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Invasive Forest Pests: Problems You Can Live Without

BY DAVID R. BRIDGWATER

Western forests are experiencing attack by invaders. Insects, diseases, animals and weeds are damaging our forest ecosystems. Sudden oak death is killing tan oak, but is also capable of infecting many other species including Douglas-fir. Port Orford cedar root disease is killing Port Orford cedar in southwestern Oregon. White pine blister rust is killing five-needle pines throughout the range of the pines. Balsam woolly adelgid has been killing grand fir, silver fir and subalpine fir throughout the Northwest. The green spruce aphid periodically defoliates spruce throughout the west. Larch casebearer at times defoliates larch throughout the tree's range. There are over 100 species of invasive plants in the west, and while most have little direct effect on mature trees, they are able to invade disturbed sites and interfere with tree regeneration. Some species also pose a threat by increasing fire intensity and spread. Feral swine in some western states may kill reproduction though their feeding habits and disturb soil, allowing for more invasive weed to establish. Other articles in this issue will explore some of these invasives in greater detail.

An invasive forest pest can be defined as an organism occurring in an ecosystem to which it is not native, and either causing or having the potential to cause ecosystem damage. When invasive species kill trees, timberlands are reduced in value, hazard from forest fire is increased and ecosystems are altered. Invasive species that don't directly kill trees—such as many invasive weeds—alter ecosystem processes, may form monotypic vegetation, can crowd out desirable species, degrade productivity and recreation benefits, and prevent reproduction of desirable species.

PHOTO COURTESY OF E.M. GOHEEN, USDA FOREST SERVICE

Tan oak mortality from sudden oak death.

These changes can occur at such rates that the ecosystem is unable to adapt. Because native trees did not evolve with the invaders from other continents, they often have limited genetic resistance to them. Rates of pest establishment and spread increase because when released into new environments, the invasives come without other species or conditions that would normally regulate their activities, such as the balsam woolly adelgid. In some cases, imported insects and diseases virtually eliminate American plant species from their natural habitat. Such was the case with chestnut blight, which between 1900 and 1950 all but eliminated the native chestnut tree from eastern forests, and set off a cascade of changes to not only forest composition, but also to the diversity of plants and animals throughout the east. Today, many forests in the west are at similar risk.

The current infestations and growing threat of invasive species make them a forest priority. Not only do these species threaten the sustainability of our forest ecosystems, but also potential movement of forest products regionally, nationally and globally. Damages caused by invasive species, including only those that can be expressed in monetary terms, have been estimated as high as $1.38 billion a year. Invasive species are thought to have been involved in 70 percent of this country's extinction of native aquatic species, and 42 percent of current endangered species are significantly affected by invasive species. Forests in the west are rich in biological diversity and provide vital goods and services. These non-native organisms have increased in their range and severity, while others await entry through global commerce and other human activities. Invasive species do not need to actually

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damage forest trees to have a significant impact. State and federally imposed quarantines that control or limit the spread of these species can limit the movement of forest products.

For the forest manager, a well conceived and organized program of invasive species prevention, early detection, eradication or management is essential. The responsibility for established invasive species lies primarily with the land manager. However, the USDA Forest Service can cost share with states for control and eradication projects on state and private lands. Prevention of new introductions and newly discovered invasive species responsibility is vested in USDA Animal Plant Health Inspection Service (APHIS) and the state Departments of Agriculture. Technical expertise for dealing with established populations is available through these two agencies, the state Departments of Forestry and USDA Forest Service.

Not all introductions of potentially invasive species establish a foothold in the west. They might not be introduced where there is a suitable host, the time of the year might be wrong, or the weather may be a limiting factor. Climate change may allow some species to more easily establish. As the climate warms, trees that are more susceptible to drought may become more susceptible to new invasive pests. On the other hand, a warmer climate may limit some species we currently have, and may become a limiting factor to some new introductions.

Strategies to minimize invasives

The most effective strategy to fight invasive species is to prevent their introduction and establishment from the start. Prevention measures typically offer the most cost effective means to minimize or eliminate environmental and economic impacts. Prevention tools include, but are not limited to quarantines (embargos), pest risk assessments, coordination with states and other involved parties, equipment cleaning, utilizing preventive measures during fire management activities, and the development of best management practices and contract clauses.

Establishing effective internal and external partnerships is critical for successful prevention and detection programs. APHIS and state agencies look at pathways of introductions for regulatory considerations. APHIS and state Departments of Agriculture establish embargos and propose legislative and policy actions to prevent introductions. Once invasive species become established, they become much more difficult to eradicate or manage, in addition to becoming a more expensive situation.

In addition to the invasive species already established in western forests, numerous other species will pose threats if introduced. The emerald ash borer is killing ash trees in the east and Midwest, and could potentially wipe out all ash species in North America. Asian longhorned beetle, and its cousin the citrus longhorned beetle, threaten many of our hardwood species. The European wood wasp now found in New York and Pennsylvania attacks and kills pine trees. Studies have shown that this wood borer does quite well in ponderosa pine, as well in other western pine species, and has been recorded on Douglas-fir and other fir species. The pine shoot beetle is widespread in the Lake States and could infest the

Western White Pine Blister Rust Article Available on Web

One hundred years after its introduction, white pine blister rust is still plaguing us. Learn more about this important pathogen in an article by Plant Pathologist Ellen M. Goheen that appears on our website at www.forestry.org/wf.

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Society of American Foresters
4033 S.W. Canyon Rd. • Portland, OR 97221 • 503-224-8046 • FAX 503-226-2515
rasor@safnwo.org • michele@safnwo.org • www.forestry.org/wf

Editor: Lori Rasor • **Assistant:** Michele Docy

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Next Issue: LiDAR

western hard pines. There are 16 to 20 other bark beetles that pose a serious threat to our forests that are not in the U.S., but are awaiting the opportunity to immigrate. Numerous other beetles may cause harm, but they do not yet have completed pest risk assessments.

In addition, many defoliators of both hardwoods and conifers are just waiting for their chance to gain a foot hold here in western forests. Asian gypsy moth, European gypsy moth, Siberian moth, rosy gypsy moth and little brown apple moth are just a few of them. Wood borers come in beetle, moth and wasp forms. The insect list goes on. Tree diseases, such as *Phytophthora alni* that attacks alder, pose threats in the form of both the mortality and wood decay. Most of our invasive species didn't start out infesting our forests; rather, they arrived in commercial or residential settings and have spread to our forests. Thus, foresters need to be aware of what is happening in urban forests as well.

Active projects with universities, APHIS, state Departments of Agriculture, state forestry agencies, federal land managers and private organizations are underway to survey for invasive species. Several universities and state agencies receive direct funding through the use of grants for diagnostic work and development of improved survey techniques, and this is expected to expand in the future. One activity underway is public outreach and educational activities to increase awareness of invasive species and their potential impacts and the need for management activities.

What can foresters do to help in the battle against invasive species? They should become familiar with the current species already here and those that are likely to show up. When they find an unknown species or a known species in a new area, report it to the appropriate agency. ◆

David R. Bridgwater recently retired as entomologist, Invasive Insect and Disease Program Manager, Forest Health Protection, USDA Forest Service, Pacific Northwest Region in Portland, Ore. He can be reached at topbug@comcast.net.

The Balsam Woolly Adelgid Still a Pest in the West

BY KAREN RIPLEY

The balsam woolly adelgid (*Adelges picea*, BWA) is a small sucking insect that feeds on the twigs and stems of trees in the genus *Abies*. It is native to Europe and was probably accidentally introduced to the northeastern United States and southeastern Canada in the early 1900s. In 1930 it was observed infesting grand fir near Salem, Oregon. By 1955, it was found infesting and killing Pacific silver fir (*Abies amabilis*) and subalpine fir (*Abies lasiocarpa*) at several locations in the Coast and Cascade mountain ranges of Oregon and Washington. In 1983 it was discovered infesting fir trees in Idaho.

BWA is an aphid-like insect. Susceptible trees react to a chemical component of the anti-coagulant saliva that is injected as the BWA feed. The tree's hormonal action is affected, causing abnormal cell division and impaired translocation. *Abies* trees that co-evolved with BWA in Europe can tolerate this substance. In contrast, feeding on branches and twigs of susceptible North American *Abies* species produces abnormal swelling of twig nodes called "gouting," which may cause slow tree death over 10-20 years. Feeding on the stems of trees ("bole infestation") can cause death within one to three years, or longer, depending on the susceptibility of the host tree species, the elevation the host is growing, and the intensity of the BWA infestation.

Russ Mitchell, USDA Forest Service, retired, studied BWA as it swept through Oregon and Washington. He reported that BWA can kill a significant number of grand (*Abies grandis*), Pacific silver and subalpine fir on suitable sites. On the BWA-preferred sites, most trees were killed in the first 10 years of an outbreak. BWA populations then collapsed and usually became rather scarce. Some trees, however, always resisted attack only to be attacked years later, even 20 to 40 years later.

