

## STAFF REPORT

Agenda Item No.:	8
Work Plan:	Private Forests
Topic:	Board Updates
Presentation Title:	2016 Forest Health Report
Date of Presentation:	November 1, 2017
Contact Information:	Sarah Navarro, Forest Pathologist (503) 945-7394; <a href="mailto:Sarah.Navarro@Oregon.gov">Sarah.Navarro@Oregon.gov</a> Wyatt Williams, Invasive Species Specialist (503) 945-7472; <a href="mailto:Wyatt.Williams@Oregon.gov">Wyatt.Williams@Oregon.gov</a> Terry Frueh, Forest Health and Monitoring Interim Manager (503) 945-7392; <a href="mailto:Terry.Frueh@Oregon.gov">Terry.Frueh@Oregon.gov</a>

### SUMMARY

This agenda item provides an overview of the Forest Health Unit's work on major insect, disease, and other damaging agents affecting Oregon forests in 2016, as required by Oregon Revised Statute (ORS) 527.335.

### CONTEXT

The Board's 2011 Forestry Program for Oregon defines a healthy, vital forest landscape as one that maintains its functions, diversity, and resiliency within the context of natural and human disturbances and is capable of providing people with the array of values, uses, and products desired now and in the future. The Board supports protecting and improving the health and resiliency of Oregon's dynamic forest ecosystems, watersheds, and airsheds (Goal F). The Board's objectives for Goal F include promoting resilient forest landscape conditions and management practices that will lead to reductions in the adverse impacts from forest insects and diseases (Objective F.7). The Board's guiding principles and philosophies includes a commitment to continuous learning, evaluating and appropriately adjusting forest management policies and programs based upon ongoing monitoring, assessment, and research (Value Statement 11).

### BACKGROUND

Forest Health staff provide specialized expertise to ODF District Offices, the ODF State Forests Division, and other state agencies. Forest Health staff also provide training and subject matter expertise to Stewardship Foresters and OSU forestry extension agents and work closely with our partners to provide technical assistance, information and training to forest landowners and forest managers. Forest Health Section staff also work toward the advancement of forest health related science.

The annual aerial survey of Oregon forestlands for insect and disease damage began in 1947. The 2016 statewide cooperative aerial survey was the 70th year of collecting these data. Oregon's survey covers over 35 million acres across all ownership categories, and is one of the best long-term data sets on forest health conditions. The Oregon Department of Forestry (ODF) is also recognized nationally for developing and testing digital sketch mapping and aircraft

technologies that improve information delivery and the safety of aviation personnel. Annual aerial surveys are accomplished through collaboration with the U.S. Department of Agriculture (USDA) Forest Service Pacific Northwest Region, with additional funding and support provided by the U.S. Department of the Interior (USDI) Bureau of Land Management (BLM), private industrial forest landowners, and cooperatives such as the Oregon State University (OSU) Swiss Needle Cast Cooperative.

A Cooperative Agreement signed in 1965 between the State Forester, the Board of Forestry, and the USDA Forest Service formalized the collaborative relationship by instructing personnel to carry out systematic surveillance and reporting of insect and disease conditions on forestlands. In addition, Oregon's Forest Integrated Pest Management Laws (ORS 527.310 to 527.370) requires that the State Forester conduct surveys to determine the presence, extent, trend, and impact of native and invasive pests, as well as overall forest health.

While aerial surveys anchor Oregon Department of Forestry efforts to collect information on forest health conditions in Oregon's forests, they are not able to detect the occurrence of many agents including most root diseases and dwarf mistletoes, which can significantly and adversely affect forest health. These agents are assessed by ground surveys, which are completed annually in priority areas, or as part of special ground survey projects.

In 2001, Oregon's aerial survey program detected sudden oak death (SOD) in Curry County. SOD is lethal to tanoak, and poses a tremendous threat to tanoak ecosystems in Oregon. The disease also threatens commerce in the nursery and forest industries. A multi-agency group (ODF, the Oregon Department of Agriculture (ODA), USDA Forest Service, BLM, and OSU) is slowing the spread of the disease through ODA quarantine regulations and a program of early detection and eradication treatments.

