

2010 Annual Accomplishment Report of the Illinois Cooperative Agriculture Pest Survey (CAPS) Program

*This annual report outlines exotic pest detection activities conducted according to guidelines issued
by the Eastern Region Cooperative Agricultural Pest Survey from January 1, 2010 through
December 31, 2010*

Illinois Natural History Survey and Board of Trustees of the University of Illinois
Illinois Department of Agriculture (IDA)
United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service
(APHIS), Plant Protection and Quarantine (PPQ)

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Illinois Cooperative Agricultural Pest Survey (CAPS) State Survey Coordinator
Illinois Natural History Survey at the University of Illinois

Accomplishment Report

State: **Illinois**

Year: **2010**

Is this a quarterly, semi- annual or final report? **Final Report**

List dates covered by this report: **January 1, 2010 – December 31, 2010**

Cooperator: **Illinois Department of Agriculture**

Cooperator's Project Coordinator:

Name	Kelly Estes
Agency	Illinois Natural History Survey at the University of Illinois
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The following accomplishment report follows the recommended outline of:

I. Accomplishments

- A. Compare actual accomplishments to objectives established for the period as indicated in the work plan. When the output of the project can be quantified, a computation of cost per unit of output is required when useful.*
- B. If appropriate, explain why objectives were not met.*
- C. Where appropriate, explain any cost overruns.*

II. If the program is survey in nature add the following information:

1. Survey Methodology (trapping protocol)
2. Rationale underlying survey methodology
3. Survey dates
4. Taxonomic services
5. Benefits and results of survey
6. NAPIS database submissions: Program pest and date of submission NOTE: This information is available per state on the NAPIS web site

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

Project: 2010 Tier I Work Plan (Infrastructure)

Cooperator: Illinois Department of Agriculture and Illinois Natural History Survey

List of Agencies Involved: USDA-APHIS-PPQ (including AQI)
Illinois Natural History Survey
Illinois Department of Agriculture
River to River Cooperative Weed Management Area
Illinois Department of Natural Resources
Illinois Department of Crop Sciences
University of Illinois Department of Natural Resources
and Environmental Sciences
University of Illinois Plant Clinic
University of Illinois Extension
U.S. Forest Service
U.S. Customs and Borders Protection

I. Accomplishments Report

Unlike the Tier II portion of the CAPS program, Tier I (or the Core) project is now utilized for all portions of the project that are considered Infrastructure. All CAPS surveys are reported later in this report.

The results or benefits detailed in the 2010 IL CAPS infrastructure:

A. Designation of a State Survey Coordinator and coordination of the State CAPS committee.

Name	Organization	Discipline
Scott Blackwood, PSS	USDA-APHIS-PPQ	Federal Regulatory
Mark Cinnamon, SPRO	IL Dept. of Ag	State Regulatory
Kelly Estes, SSC	U of I, IL Natural History Survey	Entomology
Jeffrey Davidson	USDA-APHIS-PPQ	Federal Regulatory
Laura Ettema-Khan	USDA-APHIS-PPQ	Federal Regulatory
Christopher Evans	IL River to River CWMA	Invasive Plants
Scott Frank	IL Dept. of Ag	State Regulatory
Warren Goetsch	IL Dept. of Ag	State Regulatory
Stephen Knight, SPHD	USDA-APHIS-PPQ	Federal Regulatory
Suzanne Bissonnette	U of I, Plant Clinic	Plant Pathology

B. A network of state, county, federal, and public entities to evaluate risks, conduct surveys, and manage cooperative pest programs.

Illinois uses its state CAPS committee as a basis for the groundwork of the CAPS program. Members of the committee actively meet, discuss potential pest risks to the state, and look at the benefits/downfalls of potential surveys. Recommendations are made for the yearly state CAPS surveys. Illinois CAPS surveys are conducted with the aid of the Illinois Department of Agriculture and USDA-APHIS-PPQ. The CAPS program also reaches out to state and private groups, industry representatives, and municipalities for specific surveys.

Also aiding in determining invasive pest risk for Illinois is the State Pest Analysis of Risk Committee (SPARC). This group of representatives (composed of USDA-APHIS-PPQ, DHA-CBP, state & local cooperators, and private industry stakeholders) evaluates potential invasive pests and pathways of introduction.

C. Surveys for selected harmful or economically significant non-native plant pests and weeds, including exotic pests, pests of export significance, and/or pests not known to occur in the U.S.

The following survey was conducted as a Tier II survey:

1. Nursery Bundled Survey, page 17.

D. NAPIS entry and management: presence/absence data at county level resolution for target pests and others approved for NAPIS entry.

NAPIS data was entered for CAPS Tier II surveys (page 19).

NAPIS data was entered for surveys conducted by the Illinois Department of Agriculture and USDA-APHIS PPQ as follows:

1. Emerald Ash Borer

The Illinois Department of Agriculture and USDA-APHIS-PPQ worked cooperatively on the emerald ash borer purple trap survey in 2010. Purple traps baited with Manuka oil were deployed in a grid survey as well as targeting high risk sites. The 2010 plan includes 29 counties (just beyond the state quarantine line) where traps were deployed every 1.5 square miles. A total of 6,326 traps were deployed statewide by IDA, USDA-APHIS, and municipal partners.