The most susceptible sites, those preferred by BWA, for grand fir, Pacific silver fir and subalpine fir were the wettest sites and the lowest elevations where the tree species grow. Interestingly, for all host tree species, BWA infestation in the upper half of a species' elevation range was rare. For example, Pacific silver fir commonly grows from 1,000 to 5,000 feet elevation. Although Pacific silver fir growing at 1,500-2,000 feet elevation has been heavily attacked and killed, it has resisted attack above 4,000 feet elevation, even when growing closely with severely infested subalpine fir (at the lower part of its elevation range). When the infestation level on Pacific silver fir has increased at higher elevations, the infestation has usually been brief and associated with a pattern of three to four warm years.

BWA continues to be important in the Northwest because:

- *Abies* species are used for pulp and lumber by the timber industry, provide a shade-tolerant habitat component, and are among the most important trees in high-elevation recreation sites.
- As BWA continues to spread through Idaho, Montana and the Rocky Mountains, severe damage to susceptible trees, especially subalpine fir, is likely.
- In Oregon and Washington, BWA populations may resurge periodically in areas that have already lost the most susceptible individual trees in the initial outbreaks.
- In the Puget Trough and Willamette Valley, mature grand fir trees continue to die, probably as BWA damage contributes to drought and other stresses.
- In the eastern Cascades, BWA probably affects grand fir trees' ability to tolerate and resist defoliation by the western spruce budworm (*Choristoneura occidentalis*) and Douglas-fir tussock

PHOTO COURTESY OF USDA FOREST SERVICE

This photo shows severe gouting (swollen, malformed branch tips and twig nodes), which indicates a reaction to balsam woolly adelgid feeding on twigs and branches of subalpine fir. Gouting reduces growth, photosynthetic capacity and cone production. Branch-infested trees are more susceptible to damage from other insects and diseases and may slowly decline and die.

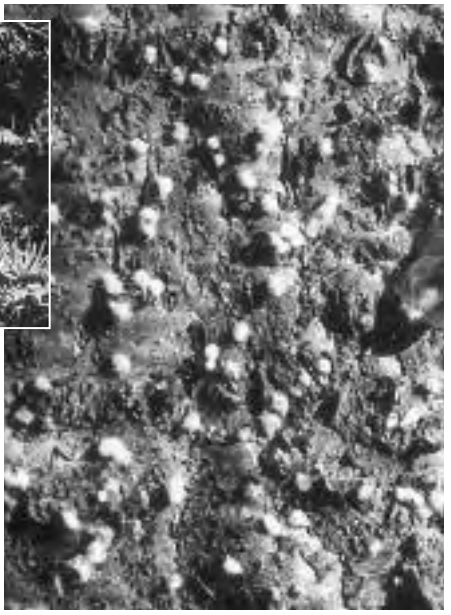

PHOTO COURTESY OF WWW.FORESTRYIMAGES.ORG

"Wool"-covered female balsam woolly adelgids as they appear during the summer on a tree trunk.

moth (*Orgyia pseudotsugata*). BWA activity may be contributing to the prolonged duration of a budworm outbreak that's currently active in Washington's southeastern Cascades, and thus may be contributing to increased forest fuel accumulations and loss of habitat for the northern spotted owl. The relationship between BWA and defoliator outbreaks currently affecting Idaho and western Montana is not known.

• Many Christmas tree growers rely on chemical pesticides to produce damage-free noble fir (*Abies procera*) and Fraser fir (*Abies fraseri*, native to the southern Appalachian Mountains) products.

• *Abies* trees are a popular component of landscaping and home gardening activities. Moving trees out of their native range is not generally recommended and may result in highly susceptible specimens.

• If climate warming continues, then the patterns of where species are significantly damaged may change. If they become warmer and drier during the growing season, areas with *Abies* species that once appeared to be resistant to BWA will likely become more susceptible.

• Native and introduced predators (such as *Laricobius* beetles and *Leucopis* flies) of hemlock woolly adelgid (*Adelges tsugae*, HWA) and BWA that are present in the Northwest are being used or evaluated for use as potential predators to protect conifers in the eastern United States. ◆

Karen Ripley is Forest Health Program manager, Washington State Department of Natural Resources, in Olympia. She can be reached at 360-902-1691 or karen.ripley@dnr.wa.gov.

About Adelgids

In their most commonly observed life stage, woolly adelgids look like cottony tufts, about one millimeter round, scattered on the twigs, branches, trunks or foliage of host trees. The cottony coat is made up of tangled waxy filaments, exuded from the adelgid's body. It helps protect the insect from moisture loss, predation and exposure to pesticides. The three most common species of conifer woolly adelgids can be distinguished by their hosts.

1. On Douglas-fir needles, the cottony tufts are Cooley Spruce Gall Adelgid (*Adelges cooleyi,* CSGA). This is a native adelgid. In a different phase of its life cycle, CSGA feeding causes woody galls to form on the branch tips of Sitka (*Picea sitchensis*), Engelmann (*Picea engelmannii*) and other spruce species. The nursery industry and Christmas tree growers consider these galls and the stunting or defoliation CSGA causes to be unsightly or unacceptable, but it doesn't cause significant damage to forest trees.

2. Balsam woolly adelgid (*Adelges picea*, BWA) looks like white cottony tufts on the stems (bole infestation) or twigs (twig infestation) of trees in the genus *Abies*. BWA causes significant damage, including tree death to susceptible North American *Abies* species. Although in Washington and Oregon the most susceptible forest trees have probably already died, continuing impacts associated with defoliation and a potentially warming climate make it continue to be of concern. New initial range extensions into the Rocky Mountains will likely cause significant damage.

3. Hemlock woolly adelgid (*Adelges tsugae*, HWA) is an exotic insect, native to Asia. It feeds on the twigs and branches of North American hemlock trees. Accumulations of the woolly tufts can be very conspicuous on western hemlock (*Tsuga heterophylla*), which does not appear to be damaged. In contrast, the Carolina hemlock (*Tsuga caroliniana*) and eastern hemlock (*Tsuga canadensis*) are rapidly killed by feeding from HWA. Efforts to develop integrated management systems—such as methods for rapidly locating new infestations, developing direct control methods, identifying resistant individuals, saving genetic material and augmenting predators—for HWA and these species are ongoing.

Foresters Help Turn the Tide on Invasive Weeds

BY GLENN AHRENS

Foresters can be powerful allies in the war on invasive weeds and it is essential that foresters get involved. Do not let the negative media discourage you—invasive plants are costing us billions and enormous economic and environmental costs continue to compound. It is not an excuse to give up, to say it is not your fight, or to think the problem is too big, because there is *some* good news: When foresters get involved, it can make a big difference in both prevention and control of invasive plants.

The forestry capability and infrastructure already in place across western forests are huge strategic assets in the war on weeds. With these assets, a little extra attention from foresters has a big impact. The key is to find a way to give that extra attention to invasive weed problems in your area. (This author found a way—see Clatsop Knotweed Campaign sidebar.)

A major asset that foresters bring to the campaign against weeds is their capability for large-scale vegetation management to produce dominant native vegetation across large acreages. Many invasive weed species do poorly under native forest cover. Where closed-canopy forests will grow, dense western conifers can provide some of the deepest shade in the world. Also, field foresters cover their ground regularly; they can easily acquire the search image for new weed species and effectively survey roadsides and management units for presence and location of invasive weeds. Effective treatment of invasive weeds can often be incorporated in the ongoing program of forest roadside maintenance.

Mutual benefits for the environment and the forestry community emerge from the cooperative effort needed to address invasive weeds. There is the environmental benefit of more weeds controlled across property lines, type-changes or land-use boundaries. People across the lines of social diversity may gain a new appreciation for foresters and their capabilities for vegetation management. While sharing the common ground to fight invasive weeds, people learn about what foresters do to provide all the benefits derived from forests.

There is increasing effort to address invasive plants at many levels in the forestry community and related agencies. Over the last 10 years, support from various national, state and local sources has stimulated formation of many cooperative groups. Cooperative Weed Management Areas (CWMAs) are now in place covering most western forests. In addition to Noxious Weed Boards, most states now have Invasive

Invasive Weed Connections

To get involved, contact your local Cooperative Weed Management Area, Soil and Water Conservation District or Cooperative Extension Service.

Other Invasive Weed Reference Sites:

Oregon Department of Agriculture, Plant Division, Noxious weeds
http://oregon.gov/ODA/PLANT/WEEDS/

Washington State Noxious Weed Board
www.nwcb.wa.gov/

Idaho State Department of Agriculture Noxious Weeds
www.idahoag.us/Categories/Plants-Insects/ NoxiousWeeds/indexnox-weedmain.php

Alaska Committee for Noxious and Invasive Plant Management
www.uaf.edu/ces/cnipm/index.html

USDA Forest Service Region 6 Invasive Plants
www.fs.fed.us/r6/weeds/

USDI Bureau of Land Management Weeds
www.blm.gov/weeds/

USDA Animal and Plant Health Inspection Service (APHIS)
www.aphis.usda.gov/plant_health/plant_pest_info/weeds/index.shtml

Center for Invasive Plant Management
www.weedcenter.org/index.html

Species Councils that engage leaders from diverse public and private entities. The U.S. Forest Service instituted a National Invasive Plant Control Strategy in 2004. State forestry agencies have increased their attention to invasive plants and formed groups or committees to plan and implement weed treatments on state lands. Foresters can build on this momentum and continue the effort needed for success in the long term, as highlighted below.

