

## Forest Health Watch

### August 2006—Reports of Forest Pest Activities in New England and New York

**Exotic pests, defoliators, and foliage diseases are currently causing the most significant forest health concerns.**

#### Established Exotic Insects

**Winter moth** was trapped in southeastern Connecticut for the first time last winter. In southern Maine, defoliation was reported in the towns of Wells, Eliot, and Kittery. Mostly red oak and red maple were affected. Winter moth was less of a problem in 2006 in Rhode Island than expected. In Massachusetts, where the insect was first found in 2003, more acres were defoliated in 2006 than 2005. Total acreage is difficult to determine because gypsy moth and forest tent caterpillar commonly occurred in the same stands. Based on trapping of adult male moths, winter moth occurs further west in Massachusetts than previously thought. The State has provided \$150,000, along with USDA APHIS and Forest Service financial support, for a biological control program. As a result, significant parasite releases are anticipated next spring.



**Winter moth**  
([www.forestryimages.com](http://www.forestryimages.com))

**Gypsy moth** defoliated more acres in Connecticut in 2006 than in 2005, but the severity was much lower. The fungus *Entomophaga* exploded after the late spring rains and as a result gypsy moth populations crashed in both Connecticut and Rhode Island. The insect is present in New York, but is not nearly as widespread or severe as forest tent caterpillar; it is often found in the same stands together. In Massachusetts, defoliation increased in 2006, but total acreage has not been determined because ground checking is incomplete and much of the defoliation was caused in association with forest tent caterpillar and winter moth.



**Gypsy moth** ([www.forestryimages.com](http://www.forestryimages.com))

**Browntail moth** populations are down again in southern coastal Maine. Entomophaga fungus is apparent in late instar larvae, which is causing significant mortality.

**Hemlock woolly adelgid** continues to slowly spread northward. In the northeast, the adelgid can be found throughout Connecticut, Rhode Island, Massachusetts, and southeastern New York State. There are no known infestations in Vermont. The infestations in New Hampshire are in the southeast corner of the State in Rockingham County. In southern Maine, in York County, the adelgid is more widespread than in 2005, with light infestations observed. No infested nursery stock has been found in the northern New England States since 2004, when infested stock, that was certified healthy, was shipped from an infested area. There are no new infestations in New York, however several infested trees were found in Rochester near the 2005 eradication site. There is some mortality occurring, along with discoloration and loss of vigor, in trees affected in the generally infested portion of the State. In Rhode Island and Massachusetts, populations of the adelgid have been increasing this year, possibly due to warmer weather conditions this past winter.



**Hemlock woolly adelgid**  
([www.forestryimages.org](http://www.forestryimages.org))

### **Other Insect Defoliators**

**Forest tent caterpillar** defoliated more acres in Connecticut than ever in 2006. Rhode Island also had defoliation, but the population crashed just like the gypsy moth. New Hampshire had about 50 percent of the acreage defoliated compared to 2005. About half the 2006 defoliation was heavy, mostly on red oak, but it did occur in some sugarbushes and also on birch and aspen. Vermont had 343,000 acres defoliated in 2006 compared to 230,000 acres in 2005. The damage moved slightly north, but was still concentrated in the southern four counties. Vermont treated 168 blocks with the insecticide Bt in sugarbushes totaling 5,488 acres compared to 1,500 acres in 2005. In New York the defoliation was widespread and severe; worse than 2005. Massachusetts had about 1 million acres of defoliation in 2006. Much of the defoliation was concentrated in western Massachusetts and on the South Shore. Often forest tent caterpillar was found in association with gypsy moth and winter moth in the eastern part of the State. Because both Entomophaga fungus and friendly flies, a natural parasite, were common in June in the infested areas in Massachusetts, there is hope that the outbreak will collapse in 2007.



**Forest tent caterpillar (Photo by VT Dept. of Forests, Parks, and Recreation)**

**Eastern tent caterpillar** heavily defoliated black cherry and ornamental apples in central and western Massachusetts. This damage was not mapped during the aerial survey because black cherry rarely grows in pure stands and therefore the damage is scattered.

**Saddled prominent** populations are increasing in northern New Hampshire. Defoliation is occurring in numerous small pockets of trees within hardwood stands. There were many reports of defoliation in the White Mountains. Moderate to severe defoliation is occurring on yellow, grey, and white birch and other hardwoods at higher elevations in western Maine. The insect is causing light defoliation at lower elevations in southern Maine with one “hot spot” in northwestern Cumberland County on red oak. In Vermont, populations have increased noticeably with widespread light defoliation in the north. Some moderate to heavy defoliation also occurred in 2006, the first time since 1981. Rhode Island is the only southern New England state to report defoliation in 2006.



**Saddled prominent (Photo by VT Dept. of Forests, Parks, and Recreation)**

**Greenstriped mapleworm** was often seen in association with saddled prominent and contributed to the observed defoliation in Vermont.



