First Detector Network News

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Another avenue to consider regarding the spread of invasive pests

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In anticipation of this upcoming holiday season, we would like to remind you that invasive pests can arrive on a variety of plants and plant products, many of which you may not have previously considered For example, in the United States alone, people purchased 27 million Christmas trees in 2010 with a total retail value of $976 million. Species that are used as Christmas trees include spruces (such as Colorado blue and white) and various species of fir (such as Balsam, Fraser, Douglas, and Noble). The states that have the most Christmas tree harvests include Oregon and North Carolina.

Movement of trees from these states and others to the local garden center near your house can allow for invasive pests and diseases to disperse to different areas of the country quite easily. It is important to be on the look out for invasive species that might have hitched a ride on your tree.

For example, the brown spruce longhorn beetle (*Tetropium fuscum*) is an invasive beetle from Europe that attacks spruce (*Picea* sp.), firs (*Aibes* sp.), pines (*Pinus* sp.), and larches (*Larix* sp.). The adults are small (less than 2.5cm) with a flat body, black head and thorax, tan to brownish-red elytra (wing coverings), and long antennae. Its larvae are yellowish-white, have a

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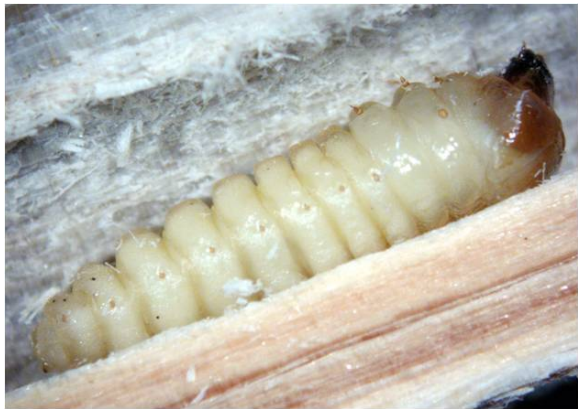

Top image is of the adult brown spruce longhorn beetle courtesy of Georgette Smith, Canadian Forest Service, www.bugwood.org, #5137033.

Bottom image is of the brown spruce longhorn beetle larvae courtesy of Stephanie Sopow, Natural Resources Canada, www.bugwood.org, #5331011

In This Edition:

rather flattened body, a dark head capsule, and measure 1.5 to 2.8cm in length.

The beetle larvae kill the tree by tunneling into the cambium and phloem layers and girdling the tree. Although this beetle is currently only found in Nova Scotia and New Brunswick, Canada, first detectors need to be aware of its possible presence and report it to their local county agent or state department of forestry. According to NAPIS Pest Tracker, surveys have been or are being conducted in Oregon, California, Louisiana, Arkansas, Vermont, and Maine.

The nun moth (*Lymantria monacha*) is also from Europe and feeds primarily on spruce, pines, firs, and larch. It is not known to be established in the United States; however, egg masses can come in on crates, pallets, and other packing material. The adults have a wingspan of 3.5 to 5.5cm (with females being bigger than males). The forewings vary in color and pattern from chalk-white with dark wavy lines and patches to dark brown with black spots. The hind wings are usually gray brown with small dark and/or light patches along the edges.

Adult nun moths. Image courtesy of Melody Keena, USDA Forest Service, www.bugwood.org, #5431694.

Mature larvae measure 3 to 4cm in length and are tan, green, or dark gray in color with brown or black mottling, and have a grayish-yellow head. They also have tufts of hair of varying lengths along the sides of their bodies. The larvae cause damage to the tree by defoliation. According to NAPIS Pest Tracker, it has been surveyed for in Washington, Oregon, California, Nevada, Utah, Texas, Alaska, West Virginia, and Michigan.

Nun moth larva. Image courtesy of Daniel Adam, Office National des Forêts, www.bugwood.org, #2515023

And who can forget the balsam woolly adelgid (*Adelges piceae*)? This tiny insect (also a native of Europe) has caused significant damage and mortality to North American fir trees. It harms the tree by way of its feeding using its tube-like mouthpart to inject a substance into the tree that causes abnormal cell division. This, in turn, causes stunting of terminal growth which leads to a slow decline of the tree, persisting for several years. Infestation of the main trunk by this insect, however, leads to

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Balsam woolly adelgid on leaves. Image courtesy of Robert L. Anderson, USDA Forest Service, www.bugwood.org, #1748037

the death of the foliage (which turns yellow) and a fairly quick death of the tree (2 to 3 years). The population of this insect in North America is comprised entirely of females which means reproduction is through parthenogenesis (reproduction that occurs without mating).

The insects are tiny (1mm long), dark purple to black in color, almost perfectly round in shape, and wingless. They produce a thick mass of waxy wool-like material that covers the adults as well as her eggs. Natural dispersal occurs at the crawler stage. It has been reported in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont, California, New York, North Carolina, Oregon, Tennessee, Virginia, and Washington.

With this in mind, if you get a holiday tree this year, be sure to give it a good once over when you pick it out. If you see something odd or unusual, be sure to report it. Unfortunately, invasive pests do not take a holiday.

