



Lake States Forest Health Watch



June 20, 2006

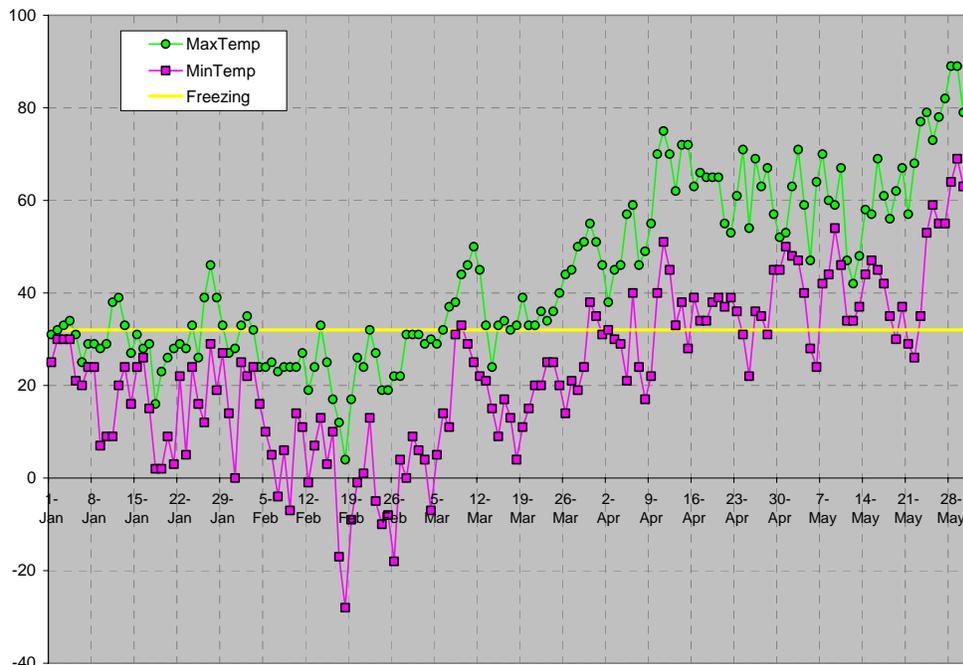
About this newsletter...

The Forest Health Protection unit of the Forest Service located in St. Paul, Minnesota produces this newsletter. Our intent is to keep Federal land managers in the Upper Great Lakes region abreast of forest health related issues such as insect and pathogen outbreaks.

What's happening this spring...

Sugar maple defoliation – We have received many reports of sugar maple defoliation in far northern Wisconsin and adjacent areas in the U.P. Most of the damage is high in the upper crowns of trees and is not always visible from the ground. It has been a bit of a challenge to determine the cause of the defoliation. Based on observations made by Linda Williams, a WI DNR entomologist, it appears that frost may have played a key role. The chart below shows temperature data from this year in Rhinelander, Wisconsin. On May 20 and 21 below freezing temperatures were widespread over the region and this would have overlapped with an active growth period on much of the maple resource. There was also a frost event earlier in May and reports of frost in the area as late as June 5. Frost damage generally occurs near the ground, lower in the tree crowns. In this case, the newer foliage at the tops of trees may have been succulent and susceptible to frost injury. Also, the regions extensive forest canopy may have allowed cold air to “settle” on the canopy rather than drop to the ground. Linda also mentioned that wind damage may have played a role. Wind storms did occur over the area on May 11. As of June 22nd, the affected maple trees appear to be developing new fully developed leaves and recovery should occur over the area. (Thanks to Sally Dahir, WI DNR for the graphic).

2006 Spring Temperatures in Rhinelander

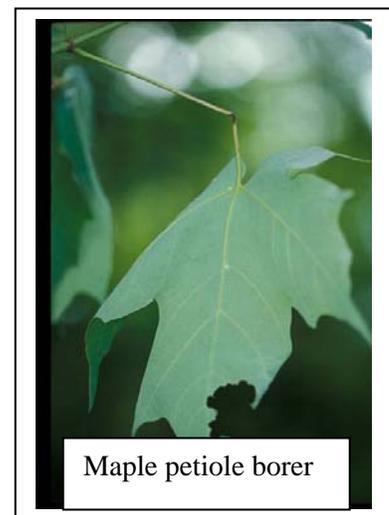


Sugar maple defoliation continued – In addition to frost and wind, there have been many reports of high population of some caterpillar defoliators in the northern hardwood areas. **Linden looper** caterpillars (see adjacent photo) were very abundant this spring. This species will feed on a variety of hardwood trees and may be responsible for some of the damage being reported. We also have reports of another looper caterpillar, the Bruce spanworm in some areas. Bruce spanworm outbreaks were quite widespread in maple and aspen stands in the late 1980's and early 1990's.