Increased effort on prevention is still needed as the first line of defense. Maintain the education campaign; periodically update field staff on invasive weed species, early detection and prevention practices.

Implement vehicle washing protocols! The down side of extensive forest roads and equipment capability is all those vehicles providing potential vectors for dispersal of invasive plant propagules. Vehicle washing is high on the to-do list, but implementation seems to be lagging behind.

Increase integrated research and adaptive management to develop the strategies needed for the long term. The survey and treatment stages are relatively easy to implement, as demonstrated by CWMAs taking action across the region. The challenge is to develop and implement strategies for long-term restoration. Relatively little funding and effort has been directed toward monitoring, integrated research and adaptive management to develop the strategies needed for the long term—which is essentially back to step 1—prevention of invasion or re-invasion. Foresters are in a good position to help, but more funding and support is needed.

A major topic for research/adaptive management is to identify desirable vegetation types that are resilient to invasion and develop management systems to maintain them—site specifically. What are stable, resilient low-growing herb or shrub communities for roadsides and rights-of-way through the forest? What are the most effective intervention strategies for wildlands or reserve lands where minimal management and natural ecological processes are desired? These and many other questions are being tackled in local areas with little funding or formal research support.

The most difficult weed problems are in open forests or at the edges of the forest, the interface with other land types and uses where growing dominant closed-canopy forest is not an option. In moist forest regions, foresters have to come out of the deep woods to work with neighbors and non-forest collaborators at the edges or the interfaces. In drier regions of open forests, meadows and rangelands, foresters must collaborate with rangeland managers and seek additional support to deal with invasive weeds in the wide-open spaces between trees.

Foresters—with their capability to develop and maintain dominant native trees and shrubs across large areas—are very welcome collaborators in cooperative weed management. Look for opportunities to join the effort and promote further attention to invasive weeds, both up and down the chain of command in your neck of the woods. ◆

Glenn Ahrens is an Extension forester for Clatsop and Tillamook counties, based in Astoria, Ore. He can be reached at 503-325-8573 or glenn.ahrens@oregonstate.edu.

Clatsop Knotweed Campaign

A little help from foresters can make a big difference in cooperative efforts to control invasive weeds. This was brought home to me in my recent experience as OSU Extension forester on the north coast of Oregon.

I worked with the Clatsop Soil and Water Conservation District to organize our local cooperative weed control group beginning in 2002. It started as a county weed board and merged into a North Coast Cooperative Weed Management Area. We studied our local invasive species situation and prioritized knotweeds (Japanese *Polygonum cuspidatum*, Giant *Polygonum sachalinense* and Himalayan *Polygonum polystachyum*) as target species in our local program. Forest landowners control 90 percent of the land base and foresters covering most of the county became cooperators early on.

Much of the knotweed infestation originated from old logging camps and homesteads in the early 1900s. These spread into riparian areas and then downstream, particularly during major flood events in the 1990s. Initial surveys identified extensive knotweed infestation in riparian areas and along forest roads and road waste areas. At first, most foresters were unfamiliar with knotweed as an invasive problem. Once informed, they rapidly incorporated knotweeds into their knowledge base and became effective cooperators. Foresters now report new locations of knotweed (and other target weeds). In addition to grant-funded treatments by the SWCD weed technician, cooperators strategically treat knotweed in their own vegetation management activities.

Within four years we progressed from little or no recognition of the knotweed problem to a comprehensive control program. The results include a complete survey of weed occurrence and treatment across hundreds of different locations involving approximately 100 different landowners, totaling about 120 acres of knotweed treated.

This was done with about $100,000 of grant funding plus in-kind effort. Monitoring indicates greater than 95 percent reduction in above-ground occurrence of knotweeds in targeted areas. Foresters and forest owners were almost universally cooperative and engaged with the effort. Since they are attentive land managers, continuing vigilance is expected. Our major task now is implementing longer-term restoration strategies to replace knotweed with trees or other desirable vegetation.

Sudden Oak Death Causes Oak Mortality

BY ELLEN M. GOHEEN

Not since white pine blister rust was introduced accidentally nearly 100 years ago has a forest tree disease gained such notoriety in the western forestry community as sudden oak death. What caught peoples' attention about the new disease was the unprecedented amount of mortality of tanoak and coast live oak it caused. Tree mortality, first noted in Marin County, Calif., in the early 1990s, quickly became widespread throughout the central coastal California region. The cause was unknown until 2000 when *Phytophthora ramorum* was isolated from cankers (localized areas of dead cambium) on dying trees and identified as the causal agent.

New to science, *P. ramorum* was soon recognized as the same pathogen causing leaf blight, stem cankers and tip dieback on nursery-grown rhododendrons and viburnums in Europe. Representatives from state and federal agencies, universities, non-governmental organizations and other interested publics quickly formed the California Oak Mortality Task Force and began working cooperatively on issues related to sudden oak death.

Meanwhile, alerted to the situation in California, forest pathologists began searching for *P. ramorum* in coastal southwest Oregon tanoak forests. In July 2001, nine patches of infected tanoaks totaling 40 acres were identified on mixed private industrial, private non-industrial and federal forestlands northeast of Brookings in Curry County. A nine-square-mile-state-mandated quarantine zone was immediately established to reduce the risk of human-assisted movement of diseased plant material, and a cooperative effort by the Oregon Department of Agriculture, Oregon Department of Forestry, Oregon State University, USDI Bureau of Land Management and U.S. Forest Service was begun to eradicate the pathogen.

In early 2002, federal quarantine regulations were established for all affected portions of California and Oregon restricting movement of some host materials and requiring mitigation or inspection for others. Confirmation of the pathogen in nursery stock from several large West Coast nurseries in spring 2004 resulted in establishment of national protocols for nursery surveys, monitoring, diagnostics and treatment. Today, *P. ramorum* detections in nursery stock still occur, but are declining while impacts in oak and tanoak forests are increasing, but remain restricted to coastal California and the southern-most portion of coastal Oregon.

The Pathogen and its Hosts

Phytophthora ramorum, whose origin is unknown, is an oomycete, or "water mold." Previously classified in the fungi, these organisms are more closely related to brown algae. Many *Phytophthora* species are root pathogens; however, *P. ramorum* is not—it affects aboveground plant parts including leaves, shoots, twigs, branches and stems.

Phytophthora ramorum is well adapted to the mild, wet conditions of the Pacific Coast. The pathogen produces small sacs (sporangia) of swimming spores (zoospores) that readily break off and can be spread in rain splash and wind. Multiple generations of spores may be produced during wet weather periods. It also makes thick-walled resting spores (chlamydospores) in infected plant parts that allow it to survive heat and drought and persist for months in soil and plant debris. Using a variety of baiting techniques, *P. ramorum* has been detected throughout the year.

Phytophthora ramorum spreads via zoospores or sporangia in water by rain splash, drip and stem flow. New growth is most susceptible. Zoospores swim through water films on the surface of leaves or stems until they settle, germinate and penetrate. New sporangia are formed on infected leaves and twigs and may wash or splash down stems. Trunk cankers that kill trees apparently originate from spores washed from above.

Over 100 plant species are known hosts, including native species such as Douglas-fir, coast redwood, Pacific rhododendron, evergreen huckleberry and Pacific madrone, and important commercial nursery species such as rhododendron, camellia, Pieris and laurel. Spore production varies by host and host parts. Wood and bark of oaks are believed to produce few *P. ramorum* spores, while leaf surfaces, particularly leaves of tanoak, Oregon myrtlewood and rhododendrons, are excellent spore producers. Conifer hosts appear to be unimportant in spore production or dispersal.

In California forests, inoculum levels tend to be high. Infected understory hosts such as California bay laurel (aka Oregon myrtlewood) facilitate the epidemic by producing large numbers of spores that then infect nearby oaks and tanoaks. In affected Oregon tanoak forests where inoculum levels seem to be much lower, the role of understory hosts in disease spread and intensification appears much less important and observations suggest that spores produced on overstory-infected tanoak leaves, petioles and twigs drive the epidemic.

Infected leaves drop to the ground, and resting spores survive in soil. Natural root infection has not been observed in the forest, but spores can be splashed back up onto low-hanging foliage and initiate new infections. Infested soil and leaves can be picked up and transported on boots, vehicles and animals, especially in wet weather. *Phytophthora ramorum* is also found in streams draining infested areas, although no new forest infections have been traced to streams.

Longer distance spread is believed to be facilitated by turbulent transfer of sporangia dislodged from upper crown infections in clouds and wind-driven rain.

