Massachusetts Fruit IPM Report for 2025

Jaime Piñero[1], Jon Clements[2], Duane Greene[3], Elizabeth Garofalo[2], Maria Gannett[2], Ajay Giri[1], Soonhong Min[1], Jianyu Li[1], John Galvan[2], and Chris Gates[1]

[1]Stockbridge School of Agriculture, University of Massachusetts
[2]UMass Extension
[3]Emeritus Professor, Stockbridge School of Agriculture

Over the past several years, the UMass Extension Fruit Program operated with a leaner team due to staffing transitions. In 2024 and 2025, we strengthened capacity again with the addition of John Galvan (Extension Educator), Dr. Maria Gannett (UMass Extension – Weed Science), and Dr. Jianyu Li (Extension Assistant Professor, Sustainable Fruit and Vegetable Production). Their expertise in weed management, berry pest management, and horticulture has already expanded our reach and on-farm support for growers across the state.

Weather (Jon Clements)

(All observations from the UMass Orchard in Belchertown, MA)

Winter brought a minimum temperature of –4 °F on January 21. Overall, it was a relatively mild winter with little snow cover, and we did not expect nor observe any major bud injury. Peaches were borderline, and some colder pockets in Massachusetts may have seen slightly more stress, but at the UMass Orchard there were no visible bud losses heading into spring.

Spring: Green tip arrived on April 7, and full bloom occurred by May 3. May was exceptionally wet, with nearly 11 inches of rainfall, making fungicide timing extremely difficult during primary scab season. Spray windows were narrow, coverage was challenged, and leaf expansion during repeated rainfall episodes created high vulnerability for infection.

Summer began with heat and humidity, culminating in 97 °F on June 21, and strawberries struggled under those conditions. Apples experienced some early August sunburn (Fig. 1), while peaches benefited from the heat, resulting in a strong peach harvest with excellent fruit quality statewide

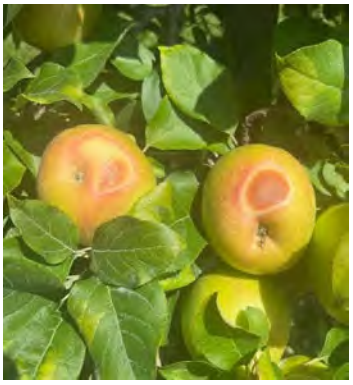

Figure 1. Sunburn observed on Honeycrisp apples on 12-August 2025 at the UMass Orchard in Belchertown

Fall brought below-average temperatures, clear days, and ideal conditions for color development, especially for red varieties. Apples were large with good internal quality, although orchards with significant scab earlier in the season still showed symptoms at harvest. The size of the apple crop overall was average to slightly above average. One notable exception: some Honeycrisp blocks seemed "off" this year, likely due to heavy cropping in 2024.

Weekends were generally favorable, except for a rainy Columbus Day system, but overall, the pick-your-own season was successful.

NEWA update: As of 2025 we now have 43 operational NEWA stations in Massachusetts. Apple Scab, Fire Blight, and the Apple Carbohydrate Thinning Model

continue to be the most used tools (Fig. 2), with over 2,500 page views for scab alone. Interestingly, more NEWA users now access the platform through mobile than desktop. If you would like to join NEWA, or need assistance adding a station, contact Jon Clements; we'd be glad to help.

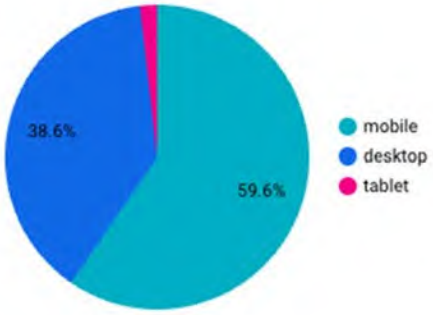

Figure 2. Mobile users exceeded desktop users in Massachusetts when using the top three NEWA "Resources" apple scab, fire blight, and apple carbohydrate thinning model.

Tree Fruit Diseases (Elizabeth Garofalo)

Apple scab was again front and center in 2025. The first spores were observed on April 8, and primary inoculum persisted into early June. The real challenge wasn't the early low-risk periods, it was the extended, high-pressure infection episodes driven by back-to-back rainfall and rapid leaf expansion

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RIMpro recorded minor early events on 4/19 and 4/22 (RIM values of 18 and 1 - negligible). But starting April 26–28, we entered a sustained high-risk period totaling RIM 3,815, coupled with over an inch of rain. This was followed by the most difficult stretch, May 2–6: RIM 12,230 across five rain-soaked days, and then another severe spike immediately afterward.

