2025 Insect Report

Utah Department of Agriculture & Food
Division of Plant Industry
March 2026

Apiary Program
Utah inspectors are approved to certify sanitation compliance of hives destined for California
pg 3

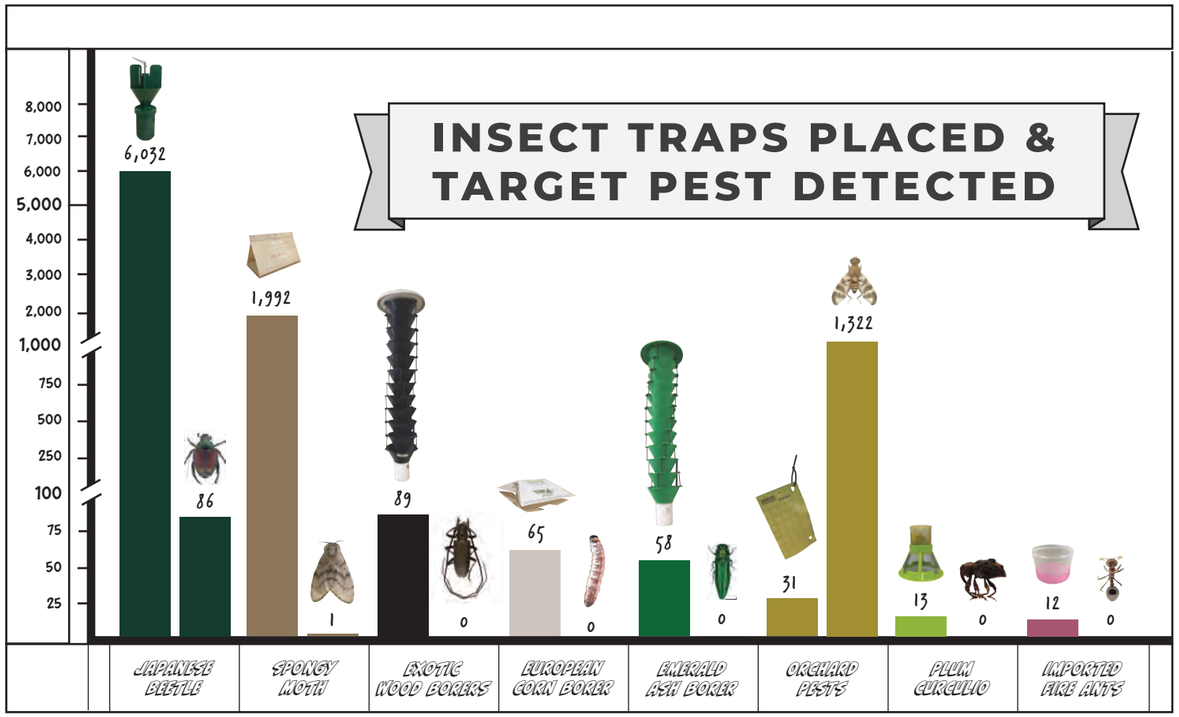
Potato Cyst Nematodes
UDAF takes the reigns of a survey to help Utah's potato seed exporters
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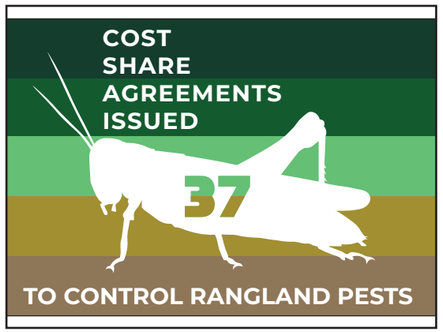
Japanese Beetle
JB populations decline, as potential new pathways of introduction are examined
pg 13

& much more!



Accomplishments at a Glance









PROGRAM PARTNERS

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Mission Statement

The mission of the Utah Department of Agriculture and Food (UDAF) is to support the development of Utah's agriculture and food industries, serve as a steward of our natural resources, safeguard public health, protect consumers, and ensure a quality food supply.

The UDAF Plant Industry Division Insect Program is essential to the department's overall mission. The program prevents the introduction of devastating invasive insects and plant diseases, assists producers in the suppression of rangeland pests, and protects the health of managed pollinators.

These goals are achieved by three primary strategies:

Prevention and Protection

Invasive insects and plant diseases are transmitted in various ways, often unintentionally. State-directed quarantines and inspections serve as first line defense measures and can prevent the establishment of new maladies.

Early Detection and Rapid Response

Whether it is an emergent invasive pest, native rangeland insect outbreak, or regulated disease, the UDAF Insect Program vigilantly monitors for known agricultural threats and responds quickly to contain or eradicate these problems before they become widespread and unmanageable.

Best Practices

The program strives to follow best practices in all work performed, utilizing advanced technology for scientifically-informed decision-making that ensures activities are sensible, cost effective, and environmentally responsible.

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1st Edition - March 2025



Regulatory Roundup

UDAF regulates the importation of agricultural commodities, which can serve as vehicles for the transportation of exotic pests. Compliance Specialists regulate these articles with quarantines. Inspections for quarantine compliance take place at nurseries, retail stores, and other places where commodities regulated by UDAF are sold. In 2025, numerous quarantine violations were found, after which inspectors worked with producers and retailers to safely destroy or remove these contraband products from the state.

Emerald ash borer quarantine violations

By 2020, it had become clear to Utah officials that the invasive range of the emerald ash borer (EAB), *Agrilus planipennis* Fairmaire, was encroaching on the state's eastern border. This wood-boring beetle is a devastating pest of ash trees (*Fraxinus* spp.) and has wreaked havoc across the eastern U.S. throughout the 21st century. Upon the discontinuation of a federal quarantine, UDAF implemented a quarantine in 2021 regulating the importation of products known to be pathways for new introductions of EAB: ash nursery stock, firewood, and green waste (see UAC § R68-11). At this time, no states are in compliance with the quarantine guidelines, so virtually none of these products are legally permitted to enter the state. UDAF Compliance Specialists conduct inspections to ensure widespread compliance with this rule, but until the quarantine has been in place for several years, industry-wide compliance is difficult to achieve. It's not unusual to see high numbers of violations at the start of quarantine implementation. With time and education, these numbers are expected to go down. This is exactly what UDAF has observed across the state's nurseries: violations continue to decrease with each year, and in 2025, only one nursery (located in Salt Lake County) was discovered to have imported ash trees. Even better, the nursery was aware of the quarantine and immediately reported the unauthorized shipment to UDAF. Six trees were examined for signs of EAB infestation (exit holes, galleries, etc.) prior to destruction via deep landfill burial. While the risk of these trees having contributed to EAB introduction to Utah is considered low, surveying in the area will be prioritized in 2026. UDAF will continue its efforts of keeping EAB out of Utah through trapping, quarantine enforcement, and education in the upcoming year.



Contraband ash trees were confiscated and destroyed

Japanese beetle quarantine violations

UDAF quarantined the Japanese beetle (JB), *Popillia japonica* Newman, (see UAC § R68-15) in 1993. This insect is a severe pest of many plants commonly grown in Utah. The quarantine regulates nursery stock, sod, and soil and requires that these commodities meet precautionary standards before being imported. One critical aspect of this quarantine is the use of an advanced prenotification system, through which importing nurseries are required to disclose plants intended to be shipped to Utah. This helps UDAF identify contraband plants prior to importation. Last year, the system prevented six violations from occurring; this is a win for all parties involved, as pests may have been prevented from being introduced and the sellers don't get a citation for non-compliance.

A large shipment of plants delivered to a Utah County retailer was flagged in 2025 for non-compliance. Approximately 600 mums (*Chrysanthemum* sp.) were imported from a quarantined state without the proper precautionary measures taken to prevent pest introduction. As a result, the shipment was halted and the plants were sent back to the state of origin. This interception of just a single shipment represents nearly 600 potential pathways by which beetles could have been inadvertently transported.



600 mums were found in violation of the JB quarantine

Firewood quarantine violations

To prevent the introduction of wood-dwelling pests that are a threat to the state's urban and natural forests, UDAF enacted the Utah Firewood Quarantine (see UAC § R68-23) in 2019. Insect pests can live on the exterior and interior of firewood; consequently, the quarantine requires that firewood undergo precautionary measures such as heat treatment prior to importation into the state. Plant Industry Compliance Specialists inspect firewood anywhere it is sold in the state to ensure that firewood distributors are following these precautionary rules.

In 2025, two interstate violations of the quarantine were found statewide, which is a drastic reduction compared to the previous year. The first violation involved approximately 40 bundles of firewood in Sanpete County. The second non-compliant shipment was in Washington County and that had about 30 bundles. Both shipments were sent back to the states of origin. Retailers in Beaver and Washington counties were found to have unlabeled firewood for sale. In these instances, it was determined that the wood products were harvested in Utah, so no interstate violations of the quarantine occurred. The merchants were ordered to properly label their products per quarantine requirements.

Online sales regulation

As global commerce moves increasingly toward the online space (AKA e-commerce), the market for online purchasing and shipment of nursery stock has increased accordingly. In fact, the global e-commerce nursery market size has been predicted to increase by over 7% each year between 2023 and 2033. Many of these products are regulated by UDAF through quarantines such as those pertaining to the Japanese beetle and emerald ash borer. These quarantines are in place to minimize the risk of pest introductions through the human-mediated transportation of nursery stock. UDAF continues its commitment to monitoring online sales of regulated plant materials such as ash trees, turf grass, and firewood, to limit pest introductions and ensure all nurseries selling products to Utah customers are compliant with state regulations.

R68-21 - Beekeeping Standards

A new rule enacted in 2025 standardizes governmental entities' beekeeping regulations. The rule contains guidelines specific to both urban and non-urban governmental entities. For example, §4 of the rule specifies that "(1) An urban county or municipality may limit the number of bee colonies allowed on private property if they: (a) allow at least two colonies per property up to ⅛ acre in size; and (b) allow an additional two colonies for each additional ⅛ acre of property." §4 continues, specifying that "(2) A governmental entity may not restrict the number of bee colonies on private property in a nonurban county or municipality." The full rule also gives regulatory guidance on the topics of hive locations on private property, barrier requirements, swarming prevention, requiring apiary water sources, and open feeding of beehives. Lastly, the rule specifies that regulations adopted by a governmental entity pursuant to this rule must be enforced by their local code enforcement agencies. Any beekeeping ordinances or codes enacted by governmental entities must not be more stringent than this rule. Local regulations that are stricter than this rule are not in compliance and should not be enforced. For the full rule text, scan the QR code below.

R68-21
Rule Text



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UDAF APIARY PROGRAM



Figure 2. UDAF apiary inspectors issue an APIP certificate to a beekeeper with an outdoor staging yard.

Founded in 1892, the purpose of the Apiary Program is to support Utah's beekeeping industry and community through the appointment of state and county apiary inspectors. These officials help beekeepers identify and control regulated honey bee (*Apis mellifera* Linnaeus) maladies. The combined efforts of Utah's 10 county bee inspectors and two state-wide inspectors protect the state's approximately 24,000 honey-producing bee colonies, which are part of a local apiary industry annually valued at approximately $4.3 million in almond pollination services and $2 million in honey production.

2025 Program News & Highlights

Apiary Pre-Inspection Program (APIP) Available to More Beekeepers in 2025

In this third year of partnership between the California Department of Food and Agriculture (CDFA) and UDAF, migratory beekeepers destined for California may request for their hives to be voluntarily inspected prior to transport. Inspectors confirm that hive equipment and pallets are free of dirt, debris, noxious weeds, and invasive insects, and issue certificates of inspection to qualified beekeeping operations. Certified operations may enjoy expedited movement through the California Agricultural Inspection Station, which puts less stress on the transported bees.

2025 marks the first year of UDAF inspectors leading APIP inspections of indoor beehive storage facilities (Figure 1) without supervision from a CDFA inspector. In early November, CDFA inspectors visited Utah to train UDAF staff on inspection procedures for outdoor staging bee yards (Figure 2). Next year, UDAF inspectors will be authorized to perform inspections of both indoor and outdoor beehive storage facilities.

APIP Quick Stats

11 beekeepers passed inspection

19,119 colonies certified

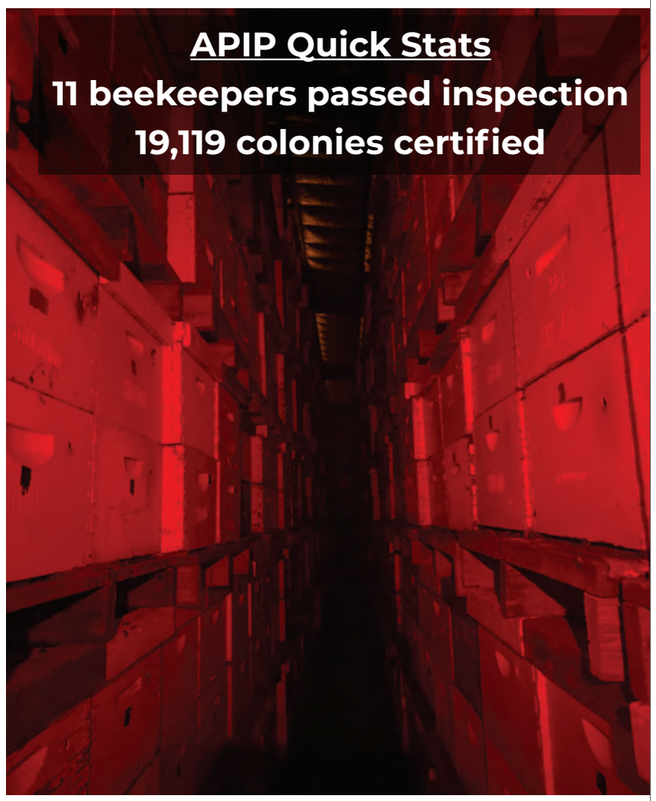


Figure 1. Stacked beehives in an indoor cold storage facility are viewed with red light to avoid disturbing the dormant bees.

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County Bee Inspector Tropilaelaps Training Event

The 2025 annual county bee inspector meeting focused on the biology, diagnostics, and management of the *Tropilaelaps* mite (*Tropilaelaps mercedesae* Delfinado & Baker), also called Tropi for short. This mite, native to Southeast Asia, is not yet present in the U.S. Tropi's possible introduction threatens managed honey bees which are already stressed by established parasites like the *Varroa* mite. Proactive inspector training like this is just one way UDAF is preparing for the possible future introduction of this mite. Other Tropi-related efforts include beekeeper-focused outreach about Tropi biology and management, screening for the mite while collecting samples for the federally funded National Honey Bee Disease Survey, and applying for a federal grant to include molecular Tropi diagnostics in the UDAF Entomology Lab's capabilities.

