

Oregon Department of Agriculture
**Plant Protection &
Conservation Programs**



ANNUAL REPORT 2020

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Plant Protection & Conservation Programs



**OREGON
DEPARTMENT OF
AGRICULTURE**

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Administration

DIRECTOR'S VIEW

The year 2020 was, by all means, unprecedented in so many ways. So, where to start with this year's summary? The Asian "murder" hornet, the Coronavirus, the financial crisis due to the COVID-19 pandemic, the unsolicited seed shipments from China, the racial injustice movement, unprecedented forest fires, the 2020 presidential election? Definitely a year to remember. What started out as a minor news story in far-away China at the end of 2019 quickly turned into a pandemic not seen in 100 years. Celebrating the new 2020 year with my family at the traditional Hoodoo ski area fireworks, in torrential rain, it may have been an omen for what to come for the rest of the year 2020. However, despite all the challenges and catastrophes, there was also good news in 2020.



Asian Giant Hornet (image courtesy of WSDA)

In December of 2019, British Columbia and Washington reported for the first time in North

America the Asian Giant Hornet, which was quickly renamed by the media as the "Murder" hornet. A nest was quickly located and subsequently destroyed on



Protective AGH gear (image courtesy of WSDA)

Victoria Island, BC, in December of 2019 and then in late 2020, another nest, the first in the US, was detected and removed in Washington State. In preparation of a potentially quick spread to Oregon, our IPPM Program

prepared for the arrival of the Asian Giant hornet by purchasing the space-suit like protective gear.

The coronavirus was the next big topic of the year 2020. At the end of January, I traveled to Chicago to participate in the Annual National CAPS Committee (NCC) meeting. As part of the NCC meeting, we observed the work of the Custom Border Protection (CBP) dog team at the O'Hare International Airport.

Most passengers on the arriving international flight wore face masks. We backed up even further after we found out that the plane had arrived from Shanghai, China, the apparent origin of this new coronavirus. That morning, January 30, I remember reading in our Hotel provided newspapers the first articles of the coronavirus situation. "Is the US ready for the coronavirus?" read the headlines in USA Today and the Wallstreet Journal.



USA Today newspaper headline from January 30, 2020.

On February 10, I had to fly to San Francisco for personal reasons. On the flight, I wore a face mask. I wasn't the only one, but still, not many people had on a protective face mask. Although the coronavirus had been confirmed in the US at that time, life pretty much continued to be as normal as ever. We still had in-person Directors' meetings, IPPM even held a woodborer taxonomy workshop in early March with 25 participants from across the country. Then I received the first cancellations for our 101st Western Plant Board meeting, which was to be held at the Pronghorn Resort in Redmond, Central Oregon, in April. At that time, our federal colleagues had been placed under a travel ban and could no longer participate due to COVID-19. We quickly decided to cancel our WPB meeting as did my fellow counterparts in all the other Plant Board regions.

Then it got personal. My son had symptoms that could not be ruled out to be COVID-19. Testing for the coronavirus was not available, so my entire family had to go into quarantine. This was on March 12. For the records, we never found out if my son actually had COVID-19.

On March 25, the Governor closed all state offices to the public. We started working remotely. In early April, the economic fall-out from the lockdown became more evident and we had to adjust our programs' spending. Our Noxious Weed Program was cut by 80% in lottery funding because restaurants and bars were closed and little to no lottery revenues were coming in. Basically, all of our weed folks had to work in our Hemp Program that still had sufficient fee-based funds.



IPPM staff handing out traps at the Hawthorne building.

Our IPPM Program, also heavily dependent on state funding, had to significantly reduce its budget. To save precious lottery funds needed for the important and ongoing Japanese beetle eradication in NW Portland, IPPM was told not to hire seasonal survey technicians for the 2020 season. All survey traps had to be set by permanent employees, volunteers, and partners from our stakeholders. You can imagine the logistical nightmare for IPPM to cope with the challenges of organizing invasive insect pest trap placement for over 20,000 traps across the state.

Any meetings had to be held virtually on GoTo Meeting or Zoom webinars. During the middle of April, it was clear that this coronavirus is not going away quickly. In fact, it caused a global epidemic that was officially declared a pandemic by the World Health Organization on March 11, 2020. The remainder of the year was



Director's meeting at the Oregon Department of Agriculture, March 2020.

dominated by COVID-19 and our response to the new normal: working from home and webinars. It was challenging at the beginning but we all had to and quickly did adapt to this new reality.

On May 25, Minneapolis police arrested George Floyd, a 46-year old black man. During the arrest, he was pinned to the ground by a police officer for almost 9

minutes. George Floyd died on the way to the hospital due to asphyxiation from sustained pressure to the neck. The encounter was captured on video and incited large protests against police brutality and systemic racism across the US and in many countries around the world in the weeks and months that followed. Daily protests took place also in Portland, Oregon. George Floyd's, Breonna Taylor's and several other black citizens' deaths resulted in a sea change in public attitudes regarding racial and social injustice, including here in Oregon, leading to new accountability policies and a renewed emphasis on diversity, equity and inclusion. ODA set up a new DEI (Diversity, equity and inclusion) working group to implement new statewide required DEI policies.



Unsolicited seed shipments.

At the end of July, we started to receive calls from Oregon residents who received unsolicited seed shipments, mostly from China. This story quickly developed into a national and international scam with tens of thousands of unsolicited seed shipments arriving in the US, Canada and several European countries. Federal law enforcement investigated the seed shipments and its origin in China. It seems like it was part of a large scale "brushing" scam, where vendors exploit customers' personal information to send unsolicited items to an unwitting receiver and then submitting positive reviews on the receiver's behalf to boost their product ratings. We asked residents to send us their seed shipments so we could submit them to our federal counterpart from APHIS for their analysis of the seeds for noxious weed, potential invasive pests, and illegal genetically modified seeds and subsequent destruction.

The summer was almost over, but the year still had surprises left for us. After the Memorial Holiday weekend, we woke up to the smell of fire and smoke barreling down from Santiam Canyon. Overnight, a rare weather event produced hurricane force winds from the east pushing some



The skies from wildfire near my farm.

minor forest fires in the western Cascades to explode into massive fires overnight down to the Salem and Portland areas. The very strong winds woke me up at 2 am on Tuesday morning, September 8, and when I went outside to check on things, I saw a red fireball east of our farm in the Silverton hills. By 6 o'clock, the sky was blood red and smoke was very thick. We checked with neighbors and my son and I decided to prepare to evacuate. Soon, the police came



My family evacuating from the wildfire.

by and advised us to leave. We scrambled to take care of our animals and packed up important documents and family valuables and left for an Airbnb in Portland. Slowly, messages came in that several other colleagues also had been forced to evacuate from the approaching fires and that several colleagues or family members lost homes. Luckily, they all escaped unharmed. However, the devastating fires sadly claimed multiple lives across Oregon. The thick smoke of the



The city of Detroit, Oregon after the fires.

fires hung around the Willamette Valley for almost 10 days, making the air quality hazardous and working outside impossible.

On November 3, the 2020 United States presidential election took place. A record of almost 160M Americans voted in the 2020 presidential election. Voter turnout in 2020 was the highest in 120 years when measured as a percentage of the voting-eligible population: 66.7 percent. You have to go back all the way to 1900 to find a higher percentage turnout (73.7 percent). The election of 1876 still holds the record for highest turnout: 82.6 percent. How do the US compare to other western countries in voter turnout? Here is

a list of voting participations in several countries in their latest main elections: Sweden (2018): 82.08%; Australia (2019): 80.79%; Belgium (2019): 77.94%; South Korea (2017): 77.92%; Israel (2020): 77.90%; Netherlands (2017): 77.31%; Denmark (2019): 76.38%; Hungary (2018): 71.65%; Norway (2017): 70.59%; Finland (2019): 69.43%; Germany (2017): 69.11%; France (2017): 67.93%; US (2020): 66.7%; Mexico (2018): 66.7%.

The COVID-19 pandemic and the devastating fires in Oregon certainly overshadowed the events in 2020, but there is also good news to report: first, it was amazing how well our colleagues responded to the COVID-19 challenges, quickly adapting to working in a totally new program field, such as our Noxious Weed staff had to do when switching from their noxious weed work to the Hemp Program. Secondly, communication between our Programs Area did not suffer from closed state offices or working from home. In fact, more coordination happened using the new 2020 communication tools, such as Goto Meeting, Zoom, Teams, Skype Meeting, etc. And thirdly, our staff mostly stayed healthy throughout this difficult time. Only a handful of positive cases were reported in our program staff, luckily everybody has recovered promptly and fully.

Good news also on our Japanese beetle eradication front: the eradication efforts from 2019 resulted in a significant reduction. Within the treatment block of NW Portland, our eradication efforts reduced the Japanese beetle population by 58%. Again, good news, but we are still a long way out to successfully end the largest Japanese beetle infestation west of the Rockies.

The year 2020 was also a year of several important retirements and promotions. Unfortunately, due to COVID-19, we could not adequately celebrate any of the retirements and other important events to pay the respect our colleagues deserve. We hope that we can pick up our celebrations again in 2021 and recognize our retirees for the great work they have done for our programs, the agency and Oregon.

RETIREMENTS:

Randy Black, who joined our Plant Programs Area when we took on the Hemp Program, retired after 36+ years with the department. Randy was responsible for many programs related to commodity inspection, such as the hops and hazelnut programs, prior to joining our Plant Programs Area. Randy



Randy Black



Jim LaBonte with counterparts from Mexico inspecting Christmas trees.

was our “Mr. Hemp,” taking the Hemp Program from its very beginning in 2015 to a multi-million dollar program when Randy decided to retire.

After 26+ years with the Department, Jim LaBonte, our state taxonomist, decided to retire in July, but graciously offered to continue as a temporary taxonomist for our IPPM Entomological Museum and Laboratory. Jim has been the scientific voice

for our IPPM Program for a couple of decades. The reputation of his experience and expertise in taxonomy quickly spread beyond Oregon’s border to national and even international level. I have always dreaded the day Jim would finally announce his retirement, losing both his thoughtful advice and witty comments. Nonetheless, Jim has been a great mentor to his replacement.

Pat Mitchell, our IPPM field coordinator for the Portland Field Office retired in April of 2020. Pat has worked for our IPPM Portland Field Office for 21 years, starting out as a seasonal survey technician. Pat became the Portland Field Office Coordinator in 2010 under difficult circumstances and successfully led the field office through several important milestones and big changes.

Susan Schouten, retired in October after 24 years with the department. Susan worked in several programs before she became a Nursery horticulturist for the important nursery industry territories of the Willamette Valley.



Pat Mitchell (left) inspecting imported steel for Asian Gypsy moth egg masses.



Gary McAninch send-off party at the Hawthorne location.

Gary McAninch officially retired in July after 21 years of leading the Nursery and Christmas Tree Program and, for the last two years of his tenure, also the Hemp Program. Gary came from the Department of Agriculture in Virginia, where he was responsible for the Gypsy moth suppression work. He joined ODA in 1999 as the Nursery and Christmas Tree Program Manager

successfully leading our program of a billion-dollar industry. In 2017, Gary took on the new Industrial Hemp Program, in addition to his other duties. His personal efforts and dedication to service were guarantee to make this new Ag-sector a big success.

Christina (Chris) Silvia Benemann became our new Nursery and Christmas Tree Program Manager. Chris was selected by a panel that included 3 industry representatives. Chris became our new lead horticulturist just last year, 2019. Chris has a strong academic background in plant pathology and was the lead of the Phytophthora ramorum program with our Plant Health Program prior to joining our Plant Area.

Chantal Pettit was selected as the new IPPM Portland Field Office Coordinator taking over for Pat Mitchell who retired earlier in the year. Chantal started her career with IPPM as a seasonal survey technician before she was permanently hired as the IPPM trap and supply technician.

I wanted to share my personal view about this last year that was dominated by the COVID-19 pandemic: the first and obvious observation is that the coronavirus is an invasive species, just like the Gypsy moth, the flowering rush or the *Phytophthora ramorum*, except primarily affecting humans. The way the coronavirus spread across the world in record time is very similar to the pathways the invasive pests we deal with make their way around the globe. The other parallel between the coronavirus and “our” invasive pests is the invasion curve comparison. The best approach is to keep any invasive out in the first place, which requires either vigorous testing as in the case of the coronavirus or setting sufficient traps for the Gypsy moth for early detection. Well, (and here begins my personal comment) that is what totally failed in the case of the coronavirus invasion in the US. Although testing had been available for some time, it was not widely available to most of the general population. The coronavirus spread as quickly and unobstructed as the brown marmorated stink bug, if we want to use an insect analogy, when it made its way to the US. In the case of the brown marmorated stink bug, we had to resort to various methods to manage the pest, including biological control. Of the recognized and approved prevention and management approaches for the coronavirus applied in most countries, physical distancing and mask wearing became the most popular. Unfortunately, rather than working together against this global threat, the coronavirus devolved into a political fight in this country. It was first decried as a liberal hoax, then the symptoms were belittled as “it is just the flu” and then the staggering numbers of sick and dead were openly questioned. At the very beginning of the pandemic, I challenged staff to think how this pandemic would influence our global and our own personal world for the time to come. Personally, I am very shocked, concerned, and frankly disappointed at how this pandemic shaped our society, both here in the US and abroad. Rather than standing together to fight a global threat to humanity, this virus brought out the division and pettiness we seem to have embedded amongst our communities. Politics quickly took over the discussion and prevented a unified response to the new invasive human pathogen. At the time of this report, more than 500,000 people have died just in the US with no end in sight. Vaccines have been developed in record time and are slowly getting deployed in many countries. How effective they will be in general and specifically against new variants of the virus, only time will tell. However, if this COVID-19 was a test for humanity, we failed miserably.



Doing what we love, hiking in Oregon’s beautiful Cascade Range, Mt Jefferson Park.

I want to end my 2020 recap with a reminder how fortunate I am to be working with and for such a great staff who help me balance all the responsibilities that come with my position and my additional assignments. For that reason, thank you to all for your hard work and service to Oregon and our department. I am truly honored to work with and for such fine experts. I am looking forward to a great first year of the new decade in 2021.

Dr. Helmuth Rogg, Director
Plant Protection and
Conservation Programs

PLANT PROTECTION AND CONSERVATION PROGRAMS STAFF

Plant Protection & Conservation Programs Director
Dr. Helmuth Rogg

Office Manager/Programs Support
Andrea (Annie) Blietz

Program Assistants/Administrative Specialists
James Chin, Nursery/Christmas Tree/Noxious Weed/Native Plant
Grace Jelks, Hemp
Josh Olson, Hemp
Luz Rameriz-Tarin, Hemp
Amanda Wright, IPPM/Noxious Weed/Native Plant

HEMP PROGRAM

Program Manager
Gary McAninch (retired, October 2020)
Tim Butler (took over for Gary)

Hemp Specialists
Randy Black (retired, July 2020)
Tristen Berg (policy)
Arden Guinn
Emily Roque (testing)

Hemp Inspectors
Beth Myers-Shenai (lead)
Carri Pirosko
Mark Porter
Patricia (Bonnie) Rasmussen

INSECT PEST PREVENTION AND MANAGEMENT PROGRAM

Program Manager
Jake Bodart

Entomologists
Todd Adams
Dr. Paul Blom
Dan Clark
Austin Johnson
Jim LaBonte (retired, July 2020, but continued in a temporary role)
Pat Mitchell (retired, April 2020)
Chantal Pettit (promoted February 2020 and took over for Pat Mitchell)
Dr. Max Ragozzino (hired March 2020)
Dr. Jessica Rendon
Kerri Schwarz
Ashley Toland
Josh Vlach (promoted and took over for Jim LaBonte, November 2020)
Dr. Holly Wantuch
Richard Worth

Imaging Specialist
Joshua Dunlap

PCR Specialist
Tom Valente

Volunteers
Rick Westcott, *retired taxonomist*

NATIVE PLANT CONSERVATION PROGRAM

Program Manager
Tim Butler

Field Botanist/Crew Leader
Jordan Brown

NOXIOUS WEED CONTROL PROGRAM

Program Manager
Tim Butler

Projects Coordinator
Tom Forney

Biological Control Entomologist
Joel Price

Grant Program & Special Project Coordinator
Tristen Berg

Integrated Weed Management Specialists
Mike Crumrine (left ODA in April 2020)
Glenn Miller
Carri Pirosko
Mark Porter
Patricia (Bonnie) Rasmussen

Integrated Weed Management Technician
Sarah (Beth) Myers-Shenai

NURSERY AND CHRISTMAS TREE PROGRAM

Program Manager
Gary McAninch (retired in October 2020)
Christina (Chris) Silvia Benemann (took over for Gary)

Lead Horticulturist
Chris Benemann (promoted to program manager)

Horticulturist Inspectors
Christy Brown
Annie Debauw
Dr. Sharon Ferrier
Sherree Lewis
Melissa Lujan
Amanda Ohrn
Lisa Rehms
Eric Reusche
Susan Schouten (retired in October 2020)
Erin Wickliffe

Nursery and Christmas Tree

NURSERY & CHRISTMAS TREE STAFF

ADMINISTRATION

- Chris Benemann, Program Manager
- Vacant, Lead Horticulturist
- James Chin, Administrative Specialist

HORTICULTURISTS

- Christy Brown, Clackamas County & Northeast Oregon
- Annie DeBauw, Yamhill/Tillamook counties
- Sharon Ferrier, Clackamas County
- Sherree Lewis, Marion County
- Melissa Lujan, Central Oregon & P. ramorum Program Field Coordinator
- Amanda Ohrn, Polk County
- Lisa Rehms, Washington County
- Eric Reusche, Southern Oregon
- Erin Wickliffe, Benton/Lane/Linn/Lincoln counties
- Vacant, Portland Metro Area-retail

WHAT DO WE DO?

A major objective of the Nursery and Christmas Tree Program is to prevent the introduction and spread of injurious plant pests, diseases, and noxious weeds within Oregon's nursery and Christmas tree industries. Thereby limiting the risk of introducing invasive species into the natural environment. In addition, the program strives to assist Oregon growers in producing high quality plant material that is competitive in domestic and international markets.

We accomplish this by:

- Inspecting incoming shipments of plant material for compliance with federal and state quarantines and regulations.
- Providing inspection and certification services for licensed nursery and Christmas Tree growers.
- Disseminating information on regulations and inspection requirements for shipping material domestically and abroad to licensed growers and the general public.
- Collecting and sharing current pest and disease management information through frequent

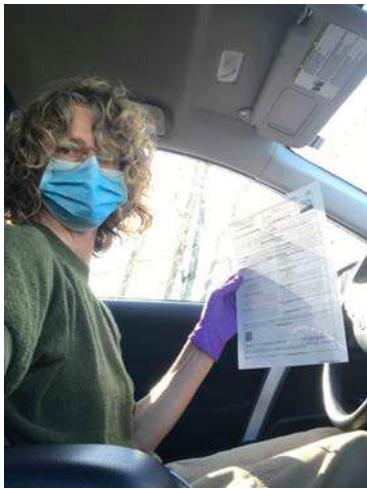


Christmas tree inspection.

communication with entomologists, plant diagnostic labs, other state and federal agencies, and academia.

A Look at 2020 in Numbers

- **2,844** nurseries and **319** Christmas tree growers were licensed with the Nursery and Christmas Tree Program.
- Our **10** horticulturists performed inspection and export certification services for Oregon's **\$1.1** billion nursery industry.
- We issued **756** state and **3,944** federal phytosanitary certificates.
- We exported nursery and Christmas tree stock to **61** foreign countries.
- The Nursery Research Grant Program funded **8** proposals, provided approximately **\$104,863** for nursery-related research projects.
- **4,561** foliar samples were sampled and tested for *Phytophthora ramorum* to fulfill compliance agreement requirements.
- **114** Christmas tree and nursery stock growers participated in this year's European Pine Shoot Moth (EPSM) trapping program. Inspectors deployed **537** EPSM traps across **183** locations.
- **633** staff hours were spent assisting the IPPM program setting and collecting traps for multiple pest surveys, including a nursery survey.
- **43** nurseries participated in Oregon's Plant Cleanliness Program for boxwood blight.



Nursery inspectors spend long hours on the road visiting nurseries to perform inspections and deliver phytosanitary certificates. State issued vehicles serve as office-on wheels.

PERSONNEL UPDATES

Another year filled with change has come and gone. In 2020, the program saw two long term staff members step down from their posts. After 23 years, Gary McAninch formally retired on September 30th. During his tenure as Program Manager, Gary was regarded fondly for his calm and friendly demeanor. No matter how taxing the problem at hand, or how busy, Gary always made the time with a

smile. Although COVID prevented sending him off in true style, staff did hold a small outside gathering, following all COVID-19 precautions, to say their fond farewells.

One of the programs senior inspectors, Susan Schouten, retired in October. During her time at ODA, Susan worked in multiple areas, including the Plant Health lab. Over the latter part of her time as an inspector with the Nursery program, she saw over one of the busiest territories in the Willamette Valley, which included Canby, Aurora, Woodburn, Wilsonville, Clackamas, and Oregon City. When asked if she had any immediate plans for her retirement, Susan said “I might buy a kayak”. Whatever she gets up to, we hope she enjoys her time off the clock!

Retirements also mean new opportunities for existing staff. Territories have once again shifted. Sharon Ferrier has switched gears

and moved over to Susan’s former territory in Clackamas County. Annie DeBauw, who has been overseeing the retail-rich Portland Metro Area, will be stepping up to the challenge of working in the wholesale nursery space in Yamhill/ Tillamook Counties. Last but not least, the manager position was filled relatively quickly with Chris Benemann taking the helm in early November. Chris joined the Nursery program



Nursery staff were able to hold a socially distant gathering to express appreciation for Gary McAninch’s years of service.



Our annual staff meeting went virtual this year. Program staff from left to right: (top row) Helmuth Rogg, Lisa Rehms, Erin Wickliffe, Annie Blietz; (second row) Melissa Lujan, Sherree Lewis, Sharon Ferrier, Eric Reusche; (third row) James Chin, Amanda Ohrn, Annie DeBauw, Christy Brown; (bottom) Chris Benemann.

only 18 months earlier as the Lead Horticulturist. We now have a territory unclaimed and the Lead Horticulturist role open for the moment, but new hires will come in 2021.

2020: A YEAR OF CHALLENGE

This past year was one for the books, presenting us with a pandemic and the largest wildfires on record in Oregon’s history. Before delving into the usual program report, we’d like to take moment to reflect how these two history-making events affected our program and industry.

Oregon Wildfires

As Labor Day weekend came to an end, skies darkened and the air filled with thick smoke in many parts of the state, marking the start to the worst wildfire season ever seen in Oregon.

By September 9th, the effects of the fire were widespread. Horticulturist Eric Reusche, who oversees Southern Oregon, reported that burning hemp fields were lighting up the night sky in Jackson County. His local news showed images of the area from Ashland to Medford, right along the I-5/Hwy 99 corridor, and to the west, all engulfed in smoke. This agricultural area



Remains of long-standing meat market.

is known for pear, grape, and hemp production. Poor air quality directly impacted program functions and staff were advised to not work outside until the Air Quality Index (AQI) reached safer levels. Some staff were impacted by the fires on a personal level: Erin Wickliffe took time to assist with horse and animal evacuation efforts in the Crooked Finger/Scotts Mills area. One inspector did evacuate to Portland when her area reached level 2 evacuation warning.



Fire scorched Christmas trees. Lyons, OR.

After the fires were under control and air quality improved, inspectors were back in the field. With Christmas season not far off, there was much to do. As Horticulturist Sherree

Lewis inspected a Christmas tree field on the western edge of the path of the wildfire east of Stayton of Hwy 22, she observed apparently healthy trees – which was good news. There was concern for Christmas tree fields close to the fires. It appeared like a close call, as some of the timber on the periphery of fields had burned. Sherree said she “was amazed and thankful that the homes that I drove by had survived. In one case, as I drove up a long gravel drive to get to the field, the brush on one side of the road had burned, but the home on the other side was OK.” She was quick to add that she was not very deep within the canyon, where the worst damage was being reported.

For those that were not heading into areas that were directly hit by fire, the effects of smoke on nursery stock was notable. Horticulturist Christy Brown observed scorch symptoms and desiccation from prolonged periods of high wind exposure. Some evergreen plants appeared to have greater-than-normal interior needle/leaf drop. She noted that symptoms appeared to be highly specific to species and even variety. For example, a block of mature specimen *Picea pungens* ‘Hoopsii’ in Estacada experienced dramatic yellowing on second year needles. Another inspector also found similar symptoms on a different conifer, as well as excessive interior leaf yellowing on holly plants.

COVID RESPONSE

Early spring signals the start of the shipping season for the nursery industry. In 2020, early spring also marked the start of the COVID-19 pandemic. Industries across the board braced for the worst, as closures of non-essential businesses and stay-at-home orders were put in place. Without in-store customers, retail nurseries were going to be hit hard. Wholesalers canceled or limited orders due to the uncertainty of how the new restrictions were going to play out. Fortunately, Oregon was one of many states that designated garden centers, greenhouses, and nurseries, as ‘essential businesses’. To remain open, nurseries had to make some major changes to their daily operations. For example, although social distancing was fairly straight forward in outdoor operations, it was more complicated to implement in confined areas such as loading docks and production areas. Staggered shifts reduced the number of staff on-site at any given time. This improved safety conditions, however in many situations it led to reduced work efficiencies. Despite these challenges, business was good and demand for nursery stock was high. A large portion of sales was attributed to the homeowner gardening boom. With so many people forced to stay at home, long neglected landscapes

were getting a boost. However, with increased demand there was a labor shortage of agricultural workers. The closure of the US – Mexican border posed an additional barrier for these essential workers to come into the country with H-2A visas. This reduced the harvesting and



We should acknowledge all the agricultural workers who were out in the field daily during the pandemic. They helped keep our industries going. Image of hydrangea fields in Brookings, OR.

processing capacity of some nurseries. For a more in-depth review of the effects of COVID-19 on the Oregon nursery industry, please read the November issue of Digger Magazine:

<http://www.diggermagazine.com/the-transportation-issue-november-2020/>



Business took different approaches to safeguard against COVID 19. Temperatures were taken before entering a Weyerhaeuser facility.

COVID-19 impacted ODA operations as well. As ‘essential workers’, our nursery inspectors were out in the field everyday performing inspection and certification services. Personal protective equipment (PPE) was difficult to come by during the early stages of the pandemic. Nursery inspectors were instructed to

abide by all COVID safety measures, especially taking care when interacting with customers. In general, most inspectors observed growers and their workers abiding by state guidelines. Even still, there were a couple of reports of non-compliance of face coverings and social distancing. In these situations, our staff took it as an opportunity to educate, by sharing the ORSHA safety guidelines. This approach appeared to work, as improved compliance was reported on following visits. Our nursery inspectors spend multiple hours on the road, and this comes with exposure risks including the



Business took different approaches to safeguard against COVID 19. Directions for truck drivers to stay in vehicles rather than enter a facility to deliver shipments.

use of public restrooms and interacting with service station employees, who may not fully follow COVID safety guidelines. To minimize the number of field staff traveling, the agency imposed a pre-approval requirement for any overnight travel, which impacted some work this past year. Long distance travel was prohibitive for those in sensitive groups, as staying in hotels posed too high a risk.

FUNDING SOURCES

The nursery and greenhouse products rank as Oregon’s #1 agricultural commodity. ODA’s Nursery & Christmas Tree Program is funded almost entirely from nursery phytosanitary certification and license fees. Gross value of nursery stock purchases and sales from licensed nurseries were up 2.8% in 2020 from 2019, pulling in \$1.1 billion in revenue (Figure 1).

For any nursery to be inspected and certified, they must be licensed with the ODA. The Nursery Program offers three types of nursery licenses:

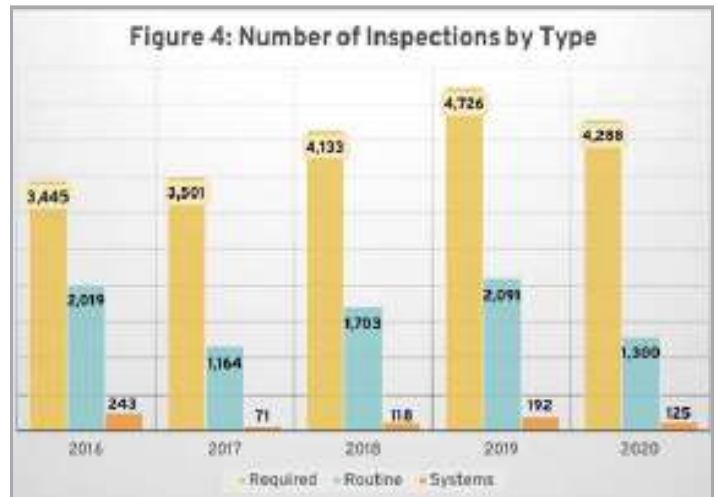
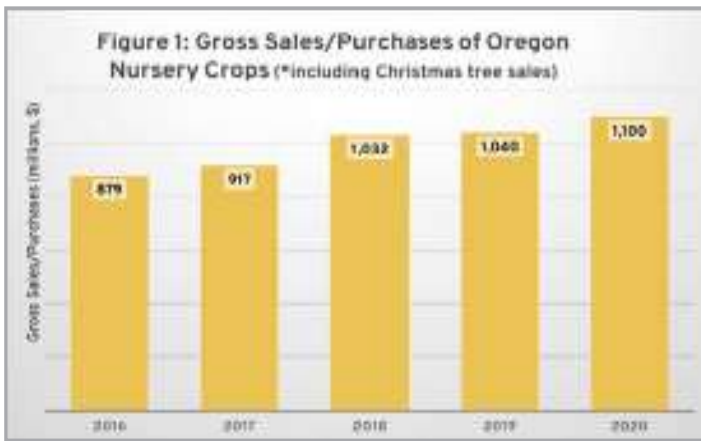
1. **Nursery Dealer License:** Required for businesses that buy and re-sell nursery stock. Garden centers, retail stores, florists, and landscapers are required to have this license. License fees are based on the purchase price (wholesale cost) of the nursery stock. Cut flowers are exempt from the licensing program.
2. **Greenhouse Growers of Herbaceous Plants License:** Required for greenhouse grown nursery crops. License fees are based on the wholesale value of the nursery stock sold.
3. **Nursery Stock Grower License:** Required for all other nursery crops, as well as collectors of native plants. License fees are based on the wholesale value of the nursery stock sold.

The total number of licenses issued by the Program have dropped slightly over the past two-years (Figure 2). During the 2020 calendar year, 1,644 nursery dealer licenses (\$205 million reported sales); 270 greenhouse grower licenses (\$137 million reported sales); and 745 nursery stock grower licenses (\$758 million reported sales) were issued.

This year, our staff conducted 5,713 inspections at licensed nurseries. (Figure 3). Inspections are divided into three general categories: required, routine, and systems inspections (Figure 4). Inspection fees vary depending on the type of certification provided. Program field staff issued 3,944 federal phytosanitary certificates for consignment of nursery stock (including Christmas trees) to 61 foreign countries. Canada stands as the number one importer of Oregon nursery products (53%). Mexico is our second largest importer (26%). “Other” countries include: Australia, Azerbaijan, Brazil, Chile, Guatemala, Costa Rica, Peru, Singapore, South Africa, Switzerland, Taiwan, Thailand, United Kingdom, Vietnam – among others (Figure 5).



Inspectors were able to continue with field inspections safely for the most part since the work can be done solo and outside.



NURSERY RESEARCH ASSESSMENT FUND

The Nursery Program received twelve nursery research proposals for the 2020 cycle. Approximately \$104,863 was awarded amongst the eight accepted proposals. Awardees were selected by the Nursery Research and Advisory Committee, in cooperation with the Oregon Association of Nurseries Research Committee. Funding for these research projects was collected through nursery research assessment fees. See Figure 6 for a list of proposals funded for the 2020 cycle.

PHYTOPHTHORA RAMORUM NURSERY PROGRAM

At the start of 2020, the program had six interstate shippers under federal compliance agreements (7 CFR 301.92). These nurseries are located in Polk (1), Washington (1), Marion (2), Columbia (1), and Lane (1) counties. That number quickly increased to nine as a result of first-time detections at two nurseries in Marion County (Nursery A and B) and one in Linn County (Nursery C). Two of these detections were the result of traceback investigations and the other was a result of a routine nursery inspection.



In each case, final confirmations were performed by USDA laboratory in Beltsville, Maryland. The USDA Confirmed Nursery Protocol (CNP) was conducted at each nursery. Several rounds of delimitation surveys were conducted at each location. Delimitation surveys and destruction procedures were carried out without issue. Two of these nurseries did present interesting challenges as the nurseries are operating on leased land, which limits the extent of the mitigation measures that can be taken. For example, extensive re-

Figure 6 : Funded Nursery Research Projects in 2020

No.	Project Title	Investigator	Award (\$)
2020-01	OSU North Willamette Research and Extension Center Nursery Production Internship	Santamaria, Nackley, Landgren	18,400
2020-02	Development of biologically based thrips management for nursery crops	Choi	20,000
2020-04	Micropropagation of apple rootstock, Geneva 214	Wada & Reed	25,280
2020-08	New cultivars of nursery plants with novel ornamental traits and disease resistance	Contreras	29,862
2020-09	Developing sterile forms of economically important nursery crops	Contreras	29,125
2020-10	Investigating gravimetric based irrigation control to improve water use efficiency in container production systems	Nackley	22,113
2020-11	Liverwort control in greenhouses with mustard seed meal and mulches	Moretti	19,070
2020-12	Investigating substrates to inform irrigation management	Nackley	17,111

grading and laying down large volumes of gravel were not options to ease water drainage issues. In particular, ODA and USDA partnered with Nursery A to outline small, tangible changes for the grower to implement over the course of several months. The grower has taken great steps to fulfill these goals. Figure 7 summarizes the results of the delimitation surveys at these nurseries. More than the required amount of plant material was destroyed by each grower. Confirmed positive soil was mitigated by steaming, which was performed by the Nursery Program in the summer months. Late in the fall compliance survey season, two interstate nurseries were confirmed positive. They are currently undergoing the CNP.

The program also holds compliance agreements with four intrastate shippers, which are regulated under Oregon state quarantine requirements (7 CFR 301.92 and OAR 603-052-1230). The nurseries are located in Marion, Clackamas, Tillamook, and Lincoln counties. Only one intrastate shipper was also confirmed positive in 2020. Shortly before confirmation, the Nursery Program received news that the owner of the nursery passed away. The Nursery Program oversaw that plant material was destroyed appropriately and the grower opted to destroy remaining inventory. The Nursery Program is staying in communication with the grower to determine what the next steps for this land will be.

After seven years, the intrastate shipper in Tillamook County successfully completed program requirements (six consecutive inspections with no *P. ramorum* detected) and was formally released from the program in May. That was the second success for the program in 2020: a nursery in Lane County was also released from the program. This nursery was first confirmed positive in 2015.

USDA-APHIS increased the sampling requirements for interstate shippers under federal compliance agreements: increasing the number of samples from 197 up to 332 per nursery. The Nursery Program requested and received increased additional funding to compensate for the increased costs for sample processing and testing. Although the program did not increase staffing, there were no significant setbacks in getting samples collected and processed. In some cases, field surveys took more than one day to sample completely.

The *P. ramorum* Program is a collaborative program between the ODA Nursery and Plant Health programs. Field inspections are performed by three ODA staff (Nursery (2), Plant Health (1)) and two USDA-APHIS-PPQ staff. The Plant Health lab is certified through USDA-APHIS-CPHST NPLAPP (National Plant Protection Laboratory Accreditation Program), which allows ODA to test and officially report out results for the program. Two diagnosticians are tested

Figure 7 : Delimitation Survey Results from Confirmed Positive Nurseries

No.	Nursery A		Nursery B		Nursery C	
	Sampled	Pr (+)	Sampled	Pr (+)	Sampled	Pr (+)
Water	2	1	1	0	0	0
Soil	25	3	5	1	2	0
Foilar	294	45	289	28	73	4



Christmas tree field.

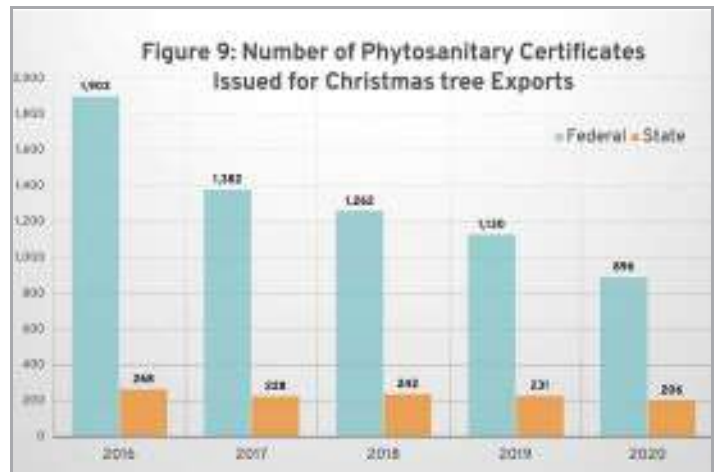
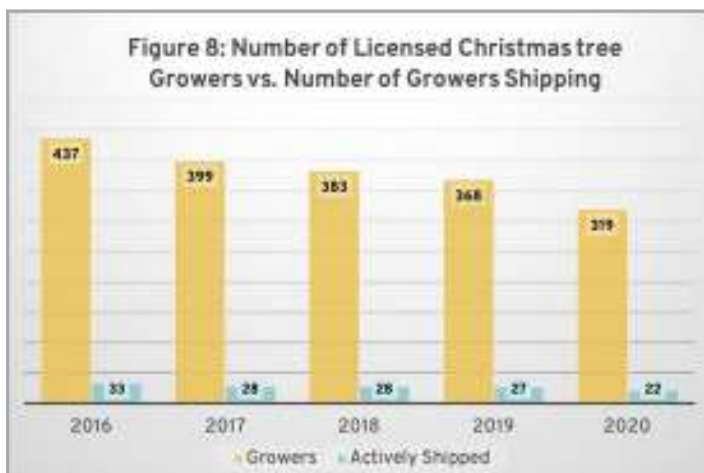
annually to maintain their certification status. ODA staff collected and tested 4,561 foliar samples for *Phytophthora ramorum* to fulfill compliance agreement requirements. This number excludes samples taken as part of CNP activities.

CHRISTMAS TREE SHIPPING SEASON SUMMARY

Program Overview

The Christmas Tree industry in Oregon has an estimated value of \$120 million (National Agricultural Statistics Service, 2017). The Christmas Tree Program provides inspection services to assist growers in the production of high-quality Christmas trees. The majority of Oregon’s Christmas trees are sold out of state, making the main activity of the program to certify trees destined for domestic and foreign markets.

The Program issued 319 Christmas tree grower licenses in 2020, continuing the decreasing trend of the number of licensed Christmas tree growers registered in the state (Figure 8). Despite that trend, the number of licensed shippers who are actively shipping, requiring inspections and phytosanitary certificates, has remained fairly constant. The drop



in the number of licensees appears to reflect smaller growers that are retiring or otherwise changing their business. Most of the larger and medium-sized growers, including those who require phytosanitary certification, continue to find market share.

Christmas tree growers planted approximately 32,434 acres in 2020. License fees were used to fund 1.5 FTE (field staff) and two 0.14 FTE (Program Manager, Lead Horticulturist, and Program Assistant).

Figure 9 shows the number of phytosanitary certificates issued over the past five years for Christmas trees going to foreign destinations, Hawaii, and US Island territories. The top three foreign importers of trees were Mexico, Hong Kong, and Singapore. Shipments to Mexico comprised just over 90% of the foreign market. Of the state phytosanitary certificates, 95% were issued for Hawaii alone.