In plain terms, there were multiple long windows where applying fungicides was nearly impossible and maintaining coverage through repeated rain events was even harder. Leaf tissue was growing rapidly, fungicide residues were washing off, and many blocks were effectively unprotected.

If you experienced scab breakthrough in 2024 and again in 2025, assume you now have a heavy local inoculum load going into winter. This is the year to commit to sanitation.

- Apply food-grade urea (46% N) to leaf litter this fall
- Follow with leaf chopping in spring

These two actions will significantly reduce overwintering inoculum pressure. I cannot emphasize this enough.

Bitter rot in Massachusetts seems to have largely taken a back seat to scab this year. While the season started off wet, with a handful of infection events in June, conditions later dried out, reducing wash-off and improving the effectiveness of fungicide coverage. In one location, early season, we saw some bitter rot develop in a block with historically high pressure and some dry eye rot that appeared to be creating wounds for the inoculum to gain purchase early in the summer.

When accomplishing dormant pruning, pay attention to removal of dead, diseased and damaged shoots as well as mummies to reduce inoculum leading into next season. Fireblight strikes are said to harbor *Colletotrichum* spores as well, making this one more reason to get rid of old strikes.

Dry eye rot *(Botrytis cinerea)* was the "odd duck" of the season. It shows up as a soft rot originating from the calyx, eventually drying to a circular depression (Fig. 3). We observed it in multiple locations but never at block-wide damaging levels. Its presence mirrors bloom-period conditions: cool, wet, and difficult for maintaining fungicide coverage which is exactly what May delivered.

Figure 3. Dry eye rot appears in cool, wet bloom conditions and begins as a soft rot at the calyx end that later dries out.

Fire blight, in contrast to 2023, was largely a non-issue this year. Cool bloom temperatures kept the EIP (Epiphytic Infection Potential) manageable. May 3 reached 82 °F briefly, but otherwise bloom temperatures hovered in the low-70s or cooler, significantly reducing infection risk. Most orchards that had managed overwintering cankers from 2024 saw very little activity.

Peach leaf curl continues showing up more frequently than we used to see. If you've wrestled with this, do not wait until spring. Begin treatments now, in late fall or early winter.

Recommended control materials for fall:

- Chlorothalonil (watch ESA label language!)
- Copper High Rate (spring follow-up before bud swell)
- Repeat Chlorothalonil in spring as well

Where copper alone hasn't worked, an initial chlorothalonil fall application seems to yield better early suppression.

Insects (Jaime Piñero, Ajay Giri, Soonhong Min, Chris Gates)

Fruit Injury Levels at Harvest Across 11 Massachusetts Orchards. Injury patterns this year followed the same general distribution we've seen since 2022: most pest feeding happened along the edges (Fig. 4). Across all orchard sites:

- Plum curculio (PC) averaged 2.3% damage on perimeter trees and 0.9% in the interior,
- Tarnished plant bug (TPB) averaged 1.5% along edges and 0.5% internally,
- Apple maggot fly (AMF), San José scale, stink bugs, European apple sawfly, and oriental fruit moth caused minimal to nearly zero detectable injury.

The message remains consistent: perimeter-focused IPM continues to work well in Massachusetts orchards, especially when combined with targeted monitoring and timely intervention.

Plum Curculio (PC). PC activity began in late April, with first captures around **217 DD base 43**. The early May cold spell briefly slowed movement, but once temperatures recovered, fresh oviposition marks became more apparent.

This was our first year as part of a large, multi-institutional grant studying improved methods for PC monitoring and management — including lure technologies and degree-day forecasting.

We deployed odor-baited trap trees across commercial orchards using:

- benzaldehyde + grandisoic acid (BEN + GA), and
- methyl salicylate + GA.

Trees were visually examined twice weekly. These baits reliably increased localized PC pressure on those trees, strengthening the value of trap-tree perimeter strategies.

We also revisited the Reissig et al. (1998) PC oviposition model. According to this model, after 308 degree-days (base 43) from petal fall, oviposition risk significantly declines. This provides a useful timing window especially for timing the final PC spray.

