

Year:	2016
State:	Connecticut
Cooperative Agreement Name:	Cooperative Agricultural Pest Survey
Cooperative Agreement Number:	16-8209-0327
Project Funding Period:	January 1 – December 31, 2016
Project Report:	CAPS Infrastructure Report
Project Document Date:	March 31, 2017
Cooperators Project Coordinator:	
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Quarterly Report	<input type="checkbox"/>
Semi-Annual Accomplishment Report	<input type="checkbox"/>
Annual Accomplishment Report	<input checked="" type="checkbox"/>

A. Compare actual accomplishments to objectives established as indicated in the workplan. When the output can be quantified, a computation of cost per unit is required when useful.

- **Activities:**

- **Committee Service:**

- Katherine Dugas, SSC, maintained contact with the CT PPQ office and state CAPS committee.
 - Katherine Dugas and general worker Zack Brown ran the spring statewide CAPS committee meeting on May 30th. SSC prepared minutes of spring statewide CAPS committee meeting.
 - Katherine Dugas began developing 2017 CAPS work plans based on feedback from committee discussions.
 - Katherine Dugas and Zack Brown ran the fall statewide CAPS committee meeting on November 10th. SSC prepared minutes of fall statewide CAPS committee meeting.

- **Other Survey Work:**

- Katherine Dugas ordered additional trapping supplies from IPHIS in April after receiving funding for orchard and mixed berry surveys through Farm Bill.
 - In early May, at the request of Dr. Joe Elkinton, Katherine Dugas collected 300 winter moth caterpillars from the *Cyzenis albicans* biocontrol release site at Beebe Park in Groton. The caterpillars were mailed to UMass Amherst, where it will be determined if they have been parasitized.
 - Katherine Dugas ordered trapping supplies and lures from IPHIS in September for the 2017 CAPS trapping season.
 - In early November, Katherine Dugas assisted Dr. Joe Elkinton in contacting CT tree wardens and members of CTPA to ask for volunteers for trapping winter moth adults along the CT coastline.

- **Outreach and Education:**

- **Interviews (TV/Radio/Newspaper/Magazines):**

- May 15, 2016--Watch out for Gypsy Moth Caterpillars; Advice from CT Agricultural Experiment Station
<http://lymeline.com/2016/05/watch-out-for-gypsy-moth-caterpillars-advice-from-ct-agricultural-experiment-station/>
 - June 1: Dr. Kirby Stafford was interviewed by Matt Scott, Fox61 News, about the gypsy moth outbreak.
 - June 2: Dr. Kirby Stafford was interviewed by Nate Lynch, New London Day, about the gypsy moth outbreak.
 - June 2: Dr. Kirby Stafford was interviewed by Chris Hall, NBC Connecticut News, about the gypsy moth outbreak.