Balsam woolly adelgid on the trunk. Image courtesy of Ladd Livingston, Idaho Department of Lands, www.bugwood.org, #1241747

NAPPO Phytosanitary Alert System

The North American Plant Protection Organization's (NAPPO) Phytosanitary Alert System is featured in this newsletter every month. Remember that this a great resource to keep up to date on the latest pest detections and quarantine information. The website features both official reports and unofficial alerts of pests for Canada, Mexico, and the United States.

They also have free subscriptions that are available for periodic email notifications of new postings on their website. Be sure to check it out regularly!

About NPDN:

The NPDN is a network of state and federal officials, land grant universities, and First Detectors whose mission is to detect, diagnose, and disseminate information regarding high consequence plant disease or pests. The NPDN was established in 2002 in response to a need for greater agricultural security.

Over the past eight years the NPDN has grown into an internationally respected consortium of plant diagnostic laboratories.

The five regions that make up the NPDN are the: NEPDN, SPDN, NCPDN, GPDN, and WPDN.

Please feel free to browse the links to the various regions to get a better idea of what is going on in your part of the country.

NPDN

White heath snail detected in Montana

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The white heath snail (*Xerolenta obvia*) has been detected in Belt, Montana (Cascade County). While it favors grassy areas, dunes, meadows and rocky hillsides in its native habitat, it is also a known pest of fodder crops such as alfalfa, clover, lupine, seradella, and sanfion in its native region of southeastern and central Europe. Other plants species on which it will feed include beans, peas, and grapes.

It has been intercepted in shipments of fruits and vegetables in Europe and is thought to be transported internationally on cargo containers. It was previously detected in Detriot, Michigan in 2001.

This snail measures 16mm in height and 22mm in diameter. It has 5-6 whorls and a helicid-shaped shell. The color of the shell's background is white with dark brown spiral stripes.

This snail's life history varies based on climate. For example, along the coast in Greece, the eggs were found to hatch in the fall, with the young becoming an adult the following summer (one year life span). However, in the more mountainous regions, the snails do not become adults until the second spring after they hatch (two year life cycle). It lays a single clutch of eggs (18 on average) in the soil (about 2cm down).

The white heath snail is a known vector of several pathogens such as *Alternaria* sp., *Fusarium* sp., and *Phytophthora* sp. It can also vector parasites of sheep and goats such as *Protostrongylus rufescens*, *Davainea proglottina* and *Dicrocoelium dendriticum*.

White heatch snail image courtesy of Ross Mayhew, Schooner Specimen Shells, www.bugwood.org, #1265136.

Update on the giant African land snail eradication effort in Miami-Dade County, Florida

Stephanie D. Stocks, Department of Entomology and Nematology, University of Florida

The giant African land snail (GALS) eradication effort in Miami-Dade County, Florida has passed its one year mark. So far, 18 cores (areas of infestation) have been identified with over 90,000 snails having been collected to date. Unfortunately though, crews are still catching lots of snails.

Homeowners and community residents have been instrumental in acting as first detectors throughout this eradication effort by reporting snail sitings to the local hotline number. In addition, outreach events, radio ads, and billboards have increased awareness of this pest.

Florida Department of Agriculture and Consumer Services - Division of Plant industry (FDACS-DPI) have also confirmed the presence of rat lungworm parasite, *Angiostrongylus cantonensis*, in samples of GALS that have been collected during the eradication effort. Symptoms of infection by this parasite in humans include headaches, stiff neck, vomiting, fatigue, tingling or numbness of the skin, occasional low grade fever, and occasional paralysis of the eye muscles. In most cases, people recover without treatment, but on occasion coma and death can occur. In some cases, this infection can progress to eosinophilic meningitis which is a rare form of meningitis.

For more infromation about this eradication effort in Miami-Dade County and to learn how to identify this invasive pest, please click here.

Changes have been made to the NPDN First Detector Newsletter format

After receiving comments and suggestions from you, the editors of the First Detector Newsletter have decided to change the newsletter format. Beginning this month, instead of a monthly newsletter, we will be publishing the newsletter every two months (in even numbered months instead).

You will still get the same quality information as before delivered to you electronically, however, if you would like real time updates, the editors would like to know if you prefer tweets or blogs as both were suggested.

Please send your ideas and comments on this topic to Carrie Harmon or Amanda Hodges.

Thank you for being a subscriber to the NPDN First Detector Newsletter!

Upcoming Meetings:

- October 24-26, 2012 - the Louisiana Master Gardener Conference will be held in Lake Charles, LA - click here for more details.
- November 11-14, 2012 - the Entomological Society of America Meeting will be held in Knoxville, TN - click here for more details.
- November 27, 2012 - First Detector Training for Bloedel Staff and Volunteers will be held in Bainbridge Island, WA - click here for more details.
- December 1, 2012 - First Detector Training for Bloedel Staff and Volunteers (alternate session) will be held in Bainbridge Island, WA - click here for more details.
- If you would like your meeting listed in the newsletter, let us know.

First Detector Training Opportunities:

- If you are hosting a First Detector Training Session, please post these on the NPDN First Detector Training website so that they can be listed here.

Do you tweet?

- Click here for updates.

Employment Opportunities:

- Please click here for more information.

Editors: Carrie L. Harmon, Stephanie D. Stocks, and Amanda Hodges

To submit news items in future editions of the newsletter, contact: clharmon@ufl.edu or sstocks@ufl.edu or achodges@ufl.edu

You can include a short descriptive paragraph, links, and related images or documents – don't forget to include author and image credits though.