Diseases caused by *Phytophthora ramorum*

Phytophthora ramorum affects different plant species in different ways. Not all affected species are killed; some suffer tip and shoot dieback

PHOTO COURTESY OF E. HANSEN, OREGON STATE UNIVERSITY

A Pacific rhododendron suffers tip die-back from sudden oak death.

while others experience relatively harmless leaf spotting. Sudden oak death on tanoaks and oaks in the red oak group is characterized by "bleeding" cankers that girdle the trunks. On ericaceous hosts such as rhododendron, evergreen huckleberry, Pacific madrone or conifers such as Douglas-fir, the disease caused by *P. ramorum* is characterized by leaf blights and shoot diebacks and is more appropriately called *Phytophthora ramorum* shoot blight. Leaf petioles and midribs may be discolored, or leaf tips or entire leaf blades may be necrotic. Leaf spots develop where water accumulates on leaf margins. Shoots die back when the disease is severe. On conifers, small twigs and new shoots are affected; succulent stems droop or become crooked, similar to symptoms caused by frost damage. Other hosts such as Oregon myrtlewood or cascara may be infected, but show only subtle symptoms, such as small leaf lesions or water-soaked areas. In general, symptoms caused by *P. ramorum* are similar to symptoms caused by other agents, especially other *Phytophthora* species. Diagnostic techniques such as culturing or DNA analysis are critical for identifying this pathogen.

Management

In those parts of California where *P. ramorum* is well established, eradication is not feasible. Land managers and homeowners are working to remove hazardous trees, reduce fuel loads and chemically protect remaining high-value trees using registered protectant fungicides. The search is underway for naturally occurring resistant coast live oaks and tanoaks. "Slow the spread" strategies where understory hosts are removed around oaks trees are being used in some areas. Efforts are underway at the extreme boundaries of the infestation to reduce the potential for spread into uninfested areas by creating "no-host zones." Extensive training for arborists, nursery managers, utility companies and homeowners is given at regular intervals.

In Oregon, eradication of the pathogen is the objective of treatments. Infected tanoaks and tanoaks within a buffer zone are treated with herbicides where possible to prevent sprouting and are cut and burned along with other host plants. Sites are intensively monitored. Some treated areas are now considered disease-free, while on others the pathogen can be recovered from soil in the vicinity of previously-infected trees. New infections have occurred since 2001 and the disease has spread. However, impacts in Oregon are greatly reduced relative to affected sites in northern California.

Impacts

The effort put toward understanding *P. ramorum* and the knowledge gained in such a short time frame is unprecedented in forest pathology history, yet the disease rages on. To date, millions of oaks and tanoaks in California have been killed. The disease has spread both north and south and now can be found from Monterey to Humboldt counties. Some California watersheds have lost over 90 percent of their tanoak components. Thousands of hazardous dead trees have been removed from campgrounds, private property and along roadsides. High-value trees have died in parks and backyards, changing aesthetics and reducing property values. Extensive areas of mortality have led to concerns about increased fire hazard, particularly in the wildland-urban interface and in municipal watersheds.

In Oregon, hundreds of tanoaks have died. Approximately 180 acres of diseased trees have been identified and over 1,000 acres have been treated. Infected nursery stock has been shipped across North America and throughout Europe; millions of plants have been destroyed as a result.

Fourteen coastal California counties and a portion of southern Curry County in Oregon are under quarantine; movement of some hosts is restricted and mitigation such as debarking or hot water dip treatments is required before moving others. West Coast nurseries must undergo rigorous inspections to ship host plants, and infected plant material must be destroyed when found. Surveys for *P. ramorum* are underway in forests and nurseries in other parts of North America as well as throughout Europe. Potential impacts of this pathogen to ecosystem health and function and economics and trade go well beyond the oak and tanoak forests of the Pacific Coast.

Several websites are maintained that provide up-to-date information on *Phytophthora ramorum* and sudden oak death. For overview information, disease chronology, photos and a variety of helpful links, visit the California Oak Mortality Task Force website at http://nature.berkeley.edu/comtf/.

For current host lists and regulations, visit the USDA Agricultural and Plant Health Inspection Service (APHIS) website at www.aphis.usda.gov/plant_health/plant_pest_info/pram/index.shtml. ◆

Ellen Michaels Goheen is a plant pathologist, USDA Forest Service, Forest Health Protection, in Central Point, OR. She can be reached at 541-858-6126 or egoheen@fs.fed.us.

Gypsy Moth Battle Goes Spatial

GIS and GPS Accelerate Washington State's Eradication Process

BY MATTHEW DeMERITT

An eerie noise is emanating from trees in the northeastern United States and certain parts of the Northwest: it is the sound of millions of gypsy moth larvae eating their dinner. And the collective noise of these foliage-hungry caterpillars has some residents of these areas at their wits' end. More than just a civic annoyance, the gypsy moth is a serious agricultural threat that has destroyed millions of acres of prime timberland in several northeastern states such as Vermont, Maryland and Massachusetts since it was first imported to the United States from Europe more than a century ago (part of French scientist Etienne Leopold Trouvelot's attempt to launch the American silkworm industry). Because of this threat, gypsy moth control has become one of the top priorities of agriculturists in the Pacific Northwest where the moth has not yet gained a foothold.

If the gypsy moth were to become established in Washington state—home to some of the richest timberland in the North America—the impact would be catastrophic. To prevent this, the Washington State Department of Agriculture (WSDA), the lead state agency in the gypsy moth fight, spends approximately $1 million each year on gypsy moth control. To improve the efficiency of gypsy moth management, WSDA implemented a pilot program in 2005 to streamline the eradication process—a key component of which was the use of geographic information system (GIS) and GPS technologies.

PHOTO COURTESY OF BILL McNEE

Gypsy moth larvae chews small holes in leaves.

Unlike eastern states that can only suppress already established gypsy moth populations, Washington's goal is eradication. WSDA uses pheromone traps that disrupt the female moth's reproductive cycle by attracting and trapping the male adult moth before mating can occur (the female gypsy moth cannot fly because of the sheer weight of her brood, which typically consists of 500 to 1,000 eggs). By doubling the density of trap placement in an area where a gypsy moth has been found, a process referred to as "delimiting," WSDA is able to eliminate whole populations of the species. "When we detect a moth, we often increase trap density around that location to pinpoint exactly where the infestation is," says John Townsend, coordinator of the WSDA gypsy moth program. "Once we treat an infested area, we need two years of negative prep data to declare eradication."

Thanks to GIS, WSDA reported more moth catches in 2006. Combined with the accuracy of GPS, delimiting has contributed greatly to WSDA's ability to keep gypsy moth populations under control.

Townsend collaborated with GIS specialist Devon Reid to configure WSDA's GIS. Having years of experience in spatial technology under his belt, Reid was quick to begin developing mobile GIS applications that simplified field staff workflow. Reid explains, "I wrote an application for detection surveys that displays a drop-down list for recording time and date, number of moths caught, live or dead catch, and trapper data including who collected that data. It also includes

coordinates." Using GPS combined with the mapmaking ability of GIS software has proved vital in enabling the workers to access and disseminate information quickly and easily. "We're able to get all the downloaded data from the GPS and generate maps that show the positive and negative traps, the distances between them, and all the data we need to do a better job delimiting and finding out where the exact location of the infestation is," Reid adds.

One of the main goals of WSDA's pilot program was to reduce the use of paper in the data collection process. To achieve this end, field workers were equipped with Garmin PDAs and Trimble handheld GPS units loaded with ArcPad to collect their data. "Before the pilot program, trappers had to conduct WSDA's surveys using pencils and data sheets," explains Townsend. "That's an awful lot of handwriting. The average trapper had to manually prepare 800 data sheets in triplicate—that's 2,400 sheets of paper. Now it's simply a matter of pushing a button and entering trap numbers." Since trappers began using PDAs for field data collection, the agency has reduced paperwork in the field by more than 90 percent. The time saved has also enabled WSDA to increase the number of traps placed in the field by 10 percent in 2006 compared to 2005.

The use of aerial photos and maps, or orthoimagery, has proved crucial in WSDA's gypsy moth fight. Orthophoto imagery illustrates tree location and areas of potential gypsy moth introduction. To obtain this information, Reid and Townsend accessed maps and imagery from the Natural Agricultural Imagery Program (NAIP) and local governments. Reid explains, "Because gypsy moths often stow away on ships, we heavily trap ports and waterways. The orthographic imagery also helps us identify areas of heavy foliage. We use this information to send crews out to set traps and conduct surveys." Reid adds that gypsy moths not only lay their egg cases on trees and shrubs, but also on trailers and recreational travel vehicles, making many travelers from the East unwitting importers of the menace into the West.

The increased moth reporting in 2006 compared to 2005 is largely due to WSDA's more comprehensive spatial data management system. To build on this success, Reid plans to focus more on metadata management in the future. "In starting a project like this, I would suggest to future users to begin by developing their own metadata standards and matching that with what is needed to satisfy state and federal standards," he explains. "Don't dismiss metadata as an afterthought just because it is not critical to the functions of the main data—use guidelines and forms to help plan your project and manage the information you collect." WSDA uses the Federal Geographic Data Committee style sheet fields in ArcGIS Desktop to manage metadata and meet federal standards.

By integrating spatial technology into the gypsy moth fight, WSDA has experienced improved workflow, better moth reportage and increased efficiency. It plans to expand the use of GIS in the future, particularly in the areas of predictive modeling (i.e., creating scenarios to best predict the probability of an outcome) and perhaps web-based GIS, where location data can be entered from anywhere and reports of sightings can be made online by concerned citizens. Says Reid, "Managing spatial data in a GIS gives us the ability to leverage limited resources in controlling this destructive pest." ◆

Matthew DeMeritt is a writer for ESRI in Redlands, California. He can be reached at 909-793-2853 x2930 or mdemeritt@esri.com.