- June 2: Dr. Kirby Stafford was interviewed by Jacquie Slater, WTNH News 8, about the gypsy moth outbreak.
- June 2: Dr. Kirby Stafford was interviewed by Anna Bisaro, New Haven Register, about the gypsy moth outbreak.
- June 6, 2016--Connecticut caterpillar invasion is biggest outbreak in decades <http://fox61.com/2016/06/01/connecticut-caterpillar-invasion-is-biggest-outbreak-in-decades/>
- June 6, 2016--Experts Weigh in On Caterpillar Invasion in Old Saybrook <http://www.nbcconnecticut.com/news/local/Experts-Weigh-in-On-Caterpillar-Invasion-in-Old-Saybrook-381721801.html>
- June 9: Dr. Kirby Stafford was interviewed by Patrick Skahill, WNPR, Connecticut Public Radio, about the gypsy moth.
- Emerald Ash Borer Found in All Eight Connecticut Counties <http://wnpr.org/post/emerald-ash-borer-found-all-eight-connecticut-counties#stream/0>
- June 11, 2016--Beetle infestation at West Haven Maltby Lakes means clear-cutting spruces <http://www.nhregister.com/environment-and-nature/20160611/beetle-infestation-at-west-haven-maltby-lakes-means-clear-cutting-spruces>
- June 13, 2016--Recent rains helping to wipe out pesky gypsy moth caterpillar attack <http://wtnh.com/2016/06/13/recent-rains-helping-to-wipe-out-pesky-gypsy-moth-caterpillar-attack/>
- June 15, 2016--State: Fungus stopping gypsy moth outbreak <http://www.ctpost.com/local/article/State-Fungus-stopping-gypsy-moth-outbreak-8196011.php>
- June 16: Dr. Kirby Stafford was interviewed by Matt Scott, Fox61 News, about the southern pine beetle and spruce trees.
- June 20, 2016--Emerald Ash Borer Will Kill All Hartford's Ash Trees <http://www.courant.com/community/hartford/hc-hartford-ash-trees-doomed-20160614-story.html>
- June 20: Dr. Kirby Stafford was interviewed by Andrew Revkin, New York Times, about the gypsy moth fungus.
- June 28, 2016--Millions of caterpillars are decimating the trees in New England <https://www.washingtonpost.com/news/capital-weather-gang/wp/2016/06/28/millions-of-caterpillars-are-totally-decimating-the-trees-in-new-england/>
- June 29: Dr. Kirby Stafford was interviewed by Mary Jo DiLonardo, Mother Nature Network about the gypsy moth.
- June 30: Dr. Kirby Stafford was interviewed by Hallie Metzger for the TIMPRO Connecticut Newsletter, about the gypsy moth outbreak.
- June 30: Dr. Kirby Stafford was interviewed by Morgan Heinz, Hartford Courant, about the gypsy moth.

- July 5: Dr. Kirby Stafford was interviewed by Henry McNulty, Hartford Courant, for an editorial on the gypsy moth outbreak and EAB.
 - July 6: Dr. Kirby Stafford was interviewed by Andrew Revkin, The Times (Opinion), about the gypsy moth.
 - July 6: Dr. Kirby Stafford was interviewed by John Charlton, Fox61, about the adult gypsy moths.
 - July 11: Dr. Kirby Stafford was interviewed by Joy VanderLek, The Cheshire Citizen, about the gypsy moth.
 - July 21: Dr. Kirby Stafford was interviewed by Aliyya Swaby, New Haven Independent, about EAB in Wooster Square.
 - July 21: Dr. Kirby Stafford was interviewed by John Penney, The Norwich Bulletin, about the gypsy moth in 2017.
 - July 27: Dr. Kirby Stafford was interviewed by Chris Woodside, CT Woodlands Magazine, about the gypsy moth.
 - August 1 and 2: Dr. Kirby Stafford was interviewed by Leslie Mayes, NBC Connecticut, about spraying for gypsy moths in Ledyard.
 - August 11: Dr. Kirby Stafford was interviewed Nate Lynch, The Day, about aerial spraying for gypsy moth and impact in 2017.
 - August 31: Dr. Kirby Stafford was interviewed by Annette Heist, an independent science writer, about gypsy moth.
 - November 16, 2016--New Haven replanting block devastated by insect infestation <http://wtnh.com/2016/11/16/new-haven-replanting-block-devastated-by-insect-infestation/>
- **Outreach materials (Pamphlets/ brochures/ posters):**
 - SSC created a 2016 CAPS target pest poster for display during the CNLA and CTPA meetings in January. This poster was accompanied by fact sheets for each pest. Pest fact sheets were also provided to all growers during initial site setup.
- **Publications:**
 - The CAPS website was updated on 1/21/2016 with the 2016 pest list and workplans.
- **Public Service Announcements (PSA):**
 - June 13, 2016--Gypsy Moth 2016 Outbreak May be Over Natural Fungus Causing Widespread Mortality
- **Meetings:**
 - **Conference calls:**
 - 21 July 2016: Katherine Dugas participated in the EPB SSC conference call.
 - 18 November 2016: Katherine Dugas participated in the EPB SSC conference call.
 - **Conferences:**
 - 7 January 2016: Donna Ellis attended the Northeast Region Technical Committee on IPM (NEERA-1004) Meeting,

Northeastern Plant, Pest and Soils Conference, Philadelphia, PA. She presented a summary of UConn IPM Program activities to the IPM Coordinators and administrators for the Northeast Region.