Annual aerial and ground surveys fulfill ORS 527.335 and support the following:

- Oregon Department of Forestry Key Performance Measures (KPM) #629-13: Damage To Oregon Forests From Insects, Diseases, And Other Agents;
- Private landowner reporting requirements for forest certification systems;
- Distribution of annual forest damage maps and data summaries to ODF Districts and other cooperators (public agencies, private forest landowners, the general public);
- Synthesis into the annual publication "Forest Health Highlights in Oregon" produced for professional foresters, other natural resource specialists, land managers, field technicians, educators and the general public (Attachment 1); and
- Incorporation into the USDA Forest Service National Insect & Disease Risk Map (NIDRM) project and forest health conditions report to the U.S. Congress.

## **ANALYSIS**

The statewide aerial survey detected over 700,000 acres of tree mortality and other damage, which is below the 10-year average of approximately 825,000 acres. The majority of tree mortality detected during aerial surveys over the last decade has been due to insect outbreaks,

namely bark beetles. In 2016, over 600,000 acres of mortality was attributed to insect damage (Attachment 1).

2016 insect damage totals (approximate acres):

**Bark beetles:** 543,000

**Wood borers:** 45,000

**Defoliators:** 3,000

**Sap-sucking insects:** 56,000

Many forest insects are secondary pests, attracted to already stressed trees, which are in turn less resilient to withstand attack. In recent years, drought has been the primary contributor to tree stress, leading to subsequent insect attack and tree mortality. Other primary stressors include various foliar, stem and root diseases and abiotic factors. For a summary, see *Forest Health Highlights in Oregon –2016* (Attachment 1).

Pine-infesting bark beetle species such as Ips beetles (pine engraver, California 5-spined), and mountain and western pine beetles caused the vast majority of tree mortality, although fir engravers also caused substantial mortality in true fir. Mortality from flatheaded fir borer (a wood borer) more than doubled in lower elevation Douglas-fir suffering from drought, poor site conditions, fire damage, etc. Mortality from this pest increased from 8,000 acres in 2015 to 45,000 acres in 2016. Much of this mortality is a result of drought-stressed Douglas-fir growing on harsh sites more suited to pine and white oak. Despite higher levels of precipitation in 2016 in some areas of Oregon, we can expect continuing impacts of prolonged drought stress on host trees. Thinning and slash management are the primary management guidelines to help mitigate drought and beetle stress.

Swiss needle cast (SNC), a native foliage disease, continued to damage Douglas-fir on the western slopes of the Coast Range. The 2016 SNC aerial survey (supported by the OSU Swiss Needle Cast Cooperative) covered 4.2 million acres and detected approximately 550,000 acres impacted by Swiss needle cast, an increase to an all-time high. Growth loss due to SNC in Oregon is estimated at more than 190 million board feet per year. In addition to growth impacts, SNC alters wood properties and affects stand development.

#### Sudden Oak Death

Sudden oak death (*Phytophthora ramorum*) continued to intensify and spread in Curry County during 2016. Forty three new infestations, all on non-federal lands, were found outside of the Generally Infested Area (GIA). The GIA is an area within the sudden oak death quarantine where eradication treatments of infested sites are no longer required under ODA rules. In 2015, the sudden oak death quarantine was expanded to 515 square miles. The number of outlying sites in 2016 exceeded the program's capacity to treat all sites with large buffers, and thus the program prioritized 7 important sites for full buffers (300 feet), with 4 sites receiving at least minimal treatments and 32 sites remain untreated.