Alaska Biological Control Program Directed at Amber-Marked Birch Leaf Miner

BY J.E. LUNDQUIST, K.P. ZOGAS, C.L. SNYDER AND B.K. SCHULZ

Non-native invasive insects are having major impacts on the economics and ecology of forests nationwide. Until recently, Alaska was fortunately mostly free of these pests. Due to the remoteness of much of Alaska's native forests, an invasive pest infestation would be extremely difficult to control. Global markets, global climate change, and the ever increasing mobility of people, goods and services are working in concert to increase the risk of invasion by exotic organisms to Alaska forests to unprecedented levels.

The amber-marked birch leaf miner (AMBLM) was introduced to northeastern U.S. from Europe in the early 1900s. Since then, it has spread across Canada and the northern United States. It was first found in Anchorage in 1997, although there is evidence that it may have been present as far back as 1982 near Haines. Subsequently, this infestation has grown to nearly 200,000 acres, including the entire Matanuska-Susitna Valley, Fairbanks, Skagway and a large part of the Kenai Peninsula.

Damage by this leaf-mining sawfly is caused by the larvae, which "mine" or eat the inside of a leaf during summer months, causing leaves to die and entire urban landscapes to turn brown. Impacts to trees have thus far been limited to decreased aesthetic values with foliage prematurely turning brown in the middle of the summer. Consequently, the use of pesticides to control the leaf miner in urban areas has increased dramatically. Although long-term impacts to individual trees have yet to be determined, in comparable infestations of both native and exotic defoliators and leaf miners, long-term effects of repeated defoliation have been found to reduce tree growth, reduce vigor, cause branch die-back, top-kill, and in some cases, outright tree mortality.

The pattern of adult dispersal suggests that this pest "hitchhikes" on vehicles as they travel from infested areas. The USDA Forest Service, Forest Health Protection unit in Anchorage is currently monitoring the spread of this insect, its impacts on the native forests, and the processes involved with this type of invasion.

Canadians had a similar problem with this leaf miner in the 1970-1980s in Edmonton, Alberta. The Municipality of Edmonton attempted to control this pest with a widespread and longstanding insecticide program. Eventually, this program became contentious, with many citizens sensitive and/or adverse to pesticide use. This nearly 20-year infestation ended with the appearance of a native parasitoid, *Lathrolestes luteolator*, which switched hosts, becoming parasitic on the amber-marked birch leaf miner. Within a year, this wasp had a significant impact on this infestation, and is credited with the collapse of the amber-marked birch leaf miner population to endemic levels in Edmonton and eliminating the need for further chemical control.

Since its introduction to Alaska, amber-marked birch leaf miner populations have steadily increased in and around Anchorage and have expanded to birch forests along the road corridors stretching from the Kenai Peninsula to Fairbanks. In the absence of an efficient biological control agent, the birch leaf miner populations are likely to continue to spread unchecked throughout Alaska's southcentral and interior birch forests.

Current technology to manage or control AMBLM relies on the use of chemical insecticides that are either injected into or sprayed onto the soil. However, several non-chemical control methods are being tested in Alaska. In cooperation with various partners, USDA Forest Service, Forest Health Protection is currently exploring the use of insect parasitoids, fungal pathogens and beneficial nematodes.

In 2003, a cooperative biological control program aimed at this pest began in Anchorage. Since that time, approximately 2,700 adult *L. luteolator* adults, imported from Canada, have been released in the Anchorage area. Thus far, two female parasitoids have been recovered, indicating the possibility that they may yet become established. There is also some indication of parasitism by native parasitoids as happened in Edmonton with *L. luteolator*. The possible impact of native parasitoids is being explored by Forest Health Protection personnel. Participating agencies include: USDA Forest Service, Canadian Forestry Service, USDA APHIS, State of Alaska Division of Forestry, University of Massachusetts

and the Municipality of Anchorage.

In 2007, a cooperative biological management study was initiated with the Pacific Northwest Research Station. The short-term objective of this project is to determine the efficacy of the entomopathogenic fungi, *Beauveria bassiana* and *Metarhizium anisophliae*, and the nematode *Steinernema carpocapsae* as biological control agents in Alaska. The use of alternative biological control methods, such as entomopathogenic fungi and nematodes, has previously not been explored. If these methods are effective, a dramatic reduction of the use of chemical insecticides may be achieved by providing additional elements of an integrated pest management program.

A parallel study, in cooperation with Colorado State University, on the spatial distribution of adults and the damage they cause showed that the leaf miner populations varied tremendously across Anchorage. This study is aimed at developing a tool for determining where and when different control and management methods should be applied. Spatial management is becoming more widely appreciated and more accessible as georeferencing tools like GIS and spatial modeling capabilities increase.

The availability of alternative tools for the control of AMBLM would provide landowners with several options to form an integrated pest management program. These tools are being developed using strategic planning processes involving the USDA Forest Service Forest Health Protection and its various partners, including: Cooperative Extension Service of the University of Alaska, State of Alaska Division of Forestry, Municipality of Anchorage, Alaska Botanical Garden, USDA APHIS, Kenai Borough, University of Massachusetts, University of Alberta, Canadian Forest Service and others.

The recent introduction of the amber-marked birch leaf miner demonstrates the increasing threat to Alaska's forest ecosystems posed by invasive insects. The Alaska Region has an excellent opportunity to work cooperatively to successfully control the birch leaf miner using pest-specific biological control agents, reducing damage to acceptable levels in Alaska's urban and native birch forests. ◆

J.E. Lundquist is with the USDA Forest Service, Region 10 Forest Health Protection and Pacific Northwest Research Station. He can be reached at jlundquist@fs.fed.us. K.P. Zogas and C.L. Snyder are with Region 10 Forest Health Protection. B.K. Schulz is with the Pacific Northwest Research Station. All are located in Anchorage, Alaska.

SAF 2007 Convention: What a Time Learning and Having Fun Together

BY DARREL KENOPS

During the week of October 23-27 with a theme of "SAF—Sustaining America's Forests," a near record of 2,184 SAF 2007 National Convention participants enjoyed a diverse offering of educational and entertaining activities at the Oregon Convention Center in Portland.

The weather cooperated for the 14 field trips and leisure tours, alumni socials and our evening World Forestry Center Gala, attended by 665 folks, which had plenty of food, drink and music! In fact, plenty of coffee and refreshments at session break times assured an excellent convention exhibit hall including 159 posters for the poster sessions and a full and successful job fair (see sidebar). A hearty "Thank You!" goes to the 37 convention sponsors whose generous financial and in-kind contributions made the 2007 convention one to remember.

The convention opened with a fun and heartfelt video welcome from U.S. Congressmen Bruce Baird (D-WA) and Greg Walden (R-OR). They appreciate SAF's leadership in forest policy and called on us to stay engaged with them and "The Hill" as our expertise and experience is needed and makes a significant difference.

Keynote speaker Richard Louv's message of getting kids outside and playing in nature resonated, especially for 103 area teachers who later had the opportunity to dialogue with Richard in a packed workshop. He received a very warm welcome and his book sold out quickly. His message to help design a society of hope and innovation for our children and grandchildren resounded with all participants.

PHOTO COURTESY OF JANA GREER

SAF National Convention organizers and speakers welcome participants to the Gala event at the World Forestry Center. Shown from left to right: Gary Hartshorn, president, World Forestry Center; Mike Ash, retired Region 6 deputy regional forester; Elaine Brong, Gala event coordinator and retired BLM Oregon/Washington state director; Bob Alverts, Publicity and Marketing co-chair; Linda Goodman, National Convention General co-chair and U.S. Forest Service regional forester; Clark Seely, National Convention General co-chair and Oregon Department of Forestry assistant state forester; Vicki Christiansen, Arrangements Committee co-chair and Washington State Department of Natural Resources state forester; and Doug Sutherland, DNR Lands commissioner.

In Forest Service Chief Gail Kimbell's message, she outlined her initiatives of climate change, More Kids in the Woods, and water—major 21st Century demands that can be addressed through hard work and cooperation within and outside the forestry sector, while also continuing work on the threats to the National Forests and Grasslands initiative started under now-retired Forest Service Chief Dale Bosworth.

What a pleasure to learn anew from Hamish Kimmins, professor of Forest Ecology, University of British Columbia, on the need for improved metrics and protocols to better define sustainability conditions and progress in reaching this important goal in the world's forests.

Chad Oliver, Pinchot professor of Forestry and Environmental Studies, director of the

Global Institute of Sustainable Forestry, School of Forestry and Environmental Studies, Yale University, as well as all of our general session and technical session speakers, shared ideas, suggestions and case studies we can take home and apply.

The National Association of State Foresters and SAF team is developing a "Sustainable Forests Management Act for the United States" and encouraged us to join in their efforts, which will result in a legislative proposal to Congress in August 2008.

It was heartening to hear from Nature Conservancy leader Russ Hoeflich on the need for intelligent, cooperative active forest management so forests are resilient and continue to provide the ecosystem services we depend upon. Pacific Forest Trust colleagues underscored the importance of ecosystem services and shared their California initiative experiences.

