsupupdate2007-11.pdf>), hemlock borer is a pest for which to keep a lookout.

Odds & Ends

Don't False Start when Preparing for the Emerald Ash Borer

Like all native Wisconsin trees, ash trees play an extremely important role in forest ecosystem function, but with emerald ash borer (EAB) looming on the horizon, there are concerns about whether we should be harvesting our ash before EAB gets here. Rest assured, until EAB is found in your local area, you should continue with your regularly scheduled harvests. Preparing our forests for the arrival of EAB does *not* mean that you remove all ash trees from your stand or stop planting some ash on appropriate sites. Entering a stand to remove ash trees before your regularly scheduled harvest is not recommended for several reasons, two of which are (1) we cannot predict when EAB will arrive in a given stand, and (2) biological control agents for EAB are being introduced and sought after, and these may help control EAB populations when they arrive. We recommend, for all sites, that **until EAB reaches the local area, continue normal long-term management activities**. Of course, the higher the ash component in a forest, the greater the risk that forest has of losing ash trees to EAB. Therefore, reducing the ash component in these stands, but not eliminating ash, through scheduled thinning or harvesting, is a management option that can reduce the impacts of EAB on the stand once the insect arrives. If you are in a stand for a scheduled thinning, do not remove all ash trees. Instead, follow standard

Acknowledgements

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