Central States
Forest Health Watch
Current forest health information for land managers in Illinois, Indiana, Iowa and Missouri

July 24, 2003

About This Newsletter…

This collaborative effort of the USDA Forest Service Northeastern Area, Missouri Department of Conservation, and Indiana, Iowa and Illinois Departments of Natural Resources will provide updates three times per year (Spring, Summer, Autumn) on forest health issues of regional interest.

Important Regional Forest Health Issues

Because exotic forest pests continue to be a major concern—both those that are established and those that we want to keep out—we'll keep updating you on their status. Some of ones we're watching include emerald ash borer, gypsy moth, sudden oak death, and Asian longhorned beetle. Another issue of regional concern is "decline" of various tree species.

Emerald Ash Borer (EAB) was first discovered in Michigan during summer of 2002, and this insect continues to be a concern and threat. So far it has been found in southeastern Michigan, an adjacent area of Windsor, Canada, and one location in northwest Ohio (Lucas County). The Michigan Department of Agriculture has placed quarantine on 6 counties in the Detroit area to reduce the likelihood of transporting the beetle outside the currently infested area. Be on the lookout for this pest in other locations, especially in recent landscape plantings where it may have been moved on nursery material before the quarantine was implemented. Information on how to identify this insect is available on the www at http://www.na.fs.fed.us/spfo/eab/ .

In northeast and north central Indiana, crews employed by the Division of Forestry and USDA APHIS are conducting surveys for **EAB**. The crews have surveyed over 2500 miles of street trees, several woodlots and 8 sawmills. They have not detected EAB. The survey continues through the summer with the goal to survey all cities and sawmills in these two areas of the state and as many ash woodlots and timber harvests as possible.

Gypsy Moth Updates – Summer 2003

Indiana	Btk (690 acres) and mating disruption (16,901 acres) treatments were completed in Northern Indiana as part of the Slow-the-Spread Program. As of July 4, over 16,000 traps have been set in the state. The 1st moth catch was during the 4th of July weekend. Noticeable defoliation is reported from one location in Fort Wayne (Parkview Hospital). Other reports of caterpillars and defoliation were received from the Fort Wayne area and isolated yard trees in the northeast quarantine counties.
Illinois	Btk (7734 acres) and pheromone flakes (25,803 acres) were applied in northern Illinois under the Slow-The-Spread Program. 6227 traps have been set in the Slow-The-Spread zone and 4609 traps have been set in Central and Southern Illinois.
Iowa	No Cooperative Gypsy Moth Eradication projects were conducted in 2003. Over 5,000 traps were set across Iowa this year. Gypsy moth caterpillars were discovered on nursery stock at a nursery near Sioux City. The nursery has sprayed twice and additional traps have been set.
Missouri	No Cooperative Gypsy Moth Eradication projects were conducted in 2003. Over 11,000 traps were set across Missouri this year. Three moths have been caught (St. Louis and Franklin Counties) as of July 10th.

Confirmed cases of **Sudden Oak Death (SOD)**, caused by *Phytophthora ramorum*, in North America have been limited to the West Coast. The disease has been found killing tanoak, coast live oak, California black oak, and Shreve's oak in forests in 10 counties in California and in Curry County, Oregon. The pathogen has

also been detected or intercepted in 4 nurseries in California, as well as a nursery each in Washington, Oregon, and British Columbia. In nurseries, the pathogen has been found on rhododendrons, viburnum, and other common landscape plants. When infected nursery plants are detected, all infected materials should be destroyed and attempts made to trace the source of infection as well as sites to which infected materials may have already been transported. Because this pathogen has potential for serious impacts to ecosystems in the Central States, we need to continue to be vigilant to ensure that infected nursery stock does not arrive here. For more information on SOD, see the California Oak Mortality Website at http://www.suddenoakdeath.org/ or the pest alert at http://www.na.fs.fed.us/spfo/pubs/pest_al/sodeast/sodeast.htm

Asian longhorned beetle (ALB) eradication efforts continue in Illinois, New York and New Jersey. From July 1 2002 to June 30 2003, only 6 infested trees were discovered in the Chicago area. These results indicate that ALB will be successfully eradicated from the Chicago area. For more information, see the ALB website at: http://www.na.fs.fed.us/spfo/alb/

Decline of hard maples in urban areas in Iowa is currently very common. The factors involved vary from case to case, but include girdling roots and other root problems, basal wounds, and *Ganoderma applanatum*. **Decline of white oak** has also been observed at high levels in Illinois and Iowa communities and woodlands. Again, the causes seem to vary from site to site, but may include repeated incidence of **oak tatters** or other foliage problems, **overstocking**, **old age**, **two-lined chestnut borer**, **armillaria root disease**, **oak wilt disease**, and other pathogens. Each site needs to be evaluated to determine which factors are involved.