From important announcements on national strategies and cooperative efforts on biomass energy and

PHOTO COURTESY OF JOE SMITH

National Convention Program co-chair Mike Cloughesy moderates a general session panel during the national convention.

PHOTO COURTESY OF BOB ALVERTS

Marketing and Publicity co-chair Darrel Kenops enjoys convention activities with, left to right, wife Lynn, World Forest Institute Director Sara Wu; and Angie DiSalvo, OSAF Foresters' Fund coordinator and World Forest Institute program director.

Federal Agencies Hire Student Job Seekers

PHOTO COURTESY OF JOE SMITH

BLM Acting Deputy State Director Mike Haske (left) and Forest Service Associate Chief Sally Collins (right) welcome new employees (left to right, center) James Donahey, Adam Bianchi, Jeff Halbrook and Zach Peterson at the 2007 SAF Convention National Student Assembly.

BY DARCI BIRMINGHAM

The U.S. Forest Service and BLM collaborated to bring on-the-spot hiring to the 2007 SAF national convention, leading to the hiring of 13 new federal employees—three by BLM and 10 by the U.S. Forest Service.

The USFS and BLM outreached with the Career Intern and Student Career Experience Program jobs prior to the convention through the SAF convention website, internal and external agency websites, SAF student chapters, forestry schools affiliated with the National Association of University Forest Resource Programs, and the SAF Diversity Committee. SAF also sent job information to all participants registered for the convention. Both agencies accepted applications prior to and during the convention.

The agencies met with students interested in agency jobs after their orientation and reception on October 23 and at the job fair on October 25. Interviews with students were conducted on October 25 and tentative job offers were made on October 26. On the evening of October 26, Sally Collins, associate chief for the Forest Service, and Mike Haske, acting deputy state director for the BLM, introduced the students who accepted job offers at the National Student Assembly.

Local students who accepted tentative job offers were Kurt Steele, Oregon State University (OSU), with the Willamette National Forest; Zach Peterson, OSU, with BLM Ely Field Office; Stephanie Larew, OSU, with the BLM Salem District; Jeff Halbrook, University of Idaho, with the Klamath National Forest; and Jeff Lau, University of Idaho, with BLM Coos Bay District.

In its third year, this on-the-spot hiring process will also be featured at SAF 2008. Positive feedback from the students and managers involved provide a strong signal to continue these effective hiring efforts.

Darci Birmingham is a forester, U.S. Forest Service Chief's Office, Washington, D.C. She can be reached at 202-205-1759 or dbirmingham@fs.fed.us.

utilization, as well as the U.S. Forest Service release of its biomass strategy and their publication "National Forests on the Edge," being good neighbors and cooperators is essential to moving forward.

SAF President John McMahon and CEO Michael Goergen outlined the State of SAF, which needs everyone's support and understanding to continue to improve. Check out the SAF Annual Report on our webpage at www.safnet.org/who/SAFar.pdf. It is packed with facts, results and accomplishments.

If student member participation is a measure of the state of SAF, the National Convention was heartening for all of us. An all-time record of 566 students from 55 colleges and universities, representing 33 states and two Canadian provinces joined in a variety of professional, social and informational events including student orientation and reception, and National Student Assembly (where the 11 student district representatives, known as the Student Executive Committee, were introduced and provided direction). At the Student Quiz Bowl it was standing-room only for spectators and fierce competition for the 27 teams. Penn State ultimately proved victorious, with Wisconsin-Stevens Point #2 and Humboldt State #3. The local host schools in Oregon and Washington helped set up the Quiz Bowl, and according to the rules, are not able to participate.

The week's student-centered activities came to a close with the social event "Stump Town Stomp" scavenger hunt through downtown Portland. Among the highlights were the specially-made pine tree-shaped donuts from Voodoo Donuts (a scavenger hunt stop) and a special prize for the winning team—Colorado State

PHOTO COURTESY OF BRAD HUMMEL

Penn State University team members celebrate their Quiz Bowl victory. On the far right is OSU Student Chapter advisor David Zahler.

PHOTO COURTESY OF JOE SMITH

Keynoter Richard Louv and forestry education experts addressed over 100 teachers and others during a science and technical session on place-based education.

PHOTO COURTESY OF HANK KIPP

Convention attendees enjoy the exhibit area.

University won the honors.

Oregon State University and Green River Community College were the official host chapters for the student activities, but students and faculty from Mount Hood Community College, Central Oregon Community College, and University of Washington offered invaluable support in the effort. And very appropriately, the Green River Community College Student Chapter was presented with the national Student Chapter of the Year award and the Washington State SAF Chapter of the Year award during the convention.

Thanks to everyone who donated to the Foresters' Fund via providing items, buying raffle tickets and bidding on silent auction items. We raised $16,279, which will help us follow through on getting people and kids in the woods as well as support other important state society and chapter level projects.

Several of our Pacific Northwest colleagues were recognized with national awards. Rick Fletcher won the Technology Transfer award, John Sandor received the Gifford Pinchot Medal, and Phil Anderson and Tom Ortman won SAF Presidential Field Forester Awards for District 1 and 2, respectively. On a local level, Gretchen Nicholas received the Washington State SAF Forester of the Year award during their annual meeting, which was held during the convention.

General Convention Local Executive Team Co-Chairs Clark Seely and Linda Goodman praised the over 200 local SAF volunteers from Oregon and Washington State who once again did an outstanding job and helped produce an outstanding SAF National Convention.

Make sure your calendar includes SAF 2008 National Convention to be held in Reno, Nevada, on November 4-8. It's another opportunity to learn and have some fun. ◆

PHOTO COURTESY OF JOE SMITH

Alaska SAFer and Fellow John Sandor received the Gifford Pinchot Medal for outstanding contributions in the administration, practice and professional development of North American forestry. His grandsons were with him when he accepted the award.

Darrel Kenops was co-chair of the Marketing and Publicity Committee, SAF National Convention. He can be reached at DKenops@msn.com.

Convention Pre-tour a Hit

PHOTO COURTESY OF RICK ZENN

SAF national pre-convention group on the rim of Crater Lake National Park.

Dick Powell of Starker Forests and Rick Zenn of the World Forestry Center led the pre-national convention tour of Oregon forests for 26 SAF members including folks from Australia, Finland, Idaho, Pennsylvania, Maine, California, Mississippi, Wisconsin, Arkansas, Alabama and Connecticut.

The group traveled in outstanding weather over 500 miles in three days including overnights in Corvallis and Bend, with visits to Oregon Department of Forestry Tillamook Forest Center, Bureau of Land Management Yaquina Head Outstanding Natural Area and Yaquina Head Lighthouse, Willamette National Forest Salt Creek Falls, Crater Lake National Park, Oregon High Desert Museum and Mt. Hood National Forest Timberline Lodge.

Help Build the Future at 2008 OSAF Annual Meeting

BY SUE BOWERS

Plans are well underway for the 2008 OSAF Annual Meeting to be held May 7-9 in Eugene. The theme of the meeting is "Building the Future with Oregon's Forests: Policies and Tools for Emerging Issues."

The first day will focus on land management issues, with speakers addressing a variety of topics including changing ownerships, salmon recovery, and state and federal land use policies. The second day will highlight the tools in use by forest professionals. Presentations will cover fuels management, bioenergy projects, use of LiDAR, genetics, and an update on the research underway on long-term productivity and in the watershed at Hinkle Creek. The third and final day will feature a choice of field tours relevant to the earlier programs.

We have a great line-up of confirmed speakers as well as time for networking and greeting friends. Alumni breakfasts will be held on Thursday, special activities for spouses/companions are scheduled and the annual awards banquet is slated for Thursday evening.

In addition to marking your calendar now for this special event, there are several other things you can do to help us prepare for the meeting. Consider nominating a colleague for one of the OSAF awards. If you would like to donate items for the Foresters' Fund, contact Ted Reiss (treiss@senecasawmill.com). Contact Sue Woodall (sue.woodall2@weyerhaeuser.com) if you know of prospective exhibitors. Be ready for a call from Mike McDowell (mike.mcdowell@weyerhaeuser.com), who is the fundraising chair. Contact Ron Heninger (ron.heninger@weyerhaeuser.com) if you are interested in displaying a poster.

The 2008 meeting will be held at Eugene's beautiful Valley River Inn, which is located on the Willamette River. There are biking and jogging trails starting at the hotel, great restaurants nearby and shopping right next door at the Valley River Mall.

Watch for more details about the program and registration information soon. See you in May! ◆

Sue Bowers is a member of the Emerald Chapter and the 2008 annual meeting committee. She can be reached at sbowers@centurytel.net.

The Farthest North Forest Sports Festival = Bragging Rights!

BY JOHN D. FOX, JR.

Students and community members wolfed down hot chili and reindeer brats at the 10th annual Farthest North Forest Sports Festival sponsored by the University of Alaska Fairbanks (UAF) Department of Forest Sciences. The temperatures ranged from 23°F for the morning events (axe throwing, pulp toss, log rolling, double-buck sawing and bow sawing) to a high of 26°F for the afternoon fire building and log birling contests. A thin skin of ice on Ballaine Lake guaranteed all brave participants in the log birling would earn their "bragging rights!"