UAC 58-28-604 Beekeeping & Veterinary Amendments

Since the 2017 federal implementation of the Veterinary Feed Directive (VFD) rule, it has been notoriously difficult for beekeepers to access antimicrobial compounds which can be used for the treatment of foulbrood diseases. The VFD rule requires that beekeepers work with a veterinarian to access antibiotics, however those veterinarians are also required to have a sound understanding of the biology of the patient. In the case of beekeepers, the "patient" is the honey bee hive, an animal which is traditionally outside the scope of veterinary education. This has caused difficulty for Utah beekeepers who want to treat their hives with antibiotics, but are unable to find a vet qualified to issue a prescription or VFD. However, a new legislative change was successfully implemented in 2025 which addresses this issue. Thanks to a collaboration between the UDAF Apiary Program and the UDAF State Veterinary Office, beekeepers seeking antibiotics for the treatment of foulbrood diseases now have a backup option if privately practicing veterinarians are not available. House Bill 194 came into effect on May 7th, 2025. The bill amends language within UAC § 58-28-604 to allow veterinarians employed by UDAF to issue veterinary feed directives to beekeepers whose hives have been inspected by county or state apiary inspectors. Importantly, this includes the provision that apiary inspectors work with UDAF veterinarians and the beekeeper to ensure that the antimicrobials are being used responsibly. This new avenue to antimicrobials will help beekeepers who are unable to find a bee-friendly veterinarian on short notice, and enables beekeepers to rapidly respond when foulbrood disease is detected by apiary inspectors. The full code text is available online, scan the QR code to the right or visit le.utah.gov and search "veterinarian client patient relationship."

Beekeeper Registrations

At the end of 2025, there were 889 registered beekeepers in the state of Utah (Figure 3). The Utah Bee Inspection Act states that any person raising bees within the state of Utah is required to register with UDAF (UAC § 4-11-104).

Tier	Annual Cost	% of Beekeepers
Youth non-profit	$0	0.3%
Hobby (1-20 hives)	$10	93.7%
Sideline (21-100 hives)	$25	3.2%
Commercial (≥ 101 hives)	$50	2.8%

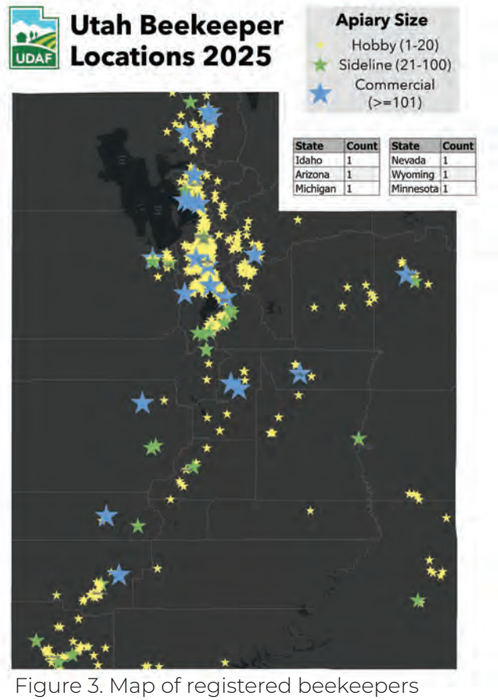


Figure 3. Map of registered beekeepers in Utah in 2025 by apiary size.

Inspection Results

The primary way apiary inspectors connect with beekeepers and detect apiary disease is through boots-on-the-ground hive inspections. In 2025, inspectors performed 405 inspections (Figure 5) across 324 apiaries, totaling 1,400 hives inspected across the state.

Bacterial Diseases

American foulbrood (AFB) is the most devastating honey bee disease and is regulated by the state. The spores produced by its causative bacterial agent, *Paenibacillus larvae*, can remain infectious for 40+ years in used beekeeping equipment. AFB spores can spread via bee and human mediated mechanisms, such as when bees rob resources from infected colonies, or when beekeepers use contaminated tools or hive equipment. Hives found infected with AFB are required to be promptly treated with antibiotics or destroyed. Apiary inspectors follow up with every lab-confirmed AFB case to ensure compliance. In 2025, AFB was diagnosed in 0.9% of inspected hives (Figure 4). The majority of AFB-infected hives were in Utah county. Other outbreaks occurred in Salt Lake, Summit, Wasatch, Iron, and Juab counties (Figure 6). Due to the highly infectious nature of the disease, outbreak notification letters are mailed to registered beekeepers with apiaries located within two miles of a confirmed AFB case. In 2025, 45 AFB outbreak letters were sent to registered Utah beekeepers.

3.4% of inspected hives were found to be infected with European Foulbrood (EFB) (Figure 4). This brood disease is caused by the bacterium *Melissococcus plutonius*. Mild EFB may clear up on its own, but severe infections require intervention. Cultural control methods like a shook swarm or caging the queen to force a brood break can help to resolve clinical symptoms, as can antibiotic treatment. Beekeepers must work with a veterinarian to access antibiotics through either a prescription or Veterinary Feed Directive, however there are few bee-knowledgeable veterinarians in the state. Thankfully, beekeepers seeking antibiotics now have the option to work with a UDAF-employed veterinarian if a privately practicing vet is unavailable.

Fungal Diseases

Nosema disease was found above threshold levels in 9.5% of lab-tested bee samples, which is a decrease from last year. This disease is caused by the parasitic microsporidians *Vairimorpha ceranae* and/or *V. apis*. Severe infections can cause colony health problems while colonies overwinter, though the overall impact of these pathogens to long term colony health is unclear.

Chalkbrood disease, caused by the fungus *Ascophaera apis*, was found in 3.1% of inspected colonies (Figure 4). While not a death sentence on its own, chalkbrood disease can make a colony vulnerable to other diseases if left unchecked.

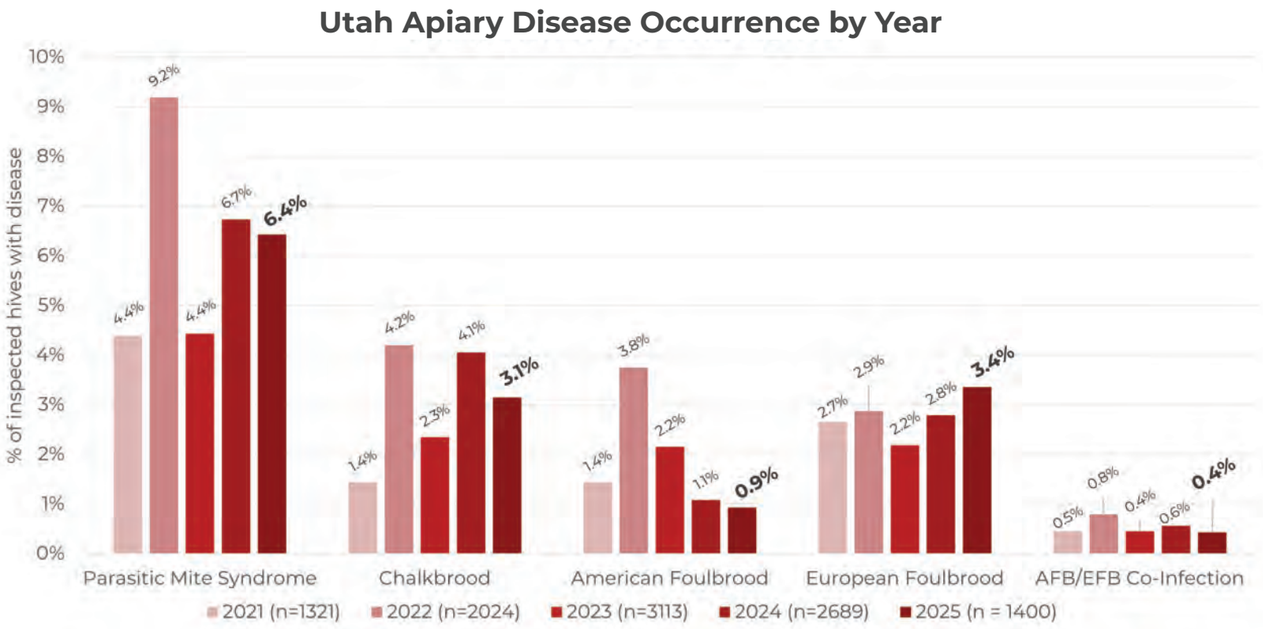


Figure 4. Comparison of apiary disease occurrences by year. American and European foulbrood diagnoses include both lab-confirmed and field diagnosed cases.

Inspection Results

1,400 hives inspected across **324** apiaries by state and county apiary inspectors.

13 hives across **9** apiaries diagnosed with American foulbrood.

47 hives across **34** apiaries diagnosed with European foulbrood.

Parasitic Mite Syndrome was the most common apiary malady in 2025.

45 AFB outbreak alert letters mailed to registered beekeepers.

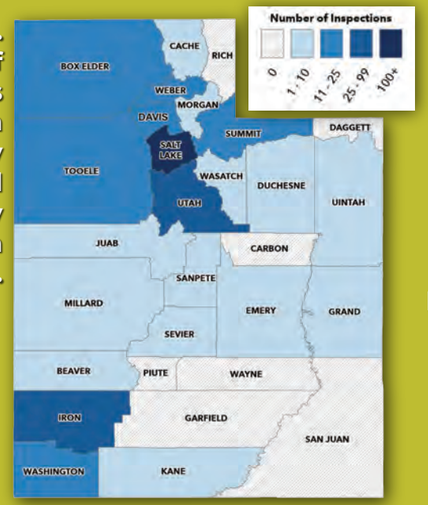


Figure 5. Number of inspections performed in each county by state and county apiary inspectors in 2025.

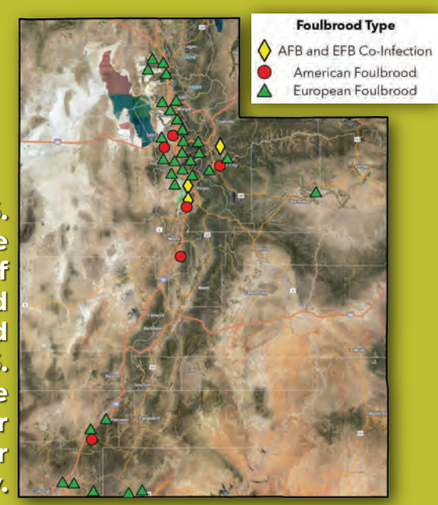


Figure 6. Approximate location of lab-confirmed foulbrood cases in 2025. Points are dispersed for beekeeper privacy.

NHBDS National Honey Bee Disease Survey — APHIS

2024 Survey Result Highlights

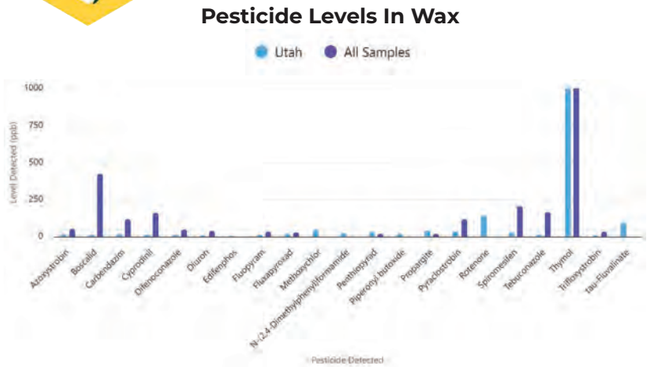


Figure 7. Pesticide levels in wax. Comparing levels found in Utah during 2024 (n=10) to average national level of the same pesticides found in wax samples for all years (n=1794). From usbeedata.org.

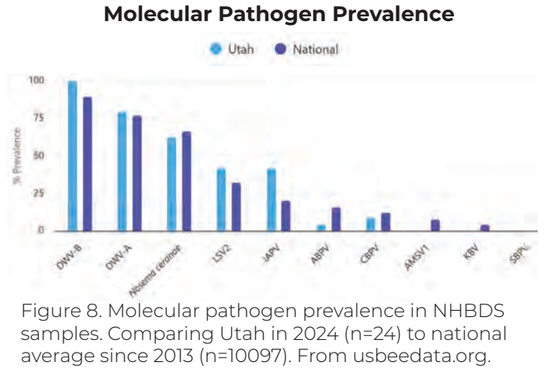


Figure 8. Molecular pathogen prevalence in NHBDS samples. Comparing Utah in 2024 (n=24) to national average since 2013 (n=10097). From usbeedata.org.

Parasites

The *Varroa* mite, *Varroa destructor* Anderson & Trueman, continues to be the lead cause of colony death in Utah. 6.4% of inspected hives were diagnosed with Parasitic Mite Syndrome (PMS) in 2025 (Figure 4). This disease complex is characterized by a combination of high *Varroa* infestation level, observed symptoms of mite-associated viruses (i.e. deformed wing virus, sacbrood virus, chronic bee paralysis virus, etc.), and visual signs of *Varroa* parasitism in the brood frames. If left untreated, PMS will result in colony collapse.

PMS is typically detected in the fall as it is correlated with an autumnal spike in *Varroa* populations (Figure 9). However, only a fraction of hive inspections occurs during the fall, so reported PMS prevalence may be an underestimate of the true PMS prevalence in the state through time. The harmful viruses associated with PMS can circulate within a colony even after *Varroa* mites are suppressed, which is why the UDAF apiary program continues to focus on *Varroa* management outreach. Beekeepers are encouraged to respond promptly to mite incursions, before virus symptoms become apparent. In 2025 a *Varroa* monitoring and treatment reminder postcard was mailed to registered beekeepers at the beginning of peak mite season, and program staff regularly give talks and demonstrations on how to monitor and manage *Varroa* mites.

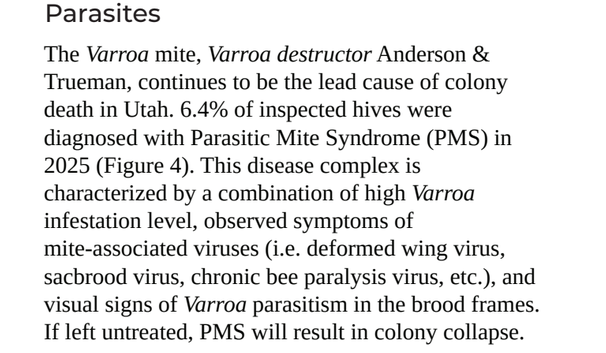


Figure 9. Average *Varroa* mite load in Utah by month, according to data collected by state apiary inspectors. Shaded area indicates minimum and maximum observed mite loads in each month.

In fall of 2024, a small population of the parasitic small hive beetle (SHB) was found in Weber county, the first detection of the parasite in Utah since 2019. After a year of monitoring, no SHB were found in any inspected beekeeping operation in 2025. It is likely that the beetles failed to establish in Utah's dry soil and climate.

Health Certificates

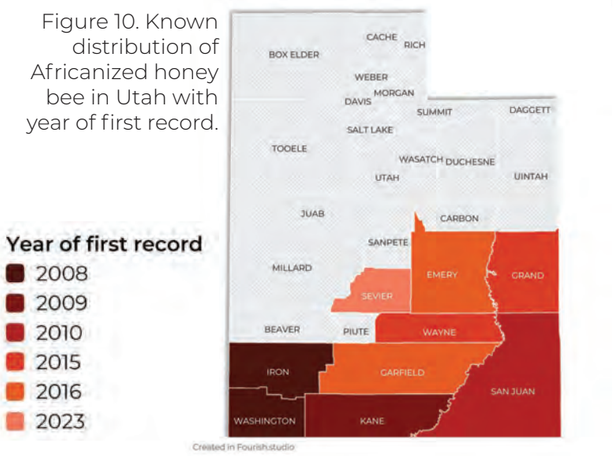
Registered Utah beekeepers may request a health certificate from the UDAF Apiary Program to verify that their operation is pest and disease-free. This may be necessary for beekeepers to maintain eligibility for federal farm assistance programs, to certify that colonies are free of regulated maladies prior to interstate movement, or to use as a selling point to customers. In 2025, eight health certificates were issued, totaling 1,439 colonies that were certified as free of regulated pests and disease.