- 14, 15 January 2016: Katherine Dugas staffed a CAPS information table at the Connecticut Nursery and Landscape Association Winter Meeting at Aqua Turf, Plantsville.
- 21 January 2016: Katherine Dugas staffed a CAPS information table at the Connecticut Tree Protective Association winter meeting in Southington; approximately 700 – 800 attendees.
- 21 January and 26 January 2016: Donna Ellis was the invited speaker for two Ornamental and Turf Short Courses in East Haven, CT and West Hartford, CT. Invited speaker to teach entomology and Integrated Pest Management to adults preparing for pesticide applicator license certification. The presentations included a discussion on exotic insect pests.
- 9 March 2016: Donna Ellis was the invited speaker at the UConn Ag Team meeting, Storrs, CT. Invited speaker for presentation on the UConn Integrated Pest Management Program.
- 4-7 April 2016: Katherine Dugas, Jeff Fengler, Steve Sandrey, Vicki Smith, and Peter Trenchard attended the combined meeting of the Eastern Plant Board, the Horticultural Inspection Society, and the Cooperative Agricultural Pest Survey, held at the Harbourtowne Resort in St. Michaels, Maryland.
- 14 June 2016: Vicki Smith participated in a table-top exercise of the Incident Command System, held in Jones Auditorium; 14 participants.
- 20 July: Katherine Dugas and Vicki Smith staffed a CAPS information table at the Connecticut Nursery and Landscape Association Summer Meeting held at Monrovia Nurseries in Granby. The display included information on the newly-enacted Pennsylvania Boxwood Blight Quarantine; approximately 200 participants.
- 21 July: Katherine Dugas and summer assistant Zack Brown staffed a CAPS and CAES information table at the Connecticut Tree Protective Association Summer Meeting at the Farmington Club.

○ **Webinars**

- **Training:**
 - 23 August 2016: Vicki Smith, with Michael Last, Ted Andreadis, and Vickie Bomba-Lewandoski, met with Dennis Geshel of DAS-BEST, for a demonstration of the state eLicense system, which the Experiment Station will soon be joining for apiary and nursery registration, in the Slate Board Room.
- **Other:**
 - SSC prepared Farm Bill work plan for the FY16 Forest Pest Project.
 - SSC prepared Farm Bill work plans for *P. ramorum*, orchard and mixed berry surveys.

B. **If appropriate, explain why objectives were not met.*** All objectives were met.

C. **Where appropriate, explain any cost overruns or unobligated funds in excess of \$1,000. *** No cost overruns have occurred.

D. **Supporting Documents (SEE APPENDIX)**

****indicates information is required per 7 CFR 3016.40 and 7 CFR 3019.51***

Approved and signed by

Victoria Lynn Smith
Cooperator

Date: 22 March 17

ADODR

Date: _____

USDA APHIS COOPERATIVE AGRICULTURAL PEST SURVEY (CAPS) PROGRAM
STATE CAPS COMMITTEE MEETING

New Haven, CT

Tuesday, May 31st, 2016; 10:00 a.m. – 12:00 p.m.