Trap removal began July 26. Traps were processed with suspect specimen sent to USDA identifiers for identification confirmation. NAPIS data information for EAB positive traps in previously unconfirmed counties follow, arranged by their NAPIS observation number:

**IL10EAB01, Iroquois county, new in county, 03/24/10

**IL10EAB02, Boone county, new in county, 04/05/10

**IL10EAB03, Winnebago county, new in county, 06/04/10

**IL10EAB04, Ogle county, new in county, 08/24/10

**IL10EAB05, Champaign county, new in county, 08/30/10

**IL10EAB06, Grundy county, new in county, 09/09/10

NAPIS Data Summary:

Target Pest	Counties	Sites - Plants	Traps	Positives	Negatives
Emerald Ash Borer Visual Survey <i>Agrilus planipennis</i>	2	3		3	0
Emerald Ash Borer Trap <i>Agrilus planipennis</i> Trap; EAB; Purple	2		3	3	0
Emerald Ash Borer Unspecified <i>Agrilus planipennis</i>	1	1		1	0

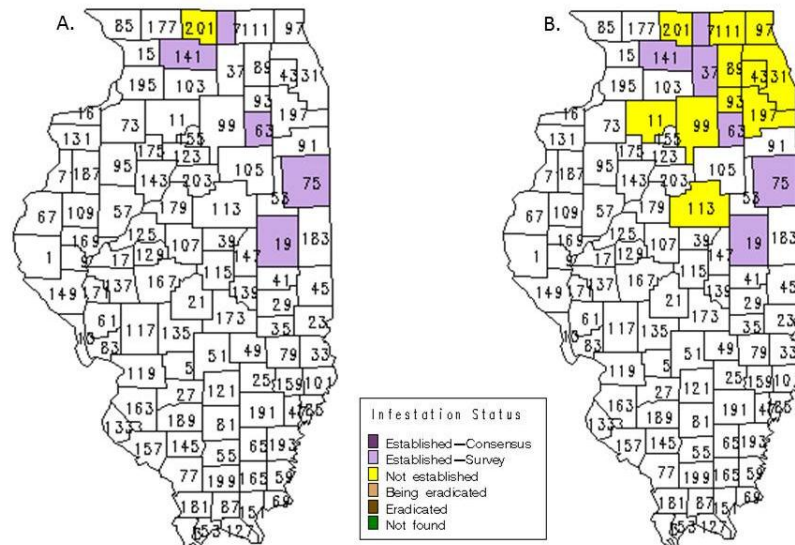


Figure 1. (A) Reported counties in Illinois identified to be infested with Emerald Ash Borer, 2010. (B) Reported counties in Illinois identified to be infested with Emerald Ash Borer, 2006-2010.

2. Gypsy Moth

The gypsy moth trapping program in Illinois is a cooperative effort between the Illinois Department of Agriculture and USDA-APHIS-PPQ. The goal of this survey was to determine the spread and dispersal of the gypsy moth in Illinois. Illinois is considered a transition state and is part of the *Slow the Spread* (STS) program. Illinois Department of Agriculture placed ~ 6,000 traps in the STS area. USDA-APHIS-PPQ coordinated the Detection Trapping and placed ~6,000 traps in 85 central and southern Illinois counties. Delimiting trapping occurred around all positive 2009 sites.

NAPIS Data Summary:

Target Pest	Counties	Sites - Plants	Traps	Positives	Negatives
Gypsy Moth (European) Trap <i>Lymantria dispar</i> Trap: milk carton pheromone	15		1482	1167	315
Gypsy Moth (European) Trap <i>Lymantria dispar</i> Trap: delta pheromone	50		11630	2382	9248

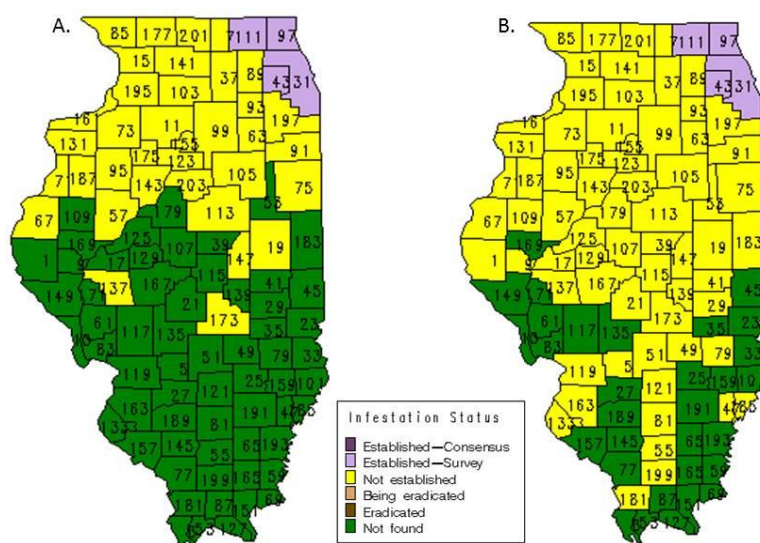


Figure 2. (A) Reported counties in Illinois identified to be infested with European Gypsy Moth, 2010. (B) Reported counties in Illinois identified to be infested with European Gypsy Moth, all years.

3. Karnal Bunt

The Karnal Bunt survey was conducted by USDA-APHIS-PPQ during the summer following the national karnal bunt survey protocol. The purpose of this survey was to determine the presence of karnal bunt in Illinois.