Oak decline in Missouri has been an ongoing problem, primarily affecting red oak species. Relatively abundant spring rains that fell in southern Missouri may temporarily benefit declining oaks, but the benefits can be expected to be short-lived. Site conditions, high stand densities, and increasing tree ages will continue to be dominant factors in oak decline for many years. **Red oak borers**, a major contributing factor in oak decline, began adult emergence in the Ozark Highlands in late June and continued through July, as the current generation completed its two-year life cycle. Large numbers of red oak borer adults (about 25 adults/hour) were captured with black lights by University of Arkansas researchers as early as June 22. Missouri Dept. of Conservation researchers in southeastern Missouri (Reynolds County) captured about 15 red oak borer adults per hour during trapping sessions on July 16-17.

Decline of white pine continues to be a problem across Illinois. Affected trees have resinous patches on the bark. So far no pathogen has been identified.

What Else Is Being Reported Across the Region…

As reported in the May edition, the **Looper Complex** has returned after 25 years to the forests of southern Indiana. Defoliation was observed in southern Indiana in the spring of 2002, and trapping surveys in the fall and winter detected the adults of half wing geometer (*Phigalia titea*) and linden looper (*Errannis titea*). This spring the looper complex returned in full force with light to severe defoliation in the Clark, Harrison-Crawford and Jackson-Washington State Forests and the Tell City District of the Hoosier National Forest. Feeding from budbreak to Memorial Day, the loopers defoliated forests within 296,800 acres in eight counties (Clark, Crawford, Floyd, Harrison, Jackson, Perry, Scott and Washington) of southern Indiana. Within this area, an estimated 100,000 acres of forest have been defoliated. The loopers prefer to feed on the white oak and chinquapin oak first, then other oaks. The pattern of defoliation in this epidemic is repeating the same pattern of defoliation that occurred in these areas from 1978 to 1981. Following that pattern, this year is the first year of noticeable defoliation. If this pattern continues, the epidemic should expand to more areas of south central Indiana in 2004 and 2005, then collapse in 2006.

In Indiana, **Forest Tent** Caterpillar (FTC) heavily defoliated forests over an area of 32,750 acres on the Jefferson and Switzerland County line along the Ohio River. FTC, like the looper complex, is returning after a 25 year period. However, FTC is not repeating defoliation in the same area of the state that it defoliated 25 years ago. This is the first reported occurrence of FTC in this area of the state.

Unlike Indiana, damage from **defoliators** was noticeably absent throughout Missouri and Illinois oak forests this spring. Lepidopteran populations are very low. Causes of low populations are not known, but may be related to poor overwintering survival or impacts related to frequent spring rains.

Jumping Oak Gall, caused by a Cynipid wasp (*Neuroterus spp*.), has returned to south central Indiana and to eastern and southeastern Missouri after being at very low levels during the past couple of years. In Indiana, reports of browning white oak were received from foresters and landowners just as trees began to refoliate following damage from the looper complex. Both Indiana and Missouri report that damage this year is mostly in widely scattered trees or patches of trees and has not increased to the higher levels seen during the late 1990s. The browning foliage is also appearing later this year (late June/early July) than it did in 1999 (late May/early June).

Missouri has reported an increase in **Dutch elm disease** mortality on elms along shelter rows and in homeowners' back yards this spring.

Sycamore Anthracnose heavily defoliated sycamore trees across the northern quarter of Indiana and Illinois. Sycamore is now refoliating and may be in full foliage by the end of July. With the cool spring weather, it is suspected that some trees were defoliated twice by anthracnose. Illinois also reported heavy **anthracnose** damage on other hardwood species, due to very wet spring and early summer conditions.