AGENDA

1. Welcome and Introductions; Joan Allen, UConn; Donna Ellis, UConn; Kirby Stafford, CAES; Vicki Smith, CAES; Zack Brown, CAES; Katherine Dugas, CAES; Alejandro Chiriboga, UConn; Kelsey Brennan, UConn, Kate Aitkenhead, PPQ; Nichole Carrier, PPQ; Shelby Farnham, CAES; Claire Rutledge, CAES
2. Updates of 2016 CAPS and PPQ surveys and outreach programs

Surveys conducted by The Connecticut Agricultural Experiment Station (CAES):

- Oak/Maple – 25 sites
 - a. *Tortrix viridana* (GOTM)
 - b. *Thaumatotibia leucotreta* (FCM)
 - c. *Archips xylosteana* (VGTM)
 - d. *Thaumetopoea processionea* (OPM)
- Xmas Tree – 25 sites
 - a. *Monochamus alternatus* (JPS) and *urussovii* (BFS)
 - b. ~~*Tetropium fuscum* (BSLB) and *castaneum* (BSB)~~ – survey cancelled due to lure delay. Should have for next year.
- *Cerceris* Biosurveillance -52 new detections last summer, 12 new towns detected by wasp watchers. Plans to move *Cerceris* from CAPS to Farm Bill as part of Forest Pest Outreach. Will be adding to 2016 workplan.
- 2016 Farm Bill Surveys:
 - a. Mixed Berry– 25 sites
 1. *Epiphyas postvittana* (LBAM)
 2. *Cryptoblabes gnidiella* (CBW/HM)
 3. *Lobesia botrana* (EGVM)
 4. *Adoxophyes orana* (SFTM)
 5. *Archips xylosteana* (VGTM)
 6. *Candidatus Phytoplasma australiense* (AGY)
 - b. Orchard– 25 sites
 1. *Archips xylosteana* (VGTM)
 2. *Adoxophyes orana* (SFTM)
 3. *Epiphyas postvittana* (LBAM)
 4. *Leucoptera malifoliella* (PBM)
 5. *Candidatus Phytoplasma mali* (AP)
 6. *Candidatus Phytoplasma prunorum* (ESFY)
 - c. *P. ramorum* – 25 nursery sites
 - d. National Honey Bee Survey – 25 sites

Surveys conducted by USDA APHIS PPQ:

- Forest Pest Survey -
 - a. *Monochamus alternatus* & *urrusovii*, - will be setting up this week
 - b. ~~*Tetropium fuscum* & *castaneum*~~, survey cancelled due to lure delay
 - c. *Dendrolimus pini* & *sibiricus* - will be setting up in 2 weeks
- Asian defoliators –
 - a. *Lymantria dispar asiatica* - may end early, starting June/early July, when GM's appear. 15 sites at NH + other ports. Antennae are needed for identification. There is always a small level of Asian phenotype present in GM

Mile-a-Minute biological control (UConn + CAES) 9th year of biocontrol. Trenton NJ sends 4k weevils per state. Shipping weevils at the end of June. Groton sub-base is a potential release site due to large amounts of MaM. Revisiting previous/ongoing sites, counting weevils

Lily leaf beetle biological control (UConn) – project started in 2012 with Lisa Tewksbury in RI. A few hundred have been released over the past few years. 3 types of parasitoids released, difficulty in rearing parasitoids last year, only got 50 wasps. Currently looking for gardens with more than a dozen lilies as potential release sites. Garden owners must commit to low amounts of chemical control.

Forest Pest Outreach Report – EAB is now much more about communicating management, both the individual homeowners and towns. There is difficulty in communicating to towns, but DEEP and CAES have collaborated with CTPA in producing some literature pertinent to CT. Chris Donnelly of DEEP is leading effort. *Cerceris* will be joining Forest Pest Outreach. Wasp watchers are a large group of volunteers with a lot of staying power. Biosurveillance is a great survey for outreach.

3. 2017 CAPS Guidelines

- *Program Changes* – changed the way pests are assessed. Changed from the AHP to the Objective Prioritization of Exotic Pests (OPEP).
- *Priority Survey* – Pests are now each assessed individually rather than on a 'competitive' list. 3 Categories: Category 1 for pests that have a 20% or higher chance of high impact; Category 2 for pests that have a 10 - 20% chance of high impact; Category 3 for less than 10% impact or undetermined impact. Pathogens tend to 'rank' higher than AHP with new assessment.
- *Pest and Survey Lists* – no longer a requirement under CAPS.