**Greenstriped mapleworm (Photo by VT Dept. of Forests, Parks, and Recreation)**

**Birch sawfly** picks up where anthracnose and saddled prominent leave off in Maine. The defoliation is especially noticeable in northwestern Maine at higher elevations compared to predominately anthracnose at lower elevations. It is probably responsible for more defoliation in Maine in 2006 than any other insect.

**Birch leaf miner** damage occurs in many of the same areas as saddled prominent in Maine. There is widespread damage on the White Mountain National Forest in New Hampshire.

**Orangestriped oakworm** defoliated more acreage in Connecticut this year than in the past, but the final acreage has not been determined yet. Rhode Island noted oakworm eggs on leaves and expects some defoliation to occur.

**Fall cankerworm** defoliated 20,000 acres in southeastern New Hampshire. Red oak was the primary host and some stands were heavily defoliated.

**Fall webworm** is heavier than in past years in Maine.

**Locust leafminer** damage was again severe in New York's Hudson River valley. This is the 3<sup>rd</sup> to 4<sup>th</sup> year of defoliation in this area.

**Baltimore bomolocha** defoliated large areas of sugar maple western in Massachusetts. This insect is a leaf rolling skeletonizer that feeds later in the season. The combination of this insect and earlier activity by pear thrips, forest tent caterpillar, and anthracnose has made 2006 a tough year for sugar maple in Massachusetts.

### Newest Invaders

**Sirex woodwasp** (*Sirex noctilio*) is an invasive woodborer that attacks several native North American pines, as well as exotic pine species planted in the United States such as Scots pine. It is native to Europe, Asia, and northern Africa and poses a threat to North American forests; therefore, it has been placed on the APHIS Regulated Plant Pest List. The *Sirex* woodwasp adult injects a fungus and toxic mucus which conditions the host tree for larval feeding. Since first being found in a monitoring trap in Fulton, NY, in Oswego County, in September 2004, delimiting surveys were implemented by APHIS and the USDA Forest Service, along with New York State Department of Agriculture and Markets and the Department of Environmental Conservation. Trapping results from 2005 found the insect in Cayuga, Onondaga, Seneca, and Wayne Counties. The Canadian Food Inspection Agency also found *Sirex* woodwasp in several counties in Ontario, Canada. Concerns over the natural spread of the woodwasp are heightened since adults are capable of dispersing large distances, from 25 to 100 miles.



**Sirex woodwasp (Photo by New Zealand Forestry)**

A *Sirex* Science Panel was convened by APHIS-PPQ in January, 2006 which recommended an "aggressive multi-state trapping program" be implemented within a 150-mile radius of Oswego, NY and the find in eastern Ontario, Canada. Approximately 2,000 traps have been placed in a 25 square mile grid that covers portions of New York, Pennsylvania, and Vermont. Surveys also continue at various ports and *Sirex* woodwasp has also been included in the Cooperative Agricultural Pest Survey (CAPS). USDA Forest Service sponsored trapping surveys are also being conducted throughout New England, and several Midwestern States in cooperation with State Forest Health Agencies.

To date in 2006, 16 additional New York Counties have been confirmed infested by Cornell University including: Allegany, Chauttaqua, Erie, Genesee, Jefferson, Livingston, Madison, Monroe, Niagara, Oneida, Ontario, Orleans, Schuyler, Steuben, Wyoming, and Yates.

In July, 2006, Sirex woodwasp was identified in Tioga County, Pennsylvania and most recently, Bradford County was also found infested, as confirmed by the APHIS Systematic Entomology Lab in Beltsville, Maryland. The State of Pennsylvania is participating in the trapping survey ongoing in the northern portion of the State.

The APHIS-PPQ Center for Plant Health Science and Technology issued a Sirex Pest Risk Analysis on August 1, 2006. A biological control program is being assessed to determine the feasibility of implementation in the United States. There has been success with Integrated Pest Management plans that include stand management activities and biological control agents in other countries, including New Zealand, Australia, and in South America, where Sirex has been previously introduced.

**Emerald ash borer** is an aggressive exotic insect that feeds on the inner bark of all ash species rapidly killing them. Infestations of the insect have been discovered in Michigan, Ohio, Indiana, Illinois, and the Canadian Province of Ontario. Surveys are being conducted again this year to determine if the insect is located in the Northeast. State, private, Federal and tribal lands are being inspected. So far, no evidence of emerald ash borer has been found in New England or New York. In Maryland, however, the borer was found on ash trees in an area in Prince George County that previously was thought to be successfully eradicated.



**Emerald ash borer**  
([www.forestryimages.org](http://www.forestryimages.org))

Public education and outreach efforts related to emerald ash borer have focused on reducing the spread of the insect by eliminating the movement of infested firewood and nursery stock.