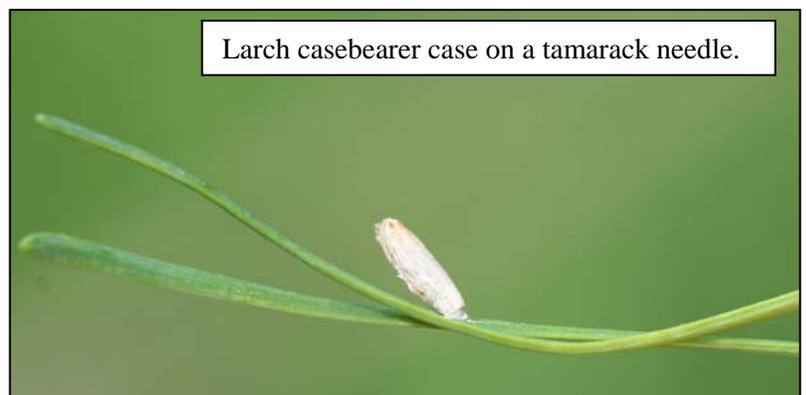


Also observed have been sugar maple leaves dropping onto the ground in large numbers. This is most often caused by the **maple petiole borer**, *Caulocampus acericaulis*, a small exotic sawfly that tunnels in the leaf petiole. Tunneling cuts the petiole and the leaves drop, often littering a yard or forest floor with hundreds of what appear to be perfectly healthy leaves. To confirm petiole borer, look for the very short petiole that is attached to the shed leaves. The sawfly larva remains in the petiole portion still attached to the tree, this eventually will drop as well and the larvae will crawl out into the soil where it will pupate. An excellent information sheet of maple petiole borer is available via UW Extension at:

<http://s142412519.onlinehome.us/uw/pdfs/A2699.PDF>



Larch casebearer -- Larch casebearer is a very small caterpillar that feeds on larch needles. Half-eaten needles make infested trees appear burnt from a distance. Close inspection reveals tiny cases made of hollowed needles. The caterpillars live inside these cases. Casebearer activity has been reported for the last several years, especially in the central portions of the U.P. and in parts of northern Minnesota.



Spruce budworm –This early season defoliator of white spruce and balsam fir remains locally active in the region, especially in northern Minnesota and northern Wisconsin. Last summer we observed relatively high populations in northern Wisconsin white spruce plantations. Aerial surveys done in early July should provide a better picture of the scope of the current spruce budworm activity in the region.

Jack pine budworm – The past two years have seen some extensive areas of jack pine budworm defoliation in northwest Minnesota, northwest Wisconsin and in Michigan. It is a bit early to tell about populations this year, but early indications are that jack pine budworm is again very active. By early July, stands with feeding damage should turn reddish-brown as clipped needles dry and turn brown. Aerial surveys done in early to mid July should capture the extent of any budworm damage.

Jack pine budworm outbreaks normally terminate after 1-3 years, this limits damage during any one outbreak. However, this insect is considered very cyclic in its population behavior so future outbreaks should be planned for.

We have had reports of jack pine budworm feeding extensively in red pine in west central Wisconsin and in portion of central and northwest Minnesota. This is not particularly unusual but neither is it common. Red pine with budworm feeding damage will have a very thin upper crown and top-kill of trees can occur. Close inspection reveals pupal cases and clipped needles tied loosely with silk webbing.



Classic browning on a budworm infested jack pine

For further information see: http://www.na.fs.fed.us/spfo/pubs/howtos/ht_jack/ht_jack.htm

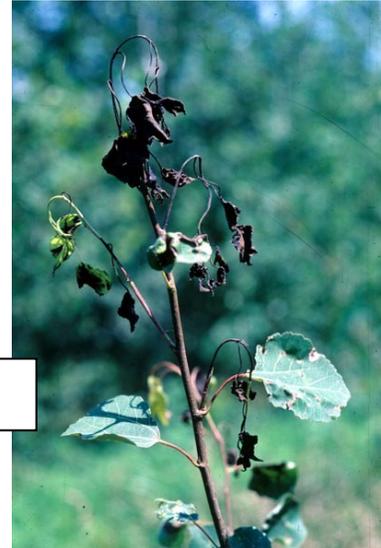
Early Spring Insects and Diseases...

The following are some of our more commonly reported tree problems in early spring.