All samples were negative for Karnal Bunt.

NAPIS Data Summary:

Target Pest	Counties	Sites - Plants	Traps	Positives	Negatives
Karnal Bunt Elevator; spec. site <i>Tilletia indica</i> Nat'l Karnal Bunt Survey, opt. scan	45	71		0	71

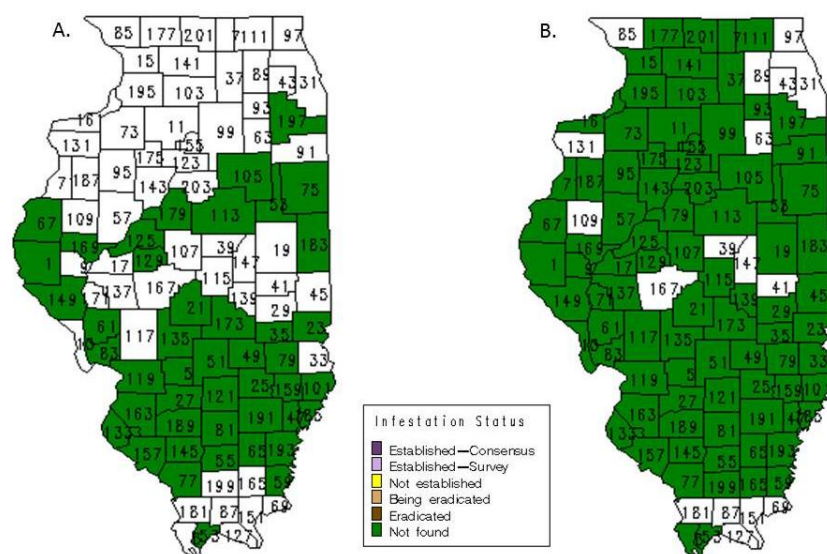


Figure 3. (A) Reported infestation status of counties surveyed for Karnal Bunt, 2010 . (B) Reported infestation status of counties surveyed for Karnal Bunt, all dates .

4. Pine Shoot Beetle

The Illinois PPQ Pine Shoot Beetle survey included trapping in the following 12 western Illinois counties: Hancock, Henderson, Warren, Adams, McDonough, Fulton, Schuyler, Brown, Cass, Pike, Scott, and Morgan. Trapping began in late January/early February. The purpose of this survey was to determine the spread and dispersal of the pine shoot beetle in Illinois. Of the 12 counties surveyed, only

one had a positive pine shoot beetle sample. Warren county is now considered to be established with pine shoot beetle.

**IL10PSB001, Warren county, new in county, 03/25/2010

NAPIS Data Summary:

Target Pest	Counties	Sites - Plants	Traps	Positives	Negatives
Pine Shoot Beetle Trap <i>Tomicus piniperda</i> Pine shoot beetle survey	12		67	1	66

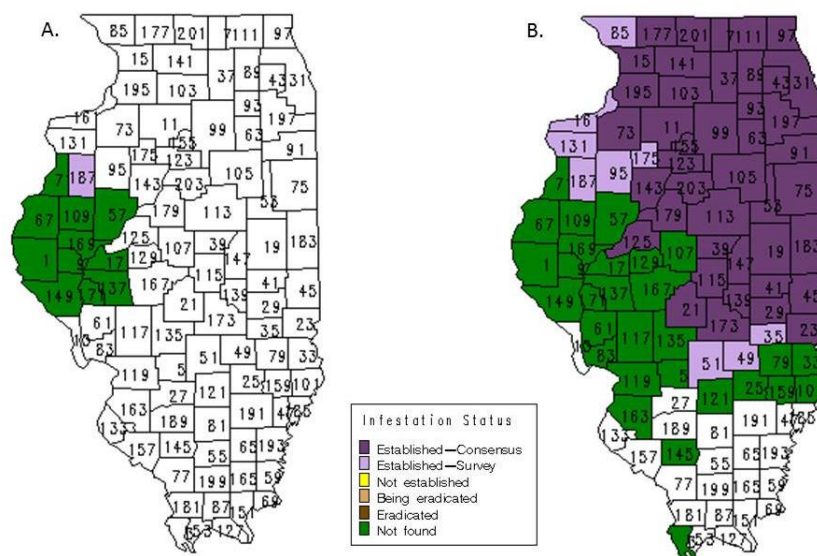


Figure 4. (A) Reported infestation status of counties surveyed for Pine Shoot Beetle, 2010 . (B) Reported infestation status of counties surveyed for Pine Shoot Beetle, all dates .

5. Exotic Wood Borer/Bark Beetle and Sirex Woodwasp

USDA-APHIS-PPQ surveyed high-risk SWPM sites according to survey guidelines and protocols. At each location, three Lindgren funnel traps were placed utilizing three different lures (Phero-Tech exotic bark beetle lure, alpha-pinene, and high-release ethanol). Fifty-one targeted sites within the state included areas in Chicago, the Quad Cities, and East St. Louis. Traps were fitted with dry collection baskets and vaponia killing strips or used the wet-trap option with low toxicity antifreeze. Traps were checked and serviced biweekly for the duration of the survey.

Survey completion and trap removal began in September. Identification of specimen was completed and data entered into NAPIS.

