

Sirex wood wasp status report July 26, 2006

BACKGROUND

The Sirex woodwasp, *Sirex noctilio*, a Eurasian native, was first discovered in New York in 2004, in the City of Fulton, Oswego County. This was the first North American discovery of this dangerous, exotic, invasive pest that is one of the top 10 most serious forest insect pest invaders, worldwide. This pest has caused extensive losses to (non-native) pine plantations across the Southern Hemisphere, in Australia, New Zealand, Chile and South Africa, and has no known, native natural controls.

The Sirex woodwasp female injects a toxic mucus and a fungus while she is laying her eggs in the bark of susceptible pine trees. This typically occurs mid-bole (10-30+ feet up) on pole-sized and larger trees (6-8" in diameter and up). Trees that are already suppressed or stressed, due to other site or environmental conditions, seem to be more preferred by the female wasps. The mucus quickly kills tree cells from the egg-laying site upwards. The fungus feeds on the killed wood, and the insects larva actually feed on the fungus. As they grow, the larvae bore galleries deep into and through the wood, unlike bark beetles, which typically confine themselves to the cambium layer, just under the bark. This makes them more difficult to detect and more difficult to eliminate.

All pine species are believed to be at risk, particularly stressed Scotch pine and red pine, as well as Eastern white pine. Literature indicates the Sirex woodwasp will also attack virtually all our other native softwood species. While there is potential for serious losses to softwood stands in New York, the far greater concern, nationally, is if this invasive, exotic pest makes it's way into the vast plantations of susceptible pine species found across the Southern US region. The pine resource in that region is much more homogeneous, in large, commercial plantations, which is far different (and far more susceptible to serious mortality) than our New York forest conditions, which are more varied, with highly susceptible pines comprising a smaller, and more scattered component of our forests.

NEW YORK DISCOVERY

The 2004 discovery in Fulton came from an unintentional capture in an exotic wood borer trap, placed as part of an ongoing invasive pest monitoring effort conducted by the US Department of Agriculture Animal and Plant Health Inspection Service (APHIS), and the NY State Department of Agriculture and Markets (DAM) Cooperative Agricultural Pest Survey (CAPS). The insect was positively identified by Cornell entomologist, E.Richard Hoebeke, in February of 2005. By the summer of 2005, a collaborative effort was undertaken involving DEC, DAM and APHIS to deploy roughly 200 targeted Sirex traps at 20, 40 and 60-mile radii from the initial find in Fulton. Although the traps were not in place until late in the summer, and there is no Sirex-specific

semiochemical attractant, or pheromone lure available, they still yielded positive finds in a total of 5 counties - Oswego, Onondaga, Cayuga, Wayne and Seneca. Another 11 counties, immediately adjacent to the positive counties, were identified as “buffer counties”.

Concurrently, trapping in Ontario found *Sirex* woodwasp in several locations, ranging from Cambridge, Ontario, west of Buffalo, to Prescott, Ontario, just across the border from Ogdensburg. These finds expanded the U.S. survey area (150 miles from known positive counties) to include all of western New York, parts of northwestern Pennsylvania, St. Lawrence County in northern New York, and parts of western Vermont.

COLLABORATIVE RESPONSE

Last fall, DEC and DAM organized a meeting with the Empire State Forest Products Association, several directly-impacted softwood using companies, and USDA APHIS, to discuss this new invasive insect pest discovery and plans for addressing it in New York. From this initial meeting, field tours and mill visits were arranged to familiarize DAM and APHIS staff with the nature of New York’s softwood resource, processing operations and the dynamics and economics of our softwood-using industry. DEC, DAM and APHIS have continued that dialogue with the industry, working to keep them informed of developments as they occur, and collaborating on voluntary recommendations for the industry to limit the human-assisted movement of potentially *Sirex*-infested wood and wood products out of the known infestation areas in New York. The industry is also aware that APHIS is looking at developing quarantine regulations that would also restrict movement of wood and products that may be infested with *Sirex* outside New York state. It is hoped the voluntary New York protocols, developed in consultation with the affected industry, will inform and help guide development of Federal quarantine regulations being drafted now by APHIS (and under review by DEC, DAM and ESFPA).