Anthracnose diseases of hardwood leaves are widespread in eastern North America. The most common symptom of this disease are dead areas or blotches on infected leaves. However, classic symptoms are not always seen, especially on ash trees. Anthracnose on ash often causes leaf drop to occur with few or no spots on the fallen leaves. In most cases, anthracnose is simply an aesthetic concern and not a serious health problem for trees. This spring, anthracnose has been very common on white and bur oaks in east central Minnesota. For more information see: http://www.na.fs.fed.us/spfo/pubs/fidls/anthracnose_east/fidl-ae.htm

Venturia shoot blight – caused by the fungus *Venturia macularis*, is common in many young aspen stands. This shoot blight (fungi) can have a profound effect on height growth and crown position of affected individual stems. Young aspen trees that lose their dominant or co-dominant crown status in dense young aspen sucker stands, tend to be eliminated. This is part of the natural thinning process that occurs frequently in these developing stands.

Venturia shoot blight



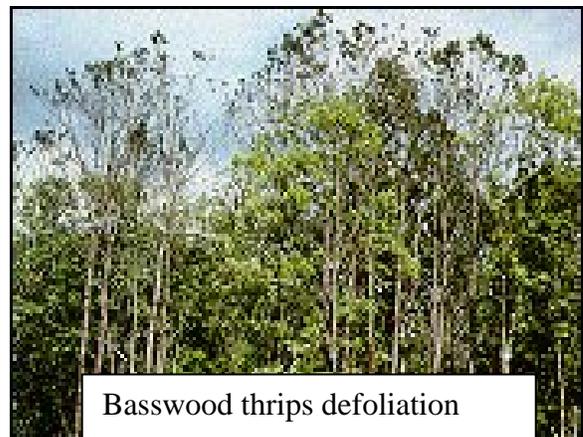
Birch leafminer – Paper birch that appear brown or burnt (see adjacent photo) in mid-June are likely to have a heavy infestation of birch leafminer. There are a couple of leafminer species in the Great Lakes region, all of them are exotic. Birch leafminers are small sawflies, the larval stages feed inside the leaf tissue on birch forming a blister type type leaf mine. White barked birches are more often attacked than are yellow or river birch. High populations can make landscape trees very unsightly. Birch leafminer populations have been relatively low the last year or two. For more information see:

http://www.na.fs.fed.us/spfo/pubs/howtos/ht_birch/ht_birch.htm

Birch leafminer damage

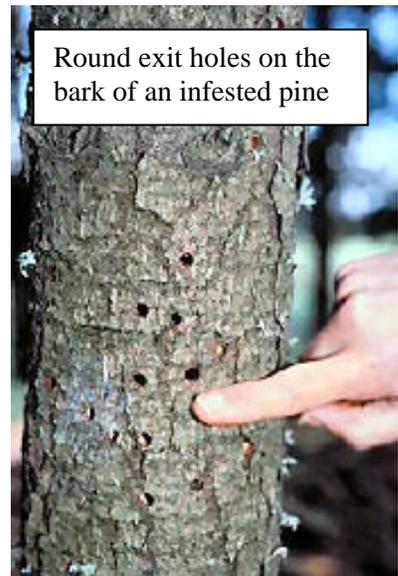
Introduced basswood thrips – Thrips are tiny insects that scrape and damage newly developing leaves when they are still in the bud stage. Thrips feeding causes very early season defoliation on basswood. Under close inspection you should see aborted buds and shredded leaves. Trees appear to have a “ragged” appearance (see photo). The timing between thrips emergence from overwintering in the soil and bud development seems to be the key for determining the amount of damage in any given spring. Damage is intensified if the thrips get to the buds before the leaves expand. We have not heard about any basswood thrips defoliation this spring. For more information see:

http://www.na.fs.fed.us/spfo/pubs/howtos/ht_bassthrips/ht_bassthrips.htm



Basswood thrips defoliation

If emerald ash borer wasn't enough, we also have increasing concerns about **sirex woodwasp**, *Sirex noctilio*, which was found to be established near Oswego, New York during May 2005. This insect is native to Europe, Asia and northern Africa where it is basically a secondary pest attacking stressed and dying pines. Scots pine is a favorite host in Europe. However, it has also been introduced into pine growing areas in New Zealand, Australia, Uruguay, Argentina, Brazil, Chile and South Africa. In these countries, it has killed exotic pines in plantations. Most of these trees are North American in origin; they include Jack pine, ponderosa pine, loblolly and Monterey pine. How the insect will behave in North America is still somewhat in question, but obviously sirex woodwasp is a very big concern in the forest health community.



We have native woodwasps, also called horntails. So, positive identification requires an insect taxonomist. Detection surveys are currently underway throughout the eastern U.S. and eastern Canada. Also an intensive survey to delimit the infestation in New York and Ontario is being conducted in 2006. The map below highlights locations (red stars) where sirex woodwasp was detected during 2005

For further information: www.na.fs.fed.us/fhp/sww/



Any idea what's going on here???