New Rule

In response to the interception of elongate hemlock scale (*Florinia externa*) and Cryptomeria scale (*Aspidiotus cryptomeria* ‘Kuwana’) on Fraser firs imported from North Carolina in 2018, the Nursery & Christmas Tree Program drafted a pre-notification rule (603-054: Notification of Imported Christmas Trees) in efforts to better regulate and inspect incoming shipments of Christmas Trees into the state of Oregon. With full industry support, the Christmas Tree Program moved forward and put the interim rule into effect at the start of the 2019 shipping season. 2020 marked the first year with this requirement being officially in place.

In summary, the Christmas Tree Program requires for all Christmas trees and cut evergreen branches:

1. Notification of incoming shipments must be no later than two business days prior to its arrival.
2. The ODA will contact the recipient of the shipment within one day of notification if the shipment must be held for inspection in order to prevent the introduction or spread of dangerous insects or other plant pests.

The Christmas Tree Program received six notifications for tree shipments coming into Oregon in compliance with the notification rule. Inspectors followed up on shipments from Wisconsin (2), eastern US (1), and Washington (3). Shipments comprised of *Abies fraseri* (Fraser fir), *Abies procera* (Noble fir), *Abies grandis* (Grand fir), *Pinus cembra* (Swiss stone pine), *P. strobus* (Eastern white pine), *P. sylvestris* (Scotts pine), and *Pseudotsuga menziesii* (Douglas fir). We received several notifications of holly wreaths from Florida that were sent to local Rite-Aid stores.

There were no interception reports of any pests of concern.

Hawaii

Horticulturists issued 172 State Phytosanitary Certificates for trees destined for Hawaii. That was 95% of the domestic market. Like last year, tree shipments to Hawaii went smoothly. Enhanced phytosanitary measures adopted by the shippers and Nursery Program inspection staff are continuing to pay off. The Hawaii Department of Agriculture reported inspecting 145 containers – a total of 75,954 trees (~13,000 less than 2019). Hawaiian inspectors held 20 containers for the detection of slugs (17), missing phytosanitary certificates (2), and a misidentification of origin (1). Of the 17 that were held for slugs, 11 were treated. In one of those containers, a hitchhiking garter snake was found. The increased slug detections were attributed to the heavy rain events right before and during harvesting. One shipper in Clackamas County has employed a clever ‘hot water tree shower’ system for removing slugs before shipment. Their inspector noted she believes the treatment to be effective as she had not detected any live slugs over the past two inspection seasons. Destinations like Hawaii, Malaysia, and Guam have strict regulations against invasive slugs. Practices like this help keep their products viable for these markets.

Mexico

During the 2020 Christmas tree shipping season, Nursery Program Horticulturists issued 817 Federal Phytosanitary Certificates for containers of Christmas trees going to Mexico. This makes up roughly 90% of all exports to foreign destinations. The ODA was notified of only two rejections this year: one each for *Cylindrocopturus furnissi* (Douglas-fir twig weevil) and *Otiorhynchus rugosostriatus* (strawberry root weevil). In total, Mexican officials reported intercepting 847 trees with *Otiorhynchus rugosostriatus* and 600 trees with *Cylindrocopturus furnissi*. Douglas-fir (*Pseudotsuga menziesii*) made up 85% of Christmas tree imports to Mexico. Noble fir (*Abies procera*) came in second making up for 12.6%. The remainder of shipments comprised of: Nordmann fir (*A. nordmanniana*) at (2.2%), Fraser fir (*A. fraseri*) at (0.1%), and Grand fir (*A. grandis*) at (0.05%). Mexico

returned 1,447 trees, the majority of which were *P. menziesii*. Mexican officials did not specify the origin of the returned trees in their report provided to ODA.

WHAT A DIFFERENCE A ‘2’ CAN MAKE

In the midst of shipping season, word began to spread throughout the industry that the Mexican regulatory officials had made changes to their regulation, NOM-013-SEMARNAT-2020, which establishes phytosanitary specifications and requirements for the import of natural Christmas trees of the species of the genera *Pinus* and *Abies* and the species *Pseudotsuga menziesii*. In particular, a change was made to the ‘Additional Declaration’ (AD) language: -2010 was updated to -2020. Albeit a single digit, that is a key part of the phytosanitary certificate that border inspectors check. Typically, such changes are announced through official channels of communication: coming down from USDA to state regulatory officials. News of this change came up from the growers and created much confusion for both nursery staff and program administrators. For more than a week there was uncertainty regarding which version of the AD to include on the certificates; messages were mixed and tensions were running high. Despite the efforts of our State Plant Regulatory Official, Dr. Helmuth Rogg, a cohesive message from either Mexico or USDA was hard to come by. As always, the program relied heavily on the patience and expertise of our horticultural staff and industry to carry on. Despite the confusion, trucks were able to get through without too much issue. This was a glaring example of how the lack of direct communication between USDA and our trade partners can negatively impact our industries. In 2021, ODA hopes to appeal to the Christmas tree Advisory Committee to issue a formal letter of concern to USDA officials.



Douglas fir twig weevil – a pest of Christmas trees inspectors often look for. This is a pest of concern for Mexico.

IPPM-NURSERY SURVEYS

The Insect Pest Prevention and Management (IPPM) program received funding through the PPA 7721 and Cooperative Agricultural Pest (CAPS) grants to conduct a widespread survey on Oregon nurseries. They targeted those nurseries that would be considered high risk for bringing in exotic species through nursery stock. For example, nurseries, which bring in high volumes of stock, especially with material from out of state or the country. The desired outcome of these surveys was to detect new, previously undetected pests, document the absence of important



IPPM entomologists, Joshua Vlach and Tom Valente, setting up a trap at the loading dock of a nursery in Yamhill County.

pests, and to create a new baseline of knowledge of pests that are present. This data will be used to increase awareness within the nursery industry about the risk of potential invasive pests.

Nursery horticulturists identified and contacted nurseries that they felt would be willing to

participate in the surveys, ensuring owners and staff were comfortable with trapping activities. The result of the canvassing effort was a list of 16 nurseries willing to be trapped. Over the summer of 2020, seven nursery inspectors spent 305 hours working with the IPPM program staff to deploy, replace, and collect traps at 16 different trapping locations. These surveys used a “shotgun approach”, utilizing several kinds of methods: Lindgren funnel and pitfall traps, ant-baiting, general bio-blitz searching for any and all species on site, as well as a handful of species-specific lure traps for some pest species.

In addition to this special survey, five nursery program staff spent 329 hours assisting the IPPM program with their routine insect surveys for Japanese beetle, Gypsy moth, and light brown apple moth. This was part of an agency-wide effort to maintain ODA’s standard of detection trapping, which was crippled by COVID-19 and the halt to seasonal hiring. For information on the IPPM surveys, please refer to the IPPM section of this annual report.

NATIONAL TRACEBACK INVESTIGATION: RALSTONIA IN OREGON NURSERIES

Ralstonia solanacearum is a serious bacterial pathogen of multiple plant economically important plant species in the family Solanaceae. In particular, *R. solanacearum* race 3 biovar 2 (RSr3B2) causes brown rot of potato, bacterial wilt on tomato and eggplant, and southern wilt on geranium (*Pelargonium* spp.) The bacterium causes plant wilting and death as it multiplies in the xylem, impeding water movement. *R. solanacearum* is

easily spread through contaminated seed, equipment, water, soil, and infested plant material. In 2002, RSr3B2 was listed as a ‘select agent’ by the USDA Agricultural Bioterrorism Protection Act of 2002.

In April of 2020, USDA-APHIS-PPQ (United States Department of Agriculture, Animal Plant and Health Inspection Services, Plant Protection and Quarantine) reported that *Ralstonia solanacearum* race 3 biovar 2 was detected on geranium ‘Fantasia Pink’ in a greenhouse operation in Michigan. This had been the first confirmed case in the US since 2003, which was the first. Federal officials confirmed the plants were sourced from a Ball Flora facility in Guatemala. In addition to implementing eradication efforts, the importer in Michigan ceased all incoming shipments. Trace forward investigations were triggered as the Guatemala facility sent out potentially infected geranium cuttings to 288 greenhouses in 39 states.

The Oregon Department of Agriculture in cooperation with the USDA-APHIS-PPQ Portland office conducted trace investigations at nine nurseries in Clackamas, Lane, Linn, Marion, Multnomah, Washington, and Yamhill counties. All nurseries were thoroughly inspected by ODA horticulturists. Wilting/ dieback symptoms were observed at four of these nine nurseries. Symptomatic geranium were tested with ELISA kits to determine if *Ralstonia* was present or not. Samples from one nursery in Washington County tested as ELISA positive. USDA instructed that any Fantasia ‘Pink Flare’ ELISA positive plants were to be immediately destroyed. The Washington nursery however, found an additional variety, Fantasia ‘Pink Salmon’, to be ELISA positive as well. The four samples were sent to the USDA Beltsville Laboratory (Maryland) for confirmation testing. USDA confirmed the Fantasia ‘Pink Salmon’ as positive for



An ELISA positive test strip along with the sampled plant. This plant had been co-mingled with the confirmed positive cultivar, Fantasia ‘Pink Salmon’. Symptoms were often subtle.)

the pathogen. This was the first US detection of RSr3B2 on a variety other than Fantasia ‘Pink Flare’, triggering a second phase of trace investigations. Six nurseries (Marion, Washington, and Linn counties) were inspected as part of this second round. This was a truly collaborative effort between our nurseries, Nursery Program staff, USDA partners, and representatives from Ball Flora. By early June 2020, all geranium stock imported to nurseries, including any plant material resold to wholesale or retail



Plants bagged and piled awaiting disposal.

businesses had been disposed of by incineration or deep burial in landfills. In total, the latest 2020 outbreak involved more than 650 facilities across 44 States. The USDA in cooperation with state agriculture agencies successfully completed actions to eliminate *Ralstonia solanacearum* race 3 biovar 2 from US greenhouses.

WESTERN HORTICULTURAL INSPECTION SOCIETY (WHIS) ANNUAL MEETING

The Western Horticultural Inspection Society (WHIS) is comprised of regulators from 13 states in the Western region of the United States. The group works together to share information, inspection techniques, training opportunities, and promote harmonization between agencies. Membership is encouraged and open to all state and county inspectors. Please visit the WHIS website for more information (<http://www.whis.org/>).

In 2020, Oregon was scheduled to host the annual WHIS meeting. However, like many other meetings and events, changes were made to accommodate the world of COVID-19 we now find ourselves in. The WHIS Executive Committee voted to continue with the meeting, moving towards a virtual platform. Although the in-person connection is a large part of the meeting that members look forward to, the change did allow for some creative thinking to try to ‘mix-up’ the normal format. The committee opted for a 2-day webinar, focusing on a handful of talks. Invited speakers were given the option to speak about a topic or issue that is high priority in their state, or to discuss their career journey. After much planning, an agenda was pulled together with topics ranging from California’s effort to combat Japanese beetle infestations, to Colorado’s Industrial Hemp Program, to the professional and life experience that led one across the globe to become our very own SPRO (Thank You, Helmuth!). Although the future of the pandemic is uncertain now, Oregon is set to host the next annual in-person WHIS meeting whenever we are able.

Hemp

The primary mission of the Hemp Program is to ensure that hemp growers, hemp handlers, and agricultural hemp seed producers are registered and to ensure pre and post-harvest tests of hemp and hemp products are conducted as required by Oregon hemp statutes and regulations.

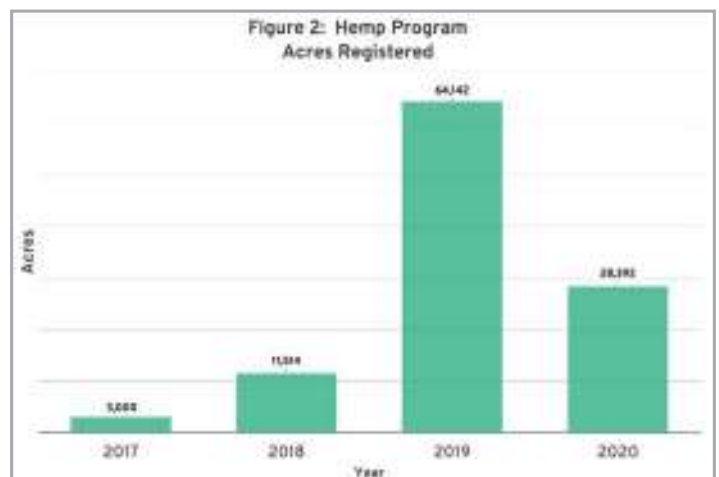
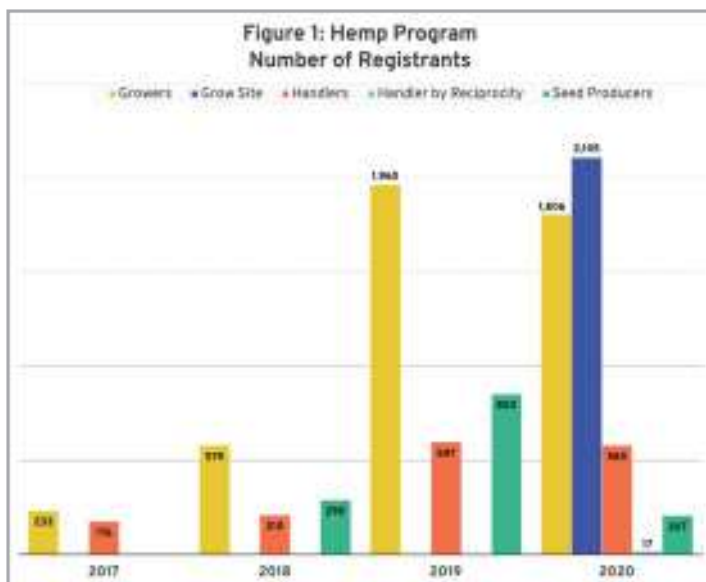
Hemp and marijuana are derived from the same plant, *Cannabis sativa*. Hemp is differentiated from marijuana by its low tetrahydrocannabinol (THC) content; THC is the main psychoactive ingredient in marijuana. In Oregon, hemp, by definition, contains less than 0.3% THC by dry weight. Hemp is found in primarily the northern hemisphere around the world where it is grown for various products such as fiber for clothing, paper products, food, and building materials. In Oregon, hemp is mainly grown for the production of cannabidiol (CBD).

Hemp was first legalized in Oregon in 2009, although growing and processing did not begin until 2015. That was the year that the ODA developed its first hemp regulations at the urging of potential growers and processors within the state. A total of thirteen licenses for growing and processing were issued in 2015. Starting in 2016, all new registrations (renamed from licenses) were issued for a one-year period and divided into three categories: industrial hemp growers, industrial hemp handlers and agriculture hemp seed registrations. The registration year begins on January 1 and ends on December 31 of each year. Since its inception in 2015, the number of growers and processors (handlers) registered with the department has increased dramatically each year.

2020 Program Highlights

As in other ODA Programs, there were many challenges due to COVID-19 and the resulting impacts on the state budget. The budget for the Hemp Program is funded through Other Funds generated by license fees. State funding for the Noxious Weed Control Program was reduced by over 80% resulting in the movement of eight Noxious Weed Program staff into the Hemp Program. The additional staff worked to update processes, policies and to develop and implement a hemp inspection program. The inspection efforts have allowed Hemp Program staff to follow up with growers on the ground to ensure that growers and handlers are following state regulations and program polices.

- Hemp Program staff registered 1,806 hemp growers, 2,105 grow sites, 580 hemp handlers, 17 hemp handlers by reciprocity, and 207 hemp seed producers.
- Hemp growers registered 28,392 acres for production.
- The program used a combination of temporary (4), seasonal (2), and borrowed (3) personnel to assist with hemp registrations.
- The program was given two new positions during the 2019-21 legislative session. Emily Roque was hired as an NRS-1, this position is responsible for receiving hemp test results and ensuring test results are entered into a hemp database. Arden Guinn was hired as a Hemp Registration Specialist and Inspector. The Program also hired two limited duration Hemp Office Specialists to assist with registrations and program support.



- Oregon hemp regulations were amended to restructure registration fees for hemp growers.
- Due to COVID-19 restrictions, a lab sampler training session was recorded and offered online; the training has received 522 views. Lab training was for staff working for third party laboratories accredited to conduct hemp sampling and testing in Oregon.
- Program staff worked to create a new pre-harvest THC submission process flagging any failed tests, allowing a more-timely response to growers.
- New Hemp Program staff started with on-the-ground grow site inspections. A total of 210 inspections were completed, 10 percent of all registered grow sites.
- Program staff increased education and outreach to Hemp Industry. Staff hosted four Webinars on the following: Pre-harvest Testing Requirements, ODA Hemp Program Update and Changes, Rule Changes and a 2021 Hemp Registration Training.
- Program staff worked with local, state, and federal law enforcement officials to address alleged illegal activities related to the Hemp Industry.
- With a dramatic increase in hemp production over the last several years, the number of complaints related to livability issues also increased in 2020. Complaints were received from the public concerning: odor, increased traffic, illegal water use, nighttime lighting in greenhouses, noise, and overuse/misuse of plastic mulch.



Gary McAninch's last day of work.

During this year, the program had two retirements: Gary McAninch, Program Manager and Randy Black, Lead Hemp Specialist. Their contributions laid the foundation for the Hemp Program. Tim Butler, Noxious Weed Control and Native Plant Conservation Program Manager added a third program, the Hemp Program, to his duties

after Gary retired in August.

The Hemp Program and the Hemp Industry are both in early stages of development and face challenges. As a program, we are confident that working together with valued input from the Hemp Industry that the ODA Hemp Program will continue to evolve to meet the future complex needs of the industry.

Tim Butler

Invasive Noxious Weed Control
and Hemp Program Manager

2020 HEMP RULE-MAKING

The Federal 2018 Farm Bill created a Hemp Program at the United States Department of Agriculture (USDA). It required states to meet certain requirements a year following USDA creating the rules. USDA filed rules on October 31, 2019.

To meet the new requirements, ODA started the rule-making process in the summer of 2020. ODA filed proposed rules with the OR Secretary of State on August 1, 2020. Part of the rules were updates to meet federal requirements and part of the rules were housekeeping updates.

On October 1, 2020, President Trump signed a federal appropriations bill that extended the required date from October 31, 2020 to September 30, 2021 (it has since been extended again to January 1, 2022) for states to operate under USDA rules. ODA had submitted a draft state plan to the USDA for review on August 14, 2020. Following the extension, ODA choose to withdraw the state plan on November 16, 2020.

ODA filed final rule updates in December 2020 with an action date of January 1, 2021. These changes include clarification on:

- When a registration (license) is required,
- When registrations are effective, and
- Lab training requirements and how labs can report test results.
- The part of the rules that addressed the federal requirements were not adopted.

2020 HEMP INSPECTION ANNUAL REPORT

This year, the Hemp Program kicked off an on-the-ground grow site inspection program. COVID-related budget challenges in the spring resulted in a hiring freeze, which disrupted plans to hire new inspectors. At the same time, a significant reduction in Noxious



An emerging hemp crop in SW Oregon.



An indoor hemp production area in NE Oregon.

Weed Program funding resulted in regional Noxious Weed Coordinators stepping-up to fill the role of hemp inspectors in the interim.

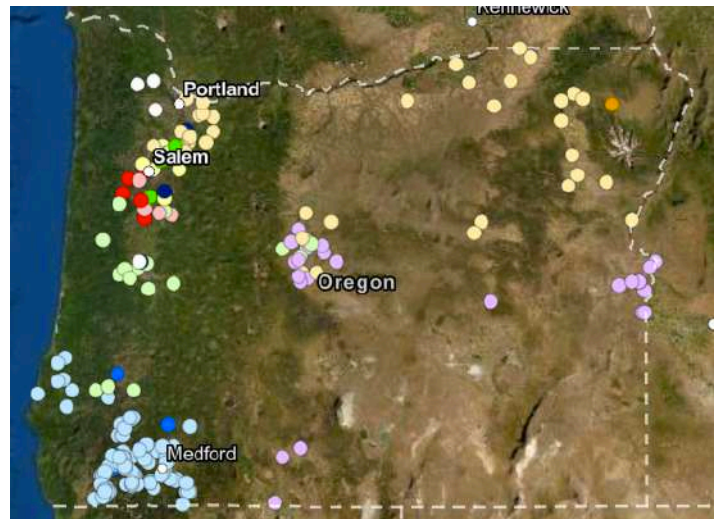
The hemp and interim staff developed protocols and electronic inspection forms over the late spring and early summer, then attended a series of training inspections together in mid-August. Routine inspections of randomly-chosen grow sites began soon after. Initial inspections focused on comparing the information listed on the application with the activities at the grow site, as well as checking that record-keeping requirements were being adhered to. There was a strong educational focus to the inspections and growers were given a packet with key information to help them understand and meet requirements.

Some inspections later in the year resulted from citizen complaints, inspectors driving by and noting harvests at registered sites where no test results had been received, and from communications with law enforcement or other valued partners with overlapping capacities.



Harvested raw hemp awaiting sale.

A total of 210 inspections were completed or 10 percent of the 2,106 registered grow sites for 2020. COVID-19 prevention protocols were in place to ensure the safety of inspectors and growers. In addition, inspectors took care to arrive at sites with clean



Assigned hemp inspections for 2020.

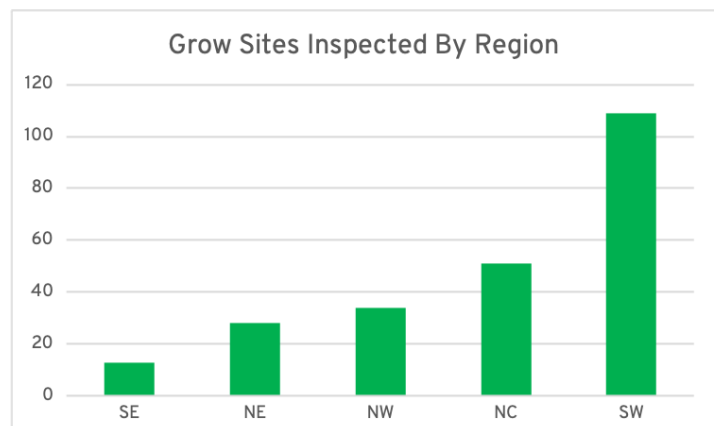
vehicles and equipment. More than half of the grow sites inspected were in the Southwest counties of: Curry, Jackson and Josephine (see chart below).

A typical inspection included:

- Meeting a grower or site representative on site
- Taking a tour of the growing, storage, irrigation and other associated facilities
- Mapping out production areas
- Noting strains grown, as well as dates hemp was planted and harvested
- Checking the labeling of stored material
- Reviewing records that must be kept for 3 years, including: harvest lot identifiers, official THC test reports, dates of hemp transfer, and registration numbers of anyone the grower transferred hemp to or received hemp from

Hemp growers were also provided an extensive information packet with rules related to water use and quality, pesticide use, air quality and testing.

The information collected from inspections is now going through a review process to confirm results and



There were more inspections conducted in SW Oregon than any other region.

issue violations. Sixty-three possible violations were preliminarily identified, or approximately one-third of all inspections. Violations identified included: growing hemp without registering, processing hemp without registering, harvesting without testing, failure to file a crop loss report within 48 hours of loss, failure to inform of planned crop destruction 48 hour before, failure to destroy crop, misleading an inspector, falsifying documents, growing in unregistered production areas, avoiding inspection, and failure to keep records. See table 1 for a list of violations as listed in OAR 603-048-1000.

Table 1: ODA Hemp Violations

Class 1 Violations	Class 2 Violations	Class 3 Violations
Providing false or misleading information to the Department	Failing to ensure test reports for the THC content of each harvest lot is timely reported to the Department	Failure to keep or provide information or records as required by the Department
Falsifying information or records required to be maintained by the Department	Failing upon request to timely provide the Department with laboratory test results that verify compliance with these rules	Growing or handling hemp with total THC that exceeds 0.3 percent on a dry weight basis but does not exceed 3 percent total THC
Failing to test a hemp item prior to sale, transfer, or attempt to sale or transfer	Any other uncategorized violation	Failing to ensure failed test results of a hemp item are reported to the Department within 24 hours
Failing to test a harvest lot in accordance with 603-048-0600		
Altering or falsifying a laboratory test report or result		
Selling or attempting to sell a hemp item that fails to meet testing requirements		

Selling, transferring, attempting to transfer or sell, processing or attempting to process a harvest lot that has not been sampled and tested, failed testing, or was invalidly tested		
Growing or handling hemp with total THC that exceeds 3 percent on a dry weight basis		
Repeat violations of Class 2 or Class 3 violations		
Any other violation that may cause an immediate threat to public health or safety		
Failure to keep or provide information or records as required by the Department		
Growing or handling hemp with total THC that exceeds 0.3 percent on a dry weight basis but does not exceed 3 percent total THC		
Failing to ensure failed test results of a hemp item are reported to the Department within 24 hours		

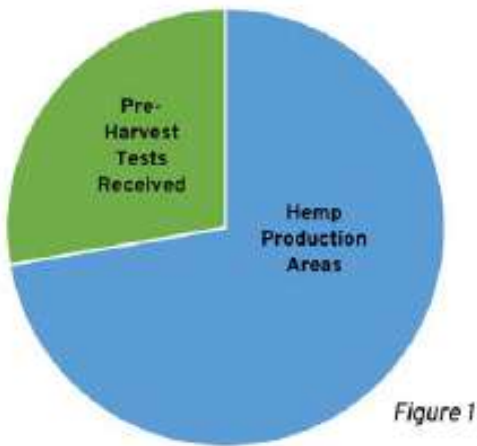
Hemp Testing

In addition to registering hemp growers and handlers in the state of Oregon, the Hemp Program also ensures that each registrant follows the necessary testing requirements of hemp and hemp products.

The Oregon Department of Agriculture introduced rules effective January 1st of 2020 that establish the limit for Tetrahydrocannabinol (THC), the primary psychoactive cannabinoid in cannabis, as 0.3% total THC. Previously, the allowable amount of THC was 0.3% delta-9 THC, which did not account for the amount of THCA, or tetrahydrocannabinol acid, present in the hemp plant material.

Hemp growers are required to have each harvest lot of hemp registered to them, sampled, and tested for total THC by a third-party accredited laboratory before harvesting. In addition, all pre-harvest tests and sampling forms must be reported to the Hemp Program.

Out of the 5,218 hemp production areas registered in 2020, the Hemp Program has received around 2,000 pre-harvest test reports (Fig. 1). The current data also suggests that roughly 1,000 registrants account for the 2,000 test reports submitted. Additionally, around 6.7% of pre-harvest tests exceeded the allowed amount of total THC.



Program staff contact registrants about missing test reports. A multitude of violations requiring enforcement are identified annually in this time-consuming effort.

This year, there were several accomplishments made in regard to ODA's oversight of hemp testing. Accredited laboratories have a new way to submit test reports. Until this point, all pre-harvest test reports, along with sampling documents, had been submitted via email and manually entered into our hemp database. Laboratories now have the option of submitting test results and all accompanying forms online. If submitted online, the testing information is automatically filtered into our hemp database. This system allows the Hemp Program to provide more

accurate and timely testing information to anyone that requests it.

Several webinars were hosted to provide information about a variety of topics, including testing and fielding questions from members in the Hemp Industry. These webinars were recorded and are currently available on the ODA hemp website.

The Hemp Program plans to continue to host webinars in 2021.

Insect Pest Prevention & Management

The primary mission of the Insect Pest Prevention and Management Program (IPPM) is to protect Oregon's agricultural, environmental, and natural resources from damaging invertebrate pests. IPPM addresses this mission through regulations and enforcement, consisting of state and federal quarantines designed to exclude exotic pests from entering Oregon and enforcing control area orders to help slow the spread of those pests within Oregon. Secondly, IPPM conducts one of the nation's most aggressive and diverse exotic species surveillance efforts. When an exotic species is detected in Oregon, eradication or control programs are promptly implemented if feasible. Other services provided by IPPM include: expertise regarding benign (such as pollinators) and destructive invertebrates; eradication, suppression, and biological control of invasive and pest invertebrates; insect identification services for the public and cooperators nationwide; monitoring and commenting on Federal Rules and Regulations; and development and dissemination of educational outreach materials such as pest alerts.

In a typical year, IPPM's biggest challenges are (1) the unceasing introduction of new exotic invertebrate species, some of which are destructive, due to global and domestic trade and (2) the lack of resources to respond effectively. New exotic species are detected every year in Oregon by IPPM. Over the last fourteen years, 135 new exotic species have been detected statewide, including many destructive species. This is an average rate of 9.5 new exotic species per year. These new exotic species are in addition to the approximately 1,000 already present in Oregon. Unfortunately, the resources and funding available to deal with these new destructive exotic species (along with those already present) have not increased at the same rate as their introduction.

2020 has been anything but typical. Along with the usual challenges that IPPM encounters, we have had to remain resilient and continually adapt through COVID-19 and wildfires, while preparing for potential economic impacts. The major changes adopted across IPPM this year were the elimination of door-knocking for outreach and education and the limiting of face-to-face interaction as much as possible to protect our colleagues and Oregonians alike. This resulted in the Japanese beetle (JB) eradication team utilizing mailers, phone calls, listserv emails, Next door posts, and project website posts for interfacing with the public, and increased public right-of-way trapping for the insect survey technician team. In addition, all field staff were equipped with masks, latex gloves,

and hand and surface sanitizers. Statewide wildfires also impacted our operations by putting a freeze on field activities due to hazardous conditions and left us unable to recover traps in areas devastated by the fires.

In order to help buffer potential economic impacts to state budgets from COVID-19 and wildfires, IPPM severely reduced its surveillance program for invasive species. Our efforts included downsized field activities, closing the Eugene Field Office, not hiring 22 seasonal positions, and leaving open 4 vacant full-time positions. Without the necessary field staff, we were unable to have a full trapping season and activities were primarily focused on the JB eradication effort and insect surveys in the Portland Field Office. In any given year, IPPM's most important resource is its staff and 2020 was no different. This year, IPPM consisted of 16 entomologists, 18 seasonal insect technicians, and a dedicated retired lifelong entomologist, Rick Westcott. Plant Program clerical staff and entomology lab staff, who don't normally place traps, worked hard to bring us closer to fully implementing our pest surveys. I cannot state strongly enough how proud I am to work with such resilient, passionate, and knowledgeable colleagues.

To further support our severely reduced staff, IPPM reached out to other ODA program areas and cooperators from other agencies and institutions to seek assistance with placing traps for exotic species throughout the state. Collectively, we were able to set and monitor approximately 21,767 traps deployed at 17,185 sites that targeted more than 54 species.

IPPM benefited greatly from both our internal agency and collaborative partnerships this year, which included the United States Department of Agriculture Animal and Plant Health Inspection Service, Plant Protection and Quarantine (USDA-APHIS-PPQ), USDA Forest Service Forest Health Protection, Oregon Department of Forestry, Oregon Invasive Species Council, Oregon State University, Oregon Parks and Recreation, Soil and Water Conservation Districts (SWCDs), Watershed Councils, and many other governmental and non-governmental organizations. We cannot thank these colleagues and cooperators enough for stepping up to support the implementation of these important surveys.

Jake Bodart
IPPM Program Manager



Insect Pest Prevention and Management Program staff.

A YEAR OF PERSONNEL CHANGES-RETIREMENTS-PROMOTIONS

Jake Bodart

In February of 2020 Chantal Pettit accepted a promotion to the position of Lead Survey Coordinator for IPPM's Portland field office. She brings with her over four years of retail management experience, love for public outreach and nature, as well as her familiarity with Oregon's invasive species surveys.

Prior to working at ODA, Chantal graduated Magna Cum Laude in 2017 from Oregon State University with a B.S. in natural resources and a minor in soil science. In the spring of 2018, Chantal joined the IPPM team as an Insect Survey Technician for the Salem field office and set over 800 insect traps for several of IPPM's insect survey programs. When the survey season concluded, she accepted a limited duration position in Market Access as a Produce Safety and Outreach Specialist, which allowed her to continue building her public engagement and outreach skills. In early 2019, an Assistant Survey Coordinator position opened in IPPM and she made the long journey back across the hall to join IPPM once again in a permanent capacity.

Since joining IPPM, Chantal has deepened her knowledge of entomology, gained experience in the



Chantal Pettit on a trip to Waldo Lake in summer 2020.

lab by assisting with specimen identification and data keeping for the light brown apple moth (LBAM) survey, and contributed to a successful survey season during a very peculiar year. In coming years, she hopes to further her education by taking entomology courses and continue learning from ODA's own leading experts.

ODA welcomed Dr. Max Ragozzino as the new Biological Control Entomologist for IPPM on March 16th, 2020. He recently defended his dissertation at Virginia Tech and then moved to Salem from Newark, Delaware.

Max's doctorate work focused on biological control of the invasive wood boring beetle, Emerald ash borer, using three species of parasitic wasps. He evaluated their field efficacy in Virginia and



Max Ragozzino

North Carolina, the phenology of Emerald ash borer and the parasitic wasps, competition effects between parasitic wasp species, and the effect of Emerald ash borer's expanded host range on the parasitic wasps. As part of his research he worked with researchers at USDA-ARS in Newark, Delaware at the Beneficial Insect Introduction Unit. Prior to graduate school, Max studied at the University of Rhode Island, where he worked in the biological control lab under Dr. Lisa Tewksbury and Dr. Richard Casagrande.

While his expertise is in parasitoids of wood boring beetles, since starting at ODA he has worked on the biological control of Brown marmorated stink bug, Azalea lace bug, and Greenhouse thrips. Currently he is partnering with the Oregon IPM center to develop a survey of grower's biocontrol needs within Oregon. He also helped survey for Gypsy moth and Japanese beetle. He hopes to expand the biological control program to include control of other invasive insects, including Spotted wing drosophila.

Max's work with biological control will create long-term control of invasive insects that damage Oregon's agriculture. He hopes to grow ODA's biological control program to protect Oregon growers from invasive pests.

In November, 2020 Josh Vlach accepted a promotion to the Lead ODA Taxonomic and Survey Entomologist position, which is the position of the State Taxonomist.



Josh Vlach

Josh brings extensive experience in invertebrate identification, survey, and pest management.

Josh joined ODA in December of 2004 as an entomologist. He primarily worked on the

identification of the hundreds of thousands of specimens that are collected by the Insect Pest Prevention and Management (IPPM) program's annual surveys but also worked on the identification of specimens sent by other states. Josh's primary expertise is in woodboring insects, but he also deals with many other groups including aphids, flies, leafhoppers (and their kin), mealybugs, mites, thrips, spiders, scales, slugs and snails. As the State Taxonomist, Josh will play an important role in identifying future invasive pest risk for Oregon, developing detection methods, control methods, and regulatory responses to insect and other invertebrate threats to Oregon's crops, forests, and environment.

Here are some of Josh's thoughts on what will be important for the lab and the IPPM program:

In the lab, one of our challenges will be maintaining, and hopefully expanding, our current available expertise. Much of our current knowledge for specific groups resides primarily with one individual, and it will take time and intent to develop expertise in others. With Jim LaBonte's retirement, we are losing significant knowledge of the native PNW fauna, especially in beetles. He was also our primary identifier for true bugs. It will take time to fill in those knowledge gaps, and when we refill our vacant position, experience tells us that it will not be easy to find staff with preexisting knowledge or even the aptitude for identification work. Now that we are available nationally for identifications, our ability to maintain our capabilities is more important than ever in the face of declining taxonomic resources elsewhere. It will take determination to maintain and develop our capabilities.

Oregon is faced with the constant drip of new invasions. As a result, we're forced to evaluate newly detected species in terms of what effort and funds we can justify to combat them. We are often near our limits. Because of this, we need to continue paying attention to federal and international regulations, as they have a huge impact on preventing new pests

from becoming established in Oregon. It is much more difficult to protect Oregon if other states continue to acquire new damaging pests. There are few professionals with the knowledge and experience to weigh in on these regulations where science and politics often mix. We must actively push for better regulation and inspection, because if we don't no one else will.

Retirements

Patrick Mitchell

In 1999, there was a Gypsy moth delimitation in Beaverton. That's the first year I started with the ODA as a "trapper." Beaverton was part of my territory. I thought, "How



Pat Mitchell

cool is this?" The only problem was I had no idea what a "delimitation" was or meant. I was scared to ask as to not appear like a dunce on my first day.

Things got better. I eventually asked questions and trapped seasonally for five seasons. As time went on positions vacated in front of me and afforded me opportunities that I had not initially envisioned. I became a full time NRS1 at the Portland field office, which was terrific in that I could quit waiting tables in the evening. Those double shifts of trapping all day and restaurant work at night made for long days.

Continuing to take advantage of opportunities to advance from within, I became an NRS 3 and was the field coordinator for the Portland Field office up until my retirement last April. Everywhere I go now I see sites and places that remind me of how diverse and nimble we had to be to execute the many surveys. From Sherman County to Astoria, Portland to Mount Hood, Hillsboro to Tillamook City, and all betwixt saw implementations by ODA of any number of projects.

Twenty-one years of great memories, challenges, hardships, setbacks and gains, blunders and mistakes, successes and failures, redemptions, all the elements of a good novel. But in the end, I'm left with gratitude for the ODA and a dose of pride in knowing I provided a small cog in the big wheel of ODA's positive impacts on our state.

On a side note, my final day before my retirement last spring was surreal. Lockdown for the COVID-19 virus had just happened. No one at the PFO but me. No one to say goodbye to. All the offices empty. I pondered on

the profoundness of retirement, very exciting and kind of scary. I left my work keys on my successor's desk, locked the office door and left. I couldn't help the drip of tears. When I got home my cat greeted me; he was hungry as usual. I put a little extra in his dish.

My Unexpected Career With ODA

James R. LaBonte

I've had two stints with the ODA IPPM program, from 1980-1986 and 1997-2020. Originally, I'd intended to just be on for a season or two. Little did I know this temporary employment would eventually become



Albany Democrat-Herald 8/13/1982. Jim LaBonte inspects trap for Gypsy moths today near Century Drive in Albany. There WAS a Gypsy moth in the trap, which Jim had to keep secret from the reporter until he checked in with ODA.

my career. Here are some of the highlights I recall. In the 1980s, I was a survey technician ("trapper") working on many different surveys and programs. Probably the most memorable was the huge Gypsy moth eradication of the mid-80s, the largest ever in the West. Placing spray pattern cards in the wee hours of the morning before each spray and covering urban streams with plastic till nightfall made for very long days, but the resulting successful eradication was worth it. I greatly enjoyed grasshopper survey, with a territory covering more than a quarter of Oregon, working in beautiful open and remote country by myself (granted, with less than trusty vehicles). I left to pursue more stable long-term employment in private business in the two Portland's (Maine and Oregon) and to eventually complete my long-languishing undergraduate entomology degree and begin my graduate program, both at Oregon State University.

Upon my return to ODA in 1997, I initially provided taxonomic and technical support for our exotic wood-boring insect surveys. This responsibility ultimately resulted in my becoming one of the few national experts in bark beetle identification. Before coming back to ODA, I'd identified exactly two bark beetles in my life!

I was **extraordinarily fortunate** to eventually fill Rick Westcott's position (not "replace" him – who could "replace" Rick?) as lead tax-



Jim at the scanning electron microscope.

onomist following his retirement. One of the things I enjoyed most was using extended depth of field insect photography (I didn't take the pictures – that was for actual photographers!) to develop the first completely image-supported identification aids for wood boring insects. This approach has been so successful that image-based work has become a mainstay of the IPPM lab and we have regularly put on identification workshops based on these products. Participants have come from throughout North America and as far away as England and Uruguay! It was also a fascinating challenge to help develop novel surveys and eradication programs for exotic pests, including the world's first eradication of an exotic ambrosia beetle (in The Dalles) and the nationally acknowledged and unique Exotic Terrestrial Plant Pest (ETPP) surveys at transport and import hubs. As a result of these and other IPPM surveys, we now recognize a disturbingly constant influx of exotic invertebrates into Oregon, around ten new exotic species detected per year since 2007. An unexpected outcome of the ETPP surveys was achieving my tongue-in-cheek wish for an invasive ground beetle pest (because ground beetles are my personal research focus). The first detection of established populations of the European *Nebria brevicollis* in North America has resulted in this species becoming somewhat of a cottage industry for me, to date yielding three published papers and a project funded by US Fish and Wildlife. Other unanticipated benefits were trips to Alaska for wood boring insect work and to Hawaii and Mexico regarding Christmas tree pests. Also, the sometimes seemingly endless public and professional presentations and media interviews enabled me



Oakridge Dead Mountain Echo 1/23/1985, the big Lane County eradication.