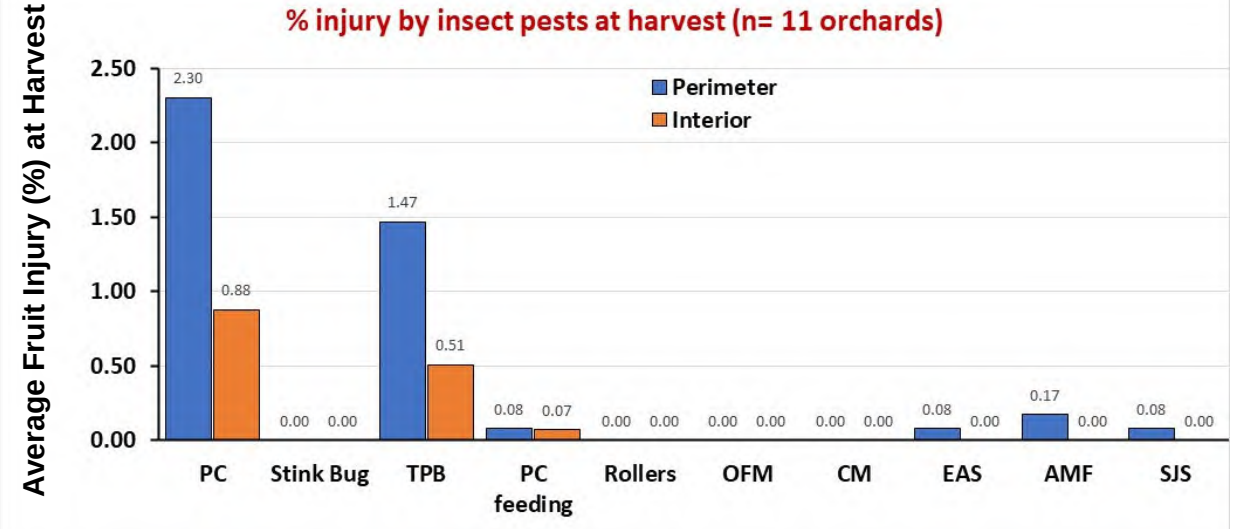

Figure 4. In 2025, fruit injury levels recorded at harvest across 11 MA orchards was low and concentrated at edges: PC averaged 2.3% perimeter vs. 0.9% interior; TPB 1.5% vs. 0.5%.

Apple Maggot Fly (AMF). AMF monitoring was conducted in 11 blocks, including those in our multi-cultivar grafting study. We used unbaited red sticky spheres in both grafted and non-grafted perimeter trees.

In 2025, AMF activity was low almost everywhere. Captures rarely exceeded 0.5 flies per trap. Even during the typical July uptick, numbers stayed subdued.

However, the exception was Wickson apple. Just as in previous years, Wickson remains highly attractive for both AMF landing and oviposition. While damage was not widespread, high levels of egg-laying (30–55%) were recorded on Wickson apples in the grafting project trials. This reinforces Wickson's role as an effective sentinel / "magnet cultivar" for AMF monitoring purposes.

Lepidoptera: OFM, CM, OBLR. This year marked expanded use of automated camera traps to track:

- Oriental fruit moth (OFM)
- Codling moth (CM)
- Obliquebanded leafroller (OBLR)

Traps were managed from April through September across orchards in MA and NH. Daily image-based counts allowed precise biofix determination and better flight timing estimates.

OFM. First detection April 23 at CSO. Cool weather and mating disruption in peach reduced captures there, though other sites experienced modest peak flights in early May. We documented three clear OFM flight peaks across the season (Table 1), with a partial fourth generation in warm sites.

CM. Biofix occurred around May 13–16. Then came a cool period where flight essentially paused, creating a split first-generation emergence. Degree-day tracking proved essential for timing sprays (Table 2). Using CM thresholds, most orchards achieved excellent suppression, and CM fruit damage was essentially negligible.

Table 2. Codling moth generation timing and DD ranges (base 50 °F), including key life-cycle observations.

Generation	Flight Period	DD Range	Observations
1st	May 13 – Jun 15	0–600	Two distinct peaks due to asynchronous emergence; sprays advised at 220–250 DD and 500–600 DD.
2nd	Jul 10 – Aug 20	1060–1400	Moderate flight; optimal spray window 1250–1400 DD.
3rd (partial)	Late Aug – Sep	>2100	Present mainly at warm sites; minimal injury risk.

OBLR. June 6–12 biofix. Captures were moderate initially, then tapered. Second-generation catches in August were low, and damage remained below economic thresholds. In organic blocks lacking broad-spectrum moth controls, OBLR catches were slightly higher but still manageable.

