

# INVASIVE PEST news & notes

Extension  
UtahStateUniversity.



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Utah IPM Program and Plant Health

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Citizen scientists in Logan who learned about pest and pollinator identification and monitoring with hand lenses and cardboard trays.

## Citizen Scientists Detect Invasive Pests

In 2006, a trained Master Gardener detected the first Japanese beetle in Orem, Utah. In 2014, a private citizen in Berks County, Pennsylvania, detected spotted lanternfly. Both of these individuals reported their findings to their state department of agriculture, which led to subsequent containment and management efforts. The observant detections were by citizen scientists—volunteers that contribute to knowledge and action by data collection or other initiatives, often on a large scale. Public participation through citizen science is effective and cost-efficient and enables civic engagement to reduce the establishment, spread, and impacts of invasive species.

Citizen science can be structured in a variety of levels. Simple and unstructured activities where many people can participate provides limited data (location, species identity) while structured activities follow a protocol at selected places, requiring repeated visits to the site. This method needs higher investment in volunteer retention and

training but produces high-quality datasets, can be designed to cover a large region, and requires a high level of commitment. Examples include using sentinel trees for repeat monitoring of invasive pests and diseases, studying the effects of invasives on native populations, or assessing changing abundance of invasive plants.

In Utah, Master Gardeners learn about invasive species through certification training, or they may participate in more advanced training via USU's First Detector Program, which is in its second year and has trained 60 volunteers to seek out a specific list of invasive pests.

Several species-recording platforms for citizen science such as iNaturalist.org and observation.org have proven valuable in species detections. For example, the occurrence of the multicolored Asian lady beetle (*Harmonia axyridis*) was never known in Costa Rica, Guatemala, Honduras,

### Helpful Links

[Utah Cooperative Agricultural Pest Survey Program](#)

[Utah Plant Pest Diagnostic Lab](#)

[Utah Department of Agriculture and Food](#)

[Don't Move Firewood](#)

[PlayCleanGo](#)



The Cooperative Agricultural Pest Survey (CAPS) program supports the U.S. Department of Agriculture's Animal and Plant Health Inspection Service's (USDA APHIS) mission to safeguard the nation's agricultural and environmental resources from harmful plant pests and diseases. The Utah CAPS Committee is comprised of experts from multiple state and federal agencies as listed below. Members meet once a year to discuss and plan ongoing and future priorities and strategies.

Utah Department of Agriculture and Food (Lead)

U.S. Department of Agriculture, Animal and Plant Health Inspection Service

Utah State University Extension

Utah Weed Supervisors Association

U.S. Forest Service

U.S. Homeland Security Customs and Border Protection

Utah Division of Forestry, Fire & State Lands

[invasives.usu.edu](http://invasives.usu.edu)

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### Example Program: Spotted Lanternfly Survey Using iMapInvasives and Community Monitoring

Several states in the Northeast and Mid-Atlantic have launched public reporting campaigns through platforms like iMapInvasives and EDDMapS (Early Detection & Distribution Mapping System) for spotted lanternfly which has significantly increased surveillance capacity. Through these initiatives:

- Volunteers are trained via online webinars, workshops, and ID guides to recognize egg masses and all life stages.
- Reports include photographs, location data, and host plant information.
- Data is reviewed by state agricultural departments or extension specialists for verification.

One major campaign, "See It? Squash It! Report It!," led by Penn State University and state agencies, encourages the public not only to report sightings but also to destroy egg masses and nymphs on sight, helping slow the pest's spread.

### Example Program: Sentinel Plant Network to Detect Sudden Oak Death

The Sentinel Plant Network (SPN) is coordinated by the American Public Gardens Association, the National Plant Diagnostic Network, and USDA. It engages staff and volunteers at public gardens and arboreta to detect invasive insects and diseases.

One key target is sudden oak death (SOD), caused by *Phytophthora ramorum*. Participants are trained to monitor susceptible plants and use standardized protocols to report suspects. Data from SPN participants have identified new outbreaks early and provided valuable information for risk-mapping and response-planning.