Two specimens of the Chinese Longhorned Beetle were collected from two sites (different from the 2009 detection). NAPIS data information for CLB positive locations follow, arranged by their NAPIS observation number:

**IL10CLB001, Du Page county, new in county, 07/13/10

**IL10CLB002, Crawford county, new in county, 07/06/10

NAPIS Data Summary:

Target Pest	Counties	Sites -Plants	Traps	Positives	Negatives
Chinese LH Beetle Trap <i>Hesperophanes campestris</i> Trap: lindgren	2		4	2	2
European Spruce Bark Beetle Trap <i>Ips typographus</i> Trap: lindgren	24		51	0	51
Lesser Spruce Shoot Beetle Trap <i>Hylurgops palliates</i> Trap: lindgren	24		46	0	46
Mediterranean Pine Engraver Trap <i>Orthotomicus erosus</i> Trap: lindgren	24		51	0	51
Pine Shoot Beetle Trap <i>Tomicus destruens</i> Trap: lindgren	24		46	0	46
Redhaired Pine Bark Beetle Trap <i>Hylurgus ligniperda</i> Trap: lindgren	24		46	0	46
Sirex Woodwasp Trap <i>Sirex noctilio</i> Trap: lindgren	13		15	0	15
Sixtoothed Bark Beetle Trap <i>Ips sexdentatus</i> Trap: lindgren	24		51	0	51

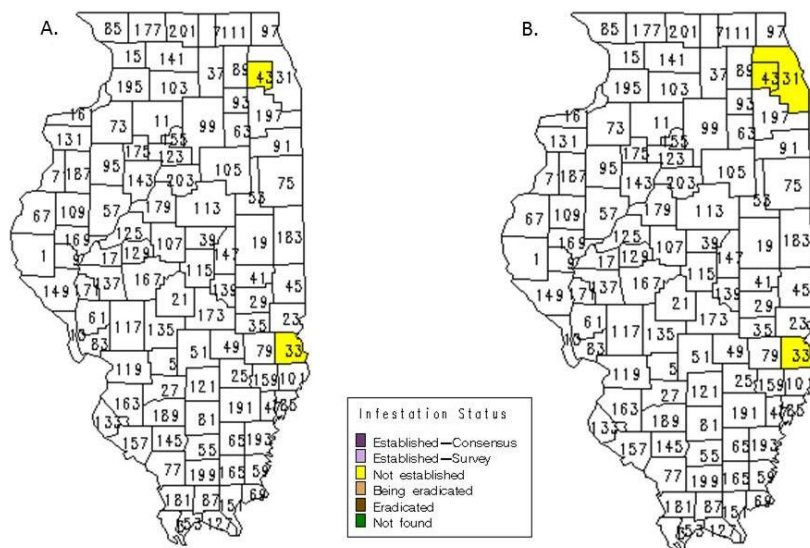


Figure 5. (A) Reported infestation status of counties surveyed for Chinese Longhorned Beetle, 2010. (B) Reported infestation status of counties surveyed for Chinese Longhorned Beetle, all dates .

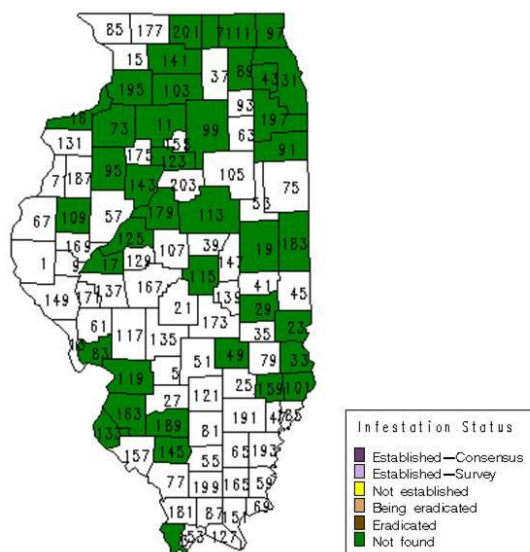


Figure 6. Reported infestation status of counties surveyed for European Spruce Bark Beetle, Lesser Spruce Shoot Beetle, Mediterranean Pine Engraver, Redhaired Pine Bark Beetle, all dates.

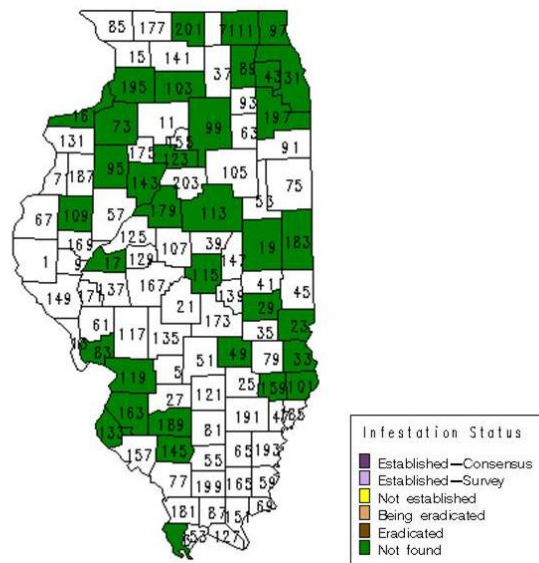


Figure 7. Reported infestation status of counties surveyed for Pine Shoot Beetle (*Tomicus destruens*) and Sixtoothed Beetle, all dates.