In early 2015, another clonal lineage of *P. ramorum* (EU1) was detected on a single tanoak tree near the Pistol River. This is the first report of the EU1 lineage in US forests. Genetic analysis suggests a nearby private nursery (now closed) as the probable source. This finding is of

particular concern because in Europe, the EU1 lineage kills or damages several conifer tree species and is considered more aggressive than the North American lineage (NA1). Furthermore, establishment of the EU1 lineage would create the potential for sexual reproduction and increased variability in the North American *P. ramorum* population. The EU1 infestation was treated (13 acres). In 2016, the EU1 lineage was detected for a second time, ½ mile south of the single EU1-infested tanoak found in 2015. Of the 25 positive trees identified, two grand fir seedlings and 23 tanoaks are confirmed positive for EU1, while the lineage result for one tanoak could not be determined using current laboratory methods. The 2016 EU1 infestation is the top treatment priority and will include a 300-600 ft treatment buffer, resulting in a 54 acre treatment.

Without the ongoing sudden oak death (SOD) slow the spread program, currently funded by the USDA Forest Service's Forest Health Protection program, BLM, and State of Oregon, disease spread would have been greater. However, this program faces a shortage of funds for eradication treatments on new infested sites that fall outside of the GIA. To alleviate this shortage, the Department received an additional \$450,000 in the 2017-2019 biennial budget for eradication treatments with EU1 as priority. The SOD Task Force (convened by U.S. Senator Jeff Merkley and State Representative David Brock Smith) brought together a diverse alliance of stakeholders to develop a collaboration-based action plan, including the pursuit of adequate resources, to contain the NA1 pathogen and eradicate the EU1 pathogen of sudden oak death. The task force was organized into six subcommittees to address issues ranging from scientific research, to mitigating wildfire risk. Department staff participated on each subcommittee as well as the full task force.

#### Emerald ash borer

Emerald ash borer (EAB), *Agrilus planipennis*, is an exotic woodborer was first detected in Michigan in 2001. The insect has killed hundreds of millions of North American ash trees (*Fraxinus* spp.). ODF conducted official statewide surveys for the insect, 2013-2015. ODF and Oregon State University Extension co-created the *Oregon Forest Pest Detector* program (funding provided by USDA-U.S. Forest Service). This program trains foresters, arborists, park workers and other tree professionals on the signs and symptoms of EAB. Although EAB has yet to be found in Oregon, it continues to spread throughout the country and is now found in 30 states. EAB is the nation's costliest invasive forest pest with over \$3.5 billion in damage. ODF and the Oregon Department of Agriculture (ODA) are currently leading an effort to develop a Readiness and Response plan for the state of Oregon prior to the arrival of EAB. Steering group members include ODF, ODA, U.S. Forest Service, USDA-Animal and Plant Health Inspection Service, City of Portland, City of Corvallis, and others. The EAB plan will serve as a template for Oregon's communities and the public. The plan is scheduled to be completed by March, 2018, with several opportunities for comment by an Advisory group and other entities.

## Staffing

The Forest Health Section of the Private Forests Division in 2016 consisted of:

<b>Title</b>	<b>Classification*<sup>1</sup></b>	<b>Name</b>
Forest Pathologist	NRS 4	Alan Kanaskie (retired) and Sarah Navarro
Forest Entomologist	NRS 4	Christine Buhl
Invasive Species Specialist	NRS 4	Wyatt Williams
Forest Health Survey and Monitoring Specialist	NRS 3	Danny Norlander
Forest Health Technician	FMT	Vacant
Student/Professional Forester Worker	FMT	Vacant

The vacant Forest Health technicians and student worker positions are federally funded and used to fulfill key work needs when such funds are available.

The Section is supported by ODF's field office in Brookings (Led by Randy Wiese). Currently there is a vacant NRS 1 position in the Brookings Office, which supports the SOD program.

## **RECOMMENDATIONS**

This report is provided to the Board for informational purposes.

## **ATTACHMENTS**

- (1) Forest Health Highlights in Oregon – 2016

---

<sup>1</sup> \*NRS = Natural Resource Specialist; FMT = Forest Management Technician