Africanized Honey Bee (AHB) & Aggressive Colonies

Apis mellifera scutellata Lepeletier, also called the Africanized honey bee (AHB), is a hybrid subspecies of honey bee notorious for its aggressive behavior and penchant for swarming. AHB is considered a public safety concern due to its heightened stinging response as compared to typical managed honey bee lineages, though few instances of AHB-related stinging attacks have been documented in Utah. AHB populations are known to occur in southern parts of Utah (Figure 10). The UDAF Apiary Program monitors AHB spread throughout the state by testing bees in at-risk areas for AHB genetic markers.

In 2025, state and county apiary inspectors responded to seven reports of aggressive bees. Temperament tests were performed on hives in the reported apiaries, and any hives which failed the test were either moved, requeened, or euthanized. UAC § 4-11-115 prohibits beekeepers from intentionally maintaining aggressive bees, regardless of their genetic origin. However, as AHB genetics can spread when queens mate with feral AHB drones, it is beneficial for beekeepers, and for the safety of the general public, to know where AHB colonies are likely to occur. For more information about AHB in Utah, visit the apiary program website and click on "Africanized Honey Bees."

Figure 10. Known distribution of Africanized honey bee in Utah with year of first record.



Outreach & Pollinator Protection

Educational outreach as a means of encouraging regulatory compliance is a high priority for UDAF. Throughout 2025, state apiary inspectors delivered multiple talks targeting beekeepers and pesticide applicators. A highlight for 2025, state apiary inspector Jenna Crowder worked with the UDAF marketing division to film a social media video short demonstrating the sample collection process for the National Honey Bee Disease Survey. The video amassed over 2,000 views across all platforms.

County apiary inspectors also regularly participate in outreach efforts. For example, in 2025, Rex Weston of Weber and Morgan counties delivered multiple beekeeping demonstrations for the Utah State University Extension A Day At The Farm event, and organized a Demaree split demonstration for the Weber county beekeeper association.

As part of UDAF's EPA-approved voluntary Managed Pollinator Protection Plan (MP3), outreach signage (Figure 11) was strategically placed in farm supply box stores and agronomy centers throughout Utah, educating consumers on best practices to minimize pesticide drift. Additionally, UDAF-funded insecticide treatments for the ongoing Japanese beetle (JB) eradication project (see JB eradication page 13) were supervised by UDAF Apiary Program and Pesticide Program staff, ensuring applications were compliant with the pesticide label. Registered beekeepers in areas treated with Acelepryn could opt in to treatment notifications and beekeepers in JB eradication areas treated with Imidacloprid were notified prior to application.



Figure 11. Pollinator protection signage placed in pesticide retail locations.

2024 National Honey Bee Disease Survey (NHBDS) Results

The UDAF Apiary Program has collaborated with beekeepers across the state to collect samples for this USDA-APHIS funded survey since 2011. The survey takes an epidemiological approach to honey bee health, monitoring for emergent invasive threats and screening for diseases known to be present in North America. Sampling primarily targets migratory apiaries, and samples are mailed to various laboratories in the U.S. for testing. Sample testing takes time, and results are not available until the following year. The results discussed here are from the 2024 sampling season.

To date, no exotic honey bee pests, including the *Tropilaelaps* mite, have been found in Utah. Data collected during the 2024 NHBDS show that virus levels were above national averages for deformed wing viruses A and B (DWV-A, DWV-B), Lake Sinai virus (LSV2), and Israeli acute bee paralysis virus (IAPV) (Figure 8). This could be due to horizontal and vertical transmission mechanisms (i.e. virus transmission within and between castes of honey bees) in addition to vector transmission of viruses from *Varroa* to worker bees and larvae. Concerningly, DWV-B virus was found in 100% of samples, even in hives with no visible viral symptoms.

Some hives are sampled twice in a season as part of the longitudinal NHBDS. Samples of secondary hive products from those colonies are tested for pesticide residues. In 2024 there were a total of 49 detections, with 22 different pesticides detected in Utah samples (Figure 7). Most pesticides were detected at an average level lower than the national average.

Two of the pesticides with frequent detections and relatively high average levels, thymol and tau-fluvalinate, are mite treatment products. When used according to the label, mite treatment products benefit colony health by reducing *Varroa* populations. Long-term accumulation of thymol in the hive matrix is not known to cause negative health impacts, though honey flavor may be affected. Tau-fluvalinate residue accumulation may cause economically significant honey bee pests to develop resistance to the chemical.

The most frequently detected pesticides were fungicides. Carbendazim, the most frequently detected fungicide, has been shown to not significantly impact acute bee mortality or gut health at the levels it was found in Utah 2024 wax samples. Other observed fungicides are considered to be relatively non-toxic to honeybees according to the EPA, though scientific evidence suggests that chronic fungicide exposure is associated with poor hive health outcomes.

For more information about the NHBDS and to view the full state report, visit usbeedata.org and click on Utah.



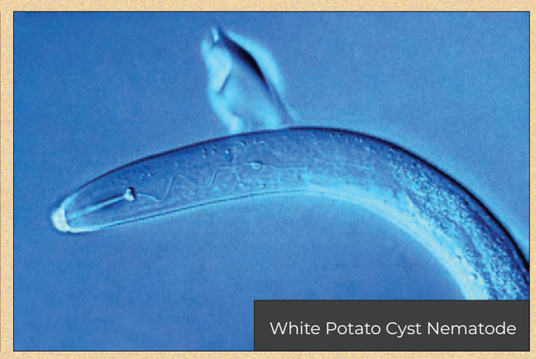
Potato cyst nematodes (PCN) (*Globodera pallida* Stone and *G. rostochiensis* Wollenweber) have the potential to cause extensive damage to the Utah potato industry. Invasive to North America, *G. rostochiensis* was first detected in New York in 1941, and *G. pallida* was detected in Idaho in 2006. Potatoes produced in Utah for the export market are high value, diverse varieties which are marketed throughout the U.S and Canada. To minimize the risk of PCN in potato production, seed potatoes produced for export in Utah are grown in remote locations to other potato growing areas and have required certification since 2007. Like other roundworms, PCN are extremely tiny and cannot be seen by the naked eye. These pests can survive for long periods of time as eggs in the dead bodies of female nematodes, called “cysts.” Cysts can stay dormant for up to 30 years, during which 200-600 eggs within the cyst can remain viable in field soil until a new host is introduced. Female nematodes attach to feeder roots and become sedentary, eventually reducing yields by up to 80%. Host plant damage includes stunted growth, poor root development, wilting, and premature death. The movement of cysts is the primary means of spreading this pest, often occurring when transporting soil, seed, host crops, or equipment from infested fields to uninfested ones. Because PCN can go undetected for long periods of time, the unintentional spread can be mitigated by diligent sampling and regular surveying.

When PCN was first detected in Idaho in 2006, many foreign markets closed immediately to U.S potato seed imports. Most of these markets have since reopened due to vigilant surveying and testing efforts, but they will remain open only as long as these efforts continue. By surveying seed potato fields in Utah, UDAF can ensure they meet the phytosanitary requirements of foreign markets, further supporting Utah’s seed potato export industry. These state-based surveys are critical because they support continued export from Utah in the event that PCN was detected in a different state. If PCN were detected in Utah, the survey results would inform regulators on what actions to implement to best address the problem depending on location, severity, etc. In an effort to help protect other potato fields and minimize impacts to the U.S commercial potato and seed potato industry, quarantines and eradication efforts would be likely.

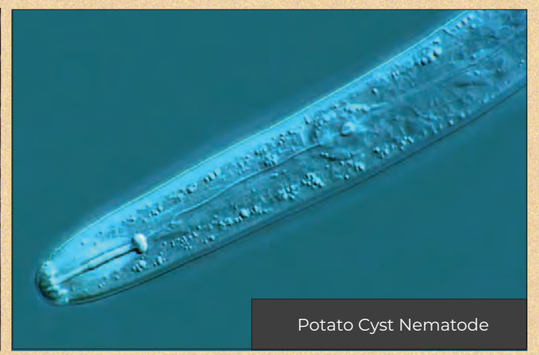
Previous to 2025, surveys have been conducted by USDA Animal Plant Health Inspection Service, Plant Protection and Quarantine’s (APHIS PPQ) PCN program located in Idaho Falls, ID. However, due to funding and staffing shortages, UDAF has taken over regulatory oversight of the survey. This year UDAF contracted a professional PCN sampling company to collect nearly 700 soil samples to qualify 650 acres in Utah. Samples were submitted for testing to the Idaho Falls PCN lab. UDAF verified the process, met with producers, and reviewed protocols set forth by USDA to ensure all guidelines were followed. To date, no PCN has been detected in Utah.

Did you know?

Nematodes are not insects. In fact, they are microscopic, eel-like roundworms. While most species are beneficial, there are a small number that are plant parasites, such as the nematodes pictured. Feeding causes swelling or gall damage (see below).


White Potato Cyst Nematode


Gall damage due to feeding


Potato Cyst Nematode



Survey in action

Utah is not known to be infested with PCN, but foreign countries that purchase Utah’s potato products require that this status be annually verified by approved survey methods. In the absence of negative survey data, Utah’s products would not be allowed in these countries.

Pictured left is a ride-on soil-sampling machine that collects soil sub-samples or cores. In 2025, a company was contracted to collect 700 cores in Cache County; these were tested for the presence of PCN by a USDA APHIS lab. Fortunately, no PCN were detected.

CAPUTO CREATED WITHOUT AI



RANGELAND PEST SUPPRESSION PROGRAM

Grasshoppers (various genera) and Mormon crickets, *Anabrus simplex* Fairmaire, play a significant role in Utah history. Before Utah was a state, indigenous people incorporated these pests into their culinary practice and celebrated having an abundance of high protein nutritional food. However, once early pioneers arrived, the grasshopper and Mormon cricket quickly became a burden and created a major problem to settlers and their crops. Since then, Utah producers have been managing these pests using various control methods.

Today, Mormon crickets and grasshoppers remain a problem in Utah. However, historical records show the grasshopper species that plagued Utah was the Rocky Mountain Locust, *Melanoplus spretus* Walsh, until it was found extinct in 1902. Since then, various management practices have been implemented to suppress rangeland pests while maintaining environmental integrity. These methods may be combined to form an intentional plan, often referred to as integrated pest management (IPM). IPM is a general approach to pest management that utilizes knowledge of the pest's biology (such as diurnal activities and flight ability) to reduce insecticide use, support long-term pest management, and minimize costs to land managers. UDAF uses and encourages the IPM method referred to as RAATs, reduced area and agent treatments, to manage grasshoppers and Mormon crickets. The RAATs treatment method utilizes the highly mobile nature of rangeland pests to primarily reduce application area: insecticide is applied to every other swath in the growing field, reducing chemical use by 50 percent while maintaining between 80 to 95 percent successful pest control. The RAATs method also supports the presence of beneficial insects and other biocontrol agents in the rangeland ecosystem, providing potential for future natural suppression. Despite being native to Utah, when populations of these pests exceed economic thresholds, they can significantly reduce available forage for wildlife, stress plant communities, severely damage crops, and impact livestock operations. Fortunately, populations have never again reached historic outbreak levels, but rangeland pests will continue to pose challenges to regions across the state.

UDAF therefore prioritizes easing the economic burden of rangeland pests on the state's producers by providing financial assistance. If an agricultural production property (greater than 10 acres) meets the population threshold of eight grasshoppers per square yard, UDAF offers a cost share program to reduce treatment costs. Through this program, reimbursement is offered for the bait and chemical used for suppression efforts on their property. The approved reimbursement amount is based on the assumed (and encouraged) use of the RAATs treatment method, though producers are not required to use the IPM method. The producer is responsible for the treatment application and associated labor costs.

Annually, the USDA Animal Plant Health Inspection Service, Plant Protection and Quarantine (APHIS PPQ) conducts surveys for rangeland pests and this year UDAF added survey efforts to the national data to share internal findings. This survey is traditionally used for monitoring current grasshopper populations as well as projecting future hazard risks. By combining forces for data collection, more data points were collected across varying land ownership types (i.e. private versus federal) to better our understanding of the bigger picture in Utah. Altogether, 3,439 surveys were conducted, with USDA APHIS PPQ covering nearly 3,000 of those surveys. Nearly all UDAF surveys were conducted in production areas on private land to help producers plan future management plans or were taken by request to provide cost share funding and support. Historically, counties impacted most heavily by rangeland pests have included Sanpete, Sevier, and Millard, and this remained true in 2025. Conversely, localized hotspots that often crop up in other counties such as Box Elder, Tooele, Duchesne, and Uintah were not abundant in 2025. Based on historical population cycles, recent outbreak patterns, climatic conditions, and suppression efforts, rangeland pest pressure is expected to remain moderate to high in several areas throughout the state in 2026.

With support from partners, UDAF distributed 132 bags of bait throughout the state to suppress grasshopper and cricket populations. Bait, one of two options in UDAF's cost share program, is an insecticide product consumed by the insect that is a great tool for securing borders, buffers, and boundaries. In other words, bait is effective at keeping pests out from an adjacent property or for targeting specific areas. Due to the nature of bait application and consumption, it is not intended for large-scale suppression efforts.

The financial assistance option that UDAF offers for larger-scale suppression efforts includes reimbursement of the chemical cost in the treatment. 37 cost share agreements were issued for chemical reimbursement, with 11 applicants completing the reimbursement process. The cost share agreement is best suited for larger suppression efforts over variable geographic terrain where bait may be difficult or impossible to apply.

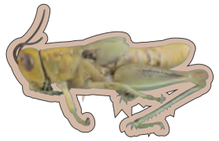
Meet the hoppers!