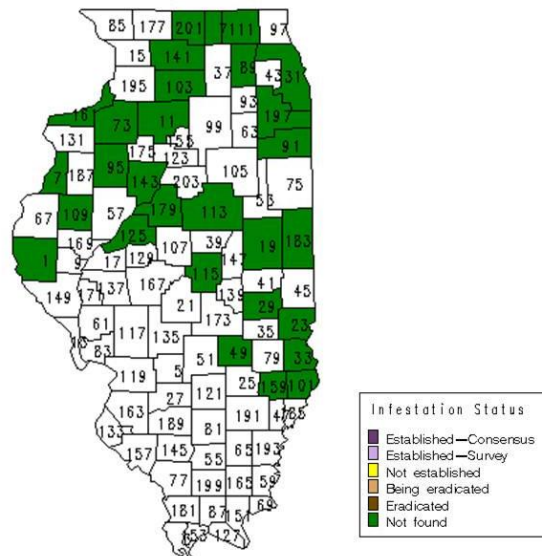


Figure 8. Reported infestation status of counties surveyed for Sirex Woodwasp, all dates.

6. Khapra Beetle

USDA-APHIS-PPQ conducted khapra beetle surveys according to survey guidelines and protocols.

NAPIS Data Summary:

Target Pest	Counties	Sites - Plants	Traps	Positives	Negatives
Khapra Beetle Trap; KB Wheat <i>Trogoderma granarium</i> Germ Bait	2	16		0	16

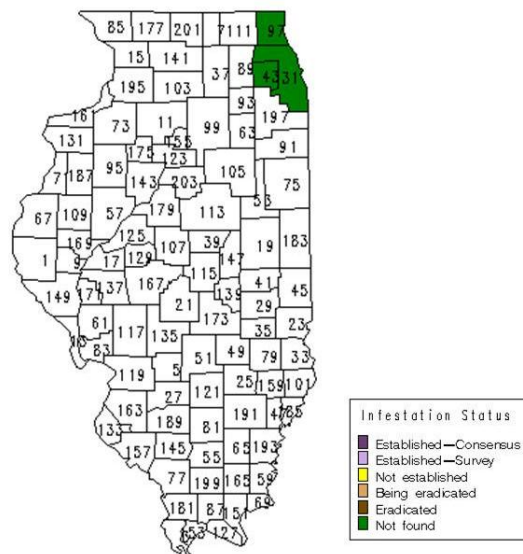


Figure 9. Reported infestation status of counties surveyed for Khapra Beetle, 2010. Map remains the same for all observation dates.

7. Interceptions and non-targets submitted to the NAPIS database.

In addition to results from formal surveys conducted by USDA-APHIS-PPQ, the Illinois Department of Agriculture, the Illinois Cooperative Agricultural Pest Survey Program, and other cooperators, invasive species (non-target finds and interceptions) were also entered into the NAPIS database.

NAPIS Data Summary:

Target Pest	Counties	Sites - Plants	Traps	Positives	Negatives
Brown Marmorated Stink Bug <i>Halyomorpha halys</i> General Pest Observ.; Lab Confirmed	1	1		1	0

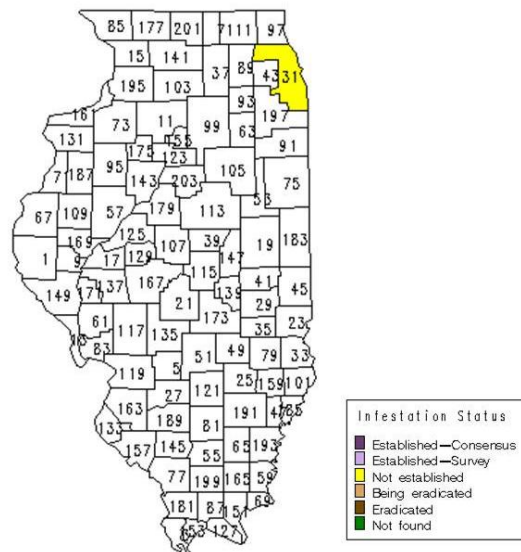


Figure 10. Reported infestation status of Brown Marmorated Stink Bug in Illinois, 2010. Map remains the same for all observation dates.

E. Attendance by designated representatives at state, regional, and national CAPS meetings.

- CAPS Eastern Region Teleconference, January 20, 2010
- CAPS Central Plant Board SSC Teleconference, May 6, 2010
- CAPS Western Region Teleconference, May 10, 2010.
- Walnut Twig Beetle/Thousand Cankers Disease Webinar, May 19, 2010
- Farm Bill 10201 Teleconference, May 26, 2010
- Farm Bill 10201 Soybean Aphid Project Proposal Teleconference, June 2, 2010
- National CAPS meeting, December 1-3, 2010

F. Public outreach, education, and communication.

1. Caps Networking, Training, and Related Activities

- Provided invasive outreach and display materials for Mid-Am Horticultural Trade Show. Chicago, IL. January 20-22, 2010.
- State Plant Analysis of Risk Committee Meeting. Des Plaines, IL, January 26, 2010.
- Provided invasive outreach and display materials for ProHort: The Greening of the Industry. February 15-16, 2010.
- 2010 Illinois' Most "Unwanted" Invasive Pests Fact Sheet. February 23, 2009.
- Illinois Invasive Plant Council Meeting. Springfield, IL, March 3, 2010.