The Festival started in 1998 by faculty and students from UAF's Department of Forest Sciences. The objective is to provide a venue for informal interaction among students, faculty and staff across the university, as well as with members of the greater Fairbanks community. Several student and local Yukon River Chapter SAF members help in the planning, setup and judging of events.

While today's professional foresters use a range of high-tech tools and employ a host of indoor and outdoor skills, the Forest Sports Festival pays tribute to a simpler time when traditional woodsmen and woodswomen activities were the basis for both work and play—survival and revival!

The spirit of this high-latitude event is simply to "give it a try" and have fun. Of course, healthy competition and team challenges are encouraged. The 70 participants and additional onlookers of all ages really did seem to enjoy themselves and left the field and lake with a truly unique experience and probably a few new friends.

The overall male winner or "Bull of the Woods" was Andy Hess from Glennallen, Alaska. Andy is the father of UAF forestry student Larsen Hess. The "Belle of the Woods" was claimed by Lesa Hollen, a UAF graduate student in neuroscience. ◆

PHOTO COURTESY OF TODD PARIS

A matter of balance: Women's birling champ Lesa Hollen.

John D. Fox, Jr. is a Yukon River Chapter member and is with the Department of Forest Sciences at the University of Alaska Fairbanks in Alaska. He can be reached at ffjdf@uaf.edu.

Calendar of Events

Oregon Logging Conference, Feb. 20-23, Eugene, OR. Contact: Rikki Wellman, oregonlogging1@aol.com.

Forest Products Management Development, Feb. 24-27, Corvallis, OR. Contact: OSU Conference Services, 541-737-6439.

Unit Planning and Layout, Feb. 25-28, Corvallis, OR. Contact: Forest Engineering Inc.

Road Builders' Clinic, March 4-6, Coeur D'Alene, ID. Contact: Washington State University, wsuconf@wsu.edu.

Uneven-aged Management, March 13, Vancouver, WA. Contact: WFCA.

7th Biennial Conference on University Education in Natural Resources, March 13-15, Corvallis, OR. Contact: http://uenr.forestry.oregonstate.edu/.

Logger PC V4, March 19-20, Corvallis, OR. Contact: Forest Engineering Inc.

Inland Empire SAF annual meeting, March 20-22, Moscow, ID. Contact: Mark Kimsey, 208-885-7520, mkimsey@uidaho.edu, www.iesaf.org.

Alaska Annual meeting, March 26-29, Juneau. Contact: Wayne Nicolls, 907-780-6318, nicolls3@gci.net.

Tree School, March 29, Clackamas Community College, Oregon City, OR. Contact: Merrily Enquist, merrily.enquist@oregonstate.edu.

Brazil Forestry Study Tour, March 30-April 6 and April 6-13, Curitiba, Brazil. Contact: Mark Willhite, www.worldforestinvestment.com.

Professional Timber Cruising Seminar, April 16-17, Beaverton, OR. Contact: Jon Aschenbach, Atterbury Consultants, 503-646-5393, jaschenbach@atterbury.com.

Oregon SAF Annual Meeting, May 7-9, Eugene, OR. Contact: Stephen Cafferata, cafferat@msn.com.

Forestry and Leadership Youth Summer Camp, June 22-28, Wilsonville, OR. Contact: Rick Zenn, 503-488-2103; rzenn@worldforestry.org.

Contact Information

Forest Engineering Inc.: 620 SW 4th Street, Corvallis, OR 97333, 541-754-7558; office@forestengineer.com; www.forestengineer.com.

WFCA: Western Forestry and Conservation Association, 4033 SW Canyon Rd., Portland, OR 97221, 503-226-4562; richard@westernforestry.org; www.westernforestry.org.

Send calendar items to the editor, *Western Forester*, 4033 SW Canyon Rd., Portland, OR 97221; fax 503-226-2515; rasor@safnwo.org. The deadline for the March/April 2008 issue is February 11.

SAF Council Reports

October Council Meeting

BY RICK BARNES

OCTOBER 23, 2007—The 2007 Convention in Portland was a huge success. The Oregon and Washington Societies did a great job of hosting this wonderful event. We all owe the volunteers a huge thank you for all your tremendous work. The turnout from forestry students from across the country was outstanding with 566 students attending. Another highlight was the number of teachers attending the opening ceremony to hear Richard Louv speak. He delivered a powerful message about the importance of frequently getting our children outdoors to experience nature first hand. See the convention wrap up article elsewhere in this publication for more convention highlights.

Liability insurance is an issue Council is taking a serious look at. Allen Haney of JZA Insurance attended the House of Society Delegates (HSD) meeting and distributed a survey to our HSD delegates to better determine our insurance needs.

The Council meeting at the convention was condensed due to all of the other activities. There were a number of issues discussed that will be followed up at the December Council meeting. Refer to Kirk David's Council report for details of the December Council meeting.

This is my last year as District 2's Council representative. Thank you for the opportunity to be involved with SAF at this level. It has been a tremendous honor to serve all of you these last three years. ◆

At the time of this writing, Rick Barnes was District 2 Council representative. He can be reached at 541-673-1208 or rbarnes@barnesinc.com.

December Council Meeting

BY G. KIRK DAVID

DECEMBER 1-2, 2007—The December Council meeting is always a busy one, with many tasks to cover. Due to Lyle Laverty's appointment to Assistant Secretary of the Interior, there will be five new voting members on Council for 2008. They are: Clark Seely succeeding Rick Barnes in District 2 in Oregon; Rod Brevig finishing Lyle's term in District 4; Gregory R. Russell taking over in District 5; Joanne Meyer Cox taking her position for District 8; and Jan K. Davis for District 11. The new (non-voting) student representative to Council member is Stephen Purvis from District 10.

Council ratified President John McMahon's letter commenting on the proposed Forest Service National Forest System Land Management Planning rule changes, and his letter to Congressman Sali (R-ID) in support of the concepts for amendments to the Healthy Forests Restoration Act.

Executive Vice President (EVP) Michael Goergen gave a positive report on staff and personnel, results of the Portland Convention, RNRF and the electronic election process.

Development and Sound Stewardship of SAF's Resources

Council Representative Barnes presented the Finance and Investment Committee report, and Council approved revised investment guidelines. SAF CFO Larry Burner presented a financial status update and Council approved the SAF 2008 budget.

HSD Chair Craig Vollmer reported on the results from the 2007 meeting, and Council moved to consider HSD recommendations that the national staff provide state societies with: 1) a paper vs. electronic voting history; and 2) clarification on adequate, but affordable SAF liability insurance coverage. Both of these items are currently in progress. Council also commended HSD for their deliberations on the Society's name and on an HSD recognition award for exemplary local unit accomplishments.

Forest Science and Technology Board Chair Bill Rockwell reported on 28 current activities and issues of the Board, including: 1) the creation of two new Working Groups: (a) Bioenergy, Climate Change and Carbon and (b) Human Dimensions; 2) criteria for probation and abolishment of inactive working groups (WGs); 3) improvements to WG officers and business meetings at Convention; and 4) the relationship of WGs to Convention Breakfast Roundtables and the new Online Professional Resource Groups.

SAF Science and Education Associate Director Terry Clark presented and Council approved changes to the Committee on National Convention Programs charter, allowing more effective transition of committee work for each convention.

EVP Goergen assured Council that the preparatory work on the proposed amendments to the SAF Constitution regarding membership categories will be completed in 2008.

Council Representative Roberson presented recommendations from the Student Executive Committee and Council approved the Student Executive Committee charter.

Committee on Forest Policy (CFP) Chair Bob Malmsheimer requested and Council approved a one-year extension of the Climate Change Task Force and a Forest Tree Biotechnology

Position Statement. Past President Marvin Brown provided an update on the SAF/NASF Sustainable Forest Policy Task Force.

Be the Leading Professional Forestry Organization in the World

Council heard District reports on division, state and chapter activities and accomplishments in 2007.

Council Representative Cubbage reviewed and Council approved the 2008-2012 SAF Strategic Plan and Suggested Actions.

Council Representative Daniels submitted and Council discussed the report on Financial Strategy.

EVP Goergen outlined one response to the membership survey. As a pilot project, SAF will pursue partnerships with four state forestry associations in the form of shared products and services along with support and incentives, to enable and motivate state forestry associations and SAF members at the local level to work together to generate more members for SAF and more valued partner associations.

With input from each district, Vice President Tom Thompson and Council Representative Coulombe led a discussion on Council special focus for 2008, critiquing what we should do less of, more of, keep up with and do better. Suggestions fell into 15 different categories. As 2008 president, Tom will refine these thoughts for Council deliberation and action.

EVP Goergen reported on progress of the Certification Task Force seeking to develop a group organization program accepted by the Forest Stewardship Council and the American Tree Farm System (and thus the Sustainable Forestry Initiative). The goal is to reduce the cost of certification (database, continuing education, auditing, marketing and customer outreach).

Enhanced and Professional Education, Performance and Leadership Capability

Council Representative David presented and Council approved the new Leadership Development Committee charter. This re-formed committee replaces the previous Leadership Academy Steering Committee and broadens its objectives to assist with training for existing and potential leaders of SAF and the broad field of forestry. EVP Goergen reported that staff has not yet secured a date or venue for the 2008 Leadership Academy, but the intent is to conduct it in the spring.