4. Proposed 2017 Surveys

- CAPS: Xmas Tree, Exotic Wood Borer/Bark Beetle Surveys will depend on timing and lure availability.
- Farm Bill: *P. ramorum*, *Cerceris* (as part of Forest Pest), Orchard, Mixed Berry(?), Grape(?) 15 sites for each survey; grape sites are limited, though important. Mixed berry survey TBD after this year's survey.

Discussion of *P. ramorum* diagnostics, immunostrips will likely be discontinued as a survey method. Can CAES do DNA extraction? Possibility of agricultural survey, although there may not be enough in CT to be worthwhile. Pumpkin survey?

5. Other old or new business

- Next State CAPS Committee meeting will be in fall 2016
- Winter Moth – caterpillar collection on 5/18, 328 caterpillars collected. Will send to Joe Elkinton of UMass for rearing.
- EAB Biocontrol – *Tetrastichus* has been found 2.5 miles out from release sites, but *Oobius* is hard to find. Releases to take place in 2016 – 3 sites by TNC in East Haddam, East Windsor and Simsbury in watershed areas. 2 other sites are Cromwell Wildlife Management Area and Plymouth State Forest.

USDA APHIS COOPERATIVE AGRICULTURAL PEST SURVEY (CAPS) PROGRAM
STATE CAPS COMMITTEE MEETING

New Haven, CT

Thursday, November 10th, 2016; 10:00 a.m. – 12:00 p.m.

AGENDA

6. Welcome and Introductions

Attended: Donna Ellis, UConn; Rose Hiskes, CAES; Claire Rutledge, CAES; Vicki Smith, CAE; Chris Maier, CAES; Kate Aitkenhead, PPQ; Kirby Stafford, CAES; Nichole Carrier, PPQ; Zack Brown, CAES; Katherine Dugas, CAES; Alejandro Chiriboga, UConn

7. Updates of 2016 CAPS and PPQ surveys and outreach programs

Surveys conducted by The Connecticut Agricultural Experiment Station (CAES):

- Oak/Maple – 25 sites **No suspects found**
 - a. *Tortrix viridana* (GOTM)
 - b. *Thaumatotibia leucotreta* (FCM)
 - c. *Archips xylosteana* (VGTM)
 - d. *Thaumetopoea processionea* (OPM)
- Xmas Tree – 25 sites **No suspects found**. *Tetropium lures* arrived and are ready for survey next year. Switching to cross-vane panel traps next year.
 - a. *Monochamus alternatus* (JPS) and *urussovii* (BFS)
 - b. *Tetropium fuscum* (BSLB) and *castaneum* (BSB)
- *Cerceris* Biosurveillance 2,200 beetles screen, numbers down from past years due to fast season. Volunteer number has remained relatively stable. A new *Agrilus* species was found in Berlin in 2015. The species was also found in New Jersey in 2016. Asian pest of tree-of-heaven. Discussion regarding USDA notification of new finds. The *Agrilus* was sent to Georgia – Hobeck – for ID.
- 2016 Farm Bill Surveys:
 - a. Mixed Berry– 25 sites **24 sites, no suspects found**
 - 1. *Epiphyas postvittana* (LBAM)
 - 2. *Cryptoblabes gnidiella* (CBW/HM)
 - 3. *Lobesia botrana* (EGVM)
 - 4. *Adoxophyes orana* (SFTM)
 - 5. *Archips xylosteana* (VGTM)
 - 6. *Candidatus Phytoplasma australiense* (AGY)
 - b. Orchard– 25 sites **24 sites, no suspects found**
 - 1. *Archips xylosteana* (VGTM)
 - 2. *Adoxophyes orana* (SFTM)
 - 3. *Epiphyas postvittana* (LBAM)
 - 4. *Leucoptera malifoliella* (PLBM)
 - 5. *Candidatus Phytoplasma mali* (AP)
 - 6. *Candidatus Phytoplasma prunorum* (ESFY)
 - c. *P. ramorum* – 25 nursery sites **Postponed to next spring due to**

personnel issues and a need to align current survey with national methods. All 25 sites will be resurveyed.