Jim providing taxonomic support at the 2020 ODA wood-boring insect identification workshop at Hawthorne.

to conquer my profound stage fright. I even managed a good (I'm told) presentation before an audience of over five hundred.

Some of my retirement

goals align with those of most retirees: more time with family, reconnecting with friends, travel (especially off-continent when possible again), gardening, fishing and hiking. Of course, being me, I also plan to work on my personal research with ground beetles and am already crafting several new manuscripts.

It has been a great privilege to work with my ODA and IPPM colleagues. Their professionalism, commitment, knowledge, and friendship made for a great work environment. I particularly want to acknowledge the IPPM lab team. The IPPM lab is now nationally and internationally recognized for the expertise and quality of work of these remarkable and incredibly knowledgeable and talented people, with whom I was honored to work for fewer years than I'd have liked.

2020 PROGRAM NOTES

Outreach and Education

The year 2020 produced many challenges for IPPM staff. With nearly all in person events cancelled, we turned to virtual media to provide training and outreach to the community. These included pre-pandemic Japanese beetle town hall meetings, hosting a bark and ambrosia beetle identification workshop at MacLeay Conference Center in early 2020, and several of our staff being interviewed for podcasts later in the year.

New Detections

IPPM detected 12 new exotic invertebrates in 2020. Notable pests detected include: the Ligurian leafhopper (*Eupteryx decemnotata*) a European species known from the eastern US and the Southern pink moth (*Pyrausta inornatalis*) native to the southeastern US; both pests of plants in the mint family; the plum bud gall mite (*Acalitus phloeocoptes*), a European pest of plum and almonds that was reported for the first time in California in 2019; and two dead specimens of the spotted lanternfly (*Lycorma delicatula*), a potentially serious vineyard/agricultural and ornamental pest.



Southern pink moth
(*Pyrausta inornatalis*).

Japanese Beetle Program

Ashley Toland

In 2020, IPPM placed 8,647 Japanese beetle (JB) traps in 35 of 36 Oregon counties. Of these, 6,508 traps were delimitation or add-on traps placed in Clackamas, Douglas, Multnomah, or Washington counties. The remaining 2,139 traps were detection traps deployed to high-risk sites in cities, towns, and rural areas throughout the state. This year, IPPM caught 4,490 Japanese beetles statewide, a majority of which were from Cedar Mill and the surrounding areas. In addition to the Cedar Mill area, IPPM also

2018 PROGRAM HIGHLIGHTS

Japanese beetle: A total of 4,490 JB were caught in 2020: 4,364 in the Cedar Mill area near Portland;



126 at Portland International Airport (PDX) and vicinity; none were trapped in Oakland, OR. Treatment is planned in the Cedar Mill area and a few nearby satellite areas, as well as at PDX in 2021.

Delimitation trapping is planned for all 2019 and 2020 catch sites.

Gypsy moth: No moths were trapped at the 2019 treatment site in Corvallis. One European Gypsy moth (EGM) was caught in Columbia County and one Asian Gypsy moth (AGM) was caught in Multnomah County. Delimitation trapping is planned for all 2019 and 2020 catch sites.



Light brown apple moth (LBAM):

Delimitation traps were placed in Roseburg, Independence, Polk County, and Douglas County. The specimens need to be dissected to be positively identified and this process takes many months to complete. The final results for 2020 are not confirmed at this time, however, no LBAM have been detected in the samples screened so far.

Mormon cricket: Mormon crickets maintained their presence in the Arlington area of north Gilliam County. Although they were not as troublesome for the City of Arlington this year, they reached densities at various locations in the surrounding area, which triggered suppression efforts. Likewise, the cross-border Idaho population had little presence in Jordan Valley, Malheur County, but its presence was noted around the Succor Creek area to the north.



Grasshoppers: Grasshoppers were historically significant this year with very high-density populations across eastern Oregon. Hordes like this haven't been seen since the 1980s and 90s. All land managers are advised to watch closely for hatch in the spring of 2021. If a high density of hatchlings is detected, it could indicate the potential for another local outbreak. Early intervention can often minimize both suppression cost and environmental impact.



Oregon Bee Project: The final set of participating Flagship Farms' bee collections were processed and identified along with samples donated by Mike Raschko. Thirty-two specimens of significance were added to the

Oregon Bee Atlas housed at the Oregon State Arthropod Collection. Of special interest was the discovery of a squash bee (*Peponapis pruinosa*) in Josephine County, and a specimen of the very rare oil-collecting Melittidae bee (*Hesperapis carinata*) from Baker County.

trapped Japanese beetles at Portland International Airport (PDX, 126 beetles in and around the vicinity). All positive JB sites will be trap delimited in 2021. An eradication program is planned for the Cedar Mill area and the Portland International Airport again in 2021. The overall number of beetles trapped in 2020 was a 42% reduction from the previous year. The number of beetles trapped within the boundary of the 2019 treatment area was reduced by approximately 58% as a result of the 2019 granular treatment and 2020 foliar treatment. We saw approximately a 67% decrease from 2019 to 2020 within the boundaries of the foliar treatment. We expect to use the foliar treatment again in 2021 in high density areas.

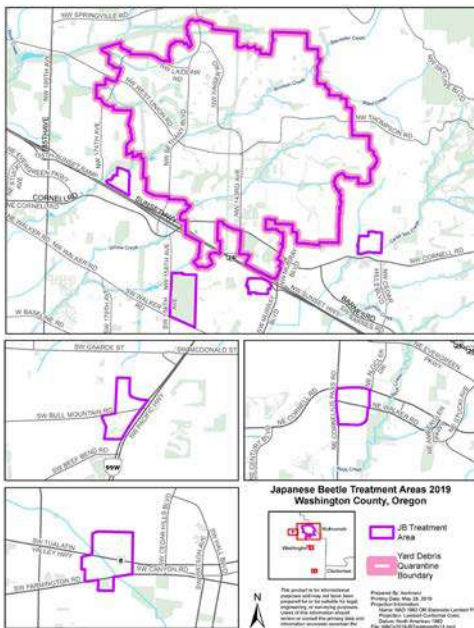
Japanese Beetle Eradication

Ashley Toland

IPPM entered its fourth year of treatment for the Japanese beetle eradication program in Washington County. Following the detection of 7,782 beetles in 2019, the treatment area in 2020 was expanded to include infested areas that were untreated in 2019. From January to March, IPPM staff worked hard to inform

residents and businesses in the treatment area about the importance of protecting Oregon from JB, as well as gather consent from residents to allow IPPM to treat the properties. To inform residents about the project, information was sent through multiple media sources including

mailed letters, notices on doors, posters in heavily trafficked areas, posts on the social platform Nextdoor, blog posts on our project website, and articles in local newspapers. In addition, two open house events were held in collaboration with partner agencies and stakeholders in the area to provide residents an opportunity to learn about the project, ask questions, and have conversations about their concerns. Overall, residents were very supportive with over 98% of residents who responded consenting to treatment.



The primary phase of treatment began on March 30 and concluded on June 5, 2020. In total about 12,200 residences, schools, parks, shopping centers, Portland International Airport, and 2 golf courses were treated – an area of approximately 4,300 acres. Treatment consisted of a single application of Acelepryn® G (Chlorantraniliprole) granular larvicide to lawns and ornamental planting beds. Residences who had requested medical exemptions were not treated this year due to the pandemic. In order to complete the treatment, nine administrative warrants were served to businesses who did not respond to requests for consent. Due to COVID-19, administrative warrants were not served to individual residents like in years past, which resulted in approximately 1,200 properties within the eradication boundary not receiving treatment.

In areas with high Japanese beetle density, a supplementary foliar spray (Acelepryn®) was conducted. Properties within 200 meters of a trap that collected 40+ beetles in 2019 were within the higher density treatment area. The supplementary treatment was applied from June 29 to July 6 on non-edible ornamental trees, shrubs, and plants that are known Japanese beetle hosts to over 800 properties.

Exotic Scarabaeidae Surveys

Ashley Toland

European chafer (*Amphimallon majale*) is an invasive species that was first detected in Newark, NY in 1940. Until recently, established populations were restricted to thirteen eastern states, as well as Ontario and Quebec, Canada. It has since spread to other parts of the country, and in the West can be found in British Columbia, Canada and Washington State. The larvae can be very destructive to the roots of lawn and pasture grasses, cereal (including wheat) and legume crops, and a wide variety of other plants. IPPM trapped this pest for the first time in Oregon in 2015. Subsequent trapping in 2016, 2017, and 2018 found large numbers at PDX. In 2019, 438 adults were trapped in and around PDX and four adults were trapped in the Swan Island area. In 2020, 489 adults were trapped in Multnomah County. PDX and Air National Guard have been seeing significant turf damage, so a treatment using Acelepryn® G was conducted on March 26th, 2020.

Oriental beetle (*Anomala orientalis*) is an invasive Asian scarab that has been known to occur in the eastern US for almost a hundred years. In 2018, Oriental beetle was detected for the first time in Oregon outside of airplane inspections. In 2019, six specimens were found in traps – four at PDX, one in Swan Island, and one in Beaverton south of the Japanese beetle eradication boundary. Like European chafer, the primary damage is caused by the larvae feeding on the roots of turf. In 2020, Oriental beetle lures were

piggybacked on 927 Japanese beetle traps statewide. In 2020, no Oriental beetles were trapped.

European and Asian Gypsy Moth Survey and Detections

Richard Worth

IPPM routinely conducts extensive survey programs for European Gypsy moth (EGM, *Lymantria dispar dispar*) and the Asian strain, Asian Gypsy moth (AGM, *Lymantria dispar asiatica*). Both moths can be detected with the same trap and lure. In 2020, with the help of cooperators, IPPM placed 9,555 traps statewide in all 36 counties for both strains. There were 5,290 AGM detection traps, 3,757 EGM detection traps, and 772 EGM delimitation traps. This is down 4,059 traps from the 2019 total of 13,614.

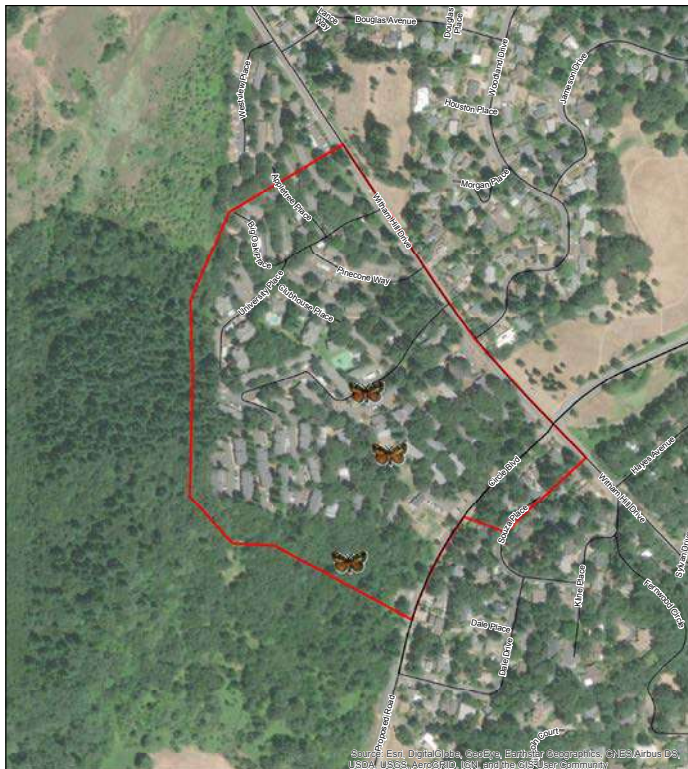
Second year delimitation trapping occurred around 2018 positive sites in two counties: Lane and Multnomah. No GM were trapped in the 2020 delimitation traps for the 2018 detections. First year delimitation trapping was conducted around two 2019 positive sites in Benton and Tillamook counties. The Tillamook County site was near an RV park, which has had positive trap catches twice before. There were only 44 delimitation traps around the recent catch since the remainder of proposed trap locations using a delimitation grid were in the Pacific Ocean. The Benton County traps were in response to 3 moths caught

after the 2019 eradication treatment in Corvallis (see Eradication Program section below). Mass trapping densities in 2019 around the original 2018 positive sites were at two levels, ranging from 3 to 9 traps/acre. In 2020, the delimitation trap density in and around the two apartment complexes was higher than normal for the center square mile but lower than mass trapping densities. A total of 183 delimitation traps were placed in Corvallis in 2020. No GM were trapped in first year delimitation traps around the 2019 EGM detections in Benton and Tillamook counties. Second year delimitation trapping is planned for both 2019 EGM catch sites in 2021.

There were two new detections in 2020. One new EGM trap catch in Columbia County was near the town of Rainier. One new AGM was detected on Sauvie Island in Multnomah County, just north of Portland. Response planning and discussion is currently underway regarding the AGM find near Portland. Both of these new sites will have delimitation surveys conducted in 2021.

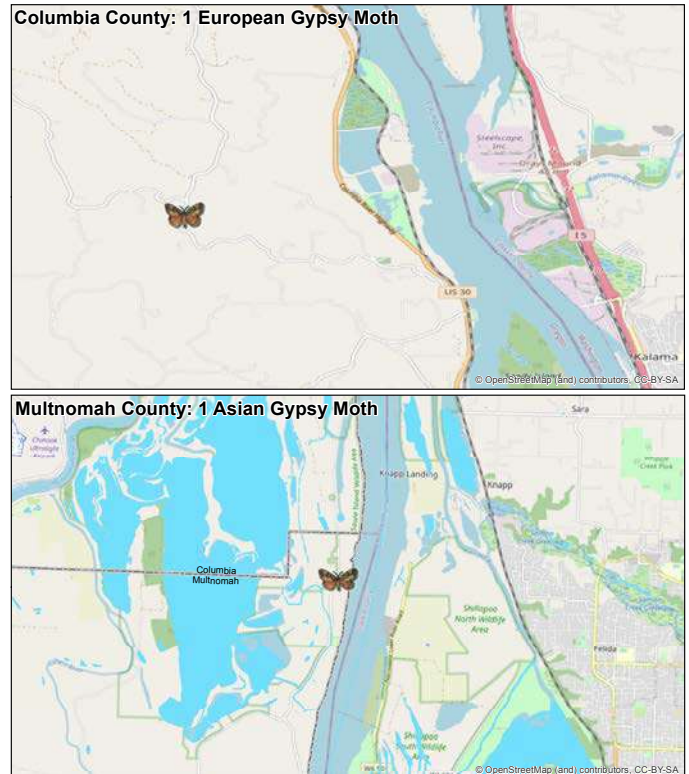
Also, a new report on the history of the Gypsy moth program in Oregon, co-written by former IPPM entomologist Dr. Diana Kearns, was recently published in American Entomologist (see Staff Publications).

2019 Oregon Gypsy Moth Detections
Three Gypsy Moths Caught in Corvallis, Benton County



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2020 Oregon Gypsy Moth Detections
Total Gypsy Moths Caught: 2



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Gypsy Moth Eradication Program Update

Ashley Toland

Delimitation trapping in 2018 detected 27 European Gypsy moths (EGM), (*Lymantria dispar dispar*), around two apartment complexes in Corvallis (Benton County). These detections resulted in a Gypsy moth eradication that occurred in May 2019. The eradication consisted of two ground applications of Foray® XG, *Bacillus thuringiensis var. kurstaki*, (Btk). It was the first ground spray GM eradication conducted in Oregon in 15 years. The treatment zone was approximately 40 acres and consisted of two apartment complexes, Whitham Hill Oaks and Oak Vale apartments, and nine houses in a nearby neighborhood on NW Souza Place. Delimitation and mass trapping in 2019 caught only three EGM. In 2020, no eradication operations were conducted in Corvallis, and subsequent summer delimitation trapping in Benton County did not detect any additional moths. No eradication operations are planned for 2021.

LIGHT BROWN APPLE MOTH (LBAM) SURVEY AND ERADICATION

Richard Worth

The Light brown apple moth (LBAM, *Epiphyas postvittana*) feeds on a wide range of fruit crops and other plants. This destructive Australian pest was first detected on the US mainland in California in 2007. The first LBAM in Oregon was trapped in 2010 at a commercial nursery in Polk County as part of a national LBAM survey. Five total moths were caught again in the same area in 2015 and 2016, leading to an aerial eradication project in 2017 where IPPM treated 510 acres with the mating disruption pheromone product (SPLAT LBAM HD Organic, ISCA Technologies) and the biological pesticide, *Bacillus thuringiensis var. kurstaki* (Btk). Additionally, one moth was detected in 2018 in a rural residential area near Roseburg, OR (Douglas County). Other than California, Oregon is the only state in the continental US where LBAM has been found.

In 2020, IPPM staff placed approximately 870 LBAM traps in 30 counties statewide. These traps used LBAM pheromone lures and were in the field from April through mid-October. They were checked and lures changed about every six weeks. A total of 81 delimitation traps in Polk and Marion counties were placed in the 2017 eradication treatment area. The 31 delimitation traps in Douglas County were placed around the 2018 detection. Supplemental ultraviolet (UV) light traps were not used this year within the 2017 Polk County treatment area as they have been for the past three years. The LBAM detection survey had 748 trap sites in 2020. Most traps were piggybacked at

Gypsy moth and Japanese beetle trap sites along high-risk routes.

Many of the 2020 pheromone trap samples have still not been processed, however, no new LBAM have been found to date. UV trap samples from 2019 are also still being processed. Based on the current negative trap catch data, no LBAM eradication programs are proposed for 2021. Delimitation trapping is still proposed for Douglas, Marion, and Polk counties in 2021 until all samples have been screened and identified.

NURSERY SURVEYS (CAPS + PPA)

Josh Vlach

IPPM has sought funding for a nursery survey for exotic species for many years. The USDA's evaluation was that we already have nursery inspectors so we don't need to survey. This doesn't recognize that a nursery inspector is primarily inspecting incoming and outgoing material for phytosanitary certification, and that this is not the same as intensive general survey and the use of traps over an entire season. Also, after more than a decade of keeping track of Oregon's invaders, it is clear that the list is biased towards European species in spite of most trade being of Asian origin. As a result, we have been viewing Canada as a likely vector. After years of rejections, two versions of the nursery survey were approved simultaneously: one funded by CAPS and one funded via PPA 7721. The surveys are nearly identical in scope, except that the PPA 7721 survey includes a trap for Pine beauty moth (*Panolis flammea*).

Unfortunately, the timing didn't work out well. Reductions in field office staff due to COVID-19 meant that entomologists in the lab needed to oversee these surveys. Fortunately, the nursery inspectors stepped up, obtained permission to survey, and then maintained the traps and collected samples. Our goal was to concentrate on nurseries that brought in international material, especially from Canada. Obtaining permission to have unnecessary personnel at the nurseries proved difficult. In spite of considerable effort nursery staff were only able to acquire permission to sample 8 of the 10 proposed sites for each survey for a total of 16 sites.

The diversity of pests is great; they may be in soil, on plants, in plants, or hitchhikers on items related to plants. To sample this diversity, multiple sampling methods were used. Both surveys utilized five Lindgren funnel traps, each baited with different lure combinations (four ethanol; alpha pinene, ethanol and monochamol; exotic *Ips*; *Trichoferus* lure and ethanol; and the *Megaplatypus* lures), five pitfall traps, pheromone traps for box tree moth and honeydew moth, and a yellow sticky trap for *Diabrotica speciosa*. In addition to a trap-based survey, two host targeted

general visual surveys were conducted for Oak splendor beetle, *Agrilus biguttatus*, Emerald ash borer, *A. planipennis*, Asian and Citrus longhorned beetles, *Anoplophora chinensis* and *glabripennis*, and European spruce beetle, *Dendroctonus micans*.

No target species have been identified in either survey, although many samples remain to be processed.

Visual surveys are complete and no target species were detected. Cottony cushion scale (*Icerya purchasi*) was found at a site in Hillsboro (PPA7721 survey) on a poor-looking outdoor citrus plant. Cottony cushion scale is not known to be established in Oregon and it is considered a significant pest. The plant was destroyed.

The PPA7721 survey was conducted in five counties: Lane, Linn, Marion, Washington, and Umatilla and 3,891 specimens have been processed and identified.

The CAPS survey was conducted in three counties: Clackamas, Marion, and Yamhill and 7,606 specimens have been processed and identified.

HIGH-TECH SITES SURVEY

Joshua Vlach

This survey was, in part, a result of findings by the Smuggling Interdiction and Trade Compliance Program (SITC) of USDA-APHIS-PPQ along Interstate 84. Shipments of construction materials from the southeastern US to the Google facility in The Dalles were found to contain raw wood as packing material. Moreover, the growth of the high-tech sector in Oregon has led to extensive importation and movement of construction and transportation materials, including raw wood packaging and crating, from other areas of the US and North America in recent years. Those materials are a potential pathway for a host of exotic and invasive invertebrate species. Since the diversity of these species could be great, diverse survey methods are required.

The survey has been conducted in 2018 and 2019 with few sites able to be sampled in a year. Another year of survey was conducted in 2020, during which nine sites were selected in seven counties. Survey methods were expanded from those used in the previous two years. Six Lindgren funnel traps, each baited with a unique lure combination (alpha-pinene/monochamol/ethanol, four ultra-high release ethanol, exotic *Ips* lure, fuscomol, *Callidiellum* lure, and trichoferone/ethanol), at least three pitfall traps, sweep net samples, ant baiting, visual survey, and UV light traps (a few sites only), were placed in suitable locations at each site. In addition, targeted visual surveys of hosts of *Agrilus biguttatus*, *Dendroctonus micans*, and *Agrilus planipennis* were conducted in western Oregon.

Many samples have been processed, with the exception of most sweep net, UV light trap, and eastern Oregon samples, however there are still

western Oregon funnel and pitfall trap samples to process. IPPM taxonomists identified a total of 8,717 specimens in target groups comprising 89 species from 10 families in four orders. The orders were: Coleoptera, Hemiptera, Hymenoptera, and Stylommatophora (Mollusca). No target species or pests of note have been found so far.

In 2019, one Umatilla County site yielded eleven specimens of a longhorned beetle, *Astyleiopus variegatus* (Cerambycidae), native to North America but never previously known west of Utah. Of greater immediate concern was the trapping at two 2019 sites in Umatilla County of two specimens of a longhorned beetle regulated by USDA-APHIS with known pest potential, the Velvet longhorned beetle (VLB, *Trichoferus campestris*). One of these sites, which also yielded *A. variegatus*, was just south of Umatilla and the other was southwest of Hermiston. The sites are about eight miles apart. Delimitation survey was planned for 2020, but due to complications brought on, at least in part by COVID-19, the delimitation was never set up. We hope to perform the delimitation trapping in 2021. If resources permit, delimitation trapping will be considered for *Astyleiopus variegatus* as well.

EARLY DETECTION AND RAPID RESPONSE FOR EXOTIC BARK AND AMBROSIA BEETLES

Daniel R. Clark

IPPM has been part of the EDRR (Early Detection and Rapid Response for Exotic Bark and Ambrosia Beetles) program since its inception in 2001. This program is conducted in collaboration with the US Forest Service in order to detect exotic bark and ambrosia beetles new to a state, region, or the US before they become irrevocably established. Preventing such pests from becoming permanent features of Oregon's environment protects urban and rural forested areas, including fragile watersheds, as well as other agricultural and natural resources. IPPM's role has included written and video protocol development, Oregon pest surveys, and taxonomic support to other western states (as was the case in 2020).

California, Kansas, and Oregon were the western states with planned EDRR trapping in 2020. However, due to inadequate funding and resources resulting from the COVID-19 pandemic, California conducted only limited trapping and Kansas was forced to withdraw entirely. Even with similar limitations, IPPM was able to place three traps at each of the 12 survey sites in the following Oregon counties: Clackamas (1), Lane (3), Linn (2), Marion (2), Multnomah (1), Washington (2) and Yamhill (1). Trapping took place from May through September. Lures were changed as needed and samples collected about every two weeks.

IPPM taxonomists identified 209 wood boring insects (26 species) in samples submitted by California and 6,028 specimens (68 species) from Oregon. The combined total of 6,237 specimens (85 species) included 5,361 specimens (36 species) of target bark and ambrosia beetles in the subfamily Scolytinae. The following non-target wood borer groups were also identified: Buprestidae (14 species), Cerambycidae (31 species), Siricidae (3 species), and Xiphydriidae (1 species). No species of regulatory significance were identified.

***Xyleborus monographus* Early Detection and Rapid Response (EDRR) Trapping**

Daniel R. Clark

In 2018, a single specimen of *Xyleborus monographus*, a European species of ambrosia beetle, was trapped at Chinook Landing (Multnomah County) in Fairview, OR. This was the first record of this species in North America. No additional specimens were found in delimitation traps in Oregon during the 2019 season. However, mortality in native oaks in northern California led to the discovery of a large infestation of *X. monographus* in Napa County, CA. Consequently, delimitation trapping in Oregon was conducted by IPPM in 2020 for this potentially destructive pest. This trapping program was funded through the USFS EDRR program.

Despite challenges, such as limited personnel due to the COVID-19 pandemic, 12 traps were placed at and in the vicinity of Chinook Landing. In addition, the movement of wine barrels across state lines from vineyards in the Napa Valley area was deemed a potential pest introduction pathway. To address this, 16 additional traps were placed at vineyards and wineries in the following Oregon counties: Douglas (5), Hood River (1), Marion (2), Polk (3), Wasco (2), Washington (2), and Yamhill (1). Trapping was conducted from April through October. Lures were changed as needed and samples collected about every two weeks. A total of 2,406 wood borers (two orders, four families, and 85 species) were identified. No *X. monographus* were detected from this survey in 2020.

Granulate Ambrosia Beetle and Other Wood Boring Insects Associated with Creosoting Plants

Josh Vlach

Surveillance for exotic wood boring insects has been ongoing at, and in the vicinity of, the railroad tie creosoting plant in The Dalles since 1997. The site was recognized as high risk for pest introduction because it imports raw ties from other regions of the United States and sometimes Canada. Several regional exotic wood boring insects have been detected there. The most significant detection to date has been the

Granulate ambrosia beetle (*Xylosandrus crassiusculus*) a threat to Oregon's orchard and nursery industries as well as to forest health and regeneration. This pest was detected in large numbers in 2004, but the area was treated in 2005 and 2006 and the population ultimately eradicated by IPPM. Subsequently, several other detections of this beetle have occurred at the plant, resulting in one additional eradication treatment in 2016. As a result of the 2004 detections, a compliance agreement with the tie plant was signed. The agreement was renewed and updated in 2017 and outlines requirements for importing ties and the prompt creosoting of those ties upon arrival in The Dalles. In addition, this agreement provides funding for IPPM's extensive surveillance efforts at the plant. Lindgren funnel traps, baited with four ultra-high release ethanol lures, are placed on the plant premises and in the surrounding area. Trapping is conducted throughout the year, including reduced trapping in winter as the lower flight threshold temperatures are unknown for ambrosia beetles such as *X. crassiusculus*.

In 2020, 50,332 specimens of wood boring insects were identified from 99 traps in The Dalles. These included 147 Buprestidae (10 species), 12,509 Cerambycidae (54 species), 37,675 Scolytinae (34 species), and 1 Siricidae (1 species). The tie plant continues to generate detections of exotic ambrosia beetles. *Euwallacea validus*, an Asian ambrosia beetle first detected in the eastern US in 1980, and not previously found west of Missouri, was first detected at the tie plant in 2016 (3 specimens). It was subsequently found in 2017 (4 specimens), 2018 (21 specimens), 2019 (58 specimens), 2020 (72 specimens), and it is now presumed to be established. This ambrosia beetle attacks numerous broad-leaved and coniferous shrubs and trees. Although not known to be a destructive species, IPPM is concerned that, as with so many other exotic species, it may become so in a new location. Three *Xylosandrus crassiusculus* were also trapped at the tie plant in 2020. Delimitation trapping will continue into 2021 to monitor these species. Other than the two species of exotic ambrosia beetle addressed above, the most interesting data were:

- *Neoclytus acuminatus*, the Red-headed ash borer, (an eastern North American species exotic to this region) comprised 94% (11,751) of total Cerambycidae trapped.
- *Xyleborinus saxesenii*, the Lesser shothole borer (a long-established European exotic ambrosia beetle), comprised 70% of all wood borers and 94% of all Scolytinae trapped.

Surveillance for exotic wood borers has begun at a second creosoting plant in Eugene. The creosoting plant has been in operation for about a century, however, in 2020, they desired to bring in raw hardwood railroad ties from the southeastern US. The plant and ODA have entered into a compliance

agreement for the importation of those ties, which includes monitoring with insect traps. In 2020, the trapping was initiated as part of the High-Tech Sites survey, but at the end of the typical sampling season, monitoring has transitioned to 10 Lindgren funnel traps baited with ethanol lures. No pests of concern have been detected at the Eugene plant, but samples are still being processed for the 2020 season.

APPLE MAGGOT PROGRAM

Paul E. Blom

IPPM has had an Apple maggot (AM, *Rhagoletis pomonella*) eradication program in Pendleton (Umatilla County) since 2006. In 2019, traps were placed at seventy sites within the city limits of Pendleton. Twenty-one sites were positive, with 111 total AM. In 2020, funding restrictions due to COVID-19 prohibited trapping in Pendleton, so the current situation there is unknown.

Since 2018, Umatilla County, the County Commissioners and Pest Board, the Oregon Department of Agriculture, and local producers, have been collaborating to establish an AM-free zone in the Milton-Freewater orchard production area and to eradicate or contain the Pendleton AM infestation. With direct support of the Blue Mountain Horticultural Society, IPPM continued with the AM detection survey in the Milton-Freewater apple production area in 2020 to protect the northeastern Oregon apple export market. Detection traps were placed at 99 sites in the Milton-Freewater area and for the first time a single fly was captured at each of 3 different locations. In



2020 apple maggot positive sites.

response to each capture additional delimitation traps were placed in orchards and other suitable habitats within a half mile of positive traps. No additional flies were found. These captures have triggered planning and preparation for extensive trapping and eradication efforts in 2021.

EXOTIC FRUIT FLY SURVEY

Todd Adams

In 2020, IPPM surveyed for Blueberry maggot (*Rhagoletis mendax*), Eastern cherry fruit fly (*Rhagoletis cingulata*), and European cherry fruit fly (*Rhagoletis cerasi*). Traps were placed in Benton, Columbia, Hood River, Lane, Marion, Multnomah, Polk, Umatilla, Wasco, Washington, and Yamhill Counties. Sites included blueberry fields, cherry orchards, and feral cherry trees. A total of 100 traps were placed: 44 for Blueberry maggot and 56 for Eastern and European cherry fruit flies. All traps were negative for these pests.

GRASSHOPPER AND MORMON CRICKET PROGRAM

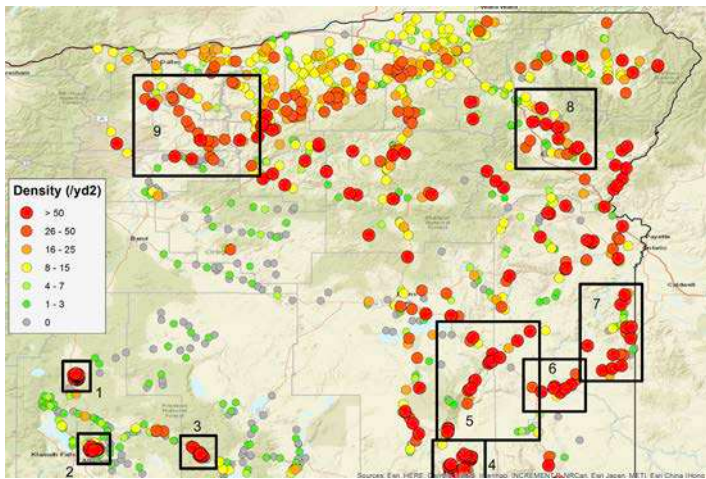
Paul E. Blom

IPPM has been cooperating with USDA-APHIS-PPQ for several decades to conduct surveys for grasshoppers (GH) and Mormon crickets (MC). These surveys are used to determine whether control measures are advisable to prevent economic levels of damage to rangelands or to protect wildlife resources.

In 2020, the GH and MC surveys began April 22nd and were completed August 25th. Nymphal survey takes place early in the season and is used to locate potential outbreak areas for suppression in the same year. Adult survey (this year: July 6th - August 25th) is used by IPPM and APHIS to make predictions of damage and areas of concern for the following season. Eight or more adults per square yard is regarded as reaching or exceeding the economic damage threshold. A total of 1,436 sites were visited: 501 for nymphal GH survey and 935 for adult GH survey. Approximately 4.8 million acres across 18 counties in eastern Oregon (including Jackson County) had GH densities at or greater than economically damaging levels. Thirteen of these counties had more than 100,000 economically infested acres. Oregon GH densities and those areas with densities reaching or exceeding the economic damage threshold have been generally increasing since 2013. While a decline in population densities was seen in 2019, this 2020 resurgence reflects outbreak situations seen two to three decades ago.

Very high densities were so pervasive across eastern Oregon this year that it is difficult to isolate specific regions. However, there are a few areas that deserve mention: (1) Bordering areas of the Klamath Marsh National Wildlife Refuge (Klamath County), (2) Swan Lake Valley (Klamath County), (3) Drews Valley (Lake County), (4) Fields region, (Harney County), (5) East of Steens Mountain (Harney and Malheur Counties), (6) from Burns Junction to Rome (Malheur County), (7) Jordan Valley Region and area to the north (Malheur County), (8) Northern Baker into SE Union Counties,

and finally (9) the broad region of Northwestern Eastern Oregon. The numbers refer to the relevant polygons on the density map for the GH survey.



Grasshopper trap catch densities (/yd²) classified into seven categories. (1:2,400,000). The black polygons are in reference to the areas of concern mentioned in this report.



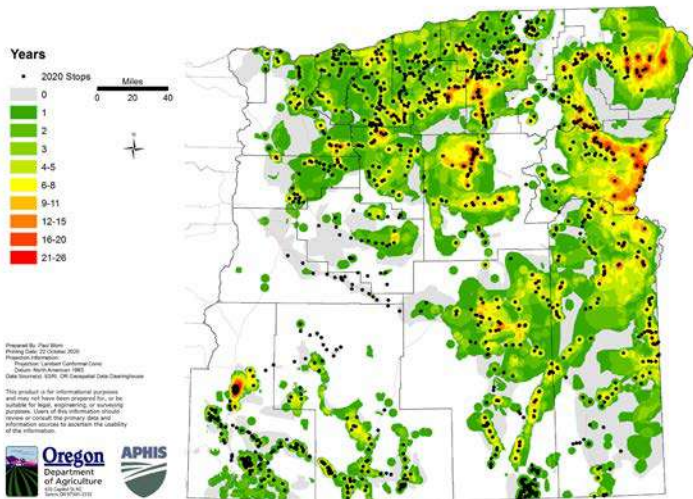
Harney County grasshopper outbreak July 2020.

Grasshopper Outbreak Response – Harney County

Jake Bodart

In a coordinated response effort to the grasshopper outbreak in Harney County, IPPM worked with Colin Park and Chelsea Carey, USDA APHIS-PPQ Plant Health Safeguarding Specialist and Pest Survey Specialist, respectively, to visit affected areas in Harney County on July 7th -9th. The group met with local land owners and cooperators from the Bureau of Land Management (BLM) to better understand the impacts and extent of the grasshopper outbreaks. Prior to the trip, stakeholders participated in virtual outreach meetings, hosted by USDA APHIS-PPQ, with the BLM, US Fish & Wildlife Services, and other ODA representatives to keep everyone informed and plan the response trip. The areas assessed with the highest GH densities included thousands of protected acres in Harney and Malheur Counties, including the Malheur National Wildlife Refuge. Spring evaluation of these areas will be the highest priority for the recommendation of any suppression treatments in 2021.

Economic Infestations of Grasshoppers in Oregon 1953 through 2020



Number of years with economic infestation of grasshoppers. The black data points indicate survey site stops for 2020.

The principal focus around Arlington has been the assessment of the MC population. In collaboration with IPPM and OSU Extension, the Arlington area community did a tremendous job the past three seasons working to manage the MC population. Although there still were areas of high MC density, scouting and spot treatments kept the bands of high-density MC contained and out of the city limits with only some incursion into cropping areas.



Harney County grasshopper outbreak July 2020.

MANAGED AND NATIVE BEES PROGRAM

Jessica Rendon

Apiary Registration

Under apiary registration rules, every person who owns or is in charge of five or more colonies of bees located within the state must register their hives with the Plant Protection and Conservation Programs Area. In 2020, 212 beekeepers registered 80,442 hives, generating a total of \$42,558.50 in registration fees. In accordance with a 2015 Oregon Legislative House Bill, these funds were transferred to the OSU Bee Laboratory where they will be used to conduct research focused predominantly on honey bees.



Emily Schmiedel of Jacobsen Salt Co. opening up the honey bee hive for inspection.

APHIS National Honey Bee Survey

For the seventh consecutive year, IPPM participated in the National Honey Bee Survey, but this was the first time IPPM conducted the entire survey. This survey documents honey bee diseases, pests, and pathogens throughout the US on a state by state basis. Additionally, the survey monitors for the presence of invasive species that may pose a threat to honey bee health. These include the Asiatic honey bee (*Apis cerana*), the Asiatic parasitic brood mite (*Tropilaelaps clareae*), and the slow bee paralysis virus. The survey also includes a colony-level pesticide analysis to assess both the variety and quantity of pesticides present in honey bee hives. Sampling included eight commercial and sideline beekeepers and 11 hobbyist beekeepers. In total, 19 different apiaries were sampled from seven counties between June and October.



Visual inspection of the brood cells for pests and diseases.

Both COVID-19 and the Oregon wildfires added challenges to this year's survey activities. Because IPPM employees had not previously conducted the survey, a hands-on training day at OSU had been planned. COVID-19 restrictions required the training to change to online training resources and email exchanges.

To limit the traveling of long distances, sampling was restricted to areas near the I-5 corridor between Eugene and Portland and IPPM employees sampled apiaries individually rather than as a team. Due to the September wildfires, sampling of the last few apiaries had to be pushed back to October. This was not an ideal time for sampling as this is when beekeepers are beginning to close up their hives for winter. Due to a backlog of samples from 2019 coupled with impediments due to COVID-19, the survey samples will take longer this year to be processed at the USDA laboratory.

Oregon Bee Project

In response to House Bill 3362 (2015) and public interest, OSU, ODA, and the Oregon Department of Forestry (ODF) developed a pollinator health strategic plan for the state. The plan, titled "The Oregon Bee Project," brings multiple state agencies together to address issues of bee health and is accessible at: www.oregonbeeproject.org/strategic-plan. The goals are to protect and promote bees, reduce bee pesticide exposure, showcase bee work in Oregon, and highlight the role that Oregonians can play in protecting bees. General information, including the project's mission, structure, and partnerships can be found at the project's website: www.oregonbeeproject.org. Unfortunately, due to COVID-19, the usual numerous and varied outreach activities this year were mainly restricted to webinars hosted by OSU. Collaborators have almost finalized the new 2021-2025 Oregon Bee Project Strategic Plan. Of note for IPPM is goal #3 – "Reduce Introduction of Exotic Bees, Diseases and Pests and Impacts of Existing Exotic Bees, Diseases and Pests." IPPM has worked with partners to include efforts that focus on improving multi-agency response to exotic bees and new and emerging bee pests and diseases, expanding pest and disease recognition in honey bee and mason bee keepers, and working with the industry to develop standards for the importation of non-*Apis* bees produced outside the State of Oregon to prevent the spread of exotic mason bees and mason bee products.