Council reviewed the finalized Fellow nominations and elected the 2007 slate of SAF Fellows.

Council Representative Coulombe submitted and Council approved changes to the Fellow nomination process timeline. In order that Fellows elected in each year will have the opportunity to be recognized at National Convention each current year, the 2008 deadline for nominations to be received, examined, completed, approved and forwarded from the District Fellows Committee (DFC) to the Council Representative will be March 31. This means applications will need to be in the hands of the DFC by February 15.

SAF Director of Field Services Louise Murgia submitted a request from the Committee on Professional Recognition to change the charter. Council approved the Committee to solicit (in addition to receive and review) nominations for SAF awards. Louise also submitted the Certification Review Board draft process for the Continuing Forest Education system. The CRB anticipates communicating with providers, CFs and CFE coordinators during 2008 and implementing the changes in 2009.

Associate Director Terry Clark submitted and Council approved a request from the Educational Policy Review Committee to proceed with their recommendations for conducting 2008 reviews with the addition of four temporary members. He also submitted and Council approved a request from the Committee on Forest Technology School Recognition to amend the SAF Standards and Procedures for Recognizing Educational Programs in Forest Technology.

I would personally like to thank Rick Barnes for his extensive professional contributions as Council Representative to his district and to SAF nationally, and to welcome Clark Seely, another proven expert and tireless workhorse for SAF, to his term on Council.

This report can only highlight the many issues discussed and actions taken by Council. For a more in-depth explanation of any of these subjects, feel free to contact your Council Representative. We are always glad to clarify topics and to receive commentary from SAF members. ◆

G. Kirk David is District 1 Council Representative. He can be reached at 208-683-3168 or kirkdavid@earthlink.net. District 2 Council Representative Clark Seely can be reached at 503-945-7203 or cseely@odf.state.or.us.

Selkirk Chapter Honors 548 Years of Membership

BY RALPH CORNWALL

The Selkirk Chapter of the Inland Empire Society celebrated the September start of the 2007-08 year by honoring its members with 50 or more years of membership. Seven of the 10 chapter members in this category attended the meeting.

A younger member of the chapter, who then presented a summary of their SAF and career accomplishments, introduced each of these seven honorees. Four served in World War II; John Bushfield received a Purple Heart while with the 10th Mountain Division in Italy. Six graduated from western universities and one from the Midwest, with the early 1950s represented as the most common date of graduation. Arthur Noskowiak graduated from Cal Berkley in 1942 and joined SAF in 1944 while a soldier in Europe.

All worked for the USFS or BLM at some point in their career. Bob Damon, Les Yates, John Bushfield and Gus Vitolins retired as federal employees. Art Noskowiak retired as an associate professor from Washington State University, Dewey Almas retired from the Idaho Department of Lands, and Jim Caddis has semi-retired from his own company that appraises forested lands.

Over the years, these men, five who are SAF Fellows, have served in almost every SAF state society activity. Most are past chapter chairs or officers and have served on some committee up to and including national meetings. All of these members have remained active after retirement with continued forest management related work and involvement with SAF activities that include serving on committees to serving as chapter officers. As current Selkirk Chapter Chair Dennis Parent said, "There are no dropouts in this group, they have all remained active in life and the SAF and we thank them for their contributions." ◆

PHOTO COURTESY OF RALPH CORNWALL

Selkirk Chapter Golden Members, front left to right: Dewey Almas, Leslie Yates and James Caddis; standing left to right: Arthur Noskowiak, August Vitolins, John Bushfield and Robert Damon.

Ralph Cornwall is a Selkirk Chapter member. He can be reached at ralphc@gocougs.wsu.edu.

Golden Members Recognized

BY DOUG RUSHTON

Washington State SAF would like to thank and recognize our newest Golden members. They are: Arnie Arneson; Gero Mitschelen; John Standerwick; Raymond Weinmann; Bill Balka; Alan Randall; Wesley Rickard; Roy Friis; Guy Lusignan; and David Bowden.

We truly value these members who have reached the status of Golden member. Golden members contribute so much to the diversity and culture of SAF—wisdom from years of experience, insights based on having done it before and practical applications from other parts of the country—among other things. Thank you to these new Golden Members for their many years and we look forward to your continued active participation in SAF! ◆

PHOTO COURTESY OF RALPH CORNWALL

Doug Rushton (right) congratulates Guy Lusignan, one of WSSAF's Golden Member Class of 2007.

Doug Rushton was chair of the WSSAF in 2007. He can be reached at dlrushton@hotmail.com.

Phillips Receives 50-year Award

Coos Chapter member Jerry Phillips was honored at the chapter's February meeting for 50 years of SAF membership. ◆

PHOTO COURTESY OF DARREN MAHR

S. Puget Sound Members Honored

Three South Puget Sound Chapter members received 50-year Golden Member awards at the Golden Member luncheon held in August at the Poodle Dog. Pictured left to right are Wes Rickard, Alan Randall and Bill Balka. ◆

PHOTO COURTESY OF SCOTT SWANSON

Policy Scoreboard

Editor's Note: To keep SAF members informed of state society policy activities, Policy Scoreboard is a regular feature in the Western Forester. *The intent is to provide a brief explanation of the policy activity—you are encouraged to follow up with the listed contact person for detailed information.*

OSAF Comments on BLM Western Oregon Plan Revision DEIS. The OSAF Policy and Legislation Committee recently reviewed the BLM Western Oregon Plan Revision (WOPR) Draft Environmental Impact Statement (DEIS) and developed comments for submission to the BLM on behalf of the OSAF Executive Committee. The WOPR covers about 2.6 million acres of BLM land, most of which has a management mandate under the O&C Act of 1937. Because the O&C Act requires a primary focus on economic benefits to local communities, the BLM's preferred alternative (No. 2) in the WOPR DEIS would substantially increase timber harvest levels over those since the 1990s when the federal Northwest Forest Plan (NWFP) was adopted. Driven largely by fish and wildlife habitat concerns, the NWFP was developed with a relatively risk-adverse approach to timber harvest activities, and this approach was further expanded in the actual implementation of the NWFP. Thus, the BLM WOPR proposal attempts to provide a greater balance between the economic mandates of the O&C Act and environmental concerns.

In developing its comments on the WOPR DEIS, the Policy Committee drew from concepts and language found in several relevant OSAF position statements, including those on "Commercial Timber Harvest on Public Lands" and on "Active Management to Achieve and Maintain Healthy Forests." Contact: Paul Adams, OSAF Policy chair, 541-737-2946; paul.adams@oregonstate.edu.

OSAF Timber Harvest Position Endorsed, Others Now Under Review. In February 2007, the OSAF Executive Committee approved an updated position statement on "Commercial Timber Harvest on Public Lands in Oregon." In late 2007, OSAF members voted to support this position by a 98 percent approval rate (33 percent response of 945 eligible voters). Although member votes are not required under SAF policy guidelines, OSAF now takes this step with most of its statewide positions to strengthen member awareness and support. This updated position has been particularly timely given such important issues as the BLM WOPR DEIS and the serious need for fuels and forest health treatments on many federal lands.

Several OSAF position statements will expire in 2008, and the OSAF Policy Committee currently is considering some revisions and updates. Those scheduled to expire this year include "Salvage Harvesting," "Clearcutting," "Using Pesticides on Forest Lands," and "Active Management to Achieve and Maintain Healthy Forests." The position on "Landslides on Forest Lands" expired on December 6, 2007, and the Policy Committee recommended that it not be renewed due to its relatively narrow focus. Later in 2008 the committee will consider a new position statement on forest management on steep lands or in the wildland-urban interface. All OSAF members are encouraged to take a fresh look at the expiring statements and pass along any comments to your local chapter officers or the Policy Committee. All OSAF position statements are online and a useful two-page handout with the individual core positions is available at www.forestry.org/pdf/core_position07.pdf (members only section). Contact: Paul Adams, OSAF Policy Chair, 541-737-2946; paul.adams@oregonstate.edu.

SALI PLAN A. Read no further if you dislike acronyms. Saving American Lives and Investing in Protecting Land and Nature Act is an amendment to HFRA written by first-term Congressman Bill Sali (R-ID) and introduced in mid-November, along with a letter of support from SAF President John McMahon. Rep. Sali wants to help rural communities and the federal government build "fireproof buffer zones" (as he reportedly said) around communities and private property adjacent to federal land.

In 2007, wildfires burned nearly two million acres in Idaho, more than any other state. Rep. Sali's amendment would exempt a new category of fuel reduction projects from lengthy environmental reviews so long as they occur no more than one and a half miles from non-federal land. The Ninth Circuit Court of Appeals decision in early December upholding the plaintiff's challenge to the HFI's NEPA categorical exclusions for small fuel treatment projects makes me wonder what plan B might be. Recommended reading: Judge Kleinfeld's two-paragraph concurring opinion in Sierra Club v. Bosworth, Dec. 5, 2007 at www.ninthcircuitopinions.com. Contact: Jay O'Laughlin, IESAF policy chair, 208-885-5776; jayo@uidaho.edu. ◆

SOCIETY OF AMERICAN FORESTERS
Western Forester
4033 S.W. Canyon Road
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