- Estes, K. "May is Invasive Species Awareness Month in Illinois." University of Illinois Home, Yard, and Garden Newsletter. May 7, 2010.
- Provided "Unwanted" template to Adirondack Park (New York).
- Provided invasive outreach material – Invasive Plants in Illinois – to Illinois Department of Transportation.
- Estes, K. "Know Your Invasives: Learn to Identify Locally Invasive Plants." University of Illinois Home, Yard, and Garden Newsletter. May 21, 2010.
- Estes, K. "On the Watch for Invasives." University of Illinois Home, Yard, and Garden Newsletter. May 21, 2010.
- Estes, K. "Know Your Invasives: Garlic Mustard." University of Illinois Home, Yard, and Garden Newsletter. May 28, 2010.
- Estes, K. "On the Watch for Emerald Ash Borer." University of Illinois Home, Yard, and Garden Newsletter. May 28, 2010.
- IL CAPS Program assisted with EAB trap placement and education. June 1, 2010 – June 4, 2010.
- Estes, K. "On the Watch for Gypsy Moth." University of Illinois Home, Yard, and Garden Newsletter. June 4, 2010.
- Estes, K. "More Native Plant Resources." University of Illinois Home, Yard, and Garden Newsletter. June 4, 2010.
- IL CAPS Program assisted with EAB trap placement and education. June 7, 2010 – June 9, 2010.
- Carney, I and K. Estes. "Hemlock Woolly Adelgid." University of Illinois Home, Yard, and Garden Newsletter. June 11, 2010.
- Carney, I., S. McLaughlin, and K. Estes. "Friend or Foe: Giant Hogweed and Its Look A-Likes." University of Illinois Home, Yard, and Garden Newsletter. June 11, 2010.
- IL CAPS Program assisted with EAB placement and education. June 17, 2010 – June 18, 2010.
- Carney, I., and K. Estes. "Beautiful but Dangerous: What You Should Know about Purple Loosestrife." University of Illinois Home, Yard, and Garden Newsletter. June 18, 2010.
- McLaughlin, S. and K. Estes. "Viburnum Leaf Beetle: Garden Menace." University of Illinois Home, Yard, and Garden Newsletter. June 18, 2010.
- Estes, K. "Transporting Invasives: What's Hiding in your Tree?" University of Illinois Home, Yard, and Garden Newsletter. June 25, 2010.
- Carney, I and K. Estes. "Salt Cedar: Watch out for this Invasive!" University of Illinois Home, Yard, and Garden Newsletter. June 25, 2010.
- McLaughlin, S. and K. Estes. "Aquatic Invasives: Brazilian Elodea and Hydrilla." University of Illinois Home, Yard, and Garden Newsletter. June 25, 2010.

- McLaughlin, S. and K. Estes. "Common Teasel: Highway Invasive." University of Illinois Home, Yard, and Garden Newsletter. July 2, 2010.
- *UNWANTED: Brown Marmorated Stink Bug Information Sheet*. July 7, 2010
- McLaughlin, S. and K. Estes. "Highway Invasives: Road Spread Weeds." University of Illinois Home, Yard, and Garden Newsletter. July 16, 2010.
- Carney, I and K. Estes. "Brown Marmorated Stink Bug" University of Illinois Home, Yard, and Garden Newsletter. July 16, 2010.
- Phone Interview. "Giant Hogweed". Chicago Sun-Times. July 20, 2010.
- *UNWANTED: Red-Banded Stink Bug Information Sheet*. July, 20, 2010.
- Phone Interview. "Brown Marmorated Stink Bug". Daily Chronicle. July 23, 2010.
- *Viburnum Leaf Beetle Information Sheet*. July 20, 2010.
- McLaughlin, S. and K. Estes. "Asiatic Garden Beetle." University of Illinois Home, Yard, and Garden Newsletter. July 30, 2010.
- Carney, I and K. Estes. "Asian Longhorned Beetle: Your Vigilance Can Save Trees" University of Illinois Home, Yard, and Garden Newsletter. July 30, 2010.
- Illinois Invasive Plant Council Meeting. Springfield, IL. August 4, 2010.
- *Brown Marmorated Stink Bug Factsheet (for website)*. August 9, 2010.
- *Asian Longhorned Beetle Factsheet (for website)*. August 11, 2010.
- Carney, I and K. Estes. "Invasive Plant, Pest and Disease Awareness: Do You Know the Part You Play in Environmental Defense?" University of Illinois Home, Yard, and Garden Newsletter. August 13, 2010.
- *Emerald Ash Borer Factsheet (for website)*. August 16, 2010.
- *Salt Cedar Factsheet (for website)*. August 18, 2010.
- *Oak Splendour Beetle Factsheet (for website)*. August 23, 2010.
- The Possibility Place Nursery Field Day. "Invasive Insects on the Horizon" Monee, IL. September 4, 2010.
- Phone Interview. "Pest Monitoring" SJR-Springfield. September 9, 2010.
- Lecture, University of Illinois, CPSC 270, Surveying for Invasive Insects in Illinois, November 8, 2010.
- Northeast Illinois Invasive Plant Partnership networking teleconference. December 10, 2010.
- *Pest Alert: Thousand Cankers Disease*. Modified and reprinted with permission of Kansas Department of Agriculture. December 2010.