- d. National Honey Bee Survey – 25 sites All samples collected, most shipped. Waiting on pollen sample shipping details. Good baseline info from this survey.

Surveys conducted by USDA APHIS PPQ:

- Forest Pest Survey - No suspects. 1 BMSB found in Wallingford
 - a. *Monochamus alternatus* & *urussovii*
 - b. *Tetropium fuscum* & *castaneum*, Also have lures for next year
 - c. *Dendrolimus pini* & *sibiricus*
- Asian defoliators – All negative; some DNA variability, but an acceptable amount. Harder to survey during heavy population outbreaks.
 - a. *Lymantria dispar asiatica*

Mile-a-Minute biological control (UConn + CAES) Not many new town infestations – found in existing towns. Around 50,000 weevils released. 3 locations, 3-4,000 weevils released this year. Good dispersal, weevils are finding sites before releasers are! Cooperator's meeting for next year.

Lily leaf beetle biological control (UConn) 3 parasitoid species, 89 wasps released. 1,400 have been released overall. Three records of parasitized larvae this year, up from 1 last year.

8. 2017 Survey Plans

- Oak/Maple – 25 sites Nurseries and forested lands
 1. *Tortrix viridana* (GOTM)
 2. *Mamestra brassicae* (CM)
 3. *Archips xylosteana* (VGTM)
 4. *Thaumetopoea processionea* (OPM)
- Xmas Tree – 25 sites Continuing survey, growers are enthusiastic
 1. *Monochamus alternatus* (JPS) and *urussovii* (BFS); *Hylobius abietis* (LPW)
 2. *Tetropium fuscum* (BSLB) and *castaneum* (BSB)
- EWB/BB – 25 sites Last surveyed in 2013, sawmills, nurseries, and forested lands
 1. *Platypus quercivorus* (OAB)
 2. *Trypodendron domesticum* (EHAB)
- Farm Bill: Grape, *Cerceris* (as part of Forest Pest)
- *P. ramorum* 2016 will continue into spring 2017
PPQ: Replacing 10 sites in CT. Not continuing cut flower survey, still trying to ID pathways. *Cerceris* and snail/mollusk survey for 2017.

9. Other old or new business

- Chris Maier - expansion of Japanese cedar longhorn beetle and viburnum leaf beetle Both are expanding range throughout the state; JCLB is moving north and VLB is moving south. Both should continue being monitored.
- Gypsy Moth Update 180,000 acres defoliated 2015, projected double for 2016. Heavy GM presence masked other defoliation events (orange-striped oakworm, forest tent, etc.). Large GM outbreak projected for 2017 due to large egg mass presence. Some communities are considering aerial spraying in 2017, but is unlikely. Telling public to schedule early spring treatments now. State will not be taking any direct action. With drought and other forest stressors, we may/will be seeing increased tree mortality. Pachaug state forest will be harvesting oaks over the winter; lots of stress and mortality signs. Increased acorn production as a last-ditch reproduction push?
- Winter Moth Update Still heaviest in New London county. Parasitoid was released in 2013, no recovered parasitized larvae in 2016, but possible to do another release spring 2017. Joe Elkinton will be monitoring for WM/bruce spanworm hybridization along the coast of CT this winter.
- EAB Biocontrol: Recovered *Tetrastichus* at sites and more than 2 miles away from release sites. Released at Sleeping Giant and Sherman. Partnered with TNC, who released at 3 additional CT river sites in Farmington and Scranton. Released a 3rd species of parasitoid, a cold-weather hardy *Spathius*. There are shipping issues with *Spathius*, as around half of them were dead when they arrived.
- Next State CAPS Committee meeting will be in spring 2017