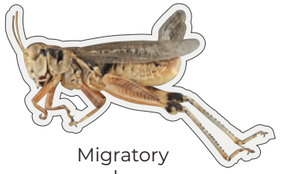
Clearwinged grasshopper



Pasture grasshopper



Packard's grasshopper



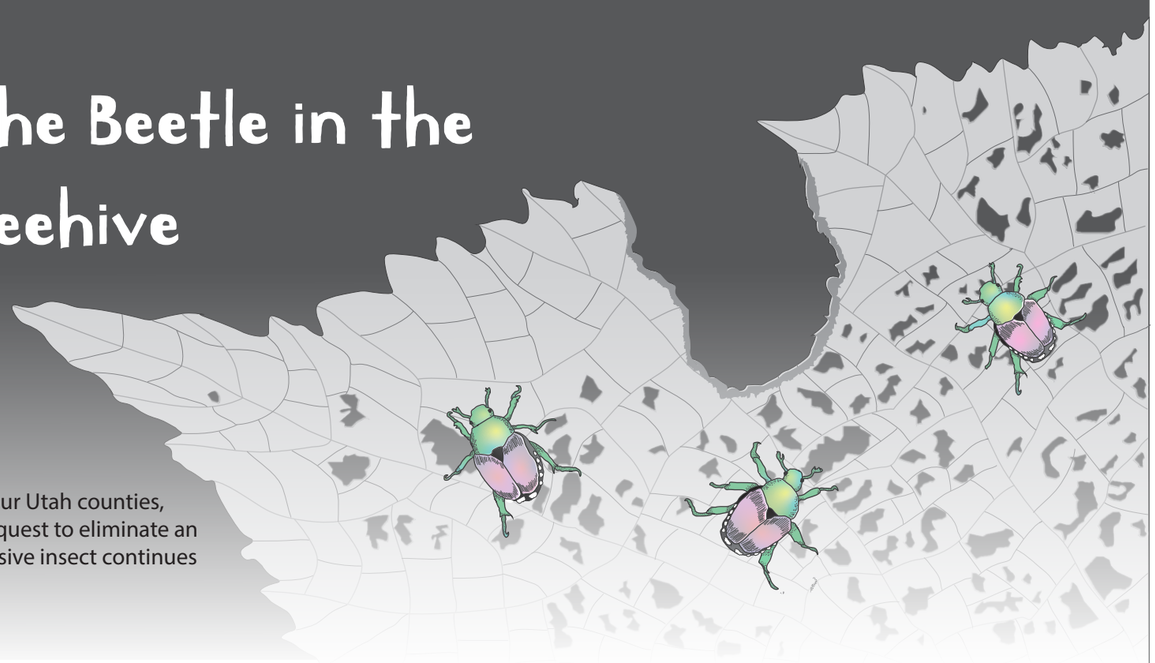
Migratory grasshopper

Regardless of where one is in the state, UDAF continues to recommend early monitoring (as early as April and first of May), coordinated treatment efforts with neighboring landowners, and participating in the Rangeland Pest Cost Share Program with UDAF. These early monitoring and coordinated efforts will help to mitigate forage losses and protect rangeland health.

The UDAF Insect Program is always looking for opportunities to educate producers about its cost share program and is happy to participate in outreach, stakeholder or community events. This year staff attended several meetings across the state to provide information about UDAF's rangeland pest supression efforts and speak with stakeholders. Utah State University (USU) Crop Schools are meetings intended to teach the public about a variety of agricultural industries and challenges as well as connect them with state resources. In 2025, UDAF presented at USU Crop Schools and emergency drought summits in Beaver, Box Elder, Garfield, Grand, Iron, Millard, Sevier, Uinta, and Wayne counties as well as a Mormon cricket and grasshopper stakeholder meeting in Fillmore. We also presented at the USU Extension Annual Conference in Washington County, providing the opportunity for UDAF share updates with our land grant partners. As long-standing board members, UDAF officials annually attend and present at the annual National Grasshopper Management Board meeting, during which state and federal representatives discuss recent findings and treatments to optimize rangeland pest management on a broader scale.

GAIUTO CREATED WITHOUT AI

The Beetle in the Beehive



In four Utah counties, the quest to eliminate an invasive insect continues

It is among the most devastating invasive insects to ever find its way to the U.S. From home gardens to sports stadiums and commercial fruit orchards, its negative impact on American agriculture spans far and wide. A mere mention of it to a country club superintendent will likely result in a shudder. This pest, of course, is the Japanese beetle (JB), *Popillia japonica* Newman. First found in 1916 by a New Jersey nursery inspector, the pest quickly became a formidable fiend to anyone employed – or merely fond of – growing fruit, vegetable and ornamental plants. While JB has favorite things to eat, it makes plenty of exceptions when the preferred hosts aren't around; the pest is known to attack over 300 different plants.

Although JB was first detected on the Eastern Seaboard long ago, its migration to other parts of the U.S. has been relatively slow and the insect has only recently found its way to the Western U.S. The results: the East and Midwest have had to cope with an estimated half a billion dollars of annual control costs and damages, while the West has been left essentially unscathed.

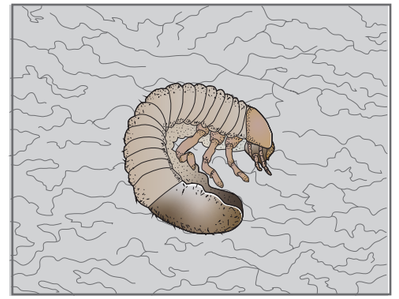
Yet the days of "ignorance is bliss" is anything but certain, as numerous Western states previously uninfested are fighting recently-discovered infestations. For six years now, UDAF has been battling JB in Utah. It all began when a small multi-county population detected in 2019 set into motion an eradication campaign the following year to eliminate its presence within the state. This effort involves setting detection traps to determine where the beetles are located then conducting targeted insecticide applications on host material in those areas.

UDAF embarked on this effort with the benefit of having done this sort of difficult task before. Indeed, JB had previously been eradicated from the state after a large population was detected in the city of Orem in 2006. It took many years, but with dogged determination, the eradication was a success. But not just any success – a record breaking one – which at the time would become nationally recognized as the largest efficacious JB eradication in U.S. history. This would serve as a model for other states discovering novel JB populations, such as Idaho. That state started a JB eradication effort of their own upon discovering a sizable number in Boise. Their eradication, when successfully completed, broke the Utah record based on population size.

At the six year mark of the second Utah JB eradication, there is great progress to report but also important work left to be done. The targeted insecticide treatments have largely proven efficacious and JB has been eliminated in various localities. However, the continued re-introduction of the pest is threatening the prospect of a final victory. In each year of the effort, UDAF learns new, important information to help bring Utah closer to a solution.

Activities and Accomplishments

UDAF kicked off the season by contracting private, licensed pesticide applicators to apply insecticides to approximately 208 acres of irrigated turf within three Wasatch Front counties: Davis, Salt Lake, and Weber. In Davis and Weber counties, the treatments were primarily conducted on residentially zoned parcels, whereas Salt Lake County areas were mostly commercial or industrial. Irrigated turf was exclusively targeted because it harbors larval JB, the most susceptible life stage of the insect to chemical control. The cities of Farmington, South Weber, and South Odgen had the largest share of treatment acreage, as these localities had the greatest concentration of JB specimens found in the previous season.



Parcel land use informed which control product was applied. Residential areas were treated with chlorantraniliprole, whereas commercial and industrial areas received imidacloprid. Both products have low risk to humans and other mammals when used according to product instructions. However, chlorantraniliprole is additionally advantageous due to its reduced risk to non-target invertebrates, such as bees and earthworms. Box 1 contains more information about the insecticidal products used and safety and environmental protection efforts taken.

Following treatments, staff placed 6,032 JB traps across the state, which were checked for target pests and serviced throughout the season. To maintain statewide coverage, traps were placed in each of Utah's 29 counties. However, the vast majority were set in Wasatch Front counties with more traps in areas where JB had been found in previous years.

Trapping Results

Trapping is critical to the eradication effort, as it allows UDAF to evaluate the effectiveness of insecticide treatments from the prior year as well as monitor JB population movements and new introductions. 2025 trapping results were quite encouraging. For the first time since detection in 2019, no JB were found in Centerville, which was the former epicenter of infestation. At one time, 49 beetles were detected in a three square block area in Centerville. After years of eradication work, the area appears JB-free, though another year of high density trapping in the area will be necessary to confirm this. The same results unfolded in Taylorsville: 24 beetles were collected in a similar-sized area in 2022, yet none were found in the most recent year's survey. Similarly, the handful of beetles found in Uintah from previous years was reduced to a single capture. Though not eliminated, drastic JB population declines occurred in Salt Lake City's Northwest Quadrant and South Salt Lake's industrial district. Furthermore, Washington Terrace's captures were more than halved. Single capture locations from 2024 in Murray and Provo yielded no detections in 2025.

While these results were encouraging, some locations provided less welcome results. Low level populations remained steady in Downtown Salt Lake City, the University of Utah campus, Sandy, Provo, and Ogden. A new single capture location popped up in West Valley. The worst developments occurred in Kaysville where seven JB were detected (only one was found in the previous season) and Farmington where the population more than doubled from 17 in 2024 to 45 in 2025.

Yet overall, the results were promising. With a total of 86 JB detected in 2025, UDAF observed an approximate 33% decrease in captures compared with 2024. In areas where turf treatments were conducted for multiple consecutive years, JB populations were severely diminished or eliminated. Substantial increases in captures only occurred where treatments had been done once or not at all. The geographical distribution of JB also shrunk substantially in 2025, as more beetles were detected in smaller sections of land relative to previous years.

GAMUTO CREATED WITHOUT AI

Preventing New Introductions

While 2025 was a successful year for the eradication campaign, there continue to be underlying challenges to completely eliminating JB from Utah. Most notably, it appears that the state is being continuously re-infested, possibly by previously unidentified pathways. For decades, UDAF has regulated the importation of nursery stock, sod, and soil as a means of preventing JB introduction. All of these commodities are well known for their abilities to transport JB. Yet, JB populations have persisted in certain industrial and commercial areas which have little apparent connection to any of these materials. These areas also possess little host material as well as habitat that is, by and large, hostile to the survival of this insect. As outlined in previous editions of the Insect Report, various hypotheses have been proposed to explain why relatively small JB populations continue to be found in industrial and commercial areas of the Wasatch Front.

Though UDAF continues to explore various potential reasons for this, almost all evidence thus far points to a singular explanation: JB is possibly hopping onto freight trains from other infested states and finding a new home in Utah. This is a somewhat surprising finding. Rail-based freight transportation has historically been considered an introduction pathway for pests such as spongy moth, *Lymantria dispar* Linnaeus, which lay egg masses on various solid surfaces, including mobile objects like cargo containers. This pathway was assumed to be a lower risk for insects that lay eggs or egg masses exclusively on or near plant surfaces such as JB. However, the concept of insects with similar life histories being transported by railway is not without scientific evidence. Short et al. (2019) observed a statistically significant correlation between rail corridors and increased detection probabilities of emerald ash borer (EAB), *Agrilus planipennis* Fairmaire. EAB only lays eggs on host plants, so the authors concluded that the likely explanation for the railroad correlation was adult insects hitchhiking on railcars. Based on many years of research into the matter, Utah officials suspect that JB could be transported in the same way.

Consequently, UDAF has been collaborating with local rail carriers to better clarify the potential correlation

Continued on Page 23

Box One

Eradication Control Product Information

In recent years, UDAF had exclusively relied on chlorantraniliprole for eradication activities because of its superior environmental-sensitivity qualities compared to other insecticides approved for JB control. The decision to utilize the broad spectrum insecticide imidacloprid in certain treatment areas was made for a multitude of considerations, the most important being insecticide resistance management. The commercial and industrial areas in the eradication area have experienced stubbornly persistent infestations, with some areas being infested with JB since the beginning of the eradication. Although these persistent populations are now thought to be primarily due to reintroductions from freight transportation and not part of a stable population, some of the same commercial and industrial areas have nonetheless been treated with chlorantraniliprole for three consecutive years. Utilizing the same product on the same pest, year after year can result in insecticide resistance. Consequently, scientific authorities strongly recommend rotating the product being used to avoid control failure. In residential areas, this hasn't been an issue. On the contrary, chlorantraniliprole is typically used for a small number of years and the JB population is eliminated.

In order to minimize risks to human health and the environment, UDAF required that all contracted insecticide applications (regardless of product used) be supervised by the state's pesticide compliance program. This ensured that pesticides were being applied according to federal and state regulations. UDAF also contacted all registered beekeepers within two miles of treatment areas to make them aware of planned applications. Beekeepers were offered free screening materials if they wanted to keep their bees inside of hives during applications.