Injury to spruce candles. *Photo by Purdue PPDL.*

Another weather effect-- **wind desiccation**-- produced an unusual symptom this spring on spruce in the northern part of Indiana and Illinois. First thought to be frost injury, the Purdue Plant Pest Diagnostic Lab diagnosed wind desiccation that turned the new candles (as long as 6-8") brown in color and left them drooping on the tree. In addition to the wind desiccation, **frost injury and winter burn** occurred on conifers in the northern half of the states.

Weather Overview: Tornadoes, Hail, Wind Storms and Floods

Over 40 tornados occurred in Missouri during May 4-10. The average number of tornadoes in Missouri is 26 per year. The May 4th event was the largest single day tornado outbreak ever recorded in Missouri (19 tornadoes). Hardest hit were the communities of Pierce City in Lawrence Co. and Stockton in Cedar Co. The storms of early May also brought damaging hail and straight-line winds to some areas. Hail in southern Cole County completely stripped all foliage from over 3,000 acres of trees. Most trees had reflushed by late June, but new foliage was clumped, poorly distributed in tree crowns, and much reduced in volume from normal conditions. In Missouri, it was estimated 96,637 acres of forestland were storm-damaged. A tornado on May 6th also caused significant damage in a 33-mile-long swath through Pulaski, Massac and Pope Counties of Southern Illinois.

Clumped foliage from reflush following hail damage. *Photo from MDC.*

Severe weather tracked southeast across Iowa, Illinois and Indiana during the first week of July. Indiana experienced torrential rains and flooding. The St. Mary's River (Fort Wayne), Salamonie, Missisinnewa River, Tippecanoe and other rivers in north central Indiana that feed into the Wabash River flooded after the 4th of July. Crop fields had standing water and small lakes from the Wabash River south to almost Indianapolis. Tree damage will show up later this summer.

Overall the rainfall has been normal to above normal for the period from May 1 to July 15, 2003. The Midwest Regional Climate Center webpage (http://mrcc.sws.uiuc.edu/Watch/watch.htm) is a good source for current regional weather information

What's new elsewhere…

The July 15th edition of the Yard & Garden Line News (Minnesota Extension Service) has an interesting article on "Chemical Trespass and Negligence". Check it out on the www at:
http://www.extension.umn.edu/projects/yardandgarden/YGLNews/YGLNews.html

Feature Topic: What is "Slime flux"?

Bacterial slime flux, also called bacterial wetwood, is caused by several bacteria, including species of *Enterobacter*, *Klebsiella* and *Pseudomonas*. The presence of white, frothy, smelly ooze at the base of the trunk is diagnostic. This condition has been fairly common this growing season throughout much of Missouri. The disease is common in elm, oak, mulberry, and to a lesser extent, maple, paper birch, butternut, redbud, sycamore and walnut. The most common symptom is oozing sap, which is slime flux." Sap flows from bark cracks or other wounds in the trunk or limbs. The sap can run down the trunk, causing dark streaks that become gray or white when dry. Homeowners may smell the fermenting odors as secondary microorganisms such as yeasts grow on the oozing liquid. This odor attracts many insects while flux is occurring. These wet regions are not decayed because decay fungi do not grow well on water-soaked wood. Proper pruning techniques reduce the incidence of wetwood by promoting closure of pruning wounds. Fertilizing can help to invigorate affected trees, however, if the tree is in severe decline, removal of the specimen is suggested.

Slime flux on base of hardwood tree. *Photo by J.* Collantes – *MDC*

Upcoming Opportunities

The 2003 North Central Forest Pest Workshop will be September 22-25 in Cloquet, Minnesota. Topic areas will include exotics, bark beetles in the Great Lakes region, and hardwood pests including oak wilt and two-lined chestnut borer. For more information, see the NCFPW webpage at
http://www.na.fs.fed.us/spfo/ncfpw/index.htm

Other Resources and Sources of Information

North Central Pest Management Center, includes a listing of all the websites for State pest management newsletters, by state, for the entire north central portion of the USA:
http://www.ncpmc.org/NewsAlerts/index.html

Forest Health Highlights webpage (with\ yearly forest health report for each state):
www.na.fs.fed.us/spfo/fhm/fhh/fhmusamap.htm

This newsletter is also available on the WWW at:

www.na.fs.fed.us/spfo/pubs/newsletters/csfhw

Northeastern Area

Indiana

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