Oregon Bee Pilot Project: Knowledge, Education, Promotion

In 2016, IPPM received funds from the USDA Specialty Crop Block Grant for its proposed Oregon Bee Pilot Project: "Knowledge, Education, Promotion." The project concluded in 2019, and in early 2020 the final set of participating farms' bee collections were presented to their farms. These bee collections display their local bee species variety and can be used to promote discussion about bee-friendly practices. Bee specimens were identified to genus (and species for some genera) by IPPM entomologist, Dr. Jessica Rendon and Lincoln Best, a bee taxonomist contracted through OSU. The bee species collected



2019 Flagship farm participant receiving their bee collection. Location: Tanager Farm in Corbett, OR.

from each farm site will increase knowledge of Oregon specialty crop bee associations. Twenty specimens of significance were added to the Oregon Bee Atlas and are housed at the Oregon State Arthropod Collection. Of special interest was the discovery of a squash bee, *Peponapis pruinosa*, at the Herb Pharm in Josephine County by Sayaka Lean. The squash bee is a very new member of the Oregon bee community, being officially confirmed in 2018. Information about the program and participating farms can be viewed at: www.oregonbeeproject.org/flagship-farms.

While not part of the Flagship Farm Program, Mike Raschko, a local insect enthusiast and citizen scientist, donated insect samples that were collected near a stand of burned ponderosa and lodgepole pines, using Lindgren type traps with ethyl alcohol and alpha pinene lures. From this donation, an additional 12 specimens of importance were taken and added to the Oregon Bee Atlas collection. These include bees in the genera: *Anthidium*, *Anthophora*, *Dianthidium*, *Svastra*, and *Trachusa*. The most exciting find from Baker County might be one sole male specimen of the very rare oil collecting bee, *Hesperapis carinata* (Melittidae).

National Native and Non-native Bee and Wasp Survey

IPPM staff did not participate in this survey this year. With the finding of Asian giant hornet in Canada and Washington State, IPPM submitted two grant proposals to survey more extensively for invasive hornet, wasp, and bee species at high risk sites; the first through USDA PPA 7721 and the second through the USDA Specialty Crop Block Grant Program. If one or both of these proposals are funded for 2021, we will work to incorporate the National Native and Non-native Bee and Wasp Survey into our study sites. While the latter survey provides sampling supplies and identification services, it does not pay for workers' time. Therefore, combining this survey with one that pays for our time may be the most efficient course of

action. The Pennsylvania Department of Agriculture's identifications for our 2019 samples are still forthcoming. Due to COVID-19 quarantines, shipping issues, and hiring rules, there has been a delay in taxonomic identification of the samples, but they will begin identification work as soon as possible. Significant records will be added to the Oregon Bee Atlas at OSU and any invasive species found will be dealt with accordingly.



Jessica Rendon wearing the hornet suit.

AZALEA LACEBUG BIOCONTROL

Thomas Valente & Max Ragazzino

Azalea lacebug (AzLB), *Stephanitis pyrioides*, a significant exotic pest of azaleas and rhododendrons, was first detected in the Willamette Valley in 2009. Since then, AzLB has caused substantial damage in residential and ornamental plantings and in nurseries, from the Columbia River Gorge east as far as Hood River and throughout the valley south to Roseburg. Although azaleas and rhododendrons are the primary hosts, AzLB attacks numerous related plants in Oregon, including blueberry, cranberry, huckleberry and our native salal, the second most abundant shrub in Oregon.

AzLB is difficult to control, as it reproduces year-round in Oregon and feeds in protected areas on plants. Multiple applications of approved pesticides are usually necessary for adequate control. The most effective currently available strategy is the use of systemic pesticides, such as neonicotinoids. However, concerns about these chemicals and the effects on bees have led to bans on the use thereof in several Oregon cities and areas. There are no truly effective pollinator-friendly chemical alternatives.

There are no native natural enemies of AzLB in North America known to effectively control populations of this pest. However, the fairy wasp, *Anagrus takeyanus*, parasitizes the eggs of AzLB. Originally from Asia, this wasp became accidentally established on the East Coast. Although it is unknown whether fairy wasps can truly control AzLB, in 2018, IPPM acquired fairy wasps from Georgia to test whether these would be effective against Oregon AzLB. Attempts to maintain a colony of the wasps failed. In June 2019, IPPM entomologists Tom Valente and Jim LaBonte returned to a known AzLB infestation near the University

of Georgia campus in an effort to acquire parasitized AzLB eggs. Although many azalea leaves with AzLB eggs were collected, no fairy wasps were recovered. In 2020, due to the COVID-19 pandemic, we were unable to travel to Georgia. Luckily, a collaborator in Georgia collected AzLB-infested azalea leaves and shipped them to us. Using a new novel method to separate emerging fairy wasps from AzLB, Valente and Ragozzino planned to collect fairy wasps from these samples. Unfortunately, the shipping process was not easy on the insects. Of the surviving AzLB eggs, none had been parasitized by the fairy wasps.

Published reports indicate that AzLB is present in Florida but infestations “take care of themselves.” This suggests that natural enemies in Florida may keep AzLB in check. In 2019, Valente and LaBonte also surveyed for AzLB and natural enemies in the Tallahassee area in Northwest Florida where azaleas are traditional landscape plants. Interviews with horticultural researchers, nursery managers, and wholesale growers confirmed AzLB is not a problem there. Extensive survey at several sites failed to locate either the pest or any potential natural enemies. Northern Florida also has a related native lacebug, *Stephanitis blatchleyi*, that could have natural enemies useful against AzLB. LaBonte and Valente surveyed several localities in northern Florida for this native lacebug's host plant, rusty lyonia, and collected *S. blatchleyi*-infested leaves to bring back to Oregon. No natural enemies were recovered. Ragozzino and Valente had planned to revisit northern Florida, and expand our search to new areas in 2020, but COVID-19 related travel restrictions prevented this.



A new approach to the AzLB Parasitoid Emergence Container.

The most exciting developments in potential AzLB biocontrol have been trials with entomopathogenic nematodes (EPNs). Working with researchers from the University of Florida and USDA, IPPM initiated trials infecting AzLB with several species of EPNs. Preliminary results of these EPNs as biopesticides against soil-

inhabiting pests are promising. In 2019, Oregon AzLB were infected, killed, and the EPNs reproduced in their bodies. If successful, use of EPNs to control AzLB would be an innovative application of a pollinator-friendly technology. Due to the shift in personnel duties, the hiring freeze, and travel restrictions, we could not repeat the EPN portion of this project this year.

BROWN MARMORATED STINK BUG BIOCONTROL

Max Ragozzino

Brown marmorated stink bug, *Halyomorpha halys*, is a devastating invasive pest of fruit, vegetable, ornamental crops, and a nuisance pest for homeowners. Brown marmorated stink bug was first detected in Oregon in 2004 in the Portland area. It is now widespread within Oregon. Brown marmorated stink bug threatens a wide variety of agricultural products grown in Oregon, especially hazelnuts and pears.

A parasitoid wasp species known as the Samurai wasp, *Trissolcus japonicus*, was found to be a natural enemy of brown marmorated stink bug eggs in its native range of Asia. Female Samurai wasps lay a single egg within a brown marmorated stink bug egg but are capable of parasitizing entire egg masses at once. The wasp larvae develop within the stink bug eggs, and after 21 days, adult wasps emerge. From 2014 to 2018, it was being evaluated for release in the United States as a biological control agent by IPPM and Oregon State University. During this time, previously unknown populations of *T. japonicus* were discovered in Vancouver, WA, and Portland, OR. Due to the apparent establishment of an endemic population, low risk to native species, and likelihood to reduce damage, USDA Plant Protection and Quarantine and ODA determined distributing the Samurai wasp within Oregon was acceptable.

After his start as the biocontrol entomologist in IPPM, Max Ragozzino began collecting and rearing brown marmorated stink bugs and the Samurai wasp. During spring and summer 2020, brown marmorated stink bug field populations were low and difficult to collect. However, by September, *T. japonicus* populations were high enough to release at field sites. Unfortunately, the wildfires prevented the release of *T. japonicus* until



Brown marmorated stink bug on apples.



Stephanitis blatchleyi, a native lacebug relative of the exotic pest AzLB.

after brown marmorated stink bug egg laying ceased. Currently, the colonies of both brown marmorated stink bug and the Samurai wasp are being kept at the biological control facility at ODA's Hawthorne site, and will be maintained for releases in the spring of 2021.

EXOTIC MOLLUSK BIOCONTROL

Josh Vlach

The primary goal of this project is to evaluate species of *Phasmarhabditis* (Nematoda) as biological control agents of invasive gastropods (terrestrial slugs and snails) in Oregon. IPPM staff have been working cooperatively with Dr. Rory McDonnell of Oregon State University on this project since 2018. Three species of *Phasmarhabditis* have been found: *P. californica*, *P. hermaphrodita*, and *P. papillosa*. All species attack mollusks and are lethal to the gray field slug, *Deroceras reticulatum*. The most virulent species appears to be *P. papillosa*. IPPM staff continue to assist in the collection and identification of slugs and snails, which are being used for infectivity trials with several species of nematodes.

IPPM and OSU published a paper on the new record of the worm slug, *Boettgerilla pallens*, in Oregon (see Staff Publications). These were detected in previous years of IPPM/OSU cooperative survey efforts.

In the spring of 2020, the National Malacologist, Dr. David Robinson, contacted IPPM with concerns that *Arion vulgaris* was identified as being present in Oregon on iNaturalist. This is a destructive slug species that was found in eastern Canada in 2018. A similar species, *A. rufus*, has been known from Oregon for over 20 years. Lab staff surveyed 14 sites and collected 132 mollusk specimens, 72 of which were superficially identified as *Arion rufus* and then later confirmed by dissection. One specimen had unusual genitalia and was sent to Dr. Robinson for verification. DNA identification has been delayed due to COVID-19. The records in iNaturalist will be changed in response to these findings.

GREENHOUSE THRIPS BIOCONTROL

Max Ragozzino

Greenhouse thrips, *Heliethrips haemorrhoidalis*, as the name suggests, is a greenhouse pest across the United States. It damages a wide variety of host plants, ranging from ornamental annuals to coniferous evergreens. It was first detected in Oregon in 2015. Greenhouse thrips cause significant damage to salal, an ecologically and culturally significant coastal forest understory plant. Since its initial detection, greenhouse thrips have persisted and have been confirmed at 6 locations in southwest Oregon. Two species of parasitic wasp have been

released in California for control of greenhouse thrips, *Thripocentus javae* and *Thriobiosis semiluteus*. There is concern that greenhouse thrips may become an ecological threat to native Oregon plants and an economic pest of nurseries.

During 2020, Max Ragozzino surveyed areas with known populations of greenhouse thrips looking for population spread, and the presence of natural enemies. Ragozzino visited sites from Mapleton to Coos Bay and found new establishments of greenhouse thrips. Unfortunately, due to COVID-19 restrictions, sites south of Coos Bay were not surveyed. During these surveys Ragozzino collected greenhouse thrips and observed them for the presence of endoparasitoids (wasp larvae, which eat the thrip alive from the inside). Unfortunately, no endoparasitoids were found and greenhouse thrips appears to have no specialized natural enemies in Oregon.

Moving forward, Max hopes to survey additional sites where greenhouse thrips were observed. He hopes that populations of greenhouse thrips closer to California may have one or both parasitic wasp species present. If they are not present in Oregon, he hopes to evaluate them to control greenhouse thrips at field sites in Oregon.

BIOLOGICAL CONTROL NEEDS FOR OREGON

Max Ragozzino

Biological control (biocontrol) of insect pests has supported growers since the dawn of agriculture. Today, Oregon growers produce over a billion dollars of specialty & commodity crops. Agricultural industries, both new and old, are under constant pressure from insect pests that require new management strategies. Biocontrol is a strategic pest management tool for all cropping systems, and has been historically overlooked by ODA. This year we set out to correct that.

Ragozzino partnered with the Oregon IPM Center at OSU to develop a survey for growers across Oregon to determine their needs for biocontrol and learn how they use biocontrol today. They collaborated with cooperators from industry groups, academia, and extension to design survey questions to best gather information from growers. They planned to attend grower meetings, working groups, and other virtual meetings to distribute the survey to a broad range of agricultural commodity and grower groups. Using the results of the survey, they hope to identify problematic underserved pests, and allocate resources to controlling them.

Additionally, the survey will collect information on the available biocontrol resources for Oregon growers.

They hope that by creating a central platform with a list of biocontrol resources, they can increase the ease-of-use and availability of biocontrol for Oregon growers.

Air Cargo Pathway Analysis of Scarab Beetles

Holly Wantuch

Despite exclusionary efforts, Japanese beetles (JB) and other invasive and exotic scarabs are introduced into Oregon and other western states via inadvertent transportation on air cargo flights every year. IPPM is working to address this important pest pathway by conducting an air cargo pathway analysis. This analysis will assess the risk of introduction from infested areas to non-infested western states – specifically to Oregon, Washington, and California. The current exclusionary and mitigation processes at origin airports in JB-infested states will also be evaluated, and new strategies will be developed to further reduce the risk of accidental pest transport. In addition, communication among western states regarding invasive scarab introduction via air cargo flights will be enhanced including protocols to facilitate the sharing of data between air carriers and state agencies. This project is ongoing, but a final report is expected in 2021.

Regional Identification Center for Exotic Invertebrates

Josh Vlach

The current identification infrastructure of the US cannot support the needs of many exotic insect surveys. This is particularly true of wood boring insect surveys because of the frequency of new exotic wood borer introductions and the numerous target species. IPPM is nationally, and to some extent, internationally recognized for expertise in the identification of wood boring insects. Consequently, IPPM taxonomists have acted as a western Regional Identification Center for Woodborers (funded via the Plant Protection Act 7721) since 2008 to provide identification services to other states and agencies in the United States. In 2020, IPPM transitioned to a National Identification Center for Invertebrates, providing identification services for most types of invertebrates targeted by invasive species survey though most of the samples are still wood borers. Types of submitted samples include unsorted trap samples, moth specimens in sticky traps, specimens in alcohol, specimens mounted on pins, and even e-mailed images. The following table summarizes the grand total of 396,812 specimens submitted for identification during 2020. The total for Oregon appears lower due to a change in which surveys we report in this section.

State	Sample type	Number of species	Number of Target Specimens	Number of non-target Specimens ¹	Total	Status
California	woodborer (raw samples)	26	209	1,045	1,254	No targets
Colorado	bark beetles (pinned)	8	66	0	66	No targets
Connecticut	moths (in sticky traps)	>30	0	335	35	In process
Idaho	woodborer (in vials)	34	172	0	172	No targets
Illinois	Woodborer (raw samples)	85	5,134	25,670	30,804	No targets
Michigan	Bark beetles (in vials)	35	791	146	937	In process
Montana	Insects from aspen	10	22	0	22	Complete
Nebraska	Woodborer (raw? Samples)	48	1,810	9,050	10,860	In process
Oklahoma	EAB Suspects	2	0	6	6	No targets
Oregon		145	58,768	293,830	352,598	In process
Utah	Woodborer (pinned)	58	120	0	120	Complete
Washington	Bark beetles (images)	1	2	0	2	Complete
Wyoming	Bark beetles (in vials)	14	69	22	91	No targets
TOTAL		N/A²	67,163	330,104	397,267	

¹Approximate number

²Various Oregon wood borer surveys or surveys with a wood borer component. These are included as an indicator of IPPM lab efforts. Specific wood borer surveys will be addressed individually under the “Exotic Wood Boring Insects Program”.

³Many of the species are shared among the individual states

2020 IDENTIFICATION CENTER HIGHLIGHTS

Many states have not been extensively surveyed for wood boring insects, so new records are fairly common. While all possible new records from specimens identified by IPPM entomologists need to be verified by literature review, several notable finds occurred in 2020. Species of bark and ambrosia beetles detected and identified include: *Dryoxylon onoharaense* (Illinois); *Anisandrus maiche*, *Corthylus columbianus*, *Crypturgus borealis*, *Hylastes opacus*, *Hylesinus fasciatus*, *Hylocurus rudis*, *Phloeotribus liminaris*, *Pseudothysanoes rigidus* (Michigan); *Scolytus muticus*, *Xyleborus affinis*, *Xylosandrus germanus* (Nebraska), *Hylastes longicollis*, and *Ips hunteri* (Wyoming). The specimen of *I. hunteri* was badly damaged, and should be verified with additional specimens from future surveys in Wyoming. Other

species detected from samples are *Cophes fallax*, a weevil (Michigan); and *Sirex nigricornis*, a woodwasp (Nebraska). Many of the species detected from samples are native to adjacent states, however, *Dryoxylon onoharaense* (Illinois) and *Anisandrus maiche* (Michigan) are considered widely distributed in the eastern and northeastern US, respectively, and not known to occur as far west as the Midwest.

IPPM Imaging

J Buck Dunlap

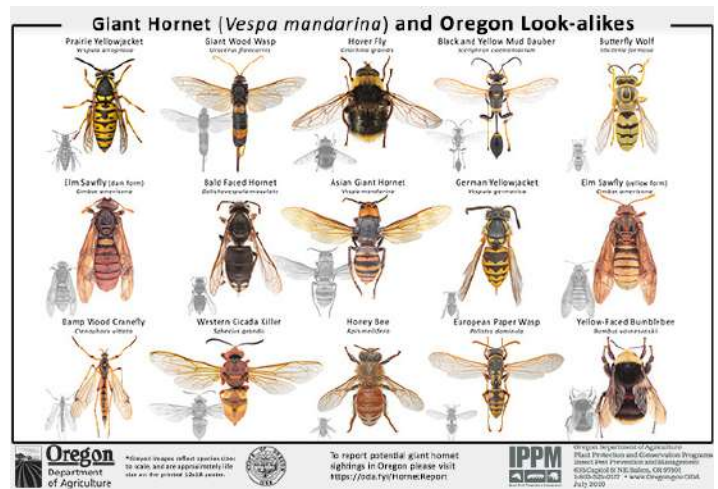
Despite challenges created by the ongoing coronavirus pandemic, IPPM imaging continued to support ODA outreach and educational efforts through work on a number of major cooperative projects including the Oregon native bee identification project in conjunction with Oregon State University and identification keys for both Siricidae and Cerambycidae for the United States Forest Service. IPPM images have also been used in academic publications from collaborators at the University of Georgia and appeared in ODA pest alert publications.

Progress continued apace on IPPM's US Forest Service funded project to develop two new image-based identification guides. The first is an ambitious key to the genera of Cerambycidae of the western US, including over one hundred genera and many exotic target species. The second is an identification guide to the Siricidae of North America. Over 370 individual stacked images have already been generated this year for the cerambycid key alone. Both keys are three-year projects planned for completion in 2021.

This December 2020, IPPM imaging will begin photography for the image component of a native bee identification project in collaboration with Dr. Jim Rivers of Oregon State University. After completion of the pilot project in 2019, funding was secured and work is expected to continue into 2021. The full project is envisioned as a three-year undertaking and will cover 50 bee genera known from the Pacific-Northwest as well as 30 *Bombus* (bumblebee) species. A total of at least 428 stacked images are expected to be generated for the project. An online version of the identification key will make project images available to the public.

As widely reported in 2020, *Vespa mandarinia*, the Asian giant hornet or “murder” hornet was detected in British Columbia, Canada and confirmed breeding in the US in Washington State. In response to a deluge of public concern, IPPM imaging was asked to create outreach materials including a giant hornet look-alikes poster. This product is available at www.ODAGuides.us and aims to help Oregon residents distinguish the Asian giant hornet from a variety of Oregon insects.

In addition to these ongoing projects, IPPM continues to offer a number of older outreach imaging products



Giant hornet outreach poster, created after Vespa mandarinia was detected in WA and BC in 2020.

to the public. These include the booklets “Bees of Oregon,” and “Slugs and Snails in Oregon” as well as posters such as “Beetles of Oregon,” “Land Slugs and Snails of Oregon,” “Stink Bugs of Oregon,” and “Bees of Oregon.” Printed copies are available free of charge to schools and other institutions. Electronic versions of these materials are available at www.ODAGuides.us.

New Records and Non-Survey Identifications

Joshua Vlach

IPPM staff responded to over 999 insect and other invertebrate inquiries and sample submissions via telephone, e-mail, mail and in-person visits to the IPPM lab. Most of these interactions were not associated with specific IPPM programs or surveys. Instead, these were from the general public, businesses, other ODA programs, county or state (mostly Oregon) agencies, federal agencies, academic institutions, other entomological museums, a wide array of professional colleagues, and even other countries. IPPM received requests from long distance contacts for identification of ants in the canopy of palm trees in Uruguay and for identification resources in Britain.

ASIAN GIANT HORNET

In addition to the 200 or so emails and calls received on suspect Asian giant hornet sightings, we had 282 reports (not included in the total contacts in the previous paragraph) submitted to a newly developed online form and geodatabase for reporting Asian giant hornet (<https://oda.fyi/HornetReport>). No members of the genus *Vespa* were reported. A look-alike guide and pest alert was created. Many insects suffered for their resemblance to AGH; these included dragonflies, bumblebees, and other native bees, cicadas, carpenter ants, carpenter worm moths, dung flies, and even crane flies. The most common insects mistaken for AGH were cicada killer wasps, *Cimbex* sawflies,

digger wasps, yellowjackets, siricid wood wasps, and Jerusalem crickets. In the process, we did learn that the invasive woodwasp, *Tremex columba*, has expanded its range over the Portland metro area south to Milwaukie. There were two reports of *Vespa crabro*, the European hornet, from Eugene that were submitted to the Washington State Department of Agriculture. One of these submissions is associated with a yardsworth of illegally imported landscape plants from the Netherlands. We're still following up to determine the accuracy of these reports.

As part of his continuing volunteer contributions, IPPM's retired entomologist, Rick Westcott, identified numerous insect specimens from various private, state, and federal sources (including IPPM surveys); the insects predominantly identified were flatheaded or metallic wood boring beetles in the family Buprestidae. Due to the pandemic, much of the work was done from images. Some specimens came from various states' trapping programs for exotic woodborer detection. In addition, Rick identified 26 fruit flies for the IPPM apple maggot detection program in Milton-Freewater, Umatilla County. Three of these were apple maggot flies, the first ever found in this area, and the remainder were snowberry maggot flies. In addition, he donated insect specimens to the ODA museum collection, reviewed manuscripts about Buprestidae for several journals, and answered many questions about those beetles and other entomological subjects via e-mail. Thank you, Rick, for your continued service!

Eighteen exotic species new to Oregon or western North America were detected and identified by IPPM taxonomists in 2020. Five of these species have been eradicated or never have established, while 12 species are apparently established. This makes a total of 135 new established exotic invertebrates in Oregon since 2007. Most of these species were initially detected, identified, or confirmed by IPPM staff. These detections exemplify the unceasing invasion of exotic species.

The species presumed eradicated or never established are all associated with plant nurseries or the movement of plants. Most are known significant pests. The New Guinea flatworm, *Platydemus manokwari*, was detected in a potted houseplant. It is considered one of the 100 worst invaders worldwide as predator negatively impacting native fauna. The homeowner destroyed the infested plant. Another incident involved shipment of redbud trees from Israel infested with the Leopard moth, *Zeuzera pyrina*, a European species of carpenter moth that is established in the eastern US (see below). Two of the others are damaging scale pests; the Tea scale, *Fiorinia theae*, and Pittosporum pit scale, *Asterolecanium arabis*, were both found in inspections of imported plants by ODA nursery staff.

The last species is the Spotted lanternfly (SLF), *Lycorma delicatula*.

In April, a Forest Grove nursery appropriately contacted the Nursery Program to report tunneling by a caterpillar in the trunk of one

Eastern redbud (*Cercis canadensis* var. "Golden Falls") tree shipped directly from Israel. IPPM was able to determine that it was a Leopard moth, *Zeuzera pyrina* (Cossidae), a European and Mediterranean species of carpenter moth; it is also found in Far East Asia and has been established in the eastern US for over a hundred years but has never been found in Oregon or west of the Rockies. Based on the path of the shipment and the age of the caterpillar the moth was clearly present when the trees shipped from Israel. It feeds on a wide variety of tree species and is a serious pest of young fruit trees in its native range. It is currently a major problem in olive trees in Israel. It is worth noting that this large caterpillar alongside obvious signs of damage escaped detection by inspectors in Israel and by Federal inspectors when it arrived in the US.

Spotted lanternfly was detected at two nurseries. SLF is an Asian species with a wide host range. In Pennsylvania where it first became established it has become a vineyard pest, but it can attack fruit tree crops as well. The first Oregon specimen was a dead female found October 1st at a Corvallis nursery in a shipment of pottery and plant pots from Pottstown, Pennsylvania. The second was a dead male found at a Woodburn nursery in a shipment of new cardboard shipping boxes on October 21st. ODA has begun drafting an external quarantine for SLF. No live specimens have been found in Oregon.

Of the thirteen apparently established species, five of them are species native to the eastern US that were collected in the high-tech pathway survey at sites in Umatilla and Multnomah counties. These species come from several Orders: an ant, *Ponera pennsylvanica*; a dung beetle, *Onthophagus hecate*; a moth detritivore, *Esperia sulphurella*; locust treehopper, *Thelia bimaculata*; a longhorned beetle, *Sternidius alpha*; and a leafhopper, *Stragania apicalis*. Two species reported by the public are pests of the mint Family: Southern pink moth, *Pyrausta inornatalis*, and the Ligurian leafhopper, *Eupteryx decemnotata*. The leafhopper was found in Corvallis and identified by OSU entomologist Bill Gerth.

In late April, a new exotic moth species was noticed by IPPM entomologist Ron Sleeter at his house in Aloha. The tiny moth, *Esperia sulphurella* (Oecophoridae), a native of Europe, has only been found in the US in California around the San Francisco Bay Area. It was discovered later that only five days earlier an



Leopard moth, *Zeuzera pyrina*, a wood boring moth in fruit trees.

individual was seen in Clackamas County. This species is a detritivore, feeding under the rotting bark of fallen oak trees and logs, possibly associated with fungi.

They are not known to cause any economic damage, but the discovery of this moth approximately 600 miles from its known location in the US suggests that wood movement is still an ongoing problem, and it's a product that can harbor some very damaging pests.



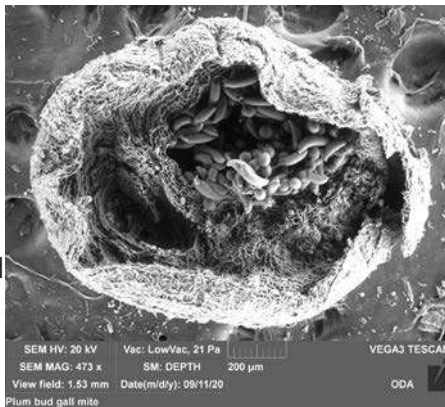
Southern pink moth, *Pyrausta inornatalis*, a bud and flower borer of *Salvia* (sage) plants.

In early July, a home gardener in SE Portland contacted IPPM via a friend with the first report of Southern pink moth (SPM), *Pyrausta inornatalis* (Crambidae),

in Oregon. Within a few weeks, up to five locations in that same area were positive for the moth. SPM is native to the southeast US and was introduced into southern California by 2009. The find in Portland is a great distance from its original distribution and suggests rapid human transport via plants rather than gradual range extension. It is unknown whether the pest arrived from the SE US or California. SPM feeds on a wide range of plants but all are within the genus *Salvia*. Unfortunately, this includes a number of garden favorites and culinary varieties, though leaves are said to be less damaged than flowers. The larvae bore into buds and flowers and can decimate most blooms when in large numbers. The pretty adult moth is a bright rose-pink color with no markings on the forewings. The find may be related to an increased interest in salvias for attracting pollinators, especially hummingbirds.

One of the most potentially damaging pests established this year is the plum bud gall mite, *Acalitus phloeocoptes*. This European species is established in the eastern US and was found in CA for the first time in 2019.

It attacks *Prunus* and *Cotoneaster*, causing distinctive galls on plum, but is more damaging on almonds. Two infested properties have been found, one in Eugene and the other in Portland. Since the species can disperse on the wind and the likelihood that there have been multiple introductions of infested plant material, eradicating the pest is unlikely.



SEM image of the inside of a gall from a plum twig showing mites and eggs.

On a different note, IPPM's entomologist and moth ID specialist, Richard Worth, had a newly described moth species named after him in the recent publication: "Royals, H.R., J-F. Landry, T. M. Gilligan, 2019. *Paralobesia* (Lepidoptera: Tortricidae), a systematic revision. *Memoirs of the Lepidopterists' Society*, (6):1-149." This publication was the product of a nearly decade long review of the tortricid moth genus *Paralobesia*, which contains the eastern North American grape pest, the Grape berry moth, *Paralobesia viteana*, a recurring target in IPPM's vineyard surveys. The new species, named *Paralobesia worthi*, was first discovered by Richard when he noticed a moth that could not be identified from a trap placed in Eugene during IPPM's survey for Light brown apple moth (LBAM) in 2010. At that time images of the specimen were forwarded to a colleague at USDA-APHIS-CPHST in Colorado who said it was probably undescribed. Only three specimens are known from Oregon, two were from IPPM's LBAM survey traps set in Eugene. A few other specimens are from Ashland, OR, the Mt. Shasta area, and southern California.

Identification Workshops

Joshua Vlach

IPPM held a bark and ambrosia beetle identification workshop on March 2nd-6th, 2020, at the Macleay Conference and Retreat Center in Salem, OR. It was the first time this facility had been used for the workshop, but it was very convenient as rental of the entire lodge allowed participants to be housed, fed, and trained in one location. There were 31 participants, the largest number IPPM has ever hosted. Participants came from APHIS-PPQ, USFS, public universities, state departments of agriculture, and forestry and natural resource agencies. For the first time, we had a large number of USDA-APHIS port identifiers. A record high of sixteen US states were represented (AZ, CA, CO, FL, HI, ID, MD, ME, MT, NJ, NY, OR, TX, UT, WA, WY). Feedback from participants made it clear the workshop was held in high regard, the information provided was considered highly useful, and workshop participants developed valuable taxonomic skills.



Students at ODA's woodborer identification workshop hard at work.

Cannabis Support

Josh Vlach

IPPM staff have been assisting growers with cannabis pest issues since 2015. Only 10 cannabis contacts were received in 2020. Most questions related to aphids or russet mites. The only notable request was related to a delphacid planthopper on plants in Arkansas.

REGULATORY ISSUES

Josh Vlach

Regulation is the basis by which invasive species are kept out of the US and Oregon. Federal regulation greatly impacts IPPM's efforts against invasive species. As a result, we must vigilantly monitor problems with and changes to federal regulation while working to make Oregon's regulations more effective.

IPPM staff reviewed the USDA pest risk assessments for:

- "Importation of Live Plants of *Ulmus davidiana* Planch. from the Republic of Korea into the United States." The report missed many species that use elm as a host and seems to be biased for importation as opposed to phytosanitary protections.
- "Importation of moth orchid (*Phalaenopsis* spp.) for planting from the Netherlands into the United States and Territories." The pests involved may not be able to establish outdoors, but Oregon has a significant greenhouse industry so these pests represent a significant threat. As has become expected, the reports make errors in favor of easy trade. The proposal would put the US at risk of importing two species of damaging fungus gnats that attack roots because they determined that the risk of introduction is low in spite of an anticipated importation of 5 million plants per year. Additionally, they mistakenly dismissed a thrips since it is reported to feed on flowers and would not be present on these plants. This is an error for this species, as with most flower thrips, because it also feeds on leaves and therefore could be present on plants.
- "Importation of *Acer buergerianum*, Miq., *A. palmatum* Thunb., and *A. pseudosieboldianum* Nakai live bunjae from the Republic of Korea into the United States." This effort was fairly robust, but there was one invertebrate pest that appears to have been missed in the evaluation is *Amphitetranychus viennensis*.

USDA National Pest Advisory Group (NPAG) Reports

Velvet longhorned beetle, *Trichoferus campestris*, was recommended for deregulation by NPAG.

ALLIUM LEAF MINER QUARANTINE AND FEDERALLY RECOGNIZED STATE MANAGED PHYTOSANITARY PROGRAM (FRSMP)

Allium leaf miner (ALM), *Phytomyza gymnostoma*, was found in Pennsylvania in 2015. It is the most damaging *Allium* pest in Europe. Since the fly's introduction it has spread and is now in NJ, NY, and CT. It was deregulated by the USDA in 2017. ODA's efforts to get FRSMP status for ALM are moving forward. FRSMP status will cause US Customs and Border Protection (CBP) to block ALM from entering Oregon at international ports. California's FRSMP status was approved in 2018. USDA's Official Control Advisory Panel (OCAP) has accepted Oregon's FRSMP proposal contingent on development of an Oregon quarantine against Allium leafminer. The quarantine is being drafted and still needs to undergo the public review process.

IPPM EDUCATION AND OUTREACH EVENTS

Austin Johnson

January

- "Invasive Species in Oregon! Finding and Eradicating Japanese Beetle and Gypsy Moth". Corbett High School, Corbett, OR. -J Rendon
- "It's time to pay attention to international regulations, so stay sharp!" poster presentation. Interagency Research Forum on Invasive Species. Annapolis, MD. -J Vlach

February

- Japanese beetle Open House at Meadow Park Middle School. Beaverton, OR. -A Johnson, A Toland, J Bodart, J Rendon
- Japanese beetle Open House at Cedar Mill Public Library. Portland, OR. -A Johnson, A Toland, J Bodart, J Rendon
- Japanese beetle project presentation. Tualatin Hills Parks and Recreation training. -A Johnson

July

- "Don't Move a Pest project and future collaborations" for Western Invasive Species Council virtual meeting. -J Bodart

August

- Western Horticultural Inspection Society virtual presentation. -H Rogg
- Oregon's state report for the National Gypsy Moth Program Managers virtual meeting. -J Bodart

September

- OSU Pollination podcast: interview on invasive species. -J Vlach

October

- Virginia Tech Virtual Hokie Bug Fest: featured alumnus. -M Raggiozino
- Japanese beetle, Gypsy Moth, and Spotted Lantern Fly virtual update. 4-County CWMA. -A Johnson
- “Oregon Gypsy Moth Report, 2020.” Annual Gypsy Moth Review - virtual meeting. -R Worth

November

- Oregon Master Gardener podcast interview: “Invasive species threatening Oregon! What to look for and how to help!” Part 1: Gypsy moth, Asian giant hornet, jumping worm, and southern pink moth. -J Rendon

December

- Oregon Master Gardener podcast interview: “Invasive species threatening Oregon! What to look for and how to help!” Part 2: Japanese beetle, spotted lanternfly, Houdini fly, lily leaf beetle, viburnum leaf beetle, and allium leafminer. -J Rendon
- “Spotted lantern fly: the next big pest for Oregon?” virtual presentation. Portland Parks and Recreation Online Live Pesticide Applicators Recertification. -H Rogg
- “Recent moth happenings at the Oregon Department of Agriculture.” Pacific Northwest Lepidoptera Workshop - virtual meeting. -R Worth

TRAININGS

January

- Oregon and Washington Full Scale Incident Command Systems Training - Invasive Species Exercise. IPPM Portland Field Office. Portland, OR. -J Bodart, A Toland, C Pettit, T Adams, Holly W, D Clark, R Rash, Invasive Species Council (OR/WA), USDA APHIS, and other state and federal counterparts.

March

- Wood Bark and Ambrosia Beetle Identification workshop. Macleay Conference and Retreat Center. Salem, OR. -J LaBonte, J Vlach, T Valente, D Clark, J Dunlap

May

- “COVID-19 and Invasive Species Programs” virtual training. -J Bodart

July

- “Foundational Training Program” virtual training sessions hosted by the Department of Administrative Services (DAS). -J Bodart

August

- “Foundational Training Program” virtual training sessions hosted by DAS. -J Bodart
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September

- “Effective Facilitator” virtual training sessions hosted by the National Plant Board (NPB). -J Bodart, A Toland, C Pettit

October

- “Effective Facilitator” virtual training sessions hosted by the NPB. -J Bodart, A Toland, C Pettit
- “Introduction to managing projects” virtual training sessions hosted by DAS. -J Bodart

November

- Plant Program all-staff virtual training sessions. -H Rogg, A Blietz

December

- Plant Program all-staff virtual training sessions. -H Rogg, A Blietz

MEETINGS

January

- Western Region Japanese Beetle Cooperators virtual meeting. -J Bodart, A Toland, A Johnson, H Rogg, C Pettit, H Wantuch, J Rendon
- National CAPS Committee (NCC) Annual meeting in Chicago, IL. - H Rogg

February

- Japanese beetle project update for the Washington County Board of Commissioners. -A Toland
- Oregon State Weed Board meeting. ODA main office, Salem, OR. -H Rogg

March

- Sudden Oak Death Task Force teleconference. -H Rogg

April

- Portland Pest Risk Committee quarterly teleconference. -J Bodart, C Pettit

May

- OISC Business Meeting -J Bodart
- Japanese beetle webinar for west coast states. -H Rogg

June

- Oregon Association of Nurseries (OAN) webinar. -H Rogg
- Christmas Tree Advisory Committee webinar. -H Rogg

July

- Japanese beetle air cargo meeting with California Department of Agriculture. -A Toland, H Rogg, H Wantuch, J Bodart, J Rendon
- Portland Pest Risk Committee quarterly teleconference. -C Pettit

September

- Oregon Invasive Species Council virtual meeting. -J Bodart
- Washington and Oregon Port Detection Interagency response plan working group virtual meeting. -J Bodart

October

- “Diversity, Equity, Inclusivity” state conference. -J Bodart, A Blietz
- Christmas Tree Advisory committee meeting. -H Rogg
- Annual Gypsy Moth Review, Washington, DC - virtual meeting. -R Worth

November

- Sudden Oak Death Task Force teleconference. -H Rogg
- Portland Pest Risk Committee quarterly teleconference. -C Pettit, J Rendon

December

- Oregon, and Washington Asian Gypsy moth response plan virtually. -H Rogg, J Bodart, A Toland, C Pettit, K. Schwarz
- Northwest Lepidoptera Workshop, OSU, Corvallis - virtual meeting. -R Worth

PUBLICATIONS

- Mc Donnell, R.J., J. J. Vlach, I. Reich, and A. J. Colton. 2020. *Boettgerilla pallens* Simroth, 1912 (Boettgerillidae): A New Invasive Slug Species in Oregon, U.S.A. American Malacological Bulletin. 38(1):63-65
- Kearns, Diana N. and Patrick C Tobin, 2020. Oregon vs. the Gypsy Moth: Forty Years of Battling an Invasive Species, American Entomologist (Fall 2020), Volume 66(3): 50-58. <https://doi.org/10.1093/ae/tmaa036>
- Pinto, J. D., R. L. Westcott, R. Stouthamer and P. F. Rugman-Jones. 2020. Phoretic relationships of the blister beetle *Meloe (Meloe) strigulosus* Mannerheim (Coleoptera: Meloidae) from a coastal dune habitat in Oregon. Transactions of the American Entomological Society 146: 549–576.

Invasive Noxious Weed Control

The 2020 season was the most challenging year for staff in the 45-year program history. COVID-19 and wildfires had big impact on the state budget. This equated to a cut in the Noxious Weed Program State Lottery Funds of over 80%. These cuts also impacted Oregon State Weed Board (OSWB) Grant funding provided by the Oregon Watershed Enhancement Board. The OSWB funding for 2020 totaling \$1.36 million was pulled back, which directly impacted our stakeholders and noxious weed projects throughout Oregon.