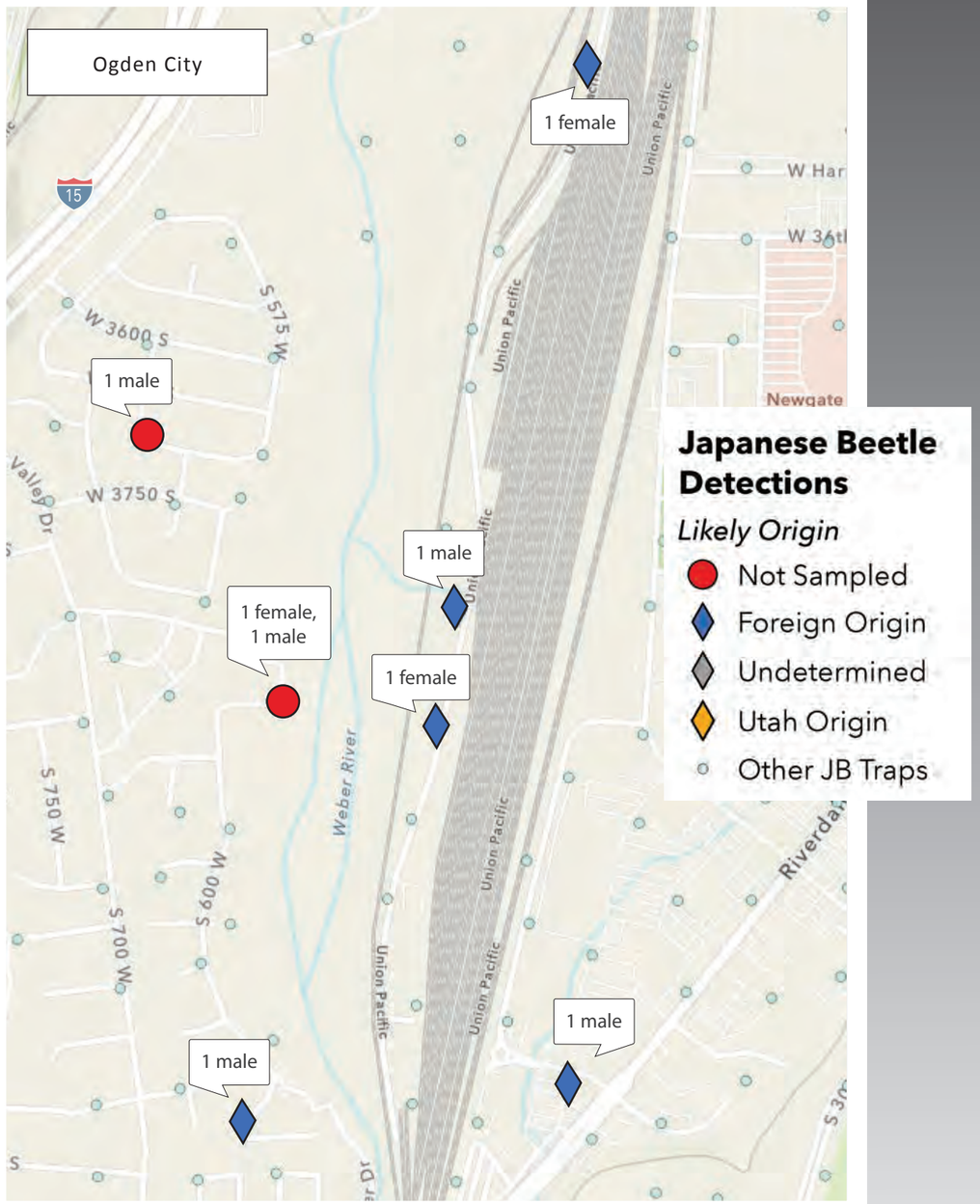


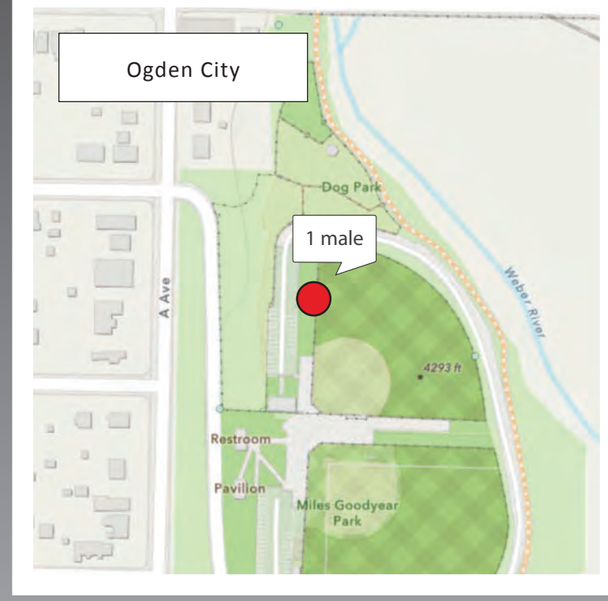


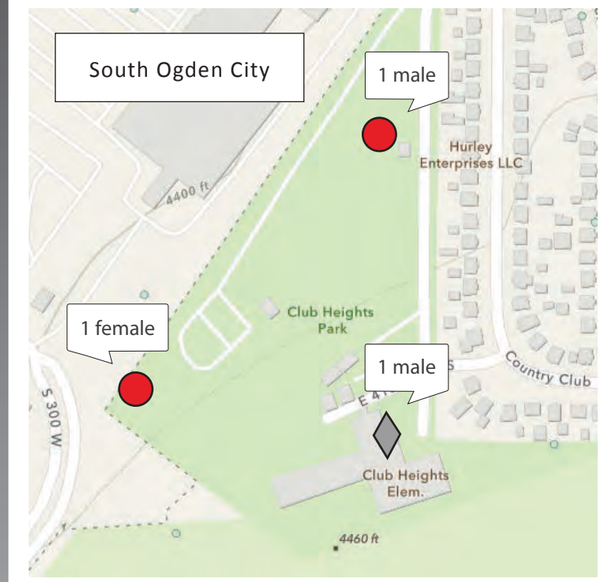


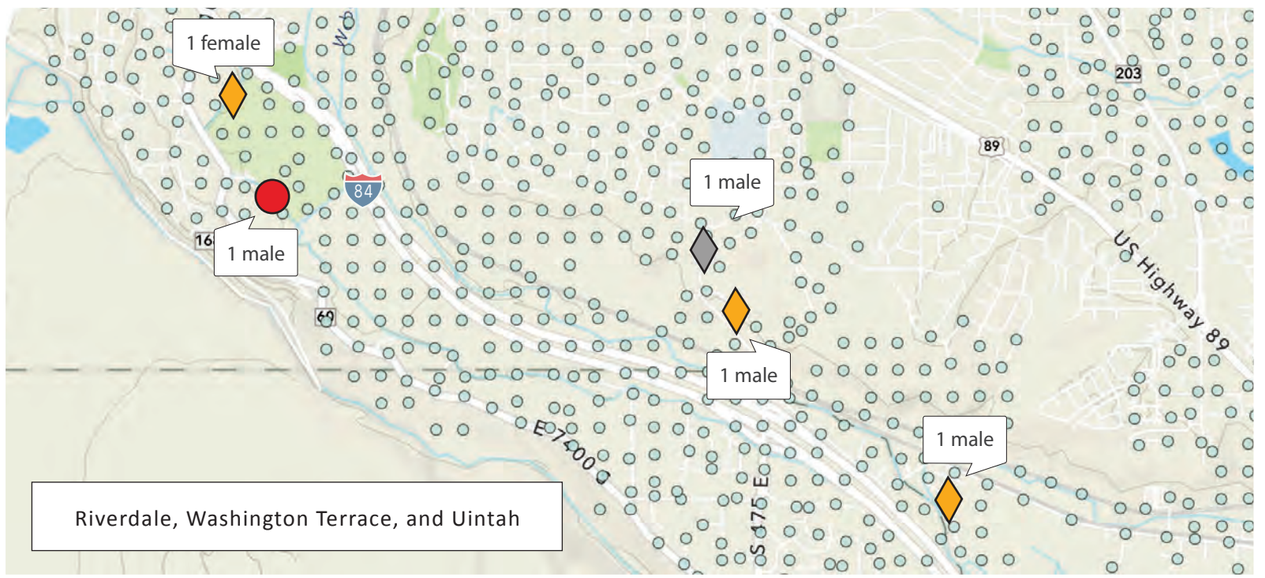
2025 JB Detection Maps

Weber County



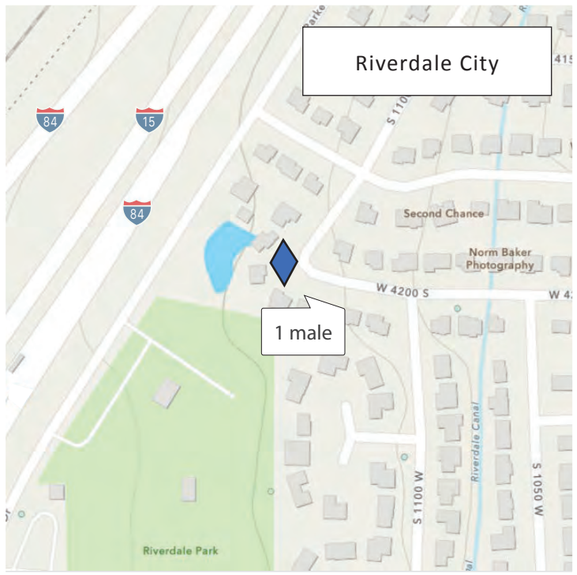




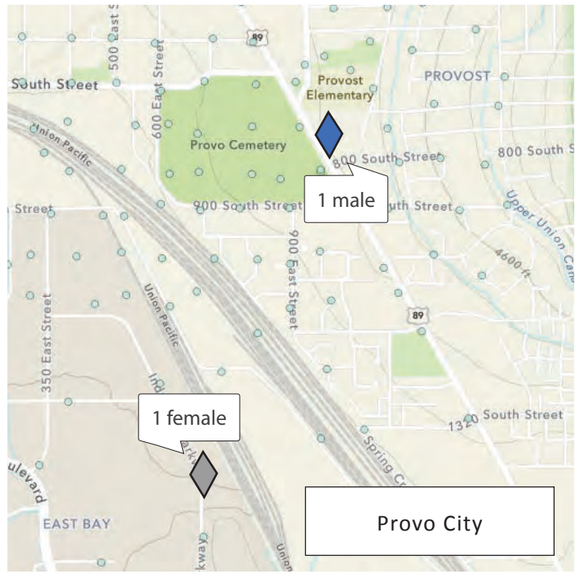


UDAF submitted 37 JB captured in the 2025 season for lab analysis to determine whether specimens were from Utah or a foreign origin (see Page 23). Using the key above, the results can be visualized in the capture location maps. Results indicate that numerous JB captured originated from out-of-state; similiar findings occured in previous years. This suggests that the current JB infestation in Utah is not the result of a single introduction event that occured many years ago, but instead a continously-occuring stream of pests that are introduced annually.

Weber County (continued)