**Don't Move Firewood Poster (Created by  
USDA Forest Service)**

**Ramorum blight (Sudden oak death) caused by (*Phytophthora ramorum*)**

continues to cause concern nationwide. *P. ramorum* was first seen in Mill Valley, CA, on tanoak in 1995. California, Oregon, and Washington nurseries are under a Federal quarantine to prevent the movement of regulated and restricted articles to uninfected areas across the country. Nursery owners in those States who ship *P. ramorum* host and associated host plants interstate must have their nursery stock inspected, sampled, and tested before plants can be transported across State lines.



**Ramorum blight on oak in California**  
([www.forestryimages.org](http://www.forestryimages.org))

Recently, in Connecticut, there was a discovery of *P. ramorum* infected Rhododendron nursery stock that originated from the west coast. This is the same nursery where infected nursery stock from Oregon was found in the fall of 2004. The infected plants were discovered as a result of resurvey protocols put in place by APHIS-Plant Protection Quarantine and have been destroyed. There were also positive findings of infected Lilac in Maine on plants from Oregon that were identified through trace forward information. Two nurseries in New Hampshire were also notified that they received plants from that same infected nursery and all of the samples collected there were negative.

In 2005, 49 States conducted nursery surveys, with about 3,800 nurseries visited and over 68,000 samples taken, resulting in 99 positive sites in 7 States: California, Georgia, Louisiana, Oregon, Tennessee, South Carolina, and Washington. These detections were made through trace forward, compliance agreement, or the national nursery surveys. By contrast, in 2003 and 2004, infected plants were found at nursery sites in 21 States in the west, south, and Mid-Atlantic. Similar nursery surveys are ongoing in 2006, where by July 5 nearly 3,000 nurseries had been visited and 89,000 samples collected, with 42 sites confirmed positive in 5 States.

The 2005 USDA Forest Service and State Agency nursery perimeter and general forest surveys were conducted in 38 States, including New York and the New England States. All of these findings were negative. To date, all of the 2006 results are also negative. The pathogen has not been found in the natural environment in the eastern United States.

Among the plants susceptible to this pathogen are rhododendron, camellias, and nearly 45 other plant species on the APHIS host list. There are over 50 more plants on the associated list that have been found infected with *P. ramorum*, but haven't undergone Koch's postulates. The most recent additions to this list include *Abies magnifica* (white fir) in California and *Magnolia grandifolia* and *Rosa rugosa* which were reported from Canada, and also Oleander.

## Foliage Diseases

**Tar spot disease** and other leaf diseases are again causing damage to Norway maple in the seacoast region of New Hampshire and Maine. Damage from this disease has spread to most of the major urban areas. The likely cause of such a wide spread outbreak is the favorable wet conditions of the spring and early summer. Many urban areas are reporting severe tar spot problems this growing season in Massachusetts. Cool, wet spring growing conditions has led to many leaf fungi diseases throughout the State.



**Tar spot on maple (Photo by USDA Forest Service)**

**Anthracnose** on birch, maple, oak, and ash has been observed in Maine, with the most severe incidence on birch. Birch statewide is losing leaves early from the bottom of the trees upward. Other species have curled, browned leaves with some heavy leaf drop, which is more common in southern Maine. In Massachusetts, anthracnose leaf disease is causing large areas of late-season leaf defoliation, mostly on sugar maple and white ash. Anthracnose diseases, especially on sycamore, oak, and maple, are very significant this year in Connecticut, due to very wet and rainy conditions in the spring. Birch anthracnose was common at upper elevations, particularly in northeastern Vermont. Birch decline continues to be noticeable in New Hampshire throughout the state. Birch anthracnose, birch leaf miner, drought, bark beetles, and ice storm damage are all playing a role in New Hampshire.

**Guignardia leaf blotch**, a fungal foliage disease on horse-chestnut, is common throughout the seacoast area of New Hampshire and Maine, most likely a result of the severe wet weather conditions that occurred in the spring.



**Guignardia leaf blotch on horse-chestnut (Photo by USDA Forest Service)**

**Brown Spot Needle Blight** was unusually heavy in Vermont on white pine this year.



**Brown spot needle blight (Photo by VT Dept. of Forests, Parks, and Recreation)**

### **Additional Damage Agents**

**Lecanium scale** populations declined somewhat in Vermont and were less common than last year but remained heavy in some sugar maple stands. The scale populations seem to have declined in New Hampshire; however it is still quite common in the sugar maple regions. Most places in New York have not seen the high levels of Lecanium scale as last year, though there have been reports of a few spots in the Adirondacks where it is heavy again. In western Massachusetts scale populations are fairly heavy in maple stands, with mostly understory trees affected.



**Lecanium scale (Photo by VT Dept. of Forests, Parks, and Recreation)**

**Fir-fern rust** was heavy in many balsam fir Christmas tree plantations in Vermont.

**Dephinella shoot blight** caused heavy losses in Vermont in several balsam fir Christmas tree plantations where it was not noticed in the past. The extremely wet spring weather was probably a major factor.



**Dephinella shoot blight (Photo by VT Dept. of Forests, Parks, and Recreation)**