During 2020, most of the Noxious Weed Program staff including the program manager were moved into positions with the Hemp Program due to budget shortfalls. In the spring, the Noxious Weed Program was also hit with the loss of Mike Crumrine, Central Oregon Regional Weed Coordinator, when he left for an Invasive Species position with USFS. Due to budget cuts, the Noxious Weed Program was unable to fill his position. Many of the usual activities completed by the Program were not completed due to the state funding shortfall and staffing changes. The primary weed program work that was completed this year was restricted to federal projects.

Moving forward, the program plans to continue to evolve as is outlined in our five-year Programmatic Strategic Plan. To successfully implement the plan, there needs to be good communication and support between policy makers, both internally and externally, for securing essential base funding to get the program back on track for the 2021-23 biennium.

The Invasive Noxious Weed Control Program role is to provide leadership, communication, and capacity for technical support to cooperators. Our staff and equipment infrastructure are in place regionally to both coordinate and implement invasive weed management projects. Projects are directly tied to natural resource management strategies at federal, state, county, and local levels.

Controlling invasive noxious weeds is a critical component in achieving success in areas of water quality as well as fish and wildlife habitat preservation, especially for salmonids and the greater sage grouse. This includes preserving recreational opportunities, ensuring a robust agricultural economy, and achieving overall functioning watersheds free of invasive weeds. The program needs support of policy makers through stable, flexible funding to achieve these goals. I sincerely hope we have better times ahead with budget and that together with our cooperators we



Noxious Weed Control Program staff (from left): Tim Butler, Tom Forney, Beth Myers-Shenai, Glenn Miller, Carri Pirosko, Bonnie Rasmussen, Mike Crumrine, Tristen Berg, Mark Porter, and Joel Price.

can continue to make progress in protecting Oregon's valued natural resources and agricultural economy.

Tim Butler

Invasive Noxious Weed Control Program Manager

PROGRAM OVERVIEW

The Invasive Noxious Weed Control Program has over 45 years of successful leadership working with cooperators to implement invasive noxious weed prevention and control projects. The investment in invasive weed control has tremendous value to Oregonians. For example, a recent study, "Economic Impact from Selected Noxious Weeds in Oregon," looked at 25 of 128 state listed noxious weeds and estimated their impact at \$83.5 million a year to Oregon's economy. If uncontrolled, the impact potential of these weeds could rise to \$1.8 billion. For every dollar invested in Early Detection and Rapid Response (EDRR) projects, there is a \$34 benefit to Oregon's economy.

- Our mission is to protect Oregon's natural resources and agricultural economy from the invasion and proliferation of invasive noxious weeds by:
- Providing leadership and coordinating noxious weed management
- Serving as a technical resource for noxious weed issues
- Providing public outreach, education, and awareness
- Conducting weed risk assessments and listing State listed Noxious Weeds



Program Regional Staff. Salem Staff—Program Manager: Tim Butler, Projects Coordinator: Tom Forney, Biocontrol Entomologist: Joel Price, Grant Coordinator: Tristen Berg.

- Implementing Early Detection and Rapid Response (EDRR) projects for new invading weeds
- Coordinating and implementing biological control of weeds
- Administering the State Weed Board Grant Program

The program has ten technical staff located in Salem, Eugene, Grants Pass, Burns, Enterprise, and an open position in central Oregon. The state is divided into five regions for the purpose of coordinating projects, working with local partners, and implementing a statewide approach to invasive weed management. The program also employs a program manager, project coordinator, biological control entomologist, grant coordinator, program assistant, and seasonal staff to help implement projects.

Invasive Noxious Weed Control staff collaborate with private landowners, county weed programs, state and federal land managers, and other cooperators to implement integrated weed management projects throughout their regions. The program is focused on Early Detection and Rapid Response for new invading noxious weeds, implementation of biological control, completion of statewide weed inventory and surveys, technology transfer and noxious weed education, noxious weed data maintenance, weed risk assessments, and maintenance of the Noxious Weed Policy and Classification System.

Program staff works closely with the Oregon State Weed Board (OSWB) to host meetings, provide updates and technical support, and administer OSWB grants. The OSWB is a seven-member board appointed by the ODA Director. The primary mission of the OSWB is to provide oversight for the listing of noxious weeds, guide statewide noxious weed control priorities, and award noxious weed control grants.

A statewide approach that engages partners has proven successful for managing noxious weeds. Weeds

do not respect jurisdictional boundaries and by their nature spread from one land ownership to another. To implement an effective weed program, the Noxious Weed Control Program must foster relationships and work with private, federal, state, county, and local interests. Developing and maintaining partnerships is critical to accomplishing our program mission.

The program works closely with federal partners to develop Memoranda of Understanding (MOU), cooperative agreements, and contracts to facilitate control projects and financially assist the program. About 40 percent of the program's budget comes from federal sources and the balance is State Lottery and General Funds. Primary federal support comes from the US Forest Service Region 6 (USFS), Oregon Bureau of Land Management (BLM), US Army Corps of Engineers (USACE), and the US Bureau of Reclamation (BOR).



Land ownership in Oregon, roughly 50% of the state is in federal ownership, 45% in private and the remainder in state, county, tribal, and other ownerships.

2020 WEED PROGRAM ACCOMPLISHMENTS

The Noxious Weed Control Program saw a significant reduction in accomplishments due to State Lottery and General Fund shortfalls contributed to Covid-19, wildfires and other factors. Despite the challenges, the program was able to complete a majority of our federal project obligations and complete a number of statewide priorities.

One of the big highlights for 2020 was biocontrol. The Noxious Weed Program was able to maintain priority biocontrol projects and expand efforts for two new agents on gorse and knotweed. Many of the other Lottery Funded activities did not fare as well and were curtailed. Overall the program completed 50% fewer projects than 2019, treatment acres were down by 40% and we conducted fewer education and outreach activities, made fewer presentation and canceled many of our longstanding events including Oregon



Masking up was the norm for 2020.

Invasive Weed Awareness Week, the summer OSWB field tour and meetings, and Interagency Noxious Weed Symposium. Additionally, most OSWB grant program activities including the 2020 grant cycle and monitoring were deferred.

Program staff implemented 70 noxious weed projects, conducted 298 treatments, completed 21 pre- and post-treatment monitoring activities, and conducted 21 weed surveys. Staff treated 524.2 net acres over 110,316.5 gross acres.

One hundred thirty-five biological control releases were made at 54 sites, and 15 species of biocontrol agents were monitored at 83 sites over 17 Oregon counties to determine establishment and effectiveness.

Staff gave 15 presentations and attended 113 meetings for consultation, planning, and outreach.

OREGON STATE WEED BOARD (OSWB) UPDATE

One of the big changes this year was the retirement of Jim Harris, the current chair of the Oregon State Weed Board. Jim served on the Oregon State Weed Board for 35 years and was presented a plaque of appreciation for his many years of service at the February meeting. Senator Bill Hansell joined the meeting to provide some history of his time on the OSWB with Jim. Jim Harris and Senator Bill Hansell were part of the founding members on the Oregon State Weed Board and the



Jim Harris retirement award presentation with ODA Alexis Taylor, Jim Harris and Tim Butler, ODA Noxious Weed Program Manager.

Oregon State Weed Board Grant Program. Senator Bill Hansell served as chair for many years during his 27 years on the board until he retired as Umatilla County Commissioner. Jim took over as the OSWB chair at that time. Jim's knowledge of noxious weed issues around the state will be greatly missed. The gavel was passed to Craig Pope as new chair and Carson Lord, as new vice chair. ODA

will start the process to fill the vacant eastern Oregon board member position in 2021.

Due to lottery revenue cuts as a result of the COVID-19 pandemic and COVID-19 concerns there was no summer OSWB meeting.

Oregon State Weed Board Grant Program

The OSWB Grant Program is a partnership with the Oregon Watershed Enhancement Board (OWEB) and the ODA Noxious Weed Control Program. Funds reside within the OWEB and the Noxious Weed Program oversees and administers the grants. There are two grant cycles per biennium and grants are awarded annually. Under the OSWB Grant Program, staff and the OSWB work to fund as many high-priority projects as possible with the available funds. OSWB grants meet specific criteria and are used to implement projects for the protection and enhancement of watershed health and wildlife habitats. Success of the OSWB Grant Program is due to the outstanding work that is being accomplished on the ground by grantees through regional partnerships.

Due to COVID-19 and lottery fund shortfalls, OWEB pulled back the remaining \$1.36 million from the 2020 OSWB grant program. The Noxious Weed Program was not able to offer a 2020 grant award. The loss of funding had a negative impact on many cooperators and noxious weed control work around the state. Some cooperators depend on OSWB Grants to match other grants, so loss of funding had a compounding affect.

At the last Oregon Watershed Enhancement Board meeting held in December of 2020 the most recent lottery revenue forecast for 2021-2023 was optimistic and OWEB is planning to restart annual grant solicitations. This means, OWEB will be working with the Noxious Weed Program to open an OSWB grant



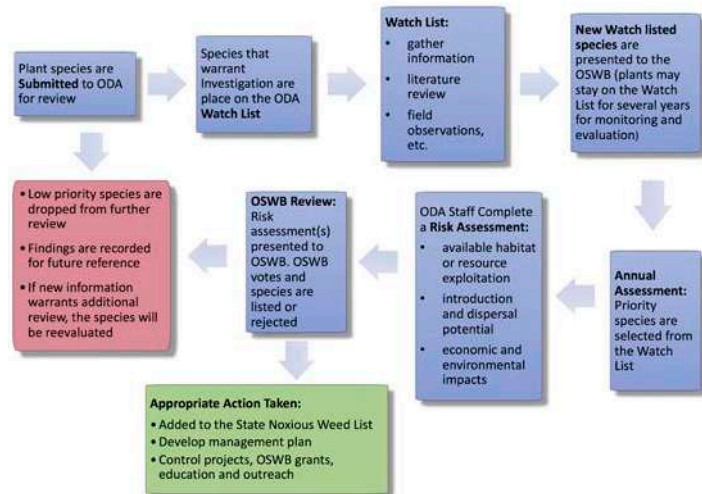
Senator Bill Hansell and Jim Harris at retirement award presentation.

cycle pending available funds. Noxious Weed staff will be working with OWEB and OSWB to possibly open a grant cycle in March of 2021 for an early July grant award if the lottery forecast comes through.

Risk Assessments and Noxious Weed List Update

The Noxious Weed Control Program develops risk assessments and gathers information to assist the

Listing a Noxious Weed



OSWB in the decision-making process to maintain and update the State noxious weed list. The Noxious Weed Program's weed risk assessment process is used to help identify high risk species and determine which candidates should be listed.

WEED LIST CHANGES FOR 2020

- Added: Turkish thistle, *Carduus cinereus* to the "A" List
- Added: English hawthorn, *Crataegus monogyna* to "B" List
- Added: Giant reedgrass, *Arundo donax*, to the "B" List



New "A" listed noxious weed, Turkish thistle, *Carduus cinereus*.

EDUCATION AND OUTREACH ACTIVITIES

Three of the big activities centering around education and outreach that the Noxious Weed Program sponsors and promotes were canceled this year. Due to current circumstances, the Oregon State Fair Invasive Noxious Weed Booth, Oregon Interagency Noxious Weed Symposium and Oregon Invasive Weed Awareness Week were canceled. Prior to the pandemic, staff participated in various education and outreach events promoting invasive weed awareness. Staff made 15 presentations to stakeholder groups and attended over 131 meetings for consultation, planning, and outreach with cooperators and private landowners.

Here are a few of the highlights (alphabetized):

- Alyssum Working Group
- Baker County Sage Grouse FIP grant Tech Review
- Cattlemen's Association Meeting - Springfield
- Clackamas River Invasive Species Partnership
- Columbia River Basin Flowering Rush CWMA
- Douglas County Weed Days
- Gorse Action Group (GAG)
- Intergovernmental Cultural Resource Meeting
- Lake County, OR and Modoc County, CA Joint Meeting
- Lower Columbia River Flowering Rush Work Group
- Mt. Hood Partners Meeting
- Northeast Oregon Noxious Weed Contractor's Meeting
- Northeast Oregon Meadow Hawkweed Work Group
- Oregon County Weed Control Association
- Oregon Invasive Species Council
- Oregon SageCon Summit
- Oregon SageCon Invasives (annual grass) Initiative Work Group
- OSU Extension Pesticide Core Training
- OSU Weed Science Course Labs
- Pull Together (4-county CWMA)
- Umatilla County EDRR Work Group Meeting (CTUIR, Umatilla Co., UNF)
- Wallowa County IAG meeting
- Wallowa County Grain Growers
- Western Invasives Network



Beth Myers-Shenai hosting a virtual weed ID tours from ODA’s greenhouse.

Outreach and Weed ID Videos

The Noxious Weed Program has set aside space in its greenhouse and dedicated time to curate live specimens of noxious weeds and other invasive plants to assist training survey crews and citizen scientists on correctly identifying them. The plants have been brought to a number of outreach events including being prominently displayed at the program’s booth at the Oregon State Fair and being used for the Oregon Vegetation Management Association’s weed quiz at their annual conference. The specimens are also available to cooperators to check out and use at their outreach events.

The Noxious Weed Program often hosts a spring open house and invites cooperators to a live plant display of our noxious weed collection to provide an opportunity to see these plants first hand and in person. As an extension of this outreach event



Beth Myers-Shenai organized a series of weekly virtual weed ID tours from the Noxious Weed Program’s greenhouse and posted them on YouTube.

Oregon Invasive Weed Awareness Week

Our usual weed awareness week when the Governor declared a week in May as “Oregon Invasive Weed Awareness Week” was canceled. This is an opportunity to highlight and showcase the importance of prevention and control of invasive weeds, their impacts and some of the work that is being done throughout the state.

As an alternative, staff showcased weed control activities around the state by posting photos on Facebook and sharing information with cooperators. The Invasive Noxious Weed Control Program uses Facebook and other social media to post announcements, promote upcoming events, provide updates on control projects, share progress and updates on grant projects, and provide timely news articles to promote greater public awareness. The program also uses Flickr, a photo-based social media site, to compile photographs of individual noxious weeds and feature outreach activities.

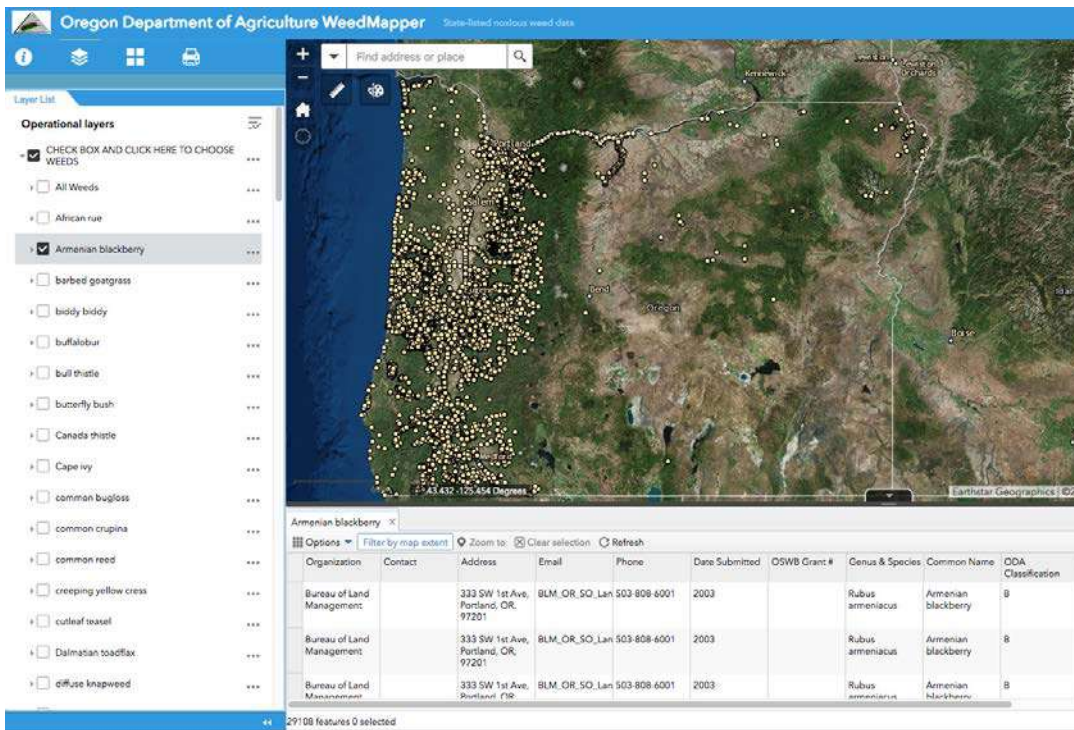
SPECIAL PROJECTS

Weed Free Forage Certification

The Oregon Department of Agriculture completed inspections for 37 growers and certified 2,882 acres as weed-free in 2020. The program has been very successful in providing certified weed-free hay and straw to meet the needs for trail users and reducing the spread of invasive weeds. The program is administered through the ODA Commodity Inspection Program and follows the North American Invasive Species Management Association (NAISMA) weed free forage standards. The USFS supports this effort through State & Private Forest Health funding to ensure weed free products are available for use on National Forest lands.

Weed Free Gravel Certification

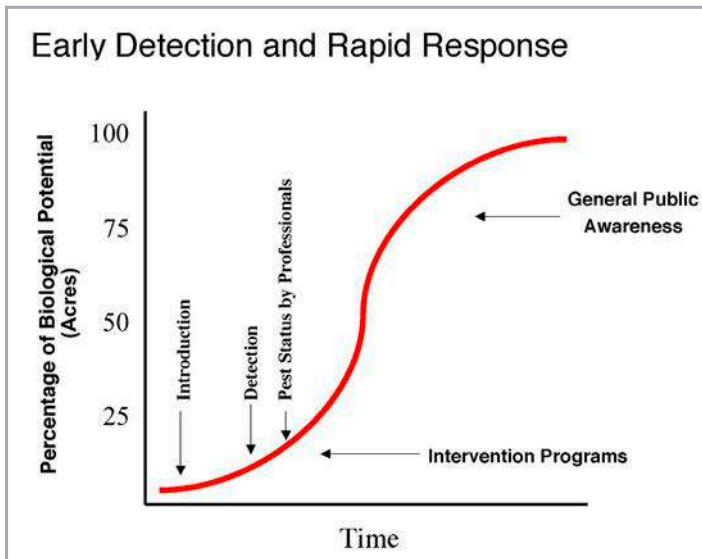
In 2020, the Noxious Weed Program completed its first full year of the new Weed Free Gravel program that provides voluntary annual inspection and certification to quarries to provide consumers assurance their operating areas are free of problem noxious weeds. There were 5 quarries certified and 2,513,000 tons of gravel and aggregate produced. The standards for this program mirror those of the North American Invasive Species Management Association (NAISMA) with the addition of any Oregon-listed noxious weeds that are not already included. Inspections are performed by ODA’s Commodity Inspection Program, which also inspect fields for Weed Free Forage certification.



WeedMapper screenshot showing distribution of Armenian blackberry

WeedMapper

WeedMapper is an extensive database of noxious weed sightings displayed in an interactive website map. Each year, the Noxious Weed Program collects new reports of weed locations from multiple agencies and organizations around the state to add to the display, much of which originates from projects funded by Oregon State Weed Board grants. The Invasive Noxious Weed Control Program also has a data sharing agreement with imapinvasives.org which collects data from multiple sources and includes confirmed reports from the Oregon Invasive Species Hotline, <https://oda.direct/WeedMapper>. The data and map displays are used by noxious weed managers throughout Oregon



and beyond for planning, reports, and evaluating changes in weed populations over time.

The 2019 update brought in a large amount of new weed locations current through the 2018 field season and 23 cooperators shared new data with WeedMapper this year in addition to the data collected by Noxious Weed Program staff and the display of data from imapinvasives.org.

EARLY DETECTION AND RAPID RESPONSE (EDRR)

EDRR is an essential focus of the program, with

the goal of preventing the introduction and spread of new weed species through early detection efforts and quick implementation of control measures. The Noxious Weed Control Program accomplishes EDRR through listing and prioritizing state listed noxious weeds, developing statewide management plans, and implementing EDRR projects. Priority listed species, A-listed and T-designated noxious weeds are of limited distribution in the state and are primary EDRR targets.

Priority species are incorporated into presentations and outreach activities to increase public awareness. Pest alerts and educational materials are distributed in an effort to help locate and report new infestations. Surveys for target weeds are conducted and if found, rapid response projects are planned and implemented for eradication or containment.

Noxious Weed Control Program staff work with state and federal cooperators, county weed programs, Cooperative Weed Management Areas (CWMAs), and private landowners to implement EDRR projects. Many EDRR projects are funded in part by OSWB grants and/or with help from federal partners. The program implements 63 EDRR control projects targeting 29 A-listed and T-listed species. During the 2020 field season, projects were prioritized and we narrowed our focus to the highest priority projects that could be completed due to Covid-19 restriction and other constraints.

The following are highlights of these projects:

African Rue, *Peganum harmala* – A(T)

African rue is difficult to control and containment is considered a success. Two locations have been detected in Oregon that require annual treatment. The first report was from an OSU herbarium record from the mid-1960s in Crook County, but it did not mention a specific location. A member of the Native Plant Society located the site in 1991. African rue has been treated as an A-listed weed by the Noxious Weed Program and Crook County since the rediscovery. The main portion of the infestation is on BLM land along Highway 27, with BLM providing most of the funding for control. The Noxious Weed Program did not assist with survey or treatment this season due to staffing and budget shortfalls.

In September 2008, a second infestation was reported and confirmed on tribal allotments located in the Harney Basin southeast of Burns. The subsequent survey revealed a project area of 2,700 gross acres and 19 landowners, including the Department of State Lands, private landowners, and tribal lands. This project is now largely funded by an OSWB grant to Harney County and is monitored by Noxious Weed Program staff. Harney County was able to continue treatments in 2020. Overall, both populations of African rue have been reduced.

Barbed Goatgrass, *Aegilops triuncialis* – A(T)

Barbed goatgrass, an A-listed weed, is only known from two locations off Highway 199. One near Rough and Ready Creek and the other at Gold Canyon south of Cave Junction in Josephine County. While infested acres of barbed goatgrass are increasing in California, they are the only known population in Oregon. The infestation extends across private, state, and federal boundaries. Support from both the Rogue River-Siskiyou National Forest and the Medford-Grants Pass BLM Office contribute to the ongoing success of this eradication project. The Gold Canyon site was sprayed this season and the Rough and Ready site was conducted by federal crews.



Barbed goatgrass volunteer pulling crew.



Noxious weed plant display by the Oregon Vegetation Management Association.

Cordgrass, *Spartina* spp. Survey and Treatment – A(T)

The state has maintained an excellent track record of finding and treating new infestations of cordgrass. Portland State University's Center for Lakes and Reservoirs (PSU) and Noxious Weed Program staff have developed a comprehensive plan to implement regular surveys of 13 Oregon estuaries that are at high risk of infestation. Three species of *Spartina* have been documented in Oregon. Prior to 2013, only two species, *S. alterniflora* and *S. patens*, were known to occur. The third species of cordgrass, *Spartina densiflora*, was detected in Coos Bay during a 2013 survey.

The majority of the 2020 *Spartina* work was conducted in the southwest Oregon. Both smooth cordgrass (*Spartina alterniflora*) and dense flowered cordgrass (*Spartina densiflora*) have been previously detected in Coos Bay. Smooth cordgrass found east of Charleston Marina in 1995 was manually removed over the course of several years. The site was monitored during the winter of 2020, no regrowth has been observed since 2007. Six clones of dense flowered cordgrass were observed and manually removed from the Jordan Cove area in 2013. In 2019, thirty small *S. densiflora* clones were found along the shoreline near Jordan Cove, the same area where *S. densiflora* was found and removed during 2013. In 2020, Noxious Weed Program staff, in collaboration with Portland State University and Roseburg Forest Products, conducted early detection *Spartina* surveys in portions of Coos Bay, including Jordan Cove. Thirty-six, small, *S. densiflora* clones were found and removed along the shoreline near Jordan Cove, the same area where *S. densiflora* was found and removed in 2013 and 2019.



Flowering Rush, Butomus umbellatus.

Flowering Rush, *Butomus umbellatus* - A(T)

Since 2014, flowering rush has been a high priority for detection and control efforts in Oregon. Several small populations of flowering rush were found in Lake Wallula on the Columbia River in Umatilla County,

Oregon in early August 2014. Surveys conducted by Portland State University's (PSU) Center for Lakes and Reservoirs detected the infestations. These were the first known occurrences in Oregon of this A-listed weed. Populations of flowering rush were already known from the Spokane, Yakima, Pend Oreille, Snake, and Flathead rivers. Prior to 2014, the furthest known downstream population on the Columbia was at Two Rivers Park in the Tri-Cities, Washington.

Flowering rush continues to be a focus of survey and control efforts on the Columbia River. The Columbia River Basin Flowering Rush Working Group and cooperators from Oregon and Washington coordinate to work on the issue. Until 2020, the Noxious Weed Program has been the lead for coordinating and organizing meetings for the working group. This year, the duties were handed off to Jennifer Parsons, Aquatic Plant Specialist with Washington State Department of Ecology due to budget cuts. In addition, the Noxious Weed Program was not able to coordinate annual survey and treatment of the Oregon Columbia River flowering rush populations. The newest population of flowering rush was detected in a pond in Klamath County toward the end of the 2017 field season. That site has been treated since 2018. Being a small outlier, the site was prioritized and treated for a third time in 2020. The pond was drained in 2019 and has remained empty making access and treatment easier.

Garden Yellow Loosestrife, *Lysimachia vulgaris* - A(T)

An A-rated weed, garden yellow loosestrife, was found in 2016 on Wheatland Bar Island on the Willamette River along the Yamhill-Marion County line. Garden loosestrife is a riparian weed that outcompetes native vegetation and even the invasive, purple loosestrife in wetlands and shoreline settings. This new invader was quickly treated by the Noxious Weed Program in 2016 and follow-up monitoring and treatment has been completed through 2019. The Noxious Weed Program coordinated with Yamhill SWCD to take the lead on survey and management of this site for 2020. Survey

and treatment were conducted by Yamhill SWCD, but they had no previous experience at surveying for the plant and were not confident they found it all.

Giant Hogweed, *Heracleum mantegazzianum* - A(T)

Noxious Weed Program staff collaborate with the City of Portland and Clackamas, Columbia,

Clatsop, Tualatin, Tillamook, and Hood River SWCDs to monitor and treat all known locations of giant hogweed in Oregon. The majority of the sites occur in northwest Oregon in the Portland Metro area. A large percentage of the sites are in residential landscapes or escaped populations from ornamental plantings. Fanno Creek and Vermont Creek, both in the Metro area, are the two historically known riparian sites, but there have been no plants found at Vermont Creek since 2013. Of the 193 known sites, 173 are considered eradicated. Overall, active giant hogweed sites and plant numbers have dropped significantly since first discovered in Oregon in 2001. Much of the work was conducted by cooperators this season with some coordination from the Noxious Weed Program.



Stem and flowers of Garden Yellow Loosestrife, Lysimachia vulgaris.

Goatsrue, *Galega officinalis* - A(T)

Goatsrue is a state and federally listed noxious weed. Goatsrue is historically known from sites in Lane, Josephine and Klamath counties. It is currently found at one location in Clackamas County, four locations in Portland, and one site near Tualatin. Historically, the Noxious Weed Program has assisted with survey and treatments; for 2020, survey and treatment of populations in the Portland area were conducted by local cooperators.

Hoary Alyssum, *Berteroa incana* - A(T)

Hoary false alyssum was listed as an A-listed weed in 2015. Prior to 2020, it occurred in two regions of the state; one from northeast Oregon near the town of Wallowa and in Deschutes County. A third population was found this season in Baker County. The Noxious Weed Program treated thirty plants at the Wallow County site in 2020. The Noxious Weed Program also assisted Baker County with a survey at the new location. The Baker County site is estimated to be 40 acres in size and incorporates four private ranch properties. Treatment and inventory efforts with Baker County will begin in spring of 2021. Deschutes County

was able to successfully treat and manage the central Oregon sites this season.

Matgrass, *Nardus stricta* – A(T)



Clump of Matgrass, *Nardus stricta*, from Cape Blanco.

Matgrass is a small perennial bunchgrass native to Eastern Europe. It is unpalatable to grazing animals and can quickly render infested pasturelands unusable and outcompetes desirable or native species. Matgrass was first noticed about

37 years ago in a peat pasture near Fort Klamath. The Klamath site was the only Oregon infestation until 2015, when three new coastal sites were detected. The new coastal finds prompted the Noxious Weed Program to act in 2016, expanding efforts for detection and control in coastal counties. Infestations were confirmed at Cape Blanco airport in Curry County and Devil’s Kitchen State Park in Bandon, Coos County. A third site was also confirmed in Clatsop County on the North Coast Land Conservancy. The south coast sites are in an area of botanical importance. The Coos site is noted for a unique pygmy forest and is one of the few remaining habitats for the federally endangered western bog lily.

The Klamath County Matgrass Project is a Lottery funded project and due to limited staffing and funds, the sites were not treated in 2020. The Noxious Weed Control Program continued treatment efforts for coastal prairie habitats, most of the sites are treated using federal funds. Treatments are proving successful at the coastal sites and the occurrence of new finds has declined.

Mouse-ear Hawkweed, *Pilosella pilosella* – A(T)

Mouse-ear hawkweed is a yellow-flowered species of the aster family native to Europe and northern Asia.



Monitoring Mouse-ear hawkweed site in Yamhill County, Glenn Miller and Joel Donnely, Yamhill SWCD.

Similar to most other hawkweeds, it is highly invasive in pasture and meadows and is highly variable and adaptive to a wide range of habitats. One site is known to occur in Yamhill County. It was reported in 2010 by The Nature

Conservancy (TNC) at a location in Gopher Valley and has spread over 20 acres in an oak woodland habitat. The site is managed by TNC for the protection of Kincaid’s lupine. The Noxious Weed Control Program has worked with TNC to manage the infestation since it was discovered until 2018. Starting during the 2018 field season, the Noxious Weed Control Program



Mouse-ear Hawkweed, *Pilosella pilosella*, Plant with stem and bud.

used an OSWB grant to fund treatment of the site with Yamhill SWCD’s assistance. Yamhill and the Noxious Weed Program continued to monitor and treat the site in 2019. In 2020, the project was completed by Yamhill SWCD without the Noxious Weed Program’s help.

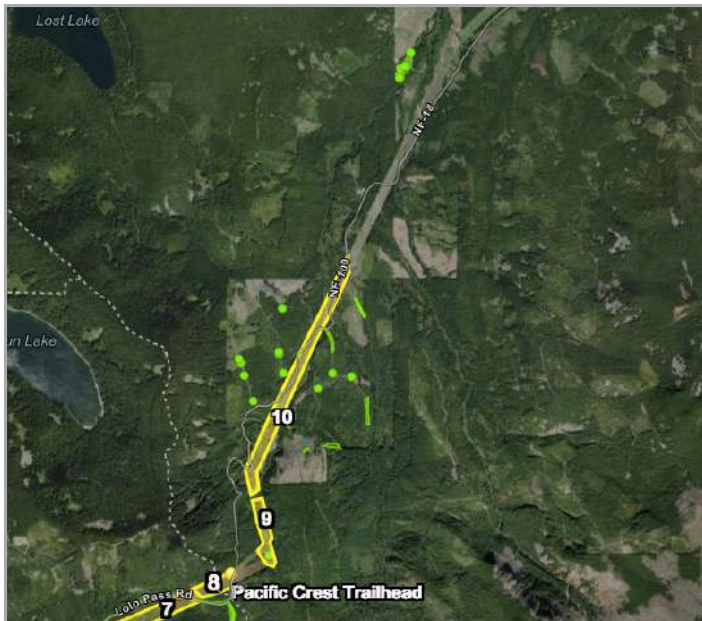
Oblong Spurge, *Euphorbia oblongata* – A(T)

Oregon’s largest site is located in Salem and is believed to have been introduced as a contaminant in flax seed that was grown and processed in the area in the mid-1900s. The core infestation is at the Oregon Office of Emergency Management along the south shore of a pond adjacent to Mill Creek. Several small sites continue to be monitored and treated annually. Overall, the Noxious Weed Program has observed a 99% decrease.

There are also a number of scattered locations in the Portland Metro area that the City of Portland and Clackamas SWCD staff are monitoring and treating. It is not entirely clear how these urban locations originated, but some of them may have been planted as ornamentals. In recent years, there have been a number of oblong spurge sites reported by cooperators around northwest Oregon although it appears this is due more to increased awareness of this noxious weed rather than a sudden spread. Benton SWCD detected three new sites in 2019 and one new site in 2020. The Noxious Weed Control Program assisted in a limited capacity with survey and treatment.

Orange Hawkweed, *Pilosella aurantiacum* – A(T) and Meadow, *P. caespitosum* – B(T)

Hawkweeds are highly invasive members of the aster family. Once established, hawkweeds can quickly develop patches that spread until they cover an area forming solid mats of rosettes. Hawkweeds displace native plants, posing a serious threat to native plant



Hawkweed sites detected and treated in Hood River County adjacent to the Mt. Hood National Forest.

communities. They can also dominate pastures, lawns, and roadsides, crowding out desirable species.

Thanks to planning and coordination by the Mt. Hood Partners group earlier in the year, the Lolo Pass orange and meadow hawkweed infestation have been able to be successfully treated in June 2020. All 365 acres in the core areas under the BPA powerlines were covered and treated thanks to a contract backpack crew hired by Clackamas SWCD as well as Clackamas SWCD, USFS and Noxious Weed Program staff.



Flowers of Orange Hawkweed, *Pilosella aurantiacum*.

The City of Portland Water Bureau contract crews also covered areas within the Bull Run watershed that are adjacent to the corridor. In addition, Noxious Weed Program crews surveyed and treated all roads and spurs within the greater 5,000-acre project area site to protect vulnerable wilderness meadow habitat. In 2020, surveys and treatments were extended both north and south along the corridor to contain further spread. Total plant numbers are a fraction of initial populations and will continue to be suppressed.

Paterson’s Curse, *Echium plantagineum* – A(T)

Paterson’s curse is an A-listed weed that threatens Oregon’s native habitats with the potential to invade oak woodlands, native prairies, and dry upland slopes. Despite a beautiful appearance, this invasive weed



Dillard, Douglas County—Paterson’s curse infestation when first found in 2004.

truly is a curse in that it is extremely toxic to livestock. It infests thousands of acres across Australia. Two Oregon counties have infestations, Douglas and Linn, and both sites are under intensive eradication efforts. Both sites continue to see an overall decline in plant numbers and acres treated. The Linn County site saw a significant decline in plant numbers in 2019 and again in 2020. Less than 1.25 acres in total were treated in the state this year.



Close up of flowers. Paterson’s Curse, *Echium plantagineum*.

Plumeless Thistle, *Carduus acanthoides* – A(T)

Plumeless thistle is known from three counties: Grant, Klamath, and Wallowa. Originally, plumeless thistle sites were discovered nearly 20 years ago in Grant County. A second location was found in Klamath County in 2007 and most recently, several sites were discovered in Wallowa County. In a normal year, the Noxious Weed Control Program monitors the sites and works with the respective counties to treat the infestations aggressively. The Noxious Weed Program had to rely heavily on the counties in 2020 as Program staff did not participate in plumeless thistle work due to budget shortfalls and COVID-19.

Ravennagrass, *Saccharum ravennae* – A(T)

Ravennagrass was listed as an A-listed weed in 2015. At the time of listing, the only known site was near McNary Dam in a wildlife area managed by the US Army Corps of Engineers. Additional locations were found in Malheur County during surveys conducted in 2016. All of the sites were monitored and treated in 2017. Observations from 2019 indicate that Malheur County has multiple new sites and some are moving

out of yards and into waste areas, irrigation ditches, and along roadsides. The Noxious Weed Control Program was not able to visit or treat the sites in 2020.

Squarrose Knapweed, *Centaurea virgata* – A(T)



Squarrose Knapweed, Centaurea virgata.

Squarrose knapweed is an A-listed weed in Oregon. A historic site in Malheur County continues to be monitored and no plants have been found since 2003. A Grant County site has been under intensive treatment since its discovery in the early 1980s. Grant County manages the project through an OSWB grant, while the Invasive Noxious Weed Control Program continues to monitor treatment efficacy. The original project area was spread across 3,200 gross acres. Over the past 30 years, the infestation has been reduced by 99% to less than 3.4 net acres. Grant County was able to continue treatment of the site in 2020, but the Noxious Weed Program was not able to assist.

Taurian Thistle, *Onopordum tauricum* – A(T)

Taurian thistle is a sister plant species to Scotch thistle, *Onopordum acanthium*, and has the same potential to be invasive. In Europe, it is more aggressive than Scotch thistle. Taurian thistle is lime green with large baseball-sized terminal flower heads that resemble an artichoke. The first Oregon infestation was detected and treated in Klamath County in 2007. Two new sites were found in 2012, located west of Klamath Falls on Hwy 140. Both sites totaled 200 plants and covered one net acre. Due to limited staffing, the Noxious Weed Control Program was not able to assist. Klamath County continues to monitor and treat sites in 2020.

Water Primrose, *Ludwigia* spp. – B(T)

The Noxious Weed Control Program staff and cooperators have made efforts to escalate detection and control efforts for water primrose in the Willamette Valley. This species, along with flowering rush and yellow floating heart, has the potential to cause significant impacts to riparian health and water resources. These species alter water quality, increase sedimentation, and contribute toward the loss of important habitat. Control efforts are now being coordinated to reduce or eliminate *Ludwigia* from water bodies in outlier sites in the Willamette system. OSWB grants and Noxious Weed Program staff are assisting with treatments and surveys in

the Willamette River system. Partners include the Benton SWCD, US Army Corps of Engineers Willamette Valley Projects, ODFW, City of Eugene Parks, City of Portland, Long Tom Watershed Council, OPRD, and Willamette Riverkeeper.

The majority of the Noxious Weed Program’s activities were deferred for 2020 along with much of the OSWB grant supported control work.

Wetted Thistle, *Carduus crispus* – A(T)

Wetted thistle, first thought to be musk or plumeless thistle, was discovered in 2016 in Wallowa County. Wetted thistle is only known in North America from one other site west of the Rockies, in British Columbia, Canada.



Wetted Thistle, Carduus crispus.

The project is seeing success. In 2019, sites were monitored on a weekly basis through the growing season and only six plants were found. This year, the Noxious Weed Program staff worked with Wallowa County’s Weed manager and private landowners to monitor and treat the area.

Yellow Floating Heart, *Nymphoides peltata* – A(T)

Yellow floating heart is an escaped ornamental aquatic plant that is highly invasive in ponds and waterways. Infestations are proving to be difficult to eradicate and are requiring annual treatments. First detected in 2004 in Washington County, it is now known from Lane, Linn, Jackson, Douglas, and Deschutes counties.



Yellow Floating Heart Caption: Yellow Floating Heart, Nymphoides peltata.

As of this field season, over 25 sites have been documented. The number of new sites continues to increase in western and central Oregon. In recent years, a number of new sites were found in Marion, Douglas, Lane, and Deschutes counties and sites are now starting to be

identified and treated on the Willamette River system. The Program is working with a number of partners and private landowners to manage this species including Willamette Riverkeeper, local SWCDs, local watershed councils, and the Umpqua National Forest.

In 2020, treatments were limited, most of the Willamette Valley and Deschutes County sites were not monitored or treated. Outlier populations in Douglas County were treated. A Douglas County site first treated in 2018 on the Umpqua National Forest in Beaver Pond was monitored and treated for a third season. Treatment is showing good results with a 75% reduction of plants. A second pond on the Umpqua National Forest, Willow sump, was detected in 2011 and has been treated annually by Noxious Weed Program staff. It is 99% eradicated.