Panama, or Puerto Rico until scientists studied records from iNaturalist. Additionally, data gathered from Project FeederWatch (a citizen science program focuses on winter bird populations) showed that red-bellied woodpecker and white-breasted nuthatch populations have increased in areas infested with emerald ash borer. Other items of note regarding these platforms:

- **Early Detection:** In 50% of cases of invasive detections, citizen science platforms reported the species earlier than or in the same year as official records.
- **Species Traits Influence Reporting:** Vertebrates are more likely to be reported earlier on citizen science platforms compared to plants or invertebrates. This trend may be attributed to the higher visibility and public interest in vertebrate species.
- **Impact of Popularity and Neighboring Observations:** Species that garner greater attention on citizen science platforms or had been observed in neighboring countries tended to be reported earlier, suggesting that public interest and regional monitoring enhance detection capabilities.
- **Regulatory Status:** Species listed as priorities are more likely to be recorded earlier in official databases, reflecting the effectiveness of targeted surveillance programs for high-concern species.

Citizen science, along with formal surveillance, improves the likelihood of early detection of invasive plant pests at local and national levels. It reduces monitoring costs by leveraging volunteer labor, increases awareness and education around invasives issues, and allows for rapid feedback over large areas. Challenges remain, however, including inaccurate or incomplete observations, requirement of expert oversight, and the need for incentives or feedback to sustain engagement over time.

Marion Murray, Extension IPM Specialist

## Spotted Lanternfly – See it? Report it!

The spotted lanternfly (SLF, *Lycorma delicatula*) threatens agriculture and native ecosystems across North America. Native to China, India, and Vietnam, this invasive insect was first detected in Pennsylvania in 2014 and has since spread to Northeast, Mid-Atlantic, and Great Lakes states. Known for its striking appearance, the spotted lanternfly threatens plants like grapes, apples, and hardwood trees.

### Identification and Biology

SLF is not a fly, and although its coloration is striking, it is not a butterfly, either. It is a type of planthopper (family Fulgoridae) in the order Hemiptera, or true bugs. Adults are about one-inch long and half-inch wide with large, black-spotted gray forewings and striking red, white, and black hindwings. When at rest, their forewings are held like a tent over their black and yellow abdomen, covering the hindwings. Nymphs are smaller and initially black with white spots during the first three instars, developing red markings at the fourth instar.

SLF overwinters as eggs. In late spring, eggs hatch and they spend the summer developing through four instars. The final, winged adult stage may be seen by mid-summer but the majority of individuals are present in late summer and fall. At this time, adults mate and females lay eggs on any convenient outdoor surface. They cover the eggs with a white waxy substance that cracks and ages to a brownish-gray. Adults die off by the onset of winter.

### Hosts

Tree-of-heaven (*Ailanthus altissima*) is the preferred host as this tree is also native to China. However, SLF can feed from the bark of over 70 plant species in North America, including ornamental and native woody plants, apple, plum, cherry, peach, apricot, and grape and hops vines.



Adult spotted lanternfly  
Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org



(Left) Fourth-instar SLF nymph. (Right) Partially covered SLF egg mass.  
Emelie Swackhamer, Penn State University, Bugwood.org.

### Economic and Environmental Impact

Planthopper insects feed with piercing-sucking mouthparts that penetrate the tissue of their host, creating the release of sap flow. SLF is unique in that its long, strong mouthpart (stylet) can pierce the bark of trunks, branches, shoots, or vines. This bark feeding weakens plants, causing reduced vigor, wilting, leaf scorch, twig dieback, and reduced tolerance to cold weather.

Like other members of the planthopper family, SLF is not likely to cause plant death. However, it produces excessive amounts of honeydew (sugary excrement) that is not only a nuisance but also a substrate for the growth of sooty mold fungi, which further reduces crop yields by preventing photosynthesis and blemishing fruits.

Eastern U.S. fruit and hops farms affected by SLF have seen reduced crop yields and increased pest management costs, with up to millions of dollars in losses each year.

### Management

In states where it occurs, citizens, growers, and others manage it using a multi-pronged approach. They prevent spread via vehicle and equipment inspections, reduce populations by scraping egg masses into ethanol-filled containers, trap adults and nymphs in sticky traps, use insecticides, and monitor for new detections with highly-trained dogs.