2. Diagnostics (Non-CAPS targets)

Phone: 8

Samples: 19

Email: 21

3. IL CAPS website and blog

The Illinois CAPS blog continues to be a source for invasive news in the state; a month-by-month breakdown of internet traffic is found below:

Month	# of Visits (2010)	# of Visits (2009)
January	244	220
February	282	304
March	325	357
April	361	368
May	541	594
June	470	654
July	661	596
August	416	524
September	301	502
October	368	456
November	240	405
December	124	338

Project: 2010 Tier II Work Plan (Bundled Nursery Survey)

Cooperator: Illinois Department of Agriculture and Illinois Natural History Survey

List of Agencies Involved: USDA-APHIS-PPQ (including AQI)
Illinois Natural History Survey
Illinois Department of Agriculture
Illinois Department of Natural Resources
University of Illinois Department of Crop Sciences
University of Illinois Department of Natural Resources
and Environmental Sciences
University of Illinois Plant Clinic
University of Illinois Extension

I. Accomplishments Report

A. Quantitative Projection of Accomplishments to be Achieved

1. The Illinois SSC, SPHD, and PSS will identify potential survey sites during the first quarter of 2010.
Completed. A list of potential sites was identified in winter 2010. Sites will be finalized in May when visual surveys begin.
2. Pheromone trap placement begin in June 2010
Completed. Trap placement began in June, completed in June.
3. Institute bi-weekly trap collection circuit and lure replacement according to survey protocols.
Completed. Traps were checked and collected every 2 weeks and lures were replaced as directed in survey protocols.
4. Continue visual surveys according to survey protocols.
Completed. Visual surveys were completed at the time of trap collections.
5. Complete survey, September/October 2010.
Completed. All traps were collected by the end of September. Screening was completed.

II. Survey Report

A. Survey Methodology

The first part of the proposed survey consisted of establishing a trapping network in Illinois nurseries to target the light brown apple moth, summer fruit tortrix moth, and false codling moth. Trapping began in mid-June and continued through mid-September. Traps were serviced and collected bi-weekly.

The visual part of the survey was conducted during routine trap collection and maintenance visits. Surveyors conducted visual surveys on stock at the business, looking for symptoms caused by the presence of the oak splendour beetle, oak ambrosia beetle, and viburnum leaf beetle. If potential pests were identified, the survey called for a sample to be taken and submitted for identification/verification. Data was recorded, then summarized and entered into NAPIS by SSC Estes.

B. Rationale underlying survey methodology

The Green Industry in Illinois (including nurseries, garden centers, landscape contactors, irrigation, lawn care, golf course management, and parks & recreation) contributes approximately \$5.2 billion to the Illinois economy. There are many invasive pests that if introduced and established in Illinois, would be potentially devastating to this industry. While these pests would undoubtedly affect nursery trade, they would also threaten the diversity of our natural areas and dramatically impact our forest product industry as well.

One high risk pathway of invasive species introduction is through nursery trade. In Illinois, nearly 1,200 nurseries are inspected and certified each year. There are approximately 40 shipping greenhouses that are inspected twice a year. Just as the movement of cargo and shipping containers continues to increase, so does the movement of plant material (and consequently, invasive species).

Of these potential pests, several are at high risk for establishment, spread, economic damage, and environmental damage. For instance, oak splendour beetle is closely related to the emerald ash borer, which has killed millions of trees in infested areas. The oak splendour beetle, as well as other wood boring pests (such as the oak ambrosia beetle) that could potentially become established, not only predispose trees to secondary insects and pathogens, but their injury impacts the quality of timber, pulp, and other forest products.

The summer fruit tortrix, light brown apple moth, and false codling moth have wide host ranges that include many nursery plants, but they are major pests of other hosts, such as fruit trees and fields crops. Both of these industries are important to Illinois agriculture.

In July 2009, the Viburnum leaf beetle was identified in Illinois for the first time. This beetle was found on viburnum in a recently landscaped neighborhood. Thanks to a well-informed arborist, the suspect specimen was turned in to be identified. In addition to learning more about the distribution of this beetle in Illinois, it is the goal of this survey to include an educational and outreach component to increase invasive species awareness in the green industry.

C. Survey Dates: June - September, 2010.

D. Taxonomic Services

SSC Estes will conduct all pre-screening of traps. If suspected targets are found, final confirmation of identification will be determined by national identifiers for new state and county records.

E. Benefits and Results of Survey

The cooperator conducted a cooperative agriculture pest survey program aimed at the early detection of invasive nursery pests. This survey was completed in two parts. The first part of the survey consisted of a trapping network coordinated by SSC Estes targeting light brown apple moth, summer fruit tortrix, and false codling moth. The second part of the survey consisted of a visual survey targeting the oak splendour beetle, oak ambrosia beetle, and viburnum leaf beetle. The visual survey yielded no suspect samples, and thus no NAPIS database submissions.