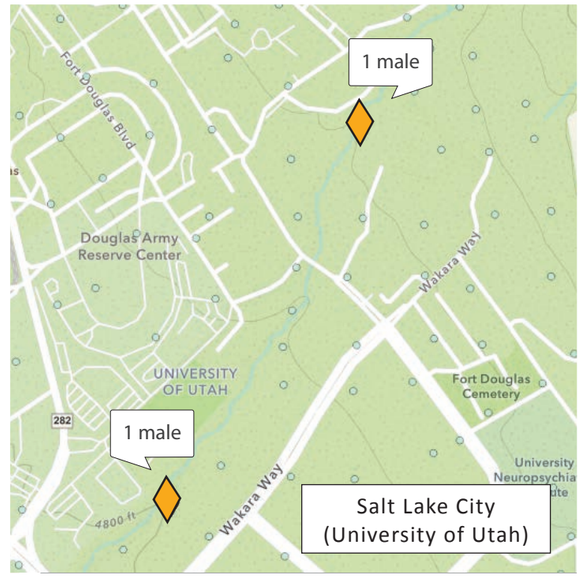


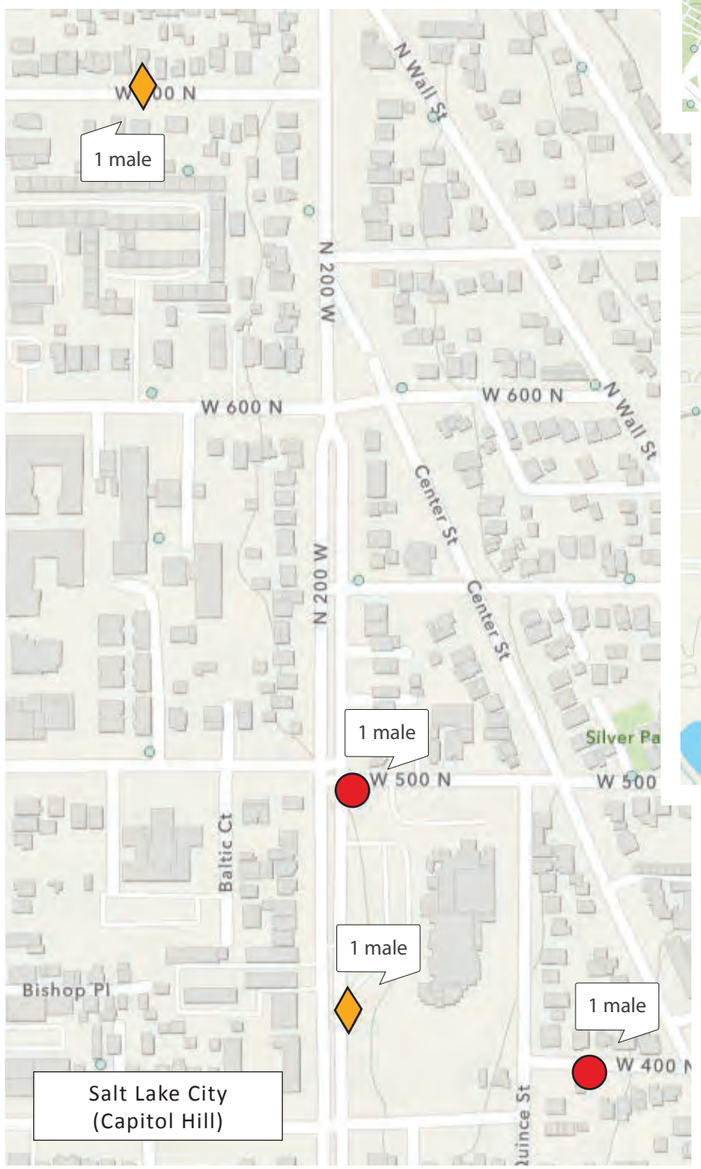
Utah County

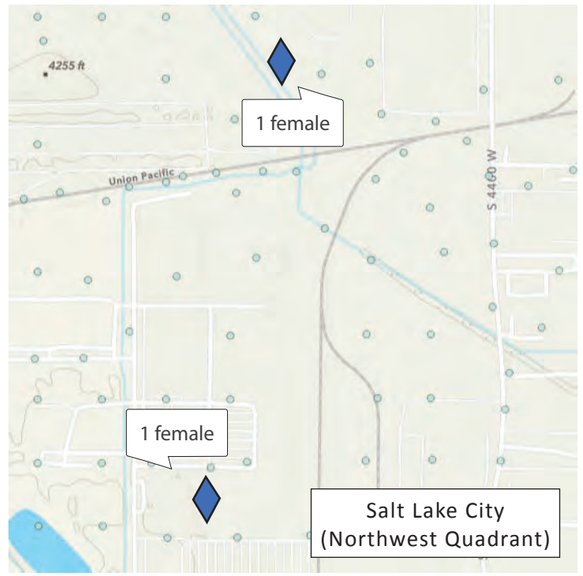


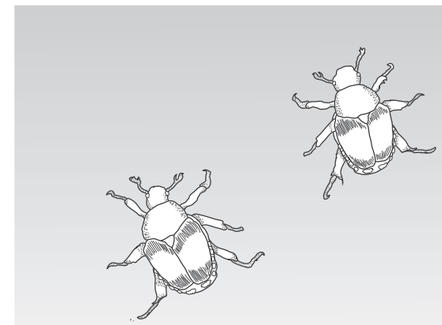


Salt Lake County

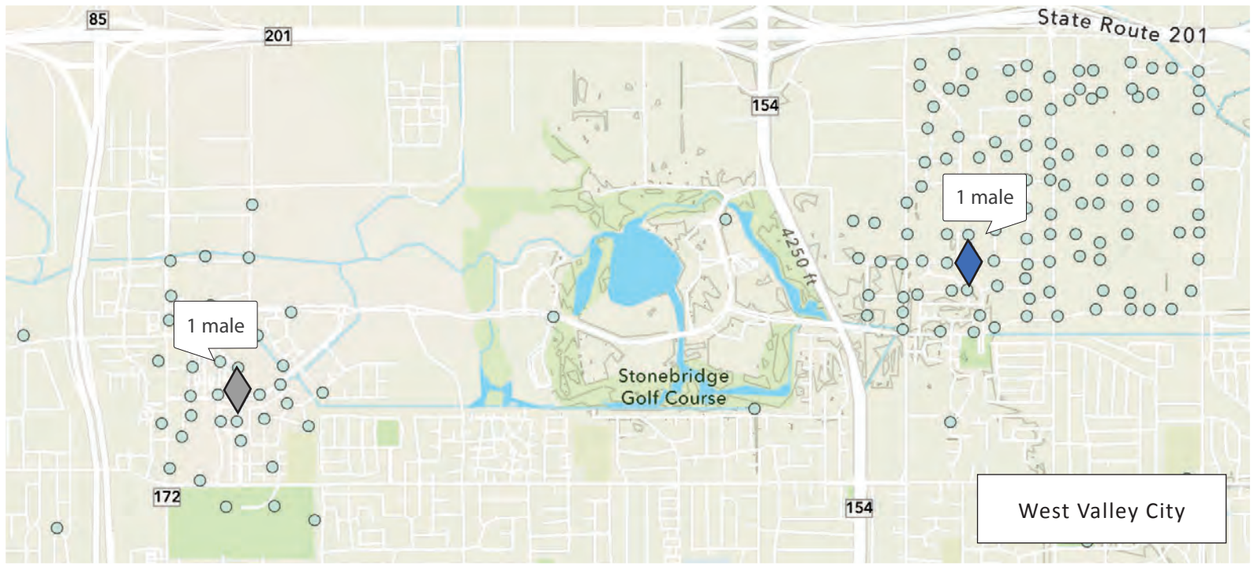


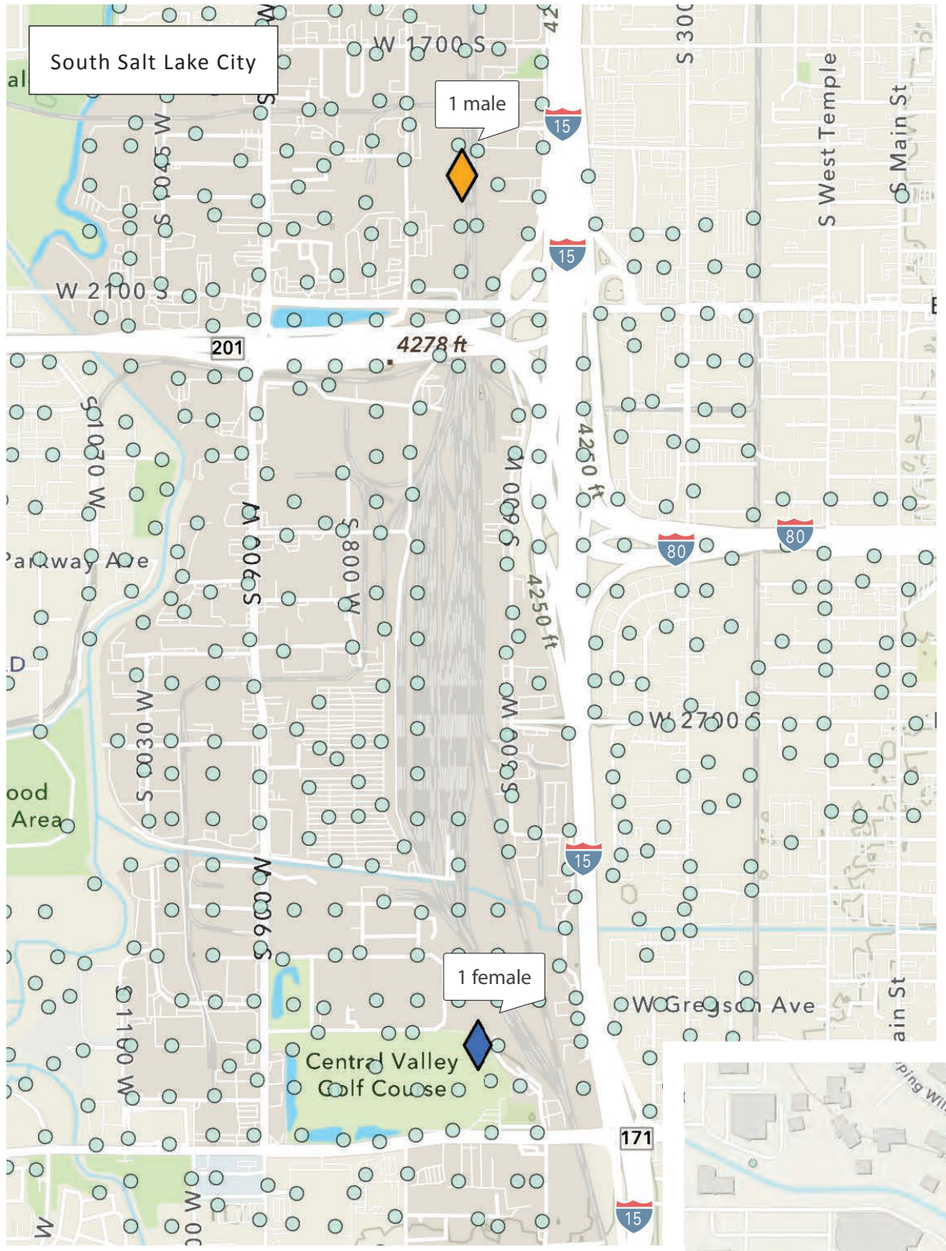


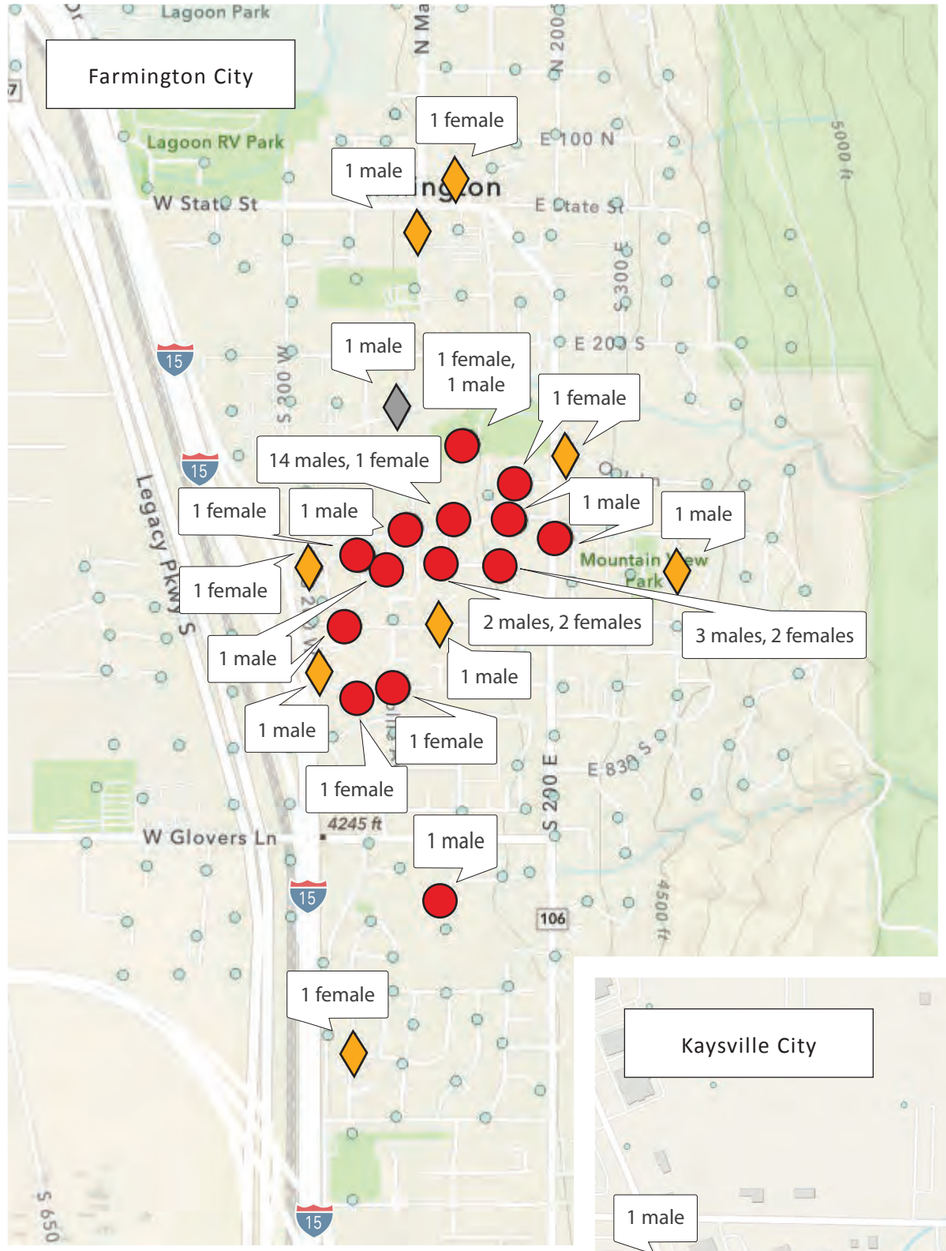




Salt Lake County



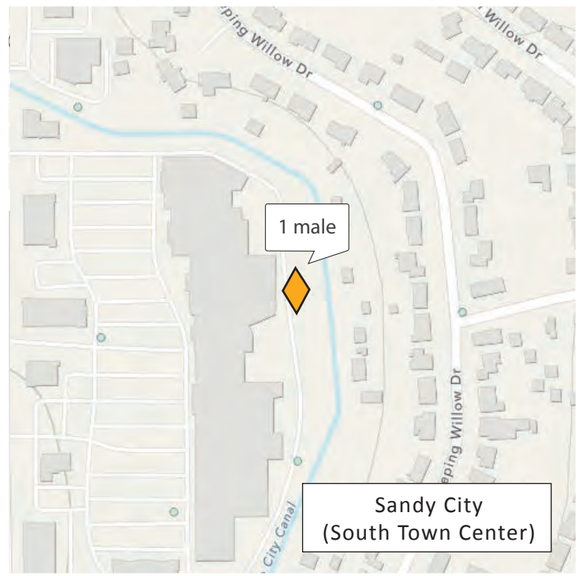


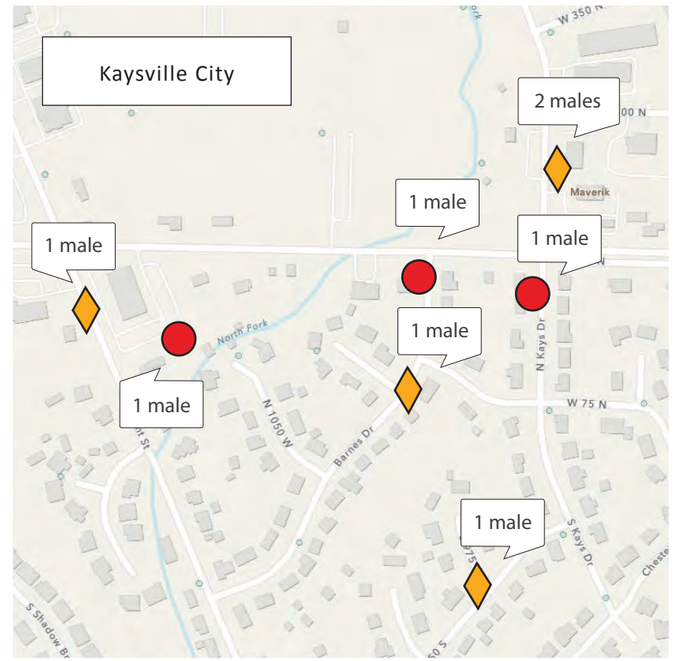








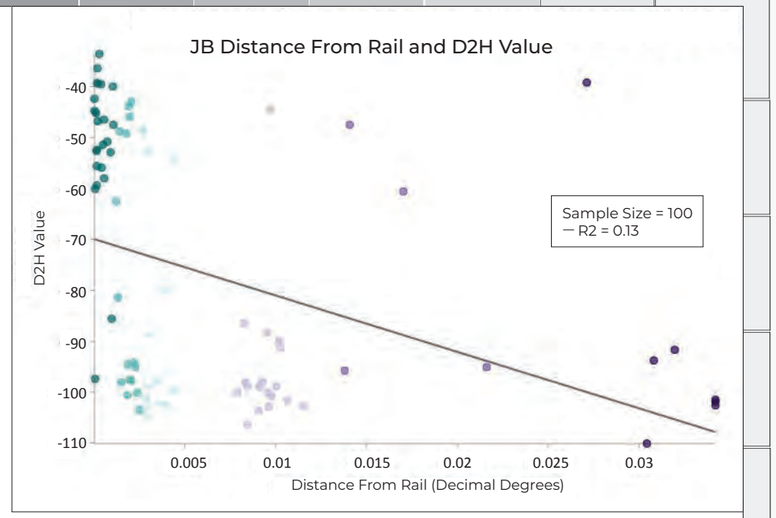




Salt Lake County (continued)

Davis County

The amounts of hydrogen and its stable isotope, deuterium, in water sources vary geographically due to global precipitation patterns. As an organism consumes water, it takes up the geographically-specific ratio of hydrogen isotopes in its body. Stable hydrogen isotope analysis of an organism provides D2H values representing the ratio of these isotopes, which can then be correlated with geographic origin.



This chart plots the D2H values of stable isotope-analyzed JB captured by UDAF in the years 2023-2025. Beetles of known Utah origin tested previously resulted in D2H values around -100, which serves as our baseline understanding for beetles of local origin. Beetles with values substantially higher or lower than this are considered to originate from outside Utah. General linear regression analysis of these values revealed a statistically significant relationship between the location of JB capture and distance to rail line, represented by the trend line. Indeed, JB detected in close proximity to a rail line have a higher likelihood of having foreign (outside Utah) origin, whereas beetles detected further away from rail are more likely to be from Utah. This supports the hypothesis that new introductions of JB may be occurring via transportation corridors.

Box Two — Stable Isotope & General Linear Regression Analysis

between high trap captures and close proximity to intermodal hubs. In 2025, state officials began freight container inspections within a rail-based transfer facility near which JB has been consistently found over the years. Staff created a standardized protocol for inspecting freight containers, which included examination of the exterior, corner castings, bottom rails, and chassis. In total, eleven weekly inspections were conducted within the adult JB flight period, wherein the crew inspected 191 containers. Priority was given to freight containers recently off-loaded from trains of eastern U.S. origin, as JB are more likely to originate from the heavily populated areas of the country. No JB were found at any of these inspections, possibly due to the extremely small subset of cargo containers inspected relative to the countless numbers moving through the facility. Nonetheless, numerous other signs of life were documented such as regulated weeds, live non-target insects, wasp nests, and spider webs. There is still much to learn about this pathway for invasive species range expansion, and UDAF is excited to continue these inspections in 2026.

Origins of newly introduced JB

More evidence of Utah's repeated reinfestation of JB (as opposed to beetles reproducing within Utah) is uncovered by the use of a specialized method of molecular testing called stable isotope analysis (SIA). This analysis utilizes the knowledge that certain elements, such as hydrogen, exist in the environment as different "versions" (isotopes) depending on geographic region. For example, higher quantities of one hydrogen isotope may be present on the eastern U.S. coast as opposed to lower quantities on the western U.S. coast. Organisms consuming water in a given region ingest these hydrogen isotopes over time which then build up within the organism's body. SIA analyzes the ratio of these different isotopes within an organism — in this case, using the wing covers (elytra) of JB — to approximate the rough geographic origin of the animal. A more thorough explanation of this can be found in the 2023 Insect Report.

In 2025, 37 beetle specimens — about 43% of the year's total captures — were sent to Utah State University's Geochemistry & Mass Spectrometry Labs for stable hydrogen isotope analysis. Of these beetles, 21 (57%) are likely to be of Utah origin, 11 (30%) are likely to be of foreign (not Utah) origin, and the remaining 5 (14%) were inconclusive (see maps in the previous pages for a visualization of results). Overall, these results are comparable to those produced by SIA on beetles captured in 2024 and 2023.