### What is Utah Doing?

While SLF has not been detected in Utah, models have shown that there is a low to moderate risk of it establishing in the northern part of the state by 2033 with grapes, apples, and stone fruits being some of the highest-risk crops. Adult lanternflies do not fly long distances, so their mode of spread into Utah would likely be as egg masses on any substrate they can find – often shipping pallets or vehicles.

Early detection and preventive measures are crucial to stop this pest from becoming established. Utah State University is spreading the word through various outreach activities including workshops, publications, a billboard along I-15, and training First Detector volunteers to keep an eye out for egg masses and live insects. Focus on tree-of-heaven, and if you spot a “suspect,” please contact the Utah Plant Pest Diagnostic Lab at [upddl@usu.edu](mailto:upddl@usu.edu).



SLF feeding damage  
Emelie Swackhamer, Penn State University, Bugwood.org

Meg Kast, IPM Associate  
Marion Murray, IPM Specialist



USDA APHIS funded an educational billboard that was displayed on I-15 in summer 2024. Artwork by Meg Kast.

## Recent News Highlights

### Pollinators in Europe are Prey for Asian Hornets

The Asian hornet (*Vespa velutina*) is an invasive nuisance pest in Europe and related to the northern giant hornet (*Vespa mandarinia*) which has been eradicated in the U.S. Scientists from the University of Exeter studied the diet of hornets across different regions in Europe, including France, Spain, Jersey (an island near France), and the UK. Using deep sequencing, they analyzed the stomach contents of over 1,500 larvae and identified nearly 1,500 different prey types, including key crop pollinators like honey bees and bumble bees, showing their adaptability as predators. With Asian hornets continuing to spread across Europe, the study emphasizes their growing threat to insect populations and ecosystems.



Asian hornet. Allan Smith-Pardo, Invasive Hornets, USDA APHIS PPQ, Bugwood.org

### Incentives for Forest Invasives

A study from the University of Illinois found that recreational landowners are less likely to control invasions without financial incentives, while timber landowners would manage invasives regardless. The study recommends targeting subsidies to recreational landowners, as they are often the source of invasive species spread, which could ultimately reduce control costs for timber producers.

### Oregon Ash Resistance to Emerald Ash Borer

Penn State researchers have identified significant genetic diversity in Oregon ash (*Fraxinus latifolia*), which could be key to developing varieties resistant to the invasive emerald ash borer and adapting to climate change. By analyzing over 1,000 trees across the Pacific Northwest, they found that genetic differences are associated with the tree's regional environments. Preserving this diversity could be essential for breeding resilient trees and restoring forests impacted by the pest.



Emerald ash borer. Debbie Miller, USDA Forest Service, Bugwood.org

### Modeling the Spread of Invasives

A team of researchers at the University of Florida has developed an enhanced environmental resistance (ER) model to better predict the spread of invasive species in the eastern United States. By analyzing factors such as native species similarity, soil type, and human activity, they found that areas with native species compositions similar to other areas that have already been invaded, are more susceptible to invasions. This refined model aims to help conservationists identify and protect regions at higher risk of invasive species establishment.

### Preventing Spread of Mediterranean Fruit Fly

The USDA Animal and Plant Health Inspection Service (APHIS) has updated the requirements for importing fresh bell peppers from Spain. A new Federal Order mandates that Spain's National Plant Protection Organization (NPPO) develop an Operational Workplan (OWP) with APHIS to ensure the peppers meet requirements for mitigating Mediterranean fruit fly (Medfly) risks. This action follows a March 2024 interception of a live Medfly larva in peppers from Spain at John F. Kennedy Airport, leading to the suspension of imports.



Mediterranean fruit fly. Scott Bauer, USDA Agricultural Research Service, Bugwood.org

## Recent U.S. Customs and Border Protection (CBP) Interceptions

**October 2024** – During an inspection of a vessel from Vietnam, officials at the Port of Brownsville, TX, discovered a suspect flighted spongy moth complex egg mass. The egg mass was later identified as *Artaxa* sp., which is part of the Erebidae family (tussock moths). Tussock moths can cause significant environmental and economic damage by defoliating trees and shrubs.