F. NAPIS Database Submissions

Target Pest	Counties	Sites - Plants	Traps	Positives	Negatives
False Codling Moth Trap <i>Thaumatotibia leucotreta</i> Trap; Delta pheromone	9		30	0	30
Light Brown Apple Moth Trap <i>Epiphyas postvittana</i> Trap; Delta pheromone	9		30	0	30
Summer Fruit Tortrix Moth Trap <i>Adoxyophes orana</i> Trap; Delta pheromone	9		30	0	30

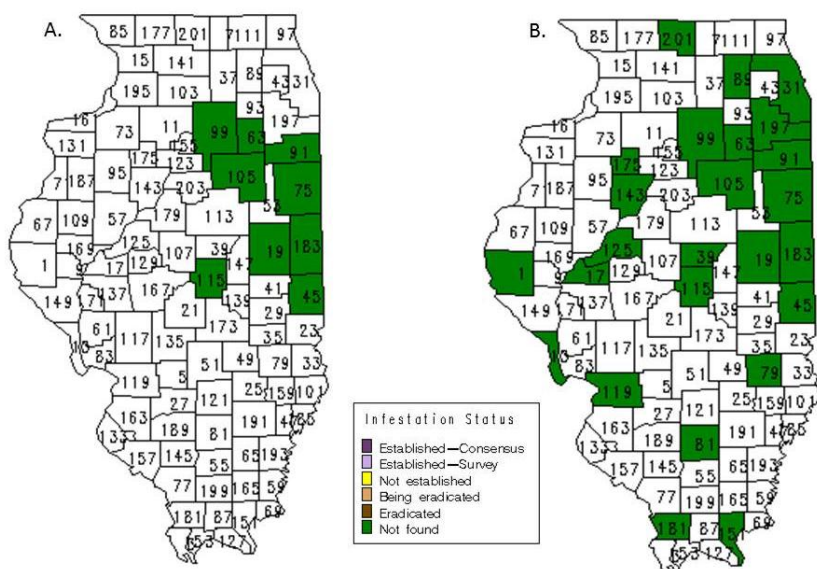


Figure 11. (A) Reported infestation status of counties surveyed for False Codling Moth, 2010. (B) Reported infestation status of counties surveyed for False Codling Moth, all dates.

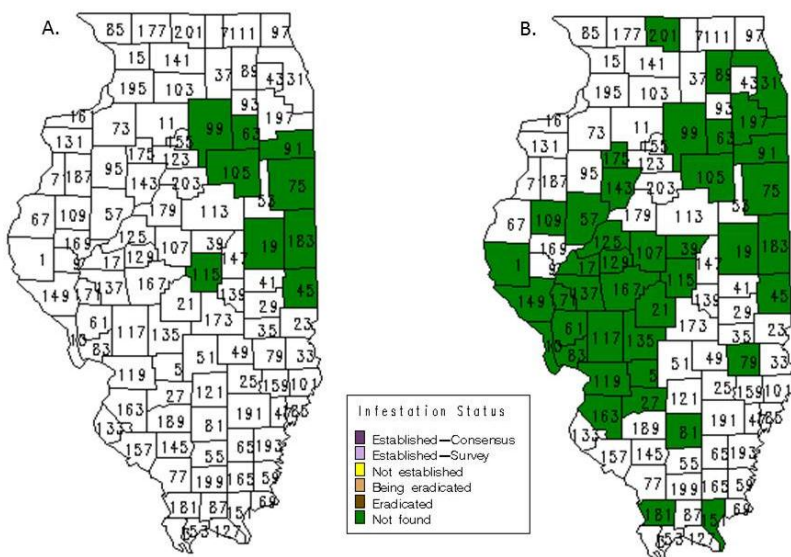


Figure 12. (A) Reported infestation status of counties surveyed for Light Brown Apple Moth, 2010. (B) Reported infestation status of counties surveyed for Light Brown Apple Moth, all dates.

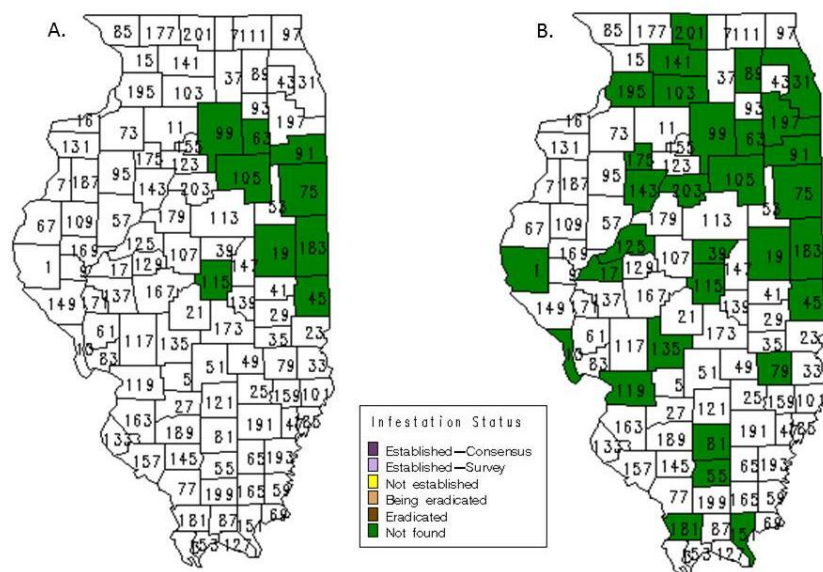


Figure 13. (A) Reported infestation status of counties surveyed for Summer Fruit Tortrix Moth, 2010. (B) Reported infestation status of counties surveyed for Summer Fruit Tortrix Moth, all dates.

Approved and signed by

_____ Date: _____

Cooperator

_____ Date: _____

ADODR