The photo to the left is of a young red pine. The tree is missing much of its older foliage as well as some of its current year needles as well. Any ideas?

This was caused by sawfly feeding, specifically feeding injury by the redheaded pine sawfly, *Neodiprion lecontei*. Whereas a something like jack pine budworm would feed only on new foliage, many sawflies will concentrate feeding on older foliage. The redheaded pine sawfly is one of only a few species that will eat both old and new needles. That is one of the reason this tree has some branches that are completely stripped of needles, both the old and new needles have been eaten.

Conifers will often die if completely defoliated. That is one reason the redheaded pine sawfly can be very destructive.

Quiz...

Test your knowledge. The photographs below are of a silver maple leaf on the left and an acorn on the right. Both photographs were taken in the late summer.



Quiz answers...

The silver maple leaf has tar spots, a fungal disease that can be found on silver, red or sugar maple, as well as box-elder. Spots actually initiate in the late spring or early summer after the leaves have attained full size. They do not appear as these large black masses until mid to late summer. Leaves with multiple tar spots may wither and drop but this is rarely a tree health concern. There are a couple of different fungal species that can cause tar-spot disease so on some trees the appearance of the spot may be different. The photo on the right shows the larval stage of an acorn weevil. The adult would become a small beetle with a long snout, a member of the weevil family. The round hole is an exit hole that is cut in the fall to allow the weevil larva to vacate the acorn. Most acorn weevil species cut an exit hole after the acorn has dropped onto the ground. The larvae then crawl into the soil or forest duff layer where they spend the winter. In the spring adults emerge from the soil and fly or crawl up into oak trees where the females lay eggs on developing acorns.

Get to know your fungi... This is a new edition to our newsletter! Information and photos provided by Dr. Joseph O'Brien.

Common name: Devil's urn, black tulip

Scientific name: *Urnula craterium*

Description: Black, cup-shaped sporocarps on fallen oak branches. Found in spring.

Habitat/host: oak

Relevance: This fungus causes Strumella canker of oak. The sexual sporocarps form on fallen, infected oak branches.



Common name: Cedar-apple rust

Scientific name: *Gymnosporangium juniperi-virginianae*

Description: Orange tendrils in a ball. Found in spring.

Habitat/host: Juniper and apple

Relevance: This fungus causes cedar-apple rust. The fungus forms these tendrils on juniper, and causes a leaf spot on apple.



Common name: Sulphur shelf; chicken-of-the-woods

Scientific name: *Laetiporus sulphureus*

Description: Orange, yellow, white shelving fungus. Found in summer and fall.

Habitat/host: Many hardwoods, especially oak

Relevance: This fungus causes a brown cubical rot. When the sporocarp is produced on a living tree, it indicates a massive amount of decay.



Aerial survey maps...

The Forest Service Forest Health Protection unit along with cooperators in the state forest health groups, conduct annual surveys for forest insect and disease outbreaks. Each Lake State National Forest along with most other Federal properties are flown annually and damage is recorded onto maps. This information has been gathered for many years, in some cases since the 1950's in Michigan, Minnesota and Wisconsin. You can access the annual survey data on our web site at:

<http://na.fs.fed.us/fhp/ta/av/index.shtm>

We encourage you to visit that site and take a look at the information available. If you have questions or suggestions for improvement of the site or about the surveys please contact Quinn Chavez at qchavez@fs.fed.us

State forest health reports...

Our state cooperators in Michigan, Minnesota and Wisconsin annually put together a report called forest health highlights. These reports are an excellent record of the major insect and disease activity within each state. Much of the information is directly relevant to Federal lands in the Lake States. They are developed in cooperation with the Forest Service, Forest Health Monitoring (FHM) program, and can be accessed at the FHM web site:

<http://fhm.fs.fed.us/>

Upcoming forest health workshops...

The 55th North Central Forest Pest Workshop will be held October 2-5 at the University of Michigan Biological Station (UMBS) near Pellston,MI. The workshop is an annual gathering of persons interested in forest health in the North Central portion of North America. It is usually attended by plant pathologists, entomologists, foresters, and other scientists and students. For more information visit:

<http://www.na.fs.fed.us/fhp/regional/ncfpw/ncfpw06/ncfpw06.htm>

Publications and resources...

Almost all of our publications are available via our home page found on the World Wide Web. This can be accessed at:

<http://na.fs.fed.us/fhp/index.shtm>

Copies can be obtained by contacting our office at the address or phone number listed to the right.

For More Information
Forest Health Protection
USDA Forest Service
1992 Folwell Avenue
St. Paul, MN 55108
(651) 649-5262
skatovich@fs.fed.us