This spring, before the hardwood leaves came out, DEC’s Forest Health program used cooperative USDA Forest Service special funds and the NY State Police’s Partenavia spotting plane to conduct aerial surveys across the entire state (excluding NYC and Long Island) looking for, and mapping evidence of decline or damage to softwood stands. (Unfortunately, that aircraft is not available for use at this time. It has been taken out of service due to structural problems that require extensive repairs.) From these surveys, follow-up ground surveys were undertaken, in some cases, and sites were targeted for trap placement in the summer.

Over the course of the winter and spring, USDA APHIS and the USDA Forest Service committed \$1.4 million to all aspects of *Sirex* response, addressing outreach, surveying, research and regulatory response, primarily in New York, but also in parts of Pennsylvania and Vermont (within 150 miles of Fulton, NY), for the summer of 2006. Survey plans - based on the available funding - called for deploying over 1,500 traps across the State, on a 25-square mile grid (one trap per 25 square miles). Traps are being deployed, and checked every 2 weeks, by a

combination of existing DEC, DAM and APHIS staff, supplemented by 8 seasonal technicians hired by DAM, using Federal APHIS funding. The crews began locating and setting out traps in late May, and as of July 21, all traps have been placed with most having already been checked and serviced at least twice.

As anticipated, the increased trapping this year, even at the low density being funded, has begun to show Sirex is far more widespread than initially documented. As of July 25, 2006, 15 counties have recorded positive finds, with 14 buffer counties identified.

Positive counties include:

Erie, Orleans, Genessee, Wyoming, Monroe, Livingston, Schuyler, Ontario, Wayne, Seneca, Cayuga, Onondaga, Oswego, Oneida and Jefferson.

Buffer counties include:

Niagara, Chautauqua, Cattaraugus, Allegany, Yates, Steuben, Chemung, Tompkins, Cortland, Madison, Otsego, Herkimer, Lewis and St. Lawrence.

A map is attached showing status as of July 25, 2006.

Concurrent with the trapping effort, APHIS has been developing a national "Pest Risk Assessment" document, which is standard procedure for any new pest invader. DEC, DAM and ESFPA representatives have had input into this document and have reviewed a draft of this assessment, which should be released by APHIS shortly. In addition, DEC has been consulting with experts to identify silvicultural management recommendations for forest managers and landowners to help improve the overall health of pine stands and make them more resistant to attack by the Sirex woodwasp, or, at least, better able to withstand attack. Along those lines, DEC plans to commit the last \$46,000 of US Forest Service Forest Land Enhancement Program (FLEP) funding, which New York just received, to target timber stand improvement projects for Sirex management purposes, in susceptible, high-stewardship-value stands, in counties identified as infested or buffer counties. Pending approval by the State Stewardship Coordinating Committee, it is anticipated these funds should become available to landowners later this summer. Interested landowners should contact their local DEC Forester for more information. Survey efforts will continue throughout the summer and into the early fall (the expected emergence season). Given the low trapping intensity, negative results within grids or counties do not necessarily indicate the county is "Sirex-free". The non-specific lures used only have an effective attraction range of about 50 yards. Even with specific criteria and protocols for selecting trap locations, chance and luck must play a major role in catching this pest in one of our traps.

At this point, there is no viable control program or mechanism for this invasive insect. In it's

native habitat, in Europe, a predatory nematode serves as an effective, natural, biological control. This nematode has been imported to some Southern Hemisphere countries, such as New Zealand and Australia, as a biological control agent. While it has been somewhat successful, experience has shown it requires a costly, annual maintenance program to perpetuate a viable, and lethal nematode population, even in situations where forest conditions are predominantly favored pine species. Nevertheless, USDA APHIS has already obtained the required permission to bring this nematode into the country for experimental purposes, to determine if it might be effective here. That work is currently being done by APHIS's research arm, the Center for Plant Health Science and Technology (CPHST), at their secure lab facility in Otis, MA. Researchers are hopeful they can begin an experimental nematode rearing and release program within a year.

For more information on Sirex, check out the DEC "Sirex woodwasp" webpage at:
<http://www.dec.state.ny.us/website/dlf/privland/forprot/health/sww.html>

Additional information may be obtained from NYS Department of Agriculture and Markets and USDA Animal Plant Health Inspection Service by contacting:

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attachments: July 26, 2006 Sirex map
List of DEC Forestry Offices