River crossing while hand pulling and bagging *Alyssum*, Illinois Valley.

***Alyssum* (Yellowtuft), *Alyssum murale* and *A. corsicum* - A(T)**

Alyssum murale and *A. corsicum* species are unique plants in that they can hyper-accumulate metals extracted from the soil into

their leaves and shoots. In the 1990s, Viridian LLC promoted the use of *Alyssum* species for phyto-mining, the process of using plants to accumulate metal and then harvest it from naturally high mineral (serpentine) soils. Viridian planted *Alyssum* on nine serpentine-rich sites in the Illinois Valley in southwest Oregon. The Viridian venture failed and the project was abandoned in 2005. *Alyssum* spread from the planted fields and became invasive in the surrounding area.

The Illinois Valley contains the largest concentration of serpentine soils in Oregon and supports a diverse and unique flora. There are more state and federally listed “Threatened” and “Endangered” plants on serpentine soils in Oregon than on any other soil class. Many of the planted *Alyssum* fields were directly adjacent



Alyssum crew, social distancing.

to these highly valued botanically rich treasures. Treatments started in 2009. Since that time, the Invasive Noxious Weed Control Program, BLM, USFS, The Nature Conservancy, Cultural Ecological & Enhancement



Alyssum helicopter survey crew.

Network, private landowners, and citizen volunteers have collaborated in pushing *Alyssum* closer to our eradication goals. Containment efforts continue with survey and control. In 2020, a helicopter survey resulted in the detection of several new populations of *Alyssum* on the edges of known infested areas and all areas were manually treated this season by the Noxious Weed Program and cooperators.

Woolly distaff thistle, *Carthamus lanatus*

Woolly distaff thistle was discovered in Oregon in 1987. This non-native is known to infest vast acreages in California and Australia. Elimination of seed production and seeds banked in the soil is key when battling an annual thistle. The project involves the control, survey, and monitoring of all known infestations of distaff thistle. At a minimum, each site is worked three times each year. Since the inception of this project, woolly distaff thistle has been reduced by 99% from historic levels; 2.48 net acres were treated and over 4,005 gross acres were surveyed in 2020.



Woolly distaff thistle, *Carthamus lanatus*.



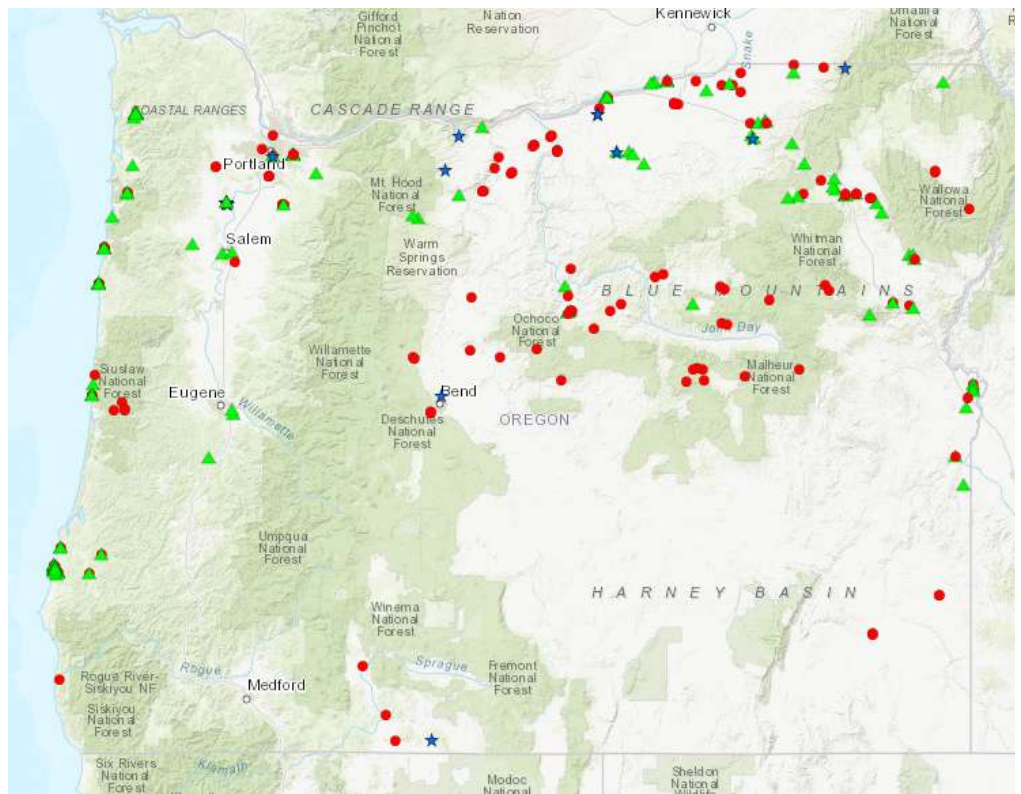
Carri Pirosko, the Noxious Weed Program, with a bundle distaff thistle.

BIOLOGICAL CONTROL OF WEEDS

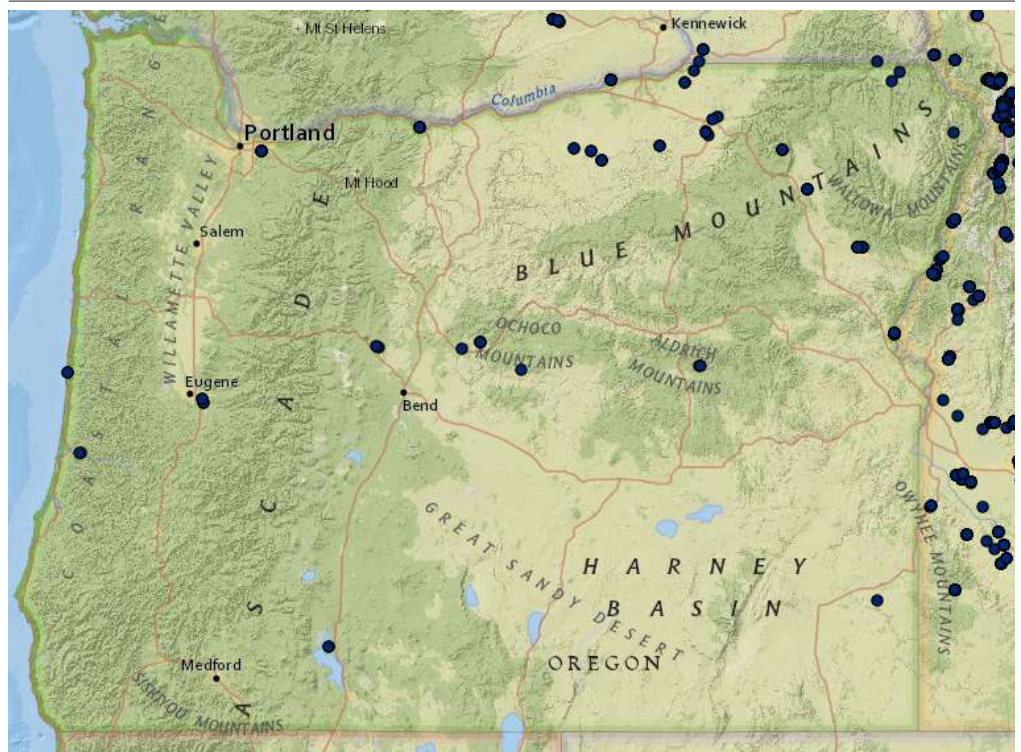
Classical biological weed control is the planned introduction of natural enemies from a plant’s native range to an invaded range in order to establish an ecological equilibrium between the herbivore agent and invasive weed host, below an economic impact threshold. Since 1947, there have been 80 species of classical biological control agents introduced against 28 species of noxious weeds in Oregon (34% widespread and effective, 41% actively redistributed, 25% no-longer used). This results in overseeing 122 biocontrol projects (weed/agent combinations). The Noxious Weed Program houses the State’s biocontrol database that contains more than 7,427 biocontrol release records from federal, state, county, district, and private cooperators.

Oregon’s biocontrol program originated in tansy ragwort biological control agents decades ago. Despite the agents being widespread and effective, tansy seems to be on the rise due to less spraying, mowing, and digging in areas where biocontrol is not well suited. Much of the biocontrol program time in early summer 2020 was spent answering dozens of phone calls and emails regarding a 2020 surge in tansy, largely due to roadside maintenance being put on hold during COVID-19 lock-downs. In natural areas, tansy agents continued to cycle but overall exert excellent control. Six tansy sites were monitored in 2020 to track eventual patch decline as agents cycle back in years to come.

The program was able to maintain the Noxious Weed Program biocontrol position despite state budget cuts; most of the project funding was supported through federal funds during 2020. The Noxious Weed Control



All 2020 biocontrol activities statewide. Collections (stars), releases (circles), and monitoring sites (triangles).



2020 long-term biocontrol study sites in Oregon.

Program’s longstanding biocontrol entomologist position was retained for year three of service by Joel Price allowing 100% focus of the FTE to remain on biological control of noxious weeds.

Accomplishments for 2020:

- Cleaned gorse thrips colony of contamination by predator thrips
- Built weed seed supply for greenhouse agent rearing
- Released new agent on gorse and provided to California
- Released new agent on knotweed and provided to Washington
- Acquired two new growth chambers for lab rearing
- Maintained 6 thrips and psyllid agent colonies overwinter
- Helped train new APHIS biocontrol addition staff
- Set-up biocontrol lab inside Hawthorne facility
- Conducted Russian knapweed wasp lab rearing parasitoid survey
- Provided Purple loosestrife agents to Washington and Idaho
- Collected nearly 1 million flea beetles for statewide distribution on leafy spurge
- Four “cold-hardy” Colorado puncturevine weevil releases conducted in Oregon
- Large collection of Cyphocleonus weevils in collaboration with a dozen USFS cooperators
- With APHIS-PPQ assistance, we expanded our use of biocontrol the “ArcGIS Collector” database on mobile device applications. In total, the Noxious Weed Program entomologist conducted 5 collections, 28 releases, and 83 monitoring sites.

TABLE 1 - TOTAL BIOCONTROL ACTIVITIES STATEWIDE, INCLUDING ALL COLLABORATORS

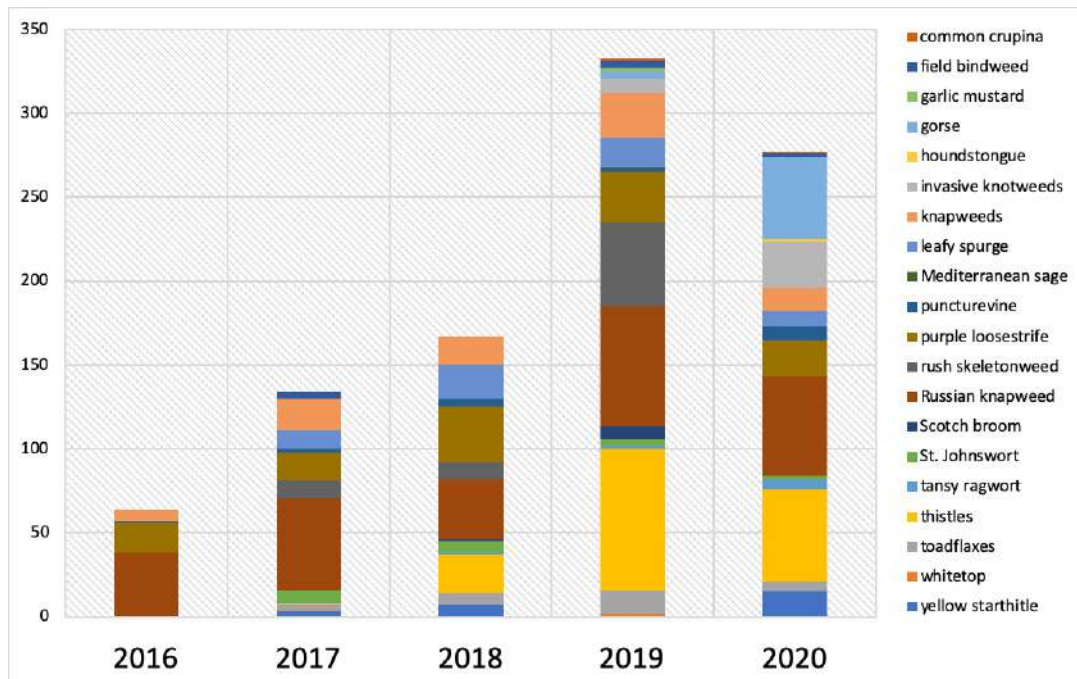
Year	Collections	Releases	Monitoring events
2020	20	135	122
2019	21	25	82

In collaboration with the Idaho Biocontrol Task Force using the Survey123 app, we expanded our permanent Standardized Impact Monitoring Protocol (SIMP) transects from 3 in 2017, 10 in 2018, 21 in 2019, to 27 in 2020. Permanent monitoring was primarily focused on Russian knapweed (4), Yellow starthistle (6) and Canada thistle (14).

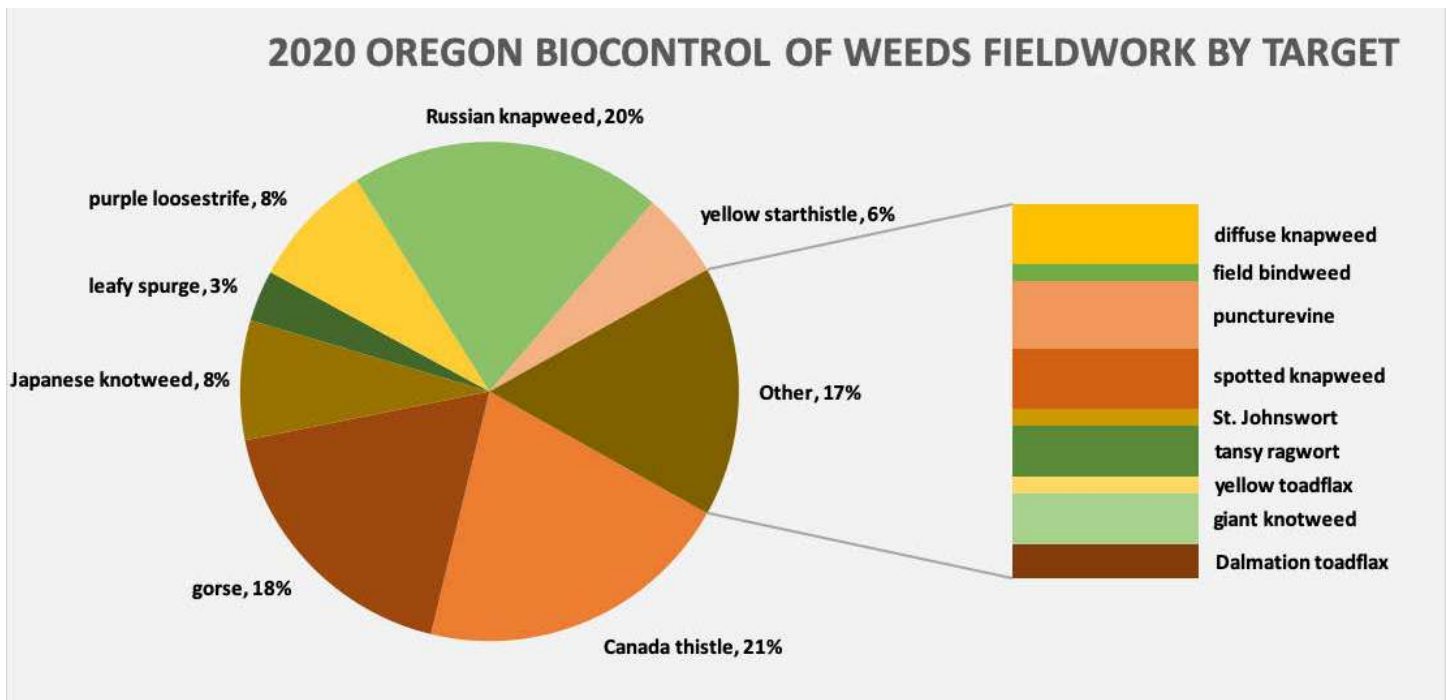
We continued extensive collaboration with USDA-APHIS-PPQ partners in Portland and Union County to cover the state. By so doing, we were able to continue to grow our program activities while making days spent in travel below 2018 levels, thus increasing efficiency. Field work began April 8th and continued till October 19th.

TABLE 2 - FIELD WORK SUMMARY FOR THE NOXIOUS WEED PROGRAM BIOCONTROL ENTOMOLOGIST ACTIVITIES

Year	Sites	Bios species no.	Counties (of 36)	Field Days
2018	41	23	16	36
2019	58	23	19	32
2020	54	15	17	35



Level of work invested (collections, releases, monitoring) in biocontrol statewide (collaborators and ODA combined) over the last 5 years by target species.



Combined ODA/PPQ 2020 biocontrol activity focus by target weed.

TABLE 3 - OREGON BIOCONTROL COLLECTION AND RELEASES CONDUCTED IN 2020 SOLELY OR COLLABORATIVELY THROUGH THE NOXIOUS WEED CONTROL PROGRAM BIOCONTROL ENTOMOLOGIST.

Targets	Species	Adults	Releases	Beneficiaries	
Canada thistle	<i>Puccinia punctiformis</i>	1014 grams	36	Wheeler Co, ODFW, State Parks, WWNF, Deschutes Land Trust, Columbia Children’s Arboretum, Owyhee Irrigation Dist., Malheur NF, TNC, Portland Parks	
Dalmatian toadflax	<i>Mecinus janthiniformis</i>	2,000	4	OPRD, Baker Co.	
Diffuse knapweed	<i>Cyphocleonus achates</i>	225	5	Sherman SWCD	
Giant knotweed	<i>Aphalara itadori</i>	2100	3	Coos Co., Tillamook Co.	
Gorse	<i>Sericothrips staphylinus</i>	3725	16	Bandon Dunes Golf, City of Bandon, USFS, ORPD, Lincoln Co.	
Japanese knotweed	<i>Aphalara itadori</i>	9080	8	Coos Co., USFS, Clackamas Co.	
Leafy spurge	<i>Aphthona lacertosa</i>	480,000	4	John Day NF, Monument SWCD, Baker Co., Union Co.	
Puncturevine	<i>Microlarinus lareynii</i>	400	4	Owyhee Irrigation Dist., Umatilla Co., Sherman Co.	
Purple loosestrife	<i>Galerucella spp.</i>	18,550	9	ODOT, USFWS, Portland Parks, Curry Co., Lane Co., Washington and Idaho	
Russian knapweed	<i>Aulacidea acroptilonica</i>	7895	32	Morrow SWCD, Umatilla Co., Lower Deschutes CWMA, Jordan Valley CWMA, Sherman SWCD, Owyhee Irrigation Dist., Baker Co.	
Spotted knapweed	<i>Cyphocleonus achates</i>	416	5	Deschutes NF	
Yellow starthistle	<i>Larinus curtus</i>	3300	5	Union Co., Baker Co., Grant Co.	
Totals by year	Targets	Species	Adults	Releases	Beneficiaries
2020	12	13	528,705	131	33
2019	9	11	900,472	63	29
2018	9	10	26,600	54	28

WEED SPECIES UPDATES

Canada thistle, *Cirsium arvense* – B(T)

Puccinia punctiformis is a naturalized rust fungus specific to Canada thistle. It was approved for redistribution by USDA-APHIS in 2017 and a USFS BCIP grant aided Colorado in supplying inoculum to many western states, including Oregon in 2018-2020. Work to establish permanent field nurseries and monitoring plots began in 2018. So far, most sites have yet to show signs of infection and the few sites we have monitored consistently for three years are showing no signs of slowing down, although travel restrictions prevented proper monitoring of most sites in 2020 when we would expect to notice results. We have yet to gain access to the Coos organic farm outbreak, find collectable timing for Tillamook Co., and our contact retired for the Lane County site (the only one we have collected from in the state). A collectable amount of rust was discovered in the John Day area by Jessica Brunson (USFS) and will be used for local movement of inoculum. The current strategy is to wait for our treated sites to start exhibiting symptoms and become collectable so we get over the supply bottleneck in Oregon. We are collaborating with Dr. Steve Young at Utah State University to discover more about the rust. We provided his graduate student with 10 or so research plots statewide.



Joel Price (Biocontrol Entomologist) with a systemically infected Canada thistle plant.

Insects were collected near Hilo, HI and brought to Oregon. The project is being coordinated by Dr. Fritzi Grevstad, OSU, and is primarily funded by the US Forest Service. The first releases were conducted in Oregon this year from the four cage colonies at the Noxious Weed Program's greenhouses and OSU quarantine. Sites were primarily selected in and around Bandon, OR for having a multitude of host plant sites, all within easy monitoring distance. The seven sites were monitored in June, July, and August. Thrips recovery was recorded for every major study site and during 22 of the 32 release location checks. 186 adult thrips were recovered across all sites. Thrips were even recovered at the Lincoln County beachfront site completely exposed to the oceanfront where salt, wind, and cold were a concern.

Japanese knotweed, *Fallopia japonica* – B

Aphalara itadori, at the OSU quarantine lab kept by Dr. Fritzi Grevstad were permitted for release in 2020. In total 34,000 psyllids were released at 27 sites in 8 states. Oregon had nine study sites. Adults released into sleeve cages lasted for many days and laid several hundred eggs on the branch leaves in which they were sleeved. Eggs quickly disappeared after sleeves were



Fritzi Grevstad, OSU (left) and Samuel Leininger, Clackamas SWCD (right) releasing adult psyllids into sleeve cages at a Clackamas County park.

Gorse, *Ulex europaeus* – B(T)

In 2008, testing of gorse thrips *Sericothrips staphylinus*, began at the OSU quarantine facility.



Vials with 100 gorse thrips in each, ready for release from the Noxious Weed Program labs to Bandon, OR.

removed and few if any nymphs were ever recorded at the sites. Each site was monitored six times and adult totals observed in the patch went from roughly 30 in early May, 10 in late May, 1 in June, and none in July or beyond. While it is reassuring that next generation psyllids were observed and timing of psyllid phenology was nearly as the model predicted, the amount of predators observed on knotweed leaves at field sites were concerning. Most sampled predators were *Anystis* spp. mites. The 2021 strategy will be to increase release sizes and release earlier in the spring when knotweed is soft and predators may be yet to peak.



Leafy spurge flea beetle collection location in Klamath Co., 2008 (above) and 2020 (below).



Leafy spurge, *Euphorbia esula* – B(T)

Leafy spurge biocontrol experienced a third consecutive banner year in Klamath County. With the help of the BLM and the Noxious Weed Program staff members, nearly a half-a-million *Apthona lacertosa* flea beetles were collected at Sacchi Ranch near Malin, OR. Beetles were introduced to the collection site in 2008 and after years of patience are now collectable and having significant impact and hollowing out a nearly 70-acre meadow. Collection may be slowing as spurge is less abundant. Landowner reported significantly increased grazing ability and never thought he would get his land back to being productive, till now.

Puncturevine, *Tribulus terrestris* – B(T)

The seed weevil, *Microlarinus lareynii* was introduced to Oregon in 1983. In 2015, weevils were found established throughout the Rogue Valley in Jackson County and Irrigon, Umatilla County. The weevils do not readily overwinter in other areas in Oregon, despite numerous introductions. The original weevils were imported from Colorado at a time when populations there were thought to seasonally migrate up from warmer clima in New Mexico and Texas. Today, overwintering populations have established throughout Colorado and are thought to be a “cold-hardy” strain. We imported 500 “Cold-hardy CO” weevils to Malheur, Grant, and Umatilla counties in 2018. Three sites were monitored in 2019 but recovery of the 2018 releases have yet to be confirmed.

Purple loosestrife, *Lythrum salicaria* – B(T)



Left to right: Joel Price (ODA), Paul Brusven (NPBCC), and Mariah Davis (USDA-APHIS-PPQ) at Oaks Bottom collection site.

8,400 *Galerucella* beetles were collected from Oaks Bottom (Sellwood-Portland) in cooperation with our APHIS-PPQ and Nez Perce-ID partners for release in Idaho counties. Significant impact to loosestrife is being observed with no “overflow” feeding on non-target plants. An additional 7,550 beetles were collected in St. Paul-Horseshoe Lake with WSU staff for release in Washington.

Russian knapweed, *Acroptilon repens* – B(T)

Greenhouse rearing of *Jaapiella ivannikovi* was abandoned due to lack of agent persistence overwinter without proper lighting for active plant bolting. Over 10,000 *Aulacidea acroptilonica* galls were easily



Absence of knapweed infestation at Priest Hole. Remaining plants stunted and heavily galled. Above (2019). Below (2020).



Mike Crumrine (Deschutes NF) instructing on sweep netting methodology (left). 100 adult *Cyphocleonus weevils* ready for shipment (right).

collected in 2020 at the Rhea lane insectary in Morrow County. 2019 galls were successfully overwintered in Salem ODA walk-in fridge and reared out as adults for spring shipments. This allowed a proper count of agents going out, preventing overwintering losses to climactic of rodent damage, and surveying for parasitoid diversity and abundance. We observed significant declines in Russian knapweed at Succor Creek (Malheur Co.) and Priest Hole (Grant Co.). Both midges and wasp galls were prolific at both sites and knapweed densities were half of what was observed in 2014.

Spotted knapweed, *Centaurea stoebe* - B(T)

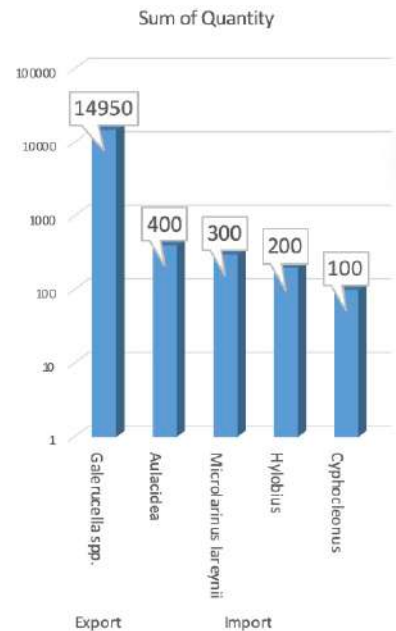
Mike Crumrine (Deschutes NF) helped facilitate the use of USFS botanists to collect 685 adult weevils September 1st, 2020. Weevils were released in Deschutes, Crook, and Grant counties. Efforts should be made in future years to visit release locations and determine agent establishment outside the Bend, OR area.

Tansy ragwort, *Jacobaea vulgaris* - B(T)

Monitoring work continued from 2018 to 2020 at SIMP transects in Multnomah county after Powell Butte experienced a significant outbreak of tansy and concerned Portland Parks employees began mowing, spraying, and control experimental plots. *Tyria jacobaeae* moth adults were observed in decent numbers during spring 2020, as were *Longitarsus jacobaeae* flea beetles. However, with year-by-year decrease in tansy digging by local land-owners and COVID lockdowns halting roadside vegetation crews for some time during spring, tansy exploded in many of the most visible areas around the Willamette Valley where humans would otherwise have maintained control in a typical year. There was an equal explosion of phone calls and emails from concerned citizens. New monitoring photo points were established and Powell Butte remained cleaner than the previous two years.



Powell Butte, Portland, Oregon tansy ragwort in 2018 (top), 2019 (middle), and 2020 (bottom).



Biocontrol interstate movement in 2020.

Native Plant Conservation

ODA's Native Plant Conservation Program was established by the Legislature in 1987 to preserve Oregon's impressive natural heritage and unique biodiversity. This was done in response to citizens' concerns about the loss and degradation of native plant species and natural habitats in many areas of the state.

The program's primary focus is to assist public agencies and private citizens with management issues involving native plants on non-federal public lands. The program meets this legislatively-mandated responsibility by:

- Assisting the general public with native plant management and protection issues.
- Limiting the management and regulation of state-protected plant species to public lands (state plant conservation laws are not applicable or enforceable on private property unless requested by the owner).
- Overseeing and regulating research and restoration activities involving target species and habitat on state lands.
- Providing guidance and support to state and local government agencies managing lands that contain target plant species or their habitats.
- Setting priorities for the establishment of conservation programs for protected native plant species, and subsequently developing such plans in collaboration with public and private stakeholders.
- Managing a permit system to regulate activities associated with protected plant collection and related actions on public lands.
- Establishing and revising Oregon's list of protected native plants, as well as providing state review of the federal government's process for listing Oregon plant species under the national Endangered Species Act.
- Conducting independent research to develop protocols for protected species recovery efforts, designed to aid in their eventual delisting.

2020 PROGRAM OVERVIEW AND HIGHLIGHTS

Cooperative Conservation Planning, Partners, and Recovery Efforts

- Work in 2020 focused on a variety of projects (and many additional consultations) situated throughout the state, involving a diversity of species and partners from both the public and private sectors.
- The Native Plant Conservation Program worked cooperatively with a range of partners in 2020, including the Oregon Military Department, Oregon Parks and Recreation Department (OPRD), Oregon Department of Energy, Oregon Biodiversity Information Center, Portland State University, Oregon State University (OSU), the US Fish and Wildlife Service (USFWS), multiple field offices of the Bureau of Land Management (BLM) and US Forest Service (USFS), the Burns-Paiute Tribe, Oregon Department of Transportation, Oregon Institute of Technology, the City of Klamath Falls, the City of Ashland, Jackson County, Josephine County, Benton County, Lane County, the City of Jacksonville, the City of Medford, the City of Corvallis, the City of Salem, the Jacksonville Woodlands Association, The Nature Conservancy, the Southern Oregon Land Conservancy, and the Native Plant Society of Oregon.
- These partnerships provided the Native Plant Conservation Program with on-going opportunities to improve our conservation efforts in many areas of the state, and furthermore, allowed Native Plant Conservation Program staff to provide management input for endangered species decision-making on federal, state, and locally administered lands.
- Stability in state funding is crucial for maintaining the legislatively assigned mission of the program, in particular completing the current list review and update (see below), as well as meeting our regulatory and consulting obligations with state and local public agencies.
- Native Plant Conservation Program initiatives and projects are supported primarily through external grants and reimbursable consultation work, together with very limited state general funds.

STATE ENDANGERED AND THREATENED SPECIES LIST REVIEW

- Over the past several years, state funding supported a crucial review of the State List of Threatened and Endangered Plants (maintained by the Native Plant Conservation Program as part of its regulatory authority), which was last updated in the late 1990's. The work included processing substantial amounts of updated information, gathering outside recommendations and comments from experts and the general public, and conducting spot field studies, to determine which plant species need a change in protective status.
- According to criteria listed under state law, species listed by the Native Plant Conservation Program must be at-risk throughout their geographic distribution (not just at-risk within Oregon), and therefore, species with limited distributions and demonstrable threats throughout a significant portion of their range were prioritized for listing.
- The list of final proposed additions to the State List of Threatened and Endangered Plant Species was released at the beginning of 2019. There are seventeen taxa proposed for listing as Threatened or Endangered and nine proposed as additions to the Candidate list.
- Completing this review and the rule-making process for the proposed changes to the State List of Threatened and Endangered Plant Species is one of the program's most important tasks for future, as the state's Threatened and Endangered plant lists can impact on-the-ground activities of all state and local land managing agencies. This effort will be completed as resources allow.

2019 COOPERATIVE FIELD PROJECT HIGHLIGHTS

Gentner's Fritillary (*Fritillaria gentneri*) – Endangered, Showy Lily of Jackson and Josephine Counties

- Partnerships with Medford District BLM, Rogue River-Siskiyou National Forest, and USFWS continued to track and monitor Gentner's fritillary transplants that have been returned to the wild. The 20,000+ plants observed in monitoring plots signified the successful establishment and survival of transplants. Continued monitoring show that the prospects for Gentner's fritillary are improving, in part thanks to the Native Plant Conservation Program's transplanting efforts that support natural populations.



ODA continues to lead the recovery of the endangered Gentner's fritillary (inset at left), through the collaborative transplanting (shown here) of bulbs and bulblets (inset at right).

- In partnership with Rogue River-Siskiyou National Forest and USFWS, the Native Plant Conservation Program conducted baseline assessments of five proposed Gentner's fritillary preserves to provide management guidance and recommendations to the US Forest Service.
- To help inform habitat restoration and noxious weed management activities in and around Gentner's fritillary sites, the Native Plant Conservation Program conducted a greenhouse-based herbicide trial. Four herbicides were tested to determine whether they impacted Gentner's fritillary plants: aminopyralid, fluazifop-p-butyl, imazapic, and rimsulfuron. Emerging Gentner's fritillary leaves were counted and measured, and while the reporting is still in process, initial findings appear promising.
- Cultivation of Gentner's fritillary transplants continued at the Native Plant Conservation Program's cultivation facilities at the OSU Greenhouses in Corvallis. The 5,000+ inventory of carefully tracked bulb stock is used to increase the number of plants in the wild. The Native Plant Conservation Program is currently in the process of transferring its cultivation leadership to partners at the USFS J. Herbert Stone Nursery in southern Oregon.
- Conservation efforts will continue in 2021 as several tasks scheduled for 2020 were postponed due to COVID-19 related travel restrictions.

Rough Popcornflower (*Plagiobothrys hirtus*) – Endangered Wetland Plant of Douglas County

- In partnership with the USFWS State Office, the Native Plant Conservation Program conducted a review of the USFWS guidelines (recovery criteria) for recovering and removing rough popcornflower



The newly created rough popcornflower population at the Del Rio Mitigation Site, with its profusion of the small white flowers of this species (inset), exemplifies another successful step, by the Native Plant Conservation Program, towards this species' recovery.

from the federal endangered species list. Current conservation status information was compiled in order to inform the Native Plant Conservation Program's proposed recommendations for recovery criteria revisions, which were shared with USFWS in early 2019. These recommendations influenced the updated USFWS recovery criteria to better provide meaningful benefits and reasonable recovery for the species.

- During summer, the Native Plant Conservation Program monitored a new rough popcornflower population that was created in partnership with ODOT as part of their mitigation responsibilities. Three shallow depressions had been excavated, to simulate the natural pool topography where this species grows, and over 3,000 rough popcornflower transplants were planted in the pools. The transplants were monitored in 2019 and showed strong signs of initial success, with over 2,500 establishing. The creation of this new population helps secure rough popcornflower's future and promote its recovery.

Peck's Milkvetch (*Astragalus peckii*) – Threatened High-Desert Plant of Deschutes and Klamath Counties

- In partnership with ODOT, the Native Plant Conservation Program is cultivating Peck's milkvetch transplants for their return to a natural population that has been impacted by safety-related highway alterations. The Native Plant Conservation Program coordinated mitigation allows this critical project to move forward while ensuring ODOT adheres to state law by contributing to the conservation and recovery of Peck's milkvetch.
- To gain a better understanding of Peck's milkvetch and the threats this species faces,

ODOT is supporting an Native Plant Conservation Program led survey effort focused on quantifying the extent and severity of damage incurred to natural populations by a native microlepidopteran herbivore, *Sparganothis tunicana* (Lepidoptera: Tortricidae). Results from the partially completed survey suggest the impacts may be less than previously thought, but likely vary from year to year.

Western Lily (*Lilium occidentale*) – Endangered, Eye-catching Lily of the Coos and Curry County Coast

- With support from USFWS, the Native Plant Conservation Program monitored western lily populations located on OPRD and ODOT land. This included revisiting natural populations and five-year-old Native Plant Conservation Program transplants to evaluate the severity of impacts associated with active management activities and herbivores. Initial results show that while population performance varied across sites, transplants can provide a lasting contribution to the species' recovery in certain areas.



In this publicly-managed powerline corridor, most of the showy western lily flowers are eaten by herbivores, but some Native Plant Conservation Program transplants escape browsing and continue to flower.

Oregon Invasive Species Council

In 2001, the Oregon Legislature established the Oregon Invasive Species Council (OISC) to conduct a comprehensive and coordinated effort to prevent, detect, control and eliminate invasive species harming the region's economy, health, and natural resources. The Council's governing statute also acknowledges the robust network of stakeholders that helps with the work of the Council: "The Invasive Species Council has a strong network of local, state, federal, tribal and private entities that actively and cooperatively combat the threat posed by harmful invasive species." ORS 570.750(4). The responsibilities of the Council set forth in ORS 570.755 include:

- Maintaining an invasive species reporting hotline
- Educating the public about invasive species
- Developing a statewide plan for invasive species
- Providing a grant or loan program for eradication of invasive species

The Council is comprised of 18 members: 6 state agencies with significant invasive species management programs, 2 higher education institutions, and 10 at-large members drawn from diverse stakeholders.

Ex Officio Members

VOTING MEMBERS:

Chair, 2020: Catherine de Rivera, Portland State University

Vice Chair, 2020: Wyatt Williams, Oregon Department of Forestry

- Noel Bacheller, Oregon Parks & Recreation
- Rick Boatner, Oregon Department of Fish & Wildlife (2021 Chair)
- Sam Chan, Oregon State University - Sea Grant
- Glenn Dolphin, Oregon State Marine Board
- Josh Emerson, Department of Environmental Quality
- Helmuth Rogg, Oregon Department of Agriculture

NON-VOTING MEMBERS:

- Rep. David Brock Smith, Oregon House of Representatives - District 1
- Nicole Brooks, Customs & Border Protection
- Erin McConnell, Bureau of Land Management
- Heidi McMaster, Bureau of Reclamation

- Sean McMillen, USDA APHIS PPQ
- Kathy Pendergrass, USDA - Natural Resources Conservation Service
- Karen Ripley, USDA Forest Service
- Amira Streeter, Office of Governor Kate Brown
- Brendan White, US Fish & Wildlife Service

Special Assistants to the Council

- Annie Blietz, Oregon Department of Agriculture
- Tania Siemens, Oregon State University - Sea Grant

2021 Appointed and Voting Members

- Troy Abercrombie, Western Invasives Network (Cascade Pacific RC&D) & North Coast Cooperative Weed Management Area (2021 Vice Chair)
- Jas. Adams, Public Member
- Edward "Chuck" Fisk, F5 Wildlife Control
- Peter Kenagy, Kenagy Family Farm, Inc., Oregon Farm Bureau, Willamette Mainstem Cooperative, Oregon Agricultural Trust & Specialty Seed Growers of Western Oregon
- Christine Moffitt, Friends of South Slough Reserve
- Tim Newton, Malheur Soil & Water Conservation District
- Dave Pranger, Morrow County
- Cheryl Shippentower, Confederated Tribes of the Umatilla Indian Reservation
- Alex Staunch, Mosaic Ecology LLC
- Eugene Wier, The Freshwater Trust

Invasive species are animals, plants, and microorganisms that are not native to Oregon and once established can reproduce so vigorously that they replace some of our native species. Invasive pests pose a threat to key sectors of Oregon's economy that depend upon natural resources and native ecosystems. Agriculture, forestry, tourism, and water resource infrastructure, including hydropower facilities, are at serious risk of being adversely impacted by invasive species. Unchecked, invasive species individually and collectively have the potential to imperil public health and to transform ecosystems, resulting in widespread economic and environmental devastations.

Unfortunately, with the beginning of the COVID-19 pandemic, the Governor’s Office approved significant cuts to our OISC funding. The additional \$300,000 funds approved in the Christmas bill in the last session and destined to fund several outreach and education grants and replenishing the invasive species emergency funds, were cut from the OISC budget.

The members of the OISC established the new grant program in late 2019 (excerpts below from the OISC website below).

New Grant for Invasive Species Education & Outreach

Invasive species pose serious threats to Oregon’s economy, ecosystems, working landscapes, infrastructure, and natural heritage. Unchecked, invasive species can imperil public health, fish and game populations, outdoor recreation, and transform ecosystems, resulting in widespread and long-lasting economic and environmental damage. Meaningful outreach and education is crucial to engage and activate a wide network of people protecting Oregon from invasive species.