Entomopathogenic Nematodes (EPNs). This year, in lab tests comparing controls for the soil-dwelling PC stage, *Steinernema carpocapsae* showed dramatically higher efficacy than *Beauveria bassiana* achieving:

- 50% mortality in 3 days,
- 80% by day 7,
- and 100% by day 10.

Table 1. Oriental fruit moth generations and degree-day timing (base 45°F), with life-cycle notes on capture patterns and larval injury risk.

Generation	Flight Period	DD Range	Notes
1st	Apr 23 – May 25	0–350	Controlled by petal-fall spray; minimal residual activity after 350 DD
2nd	Jun 1 – Jul 5	920–1100	Moderate captures; low due to mating disruption
3rd	Jul 15 – Aug 25	1800–2300	Highest larval injury potential; continued through ~2600 DD
4th (partial)	Late Aug – Sep	>2700	Minor, incomplete development; overwintering larvae

In field emergence trials, BioSC suppressed adult emergence completely at both full and half-label rates.
We went further: in July, we purchased and distributed 11 billion nematodes to 22 growers across CT, MA, and NH (at no cost to them) thanks to grant funding. These were applied to perimeter rows and hotspots.

We also finalized (95% complete) the EPN grower application guide, including:

- Mixing / agitation instructions
- Nozzle recommendations
- Tree-count coverage per bag
- Soil-moisture guidelines
- Cost modeling

These steps will support broader, confident grower adoption in 2026 and beyond.

Spotted-Wing Drosophila (SWD). Monitoring across seven farms using our tried-and-true fermented Concord grape juice + 2% salt bait showed a familiar pattern:

Low activity in June → gradual buildup in July → sharp peak in early August (Fig. 5).

Peak fly captures averaged ~245 SWD, with a maximum of 910 in a single trap in a late blueberry block. After this peak, activity dropped sharply as harvests concluded and fruit availability declined. The advantage of the diluted Concord grape juice laced with 2% table salt remains consistent: It produces high SWD selectivity and low bycatch, making interpretation cleaner for growers.

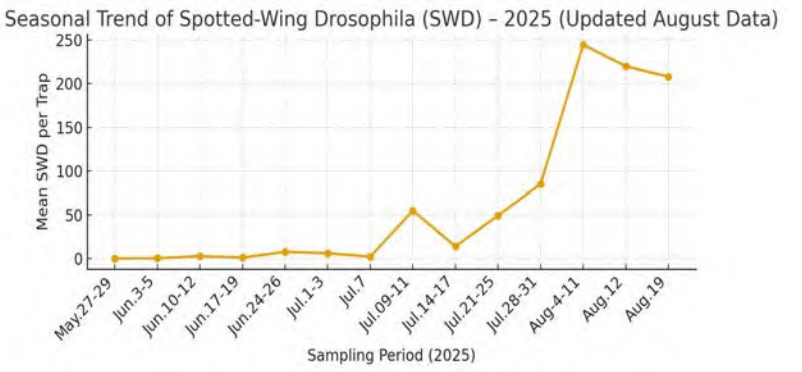

Figure 5. Seasonal captures of spotted-wing drosophila in traps baited with diluted Concord grape juice + 2% salt across 7 commercial fruit orchards.

Brown Marmorated Stink Bug (BMSB). Long-term monitoring shows BMSB populations continue to fluctuate dramatically from year to year. 2025 was another low-pressure year. Most orchards saw trap captures near zero for weeks at a time. One orchard briefly triggered an insecticide treatment after exceeding 4 adults/trap, but overall, 2025 BMSB activity was very light and geographically limited, suggesting that in BMSB populations remained at subeconomic levels in Massachusetts orchards.

Horticulture (Jon Clements and Duane Greene)

Pretty much unexceptional here with one caveat. There was a significant carbohydrate deficit around the petal fall thinning window (circa May 13), however, that reversed itself during the traditional 12 mm thinning window when there was significant carbohydrate surplus (Figure 6). After the fact, it was clear thinning sprays (NAA) applied just post-bloom into petal fall were quite effective. But then very little thinning was observed when sprays were applied later during the traditional thinning window (circa May 25). Apple crop load management remains challenging but has huge implications when it must be followed by hand thinning (costly and no one wants to do it), and too many apples (quality and return bloom issues). Take home: make every effort to apply NAA during bloom and petal fall, start the thinning process and promote return bloom (particularly in Honeycrisp). Not to say ignore that 12 mm spray, but cool springs seem to be making that spray more difficult in terms of efficacy.