**December 2024** – Two insect pests were intercepted by CBP at the Washington Dulles International Airport. One of the pests, *Capriobia* sp. (family Lygaeidae), was a first-in-port discovery, while the other, *Oxycarenus maculatus* (protea seed bug), had not been seen locally since 1984. Both pests are known to damage corn, fruit, wheat, and vegetables.

**December 2024** – CPB officials in Houston, TX, discovered an un-named species of longhorned beetle during a routine inspection of a vessel from Vietnam.

Generally, longhorned beetles cause damage to hardwood trees by boring into the bark and heartwood, posing a threat to native forests.

**January 2025** – CBP agriculture specialists at the Calexico, CA cargo facility intercepted a rare pest within a lettuce shipment from Mexico. USDA identified it as *Campiglossa peregrina*, a fruit fly species not previously recorded in the U.S., marking it the first discovery of its kind at any U.S. port.

**February 2025** – CBP at LAX intercepted 37 live beetles hidden inside packages of Japanese snacks, potato chips, and chocolate in a shipment from Japan. Among the seized beetles were scarab beetles, stag beetles, and darkling beetles. The smuggled insects, valued at \$1,480, pose a threat to agriculture by damaging plants and forests. Exotic beetles are highly sought after by collectors, fueling illegal trade. The seized

beetles were turned over to the USDA, which will likely donate them to local zoos or preserve them for research.

**February 2025** – During a routine inspection of a passenger traveling to Ohio, Customs at Detroit-Metro Airport discovered a rare spore-spreading seed bug (*Orsillus maculatus*) that was brought by the passenger for medicinal purposes. This non-native insect has only been recorded twice before in the U.S. Known to damage cypress plantations and spread fungal spores, it poses a potential threat to native conifer trees.

*Note that shipments that are found to contain pests are refused entry to the U.S., and prohibited food items that are deemed high risk for spreading invasive pests and diseases are seized and destroyed.*



Protea seed bug.  
Cecile Roux, inaturalist.org



*Campiglossa peregrina*. Dick Belgers at Waarneming.nl, CC BY 3.0, via Wikimedia Commons



Scarab beetle. David Cappaert, Bugwood.org

# Invasive Pest Detections Surge in Cut Flower Imports

U.S. Customs and Border Protection (CBP) is finding a record number of pest interceptions in shipments of fresh-cut flowers arriving at Los Angeles International Airport. From Nov. 2023 to Nov. 2024, CBP agriculture specialists intercepted a variety of invasive pests in shipments from countries such as Colombia, New Zealand, India, Portugal, and others. These pests include cicadas, beetles, aphids, and weevils—each posing a serious threat to American agriculture, forests, and ecosystems. Nationwide, CBP inspects more than 1 billion cut flower shipments in a year, intercepting over 1,000 shipments containing pests.

Experts from the USDA Animal and Plant Health Inspection Service (APHIS) collaborate with CBP specialists to identify and address each intercepted pest. Many of these pests are classified as “first in the nation” or “first in the port,” indicating the first recorded instance of their interception either in the U.S. or at specific ports.

The surge in interceptions is a growing concern, as the establishment of invasive pests can inflict severe damage on plants and crops. CBP agriculture specialists employ advanced screening techniques to prevent these harmful species from entering the country. Their efforts are crucial in safeguarding

U.S. agriculture and natural resources from the potential devastation caused by these invasive species. In addition to pest interceptions, CBP also issued thousands of Emergency Action Notifications (EANs) to trade entities, ensuring compliance with regulations designed to protect against foreign plant and animal threats.

Meg Kast, IPM Associate  
Marion Murray, IPM Specialist



U.S. Customs and Border Protection agriculture specialists inspecting imported cut flowers. Ozzy Trevino, U.S. Customs and Border Protection

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Editor: Marion Murray  
Email: [mair.murray@usu.edu](mailto:mair.murray@usu.edu)

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