Nearly all analyzed beetles captured in close proximity to transportation corridors were identified as having foreign origin. Moreover, a general linear regression (GLR) analysis was conducted to examine the effect of distance to rail on the isotope results produced by the SIA (see Box 2). This statistical method models continuous data using independent predictor variables (in this case, the SIA results for each beetle location and the distance to rail, respectively). The GLR results indicated a strong correlative relationship between the distance from beetle trap location to transportation hub. More specifically, beetles captured in close proximity to rail lines were more likely to be of foreign origin, further supporting our hypothesis that transportation hubs are likely a key player in continued JB reintroductions in Utah.

Almost all beetles that indicated Utah origin were caught in areas with recurring annual captures, such as those in Davis County. Less predictable were the results indicating that some beetles captured in newly infested areas, such as near the University of Utah, were of Utah origin. Overall, this year's findings from the SIA on JB specimens were similar to previous years, further bolstering our understanding of the greater picture of JB invasion into Utah. These results will continue to support decision-making in the ongoing eradication of JB in the state.

Plans for 2026

With progress being made eliminating JB from certain cities and the headline number of JB captured decreasing, UDAF plans to build on this success and continue eradication efforts in 2026. First up in these plans will be to conduct treatments of irrigated turf where concerning numbers of JB are present. Following these treatments will be high density trapping in places with previous captures and continued surveying of areas where the insect has not yet been found to monitor for potential movements or new introductions. Regulation of nursery stock, sod, and soil will continue, as it has for decades, to ensure that previously identified pathways aren't supporting continued reintroductions of JB into the state. UDAF will also prioritize inspections of cargo containers being shipped via rail, as this has been identified as a potential pathway for new JB introductions and the greatest obstacle to completing the mission of statewide JB eradication.





ENTOMOLOGY LAB



Figure 2. Healthy trachea visible in the thorax of a dissected honey bee undergoing a tracheal mite test.

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The Utah Department of Agriculture and Food (UDAF) Entomology Lab provides supportive services to all of UDAF's regulatory insect activities. The lab keeps an open phone line to address regulatory insect problems (See pg 35, Contacts and Resources). Entomology lab staff receive a variety of calls from reports of invasive insect species, to regulatory insect program and apiary program inquiries. If someone calls with an issue outside of the lab's scope of work, such as nuisance or public health pest concerns, lab staff connect stakeholders with the appropriate resources. The lab also offers walk-in or mail-in insect identification services for specimens of regulatory concern.

2025 Trapping Samples Processed

The UDAF Entomology Lab provides crucial space and equipment for Insect Program staff to rapidly process trap catches for various regulatory pest surveys in-house (Table 1). Program staff sort through all the insects caught in each trap searching for target pests (Figure 1). If found, suspect target pests are sent via USDA channels to an appropriate taxonomic expert for official specimen determination. The 2025 federal shutdown delayed identification results, so it cannot be concluded whether new insects of regulatory concern were found in 2025. A few suspect detections were made for some pest species (Table 1). USDA determinations are expected in 2026.

Survey	Samples processed	Number of suspect detections
Orchard pest sentinel	**108**	**1,323**
◦ *Light brown apple moth*	13	1
◦ *Apple maggot*	49	100
◦ *Western cherry fruit fly*	44	1,222
Imported fire ant	**6**	**0**
Emerald ash borer	**292**	**0**
Exotic wood borers	**301**	**24**
◦ *Ips bark beetles*	101	-
◦ *Black fir sawyer & large pine weevil*	100	-
◦ *Tetropium beetles*	97	-

Table 1. Regulatory pest survey trap catch samples processed by lab staff in 2025.



Figure 1. Invasive insect pathway closer Liz Rideout sorts through an exotic wood borer trap catch.

Apiary Diagnostics

The UDAF Entomology Lab offers diagnostic services for five honey bee maladies (Table 2). Rapid diagnostics are vital to prevent the transmission of apiary diseases which spread quickly within and between apiaries through both human- and bee-mediated mechanisms. In 2025, the median turnaround time for apiary samples was four business days.

Bee samples may be submitted by mail, brought directly to the UDAF office in Taylorsville (see page 35, Contacts and Resources), or collected from an apiary by a county or state bee inspector. Adult honey bees can be tested for Nosema disease and for the presence of two types of mites. To test for brood diseases, a swab sample from infected brood cells or a cut-out section of brood comb is required.

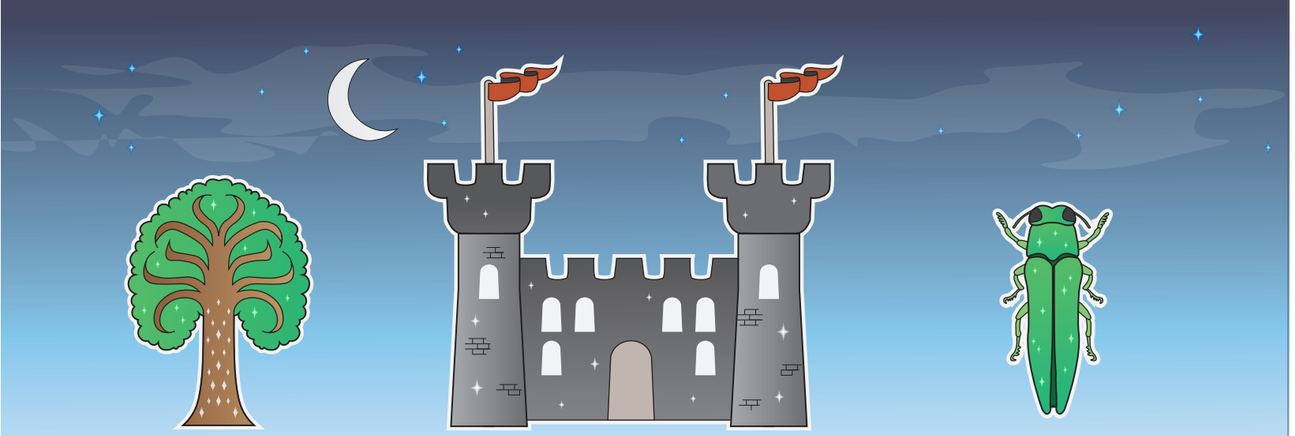
121 apiary samples received by the lab for diagnostics

99 brood samples

22 adult bee samples

Test target	Method	Number of tests performed	% of results above threshold level
American foulbrood (AFB) *Paenibacillus larvae*	Molecular qPCR	87	16%
European foulbrood (EFB) *Melissococcus plutonius*	Molecular qPCR	99	59%
Nosema disease *Vairimorpha* spp.	Microscopy	21	9%
Tracheal mite *Acarapis woodi*	Microscopy	6	0%
Varroa mite *Varroa destructor*	Alcohol wash	15	33%

Table 2. Type and number of apiary diagnostic tests performed by lab staff in 2025.



Utah Builds a Fortress Around Ash

Quarantines and survey protect the state's immense native and naturalized ash stock

Not since chestnut blight (*Cryphonectria parasitica*) and Dutch elm disease (*Ophiostoma* spp.) have American forests experienced an invasive pest as destructive as the emerald ash borer (EAB), *Agrilus planipennis* Fairmaire. It has been over 20 years since this pest was first detected in Michigan; now the "Green Menace" is found in all but a handful of Western states and Florida. EAB is believed to attack all ash (*Fraxinus* spp.) in North America with certain species such as green (*F. pennsylvanica*) and white ash (*F. americana*) being highly susceptible. The death toll of ash trees is now in the hundreds of millions, and certain species are now considered endangered or functionally extinct.

The pest has not yet been detected in Utah, but much is at risk once it arrives. The state's urban canopies are estimated to be between 15 and 20% ash. These trees provide enormous benefits to residents in these communities such as reduced energy costs in nearby buildings due to the cooling effects. Urban canopies also improve air quality by filtering pollutants such as particulate matter and ground-level ozone (O_3), which in recent years have been at concerning levels for human health in Wasatch Front communities.

The natural environment in Utah is also expected to suffer if EAB arrives and establishes. This pest threatens two native ash species that live in southern Utah: velvet ash (*F. velutina*) and singleleaf ash (*F. anomala*). The latter provides good cover value for mule deer, pronghorn, game birds, and small mammals and crucial forage for the two-tailed swallowtail butterfly, *Papilio multicaudata* Kirby.

Exclusion & Early Detection

While the apparent absence of EAB in Utah can be postulated from negative trapping data and regulation inspections, luck cannot be discounted, nor can UDAF drop its guard. EAB hasn't been found in Utah yet, though its apparent absence has not been due to a lack of searching or attempts to exclude the pest. Due to the gravity of what is at stake, UDAF considers EAB to be a high priority pest for exclusion and early detection. Utah's government has therefore implemented arguably the strongest protections for preventing the pest's introduction and the most robust survey for early detection in the entire nation.

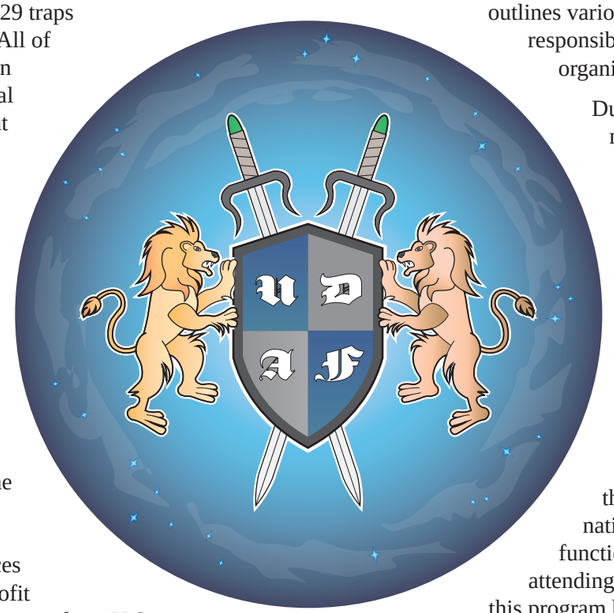
The human-mediated movement of firewood and nursery stock is considered a major pathway for EAB dispersal to new areas. UDAF's two pillars for excluding the pest are the state's Firewood Quarantine (UAC § R68-23) and Emerald Ash Borer Quarantine (UAC § R68-11). The firewood quarantine regulates the importation of all firewood that is harvested out-of-state and requires heat treatment or other measures to ensure the pest is not transferred by these materials. The latter quarantine regulates the importation of ash nursery stock, and because no states currently comply with these rules, any importation of ash into the state is prohibited at this time.

In addition to these strong exclusionary protections, UDAF also coordinates a robust, multi-agency, statewide survey for EAB. This survey takes a multi-pronged approach utilizing two different trapping methods and visual surveying. If trees are suspected of being infested, more intensive detection methods are employed, such as bark peeling and caged rearing of tree limbs. In 2025, UDAF placed 58 traps across 14 counties. 45 traps were placed in stressed ash trees or trees growing in high risk areas. 13 additional traps were placed at green waste facilities, where large quantities of tree materials are dumped as waste.

The Utah Department of Natural Resources (DNR) set an additional 29 traps throughout 10 counties. All of these traps were placed in at-risk trees. The National Park Service placed eight traps at Zion National Park. EAB was not detected at any of the survey locations.

Interstate & International Cooperation

UDAF once again hosted the Western Region EAB Cooperator's Meeting via video conference. The meeting is an annual gathering of regulatory agencies, natural resources departments, and non-profit organizations. Representatives from U.S. states, federal agencies, and Canadian provinces were in attendance to report their efforts regarding excluding or mitigating EAB presence. The keynote speaker this year was Dr. Matthew Ethington of USDA Forest Service Health Protection. Dr. Ethington reported on the slower-than-expected spread of EAB along Colorado's Front Range, theorizing that this may be due to limited host resources in the region and implementation of management tactics such as chemical and biological control. The meeting provided a critical opportunity for various agencies to learn from one another's efforts and devise ways to work together more effectively.



Utah EAB Task Force

2025 marked the 10 year anniversary of the formal creation of the Utah EAB Task Force. The UDAF-led group is composed of state and federal agencies, local governments, and non-profit organizations. Since its formation, members have been collaboratively strategizing on how best to prevent EAB introduction into Utah and prepare for its arrival. The task force has been instrumental in guiding state policy as it relates to this pest. This includes endorsing the creation of previously mentioned quarantines and contributing to the creation of the 2024 EAB Exclusion & Response Plan, which is a guidance document that outlines various roles and responsibilities for member organizations.

During this season's meeting, representatives reported on their work from the previous year and discussed the recently adopted response plan. For the first time, the group also welcomed botanists from Utah DNR's Rare Plants Program. The topic of EAB is relevant to these biologists, as it threatens to make two native ash species functionally extinct. After attending the meeting, staff from this program began integrating ash inspections into their normal field work when possible.

Plans for 2026

UDAF plans to continue rigorous efforts relating to this pest in 2026. Nursery inspectors will enforce both quarantines relating to EAB by inspecting firewood for sale and checking nurseries for contraband ash stock. The multi-agency, statewide survey will proceed as it has in recent years, with a goal of continuing to expand green waste facility trapping. UDAF will also be searching for new organizations to join the EAB Task Force.

CAPUTO CREATED WITHOUT AI

INVASIVE PEST PROFILES

Using state and federal funding, UDAF surveys for numerous exotic pests

Spongy Moth

***Lymantria dispar* Linnaeus**

Forest defoliating pest

1,992 TRAPS PLACED IN 29 COUNTIES | FUNDED BY UDAF & USDA APHIS

Lymantria dispar Linnaeus, commonly known as the spongy moth (SM), is an invasive pest of hardwood trees. Originally from Europe, this moth is a leaf-defoliator of more than 300 different host plants. Females of SM often lay their eggs on common outdoor household items such as grills, trailers, and toys, facilitating accidental introductions to novel areas. In fact, an inspection checklist was created by USDA for people moving from an infested location to help confirm that they are not accidentally transporting SM eggs to an uninfested one. SM is established in much of the eastern U.S. and was first discovered in Utah in 1988. Extensive trapping and eradication efforts were conducted, and eradication was declared twice in the decade following. In 2025, a single capture was detected in Bountiful City. A high density trapping grid was set in response and no further detections were made. High density trapping will continue around this area in 2026.



Utah status: Not known to be established, after being eradicated twice from the state.
Native range: Europe
Infested areas: 20 Northern, Midwestern, and Southern states &Washington D.C.

Imported Fire Ants

***Solenopsis invicta* Buren & *S. richteri* Buren**

Human, livestock & agriculture pest



Utah status: Not known to be present
Native range: South America
Infested areas: 11 Southern states, parts of California, New Mexico and Puerto Rico

12 TRAPS PLACED IN TWO COUNTIES | FUNDED BY USDA APHIS

Red and black imported fire ants (*Solenopsis invicta* Buren and *S. richteri* Forel, respectively) are native to South America but have had far-reaching impacts to many industries globally. Agriculturally, they are well-known pests of feed crops, fruit trees, and livestock. The aggressive nature of these ant species is also a notable hazard to human health, as they often choose nesting sites in public parks and golf courses. Furthermore, telecommunication, electrical, and airport runway infrastructure can often be impacted by nesting. These ant species are limited in their geographical range, but the southern Utah counties of Kane and Washington are considered suitable climatically. UDAF regularly surveys these areas and has not detected either species.