One more thing: we expect to have BrevisTM (ADAMA, metamitron active ingredient, a Group 5 herbicide) for thinning apples and pears in 2026. It has federal registration, but we are still awaiting Massachusetts state registration, which should be forthcoming. Brevis "Temporarily inhibits photosynthesis w/o interacting with plant hormone regulation." We have some research experience here with Brevis, but as usual, it's been a bit up and down in terms of thinning results. A mild thinner at best? Still, we think it will be a very useful tool to help with your thinning beginning in 2026. Stay tuned on that...

Smal Fruit (Jianyu Li and John Galvan)

Blueberries. 2025 emphasized again how rapidly Septoria leaf spot (Fig. 7) can establish during the first-year establishment period in young blueberry fields. We followed disease incidence (Fig. 8) and severity (Fig. 9) from June through August in five cultivars: Bluegold, Chandler, Last Call, Northland, and Reka.

Patterns were consistent:

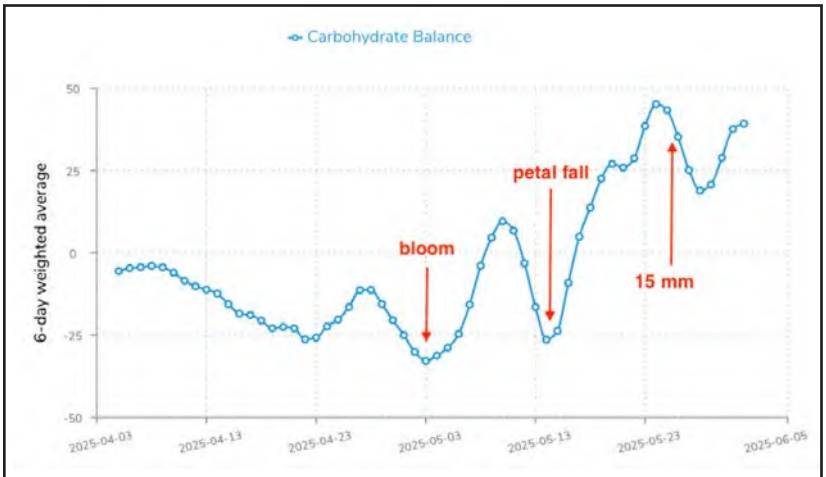

Figure 6. Apple carbohydrate thinning model for UMass Orchard, Belchertown, MA. Note the carbohydrate deficit during bloom and petal fall, followed by a carbohydrate surplus during the traditional thinning window circa 10-15 mm.

- Chandler and Northland showed early and aggressive Septoria buildup, reaching as high as ~80% of leaves affected by mid-summer.
- Last Call showed intermediate levels (40–70%).
- Bluegold and Reka maintained much lower levels, typically below 30%.

Severity (Fig. 9) followed the same order, with Chandler especially showing larger lesion coverage by late August.

Take-home for new growers: Start scouting **by mid-June**, even in year-one plantings. Maintain airflow through:

- Pruning
- Spacing
- Vegetation management

Figure 7. (Left) Fungal disease *(Septoria albopunctata)*, (Right) Young blueberry plants infected.

Fungicide rotation and coverage still matter, but cultivar choice may be one of the most important long-term decisions for reducing input needs.

Grapes and Spotted Lanternfly (SLF). SLF (Fig. 10) was first confirmed in MA in 2021 and is now distributed across multiple counties (Fig. 11). In 2025, we documented adult feeding on both hybrid and vinifera grape varieties. Adult activity was highest from August through October, primarily along:

- Vineyard borders
- Trellis lines
- Areas adjacent to *Ailanthus* (tree of heaven)