The Legislature provided the Oregon Invasive Species Council (OISC) with \$100,000 to fund education and outreach projects in the range of \$2000 to \$20,000 during the 2019-2021 biennium. The OISC seeks to fund a diverse range of conventional and innovative projects to build knowledge and awareness, and empower policy makers, communities, interest groups, and members of the public to take actions that help prevent the spread of and control invasive species across the land and waters of the state. The OISC encourages innovation that leverages upon current invasive species educational approaches and messaging and/or new messages and approaches to invasive species education and outreach to reach new audiences.

ACCOMPLISHMENTS IN 2020

Conducted Virtual Council meetings

Due to the Covid-19 pandemic, all 2020 council meetings were held virtually.



Outreach and Education Grants Program

- The Outreach and Education Committee prepared guidelines for the statutorily mandated, but so far unfunded, outreach and education grants program. SB 445 provided \$100,000 for the Grants Program. Submitted grants were selected in early 2020, but funding was removed due to the economic crisis caused by the COVID-19 pandemic.

OISC Coordinator Group

In late 2019, the Invasive Species Council Coordinator position was re-filled with the Samara Group LLC. The principle OISC coordinator is Jalene Littlejohn. Other members of the Samara Group are Leslie Bliss-Ketchum, Adriana Escobedo-Land, and Marie Hepner. Here is a short description of our coordinators:

- **R. Jalene Littlejohn, Lead Coordinator**
Jalene manages the project including management of tasks, deliverables, executive support to the council and chair, facilitation of meetings, and development of all reports. Jalene is a skilled project manager and partnership facilitator with a background in Pacific Northwest ecology and environmental management.
- **Leslie L. Bliss-Ketchum, Assistant Coordinator**
Leslie closely supports project coordination, specifically leading legislative projects and event management. Leslie is a skilled project manager with experience coordinating large public events, liaising with state and regional government regarding wildlife and habitat issues, and supporting research of invasive species.

The OISC Coordinator Group Samara LLC. has continued to assisted in various projects of our Programs Area, including the Oregon Bee Project, the new “Don’t Move a Pest” Campaign, and the Japanese beetle (JB) eradication outreach efforts coordinating communication and facts for affected stakeholders. They created a website where all information, communication, and facts about the JB project are compiled and easily accessible to the interested public.

- More information is available at: www.oregoninvasivespeciescouncil.org

REPORTING INVASIVE SPECIES

The Oregon Invasive Species Council manages the www.oregoninvasiveshotline.org, where people can report suspected invasive species. In addition, the Oregon Department of Agriculture maintains a toll-free 1-866-INVADER phone line for the public to report suspected invasives.

Miscellaneous



Virtual training with our Noxious Weed Program staff.

EMPLOYEE TRAINING

This year, our staff of the Plant Protection and Conservation Programs Area has had again various training opportunities. However, the circumstances of the COVID-19 pandemic made training and meeting events quite different from a regular year. Except for the first three months of 2020, all training and meetings happened online. We held program individual training sessions in the fall of 2020.



Virtual training with our Hemp and Native Plant Programs staff.

During our all-staff training events, for instance, staff participated in mandatory and optional training sessions with topics such as ethics violations, emergency preparedness, fleet, IS security training, gender and sexual harassment and administrative procedure training to name a few. Our licensed and certified staff has maintained and continued any and



Virtual training with our IPPM Program staff.

all staff held export certifications, pesticide applicator and re-certification classes necessary to maintain accreditation and further individual expertise. Several IPPM staff members participated in an ICS (Incident Command System) table top exercise at the Washington Department of Agriculture offices in Olympia, WA, on October 23rd, 2019. The full-scale ICS exercise took place in the last week of January, 2020.



Virtual training with our Nursery & Christmas Tree Program staff.

PROFESSIONAL DEVELOPMENT

In 2020, most meetings and conferences were either canceled, such as the 101st Western Plant Board meeting scheduled for April, 2020, or moved online using a wide variety of conference systems.

One of the few meetings attended in person was the Annual National CAPS Committee meeting in Chicago, IL, the Grasshopper Management Board meeting in Aurora, CO, and a few others. At the end of this section is a complete list of meetings and conferences our staff organized or participated in.



Annual NCC meeting at Chicago O'Hare International Airport, Chicago, IL.

WEBPAGES

In 2020, Plant Protection and Conservation webpages were maintained and updated by a team of staff members: Tristen Berg, Annie Blietz, and Kerri Schwarz. The Oregon Department of Agriculture website is available at: www.oregon.gov/ODA. Continuous maintenance of our webpages is essential to offer up-to-date information to our target audience, but requires hard work from our web team. We appreciate the efforts our web team have invested in putting together and to continue improving our programs area's webpages.

FEDERAL PERMITS AND COMPLIANCE AGREEMENTS

In 2020, Plant Protection and Conservation Programs staff reviewed 167 federal permit applications through the federal e-permit system. One hundred and twenty of those permits were Plant Pest Quarantine (PPQ) 526 applications to import live plant pests or noxious weeds, including twelve PPQ 526 permits to import butterflies and moths, of which one was requested for *Danaus plexippus*, which is not allowed for import, release, and trade in Oregon; eight permits were for P546 Post Entry Quarantine. There were four PPQ 525 permits to import

soil and nineteen PPQ 588 permits (permits to import restricted plants or plant products for experimental purposes) and sixteen BRS (Biotechnology Regulatory Services) permits for genetically modified crops. Over the last two years or so, we have seen multiple e-permit requests for Isopoda. This year, almost 30 e-permit requests were submitted to sell "pet" Isopods in Oregon.

OREGON REVISED STATUTE AND ADMINISTRATIVE RULE CHANGES

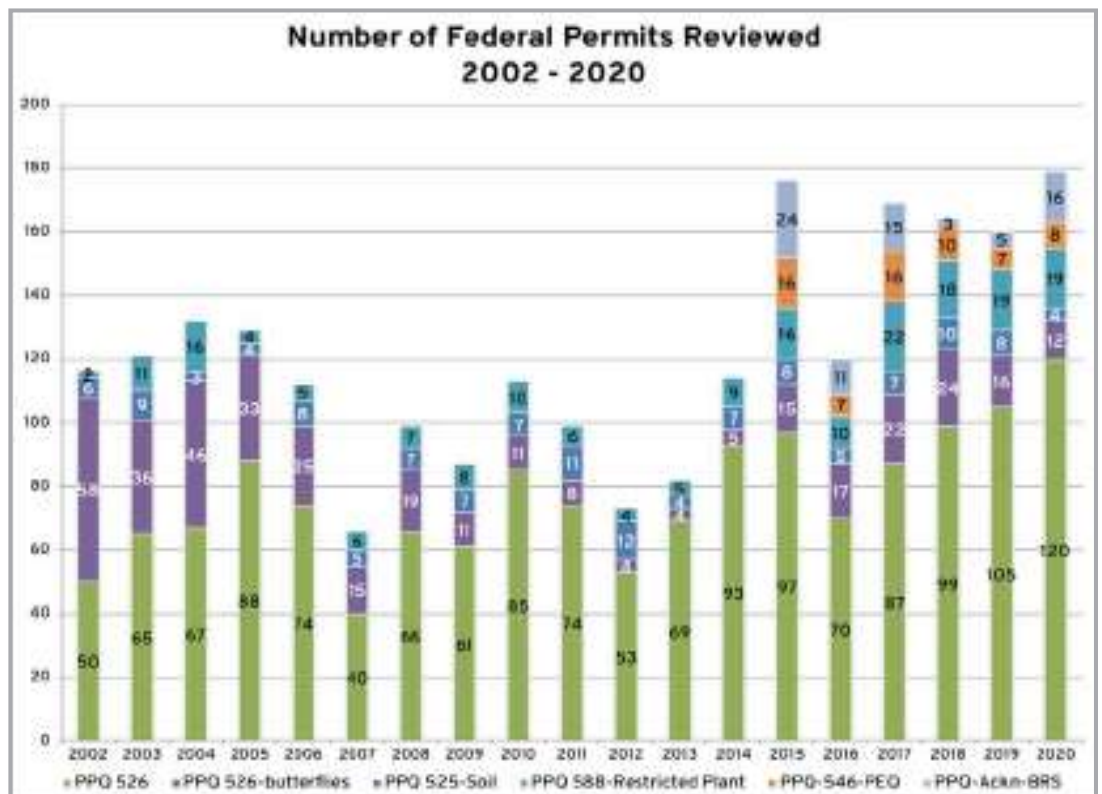
In 2020, Plant Protection and Conservation Programs Area adopted or amended the following rules:

603-052-0127

Quarantine; Japanese Beetle, European Chafer and Oriental Beetle

(1) Establishing a Quarantine. A quarantine is established against the pest known as Japanese beetle (*Popillia japonica*), European Chafer (*Rhizotrogus majalis*), and Oriental beetle (*Anomala orientalis*), members of the family Scarabaeidae, which in the larval stage feed on the roots of many plants and in the adult stage feed on the flowers, foliage and fruit of many plants.

(2) Areas Under Quarantine. The entire states of Alabama, Arkansas, Colorado, Connecticut, Delaware, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota,



Types and quantities of federal permits issued in 2020.

Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Tennessee, Texas, Vermont, Virginia, West Virginia, Wisconsin, the District of Columbia, the Provinces of Ontario, Quebec, and British Columbia, Canada, and any other state, territory or province where the presence of an established population of any of these insects is confirmed and effective eradication procedures have not been implemented. Any property(ies) in Oregon where Japanese beetles, European Chafers or Oriental beetles are found including a buffer zone that may be infested around the area where the pests were discovered.

(3) **Commodities Covered.** All life stages of the Japanese beetle, European Chafer and Oriental beetle, including eggs, larvae, pupae, and adults; and the following hosts or possible carriers of Japanese beetle:

(a) Soil, growing media, humus, compost, green waste or yard debris, and manure (except when commercially packaged, and except soil samples under a federal Compliance Agreement);

(b) All plants with roots;

(c) Grass sod;

(d) Plant crowns or roots for propagation (except when free from soil and growing media; clumps of soil or growing media larger than 1/2 inch diameter will be cause for rejection);

(e) Bulbs, corms, tubers, and rhizomes of ornamental plants (except when free from soil and growing media; clumps of soil or growing media larger than 1/2 inch diameter will be cause for rejection); and

(f) Any other plant, plant part, article or means of conveyance when it is determined by the department to present a hazard of spreading live Japanese beetle due to either infestation, or exposure to infestation, by Japanese beetle.

(4) **Restrictions.** All commodities covered are prohibited entry into Oregon from the area under quarantine unless they have the required certification. Plants may be shipped from the area under quarantine into Oregon provided such shipments conform to one of the options below and are accompanied by a certificate issued by an authorized state agricultural official at origin. Note that not all protocols in the U.S. Domestic Japanese Beetle Harmonization Plan are acceptable for Oregon. Advance notification of regulated commodity shipment is required. The certifying official shall mail, FAX or e-mail a copy of the certificate to: Plant Program Area Director, Oregon Department of Agriculture, 635 Capitol Street NE, Salem, Oregon 97301, FAX: 503-986-4786, e-mail: quarantine@oda.state.or.us. The shipper shall notify the receiver to hold such commodities for inspection by the Oregon Department of Agriculture. The receiver

must notify the Oregon Department of Agriculture of the arrival of commodities imported under the provisions of this quarantine and must hold such commodities for inspection. Such certificates shall be issued only if the shipment conforms fully with subsection (4) (a)-(d), subsection (5) or subsection (6) below:

(a) **Bareroot Plants.** Plants with roots are acceptable if they are bareroot, free from soil and growing media (clumps of soil or growing media larger than 1/2 inch diameter will be cause for rejection). The certificate accompanying the plants shall bear the following additional declaration: "Plants are bareroot, attached clumps of soil or growing media are less than 1/2 inch in diameter." Advance notification required (see subsection 4 above).

(b) **Production in an Approved Japanese Beetle Free Greenhouse/Screenhouse.** All the following criteria apply. All media must be sterilized and free of soil. All stock must be free of soil (bareroot) before planting into the approved medium. The potted plants must be maintained within the greenhouse/screenhouse during the entire adult flight period. During the adult flight period the greenhouse/screenhouse must be made secure so that adult Japanese beetles cannot gain entry. Security will be documented by the appropriate phytosanitary official. No Japanese beetle contaminated material shall be allowed into the secured area at any time. The greenhouse/screenhouse will be officially inspected by phytosanitary officials and must be specifically approved as a secure area. They shall be inspected by the same officials for the presence of all life stages of the Japanese beetle. The plants and their growing medium must be appropriately protected from subsequent infestation while being stored, packed and shipped. Certified greenhouse/screenhouse nursery stock may not be transported into or through any infested areas unless identity is preserved and adequate safeguards are applied to prevent possible infestation. Each greenhouse/screenhouse operation must be approved by the phytosanitary officials as having met and maintained the above criteria. The certificate accompanying the plants shall bear the following additional declaration: "The rooted plants (or crowns) were produced in an approved Japanese beetle free greenhouse or screenhouse and were grown in sterile, soilless media." Advance notification required (see subsection 4 above).

(c) **Production During a Pest Free Window.** The entire rooted plant production cycle will be completed within a pest free window, in clean containers with sterilized and soilless growing medium, i.e., planting, growth, harvest, and shipment will occur outside the adult Japanese beetle flight period, June through September. The accompanying phytosanitary certificate shall bear the following additional

declaration: “These plants were produced outside the Japanese beetle flight season and were grown in sterile, soilless media.” Advance notification required (see subsection 4 above).

(d) Application of Approved Regulatory Treatments. All treatments will be performed under direct supervision of a phytosanitary official or under compliance agreement. Treatments and procedures under a compliance agreement will be monitored closely throughout the season. State phytosanitary certificates listing and verifying the treatment used must be forwarded to Oregon via fax or electronic mail, as well as accompanying the shipment. Note that not all treatments approved in the U.S. Domestic Japanese Beetle Harmonization Plan are acceptable for Oregon. The phytosanitary certificate shall bear the following additional declaration: “The rooted plants are in soilless media and were treated to control *Popillia japonica* according to the criteria for shipment to category 1 states as provided in the U.S. Domestic Japanese Beetle Harmonization Plan and Oregon’s Japanese beetle quarantine.” Advance notification required (see subsection 4 above).

(A) Dip Treatment - B&B and Container Plants. Not approved.

(B) Drench Treatments - Container Plants Only. Not approved for ornamental grasses or sedges. Potting media used must be sterile and soilless, containers must be clean. Containers must be one gallon or smaller in size. Field potted plants are not eligible for certification using this protocol. This is a prophylactic treatment protocol targeting eggs and early first instar larvae. If the containers are exposed to a second flight season they must be retreated with an approved insecticide following label description for application rates:

(i) Imidacloprid (Marathon 60WP). Apply one-half (0.5) gram of active ingredient per gallon as a prophylactic treatment just prior to Japanese beetle adult flight season (June 1, or as otherwise determined by the phytosanitary official). Apply tank mix as a drench to wet the entire surface of the potting media. A twenty-four (24) gallon tank mix should be enough to treat 120-140 one-gallon containers. Avoid over drenching so as not to waste active ingredient through leaching. During the adult flight season, plants must be retreated after sixteen (16) weeks if not shipped to assure adequate protection.

(ii) Bifenthrin (Talstar Nursery Flowable 7.9%). Mix at the rate of twenty (20) ounces per 100 gallons of water. Apply, as a drench, approximately eight (8) ounces of tank mix per six (6) inches of container diameter.

(C) Media (Granule) Incorporation - Container Plants Only. Containers must be one gallon or smaller in size. Not approved for ornamental grasses or sedges.

All pesticides used for media incorporation must be mixed prior to potting and plants potted a minimum of thirty (30) days prior to shipment. Potting media used must be sterile and soilless; containers must be clean. The granules must be incorporated into the media prior to potting. Field potted plants are not eligible for treatment. This treatment protocol targets eggs and early first instar larvae and allows for certification of plants that have been exposed to only one flight season after application. If the containers are to be exposed to a second flight season they must be repotted with a granule incorporated mix or retreated using one of the approved drench treatments. Media must be treated with approved pesticides following label description for application rates approved for media incorporation:

(i) Imidacloprid (Marathon 1 G). Mix at the rate of five (5) pounds per cubic yard.

(ii) Bifenthrin (Talstar Nursery Granular or Talstar T&O Granular (0.2G)). Mix at the rate of 25 ppm or one-third (0.33) of a pound per cubic yard based on a potting media bulk density of 200.

(iii) Tefluthrin (Fireban 1.5 G). Mix at the rate of 25 ppm based on a potting media bulk density of 400.

(D) Methyl Bromide Fumigation. Nursery stock: methyl bromide fumigation at NAP, chamber or tarpaulin. See the California Commodity Treatment Manual for authorized schedules.

(5) Detection Survey for Origin Certification.

(a) Japanese Beetle Harmonization Plan protocol not approved.

(b) Alternative approved protocol: States listed in the area under quarantine may have counties that are not infested with Japanese beetle. Shipments of commodities covered may be accepted from these non-infested counties if annual surveys are made in such counties and adjacent counties and the results of such surveys are negative for Japanese beetle. In addition, the plants must be greenhouse grown in media that is sterilized and free of soil and the shipping nursery must grow all their own stock from seed, unrooted cuttings or bareroot material. A list of counties so approved will be maintained by the State Department of Agriculture. Agricultural officials from a quarantined state or province may recommend a noninfested county be placed on the approved county list by writing for such approval and stating how surveys were conducted giving the following information:

(A) Areas surveyed;

(B) How survey was carried out;

(C) Number of traps;

(D) Results of survey;

(E) History of survey;

(F) If county was previously infested, give date of last infestation. If infestations occur in neighboring counties, approval may be denied. To be maintained on the approved list, each county must be reappraised every twelve (12) months. Shipments of commodities covered from noninfested counties will only be allowed entry into Oregon if the uninfested county has been placed on the approved list prior to the arrival of the shipment in Oregon. The certificate must have the following additional declaration: "The plants in this consignment were produced in sterile, soilless media in (name of county), state of (name of state of origin) that is known to be free of Japanese beetle." Advance notification required (see subsection 4 above).

(6) Privately owned house plants obviously grown, or certified at the place of origin as having been grown indoors without exposure to Japanese beetle may be allowed entry into this state without meeting the requirements of subsection 4. Contact the Oregon Department of Agriculture for requirements: Plant Program Area Director, Oregon Department of Agriculture, 635 Capitol Street NE, Salem, Oregon 97301, telephone: 503/986-4644, FAX: 503/986-4786, e-mail: quarantine@oda.state.or.us.

(7) Infested properties in Oregon: Confirmation of an infestation of Japanese beetle, European Chafer or Oriental beetle must be made by the State Department of Agriculture or an official cooperator.

(a) Response plan. If the State Department of Agriculture confirms an infestation, the State Department of Agriculture will notify the property owner(s) and develop a response plan. The goal of the plan will be eradication as soon as possible. The plan may require cooperative measures by the property owner(s) to supplement measures taken by State Department of Agriculture.

(b) Evidence of infestation that triggers eradication. The eradication will be required upon detection of three adult Japanese beetle detections within the same trap and within the same year, or the detection of one larva, pupa, or egg stage. Eradication may also be triggered if these parameters are not met but the department determines there is a likely risk of infestation because of total detections of Japanese beetle in an area, a high occurrence of suitable breeding habitat, or a ratio of greater detections of female to male Japanese beetles in an area.

(c) Treatment. Ground treatment: Chlorantraniliprole (Acelepryn); One application per year, according to label instructions. If deemed necessary by the Department, foliar treatments with approved products will be applied along with ground treatment.

(A) Area determination: Treat 200-meter radius centered over every confirmed catch site and treat irrigated turf areas, according to label.

(B) If deemed necessary, foliar treatments with Chlorantraniliprole (Acelepryn) or other approved products will be applied during the flight period of the adult beetles, following label instructions;

(8) Quarantine: Wherever the State Department of Agriculture detects an incipient population of Japanese beetle, it may take the actions in subsections (8)(b) – (d) to prevent the spread and establishment, and to accomplish the eradication, of Japanese beetle in any infested Oregon county.

(a) The State Department of Agriculture has determined that the actions described in subsections 8(b)–(d) are necessary to prevent the spread and establishment, and to accomplish the eradication, of Japanese beetle in Clackamas, Multnomah, and Washington County.

(b) Areas subject to State Department of Agriculture treatment: The portions of the Clackamas, Multnomah, and Washington counties of Oregon described in the map that is available at: <https://oda.direct/jbmap>

(c) Commodities covered: All life stages of the Japanese beetle, European chafer, and Oriental beetle, including eggs, larvae, pupae, and adults, as well as the following hosts or possible carriers of Japanese beetle. Soil, all growing media, humus, compost, green waste (yard debris), and manure (except when commercially packaged, and except soil samples under a federal Compliance Agreement);

(A) All plants with roots;

(B) Grass sod, green (living) roots;

(C) Plant crowns or roots for propagation (except when free from soil and growing media; clumps of soil or growing media larger than 1/2 inch diameter);

(D) Bulbs, corms, tubers, and rhizomes of ornamental plants (except when free from soil and growing media; clumps of soil or growing media larger than 1/2 inch diameter will be cause for rejection); and

(E) Any other plant, plant part, article or means of conveyance when it is determined by the department to present a hazard of spreading live Japanese beetle due to either infestation, or exposure to infestation, by Japanese beetle.

(d) Mitigation measures: The mitigation area is as described in subsection 8 (b) above. Mitigation measures will consist of approved treatments during the time of targeted life stages following label instructions. Additional treatments may be required until eradication has resulted.

~~(8) Quarantine in Washington County: During 2016, the State Department of Agriculture detected an incipient population of the Japanese beetle in the Cedar Mill and Bethany neighborhoods in Washington County, Oregon. The State Department of Agriculture has determined that this is the largest Japanese beetle~~

infestation ever detected in Oregon. If the Japanese beetle population in Oregon is not eradicated, damage to Oregon's agricultural industry and natural resources is estimated at up to \$45 million annually. The State Department of Agriculture estimates that approximately \$3.5 million (2016) in nursery product sales in Oregon could be lost because of quarantine restrictions against Oregon products if the Japanese beetle is not eradicated in Washington County.

(a) The State Department of Agriculture has determined that the actions described in subsections 8(b)–(d) are necessary to prevent the spread and establishment, and to accomplish the eradication, of Japanese beetle in Washington County.

(b) Areas subject to State Department of Agriculture treatment: The portions of the County of Washington described in the map that is available at: <https://oda.direct/jbmap>

(c) Commodities covered: All life stages of the Japanese beetle, European chafer, and Oriental beetle, including eggs, larvae, pupae, and adults, as well as the following hosts or possible carriers of Japanese beetle: Soil, all growing media, humus, compost, green waste (yard debris), and manure (except when commercially packaged, and except soil samples under a federal Compliance Agreement);

(A) All plants with roots;

(B) Grass sod, green (living) roots;

(C) Plant crowns or roots for propagation (except when free from soil and growing media; clumps of soil or growing media larger than 1/2 inch diameter);

(D) Bulbs, corms, tubers, and rhizomes of ornamental plants (except when free from soil and growing media; clumps of soil or growing media larger than 1/2 inch diameter will be cause for rejection); and

(E) Any other plant, plant part, article or means of conveyance when it is determined by the department to present a hazard of spreading live Japanese beetle due to either infestation, or exposure to infestation, by Japanese beetle.

(d) Mitigation measures: The mitigation area is as described in subsection 8 (b) above. Mitigation measures will consist of approved treatments during the time of targeted life stages following label instructions. Additional treatments may be required until eradication has resulted.

(9) Entry onto property to be treated is pursuant to authorities in ORS 561.510 and ORS 570.305 by consent of the owner or occupant of the property, or pursuant to an administrative warrant as may be issued by the appropriate court. The State Department of Agriculture shall seek consent to enter property before entering property and shall provide at least seventy-two (72) hours advanced notice prior to entering property to treat the premises. If

consent is withheld or denied, the State Department of Agriculture may seek an administrative warrant to enter the property to treat the premises.

(10) Prohibitions: All commodities covered are prohibited from leaving the Area under Quarantine described in subsection 8 (b) (Area under Quarantine) unless they have the required certification as described under subsection (4) (d).

(11) Plants may be shipped from the Area under Quarantine into other counties of Oregon or outside of Oregon provided such shipments conform to one of the classifications in subsection (4) and (5) and are accompanied by a certificate issued by an authorized state agricultural official. These are treated the same way as quarantine areas outside Oregon.

(12) Additional Quarantine Requirements. Sites on which Japanese beetle (*P. japonica*) has been detected and on which mitigation activities as described in subsection (8)(d) have been implemented may be eligible to ship plant materials intra- and interstate provided mitigation measures as described in subsection (4) have been conducted. The imposition of a civil penalty is subject to ORS 183.745.

(13) Exceptions to Quarantine. Upon written request, and upon investigation and finding that unusual circumstances exist justifying such action, the department may issue a permit allowing entry into this state of commodities covered without meeting the requirements of subsection (4). However, all conditions specified in the permit shall be met before such permit will be recognized.

(14) Violation of Quarantine. All covered commodities described in subsection (3) of this rule found to be in violation of this quarantine shall be returned immediately to point of origin by the Oregon receiver, or at the owner's option be destroyed under the supervision of the department, without expense to or indemnity paid by the department. Violation of this quarantine may result in a fine, if convicted, of not less than \$500 nor more than \$5,000, as provided by ORS 561.990(4). Violators may also be subject to civil penalties of up to \$10,000 as provided by ORS 561.995. The imposition of a civil penalty is subject to ORS 183.745.

Statutory/Other Authority: ORS 561.020, 561.190, 561.510 & 570.305

Statutes/Other Implemented: ORS 561.510

History:

DOA 4-2020, amend filed 03/24/2020, effective 03/24/2020

DOA 2-2018, temporary amend filed 02/01/2018, effective 02/01/2018 through 07/30/2018

DOA 10-2017(Temp), f. 4-14-17, cert. ef. 4-15-17 thru 10-10-17

DOA 3-2013, f. & cert. ef. 3-1-13
 DOA 4-2010, f. & cert. ef. 1-28-10
 DOA 7-2008, f. & cert. ef. 2-8-08
 DOA 9-2006, f. & cert. ef. 3-22-06
 DOA 27-2000, f. & cert. ef. 10-13-00
 DOA 10-1998, f. & cert. ef. 12-30-98
 Reverted to AD 12-1977, f. 6-6-77, ef. 6-20-77
 AD 7-1988(Temp), f. & cert. ef. 8-2-88
 AD 12-1977, f. 6-6-77, ef. 6-20-77

Allium Leaf Miner

As part of our Allium Leaf Miner (ALM) FRSMMP (Federally Recognized State Managed Phytosanitary Program), we prepared an exterior quarantine for the Allium Leaf Miner. The rule is currently under draft and will be finalized in early 2021 for publication:

603-052-0XXX

QUARANTINE AGAINST ALLIUM LEAF MINER

A quarantine will be established against the Allium Leaf Miner, ALM. Areas under quarantine will include any parts of the United States and Canada where ALM is known to exist. *Allium* spp. host material from these areas will be prohibited unless conditions are met that prevent the introduction of ALM into Oregon. Additionally, importers will be required to notify the department prior to import of *Allium* spp. host materials from these areas to enable ODA to inspect material entering the state.

(1) Establishing a Quarantine. A quarantine is established against the allium pest, the Allium leaf miner, *Phytomyza gymnostoma* Loew, 1858 (Diptera: Agromyzidae), native to Germany and Poland and found in the United States in Pennsylvania in 2015. The allium leaf miner is one of the most important Allium (garlic, leek, and onion) pests in Europe. The larvae feed on the leaves and can cause the death of small plants and leaves to twist.

(2) Area Under Quarantine:

(A) All infested states in the United States and provinces in Canada.

(3) Articles and Commodities Covered:

(a) All plant material from hosts listed below: including ornamental varieties:

(A) Garlic (*Allium sativum*)

(B) Onion, green onion, shallots (*Allium cepa* and varieties)

(C) Leek (*Allium ampeloprasum*)

(D) Chives (*Allium schoenoprasum*)

(4) Restrictions:

(a) Certification Required. Articles and commodities covered, which are produced in or shipped from the area under quarantine are prohibited entry into the state of Oregon unless each lot or shipment is accompanied by a certificate issued by and bearing the original or facsimile signature of the authorized agricultural official of the state from which the article or commodity is shipped evidencing compliance with subsections (c) and (d) of this section.

(b) Reshipments of commodities (in original containers) grown outside the area under quarantine. Commodities in original unopened containers may be reshipped to this state from any point within an area under quarantine. Containers shall bear labels or other identifying marks which clearly indicate that commodities originate from outside a quarantined area;

(c) Certification required for Admission of Repacked Commodities Grown Outside of Area Under Quarantine. Provided each lot or shipment is certified by an authorized agricultural official to have been grown outside the area under quarantine and that continued identity has been maintained while within the area under quarantine, the commodities may be repacked and shipped by common carrier from any point within the area under quarantine to this state. The certificate shall set forth the state in which commodities were grown, point of repacking and reshipment, amount and kind of commodities comprising the lot or shipment, and the names and addresses of the shipper and consignee;

(d) Commodities treated with approved insecticides. Commodities treated with approved insecticides may be admitted into Oregon provided treatment is approved by the proper authorities in the state of origin and further provided each lot or shipment of such commodities to Oregon is accompanied by a certificate, as stated in subsection (a) of this section, evidencing compliance with the minimum requirements of this section;

(e) Notification of regulated commodity shipments of *Allium* spp. host material is required. The Department may require that shipments be held until inspected and released. Notification shall be via mail, FAX, or e-mail to Nursery Program Manager, Plant Protection and Conservation Program Area, Oregon Department of Agriculture, 635 Capitol St. NE, Salem, OR 97301; FAX 503-986-4564; quarantine@oda.state.or.us. Recipients shall notify the Department prior to arrival, the following shipment information:

(A) the shipment volume;

(B) shipper's name and address;

(C) the consignee's name and address;

(D) the approximate date of delivery; and

(E) applicable copies of phytosanitary certificates and lab reports.

Statutory/Other Authority: ORS 561 & 570.305

Statutes/Other Implemented: ORS 561.190, 561.510 - 561.600, 570.305, 570.405 & 570.410 - 570.415

Spotted Lantern Fly

We also prepared a draft of an exterior quarantine against the new invasive pest, the Spotted Lantern Fly (SLF). The draft is under review and will be, hopefully, finalized in early 2021:

SPOTTED LANTERNFLY EXTERIOR QUARANTINE

A quarantine is established against the following pest, its hosts, and possible carriers:

(a) Pest: Spotted lanternfly, *Lycorma delicatula*, a lanternfly in the Order Hemiptera, Family Fulgoridae.

(b) Definitions

- 1) “Compliance Agreement” means a written agreement between a person engaged in handling, receiving, or moving regulated articles and a State Department of Agriculture wherein the former agrees to fulfill the requirements of the compliance agreement and comply with provisions of this regulation.
- 2) “Covering” means a rigid or flexible sheet that can be secured over an otherwise open load to prevent the egress of spotted lantern fly. If woven or of mesh, openings in the weave must be 1 millimeter or less.
- 3) “Decontaminate” means to treat so as to remove any stages of the spotted lanternfly.
- 4) “Infestation” means an established, reproducing population of spotted lanternfly as determined by the Department.
- 5) “Infested area” means any state, province, political sub-division, nation, or any delineated area within a nation or sub-division that the United States Department of Agriculture, United States Forest Service, or respective State Plant Pest Regulatory Agency has declared to have an infestation of, or to be quarantined for, spotted lanternfly.
- 6) “Living Life Stage” means all life stages of the spotted lanternfly, including, but not limited to, adults, nymphs, or viable egg masses.
- 7) “Move; movement” means shipped, offered or received for shipment, carried, transported, or relocated into or through any area of the State/ Province of the infested area.
- 8) “Moving through the infested area” means the regulated article, including the vehicle and conveyance, is moved directly through the infested area without stopping (except for refueling or for traffic control devices or conditions) and has been

stored, packed, or handled only at locations outside the infested area.

9) “Permit” means a document issued by a State Plant Regulatory Agency that certifies that a person has successfully completed training regarding spotted lanternfly and agrees to the conditions specified by the permit.

10) “Person” is defined as any individual, partnership, association, corporation, limited liability company, or any organized group of persons whether incorporated or not.

11) “Phytosanitary Certificate” means a document issued by an authorizing official that certifies a commodity has been inspected or treated and found to be apparently free from specific pests.

12) “Regulated Article or Articles” means the plant pest spotted lanternfly along with any plant, plant product, storage place, packaging, conveyance, container, soil, and any other organism, object, or material capable of harboring or spreading pests and deemed to require phytosanitary measures, particularly where interstate transportation is involved.

13) “Reproducing Population” means biological evidence including, but not limited to, egg masses, visibly mated females, early instar nymphs, or multiple life stages present within one year, indicating successful reproduction in the environment.

14) “Treatment” means official procedure for the killing, inactivation, or removal of pests, for rendering pests infertile, or for devitalization.

(c) Area Under Quarantine. The entire states of Delaware, Maryland, New Jersey, New York, Ohio, Pennsylvania, Virginia, and West Virginia and any other state or province infested with the spotted lanternfly.

~~(f) Infested Area. Areas within a given state designated by the state as infested by the spotted lanternfly.~~

d) Articles and Commodities Covered. The following are hereby declared to be hosts and possible carriers of the pest quarantined against:

- (1) Any living life stage of the spotted lanternfly.
- (2) All plants and plant parts: This shall include, but is not limited to, any species of live or dead tree, nursery stock, budwood, lumber, firewood, logs, perennial plants, garden plants and produce, stumps, roots, branches, mulch, and composted and uncomposted chips, bark, and yard waste.
- (3) Outdoor industrial and construction materials, equipment and waste: This shall include, but is not limited to, concrete barriers or structures, stone, quarry material, ornamental stone or concrete, wood, and construction, landscaping, and remodeling waste.

- (4) Shipping and storage containers: This shall include, but is not limited to, wood crates, pallets, boxes, personal moving containers, and barrels.
- (5) Outdoor household articles: This shall include, but is not limited to, lawn tractors and mowers, mower decks, grills, grill and furniture covers, tarps, mobile homes, tile, stone, deck boards, fire pits, and any equipment not stored indoors.
- (6) Conveyances of any type, including, but not limited to, cars, trucks, trains, recreational vehicles, and boats, whether utilized for movement of the materials previously listed or not, and any trailers, wagons, or other equipment attached thereto.
- (7) Agricultural equipment including, but not limited to, tractors, harvesting equipment, and rigid containers such as shipping containers, pods, and large bins.
- (8) Any other article, object, materials, or means of conveyance when it is determined by the Department to present a risk of carrying or spreading any life stage of spotted lanternfly.

(e) Restrictions. All articles and commodities covered are prohibited entry into Oregon from the area under quarantine with the following exceptions:

- (1) Origin Certification from non-infested Localities. Articles and commodities covered will be permitted entry into the State of Oregon if each shipment is accompanied by a waybill issued by the state of origin indicating that the points of origin of the shipment is in a non-quarantined area or an area of quarantine not within an infested area.

OR

- (2) Certificate of Treatment. All of the articles and commodities covered, are approved for entry into Oregon when accompanied by a certificate issued by an authorized state agricultural official declaring that the article or shipment was treated at origin for spotted lanternfly prior to shipment. Such treatment(s) shall be in accordance with methods and procedures approved and prescribed by the Department.

All treatments shall be conducted under direct supervision of an authorized state agricultural official or by the shipper under a compliance agreement with the authorized state agricultural official to perform the treatments. The authorized state agricultural official shall monitor all treatments and procedures performed under a compliance agreement.

OR

- (3) If originating outside of the infested area and moving through the infested area during the period of March through December, the regulated article shall move through the infested area in an enclosed vehicle or conveyance. Alternatively, the article(s) may be completely covered to prevent exposure to

the pest. The covering must be kept on the regulated article until leaving the infested area and thereafter be inspected and found to be free of spotted lanternfly. If life stages are found, the article must be decontaminated or destroyed.

OR

- (4) Any articles transported by means of a conveyance that provides a global positioning system (GPS) data report indicating that the conveyance did not travel through an infested area.

OR

- (5) Indoor articles not exposed to the environment, as determined by the nature or intended purpose of the article and confirmed by the shipper. This includes, but is not limited to, household articles, house plants, and indoor furnishings.

MOVEMENT OF REGULATED ARTICLES FROM INFESTED AREA(S).

Material specified in sub (d) (1), (2), (3), (4), (5), (6), (7), and (8) that is accompanied by a written permit, phytosanitary certificate, or Compliance Agreement:

- (A) If any other area inside or outside of this state is determined by Federal, State, or another Regulatory Agency to be an infested area, movement from that area into Oregon shall, subject to passing inspection, be allowed under a permit, that may comprise a Compliance Agreement under a Master Permit. A person required to obtain a permit for movement of regulated articles within or from the infested area shall comply with all permit requirements.

- (B) Any Phytosanitary Certificate covering regulated articles originating from an infested area, or that enter an infested area and are exposed to the environment shall be issued by an authorizing official from the state of origin. Such regulated articles, subject to passing inspection, shall be allowed entry.

(C) REQUIREMENTS FOR COMPLIANCE AGREEMENT OR PHYTOSANITARY CERTIFICATE.

1. Compliance Agreement in Place. Plant products may be imported from an infested area in compliance with a written agreement between the importer and the department that includes all of the following:
 - a. The name and address of the importer.
 - b. The type and volume of material that may be imported under the agreement.
 - c. The names and addresses of the persons to whom, and the locations to which the materials may be imported under the agreement.
 - d. The locations from which the material may be imported under the agreement.
 - e. The method by which the material may be imported.

- f. The time period covered by the agreement.
- g. The compliance agreement holder's commitment to keep complete records of each import shipment and to submit those records to the Department for inspection and copying upon request.
- h. Specific import terms and conditions that will, in the Department's opinion, effectively ensure that materials imported pursuant to the agreement will not introduce the spotted lanternfly into Oregon.
- i. A provision authorizing the Department to terminate the agreement, without prior notice, for any reason.
- j. A shipping certificate must accompany each shipment indicating that the product is under a compliance agreement.

2. Phytosanitary Certificate. Regulated articles from infested areas may only enter this state if they are inspected by an inspector of the state plant regulatory agency of the originating state and a phytosanitary certificate is issued for the article. The phytosanitary certificate must state that no spotted lanternfly was found on the regulated articles and the certificate must accompany the regulated article from origin to destination. The phytosanitary certificate does not exempt the means of conveyance or vehicle, which may require a permit.

(6) CHECKLIST REQUIRED FOR INDIVIDUALS NOT ENGAGED IN COMMERCIAL ACTIVITY MOVING REGULATED ARTICLES FROM AREAS WHERE SPOTTED LANTERNFLY IS KNOWN TO BE ESTABLISHED. A regulated article, including any vehicle or conveyance, covered by this regulation may be moved from a quarantine area if accompanied by a checklist completed by the individual transporting the regulated article(s). The completed checklist must be signed by the individual and shall accompany them. The checklist certificate is a form available from the Department's website.