Plum Curculio

***Conotrachelus nenuphar* (Herbst)**

Orchard fruit pest

13 TRAPS PLACED IN TWO COUNTIES | FUNDED BY UDAF

Plum curculio (PC), *Conotrachelus nenuphar* (Herbst), is considered to be one of the oldest known fruit crop pests in the U.S. with observations dating back to as early as the 18th century. Native to the eastern U.S., PC is a destructive species of weevil with a large host range including fruits such as apple, peach, cherry, pear, and, in some regions, blueberry and grape. Despite its lengthy history in the U.S., successful management of this insect remains challenging, as no control tool has proven successful on its own. Integrated pest management plans for the management of PC incorporate diverse tools including trapping, cultural control (e.g., leaf litter removal), and timely top-down insecticide applications. The weevil was found in Box Elder County, Utah in 1983, and as of 2025, this population remains the only known PC population in Utah.



Utah status: Present
Native range: Eastern U.S.
Infested areas: Box Elder County, Utah

Apple Maggot

***Rhagoletis pomonella* (Walsh)**

Orchard fruit pest

12 TRAPS PLACED IN TWO COUNTIES | FUNDED BY UDAF

Apple maggot (AM), *Rhagoletis pomonella* (Walsh), is a species of fruit fly present in many Utah orchards. This pest originally evolved on hawthorn trees in the eastern U.S.; however, host expansion to apples and other pome and stone fruits allowed AM populations to spread westward. Now present in much of the western U.S. including Utah, identification and subsequent treatment is often required of land managers. Larvae (maggots) of AM can be distinguished from other orchard pests due to their tendency to feed on the fruit's flesh, rather than its core. Timely detection through trapping or other means is necessary to avoid losing fruit marketability. In 2025, 100 AM were detected across the two surveyed counties.



Utah status: Present
Native range: Northeastern U.S.
Infested areas: Most of the continental U.S.

Western Cherry Fruit Fly

***Rhagoletis indifferens* Curran**

Orchard fruit pest

10 TRAPS PLACED IN TWO COUNTIES | FUNDED BY UDAF

Rhagoletis indifferens Curran, commonly known as the western cherry fruit fly (WCFF), is considered by many to be the most severe pest of sweet and tart cherries in Utah. As opposed to its close relative, the apple maggot, WCFF is a native species to the western U.S. WCFF larvae (maggots) develop and feed within the cherry flesh before eventually emerging. This process leaves fruit unmarketable with an exit hole and "wormy" leftover fruit. Infestations within an orchard can spread rapidly if unmanaged; therefore, detection and treatment timing are often determined via baited sticky trap placement. Chemical and various cultural control methods are then implemented to manage populations. In 2025, 1,222 WCFF were detected across the two surveyed counties.



Utah status: Present
Native range: Western U.S.
Infested areas: Western U.S.

Light Brown Apple Moth

***Epiphyas postvittana* (Walker)**

Orchard fruit pest

9 TRAPS PLACED IN TWO COUNTIES | FUNDED BY UDAF

Epiphyas postvittana (Walker), also known as the light brown apple moth (LBAM), is a species of leafroller moth native to Australia. LBAM caterpillars are major pests of pome fruits and ornamental plants in temperate regions. This pest has been introduced to numerous areas outside its native range including Great Britain, New Zealand, and the U.S. states of Hawaii and California. While LBAM was detected initially in Hawaii over a century ago, it wasn't until 2007 that a separate introduction was discovered in California, prompting eradication and quarantine efforts. Further range expansion eastward into Utah is monitored closely by UDAF through yearly trapping efforts which have resulted in no detections as of 2025.



Utah status: Not known to be present
Native range: Australia
Infested areas: California and Hawaii

European Corn Borer

***Ostrinia nubilalis* (Hübner)**

Vegetable & ornamental pest



Utah status: Not known to be present
Native range: Europe
Infested areas: Most corn-growing states east of the Rocky Mountains

65 TRAPS PLACED IN 14 COUNTIES | FUNDED BY UDAF

European corn borer (ECB), *Ostrinia nubilalis* (Hübner), is an invasive snout moth native to Europe. Since the first discovery of ECB in the northeastern U.S. (1917), populations have established as far west as the Rocky Mountains. ECB is historically a very serious pest of sweet and grain corn, its caterpillars causing severe damage to much of the corn plant. While exotic parasitoids and microbial diseases have shown some success for population management, genetically modified corn plants ("Bt corn") have been heavily incorporated into grain corn growing practices. These modified corn plants are toxic to ECB caterpillars, providing direct population control oftentimes within a greater integrated pest management program. As of 2025, Utah remains free of this pest.

Asian Longhorned Beetle

***Anoplophora glabripennis* (Motschulsky)**

Exotic wood borer

32 VISUAL SURVEYS ACROSS 8 COUNTIES | FUNDED BY USDA APHIS

Asian longhorned beetle (ALB), *Anoplophora glabripennis* Motschulsky, is a close relative to the citrus longhorned beetle (CLB), sharing many physical traits and host species. These hosts span a large range of hardwood trees such as oak, maple, and stone and pome fruit trees. Unlike CLB, initial discovery of ALB in the U.S. did not occur until after populations had established and local tree damage was significant (New York in 1996). The U.S. Department of Agriculture (USDA) promptly began eradication efforts alongside state agriculture departments. Since then, the pest has been successfully eradicated in Illinois and New Jersey. Quarantines and other eradication efforts by USDA continued in 2025 in the infested states of Massachusetts, New York, Ohio, and South Carolina. Wood-boring pests like these can be transported inside firewood, so avoid moving firewood over state borders (see UAC § R68-23).



Utah status: Not known to be present
Native range: Asia
Infested areas: Found in Massachusetts, New York, Ohio & South Carolina (eradication in progress)

Citrus Longhorned Beetle

***Anoplophora chinensis* (Forster)**

Exotic wood borer

32 VISUAL SURVEYS ACROSS 8 COUNTIES | FUNDED BY USDA APHIS

Citrus long-horned beetle (CLB), *Anoplophora chinensis* Forster, is a large, conspicuous Cerambycid beetle native to east Asian countries including China, Japan, and Korea. Known even in its native range as a serious pest of citrus, this beetle also attacks many hardwood tree species such as maple, stone fruits, ash, and walnut. Multiple interceptions of CLB have been made in the U.S.: first, on a bonsai tree shipment in Georgia (1999), and again when it was discovered to have escaped from imported nursery stock in Tukwila, Washington (2002). Eradication efforts began, and Washington state declared successful eradication of CLB in 2006. CLB is not known to be present in the U.S. as of 2025.



Utah status: Not known to be present
Native range: Asia
Infested areas: Not known to be in the U.S.

Black Spruce Longhorn Beetle

***Tetropium castaneum* (Linnaeus)**

Exotic wood borer

29 TRAPS PLACED IN 13 COUNTIES | FUNDED BY USDA APHIS

Tetropium castaneum (Linnaeus) (TC), also known as the black spruce longhorned beetle, is one of two new wood-boring species added to UDAF's Exotic Wood Borer Survey in 2025. TC is a secondary pest of conifers native to numerous countries across Europe and Asia. Feeding and boring activities by this species may lead to drought stress and weakened structural integrity in the host tree, leading to premature mortality. Additionally, wood-staining fungus in the genus *Ophiostoma* may be associated with the tunnels created by TC. Interceptions of this species have been made in western ports in both Canada and the U.S, but this species is not known to be established in either country.



Utah status: Not known to be present
Native range: Asia
Infested areas: Not known to be in the U.S.

Brown Spruce Longhorn Beetle

***Tetropium fuscum* (Fabricius)**

Exotic wood borer

29 TRAPS PLACED IN 13 COUNTIES | FUNDED BY USDA APHIS

Brown spruce longhorned beetle, *Tetropium fuscum* Fabricius (TF) is the second of two new species added to UDAF's Exotic Wood Borer Survey in 2025. TF is native to several European and Asian countries. Closely related to the black spruce long-horned beetle, this species differs in its ability to attack healthy hosts despite being considered a secondary pest. Like for other wood-boring species, human-mediated dispersal is possible via the transportation of infested firewood and wood-packaging materials. An established population of TF has been present in Nova Scotia, Canada since 1999. This species is not known to be present in the U.S.



Utah status: Not known to be present
Native range: Eurasia
Infested areas: Not known to be in the U.S.

European Spruce Bark Beetle

***Ips typographus* (Linnaeus)**

Exotic wood borer

29 TRAPS PLACED IN 13 COUNTIES | FUNDED BY USDA APHIS

Ips typographus (Linnaeus), also known as the European spruce bark beetle (ESBB), is a destructive pest of conifers that has caused extensive declines in forest health across Europe. The preferred host species of ESBB is Norway spruce, but it can also be found on fir, pine, larch, and other spruces. ESBB is considered a secondary pest, as it prefers dead, stressed, or weakened host trees, but it has been observed attacking healthy trees in large populations. In addition to feeding-caused tree mortality, this pest can also carry blue stain fungus, which hinders water transportation and can destroy commercial value. While numerous interceptions have been made at U.S. ports, this species is not known to be established in the U.S. as of 2025.



Utah status: Not known to be present
Native range: Europe
Infested areas: Not known to be in the U.S.

Six-toothed Bark Beetle

***Ips sexdentatus* (Börner)**

Exotic wood borer

29 TRAPS PLACED IN 13 COUNTIES | FUNDED BY USDA APHIS

Six-toothed bark beetle (STBB), *Ips sexdentatus* (Börner), is a close relative of the European spruce bark beetle and is similarly considered a secondary pest of pine trees. Secondary pests such as STBB typically arrive following other disturbances, such as wildfires, drawn in by chemicals emitted by the weakened conifers. Additionally, bark beetles release chemicals while feeding that attract other beetles to the area to utilize the damaged trees, often increasing outbreak severity. Similar to other wood-boring beetles, STBB can be introduced to novel geographical areas by the movement of firewood, wood-packaging, and nursery stock. STBB was reportedly intercepted in U.S. ports 157 times between the years 1985 and 2001. STBB remains unestablished in the U.S. as of 2025.



Utah status: Not known to be present
Native range: Europe
Infested areas: Not known to be in the U.S.

Large Pine Weevil

***Hylobius abietis* (Linnaeus)**

Exotic wood borer

29 TRAPS PLACED IN 13 COUNTIES | FUNDED BY USDA APHIS

Large pine weevil (LPW), *Hylobius abietis* (Linnaeus), is a stem-boring, tree-girdling beetle of significant pest status in European plantation forestry. LPW adults mate in felled-conifer stumps and roots up to five years old with greater success in pines than in spruces. Feeding by all life stages is primarily done on the tree bark but can also occur in the tree's roots, stem, and crown, leading to girdling and tree mortality. LPW is particularly destructive to young pines and spruces, can also attack non-coniferous woody plants, and is considered a major agricultural pest in replanting of commercial forests. LPW has not yet been found in the U.S.



Utah status: Not known to be present
Native range: Asia
Infested areas: Not known to be in the U.S.

Black Fir Sawyer

***Monochamus urussovii* (Fisher von Waldheim)**

Exotic wood borer

29 TRAPS PLACED IN 11 COUNTIES | FUNDED BY USDA APHIS

Monochamus urussovii (Fischer von Waldheim), commonly known as the black fir sawyer (BFS), is an invasive beetle native to many countries across Europe and Asia. This large Cerambycid beetle causes particularly severe damage to fir species and can attack many other species in the pine family (Pinaceae). Interestingly, BFS has also been found attacking and completing reproduction on deciduous trees such as birch, aspen, and oak. While general feeding and reproduction can cause physical damage, BFS may also infect the tree with a blue-stain fungus (*Leptographium sibiricum*) or the pinewood nematode (*Bursaphelenchus xylophilus*). These agents can cause further declination of host tree health, leading to mortality. As of 2025, BFS is not known to be established in the U.S.



Utah status: Not known to be present
Native range: Eurasia
Infested areas: Not known to be in the U.S.

Pests on the Radar

Yellow-Legged Hornet

***Vespa velutina* (Lepeletier)**

Human & apiary pest

This invasive hornet threatens the beekeeping industry because it preys on honey bee colonies, among other food sources. The initial 2023 incursion of this pest in Savannah, GA triggered USDA-supported eradication efforts in the surrounding areas. The hornet's range is appearing to slowly spread, and there are hornet eradication programs in both Georgia and neighboring South Carolina. Utah residents are encouraged to contact the UDAF Insect Program directly with any reports of suspect invasive hornets.



Utah status: Not known to be present
Native range: Asia
Infested areas: Eradication ongoing in Georgia and South Carolina

Tropi Mite

***Tropilaelaps mercedesae* (Delfinado & Baker)**

Apiary pest

Any experienced beekeeper will say that the last thing the apicultural industry needs is another mite. *Tropilaelaps mercedesae* (Delfinado & Baker) threatens to be just that, a parasitic mite which, if introduced to the U.S., would cause significant stress to the beekeeping industry. Similar to the established *Varroa* mite, Tropi parasitizes honey bee brood and can spread harmful viruses to the developing larvae, if the larvae are not killed outright due to the parasitism. Tropi has a faster reproductive cycle than *Varroa*, and Tropi's diminutive size makes visual detection difficult. This pest is not known to be in the U.S.



***Varroa* mite (left) and Tropi mite (right).**

Utah status: Not known to be present
Native range: Asia
Infested areas: Not known to be in the U.S.

To report a suspect invasive insect, email a picture to udaf-insects@utah.gov

Contacts & Resources

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Back Row (left to right)

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Not pictured

Jordan Allred, JB/SM Trapper

Apiary Resources

UDAF Apiary Program: ag.utah.gov/farmers/plants-industry/apiary-inspection-and-beekeeping/
UDAF Pollinator Habitat Improvement Project: ag.utah.gov/farmers/conservation-division/pollinator-program/
USDA-ARS Pollinating Insect-Biology, Management, Systematics Research:
ars.usda.gov/pacific-west-area/logan-ut/pollinating-insect-biology-management-systematics-research
Project Apis m: projectapism.org

Invasive Insect Resources

Japanese Beetle Eradication
ag.utah.gov/jberadication
USDA-APHIS-PPQ
aphis.usda.gov/plant-protection-quarantine
Utah Cooperative Agricultural Pest Survey Program
utahpests.usu.edu/caps/utah-caps-program
Utah Plant Pests Diagnostic Laboratory
utahpests.usu.edu/uppdl

Professional Associations

Apiary Inspectors of America
apiaryinspectors.org
National Plant Board
nationalplantboard.org
National Grasshopper Management Board
sites.google.com/site/ngmborg/home
Utah Horticulture Association
utahhort.org/
Utah Nursery and Landscape Association
utahgreen.org
Utah Beekeepers Association
uba.wildapricot.org

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Tropilaelaps

Identify Tropi:
See it, STOP it!



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Tropi Look a-likes



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OIE Terrestial Manual 2018.

Varroa Mite (L) vs Tropi Mite (R)

AUBURN



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