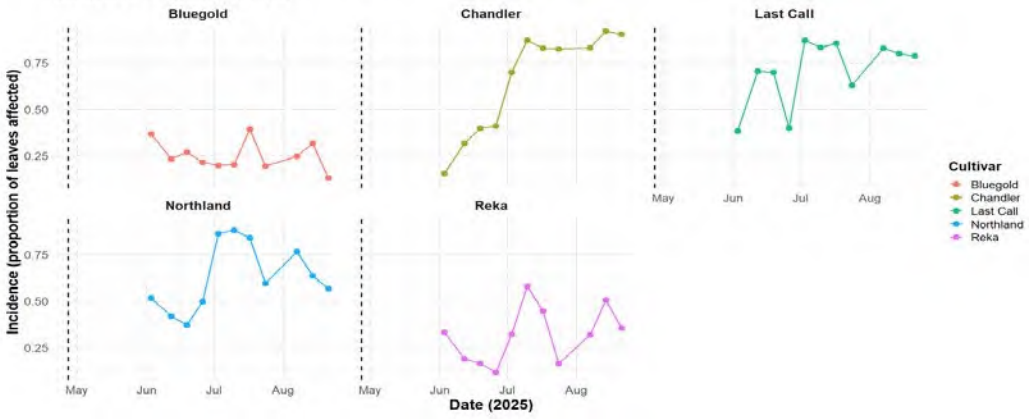

Figure 8. Septoria disease incidence over time (mean ± SE, four blocks). Dashed line = transplant date (April 27, 2025)

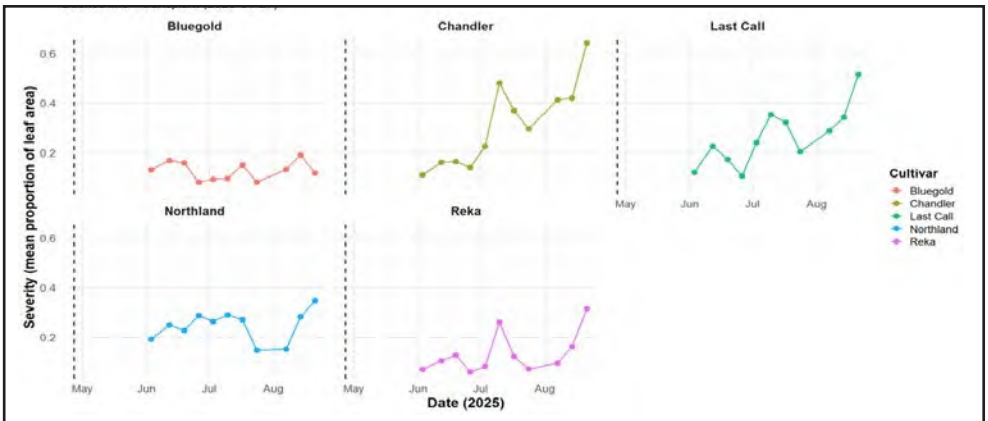

Figure 9. Septoria disease severity over time (mean ± SE across four blocks). Dashed line = transplant date (April 27, 2025).

Late-season SLF feeding can drain carbohydrate reserves before winter dormancy, and several growers noticed weakened bud vigor by spring in affected vines.

We encourage vineyard managers to:

- Monitor border activity
- Remove local Ailanthus stands where feasible
- Document sightings
- Follow evolving SLF management guidance

For more information, see Fact Sheet.

Figure 10. Spotted lanternfly (*Lycorma delicatula*) on grapevine 10/16/2025.

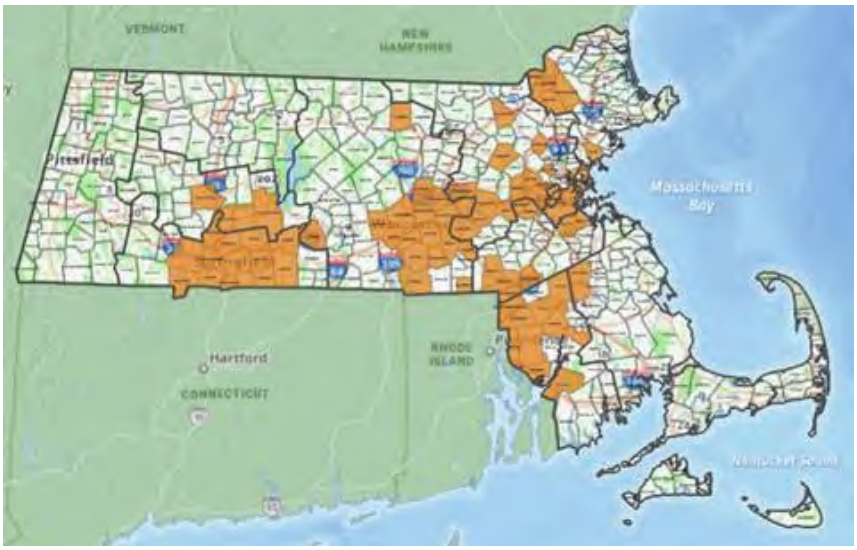

Figure 11. Current distribution of spotted lanternfly in Massachusetts. Photo Credit: Cornell University CALS, & MDAR.