PRESENTATIONS, OUTREACH EVENTS & PUBLICATIONS 2020

January

- Oregon and Washington Full Scale Incident Command Systems Training - Invasive Species Exercise. IPPM Portland Field Office. Portland, OR
-J Bodart, A Toland, C Pettit, T Adams, H Wantuch, D Clark, R Rash
- Western Region Japanese Beetle Cooperators-virtual meeting.
-J Bodart, A Toland, A Johnson, H Rogg, C Pettit, H Wantuch, J Rendon
- "Invasive Species in Oregon! Finding and Eradicating Japanese Beetle and Gypsy Moth". Corbett High School, Corbett, OR
-J Rendon
- "It's time to pay attention to international regulations, so stay sharp!" poster presentation. Interagency Research Forum on Invasive Species. Annapolis, MD
-J Vlach
- "Knotweed Biocontrol: The Sage Begins" 4-County Pull Together. Portland, OR
-J Price
- "Biocontrol: Back in Business" Non-Crop Vegetation Management. Albany, OR
-J Price
- Mt Hood Partners, Annual Planning meeting. Beaver Creek, OR
-B Myers-Shenai
- "Strategic Planning at the State Scale: What is the state actually doing to address noxious weeds?" South Coast Invasive & Noxious Weed Strategic Planning Seminar. Bandon, OR
-C Pirosko
- "Noxious Weeds in SW Oregon" Pesticide Recertification Shortcourse. Central Point, OR
-C Pirosko
- "Noxious Weeds Updates" State IPM Quarterly Coordination Meeting. Salem, OR
-C Pirosko
- "Noxious Weeds Updates" Forest Hills Firewise Group. Grants Pass, OR
-C Pirosko
- "Noxious Weeds Updates" Gorse Action Group Partner Meeting. Bandon, OR
-C Pirosko
- "Noxious Weeds Updates" Garlic Mustard Sub-Committee Meeting. Grants Pass, OR
-C Pirosko

February

- Japanese beetle project update for the Washington County Board of Commissioners.
-A Toland
- National Grasshopper Management Board Meeting, Denver, CO.
-P Blom, J Bodart.
- Japanese beetle Open House at Meadow Park Middle School. Beaverton, OR
-A Johnson, A Toland, J Bodart, J Rendon
- Japanese beetle Open House at Cedar Mill Public Library. Portland, OR
-A Johnson, A Toland, J Bodart, J Rendon
- Japanese beetle project presentation. Tualatin Hills Parks and Recreation training.
-A Johnson
- “ODA: Boxwood Blight Cleanliness Program” Boxwood Blight Workshop, Horticulture Research Institute. Aurora, OR
-C Benemann
- “Biological Control Update” Oregon State Weed Board. Salem, OR
-J Price
- “Keepin’ it Clean: Best Practices for Preventing the Spread of Invasive Plants” Bonneville Power Administration Contractor Crew Training. The Dalles, OR
-B Myers-Shenai
- “Lolo Pass Hawkweed Project Update” Columbia Gorge Invasive Species and Exotic Pest Workshop. Columbia Gorge CWMA. Stevenson, WA
-B Meyers-Shenai
- “Noxious Weeds update for SW Oregon; Most Asked Questions” Douglas County Noxious Weed Day. Roseburg, OR
-C Pirosko
- “Watch List: Weeds to Be on Lookout For in 2020” Jackson & Josephine CWMA groups meeting. Medford, OR
-C Pirosko
- “SW Update, Trends: Jubata grass and Gorse Action Group” Oregon State Weed Board Meeting. Salem, OR
-C Pirosko
- Oregon State Weed Board meeting, Salem, OR
-H Rogg, T Butler, T Berg, B Myers-Shenai, C Pirokso, M Porter
- Noxious Weeds SW Oregon Updates; Gorse Partnerships Seminar. Port Orford, OR
-C Pirosko
- Noxious Weeds SW Oregon Updates; Oregon State Weed Board Meeting. Salem, OR
-C Pirosko
- “Calibration Mathematics for Applicators” OSU Extension Pesticide Core Training- Island City, OR & Enterprise, OR
-M Porter
- “Status of Noxious Weeds in NE OR” ODA, Oregon State Weed Board Meeting- Salem, OR
-M Porter
- Weed Board Grants and Grantee Updates; Oregon State Weed Board Meeting. Salem, OR
-T Berg
- “Noxious Weeds of Concern in SE Oregon” Jordan Valley Winter Weed Seminar- Jordan Valley, OR
-B Rasmussen

March

- “Japanese Beetle Eradication Activities for IPPM 2019 Updates” Pesticide Analytical Response Coordination Board Meeting. Portland, OR
-J Rendon
- Sudden Oak Death Task Force teleconference-virtual meeting.
-H Rogg
- The Association of American Pesticides Control Officials 73rd Annual Spring Meeting, Alexandria, VA.
-J Bodart
- Wood Bark and Ambrosia Beetle Identification workshop. Macleay Conference and Retreat Center. Salem, OR
-J LaBonte, J Vlach, T Valente, D Clark, J Dunlap
- “Climate Change & Invasive Invertebrate Pest”. The Association of American Pesticides Control Office 73rd Annual Spring Meeting, Alexandria, VA
-J Bodart
- “Gorse Thrips & Biological Control Agents” Intergovernmental Cultural Resource Meeting. Corvallis, OR
-J Price
- “Canada Thistle Rust Fungus” Cattleman’s Association Meeting. Springfield, OR
-J Price
- Noxious Weeds SW Oregon Updates; Josephine & Jackson CWMA- virtual meeting
-C Pirosko
- Technical Review Team- Baker County Sage Grouse FIP Grant Tech Review; Baker County Sage Grouse Habitat Local Implementation Team. Baker City, OR
-M Porter
- “Status of Noxious Weeds & Biocontrol in Umatilla, Oregon” Umatilla County EDRR Work Group Spring Planning Meeting. Pendleton, OR
-M Porter

April

- Portland Pest Risk Committee quarterly teleconference- virtual meeting.
-J Bodart, C Pettit
- WeedMapper demo; & Live tour of weed specimens in greenhouse. Mid-Willamette CWMA Spring Meeting- virtual meeting.
-B Myers-Shenai
- “Beautiful Invaders: Ornamental Invasive Plants of NW Oregon” Portland Parks- IPM training- virtual meeting.
-B Myers-Shenai
- Noxious Weeds SW Oregon Updates; State IPM Coordination Committee- virtual meeting
-C Pirosko
- Weed Board Grants and Grantee Updates; Oregon County Weed Control Association Spring Meeting- virtual meeting
-T Berg
- Technical Review Team- Baker County Sage Grouse FIP Grant Tech Review; Baker County Sage Grouse Habitat Local Implementation Team- virtual meeting
-M Porter
- Collaborative meeting on mapping methods – Oregon’s WeedMapper; Lower Columbia Flowering Rush Working Group- virtual meeting
-M Porter
- “Status and Distribution of Known Hawkweed Sites” Tri-County CWMA-Plus, NE Oregon Meadow Hawkweed Work Group- virtual meeting
-M Porter

May

- OISC Business Meeting- virtual meeting
-J Bodart, H Rogg
- Japanese beetle webinar for west coast states- virtual meeting
-H Rogg
- “COVID-19 and Invasive Species Programs”- virtual training.
-J Bodart
- “Purple Loosestrife Biological Control” Tualatin SWCD- virtual meeting.
-J Price
- Co-coordinate/lead Spring Work Plan throughout the lower Columbia; Lower Columbia River Flowering Rush Working Group- virtual meeting.
-M Porter
- Weed Identification & Biological Control” Tri-County CWMA, NE Oregon Noxious Weed Contractor’s Meeting. La Grande, OR
-M Porter

June

- Oregon Association of Nurseries (OAN) webinar- virtual meeting.
-H Rogg
- Christmas Tree Advisory Committee webinar- virtual meeting.
-H Rogg

July

- Japanese beetle air cargo meeting with California Department of Agriculture.
-A Toland, H Rogg, H Wantuch, J Bodart, J Rendon
- Portland Pest Risk Committee quarterly teleconference- virtual meeting.
-C Pettit
- “Foundational Training Program” hosted by the Department of Administrative Services (DAS)- virtual training sessions.
-J Bodart
- “Don’t Move a Pest project and future collaborations” for Western Invasive Species Council- - virtual meeting.
-J Bodart
- Eastern Oregon outreach and response to grasshopper outbreak.
-J Bodart, B Burns

August

- Gypsy Moth Program Managers Meeting- virtual meeting.
- J Bodart
- “Foundational Training Program” hosted by DAS- virtual training sessions.
-J Bodart
- “My Journey Becoming a SPHRO” Western Horticultural Inspection Society- virtual presentation
-H Rogg
- “ODA 2019: Nursery Program Update” Western Horticultural Inspection Society- virtual presentation
-C Benemann
- Western Horticultural Inspection Society- virtual presentation
-H Rogg, C Benemann, A DeBauw, A Ohrn, C Brown, E Reusche, E Wickliffe, L Rehms, M Lujan, S Farrier, S Lewis, S Schouten
- Oregon’s state report for the National Gypsy Moth Program Managers- virtual meeting.
-R Worth
- Noxious Weeds SW Oregon Updates; Gorse Action Group- Bandon, OR (socially distanced)
-C Pirosko

September

- Oregon Invasive Species Council- virtual meeting.
-J Bodart, H Rogg
- Washington and Oregon Port Detection Interagency response plan working group- virtual meeting.
-J Bodart
- “Effective Facilitator” hosted by the National Plant Board (NPB)- virtual training sessions.
-J Bodart, A Toland, C Pettit
- OSU Pollination podcast: interview on invasive species.
-J Vlach

October

- “Diversity, Equity, Inclusivity” State of Oregon Annual Conference- virtual training.
-J Bodart, A Blietz, B Myers-Shenai
- Christmas Tree Advisory committee meeting- virtual meeting.
-H Rogg, C Benemann
- Annual Gypsy Moth Review, Washington, DC - virtual meeting.
-R Worth
- “Effective Facilitator” hosted by the NPB- virtual training sessions
-J Bodart, A Toland, C Pettit
- “Introduction to managing projects” hosted by DAS- virtual training sessions
-J Bodart
- Virginia Tech Virtual Hokie Bug Fest: featured alumnus- virtual meeting
-M Raggiozino
- Japanese beetle, Gypsy Moth, and Spotted Lantern Fly Update. 4-County CWMA- virtual meeting
-A Johnson
- “Oregon Gypsy Moth Report, 2020.” Annual Gypsy Moth Review - virtual meeting.
-R Worth
- “Biological Control of Weeds” OSU Weed Science Lab- virtual meeting.
-J Price
- “Organic, Cage-free Knotweed Psyllid Production” Columbia Gorge CWMA- virtual meeting
-J Price
- Noxious Weeds SW Oregon Updates; Jackson & Josephine CWMA- virtual meeting
-C Pirosko
- Weed Board Grants and Grantee Updates; Oregon County Weed Control Association Fall Meeting- virtual meeting
-T Berg

- Weed Board Grants and Grantee Updates; North Coast CWMA- virtual meeting
-T Berg
- Nursery Program Updates; Oregon Association of Nurseries, Nursery Research Grant Committee- virtual meeting
-C Benemann

November

- Plant Protection & Conservation Programs (PPCP) All-staff Annual Training- virtual meetings
-H Rogg, A Blietz
- Oregon Master Gardener podcast interview: “Invasive species threatening Oregon! What to look for and how to help!” Part 1: Gypsy moth, Asian giant hornet, jumping worm, and southern pink moth
-J Rendon
- Sudden Oak Death Task Force teleconference- virtual meeting
-H Rogg
- Portland Pest Risk Committee quarterly teleconference- virtual meeting
-C Pettit, J Rendon
- Noxious Weeds SW Oregon Updates; South Coast CWMA- virtual meeting
-C Pirosko
- Noxious Weeds SW Oregon Updates; State IPM Coordination Committee- virtual meeting
-C Pirosko

December

- Plant Protection & Conservation Programs (PPCP) All-staff Annual Training- virtual meetings
-H Rogg, A Blietz
- Oregon Master Gardener podcast interview: “Invasive species threatening Oregon! What to look for and how to help!” Part 2: Japanese beetle, spotted lanternfly, houdini fly, lily leaf beetle, viburnum leaf beetle, and Allium leafminer
-J Rendon
- “Spotted lantern fly: the next big pest for Oregon?” Portland Parks and Recreation Online Live Pesticide Applicators Recertification- virtual meeting
-H Rogg
- “Recent moth happenings at the Oregon Department of Agriculture.” Pacific Northwest Lepidoptera Workshop - virtual meeting.
-R Worth
- Oregon, and Washington Asian Gypsy moth response plan- virtual meeting
-H Rogg, J Bodart, A Toland, C Pettit, K. Schwarz

- “Bandon Gorse Thrips Project” Gorse Action Group- virtual meeting
-J Price
- “Oregon Program Status with Tim Butler” Columbia River Basin Flowering Rush CWMA, Columbia River Basin CWMA- virtual meeting.
-M Porter
- “Stopping the Spread (or at least slowing it down.)” And “Reflecting the Lessons Learned; What’s Next?” Sage Con Invasives Initiatives Annual High Desert Partnerships Invasive Grass Workshop- virtual workshop
-M Porter
- “Status and Distribution of known IAG’s in Wallowa County” Wallowa Canyonlands Partnership, Wallowa County IAG Meeting, Enterprise, OR
-M Porter
- Hemp Registration Overview of Mapping Tool with live demonstration; ODA- virtual meeting.
-B Myers-Shenai
- Noxious Weeds SW Oregon Updates; Jackson & Josephine CWMA Coordination Committee- virtual meeting
-C Pirosko
- Hemp 2021- Registration Overview; ODA- virtual meeting.
-A Guinn, B Myers-Shenai, E Roque, T Berg, S Summers

INTERVIEWS 2020

- “Phytophthora ramorum in US Nurseries” Freelance Reporter, Ellie Seschet
-C Benemann

PUBLICATIONS 2020

- Mc Donnell, R.J., J. J. Vlach, I. Reich, and A. J. Colton. 2020. *Boettgerilla pallens* Simroth, 1912 (Boettgerillidae): A New Invasive Slug Species in Oregon, U.S.A. *American Malacological Bulletin*. 38(1):63-65
- Diana N Kearns & Patrick C Tobin, 2020. Oregon vs. the Gypsy Moth: Forty Years of Battling an Invasive Species, *American Entomologist*, Volume 66: (3), Fall 2020, Pages 50–58. <https://doi.org/10.1093/ae/tmaa036>
- Pinto, J. D., R. L. Westcott, R. Stouthamer and P. F. Rugman-Jones. 2020. Phoretic relationships of the blister beetle *Meloe* (*Meloe*) *strigulosus* Mannerheim (Coleoptera: Meloidae) from a coastal dune habitat in Oregon. *Transactions of the American Entomological Society* 146: 549–576.
- Benemann, C. Oregon Department of Agriculture Phytophthora ramorum Nursery Program

activities- Monthly Updates, California Oak Mortality Task Force Newsletter- Monthly Updates

- Benemann, C. *Phytophthora ramorum*: A Guide for Oregon Nurseries. Projected Publish date Spring 2021

COVID-19 TIMELINE

- December 2019- First cases of an unknown pneumonia-like disease were reported in Oregon. The results were actually confirmed to be COVID-19 analyzing lab samples in the middle of 2020.
- February 28th, 2020- COVID-19 was confirmed to have reached the state of Oregon. Governor Kate Brown creates a coronavirus response team.
- February 29th, 2020- The Department of Human Services issued strict guidelines, restricting visitation at congregated care facilities, including nursing homes.
- March 2nd, 2020- The State of Oregon Emergency Coordination Center was activated.
- March 8th, 2020- Governor Kate Brown declared an emergency under ORS 401.165 et seq. due to the public health threat posed by the novel infectious coronavirus (COVID-19)
- EXECUTIVE ORDER NO. 20-03 DECLARATION OF EMERGENCY DUE TO CORONAVIRUS (COVID-19) OUTBREAK IN OREGON
- As of March 8, 2020, 14 presumptive or confirmed coronavirus cases in Oregon, 430 cases in the United States, and 101,927 cases worldwide, in a total of 94 countries. In the United States there have been 19 deaths, and worldwide• there have been 3,486 deaths
- March 11th, 2020- The World Health Organization of the United Nations declared the COVID-19 disease a global pandemic.
- March 12th, 2020- Governor Kate Brown prohibited gatherings of 250 or more people, and announced a statewide closure of Oregon K-12 schools from March 16, 2020, through March 31, 2020. EXECUTIVE ORDER NO. 20-05 PROHIBITING LARGE GATHERINGS DUE TO CORONAVIRUS (COVID-19) OUTBREAK IN OREGON
- As of March 12th, there are 21 presumptive or confirmed coronavirus cases in Oregon, and state and local public health officials have advised that the virus is circulating in the community and that they expect the number of cases to increase.
- March 13th, 2020- the President of the United States, Donald J. Trump declared the COVID-19 outbreak a national emergency.

- March 16th, 2020- The Department of Human Services imposed its most recent protective measures to restrict visitors to long-term care facilities and other residential facilities. The Oregon Health Authority has adopted similar measures at the Oregon State Hospital and other behavioral health settings and has limited admissions to the Oregon State Hospital. The Oregon Department of Corrections has suspended all visits to state prisons.
- March 17th, 2020- EXECUTIVE ORDER NO. 20-06 DECLARATION OF ABNORMAL DISRUPTION OF THE MARKET DUE TO COVID-19
- Cleaning and basic hygiene supplies, becoming especially hard to find. Prices on medical supplies such as hand sanitizer and masks, as well as other essential consumer goods and services, have risen dramatically and supplies have dwindled since January 30, 2020.
- March 17th, 2020- Governor Kate Brown prohibited gatherings of 25 or more people, banned on-site consumption of food and drink at food establishments statewide, and extending school closures until April 28, 2020. Also encouraging all businesses not subject to the prohibitions to implement social distancing protocols. EXECUTIVE ORDER NO. 20-07 PROHIBITING ON-PREMISES CONSUMPTION OF FOOD OR DRINK AND GATHERINGS OF MORE THAN 25 PEOPLE
- As of March 17th, there are at least 51 cases and one death in Oregon
- March 17th, 2020- EXECUTIVE ORDER NO. 20-08 SCHOOL CLOSURES AND THE PROVISION OF SCHOOL-BASED AND CHILD CARE SERVICES IN RESPONSE TO CORONAVIRUS (COVID-19) OUTBREAK
- All public schools shall close to students from March 16, 2020, through April 28, 2020 (“closure period”), unless that period is extended or terminated earlier by the Governor.
- March 18th, 2020- Governor Kate Brown suspended in-person instructional activities at higher education institutions through April 28, 2020. EXECUTIVE ORDER NO. 20-09 SUSPENSION OF IN-PERSON INSTRUCTIONAL ACTIVITIES AT HIGHER EDUCATION INSTITUTIONS IN RESPONSE TO CORONAVIRUS (COVID-19) OUTBREAK
- During the effective period, colleges and universities shall limit on-campus operations only to critical functions and shall employ social distancing measures, consistent with guidance from the Oregon Health Authority, for all on-campus employees and residents. Critical functions may include, but are not limited to, the operation of dormitories, dining services, general administrative services, safety programs, childcare centers, research, medical facilities, and other activities critical to emergency response and resiliency efforts.
- As of March 19th, there are at least 75 cases and three deaths.
- March 19th, 2020- Governor Kate Brown ordered the postponement of non-urgent health care procedures, in order to conserve personal protective equipment (PPE) and hospital beds for the state’s COVID-19 emergency response efforts. Directed the Oregon Health Authority to provide guidance regarding limitations and screening for visitors to hospitals and ambulatory EXECUTIVE ORDER NO. 20-10 CONSERVING PERSONAL PROTECTIVE EQUIPMENT AND HOSPITAL BEDS, PROTECTING HEALTH CARE WORKERS, POSTPONING NON-URGENT HEALTH CARE PROCEDURES, AND RESTRICTING VISITATION IN RESPONSE TO CORONAVIRUS (COVID-19) OUTBREAKS
- Personal protective equipment (PPE) is essential to diagnosing and treating COVID-19 and in caring for individuals with COVID-19, but there is a severe shortage in Oregon and across the nation. We must conserve PPE by eliminating all elective and non-urgent procedures that use PPE, including masks and gowns. In addition, by limiting all non-essential visitation at hospitals and other health care facilities, and screening all visitors, we can protect health care providers from possible exposures to COVID-19.
- March 22nd, 2020- Governor Kate Brown imposed a temporary moratorium on residential evictions for nonpayment, prohibiting law enforcement from serving, delivering, or acting on any notice, order or writ of termination of tenancy, relating to residential evictions for nonpayment. EXECUTIVE ORDER NO. 20-11 TEMPORARY MORATORIUM ON RESIDENTIAL EVICTIONS FOR NONPAYMENT, IN RESPONSE TO CORONAVIRUS (COVID-19) OUTBREAK
- The inability of Oregonians to pay rent and related costs as a result of the COVID-19 pandemic increases the likelihood of evictions from their homes, which in turn increases economic hardship and life, health and safety risks for all Oregonians.
- At this time, a temporary moratorium throughout Oregon on law enforcement actions relating to residential evictions for nonpayment of rent and related costs will prevent economically vulnerable Oregonians from having to leave their homes to seek temporary or new shelter, and will make it significantly easier for them to continue to practice

the effective social distancing that is vital to control the spread of this pandemic.

- NOW THEREFORE, IT IS HEREBY DIRECTED AND ORDERED THAT:
- Law enforcement officers in Oregon are prohibited from serving, delivering or acting on any notice, order or writ of termination of tenancy or the equivalent or any judicial action, pursuant to or arising under ORS 105.105 through ORS 105.168, that relates to residential evictions for nonpayment.
- March 23rd, 2020- Governor Kate Brown ordered Oregonians to “Stay Home, Save Lives,” directing individuals to stay home to the greatest extent possible, ordering the closure of specified retail businesses, requiring physical distancing measures for other public and private facilities, and imposing requirements for outdoor areas and licensed childcare facilities. EXECUTIVE ORDER NO. 20-12 STAY HOME, SAVE LIVES: ORDERING OREGONIANS TO STAY AT HOME, CLOSING SPECIFIED RETAIL BUSINESSES, REQUIRING SOCIAL DISTANCING MEASURES FOR OTHER PUBLIC AND PRIVATE FACILITIES, AND IMPOSING REQUIREMENTS FOR OUTDOOR AREAS AND LICENSED CHILDCARE FACILITIES
- As of March 23rd, there are at least 161 cases and five deaths.
- Some Oregonians are not adhering to social distancing guidance provided by the Oregon Health Authority, as represented by crowds at the Oregon Coast, Smith Rock State Park, the Columbia River Gorge, and other places around the state. The purpose of this Executive Order is to reduce person-to-person interaction with the goal of slowing transmission.
- NOW THEREFORE, IT IS HEREBY DIRECTED AND ORDERED THAT: Stay Home, Save Lives It is essential to the health, safety, and welfare of the State of Oregon during the ongoing state of emergency that, to the maximum extent possible, individuals stay at home or at their place of residence, consistent with the directives set forth in my Executive Orders and guidance issued by the Oregon Health Authority
 Closure of Certain Businesses Amusement parks; aquariums; arcades; art galleries (to the extent that they are open without appointment); barber shops and hair salons; bowling alleys; cosmetic stores; dance studios; esthetician practices; fraternal organization facilities; furniture stores; gyms and fitness studios (including climbing gyms); hookah bars; indoor and outdoor malls (i.e., all portions of a retail complex containing stores and restaurants in a single area); indoor party places (including jumping gyms and laser tag);

jewelry shops and boutiques (unless they provide goods exclusively through pick-up or delivery service); medical spas, facial spas, day spas, and non-medical massage therapy services; museums; nail and tanning salons; non-tribal card rooms; skating rinks; senior activity centers; ski resorts; social and private clubs; tattoo/piercing parlors; tennis clubs; theaters; yoga studios; and youth clubs.

Required Social Distancing for Other Retail Businesses grocery, health care, medical, or pharmacy services, which also are encouraged to comply with social distancing guidelines. Workspace Restrictions effective March 25, 2020, all businesses and non-profit entities with offices in Oregon shall facilitate telework and work-at-home by employees, to the maximum extent possible. Work in offices is prohibited whenever telework and work-at-home options are available. When telework and work-from-home options are not available, businesses and non-profits must designate an employee or officer to establish, implement, and enforce social distancing policies, consistent with guidance from the Oregon Health Authority. Such policies also must address how the business or non-profit will maintain social distancing protocols for business-critical visitors. Government Buildings effective March 25, 2020, all state executive branch offices and buildings, to the maximum extent possible, shall close to the public and provide public services by phone and online during regular business hours. To the extent that closure is not feasible, in-person interactions between staff and the public should be by appointment, whenever possible. When public services require in-person interactions, social distancing measures must be established, implemented, and enforced, to the maximum extent possible.

Childcare Facilities Any childcare facility licensed shall close from March 25, 2020, through April 28, 2020 (“effective period”), unless that period is extended or terminated earlier by the Governor. Excluded childcare facilities are as follows, if they meet the following requirements:

- a. Childcare must be carried out in maximum stable groups of 10 or fewer children (“stable” means the same 10 or fewer children are in the same group each day), and in a classroom that cannot be accessed by children outside the stable group; and
- b. Facilities must prioritize the childcare needs of first responders, emergency workers, health care professionals, followed by critical operations staff and essential personnel, consistent with guidance provided by the Oregon Department of Education, Early Learning Division
 Outdoor Recreation and Travel All private and

public campgrounds to be closed immediately. This order does not prohibit camp hosts or veterans from remaining in state campgrounds, nor does it extend to RV parks and other housing.

The Oregon Parks and Recreation Department to close any property or facility, when proper social distancing cannot be maintained. order the immediate closure of all pools, skate parks, outdoor sports courts, and playground equipment areas.

For public recreational areas that are permitted to remain open, signs requiring social distancing must be posted at all entrances, exits, and in prominent areas. On-site restrooms must have trash cans, and soap and water or hand sanitizer available. Users of open public recreational areas must strictly adhere to social distancing guidelines. Individuals are directed to minimize travel, other than essential travel to or from a home, residence, or workplace; for obtaining or providing food, shelter, essential consumer needs, education, health care, or emergency services; for essential business and government services; for the care of family members, household members, elderly persons, minors, dependents, persons with disabilities, or other vulnerable persons, pets or livestock; travel as directed by government officials, law enforcement, or courts; and other essential travel consistent with the directives of Executive Orders and guidance from the Oregon Health Authority.

- April 1st, 2020- Governor Kate Brown imposed a temporary moratorium on the termination of residential and nonresidential rental agreements and evictions for nonpayment, to ensure that individuals can stay at home to the greatest extent possible, and to ensure the provision of necessary goods and services during this emergency. EXECUTIVE ORDER 20-13 TEMPORARY MORATORIUM ON CERTAIN EVICTIONS AND TERMINATIONS OF RENTAL AGREEMENTS AND LEASES, IN RESPONSE TO CORONAVIRUS (COVID-19) OUTBREAK
- April 7th, 2020- EXECUTIVE ORDER NO. 20-14 EXTENDING THE DURATION OF EXECUTIVE ORDER NO. 20-07 (PROHIBITING ON-PREMISES CONSUMPTION OF FOOD OR DRINK) This Executive Order remains in effect until terminated by the Governor. The Governor will continue assessing the ongoing public health emergency, and will modify or rescind provisions of this Executive Order, as appropriate.
- April 7th, 2020- EXECUTIVE ORDER 20-15 EXTENDING THE DURATION OF EXECUTIVE ORDER NO. 20-06 (DECLARATION OF ABNORMAL DISRUPTION OF THE MARKET DUE TO COVID-19) This Executive Order remains in effect until terminated by the Governor, provided that the Governor periodically notifies the Attorney General that the abnormal disruption of the market continues to exist.
- April 8th, 2020- Governor Kate Brown announced that school closures and the suspension of in-person instructional activities at higher education institutions would be extended through the end of the current academic term and school year.
- April 15th, 2020- Governor Kate Brown ordered certain necessary measures to ensure safe public meetings by public bodies and to facilitate continued operations by local governments during the COVID-19 outbreak. EXECUTIVE ORDER 20-16 KEEP GOVERNMENT WORKING: ORDERING NECESSARY MEASURES TO ENSURE SAFE PUBLIC MEETINGS AND CONTINUED OPERATIONS BY LOCAL GOVERNMENTS DURING CORONAVIRUS (COVID-19) OUTBREAK During this emergency, state and local governments must continue to operate, provide essential services, and make decisions in a public and transparent manner. Governments must do so safely, consistent with my emergency directives. Public participation is essential to the functioning of our state and local governments, but in-person attendance at public meetings presents a risk to the public health and safety of Oregonians, unless appropriate measures are taken. Thus, during this emergency, public meetings should be held via telephone, video, electronic or other virtual means, whenever possible, to keep Oregonians safe, and to mitigate the spread of COVID-19.
- April 17th, 2020- EXECUTIVE ORDER 20-17 EXTENDING EXECUTIVE ORDER NO. 20-09 (SUSPENSION OF IN-PERSON INSTRUCTIONAL ACTIVITIES AT HIGHER EDUCATION INSTITUTIONS) It is ordered that colleges and universities shall be prohibited from conducting in-person classroom, laboratory, and other instruction from March 21, 2020, through June 13, 2020 (“effective period”), unless that period is extended or terminated earlier by the Governor.
- April 17th, 2020- EXECUTIVE ORDER 20-18 PROTECTING CARES ACT RECOVERY REBATE PAYMENTS FROM GARNISHMENTS, SO THOSE FUNDS CAN BE USED FOR ESSENTIAL NEEDS The COVID-19 emergency has resulted in the loss of employment and economic suffering for many Oregonians.
- Eligible Oregonians will soon be receiving CARES Act Recovery Rebate payments. These payments are needed by vulnerable Oregonians to help pay for their housing, food, medical and other essential needs. This Executive Order is necessary to ensure

- that these payments may be used to pay for their current needs.
- April 23rd, 2020- EXECUTIVE ORDER NO. 20-19 EXTENDING DIRECTIVES REGARDING CLOSURE OF LICENSED CHILDCARE FACILITIES IN RESPONSE TO CORONAVIRUS (COVID-19) OUTBREAK Any childcare facility licensed or program recorded under ORS 329A.030 and ORS 329A.250 to ORS 329A.450 (“childcare facility”) not approved by the Department of Education, Early Learning Division, Office of Child Care (“ELD”) to operate as an emergency childcare facility must remain closed.
 - April 27th, 2020- Governor Kate Brown issued an order that allows for the gradual resumption of non-urgent health care procedures, as long as those procedures are performed in compliance with Oregon Health Authority guidance that ensures adequate hospital capacity and supply of PPE. EXECUTIVE ORDER NO. 20-22 ALLOWING MEASURED RESUMPTION OF NON-URGENT HEALTH CARE PROCEDURES USING PERSONAL PROTECTIVE EQUIPMENT, AND CONTINUING RESTRICTIONS ON VISITATION IN RESPONSE TO CORONAVIRUS (COVID-19) OUTBREAKS NOW THEREFORE, IT IS HEREBY DIRECTED AND ORDERED THAT:
 - Resumption of Certain Elective and Non-urgent Procedures On or after May 1, 2020, elective and non-urgent procedures across all care settings that utilize PPE are allowed, but only to the extent they comply with guidance or administrative rules issued by the Oregon Health Authority.
 - Prohibition on Non-essential Visitation
 - May 1st, 2020- EXECUTIVE ORDER NO. 20-24 EXTENDING THE COVID-19 DECLARATION OF EMERGENCY (EXECUTIVE ORDER NO. 20-03) FOR AN ADDITIONAL 60 DAYS, THROUGH JULY 6, 2020 Executive Order 20-03, declaring a state of emergency due to the COVID-19 outbreak in Oregon, was issued on March 8, 2020, and declared a statewide emergency for 60 days, through May 7, 2020. The very infectious coronavirus (COVID-19) continues to threaten public health and safety, and remains a statewide emergency extending the state of emergency for an additional 60 days; Executive Order 20-03 shall remain in effect through July 6, 2020, unless extended or terminated earlier by the Governor.
 - May 14th, 2020- EXECUTIVE ORDER NO. 20-25A SAFE AND STRONG OREGON: MAINTAINING ESSENTIAL HEALTH DIRECTIVES IN RESPONSE TO COVID-19, AND IMPLEMENTING A PHASED APPROACH FOR REOPENING OREGON’S ECONOMY
 - As of May 14th, there are at least 3,416 cases and 134 deaths in Oregon, There are more than 80,000 confirmed deaths from COVID-19 nationwide.
 - June 5th, 2020- EXECUTIVE ORDER NO. 20-27A SAFE AND STRONG OREGON (PHASE I II): MAINTAINING ESSENTIAL HEALTH DIRECTIVES IN RESPONSE TO COVID-19, AND CONTINUING TO IMPLEMENT A PHASED APPROACH FOR REOPENING OREGON’S ECONOMY The success of Oregon’s emergency response efforts and phased reopening will depend in large part on the ability of employers, employees, and each and every member of the public to adhere to public health, safety, and physical distancing measures. Preventing and controlling outbreaks and limiting the spread of COVID-19 is the only way to avoid future business and social disruption, and to allow Oregon’s economic and social life to thrive.
 - June 12th, 2020- EXECUTIVE ORDER NO. 20-28 OPERATION OF HIGHER EDUCATION INSTITUTIONS DURING CORONAVIRUS PANDEMIC It is ordered that the conduct of in-person instruction leading towards a degree or certificate, research, and residential activities at colleges and universities shall be subject to restrictions, effective June 14, 2020. Namely, in-person instruction, research, and residential activities at colleges and universities may only take place if they comply with the minimum standards
 - June 24th, 2020- EXECUTIVE ORDER NO. 20-29 READY SCHOOLS, SAFE LEARNERS: K-12 INSTRUCTIONAL ACTIVITIES AND THE PROVISION OF SCHOOL-BASED SERVICES DURING 2020-2021 ACADEMIC YEAR IN THE FACE OF THE ONGOING CORONAVIRUS (COVID-19) OUTBREAK This virus remains very dangerous, and the global spread of the novel coronavirus continues to seriously threaten the lives and health of Oregonians. As of June 24th, there are at least 7,274 cases and 192 deaths in Oregon, with more than 120,000 deaths from COVID-19 nationwide. Cases of COVID-19 have been detected in all corners of the state, as the virus knows no boundaries.
 - June 30th, 2020- EXECUTIVE ORDER NO. 20-30 SECOND EXTENSION OF EXECUTIVE ORDER 20-03 AND COVID-19 STATE OF EMERGENCY; RESCINDING EXECUTIVE ORDER 20-13 AND EXECUTIVE ORDER 20-18 As of June 30th, there are at least 8,656 cases and 207 deaths in Oregon, with more than 125,000 deaths from COVID-19 nationwide. Spikes of cases are occurring across the country following reopening, and while Oregon is in better position than many states, Oregon too is seeing rising case numbers as reopening proceeds. This emergency is not over, and neither is our emergency response.

- July 1st, 2020- Governor Kate Brown requires face coverings indoors.
- August 31st, 2020- EXECUTIVE ORDER NO. 20-37 EXTENDING HOUSE BILL 4204'S MORTGAGE FORECLOSURE MORATORIUM UNTIL DECEMBER 31, 2020 Hereby extend the mortgage foreclosure moratorium "emergency period" underlying the provisions of House Bill 4204, to December 31, 2020.
- Sept. 1st, 2020- EXECUTIVE ORDER NO. 20-38 THIRD EXTENSION OF EXECUTIVE ORDER 20-03 AND COVID-19 STATE OF EMERGENCY; RESCINDING EXECUTIVE ORDER 20-16 NOW THEREFORE, IT IS HEREBY DIRECTED AND ORDERED:
Extension of State of Emergency for an Additional 60 Days
- Sept 28th, 2020- EXECUTIVE ORDER NO. 20-56 TEMPORARY MORATORIUM ON RESIDENTIAL EVICTIONS FOR NONPAYMENT, IN RESPONSE TO COVID-19 AND WILDFIRE EMERGENCIES. In addition to the significant challenges arising from the spread of COVID-19, shortly after the start of the school year massive and unprecedented wildfires erupted across Oregon. In response, Governor Kate Brown declared a statewide wildfires state of emergency under ORS 401.165 et seq., and invoked the Emergency Conflagration Act statewide. Despite the heroic efforts of our firefighters and first responders, these fires resulted in evacuations, damage and destruction to critical infrastructure, including homes, as well as other structures, and injury and loss of life. The effects of these fires will be felt long after the fires themselves are out. Among other impacts, the destruction and displacement caused by the fires is placing significant, additional pressure on housing resources at a time when the state is already dealing with a housing crisis.
- Following the Labor Day holiday, and the significant displacement associated with the wildfire evacuations, cases of COVID 19 have again began to rise sharply in Oregon.
- Similar to the significant needs underlying the CDC's nationwide eviction moratorium, it is necessary to Oregon's emergency response to keep a state eviction moratorium in place through the end of this year. A temporary residential eviction moratorium through December 31, 2020, consistent with the timeline of the CDC's federal eviction moratorium and Oregon's mortgage foreclosure moratorium.
- Oct 23rd, 2020- EXECUTIVE ORDER NO. 20-58 ENHANCED HEALTH AND SAFETY REQUIREMENTS FOR CERTAIN EMPLOYER-PROVIDED HOUSING DURING AGRICULTURAL OFF SEASON IN RESPONSE TO CORONAVIRUS (COVID-19) OUTBREAK Outbreaks and community spread in certain counties also have required us to reimpose restrictions at times, to maintain public health and safety. Although Oregon has been able to cautiously reopen sectors of its economy, this virus remains very dangerous. As of October 23rd, there are at least 38,406 cases and 635 deaths in Oregon, with more than 8 million cases and 222,000 deaths from COVID-19 nationwide.
- It is by now very clear that this virus has had a disproportionate impact on communities of color. We have also seen outbreaks spread quickly in crowded housing, and in settings where workers live together and work in close quarters. Due to the convergence of these factors, agricultural Labor Housing and Related Facilities and Labor Camps are an area of particular concern when it comes to the impacts and spread of COVID-19. While the population of workers occupying this housing is lower during the off season, there are still a variety of critical farm labor activities that occur during the October to April timeframe. The health and safety requirements set forth in this Executive Order mirror the requirements that have been in place for the last six months, and are intended to help preserve the health and safety of these workers, their employers, and the surrounding communities, and to allow this critical work to go forward in a safe manner.
- Oct 27th, 2020- EXECUTIVE ORDER NO. 20-59 FOURTH EXTENSION OF EXECUTIVE ORDER 20-03 AND COVID-19 STATE OF EMERGENCY While Oregon continues to cautiously reopen sectors of its economy, this virus remains very dangerous, and the ongoing spread of the novel coronavirus continues to seriously threaten the lives and health of Oregonians statewide. As of October 27th, there are at least 41,348 cases and 649 deaths in Oregon, with more than 225,000 deaths from COVID-19 nationwide. This emergency is not over, and neither is our emergency response.
- November 17th, 2020- EXECUTIVE ORDER NO. 20-65 TEMPORARY FREEZE TO ADDRESS SURGE IN COVID-19 CASES IN OREGON Over the past nine months, Oregon has fared better than many other states when it comes to the health impacts of COVID-19. However, this virus has remained very dangerous even in Oregon. As of November 17th, there have been at least 58,570 cases and 778 deaths in Oregon, with more than 11 million cases and more than 247,000 deaths from COVID-19 nationwide. We have gone from seeing around 200-300 cases a day in September, to over 1,000 cases a day in mid-November. This is a very dangerous situation. As a result, our hospitals have been sounding the alarm. Infection

records are being set in states across the country. The situation is dire, and requires an urgent, immediate, and decisive response to quell the current surge in COVID-19 infections, before it is too late.

- Dec 2nd, 2020- EXECUTIVE ORDER NO. 20-66
RISK AND SAFETY FRAMEWORK: COUNTY-BY-COUNTY METRICSBASED APPROACH TO CONTROLLING COVID-19 TRANSMISSION TO CONSERVE HOSPITAL CAPACITY AND PROTECT HUMAN HEALTH AND HUMAN LIVES